# Roles and competencies of district pharmacists: a case study from Cape Town

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**Submitted in fulfilment of the requirements for the degree PhD, in the School of Public Health, Community and Health Sciences Faculty, University of the Western Cape**

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**18 December 2013**

# Keywords

District pharmacist

District health system

District management team

Primary health care

Roles

Competencies

Competency framework

Human resources development

Developing country

South Africa

# Preface

I declare that ***Roles and competencies of district pharmacists: a case study from Cape Town*** is my own work, that it has not been submitted for any degree or examination in any other university, and that all sources I have used or quoted have been indicated and acknowledged by complete references.


Name: Hazel Anne Bradley


Signed:


Date: 18 December 2013

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# Acknowledgements

I am grateful to City Health and Metro District Health Services for granting me permission to carry out this research in Cape Town and to the pharmacists and managers who participated, especially the two senior pharmacists from each organisation. I appreciate the time and expertise contributed by all participants over four years between 2008 and 2011 which resulted in collaborative learning experiences.

I thank my supervisor, Prof Uta Lehmann, co-supervisor, Prof Nadine Butler and mentor, Prof John Seager, for their guidance and support throughout this lengthy journey and I thank also my colleagues, family and friends who have encouraged me through the many highs and lows. In addition, I am grateful to the University of the Western Cape for providing funding and study leave to conduct the research and produce this thesis report.

Finally, I want to thank my two sons, Thomas and James, for their understanding whilst I have been busy with this research and for their technical assistance in finalising the thesis report.
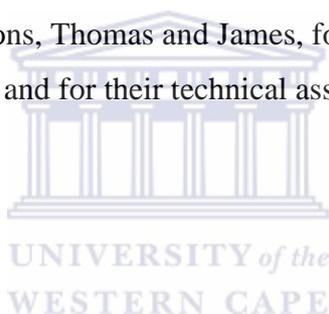
# Dedication

This thesis is dedicated to the late Drs Ivan Toms and Jamie Claassen of City Health and Metro District Health Services, respectively, whose vision and commitment to district health services was exemplary and who inspired and supported this research.

# Abstract

This thesis presents research on the emergence of sub-structure and sub-district pharmacists in Cape Town by considering their roles and related competencies, and the support required to establish them in these new positions. The research was carried out in partnership with Metro District Health Services (MDHS) and City Health. Both organisations provide services across the whole of the Cape Metro. The research took place as MDHS was dividing the Cape Town Metro District into four sub-structures, and the research is embedded in these unfolding developments. The four sub-structures were created to be closer in size to WHO health districts than the unmanageably large Metro District. Consequently, sub-structures and sub-structure pharmacists in this study should be considered equivalent to districts and district pharmacists in other settings.

I used a participatory action research (PAR) approach to partner with pharmacists and managers in both organisations between 2008 and 2011. The partnership benefitted from the contextual and practice experiences of the health services stakeholders and my evolving research expertise. Including a broad stakeholder group was considered important for developing the shared learning and understanding that would translate into action and change in the organisations. The flexible and emergent approach of PAR was considered suited to a complex health system in the midst of change.

After an initiation stage, the research evolved into a series of five iterative cycles of action and reflection, each providing increasing understanding of the roles and related competencies of sub-structure and sub-district pharmacists, and their experiences as they transitioned into these new management positions in the two organisations. The research centered around two series of three interactive workshops I facilitated, attended by both pharmacists and managers, in which I contributed information from published literature and documentary reviews to the collaborative processes. Semi-structured interviews and focus groups were conducted at various stages during the research, to inform conceptualization and supplement workshops, and later on, during years three and four, to reflect on the experiences of sub-structure and sub-district pharmacists.

The research identified five main roles each for sub-structure and sub-district pharmacists. Four of these roles are the same for each:

- Sub-structure (sub-district) management
- Planning, co-ordination and monitoring of pharmaceuticals, human resources, budget, infrastructure
- Information and advice
- Quality assurance and clinical governance

But their fifth roles are different:

- Research, for sub-structure pharmacists. Dispensing at clinics for sub-district pharmacists.

But although they look similar, there were substantial differences between sub-structure and sub-district pharmacist roles in the two organisations. Their roles were shaped by the differences in leadership and governance, as well as by the services provided by the two organisations. Sub-structure pharmacists were generally involved in strategic level management functions whilst sub-district pharmacists combined sub-district management activities with dispensing in clinics. Essentially the two cadres were working at different management and leadership levels, with sub-structure pharmacists working at middle management level and sub-district pharmacists straddling first level and middle management levels.

Five competency clusters were identified for both cadres, each with several competencies.

- Professional pharmacy practice
- Health system/public health
- Management
- Leadership
- Personal, interpersonal and cognitive

Whilst professional pharmacy practice competencies were particularly valued by sub-structure and sub-district managers, overall, sub-structure and sub-district pharmacists required generic management and leadership competencies. Along with the more technical management and leadership competencies, both organisations recognised the importance of

'softer' competencies for pharmacists moving into these management positions. Again, although the competencies appear similar, there were differences between the roles, so that the different cadres required different competencies within these competency clusters.

Transitioning into these new management positions was an emergent process, which entailed pharmacists changing form performing technical and clinical functions associated with professional pharmacy practice to co-ordinating pharmaceutical services across the sub-structure or sub-district. They moved from working in a pharmacy to being a member of a multi-professional team in a sub-structure or sub-district. Adjusting to these new management positions took time and was facilitated by several personal and organisational factors which varied in the two organisations. Managers and pharmacists mentioned the positive contribution of the PAR in assisting with this transition through the development of shared understanding of the DHS and the roles and functions of pharmacists working in these management positions. The research assisted with practical aspects including the development of new job descriptions.

Several implications for developing competencies in sub-structure and sub-district pharmacists emerged during the research. Firstly, although competency frameworks for sub-structure and sub-district pharmacists are useful for selecting new staff, conducting performance appraisals and identifying learning needs, they need to be tailored for each setting. Secondly, a mixture of traditional training options, including academic qualifications and short courses, as well as innovative on-the-job support such as mentoring and coaching are required to support sub-structure and sub-district pharmacists, and other similar cadres in these positions.

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# List of Acronyms

| | |
|---|---|
| ACLF | Advanced and Consultant Level Framework |
| ACT | Artemisinin-based Combination Therapy |
| AR | Action Research |
| ARV | Anti-retroviral |
| CAPE | Center for the Advancement of Pharmaceutical Education |
| CBO | Community-Based Organisation |
| CDU | Chronic Dispensing Unit |
| CHC | Community Health Centre |
| CHMT | Council Health Management Team |
| CHW | Community Health Worker |
| Co-DEG | Competency Development Evaluation Group |
| CSP | Comprehensive Service Plan |
| DEX | District Executive |
| DHER | District Health Expenditure Review |
| DHS | District Health System |
| DMT | District Management Team |
| DOTS | Directly Observed Treatment Shortcourse |
| EDL | Essential Drug List |
| EPI | Expanded Programme on Immunisation |
| FIP | International Pharmacy Federation |
| GP | General Practitioner |
| GLF | General Level Framework |
| HBC | Home-Based Care |

| | |
|---|---|
| HIV/AIDS | Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome |
| HPSR | Health Policy and Systems Research |
| HRH | Human Resources for Health |
| HST | Health Systems Trust |
| ISDMT | Integrated Sub-District Management Team |
| ISDS | Initiative for Sub-District Support Programme |
| LMIC | Low and Middle Income Country |
| MDG | Millennium Development Goal |
| MDHS | Metro District Health Services |
| MEDICOS | MEDUNSA Initiative for Community Service |
| MEDUNSA | Medical University of Southern Africa |
| MOU | Midwife Obstetric Unit |
| MPH | Master of Public Health |
| MSH | Management Sciences for Health |
| NGO | Non Governmental Organisation |
| NHI | National Health Insurance |
| NHS | National Health Service |
| NPO | Not-for-Profit Organisation |
| OSD | Occupation Specific Dispensation |
| PA | Pharmacist's Assistant |
| PAR | Participatory Action Research |
| PET | Pharmacy Education Taskforce |
| PGWC | Provincial Government of the Western Cape |
| PHC | Primary Health Care |
| PLDP | Pharmaceutical Leadership Development Programme |

| | |
|---|---|
| PTC | Pharmacy and Therapeutics Committee |
| SAPC | South African Pharmacy Council |
| SOPH | School of Public Health |
| SPS | Strengthening Pharmaceutical Systems |
| SSA | Sub-Saharan Africa |
| STI | Sexually Transmitted Infection |
| TB | Tuberculosis |
| UK | United Kingdom |
| USA | United States of America |
| USAID | United States Agency for International Development |
| UWC | University of the Western Cape |
| WHO | World Health Organisation |
| ZEDAP | Zimbabwe Essential Drug Action Programme |

# Chapter 1:    Introducing the research

## 1.1  Introduction

In this thesis I present my research on the emergence of pharmacists as managers in the evolving district health system in Cape Town by considering their roles and related competencies, and the support required to establish them in these new positions. I used a participatory action research (PAR) approach involving pharmacists and managers working in public sector primary level services between 2008 and 2011 (Baum et al., 2006). In Cape Town, primary health care (PHC) services are delivered by two tiers of government, the local authority, City Health, and the provincial government, Metro District Health Services (MDHS) across the same geographical area. The research took place as MDHS was re-structured and the research is embedded in these developments. This period provided me with the opportunity of collaborating with pharmacists and managers as pharmacists established themselves in these new management positions.

District and sub-district pharmacists, and other similar cadres, have emerged in the South African health system over the past few years as the result of health reform, which has moved from a highly fragmented hospital-based health service to a PHC approach[1] based on the district health system (DHS)[2] (Department of Health, 1997, Republic of South Africa, 2004). The reforms necessitated the formation of health districts and an increased focus on primary level services. Implementation of the DHS resulted in the establishment of district management teams (DMTs), creating a new layer of health managers with responsibility for strategic and operational functions (Sanders et al., 2001). The past couple of years have seen renewed impetus in district development with the launch of a national strategy to revitalise PHC and strengthen the DHS. In addition to strengthening the DHS as a whole, three PHC

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[1] **The PHC approach**, as elaborated in the Alma Ata Declaration, focuses on the family and community rather than individual, with an emphasis on up-stream social determinants of health (WHO/UNICEF, 1978)

[2] **The DHS** was conceptualised as the organisational vehicle for implementing PHC, with WHO defining a DHS as a more or less self-contained segment of the national health system, comprising a well-defined population living within a clearly delineated geographical area and including all healthcare activities and interrelated elements (Tarimo, 1991).

streams have been identified and are being implemented, with activities focussed in ten selected pilot districts (Department of Health, 2010, Pillay, 2012).

Within the district structure, district and sub-district pharmacists have responsibility for medicines supply and management within the district or sub-district, with other pharmacists, pharmacy support workers and nurses performing a variety of tasks (Chatora and Tumusiime, 2004a). Medicines are essential components of healthcare, and along with human resources, were recently identified as one of six building blocks of health systems (WHO, 1981, WHO, 2007a). The importance of strengthening these elements, as well as their interconnections, is critical to improving health outcomes (de Savigny and Adam, 2009). In South Africa, the high prevalence of the human immunodeficiency virus (HIV) and increasing disease burden of non-communicable diseases in the country have emphasised the importance of improving accessibility and availability of anti-retrovirals (ARVs) and other medicines at primary level, and this has underlined the need for district and sub-district pharmacists (Bradshaw et al., 2006).

Despite recognition at an early stage that the introduction of the PHC approach would require the re-definition of roles and functions of all health personnel, human resources received little attention for quite some time (Pick et al., 2001, Tarimo and Webster, 1994). The last few years have seen a greater focus on human resources for health (HRH), demonstrated by the publication of the HRH Strategy for the Health Sector: Human Resources for Health South Africa 2012/13–2016/17 and this was followed by the Pharmacy Human Resources in South Africa 2011 Report describing the current and future pharmacy workforce needs of the country (National Department of Health, 2011, South African Pharmacy Council, 2012).

Whilst there have been specific initiatives aimed at strengthening hospital and district managers capacities, there have been limited interventions focusing specifically on district and sub-district pharmacists (Groenewald, 2006, Lehmann, 2008). Having a clear understanding of the roles and related competencies of district and sub-district pharmacists is critical to developing appropriate capacity, and facilitating the optimal management of medicines at primary care level (Frenk et al., 2010).

In the remainder of this chapter I will outline my experience and interests, the research context, how the project was initiated, the research problem and aims. This will be followed

by a description of the research design and approach and an overview of the research project. Finally, I will outline the chapters of the thesis.

## 1.2   Personal experiences and interests

Three overlapping areas influenced the choice of this research for my PhD and my role as the researcher. They are my prior professional experience, understanding of the research context and interest in the professional practice of pharmacists. My interest in primary level pharmaceutical services can be traced through experiences in Cape Town and beyond. I arrived in Cape Town in 1994, just over two months after the first democratic elections in the country, keen to contribute to building a 'new' South Africa. A few years later, I began broadening my professional pharmacy qualification by studying at the University of the Western Cape (UWC) for a Master in Public Health (MPH). Here I was introduced to the South African health system as it was being transformed by the incoming government, and had the opportunity to visit public sector primary level facilities in Cape Town and observe pharmacies.

At the time, I recall feeling that pharmacists should be playing a key role in delivery of PHC services and being disappointed as I observed them working in cramped, and frequently chaotic, community health centres (CHCs) supplying medicines to patients through small glass-fronted hatches. They appeared to be rather isolated from the rest of the healthcare team, had minimal interaction with patients and demonstrated limited understanding of the socio-economic and cultural context in which they practiced. These responses were probably prompted by my previous experiences in the United Kingdom and India where I had worked in settings where pharmacists were considered integral members of the PHC team and seemed to play more meaningful roles. My work in the United Kingdom as a pharmacist overseeing the supply and use of medicines and vaccines to community clinics, general practitioners and other facilities, such as old age homes and special schools, provided me with broad insights into potential district and community level roles of pharmacists in South Africa.

After completing my MPH, I familiarised myself with the PHC setting in Cape Town. The first was working part-time for the Initiative for Sub-District Support (ISDS) Programme of

the Health Systems Trust (HST), assisting in primary level pharmaceutical services in one of the City Health sub-districts. I subsequently worked for a non-governmental organisation (NGO) based in the Cape Town townships for two years, which provided primary and community-based health care services through health professionals and community health workers.  In 2003, I joined the staff of the School of Public Health (SOPH) at UWC, and was involved in research projects including the Cape Town Equity Gauge and the Strengthening Health Information Systems Projects. These opportunities helped me to understand the circumstances facing pharmacists and health managers delivering health services in Cape Town and provided me with the chance to develop personal relationships, both of which were critical in the initiation and implementation of this project.

The third influence was my interest in the development of professional pharmacy practice as the DHS was being implemented in the country. As a registered pharmacist and member of the Pharmaceutical Society of South Africa I have got to know many pharmacists employed in public sector health services in Cape Town and this contributed to my decision to explore pharmacists' roles and competencies in the evolving DHS more closely.

## 1.3  Research context

The research took place in the City of Cape Town, a metropolitan (metro) district with an estimated  population of 3.8 million in 2011, situated in the Western Cape Province of South Africa (Executive Management Team, 1999). The city exhibits inequalities in socio-economic and health status consistent with the apartheid history of the country (Western Cape Department of Health, 2011a). Its quadruple burden of disease has been categorised as HIV/AIDS and tuberculosis; maternal and child illnesses; non-communicable diseases such as cardiovascular diseases; and violence and injuries (Groenewald et al., 2008).

The population of Cape Town health district far exceeds the 50-300,000 envisioned by the World Health Organisation (WHO) due to concurrent processes in establishing health and magisterial boundaries (Barron, 2008, Chatora and Tumusiime, 2004a). As can be seen in the map in Appendix 1, Cape Town Metropolitan District is divided into eight health sub-districts, with each sub-district approximately the size envisaged by WHO for health districts.

Cape Town has a variety of health care facilities ranging from academic hospitals and PHC community health centres and clinics in the public sector, to state-of-the-art hospitals, general medical practitioners and retail pharmacies in the private sector, as well as non-governmental organisations (NGOs) which mainly provide community-based services in resource-poor parts of the city. Approximately 17% of the population have medical insurance and utilise private health care, with a further 8% accessing private general practitioners and retail pharmacies through out-of-pocket payments (Day et al., 2011). This means that the vast majority of Cape Town's population are dependent on public sector health services which, despite being free at the point of care for the uninsured, are inequitably distributed amongst the population.
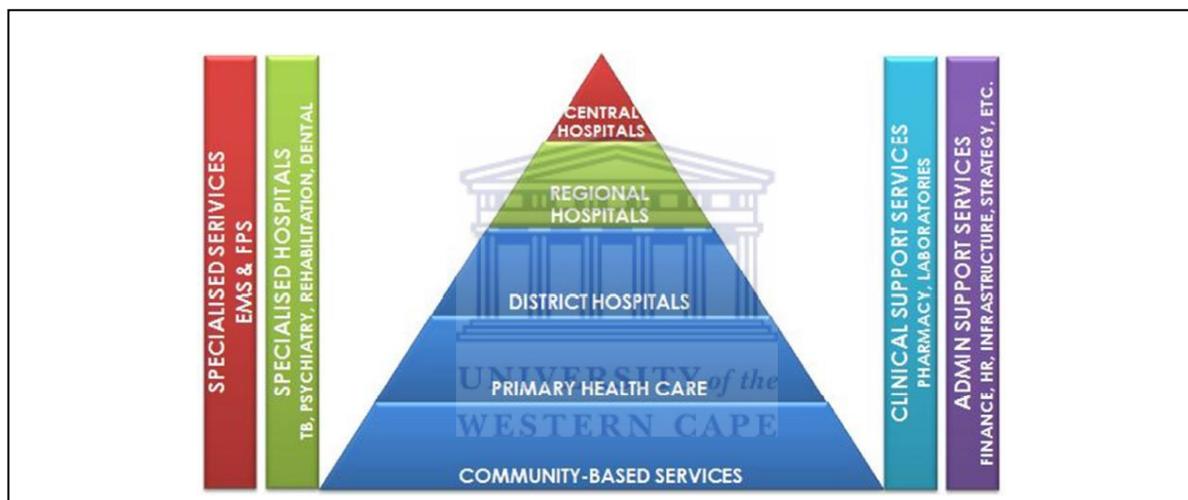


**Figure 1.1: Health Service Platform in the Western Cape (Western Cape Department of Health, 2007)**

Public sector health services in Cape Town are organised according to the service delivery platform of the Provincial Government of the Western Cape (PGWC) Comprehensive Service Plan (CSP) in line with HEALTHCARE 2010 (Figure 1.1) (Western Cape Department of Health, 2007). District Health Services include district hospitals, PHC provided at CHCs and clinics and community-based services. Pharmacy services form part of clinical support services. The packages of services offered by district health services are in line with National Packages of Services (Department of Health, 2001b, Department of Health, 2002).

In the City of Cape Town, similar to other metropolitan districts in the country, PHC services are still delivered by two tiers of government, the Western Cape provincial health department as the Metro District Health Services (MDHS), and the municipality, City Health, the latter in terms of a service level and co-funding agreement with the Provincial Government of the Western Cape (PGWC) (Republic of South Africa, 2004). This is despite promulgation of the Health Act in 2004 which assigned provincial health departments' with responsibility for all personal PHC services and resulted in all PHC services in the five rural districts of the Western Cape Province being formally transferred in 2006 (Barron, 2008, Republic of South Africa, 2004, South African Local Government Association (SALGA), 2009, The Local Government and Health Consortium, 2004, Western Cape Province Ministry of Health and Social Services, 1995). There are plans to address provincialisation of health services in Cape Town by 2020, but meanwhile good structural arrangements are in place to co-ordinate and jointly manage PHC services in the metro by means of monthly DEX Committee meetings, comprising the directors and senior managers of MDHS and City Health, as well as Integrated Sub-District Management Teams (ISDMT) at sub-district level (Western Cape Department of Health, 2011a).
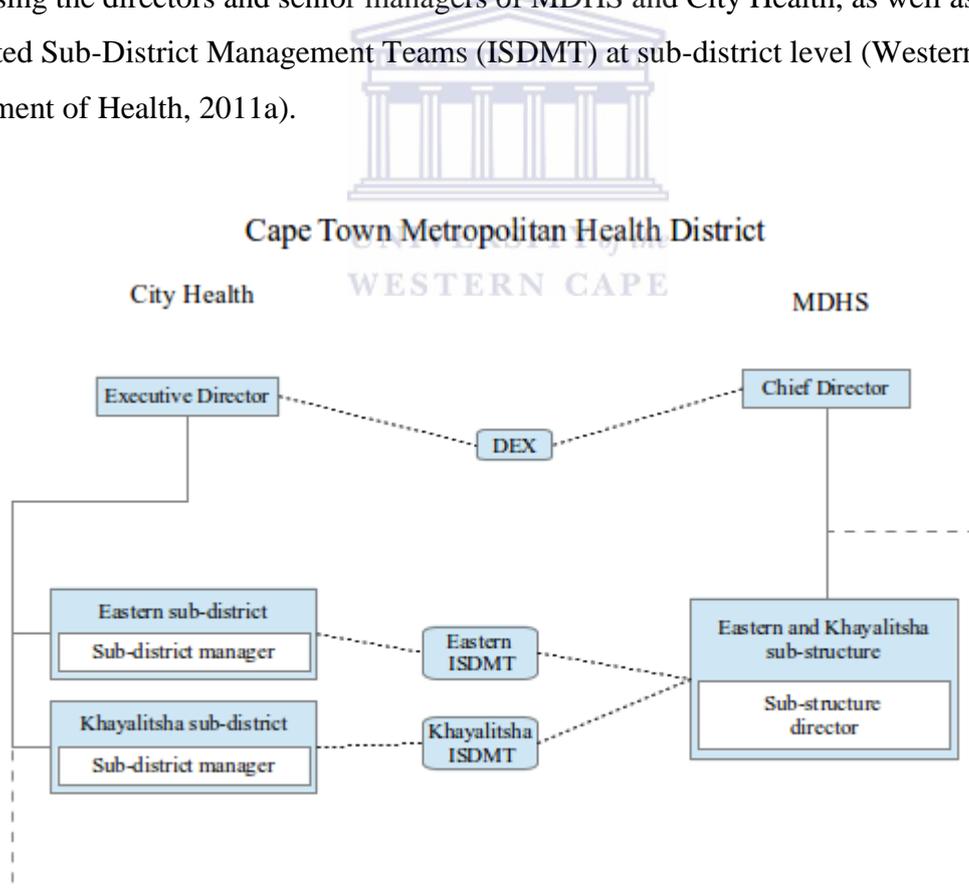


**Figure 1.2: Cape Town Metropolitan District PHC services collaboration**

Figure 1.2 illustrates the PHC collaboration at district level and at sub-district level between two of the eight sub-districts, Eastern and Khayelitsha. The DEX Committee was the official platform that facilitated participation of the health departments of both organisations in this research project.

Despite this comprehensive service platform and good collaboration at district and sub-district levels, MDHS and City Health essentially manage services at their own PHC facilities, and this includes pharmaceutical services. A feature of this research was the evolving research context which included changes in organisational structure in MDHS and increasing moves towards the equitable delivery of the Comprehensive Primary Health Care Service Package across the Metro (Department of Health, 2001b, Western Cape Department of Health, 2007). During the course of the research both MDHS and City Health facilities started to offer a wider range of services. These include new services, such as the rollout of HIV prevention, treatment and care including VTC, ART and home-based care services at facilities in both PHC organisations, as well provision of services previously only provided by one of the PHC organisations such as chronic medication, immunisations and reproductive health services. The following sections describe developments in organisational structure, service delivery and pharmaceutical services management in Cape Town during the research.

## 1.3.1 Metro District Health Services structure, services and pharmaceutical management

When the research commenced, MDHS was headed by a director and health services were managed by a team, including the chief medical officer and financial services, information services, human resources managers, based at a central location in the Metro. A project manager: pharmaceutical services was appointed in 2003, with responsibility for overseeing pharmaceutical services to the 42 CHCs in the Metro. Over time, several other pharmacists were appointed to this central office to provide a range of pharmaceutical management functions across the MDHS, including human resource management and development for pharmacy staff, pharmacy information systems, medicines supply management and liaison with new central dispensing unit (CDU).

In 2009, approximately two years after the research commenced, MDHS was unbundled into four sub-structures each consisting of two sub-districts, in line with provincial plans to bring the units nearer in size to health districts as envisaged by WHO (Chatora and Tumusiime, 2004a, Western Cape Department of Health, 2003, Western Cape Department of Health, 2007). The MDHS is now headed by a chief director and each sub-structure is managed by a director and a management team comprising four deputy directors, with responsibility for Comprehensive Health Services, Pharmaceutical Services, Human Resources, and Finance and Support Services and run in line with district model. The four sub-structure pharmacists[3] were appointed between August and October 2009. Figure 1.3 illustrates the changes in the management structure within MDHS during the course of the research project, with particular reference to pharmaceutical management.
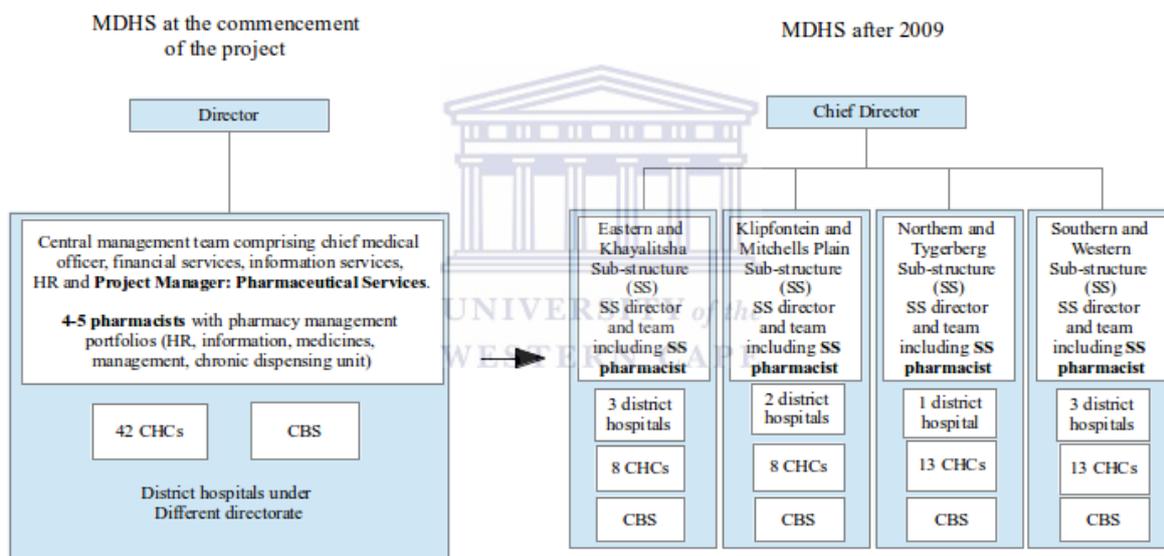


**Figure 1.3: Changes in MDHS structure, services and pharmaceutical management**

In addition to the four pharmacists appointed as deputy directors at sub-structure level in MDHS, all MDHS facilities have a responsible pharmacist and other pharmacists and

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[3] **Sub-structure pharmacists** should be considered equivalent to district pharmacists in other settings,

pharmacist's assistants[4] depending on their size. In 2010 there were approximately 110 pharmacists and 100 pharmacist's assistants working in PHC services in MDHS (Western Cape Department of Health, 2011c).

Although the primary focus of MDHS at the commencement of the project was PHC services at community health centres, since the unbundling into four sub-structures in 2009 the scope of health services managed by sub-structures has expanded considerably, in accordance with the CSP 2010 and in line with DHS principles. These include district hospitals, Midwife Obstetric Units (MOUs) at CHCs, as well as increasing numbers of NGOs and CBOs as the community-based platform expands and linkages with private service providers.

MDHS is currently responsible for services to nine district hospitals across the Metro which vary considerably in size and services, and are supported by specialised psychiatric and tuberculosis hospitals managed by the provincial government.

MDHS manages a total of 42 CHCs, with twelve CHCs providing extended hours services, nine CHCs providing 24-hour trauma/emergency care, and twelve CHCs having midwife obstetric units (MOUs). The CHCs primarily focus on adult curative care, particularly for people with chronic conditions such as hypertension, diabetes and mental health problems. At the CHCs health services are provided by medical officers, nurses, pharmacists and allied health professionals including physiotherapists, occupational therapists, clinical psychologists, radiographers and dieticians. Pharmaceutical services are essentially provided in accordance with nationally prescribed packages of care, and although the major focus at the CHC's remains the dispensing of chronic medication for adults, several additional services such as child immunisations and reproductive health are being added (Department of Health, 2001b, Department of Health, 2002).

MDHS also manages the community-based services platform and the past few years have seen increasing numbers of community and home-based care workers, mostly employed by not-for-profit organisations (NPOs) working alongside professional staff at CHCs. In

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[4] **Pharmacist's assistants** are registered with the South African Pharmacy Council at basic or post-basic levels and work under the direct supervision of a pharmacist in a registered pharmacy in public or private sector. Their main responsibilities include stock control and post-basics assist with dispensing medicines.

2009/2010 there were over 100 NPOs employing about 2000 community care workers providing promotive and preventive services, adherence support and de-hospitalised and home-based care across the Metro (DHER 2009/2010).

## 1.3.2 City of Cape Town structure, services and pharmaceutical management

The City of Cape Town is headed by an Executive Director: Health with eight sub-district managers and a professional support services manager. A senior pharmacist was appointed towards the end of 2007, prior to the commencement of this research, and reports to the professional support services manager. At the start of the research there were four sub-district pharmacists, appointed in 2005, (two in 5/8th positions) each supporting pharmaceutical services to two sub-districts. During the course of the research an additional sub-district pharmacist was employed and one of the part-time sub-district pharmacist positions was converted to a full-time post.

The City of Cape Town manages all fixed clinics (81), satellites (23) and mobiles (4), as well as three CHCs, It does not have responsibility for any hospital services. The services at City Health clinics have a largely promotive and preventive focus, centring on reproductive and child health, tuberculosis (TB) and, more recently, HIV prevention and treatment. City Health services are essentially nurse-driven services, with clinical nurse practitioners principally providing health services, supported by part-time medical officers. In most clinics pharmaceutical services are provided by clinical nurse practitioners, although a small number of the larger clinics have pharmacies with a responsible pharmacist and pharmacy support staff.

Over the past few years several clinics have started to provide ARV drugs, and these services have been supported by a local non-governmental organisation (NGO), Kheth'Impilo. At these sites a post-basic pharmacist's assistant working under in-direct supervision of a pharmacist dispenses ARVs, supported by a supervisory pharmacist from the NGO. In line with moves towards comprehensive service provision, some clinics have also commenced providing chronic medication in the form of pre- prepared packages dispensed by the Western Cape provincial health departments' chronic dispensing unit (CDU).
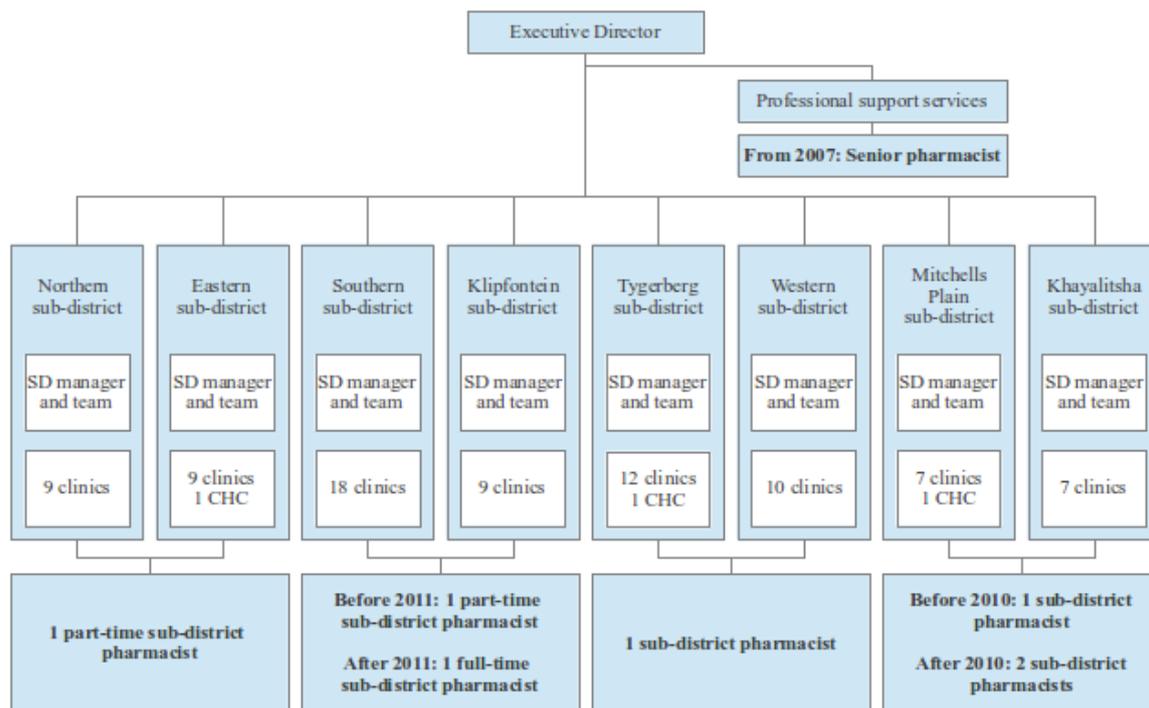
**Figure 1.4: City of Cape Town organisational structure and pharmaceutical management**

By end of project in 2011, in addition to the senior pharmacist and five sub-district pharmacists, City Health employed approximately 12 pharmacists and 30 pharmacists' assistants working across the city, many of whom are on short-term contracts or contracted through the NGO to provide ARV services (Von Zeil, 2011). Figure 1.4 shows the organisational management structure of City Health, with particular reference to pharmaceutical management positions up to 2011.

All facilities in Cape Town Metropolitan District are busy, and in 2009/2010 the total PHC headcount for the district was just under 10 million which equates to a utilisation rate of 2.6 for the total population and 3.8 for the uninsured population, which is above the national target of 3.5 (Western Cape Department of Health, 2011c). Across both organisations pharmacists and pharmacist's assistants comprise 3 and 3.1% of the staff compliment, respectively, with a calculated workload of 395.76 patients/pharmacist per day and 374.39 patients /pharmacist's assistant per day.

Total recurrent expenditure for PHC facilities in 2009/2010 was R 1.2 billion, with 61% of facility based expenditure occurring at CHCs, 23% at clinics and the remainder at MOUs and oral health facilities. In line with conventional trends, the largest proportion of expenditure, 57% (R750m), was incurred for staffing and medicines expenditure was the next highest line item accounting for 21% (R 260m). This averages to R127 per PHC attendance which includes R27 for medicines.

## 1.4 Research origin

The idea for the research evolved from a series of conversations with the then Executive Director of Health: City of Cape Town between 2000 and 2006 about the performance of sub-district pharmacists in the City of Cape Town. In addition to these discussions I was in contact with pharmacists from MDHS, through a research project on pharmacy information systems, and became aware of the imminent re-structuring of MDHS into four sub-structures and the impending appointment of four sub-structure pharmacists. As deputy directors, these pharmacists would be working as part of the sub-structure management team, and at this time their roles and responsibilities were not clearly defined.

When I raised the idea of a joint project looking at the emerging roles and competencies of sub-structure and sub-district pharmacists, the senior pharmacists from City and MDHS were both enthusiastic. The support from the senior pharmacists was formally endorsed at the beginning of 2008 at the District Executive (DEX) Meeting, which is comprised of the directors and senior health management of City Health and MDHS, and meets monthly to co-ordinate and manage PHC services in Cape Town Metro. I sensed that permission for the project was readily given because it would be exploring issues about the development of pharmaceutical management that they considered relevant to their current situation. After receiving permission, I met with the two senior pharmacists and we planned the first steps of the research together. This included a stakeholder workshop of pharmacists and health managers to agree on the project goals, participants and methodology.

The study context and timing of the engagement were a significant aspect of this study particularly in terms of district development in Cape Town. On the one hand, having two PHC service organisations in Cape Town and the re-structuring of MDHS occurring during

the project added to the complexity of the project, with regard to changes in personnel and shifting lines of accountability; whilst on the other hand, the context contributed to both organisations being interested in participating in the project, and their engagement facilitated deeper understanding of issues relating to the development of sub-structure and sub-district pharmacists within the South African health system (Orr and Bennett, 2012)

## 1.5 Research problem and aims and objectives

As the DHS is being implemented in South Africa, districts are endeavouring to define the roles and functions of district and sub-district pharmacists, although the processes lack clarity and co-ordination (Groenewald, 2006). In the mid-1990s some work was carried out looking at roles and functions of health workers with responsibility for managing sub-district pharmaceutical services, but the context has changed considerably since then (Gray, 1999, Suleman et al., 1998). This includes the growing burden of HIV/AIDS and non-communicable diseases placing demands on district and sub-district pharmaceutical services, such as the setting up and provision of new ARV services; changes in the pharmacy workforce including substantial increases in qualified pharmacist's assistants; and an increasing focus on primary and community-based care with the involvement of local and international NGOs (South African Pharmacy Council, 2012, Naledi et al., 2011, Department of Health, 2007).

For many years human resources for the South Africa health services received scant attention, and initiatives to develop management skills were piecemeal and uncoordinated, even though the need to develop a new layer of health managers, including pharmacists, was identified as an important component of implementing the reformed DHS model (Pick et al., 2001, Sanders et al., 2001). In recent times human resources for health have received greater prominence and the issue of management and leadership in the health sector was recently identified as a priority by the National Minister of Health (National Department of Health, 2011). Whilst there have been on-going initiatives developing pharmaceutical services at various levels across the country, there has not been a systematic approach to identifying the roles and related competencies of district and sub-district pharmacists and similar cadres managing pharmaceutical services, even though having clearly defined functions and the correct competencies have been linked to optimal performance (Frenk et al., 2010).

Cape Town PHC services are still delivered by two tiers of government, local authority (City Health) and the provincial department of health (MDHS), and they provide pharmaceutical services to clinics, CHCs, district hospitals, community-based organisations and some private providers across the geographical area. City Health appointed four sub-district pharmacists in 2005 and a senior pharmacist working at the central level in 2007, but between 2000 and 2006 senior management expressed dissatisfaction with the pharmaceutical support being provided to the sub-districts. During the same period, plans for the unbundling of MDHS into four sub-structures were being made, and pharmacists were about to be appointed at deputy director level for each sub-structure, prompting MDHS management to consider the responsibilities and functions of the new sub-structure pharmacists (Western Cape Department of Health, 2003, Western Cape Department of Health, 2007).

The aim of this study was to explore the contribution of sub-structure and sub-district pharmacists to health system development and how to support them in their roles, by considering their roles and related competencies in the South African health system and piloting an intervention to enhance their competencies.

## 1.6 Research design and approach

I chose a PAR approach, using Cape Town as a case study, to explore the roles and related competencies of sub-structure and sub-district pharmacists in the evolving South African health system. The approach is increasingly used in healthcare settings and has been found useful in health improvement interventions and professional development and it has recently been suggested as a suitable approach for Health Policy and Systems Research (HPSR) (Baum et al., 2006, Swanson et al., 2012, Waterman et al., 2001). The emergent nature of the research design matched emergence of the subject under discussion, and the approach was suitable to gaining in-depth knowledge and understanding of the development of sub-structure and sub-district pharmacists in a complex system undergoing re-structuring during the research (Reason, 2006, Yin, 2003).

## 1.7 Overview of the research project

The research was originally envisaged in two phases, shown below, and it was expected it would proceed sequentially from Phase 1 to Phase 2 with equal weight apportioned to each phase.

**Phase 1: Identifying roles and competencies of sub-structure and sub-district pharmacists**

↓

**Phase 2: Developing and piloting an intervention to enhance competencies**

Phase 1 commenced by identifying current and future roles of sub-structure and sub-district pharmacists, and then used these as the basis for identifying competencies (Whiddett and Hollyforde, 2003). As the project unfolded it became apparent that the research context offered unique opportunities which prompted adjustments to the precise scope and outcomes of the project, resulting in a more in-depth engagement in Phase 1 and a smaller intervention in Phase 2. This was in accordance with the emergent nature of PAR which emphasises responsiveness to research participants and the context (Reason, 2006, Winter, 1998).

The research commenced with an initiation stage, comprising steps proposed by several other researchers, and then developed into a series of five iterative cycles of action and reflection shown in each providing increasing understanding of the roles and related competencies of sub-structure and sub-district pharmacists in Cape Town and their experiences as they transitioned into these new management positions in the two PHC organisations, (Bless and Higson-Smith, 2004, Cornwall and Jewkes, 1995).

**Box 1.1: Overview of research project**

> Initiating the project
>
> Cycle 1:  Identifying roles of sub-structure and sub-district pharmacists
>
> Cycle 2:  Identifying competencies of sub-structure and sub-district pharmacists
>
> Cycle 3:  1st reflection on roles and competencies of sub-structure and sub-district pharmacists
>
> Cycle 4:  Developing and piloting intervention to enhance competencies
>
> Cycle 5:  2nd reflection on roles and competencies of sub-structure and sub-district pharmacists

The initiation stage and each cycle centred on a series of participatory workshops I facilitated, attended by pharmacists and managers from both PHC organisations in Cape Town and other invited stakeholders. I contributed information from semi-structured interviews, focus groups as well as documentary and literature reviews to the collaborative workshop process.

## 1.8  Thesis outline

The thesis is written in a narrative style and has been structured in a way that reflects the iterative and emergent nature of PAR. The first three chapters follow the conventional structure of thesis reports, whilst chapters 4, 5 and 6 break with this convention.

This first chapter has introduced the research, described my background and how my interest in the research topic evolved. It provides a description of the research setting and an overview of the research project, briefly describing how the research cycles emerged during the project. The chapter concludes with this thesis outline.

**Chapter 2: Reviewing the literature**. This chapter reviews literature relevant to this research, commencing by describing how pharmacists' roles are changing in response to global developments, and then focussing on issues of particular relevance to sub-Saharan African countries, including the emergence of district pharmacists. This is followed by some of the challenges of establishing district pharmacists in South Africa and consideration of the application of competency-based approaches to supporting development of district pharmacists.

**Chapter 3: Research design and methodology**. This chapter describes the research design and methodological approach used in this project and its relevance to health systems research. It discusses the key characteristics of PAR - participation, cyclical process, use of reflection and the emergent nature of the engagement, and how they were applied in this research. It is followed by a discussion of the tools and techniques used in data collection, management, analysis interpretation and reflection. It explores the issue of quality in PAR and how this was addressed in this research. The chapter concludes by discussing how ethical issues were handled and a justification for the reporting strategy.

**Chapter 4**: **Cycles of action and reflection**. At this stage the thesis breaks from the conventional structure and this chapter introduces the initiation stage of the research followed by five iterative action research cycles. Each cycle of action and reflection generated increasing understanding of the roles, competencies and experiences of sub-structure and sub-district pharmacists in the two evolving PHC organisations in Cape Town. An intervention to enhance pharmacists' competencies is described. A schematic diagram outlining the main activities of the initiation stage and each of the cycles is presented, and this is followed by a narrative account of the activities, augmented with discussion and reflection which then inform subsequent cycles.
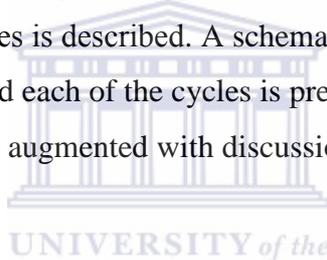
**Chapter 5: Discussing the research**. This chapter discusses the research and its contribution to DHS development using a PAR approach with two evolving organisations delivering PHC services in Cape Town. It discusses the roles and related competencies of sub-structure and sub-district pharmacists in Cape Town in the light of the existing literature. It also considers three underlying themes that emerged during the research: the influence of context in the development of sub-structure and sub-district pharmacists; transitioning into these new management positions is an emergent process; and finally the research suggested ways in which sub-structure and sub-district pharmacists can be supported as they take up these new roles.

**Chapter 6: Final reflections**. In this chapter I critically reflect on using PAR as a methodological approach in this research and its relevance to the growing field of HPSR. I reflect on the distinctive features of PAR, action, reflection and partnership and discuss how they facilitated an in-depth understanding about sub-structure and sub-district pharmacists in

the evolving health system in Cape Town, whilst also acknowledging some of the challenges of the approach.

# Chapter 2: Reviewing the literature

## 2.1 Introduction

Although the impetus for this research on the emerging roles and related competencies of sub-structure and sub-district pharmacists in the South African health system was primarily driven by my desire to contribute meaningfully to developments in Cape Town health services, rather than the more traditional starting point of identifying a gap in the published literature; nevertheless, reviewing the literature formed an important part of the research and was an iterative process throughout the project. I carried out a review of the literature during the proposal development stage and continued with more in-depth searching as themes arose during the research. In the narrative description of the research process which follows in chapter four, I have highlighted explorations into critical subjects as they arose and have shown how the information was used to make sense of the data as it emerged from collaborative activities with health services participants and used to inform the direction of the research. In this chapter I present an overview of the major areas of literature I reviewed and illustrate how they contributed to this research project.

I commence by describing the roles pharmacists play in delivering health services around the world, and explore how they are changing in response to developments in technology and reforming health systems, with a particular focus on low and middle income countries (LMICs). I follow this by tracing the emergence of district pharmacists in sub-Saharan Africa (SSA), and specifically South Africa, and then look at some of the challenges of establishing district pharmacists, and similar cadres, in the district health system in this country. Next, I discuss the link between performance and competency and the application of competency-based approaches to identify competencies required by pharmacists working in management positions in the district health system.

## 2.2 Pharmacists roles in the health system

Pharmacists are traditionally called 'the custodians of medicines' and have responsibility for the distribution of medicines to consumers and for ensuring their safe, effective and rational use (FIP/WHO, 2010). The pharmacist's role evolved from the apothecary in Europe who

diagnosed and treated the poor, who could not afford the services of physicians, with products they compounded and sold (Anderson, 2002). However, pharmacy practice has changed considerably in the past one hundred years and today pharmacists are involved with medicines from the initial development of chemical entities, to formulation into medicines, manufacturing, licensing, distribution, supply, information management, dispensing, education and monitoring use of patients (Wiedenmayer et al., 2006).

Several initiatives led by the World Health Organisation (WHO) and the International Pharmacy Federation (FIP) since 1986 have been influential in elucidating pharmacists' roles in developed and developing countries. These include four stakeholder meetings, adoption of a WHO resolution on *The role of the pharmacist* in support of the WHO Revised Drug Strategy in 1994 and publication of standards for *Good pharmacy practice in community and hospital pharmacy settings* (WHO, 1988b, WHO, 1993b, WHO, 1997, WHO, 1994, WHO, 1998, WHO, 1996).

Today pharmacists practice in a range of settings including retail (community), hospital, primary care, pharmaceutical industry, academia, policy and regulatory control. The greatest numbers of pharmacists work in patient-focused activities in retail and hospital pharmacy, although there are differences between countries. The Global Pharmacy Workforce Report of 2009 found 58% of pharmacists worked in retail pharmacy, 12% in hospital pharmacy, 12% in industry, 4% in research and academia and 4% in regulation (Wuliji, 2009).

## 2.2.1 Changing roles of pharmacists –from 'product' to 'patient' to 'population' focus

Whilst pharmacists' roles in different settings vary, the past 50 years have seen significant moves within the pharmacy profession from a 'product' to 'patient' focus, with some recent initiatives pointing to a  greater 'population' focus (Anderson, 2002, Manasse Jr and Speedie, 2007). The move towards a 'patient focus' occurred at a time when pharmacists' involvement in medicine manufacturing declined due to the establishment of large scale commercial manufacturing facilities, and medicines and treatment regimes were becoming increasingly complex (Anderson, 2007, Wiedenmayer et al., 2006).

Pharmacists shift into 'patient-focussed' activities emerged initially in hospital pharmacy practice in the United Kingdom (UK) and the United States of America (USA) during the 1970s as pharmacists took on greater clinical roles. During the 1980s pharmaceutical care emerged in the USA and was defined by Hepler and Strand as *"… the responsible provision of drug therapy for the purpose of achieving definite outcomes that improve a patient's quality of life"* (Hepler and Strand, 1990). The definition was modified in 1998, prior to its adoption by FIP, to *"improve or maintain a patient's quality of life"*, probably in recognition of the increasing burden of chronic conditions (diabetes, cardiovascular diseases and HIV/AIDS) (Wiedenmayer et al., 2006). Pharmaceutical care, as envisaged by Helper and Strand (1990), focused on individual patient care, and its application has largely been confined to pharmacists working in developed countries with sufficient pharmacists and pharmacy support workers.

As a result of these developments within the profession, hospital pharmacists' roles have broadened considerably. In addition to the supply of medicines to in-patients, out-patient clinics and off-site facilities, and some small scale manufacturing, they provide information and advice on medicines to medical, nursing and other health professionals, manage Drug Information Centres, and are involved in treatment guidelines, formulary development and clinical trials (Anderson, 2002). Increasingly hospital pharmacists are engaged in activities such as therapeutic drug monitoring and work in clinical positions in intensive care (critical care) units or anti-coagulant or diabetic clinics. In many hospital settings these days, mainly in developed countries, medicine distribution and preparation tasks are carried out by qualified pharmacy support staff, enabling pharmacists to engage in clinically-focussed roles within the healthcare team, however this is not usually the case in other countries due to pharmacy workforce shortages (Matsoso, 2009).

During the 1980s and 1990s, whilst the supply of medicines in accordance with a prescription or without a prescription remained a central role for retail pharmacists, other activities such as counselling patients on appropriate medicines use, advising on minor ailments and provision of information on medicines to other health professionals became established activities (Anderson, 2002). Retail pharmacists' roles have expanded further over the past few years to include a wider range of medicines management and preventive and promotive activities, such as medicines use reviews, emergency supply of hormonal contraception,

influenza vaccination, blood pressure, diabetes and cholesterol testing, and smoking cessation programmes (Bush et al., 2009). Some services involve community pharmacists in activities outside the pharmacy, for example domiciliary visits and provision of services to Old Age Homes. Retail pharmacists' involvement in these activities varies between countries depending on health system factors, the pharmacy workforce and distribution of community pharmacies.

Recent times have seen further broadening of pharmacists' responsibilities in hospital, retail and newer primary care settings with the terms 'medication therapy management' and 'medicines optimisation' coined in the USA and UK, respectively, to describe these newer activities (Albanese and Rouse, 2010, FIP/WHO, 2010, Royal Pharmaceutical Society of Great Britain, 2012). In addition to pharmacists' roles in personalised patient-care, these new initiatives include population-level activities to promote rational use of medicines by prescribers and consumers, especially the use of medicines for chronic conditions. They emphasise the importance of pharmacists developing partnerships with patients, caregivers and other health workers to promote safe and cost-effective use of medicines and to optimise therapeutic outcomes. This shift in pharmacists' focus mirrors global and country trends in health policy and service delivery which have seen an increased emphasis on the patient experience and population perspectives, particularly with regard to rational medicine use[5] principles. This has relevance to pharmacy practice in resource constrained settings as well as developed countries, although it is likely that in these settings some of these roles may be performed by pharmacy support workers or lay health workers rather than pharmacists themselves (WHO, 2008, WHO, 2007a).

Besides these largely patient-focussed roles, smaller numbers of pharmacists in all countries perform strategic roles in medicines policy and regulation; procurement and distribution of medicines in the public (government) and private sectors; and others work for registration boards and professional organisations (WHO, 1988b). In addition, pharmacists in

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[5] **Rational medicines use** is defined as "when patients receive medications appropriate to their clinical needs, in that meet their individual requirements, for an adequate period of time and at the lowest cost to them and their community" (WHO, 1985a).

pharmaceutical industry are engaged in research and development, production, quality assurance, regulatory affairs, medical information, clinical trials, sales, marketing and distribution, and others are involved in the education and training of pharmacists in academic institutions (Anderson, 2002, WHO, 1988b).

In 2010, FIP/WHO published *Guidelines on good pharmacy practice; standards for quality of pharmaceutical services* (Box 2.1) which embraced developments in pharmacy practice during the previous 15 years and listed four main roles for pharmacists (FIP/WHO, 2010). Whilst the four roles relate to pharmacists in all settings around the world, it is pertinent to note that whilst the first two roles capture pharmacists' traditional and newer functions respectively, the third and fourth roles point to issues relevant to this project and will be discussed in subsequent sections.

**Box 2.1: Roles for pharmacists (FIP/WHO, 2010)**

| |
|---|
| 1. Prepare, obtain, store, secure, distribute, administer and dispose of medical products |
| 2. Provide effective medication therapy management |
| 3. Maintain and improve professional performance |
| 4. Contribute to improve effectiveness of the health system and public health |

## 2.2.2 Pharmacists' roles in primary health care

Pharmacists have always been active in primary health care (PHC) through their traditional roles in retail pharmacies where, in addition to providing curative treatment in the form of medicines, they support self care and provide advice and information on a range of health matters (Anderson, 2007). However, pharmacists' involvement in PHC has increased in countries around the globe since the Alma Ata Declaration of 1978, commencing with the inclusion of pharmacists as part of the health care team by the WHO Expert Committee in 1985 reporting on *Health manpower requirements for the achievement of health for all by the year 2000 through primary health care* (WHO, 1985a, WHO/UNICEF, 1978).

This committee highlighted the importance of redefinition of the roles and functions of all health workers, including pharmacists, to implement PHC.

*" The pursuit of health for all through the primary health care approach will require the redefinition of the roles and functions of all categories of health personnel including those of physicians, nurses and other health professionals, such as dentists, pharmacists, sanitary engineers, etc., who will have to accept membership in, and if justified, leadership responsibility for, the health team."* (WHO, 1985b)

Since that time further global and country level reforms in health policy and service delivery have increasingly promoted a PHC approach which has impacted on pharmacists' roles (WHO, 2000, WHO, 2007a, Eades et al., 2011, WHO, 1993a, WHO, 2008). Pharmacists' involvement in PHC may be categorised into personalised PHC activities or population-level PHC activities.

## 2.2.2.1 Personalised primary health care roles

In many ways pharmacists' increased involvement in personalised PHC activities was a natural progression from the greater patient-care focus described in the previous section. PHC activities have largely been taken on by retail pharmacists, particularly in developed countries, although in some settings pharmacists working in PHC teams in the UK and the USA are involved in similar activities (Manolakis and Skelton, 2010, Silcock et al., 2004).

In most developed countries retail pharmacists are recognised as one of the most accessible health care providers, and many countries have capitalised on this by using retail pharmacists to increase access to a range of promotive and preventive services, in addition to medicines management services for self-care and chronic conditions (Gal, 2012). These initiatives appear to be prompted by the aging population and increasing disease burden, especially chronic diseases which often include life-long medication, escalating health costs and shortage of health workers (Manolakis and Skelton, 2010, Department of Health, 2005). In the UK, for example, Health Minister Rosie Winterton identified pharmacists as "an untapped resource for health improvement", and in the USA  the Report to the US Surgeon General in 2011 motivated for increased involvement of pharmacists in PHC to meet the growing health needs of the country (Department of Health, 2005, Giberson et al., 2011).

One country in which pharmacists' roles in PHC have developed significantly is the UK. Key features of this country are its national health system, and important policies introduced by the government to include pharmacists in initiatives to improve access to promotive and preventive health care, such as: *Choosing health through pharmacy* and *Pharmacy in England: Building on strengths – delivering the future* (Department of Health, 2005, Department of Health, 2008). Retail pharmacists' involvement in extended primary care roles were formalised with a new government contract in the mid-2000s, which required retail pharmacists to provide advice on healthy living, self-care and involvement in health promotion campaigns, as well as their traditional roles in provision of medicines and medicines focused activities (Richardson and Pollock, 2010). Other developed countries in North America, Europe and Australasia have similarly reported retail pharmacists' involvement in primary care services, although their different health systems have resulted in variations in service provision (Eades et al., 2011).

There are fewer examples of pharmacist's involvement in personalised PHC initiatives from Asia and Africa, probably because the situations are different in these countries regarding the numbers of retail pharmacists and pharmacies and the health needs of the population (Eades et al., 2011, Wuliji, 2009). Whilst in South Africa, with its reasonably well resourced retail pharmacy network (albeit inequitably distributed throughout the country), there have been a number of schemes to increase pharmacists' involvement in primary care, the situation in most other sub-Saharan African countries is different (South African Pharmacy Council, 2012). A noteworthy scheme launched in the country in the 1990s trained pharmacists, mainly those working in retail pharmacies, as primary care providers. Pharmacists who had successfully completed training in a registered Primary Care Drug Therapy Course were issued with a permit in terms of Section 22A (15) of the Medicines Act, and could provide a range of primary care services including immunisations and family planning (Gilbert, 1998). The underlying rationale was to increase primary care services in rural and underserved populations but, despite some innovative models of retail pharmacies that developed primary care services in rural areas, this initiative was generally limited by the lack of established retail pharmacies in these parts of the country (South African Pharmacy Council, 2012).

More recent initiatives reflect the increasing disease burden: the South African Pharmacy Council (SAPC) published guidelines on *The Role of the Pharmacists in the management of*

*HIV/AIDS, TB and STIs* in 2003, and *The Durban Declaration on Non-communicable Diseases* was issued jointly by the Commonwealth Pharmacists Association, the Pharmaceutical Society of South Africa and SAPC last year (South African Pharmacy Council, 2003b, Commonwealth Pharmacists' Association, 2011). Today, many retail pharmacists in South Africa, besides dispensing and the over-the-counter prescribing, offer a similar range of preventive and promotive services as in developed countries, and the recent introduction of a fees structure for pharmacists providing these services paves the way for pharmacists to be remunerated for these new roles (see Box 2.2) (South African Pharmacy Council, 2010b).

**Box 2.2: List of retail pharmacists services (South African Pharmacy Council, 2010b)**

1. Dispensing procedures
2. Clinical pharmacy
3. Promotion of Public Health
4. Screening and testing of biological and physical parameters
5. Additional dispensing procedures

In other sub-Saharan African countries, even though the numbers and distribution of retail pharmacies are low compared to developed countries, retail pharmacists are involved in some PHC activities linked to their priority disease burdens. Some retail pharmacists in Ghana provide syndromic treatment for sexually transmitted infections (STIs), some in Tanzania and other East African countries provide artemisinin-based combination therapy (ACTs) and medication for malaria treatment, while others in Nigeria are involved in health promotion activities (Eades et al., 2011, Mayhew et al., 2001).

Retail pharmacists' involvement in these newer primary care roles have not been without challenges. Some pharmacists in the UK have reported unease with activities not directly medicine-related, and others identified practical constraints including lack of time, space and competency in these areas (Bradley et al., 2008a). In many developed and developing countries around the world, including South Africa, funding of services is an additional challenge. A study carried out in the UK found that many consumers were unaware of the range of services offered by retail pharmacists, although those who had availed themselves of

them were generally happy with services provided (Bradley et al., 2008a). Others have critiqued the evidence and cost effectiveness of utilising retail pharmacists for these roles, and say that although evidence supports the provision of certain services such as smoking cessation and emergency hormonal contraception, the evidence base for some others is limited (Ballantyne, 2007, Richardson and Pollock, 2010). Whilst government policies in some countries, such as the UK, have promoted pharmacist's extended roles in PHC, in other settings including South Africa there was considerable unhappiness expressed by the medical fraternity to initial steps to move into these new areas of practice in the 1990s (Gilbert, 1998). However, a greater appreciation of inter-professional team work over the past few years appears to have facilitated recent initiatives in retail pharmacy in this and other LMICs (Wilbur et al., 2012, Wong et al., 2011).

Whilst retail pharmacists comprise the major group engaging in personalised primary care activities, pharmacists working in other settings are also involved. These include pharmacists working in government, NGOs and managed healthcare organisations. Pharmacists in the USA working in the Indian Health Services, Veterans Affairs and Department of Defense have practised primary care roles in disease management and clinical services for over 40 years (Carmichael et al., 2004, Giberson et al., 2011). These patient-centered and collaborative approaches led to the publication of the Indian Health Services Pharmacy Standards of Practice in 1989, which are still in use today (Box 2.3) (Giberson et al., 2011).

**Box 2.3: Indian Health Service Standards of Practice (Giberson et al., 2011)**

1. Assure appropriate drug therapy
2. Verification of understanding
3. Assure availability, preparation and control of medications
4. Provide drug information and staff education
5. Provide health promotion and disease prevention
6. Manage therapy/care for selected patients in whom drugs are the principal method of treatment (inclusive of disease management)

In the UK health system reforms from the 1990s onwards to emphasise primary care, together with drives to improve cost-effectiveness of primary care prescribing, led to the appointment of pharmaceutical advisors to each of the 100 health authorities in the country, and later to the emergence of primary care pharmacists (Noyce, 1997). Primary care pharmacists now form a third branch of patient-focused pharmacists alongside hospital and retail pharmacists (Silcock et al., 2004). Primary care pharmacists generally work with general practices or primary care trusts, and their main role is to optimise the effectiveness and efficiency of medicines prescribing in general practices.

Although the development and implementation of a practice formulary is a common starting point, primary care pharmacists employed at general practices are mainly involved in personalised primary health care roles in monitoring long-term therapy, undertaking patient medication reviews and operating specialist clinics to review and adjust drug therapy in accordance with agreed protocols (Noyce, 1997, Silcock et al., 2004). Other examples of pharmacists' involvement in primary care include working with primary care teams to deliver domiciliary pharmacy services in the UK, and with primary care teams in Canada (Dilks, 2007, Pottie et al., 2009).

### 2.2.2.2 Population-level primary health care roles

The second area of pharmacists' involvement in PHC has been at the population-level and, whilst the example of the USA federal pharmacy health services portrays a largely personalised service, it does include population-level elements, such as the development and use of formularies and treatment protocols. However, of greater relevance to this project looking at district and sub-district pharmacists are examples from the UK which has a nationally coordinated health system. Here, some pharmacists have taken on broader public health and management roles in primary care, commencing with the appointment of pharmaceutical advisors in the early 1990s (Silcock et al., 2004). Pharmaceutical advisors tend work for a health authority or primary care trust, and have largely population-level roles within the primary health care team, as opposed to primary care pharmacists working with general practices. Their responsibilities include determining the pharmaceutical needs of the population, and ensuring they are effectively and efficiently met. This may involve policy development and planning of pharmaceutical services, in addition to monitoring medicines

use and the pharmaceutical budget within their area. Some pharmacists holding these positions have been called "pharmaceutical specialists in public health" (Noyce, 1997).

A critical feature of pharmacists' increasing involvement in PHC initiatives has been recognition of the importance of integrating the work of pharmacists with other members of the health care team (Department of Health, 2003c, Haines et al., 2010). Collaboration between PHC team members reportedly worked well in the relatively confined environments of the Indian Health Services, Veterans Affairs and Department of Defense in the USA, whilst integration within other primary care structures in the country was more challenging (Giberson et al., 2011, Haines et al., 2010). A study in the UK found that meaningful relationships between retail pharmacists and general practitioners (GPs) and other health care professionals were often piecemeal, and relied on existing goodwill and trust, whilst primary care pharmacists based at general practices achieved greater levels of integration into the PHC team (Bradley et al., 2008a). Although this suggests that co-location facilitated collaboration, the authors pointed out that similar benefit could be achieved through regular face-to-face contact between health professionals. An action research study conducted in Canada identified trust and credibility as key to integrating pharmacists into established PHC teams, as well as clear role definitions (Kolodziejak et al., 2010).

Another issue frequently raised with regard to pharmacists taking up these newer roles is the appropriate use of pharmacy support workers, and this is an even more critical issue in developing countries, including South Africa, with few pharmacists and high disease burdens (Manasse Jr and Speedie, 2007, South African Pharmacy Council, 2012). Recently, several authors have highlighted the importance of increasing mid-level pharmacy workers and judicially managing skill-mix within the health system to facilitate pharmacists' involvement in strategic management and clinical roles, thus optimising pharmaceutical services (Brown et al., 2011, Fulton et al., 2011, Gal, 2012).

## 2.2. 3 Pharmacists in low and middle income countries

The roles pharmacists are required to perform in low and middle income countries were summarised in the most recent Global Pharmacy Workforce Report (Box 2.4) and are not dissimilar to the range discussed in previous sections (Wuliji, 2009).

**Box 2.4: Pharmaceutical human resources in developing countries (Wuliji, 2009)**

Government Ministries of Health for planning and policy;

Regional/provincial levels for policy implementation;

Central medical stores for medicines procurement and distribution;

Health facilities, both public and private for medicines acquisition and dispensing;

Private pharmacy establishments (industry, wholesale and retail);

Pharmacy council and professional associations to develop pharmacy practice;

Training and research institutions to train pharmacy workforce, and conduct research.

A feature of many LMIC countries is the lack of pharmacists, with SSA countries suffering some of the most severe shortages, and this influences the roles pharmacists play in these countries. The shortages of pharmacists are particularly challenging given the high disease burden of HIV, TB, malaria and chronic non-communicable diseases in the region which require medicines and vaccines. The size of the pharmacy workforce depends on a variety of factors including the labour market of the country, the availability of training institutions, as well as appropriate recruitment, retention and attrition strategies. In addition to shortages, other challenges faced by developing countries are mal-distribution between private and public sectors and urban and rural areas, and poor performance, some of which may be related to the appropriateness of the training they have received (Wuliji, 2009). Table 2.1 illustrates disparities between countries, with South Africa falling between the developed nations and the most poorly resourced in SSA.

**Table 2.1: Pharmacists, pharmacy technicians and pharmacies density (per 10,000 population) in selected countries (Wuliji, 2009; South African Pharmacy Council, 2012)**

| Country | Pharmacists | Pharmacy technicians | Pharmacies |
|---------|-------------|----------------------|------------|
| Japan | 19.77 | n/a | 4.76 |
| USA | 9.06 | 14.78 | 2.20 |
| Great Britain | 7.99 | 1.17 | 2.12 |
| South Africa | 2.55 | 0 | 0.87 |
| Zimbabwe | 0.80 | 0.38 | 0.69 |
| Chad | 0.04 | 0.01 | 0.04 |
| Uganda | 0.01 | 0.17 | 0.13 |

The shortage of pharmacists has resulted in many countries in the region relying on pharmacy support workers to provide pharmaceutical services, including pharmacy technicians and pharmacist assistants, and in some countries such as Uganda and Tanzania pharmacy technicians comprise more than 50% of the pharmacy workforce (Wuliji, 2009). In almost all countries nurses take on some pharmaceutical functions, especially at primary level, and in countries with high disease burdens and shortages of health workers, community-based workers such as community health workers and community drug distributors are increasingly taking on roles in drug supply in order to facilitate access to medication (Wamae et al., 2006). This situation has implications for pharmacists' roles, in particular supervision of health workers providing pharmaceutical services in settings remote from pharmacists. In addition, in many developing countries unqualified and unregulated workers, such as drug sellers and patent medicine vendors, posing additional challenges to pharmacists and regulatory authorities (Goodman et al., 2007).

Even though the shortage of health workers, including pharmacists, in SSA has received prominence in the past few years, it is not a new phenomenon, and since the 1980s various stakeholders, led by the WHO, have supported the development of pharmaceutical services in these countries, with some specifically speaking to pharmacists' roles in these settings (Chan and Wuliji, 2006, WHO, 2006, JLO, 2006). Strategic initiatives to improve access and availability of medicines include the development of national drugs policies, essential drugs lists and standard treatment guidelines, and the rational drug use concept, which have become

integral features of health systems in most SSA countries (Laing, 1991, Laing et al., 2001, Ross-Degnan et al., 1992, WHO, 1988a).

A significant influence on pharmacists' roles in SSA countries has been the programmatic approach to health promoted by global organisations, such as WHO's Expanded Programme of Immunisation campaigns, and in recent years the Global Health Initiatives to support the millennium development goals (MDGs), which have resulted in numerous vertical programmes such as Roll Back Malaria, STOP-TB and many HIV/AIDS initiatives. Whilst these initiatives have brought much needed pharmaceuticals to countries, as well as a skilled international workforce in many cases, they have also introduced health system challenges (Egger and Ollier, 2007, Travis et al., 2004). Some have lauded the new pharmaceutical systems and skills brought into countries, with pharmacists in East Africa maximising on this situation to develop new skills in local pharmacists, whilst others have lamented the overall effect on pharmaceutical management caused by the large number of different organisations, each with separate reporting systems, involved in supplying pharmaceuticals in one country (Embrey et al., 2009, King and Fomundam, 2009, Matowe et al., 2008).

Recognising the constraints placed on countries with small pharmacy workforces, a WHO consultative workshop held in 1988, followed by the *Good pharmacy practice in developing countries: Recommendations for step-wise implementation* published in 1997, made practical suggestions on the roles of pharmacists and support workers in managing pharmaceuticals in these countries. They recommended that countries with acute shortages of pharmacists should prioritise positions in drug regulation and control, procurement and distribution of medicines, and hospital pharmacy, and proposed training pharmacy support workers and community health workers for other pharmaceutical tasks (FIP, 1997, WHO, 1988b).

Whilst pharmacist shortages in these countries constrain their involvement in personalised pharmaceutical care roles, as envisaged by Helper and Strand (1990), it does not mean that pharmacists' roles are limited to the critical areas of drug policy, procurement and distribution. Participants at a WHO Consultative Group Meeting held in 1993 on *The role of the pharmacist in the health care system* pointed out the importance of taking into account the healthcare system and pharmaceutical resources available in each country when they proposed that, whilst ideally all patients should receive pharmaceutical care, in areas where

resources are limited pharmacists may need to prioritise particular patients (WHO, 1993b, Wiedenmayer et al., 2006). They advocated that pharmaceutical care could be applied at a population or community-level and proposed a wide range of activities, including the development of treatment guidelines, formularies and medicines lists, medicines policies, monitoring of prescribing practices and costs, and drug use by consumers (WHO, 1993b).

**Box 2.5: Pharmaceutical Care for the Community adapted from WHO (1993b)**

1. Participate in the formulation of drug policy including drug regulation.

2. Develop guidelines and criteria for formularies.

3. Collaborate with other health care professionals to develop treatment guidelines.

4. Design and monitor procurement and drug distribution systems, including storage and disposal.

5. Formulate and manufacture quality medicines within pharmacy practice.

6. Serve as a source of objective drug information: establish poison and drug information systems and centres.

7. Initiate and undertake research in pharmacotherapeutics, pharmacoepidemiology, and health economics.

8. Educate all health professionals who participate in pharmaceutical care.

9. Develop, evaluate and document pharmaceutical care practices.

10. Participate in health screening.

11. Participate in health promotion and education (eg proper use of medication, smoking cessation, immunisation, prevention of drug abused, family planning).

12. Develop professional standards and audit procedures.

13. Establish and maintain an appropriately qualified pharmacy workforce.

Some of these activities fall under the broad umbrella of rational medicines use, which is a concept that has been widely applied at individual and population levels in developing countries for some time (WHO, 1985b). Significantly, these activities make little mention of pharmacists' involvement in the PHC team or health system, although this may be understandable, as the list was produced almost 20 years ago when these concepts were in still in their infancy.

Although these recommendations have particular relevance for SSA with its critical shortage of pharmacists, they are also applicable to South Africa in terms of identifying the most appropriate ways to utilise pharmacists, pharmacy support staff and lay health workers, and point to the strategic importance of prioritising the positions of pharmacy managers working at national and district levels.

## 2.3 District Pharmacists

### 2.3.1 Emergence of district pharmacists

District pharmacists emerged as regular members of the district health team as health reforms were being introduced (Chatora and Tumusiime, 2004b). This built on the earlier inclusion of pharmacists as part of the PHC team by the WHO Expert Committee in 1985 (WHO, 1985a). Shortly afterwards, the first consultative workshop was convened by WHO in Delhi, India in 1988 on *The role of the pharmacist in the healthcare team*, which similarly endorsed the inclusion of pharmacists as part of health teams at all levels from national to district (WHO, 1988b).

Some of the earliest published work on district pharmaceutical services in SSA comes from Zimbabwe, which prior to its recent political problems was considered a front runner in health reform on the continent (Jameson et al., 1991b, Trap et al., 2004, Trap et al., 2001). Literature from South Africa provides useful insights into the first steps in the development of district pharmaceutical services in the country post 1994, and from 2005 onwards district pharmacist functions were mentioned in several other SSA countries (Barrington et al., 2010, Kimaro and Twaakyondo, 2005, Lufesi et al., 2007, Mariacher et al., 2008, Semali et al., 2005, Wamae et al., 2006). In some publications district pharmacists' contributions were mentioned as part of a research study, and it was unclear whether the roles mentioned were usual practice or part of the research, nevertheless, they provided useful insights into current and potential roles of district pharmacists in district health systems (DHS) in these countries.

### 2.3.2 District pharmacists in sub-Saharan Africa

District pharmacists were identified in published literature from several SSA countries, including Tanzania, Ghana, Kenya, Uganda, Malawi and Zimbabwe (Jameson et al., 1991b,

Kimaro and Twaakyondo, 2005, Lufesi et al., 2007, Wamae et al., 2006, Ansah et al., 2009, Barrington et al., 2010, Mariacher et al., 2008, Semali et al., 2005, Agyepong, 1999, Jenkins et al., 2010, Castiglia et al., 1996). In some countries terms other than 'district pharmacist' were used for health workers with responsibility for drugs in the district, these included 'district-level pharmacist' in Burkina Faso, 'district pharmacy manager' in Zimbabwe, and 'district pharmacy chief' in Mozambique (Beiersmann et al., 2010, Sevene et al., 2008, Trap et al., 2001). This may have been because shortages of pharmacists in these countries required other cadres to take on pharmacists' functions, as in the case of Zimbabwe, where it was reported that the district pharmacy manager was most often a pharmacy technician, especially in the rural areas (Trap et al., 2001).

In many cases it was not clear where district pharmacists were based, but it is likely that some were stationed at the district offices whilst others were at a district hospital or a district medical store. Whilst most publications identified district pharmacists as having responsibilities within the district, some earlier publications from Zimbabwe mentioned district pharmacists who were based at the district hospital and who did not have responsibilities beyond the hospital (Jameson et al., 1991a). This could possibly be the case in some other countries too.
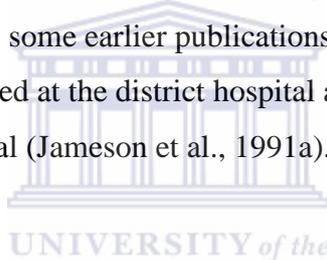
The literature identified several roles attributed to district pharmacists in SSA, including district management as part of the district management team (DMT), medicines supply, rational drug use, and training and supervision of medicines-related activities.

### 2.3.2.1 District management roles of pharmacists

In Tanzania, which has the most published literature on the topic, district pharmacists were clearly identified as members of the Council Health Management Team (CHMT), the equivalent of the DMT, whereas in most other countries the district pharmacists' position on the DMT was not clearly spelt out (Kimaro and Twaakyondo, 2005, Maluka et al., 2010). The inclusion of district pharmacists as part of the CHMT in planning, budgeting, management, control, co-ordination and support of health services in the district seemed to indicate the developmental stage of the DHS in Tanzania (Maluka et al., 2010). These activities correlate with the three areas Egger et al. (2005) suggested need to be managed by all health managers, in programmes, facilities and settings. They are:

- Volume and coverage of services (planning implementation and evaluation)

- Resources (staff, budgets, drugs, equipment, buildings, information)

- External relations and partners – including users of services

The other country where membership of the DMT was specifically mentioned was Zimbabwe, where the district pharmacy manager was a member of the District Health Executive, although no specific information was provided on their responsibilities as part of the Executive (Trap et al., 2001).

Despite district pharmacists' inclusion in DMTs, researchers in Tanzania and Uganda raised concerns about the levels of integration of their functions within the district. This resulted in recommendations that district pharmacists should work more closely with other health workers, such as monitoring and evaluation officers and malaria focal persons in managing ACTs for treating malaria in Uganda, and cold chain officers and other members of the CHMT in managing the Expanded Programme of Immunisation in Tanzania (Semali et al., 2005, Barrington et al., 2010).

The next two roles that were attributed to district pharmacists were medicines supply and rational medicines use (Islam, 2007). These relate specifically to pharmaceutical management which was defined by Islam as "*the set of practices aimed at ensuring the timely availability and appropriate use of safe, effective, quality medicines, health products, and services in any healthcare setting*" (Islam, 2007, p. 10-4). The processes involved in pharmaceutical management have been described in the Drug Supply Management Cycle (Figure 2.1).
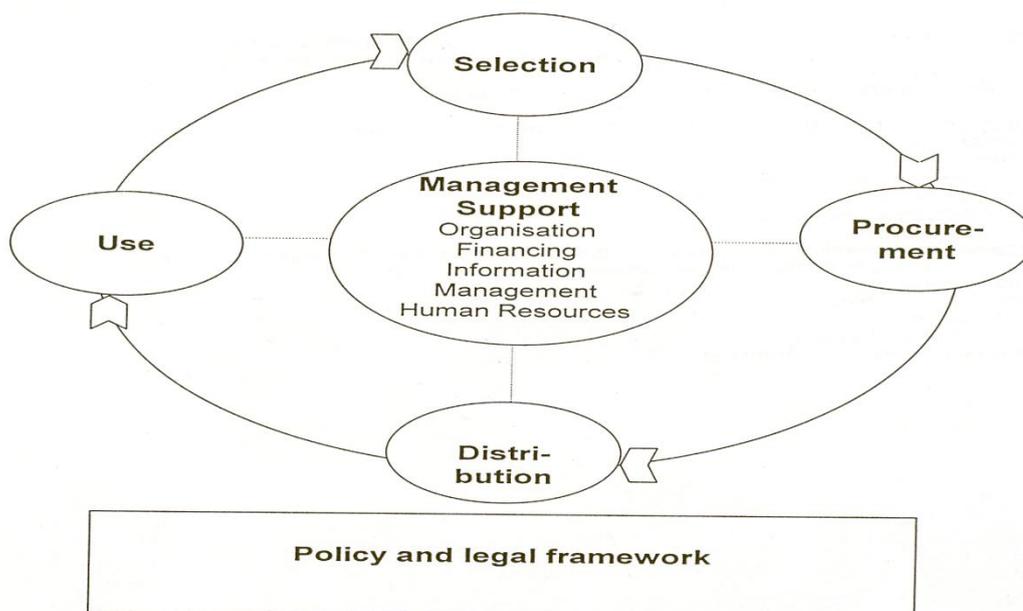
**Figure 2.1: Drug Supply Management Cycle (Paina and Peters, 2012)**

The cycle identifies four main components: drug selection, procurement, distribution, and use of pharmaceuticals. Medicines supply typically comprises medicines procurement and distribution, and rational medicines use comprises medicines selection and use. In the centre of the cycle, management functions in human resources, financial and information are listed, indicating the central role of management in drug supply (which links to the district management role discussed in the previous section); and as medicines are regulated products, management requires the application of medicines and pharmacy policies, laws and regulations (Quick et al., 1997). With particular regard to this last point, WHO/FIP and many individual countries, including South Africa, have developed *Guidelines for good pharmacy practice* to assist pharmacists to deliver high quality pharmaceutical services (FIP, 1997, FIP/WHO, 2010, South African Pharmacy Council, 2010a).

**2.3.2.2 Medicines supply roles**

Medicines supply was the role most frequently associated with district pharmacists. It included procurement of medicines and distribution of stocks to hospitals, clinics and community based workers in the district. Several countries including Kenya, Mozambique, Tanzania and Zimbabwe described district pharmacists' roles in distributing medicines to facilities in the district, and in Tanzania the district pharmacists' role in managing and

distributing drug donations was reported (Jameson et al., 1991b, Jenkins et al., 2010, Semali et al., 2005, Wamae et al., 2006, Mariacher et al., 2008). District pharmacists' role in procurement of medicines was not specifically identified and this may be due to most purchasing or management of donations from global health initiatives occurring at a national level with supplies distributed to districts.

It was not always clear if the district pharmacists' role in medicine supply ended with the distribution of medicines to the hospitals or clinics, or if they continued to play a role after the medicines reached the clinics. Studies from Ghana, Tanzania and Zimbabwe reported that district pharmacists monitored drug stock-outs at clinics; however, in Malawi, Uganda and Kenya medicines stock-outs at facilities were a problem, and it was suggested that district pharmacists should be more involved in controlling medicine stocks at this level (Ansah et al., 2009, Barrington et al., 2010, Lufesi et al., 2007, Asiimwe et al., 2011, Jenkins et al., 2010).

In most cases it was not stated how district pharmacists monitored medicines stocks, although in Zimbabwe the district pharmacy manager made supervisory visits to clinics, which reportedly improved stock control (Trap et al., 2001). Recent technological developments may offer innovative solutions to monitoring stock control, with studies in Tanzania and Uganda investigating the use of SMS[6] messaging for reporting malaria cases and management of stock control of antimalarials. The authors motivated that in the future this option may be a useful way of managing medicines stocks in remote areas where regular visits by district staff are difficult (Barrington et al., 2010, Asiimwe et al., 2011).

Although district pharmacists are frequently involved in distributing medicines as part of HIV/AIDS, TB and reproductive health programmes, recent studies have reported on district pharmacists' involvement in distributing malaria medicines and vaccines in Tanzania, and ivermectin for filariasis and mental health drugs in Kenya (Wamae et al., 2006, Jenkins et al., 2010, Semali et al., 2005). In these programmes various community-based health workers

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[6] **SMS** (**Short Message Service)** is a text messaging service component of phone, web, or mobile communication systems, using standardized communications protocols that allow the exchange of short text messages between fixed line or mobile phone devices (Accessed Wikipedia 9 June 2012)

were engaged in distributing the medicines, and whilst these initiatives are in line with policies to improve access to health care in resource constrained countries, especially in sub-Saharan Africa, they have implications for district pharmacists' roles. These include working closely with other health workers, non-profit and community-based organisations and community leaders in the district, as well as monitoring community-based workers (Wamae et al., 2006). Whilst medicine supply in some programmes appeared to be successful, in others it was recommended that district pharmacists should work more closely with other health workers in the district (Semali et al., 2005, Barrington et al., 2010). This may indicate that, whilst district pharmacists were fulfilling their role in medicines supply as part of a vertical health programme mandate, they were not truly integrated into the district management team.

### 2.3.2.3 Rational medicines use

Rational medicines use, previously called rational drug use, was the next role associated with district pharmacists, and it was a function identified in the district health services in Zimbabwe (Trap et al., 2001, Castiglia et al., 1996, Laing and Ruredzo, 1989). The WHO defined rational medicines use as "*when patients receive medications appropriate to their clinical needs, in doses that need their individual requirements for an adequate period of time and at the lowest cost to them and their community*" (WHO, 1985b). The approach promotes rational medicines use strategies among healthcare providers, both prescribers and dispensers, and consumers and has been identified as a critical feature in ensuring accessibility and availability of essential medicines (Laing et al., 2001, Le Grand et al., 1999).

Rational medicines use was identified as a central objective of the essential drugs action programme (ZEDAP) established in Zimbabwe with the support of WHO and the Danish International Development Agency shortly after independence in 1980. It featured an innovative training programme outlined in the subsequent section (Laing and Ruredzo, 1989). This initiative was followed by a study that described district pharmacy managers' roles in aspects of rational medicines use, including monitoring prescribed medicines to ensure adherence to treatment guidelines and budgetary control of medicines (Castiglia et al., 1996, Trap et al., 2001). WHO has developed a useful manual *How to investigate drug use in health*

*facilities* and this standardize methodology can be applied to measure a range of medicines use indicators (WHO, 1993a). Although once-off cross-sectional studies are more common than monitoring processes, the study in Zimbabwe illustrated the value of a time-series approach to improve rational medicines use in PHC clinics (Trap et al., 2004). In Mozambique district pharmacists were involved in less familiar aspect of rational medicines use, collating and forwarding adverse drug reactions to the central drug information centre (Sevene et al., 2008).

**2.3.2.4 Training and supervision**

The fourth role attributed to district pharmacists was training and supervision of staff managing or handling drugs in the district. This included pharmacy support staff and nurses based in clinics, as well as health workers working outside government clinics or hospitals, such as community-based workers and private providers.

In Zimbabwe in the mid 1980's, the ZEDAP successfully developed a training programme to improve medicines supply, management and rational use using an innovative participatory approach to identify topics, produce materials and conduct training. The intervention, which included pharmacists, doctors and nurses, was disseminated by health workers at central, provincial and district-level workshops across the country (Laing and Ruredzo, 1989). Sometime later, as district pharmacists and district pharmacy managers were involved in training nurses working in primary care clinics on rational medicines use and medicines management, they found that whilst practices improved they were not sustained over time. (Castiglia et al., 1996, Trap et al., 2001). This prompted a follow-up study which showed that supervision of clinic nurses by district pharmacy managers, who had completed a two-week national training course in supervision of medicines, resulted in sustained improvements in stock management and adherence to standard treatment guidelines (Trap et al., 2001).

These findings were similar to other studies in Africa and Asia which reported that supervision by a variety of health workers resulted in improvements in drug management and prescribing practices in primary health clinics and community settings (Ross-Degnan et al., 1997, Rowe et al., 2005, WHO, 2001, Bosch-Capblanch and Garner, 2008). They resonated with a systematic review which concluded that, although supervision is a complex

intervention and implemented in different ways, there was evidence that it improved primary health care performance in developing countries (Bosch-Capblanch and Garner, 2008).

Although district pharmacists have only been closely linked with CHWs and other lay health workers in a few settings so far, as these cadres become more involved in medicines distribution, district pharmacists are likely to have some responsibility in providing training and advice on good medicine supply management (Wamae et al., 2006). In some countries district pharmacists already play a role in supervision and regulation of chemical sellers (unregistered medicine sellers) and private pharmacies, although it was reportedly not without problems in Tanzania (Goodman et al., 2007). Some years previously Agyepong (1999) reported proposals to introduce a similar initiative in Ghana, although no further information is available on whether the venture was successful or not.

### 2.3.3 Establishing district pharmacists in South Africa

The establishment of district pharmacists in South Africa is an integral part of health system reform introduced by the new democratic government in 1994 and, similar to the broader DHS reform process, progress on district pharmacists has been slow and uneven across the nine provinces (Gray and Suleman, 1999, Haynes et al., 2008).

Several key reforms involving medicines took place in the country soon after 1994, with technical assistance from outside agencies such as the WHO in the form of the South African Drug Action Programme which was located within the National Department of Health (Summers and Suleman, 1996). The foundation of the pharmaceutical sector in the country was laid by the National Drug Policy, published in 1996 with the overarching goal of ensuring "*an adequate and reliable supply of safe, cost-effective drugs of acceptable quality to all citizens of South Africa and the rational use of drugs by prescribers, dispensers and consumers*" (Department of Health, 1996). It endorsed the essential drug concept and was followed shortly afterwards by the first edition of the Essential Drugs List and Standard Treatment Guidelines- Primary Healthcare (National Department of Health, 1996). Other early initiatives were the baseline surveys carried out between 1996 and 1998 in eight of the nine provinces to assess the implementation of the Essential Drugs Programme (Department of Health, 2003b). These activities predated the publication of the White Paper for the

Transformation of the Health System in South Africa in 1997, and indicated a positive start in management of pharmaceuticals in the country (Department of Health, 1997).

**2.3.3.1 District pharmaceutical services development**

District development in the country has been supported by a number of organisations, and two that have made significant input to drug management include Health Systems Trust (HST), a not for profit organisation established in 1992, and EQUITY Project, a United States Agency for International Development(USAID)/South Africa-funded project of the Department of Health through Management Sciences for Health (MSH) (Department of Health, 2003a). The Initiative for Sub-District Support Programme (ISDS) of HST contributed significantly to the early thinking and development of district pharmaceutical services and district pharmacists in South Africa. During the second half of the 1990s ISDS worked with health workers in several districts around the country to improve drug supply and distribution systems. This resulted in a number of publications covering district drug management in various provinces, including KwaZulu-Natal, Eastern Cape, Northern Cape, and Mpumalanga, and one from the Free State focusing on integration into the new local government district councils (Gray, 1999, Suleman et al., 1998, Department of Health Welfare and Gender Affairs Mpumalanga, 1996, Shuping and McCoy, 2000, Department of Health and Welfare Eastern Cape Province, 1996). Two key publications were *District drug management: Lessons learnt from the ISDS in the Eastern Cape, KwaZulu-Natal and Northern Cape* published in 1998 and *Performing an in-depth situation analysis of the drug management system in a health district* which provided a practical guidance and tools for district management teams to map and implement improved drug management in their district (Gray, 1999, Suleman et al., 1998).

The MEDICOS (MEDUNSA Initiative for Community Service) Pharmacy Project and the School of Pharmacy at MEDUNSA (Medical University of Southern Africa), also supported by ISDS/HST, were active in supporting transformation of pharmaceutical services in the Northern Province. They worked alongside the Department of Health on a number of initiatives in the late 1990's including *Evaluation of the transformation of Pharmaceutical and Related Services in the Northern Province*, which was followed *by The impact of rationalised pharmaceutical procurement and distribution and of the essential drugs*

*programme implementation* (Summers et al., 1998, Summers et al., 1997). Particularly pertinent to this research was the study conducted within one district: *Public sector medicines supply and management in districts: an example from the Northern Province* (Summers et al., 1999). Reports of this work were published and their methodological approaches and expertise were subsequently utilised by the National Department of Health to determine the Impact of the Essential Drugs Programme at Primary Health Care Level in South Africa in 2003 (Department of Health 2003b).

The second organisation was the EQUITY Project, which first brought international technical experience to assist the Department of Health to implement primary health care between 1997 and 2003, focusing initially in the Eastern Cape and then expanding to several other provinces. The EQUITY Project identified problems in drug supply and rational prescribing, and addressed them by developing capacity through filling vacant posts, updating clinical skills, as well as developing a uniform drug management system and training staff in its use (Department of Health, 2003a). As a result of this work, the project produced a useful manual *Managing drug supply for health institutions* which was institutionalised in the Eastern Cape Department of Health and later introduced in the North West and Mpumalanga Provinces, and also made available to others around the country (Eastern Cape Department of Health, 2000).

In addition to the contributions of these two organisations, various academic institutions launched projects and short training courses in drug management, including *The rational prescribing project* of the University of Durban-Westville and University Cape Town, which produced a training manual for primary level prescribers and initiated a drug information centre (Orrell and Kishuna, 1997). The WHO Collaborating Centre on Drug Policy, Information and Safety Monitoring at the University of the Western Cape (UWC) and University of Cape Town ran short courses such as *The essential drugs course for a district health system* and the MEDUNSA School of Pharmacy offered courses in *Rational drug use* in collaboration with MSH and WHO, and were involved in supporting the Department of Health in a variety of other activities (Gray and Eagles, 1997).

**2.3.3.2 District Drugs Co-ordinator**

Authors of the two publications on district management from the ISDS Programme mentioned above outlined several key principles for district drug management, based on their experiences in the programme (Gray, 1999, Suleman et al., 1998). The first point they made was that each district should have one person designated with responsibility for drugs in the district, and this person should be a member of the district management team. They said that although ideally this person should be a qualified pharmacist, in practice the person may be another pharmaceutical cadre or a nurse and in view of this they introduced the title district drugs co-ordinator rather than district pharmacist for the person taking on this role. Whilst this acknowledged the reality in the more rural parts of the country at the time, there were clearly implications concerning the capability of a person with minimal pharmaceutical experience taking on this responsibility in the district.

The inclusion of the district drugs co-ordinator as part of the district management team was seen as crucial to planning, monitoring and reporting on drug management in the district. Likewise the proposal of establishing a District Drugs Task Team suggested that the authors viewed the engagement of a variety of role players important in managing medicines in the district. Suleman, McCoy and Gray (1998) provided a list of roles they envisaged for the district drug co-ordinator and they are shown in Box 2.6 below.

**Box 2.6: Role of the District Drugs Co-ordinator (adapted from Suleman et al., 1998)**

1. Conduct an initial situation analysis of drug supply and distribution;
2. Monitor and evaluate drug supply;
3. Help develop and implement standard procedures for drug management activities;
4. Identify the training needs of personnel involved in drug management;
5. Develop an efficient and co-ordinated schedule for the delivery and distribution of drugs to all health facilities;
6. Be the contact person should queries or problems arise with the supply and distribution of drugs;
7. Liaise with medical officers and nurse practitioners on the use of the essential drugs list (EDL);
8. Ensure that therapeutic information and the EDL are available to all prescribers;
9. Prepare and present reports on drug management to the DMT.

As this publication was written during the early days of district development in South Africa, it is not surprising that there was a focus on understanding the drug management situation in the district, as well as planning, introducing standard procedures and putting systems in place to monitor and report on drug management to the DMT. The key roles of distribution of medicines, provision of information on medicines and ensuring rational use, as well as identifying and meeting training needs of those involved in drug management have much in common with the roles identified in literature from SSA countries.

Other documents from around this time recommended one pharmacist per district. This sounds a low target but it reflected the size of health districts and the pharmacy workforce in the public sector at the time. Subsequent to this recommendation the definition of health districts was finalised in the legislation, and in order to keep health districts congruent with municipal boundaries the resulting districts were larger than originally envisaged. This recommendation would equate to a pharmacist per sub-district (South African Pharmacy Council, 2012, The Interim Pharmacy Council of South Africa, 1998, Chatora and Tumusiime, 2004a). This resulted in all the metropolitan districts, including Cape Town, being much larger than envisaged by WHO; hence the reason for dividing Cape Town into four sub-structures and appointing pharmacists, known as sub-structure pharmacists, as part of the sub-structure management team.(Chatora and Tumusiime, 2004a, Barron, 2008).

### 2.3.3.3 On-going challenges to establishing district pharmacists

After this initial, fairly extensive, work on district pharmaceutical services in the country, there has been little published on district pharmacists' (or district drugs co-ordinators') roles *per se,* with the exception of a report published in the mid-2000s by a district pharmacist from KwaZulu-Natal in the South African Pharmaceutical Journal (Groenewald, 2006). In his Portfolio Report on the District Health System for the South African Association of Hospital and Institutional Pharmacists, Groenewald (2006) proposed roles envisaged for a district pharmacist (Box 2.7). In addition to overseeing accessibility of drugs, vaccines and information throughout the district and providing input to the DMT, the roles are broadly in

line with those identified previously: managing and monitoring drug supply, monitoring rational drug use, and providing training and support to those involved in drug supply (Groenewald, 2006).

**Box 2.7: Roles of a district pharmacist (adapted from Groenewald, 2006)**

1. Overseeing accessibility to drugs, vaccines and information at all levels throughout the District;
2. Monitoring or managing drug supply cycle at every level from District drug procurement to consulting room drug selection;
3. Facilitating quality of care improvement by ongoing prescriber monitoring and prescription review;
4. Providing training in rational drug use and drug supply management;
5. Providing support to line-function pharmacy;
6. Facilitating the capacity building &appropriate utilisation of support personnel;
7. Providing professional services and input to DMT.

Whilst the author notes in the report that district pharmaceutical services have developed differently in each province, he advocates for *"this patchwork of systems to be unravelled and examined"* and for a standardised set of key result areas and performance objectives for district pharmacists that could be tailored to each setting (Groenewald, 2006). This report seemed to confirm limited progress in district pharmaceutical services and the elucidation of district pharmacists' roles, and endorsed the aims of this research project. Several on-going challenges are likely to have contributed to this lack of progress in establishing district pharmacists in South Africa. They include delays to implementing the DHS and establishing district pharmacist posts, pharmacy workforce shortages, the increasing disease burden and limited capacity building initiatives.

### 2.3.3.3.1 *Delays in implementing the district health system*

Although district health development commenced strongly in the late 1990s, and this included district pharmaceutical services described in an earlier section, some have reflected on a loss of momentum since this time. The District Management Study conducted in 2007 found that provinces were at different stages of district development (Haynes et al., 2008). In

the Western Cape, whilst district health services in the five rural districts were integrated in 2005 and district pharmacists appointed, in Cape Town Metro, two service providers still deliver PHC services. It was only in 2009, during the course of this research project, that the DHS model was implemented in Cape Town, with the formation of four sub-structures and the appointment of four sub-structure pharmacists, and even now there is not full integration of PHC services (Western Cape Department of Health, 2007). The other metro districts in the country remain in a similar situation.

Significant variations in the structures of the district and sub-district health services between provinces have been reported, and one way in which this is reflected is that similar posts, for example, district managers, have been set at different levels in different provinces. Although there is no published information on district and sub-district pharmacists' positions around the country, anecdotal evidence indicates that district and sub-district pharmacist positions have suffered a similar fate, with posts created at different levels across the nine provinces and with no central processes to plan, define roles or develop job descriptions, which are critical elements for optimal performance (Groenewald, 2006, Pincock et al., 2011).

Since the commencement of this project a change in political leadership in 2009 brought a new wave of health reforms focussing on improving health outcomes (Harrison, 2009). These include the *PHC Re-engineering Strategy* with a population oriented service model of PHC, and the *National Health Insurance* (NHI) which will introduce universal health insurance coverage over a 14 year period (Department of Health, 2010, Minister of Health, 2011, Naledi et al., 2011). These reforms will have far reaching effects on the public and private health sectors in the country but as yet their implications for district pharmacists are unknown.

### 2.3.3.3.2  *Pharmacy workforce shortages*

The shortage and distribution of pharmaceutical human resources in the country and the appropriateness of their training for the roles that would be required in the reformed health system were highlighted by Gray and Suleman in 1999, drawing on the Technical Report on *The Production and Distribution of Human Resources in Pharmacy* published the previous year (The Interim Pharmacy Council of South Africa, 1998, Gray and Suleman, 1999). Although in 1998 there were 8,415 pharmacists in the country, giving a fairly reasonable

pharmacist: population ratio of 1: 3,752 or (2.2 pharmacists per 10,000) compared to other countries, a critical factor was the mal-distribution of pharmacists between provinces and sectors, resulting in extreme inequity of pharmaceutical services. For example, Gauteng and the Western Cape reported pharmacist to population ratios of 1: 1,738 and 1: 2,514, respectively, whilst the Northern Province had 1: 16,446. In addition, research conducted in 1997 found 11-15% of pharmacists worked in the public sector which provided services to 80% of the population (The Interim Pharmacy Council of South Africa, 1998). It was not surprising that vacancy rates of public sector pharmacists posts at the time ranged between 7% and 12% in Mpumalanga and the Western Cape, and 43% and 45% in North West and Northern Province, respectively (Gray and Suleman, 1999). However, the authors cautioned that these figures reflected inequitable distribution of posts, and said that if an equitable norm based on workload was applied, the greatest need would be in district hospitals which would then have a vacancy rate of 75% (Gray and Suleman, 1999). This last figure is likely to give a more realist idea of the situation with respect to district pharmacists across the country.

Over the years a number of measures have been implemented to recruit and retain pharmacists in the public health sector. One initiative to increase the numbers of pharmacists in the public sector commenced in 2001 when a mandatory one year community service in the public sector was introduced for all pharmacists following registration with the SAPC. Over the past 10 years this has brought an average of 479 additional pharmacists into the public sector each year, not all of whom remain in the public sector after completion of the mandatory year of service (South African Pharmacy Council, 2012).

Other schemes to attract and retain pharmacists in the public sector have focused on improving conditions of service such as the introduction of rural and scarce skills allowances (pharmacy was named as a scarce skill by the Ministry of Labour in 2007). The most recent initiative implemented in 2009/10 was the Occupation-Specific Dispensation (OSD) which consolidated the previous two allowances and included a re-grading component (Gray, 2009). The data from the past few years show a significant increase in the proportion of pharmacists working in the public sector from 12% in 2004 to 29% in 2010. Whilst many attribute this shift to the improved salaries, formal establishment of posts and opportunities for career advancement, and conditions of service in the public sector, significant policy and legislative changes in regulations relating to the ownership and licensing of pharmacies, which

previously was restricted to pharmacists, and the introduction of the dispensing fee in 2006 have affected other sectors of the pharmacy profession during this period (South African Pharmacy Council, 2012).

Another feature of the South African pharmacy workforce in the 1990s was the very small numbers of qualified pharmacy support workers, which resulted in pharmacists spending time on tasks that could be carried out by pharmacy support workers and less time on professional and managerial functions. However, significant progress has been made to increase training opportunities, commencing with the re-launch of the Pharmacist's Assistant Programme in 2000, and this has resulted in a steady increase in the numbers of qualified pharmacists' assistants in the country from 507 in 1998 to 9000 in 2010 (South African Pharmacy Council, 2003a, South African Pharmacy Council, 2012). Although the increased numbers of pharmacists' assistants have contributed to provision of pharmaceutical services, especially in the public sector, the roll-out of ARVs and the need for a more highly qualified pharmacy support cadre that is able to work at primary healthcare clinics under the indirect supervision of a pharmacist, has resulted in the decision to introduce two new mid-level workers, pharmacy technicians and pharmacy technical assistants (South African Pharmacy Council, 2011a). Whilst these developments in the pharmacy support workforce have had a positive impact on facilitating district pharmacists and other pharmacists to focus on professional and managerial roles, they have created additional managerial and supervisory responsibilities for them.

### 2.3.3.3.3 Increasing disease burden

The increasing disease burden in the country, particularly HIV/AIDS, TB and non-communicable diseases, and the resulting requirements for services, have posed additional challenges for primary pharmaceutical level services and are likely to impact on district pharmacists (Bradshaw et al., 2006). These include accreditation and operation of new ARV sites, expansion of TB DOTS (Directly Observed Treatment Shortcourse) across the country, and requirements for regular medication supply for those with chronic non-communicable diseases.

These challenges have prompted innovative ways of meeting the growing need for accessible pharmaceutical services, including increased utilisation of pharmacy support workers and lay

health workers. Whilst developments in the pharmacy support workforce have been mentioned in the previous section, lay health workers, especially CHWs, have also increased their involvement in medicine distribution and use, such as TB DOTS, ARV adherence support and new areas of chronic disease management. Given the strategic roles envisaged for CHWs in re-engineering PHC, their contributions in these areas are likely to increase (Department of Health, 2010, Naledi et al., 2011). As yet there is little written about the relationship between district pharmacists and community health workers in the South African context, but district pharmacists are likely to have some responsibility for advising or overseeing good medicines practices (Doherty and Coetzee, 2005).

### 2.3.3.3.4 *Limited capacity building for district pharmacists*

Whilst the lack of systemic development of roles, tasks and functions for district pharmacists is likely to have hindered capacity development in this particular cadre, nevertheless, insights of key stakeholders in South Africa, and from the international community. have contributed to a variety of interventions. HST and MSH have continued to provide support at different levels of the health system, from national to sub-district levels, although over time their programmes have changed from the ISDS and EQUITY Programmes, respectively, started in the mid-1990s. MSH, in particular, continues to support pharmaceutical services and works closely with national and provincial health departments in areas such as drug supply management and Pharmacy and Therapeutic Committees (PTCs). A recent initiative includes the launch of the Pharmaceutical Leadership Development Program (PLDP) through its Strengthening Pharmaceutical Systems (SPS) Program. The SPS Program adapted the LDP specifically for pharmacists, and it was piloted with three groups in South Africa during 2011 and 2012 (Management Sciences for Health, 2012). It will be interesting to see how this intervention contributes to developing the types of skills required by pharmacy managers, such as district pharmacists.

Most other initiatives relevant to district pharmacists have focussed on individual training offered by academic institutions, ranging from short courses to Master level qualifications, and courses offered by the department of health or international organisations (Lehmann, 2008). Many of the short courses have primarily a vertical programme focus and have been offered on priority diseases of HIV/AIDS, TB, or specific support systems for drug

management and information systems. It is difficult to know how many district and sub-district pharmacists have benefited from these initiatives, or how effective they have been in building the required capacity, a common feature of many management strengthening initiatives (de Savigny and Adam, 2009). However, the vertical programmatic focus and concentration on individual knowledge rather than skills, behaviours and attitudes of a whole team have a high opportunity cost in terms of managers being absent from their workplace, and limit their value as true capacity building initiatives (Baser and Morgan, 2008, Egger et al., 2005).

In the longer-term reform in pharmacist pre-service training, as that of other health professionals, should be more closely aligned to the health and service needs of the country (Anderson and Futter, 2009, Frenk et al., 2010). Several changes in pharmacy education have taken place over the years. A second revision of the pharmacist degree qualification has been approved by the South African Qualification Authority and the new curriculum will be introduced at Schools of Pharmacy in 2013 (South African Qualifications Authority, 2009). Alongside the new exit outcomes, innovative ways of training pharmacy undergraduates are being pioneered to produce pharmacists who are confident in working inter-professionally and at all levels of the health service, including a particular focus on primary level (Bheekie et al., 2011, Summers and Enslin, 2000, Suleman, 2012). It is hoped that these initiatives will produce pharmacy graduates with appropriate attributes and skills for the needs of the country's health system, including district pharmacists, but as yet the outcome of these reforms are unknown.

## 2.4 Developing competencies in district pharmacists

Whilst evidence suggests that the numbers and coverage of health workers have a direct effect on health outcomes, there has been an increasing emphasis in the past few years on health workers having appropriate competencies to perform optimally (Anand and Bärnighausen, 2004). The World Health Report in 2006 stressed the importance of health systems having *"the right health workers with the right skills in the right place doing the right thing"* (WHO, 2006). Identifying the roles and related competencies of district pharmacists accords with recent publications which highlighted the need for the roles and

competencies of health workers to be re-defined in response to changing health priorities and health system reforms of their country (Frenk et al., 2010, Rigoli and Dussault, 2003).

## 2.4.1 Competence and performance

The competency concept is complex, with the approach typically focusing on performance as the goal rather than educational programmes or training. Several authors have pointed out that competence and performance are not the same. In terms of health professionals, whilst clinical and managerial competence are important, greater attention has been given to clinical competence, particularly during training and early career. Miller (1990), proposed a pyramid as a framework for assessing clinical competence and designated four stages as: knows, knows how, shows how, and does (Miller, 1990). Although Miller refers to 'shows how' as performance, Rethans et al. (2002) argue that 'shows how' should be referred to as competence-based assessment and 'does' as performance-based assessment, in which competency-based assessment would measure what pharmacists can do in controlled representations of professional practice, and performance-based assessment would measure what pharmacists do in actual professional practice (Figure 2.2).
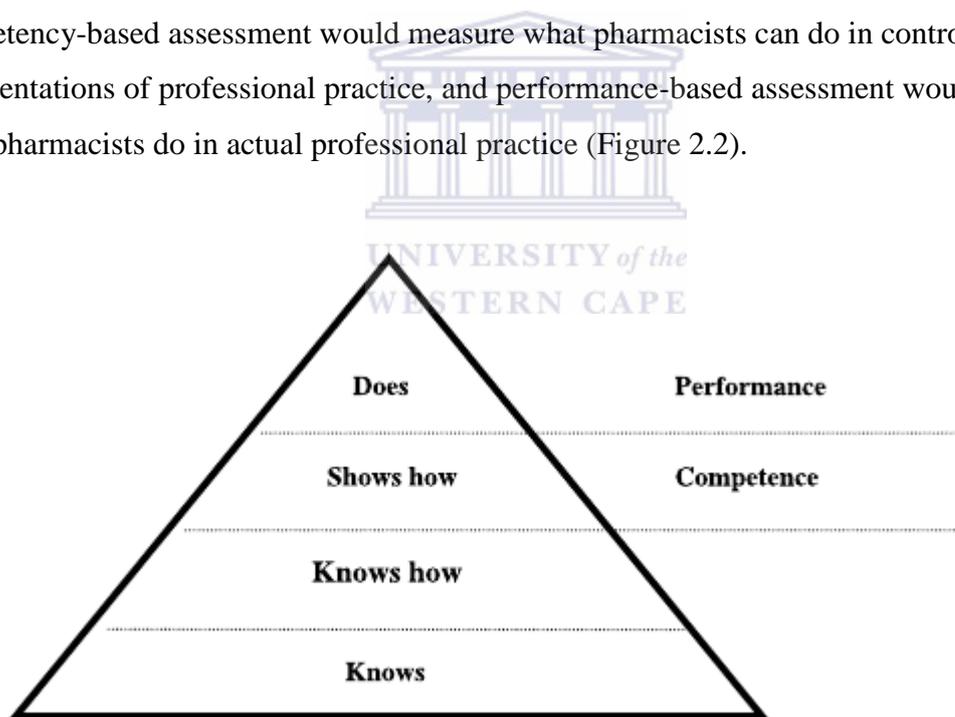


**Figure 2.2: Miller's Pyramid modified by Rethans et al. (2002)**

A limitation of Miller's pyramid is that it does not take into account other factors that may influence clinical performance. The context specific nature of performance was illustrated by Kak et al. (2001) (Figure 2.3), who pointed out that in addition to competence, there are a

number of other determinants of performance, including personal motivation and external factors related to the organisation and society, factors and these in turn influence health outcomes and clients satisfaction with health services.
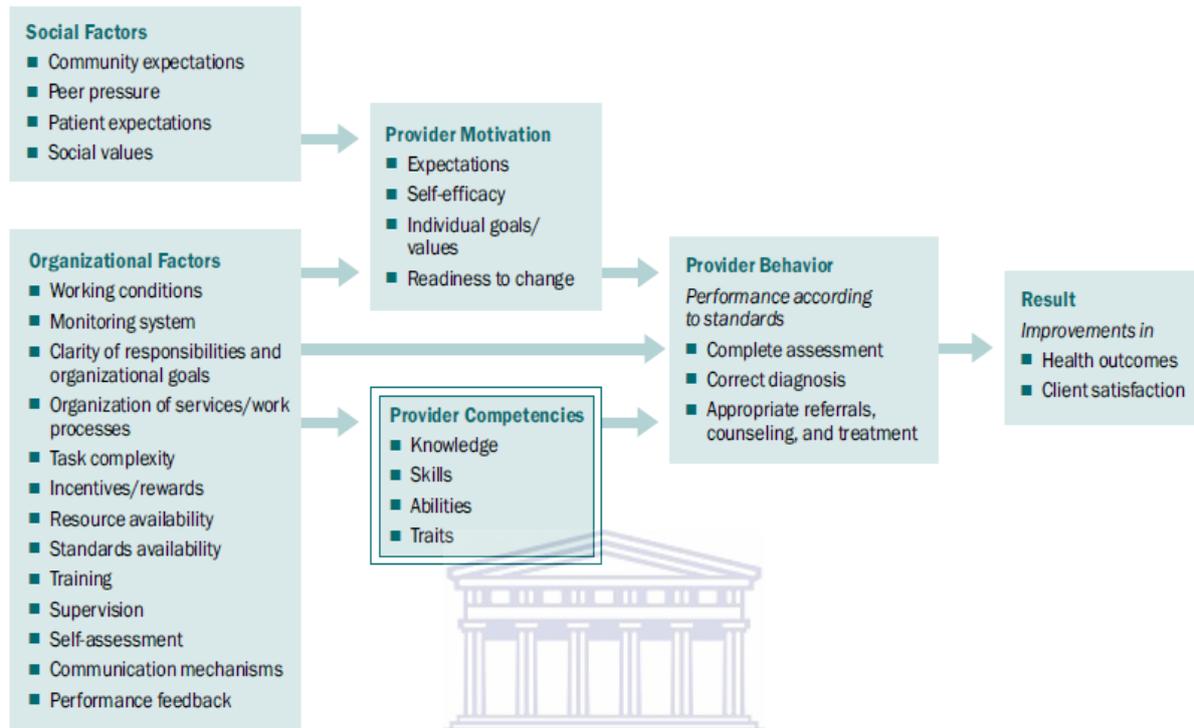


**Figure 2.3: Determinants of Healthcare Provider Performance (Kak et al., 2001)**

About the same time, Rethans et al. (2002) developed the Cambridge Model (Figure 2.4) for delineating performance and competence and identified performance as a product of competence combined with factors related to the individual and the system. The authors describe individual-related influences as personal and interpersonal relationships, and system-related influences as government programmes, patients' expectations, time and accessibility.
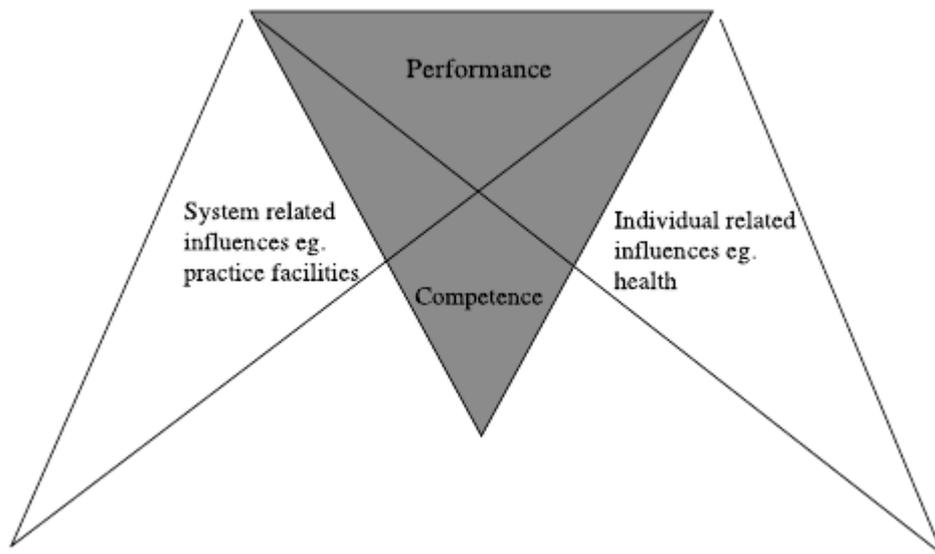
**Figure 2.4: Cambridge Model (Rethans et al., 2002)**

Winslade et al. (2007) endorsed these views by acknowledging that a variety of factors influence pharmacists' performance but said that their contributions have not been determined. They proposed a model for analysing and assessing factors influencing pharmacists' practice performance using four levels of interventions related to the quality of health and Green's predisposing, enabling and reinforcing categories (Table 2.2) (Winslade et al., 2007).

**Table 2.2: Factors influencing pharmacists' practice performance (Winslade et al., 2007)**

| | Motivating Factors | Enabling Factors | Reinforcing Factors |
|---|---|---|---|
| **Patient** | Perception of patients' receptivity to pharmacists' services. | Patient willingness to provide time and information. | Patient feedback or willingness to pay. |
| **Individual Pharmacist** | Pharmacist motivation to provide services. | Pharmacist competence | Pharmacist reward for services (eg, pay / support for education). |
| **Team / Pharmacy**<br>• Pharmacy technicians<br>• Pharmacy owners | Perception of team / owner support of pharmacist provision of services. | Team / management systems support of pharmacist provision of services (eg, # of support staff, jop descriptions, work flow, physical layout, training) | Pharmacy / pharmacy staff reward for pharmacist provision of services. |
| **Organization**<br>• Chain (corporate policies) | Perception of corporate management support of pharmacist provision of services. | Corporate management support of pharmacists providing the services (eg, vision, mission, advertising, recruiting) | Chain reward for pharmacist provision of services (eg, increased clientele / profit). |
| **Health Care System**<br>• Profession of pharmacy<br>• Other health care providers<br>• Regulators<br>• Policy makers | Perception of profession and health care system support of pharmacist provision of services. | Health care system support of pharmacists (eg, laws, regulations, reimbursemnent, access to information such as therapeutic indication for prescribed medications) | Health care system reward (eg, lower costs, improved patient outcomes, increased physician time for care provision). |

The model emphasises strongly the multiplicity of factors, alongside competence, that influence pharmacists' performance. In this research the extended engagement with a broad range of stakeholders from both PHC organisations, as the organisations were evolving, provided the opportunity to gain deep contextual understanding of the competencies required by district and sub-district pharmacists.

## 2.4.2 Competency-based approaches in health care

Competency-based approaches have been used in health care for some time, both in pre-service education and in practice settings, and their use in defining outcomes or competencies required by graduates for registration or licensing with health professional boards or councils is widespread (Frenk et al., 2010, Harrison and Mitchell, 2006). In practice settings the approach can be used by individuals for personal development and by organisations for job descriptions, selection of personnel, performance management and remuneration (Whiddett and Hollyforde, 2003).

Competency-based approaches have their origins in the functional competence approach which was promoted by the British government for the development of occupational standards, and in the USA in the management field where the approach focused on personal and behavioural competencies (Jessup, 1991, Boyatzis, 1982). Competence is a contested concept and a variety of definitions are used to define the concepts. However, I found those used in recent competency development work in pharmacy as helpful and have adapted them for use in this research project (Box 2.8) (FIP, 2012).

**Box 2.8: Competence definitions used in this research project**

> **Competence** is defined as someone's ability to perform tasks and roles to expected standards
>
> **Competencies** are the knowledge, skills, attitudes and behaviours that an individual accumulates through education, training and work experience
>
> **A Competency framework** is a collection of **competencies** needed to effectively perform a role in an organisation

Typically, competencies identified in the competency framework are broken down into defined tasks to which behavioural statements are attached. Many competency frameworks include a hierarchical approach to competency development, first proposed by Dreyfus and Dreyfus in 1986, in which an individual moves from a novice level, to competent and then an expert (Dreyfus and Dreyfus, 1986, Dreyfus, 2004).

The competency approach has been critiqued as reductionist, focusing on discreet tasks and producing long lists of competencies or outcomes without adequately reflecting the integrative way in which practice takes place in the real world. As Talbot (2012) says, the approach "has a tendency to limit the reflection, intuition, experience and higher order competence necessary for expert, holistic or well developed practice." This is particularly relevant when considering the complex processes needed for professional practice and management, as is the case with district and sub-district pharmacists. Other issues that have been raised include the difficulties associated with measuring competence, with some fearing that knowledge and skills would only be understood as referring to performance that can be

observed or measured, thereby excluding the 'interiority' of the learning,  and reducing assessment to a checklist of 'correct behaviours' (Walters and Isaacs, 2009).

Despite, or perhaps because of, these critiques the past few years has seen moves away from the 1990s atomised frameworks, at least in some settings, to more generic competency frameworks which define the most important part of job competence and promote a more pragmatic approach (Wright and Morgan, 2011).  In this research project, in accordance with these notions, I stopped at identifying the list of competencies of district and sub-district pharmacists and did not specify tasks or behavioural statements.

Cheetham and Chivers (1996, 1998) working in the UK, developed a holistic model of professional competence by harmonising competency-based approaches and the reflective practitioner approach of Schon (Schon, 1983). They also included meta-competencies (generic, high-level competencies) and ethical competencies in their holistic model (Cheetham and Chivers, 1996, Cheetham and Chivers, 1998). Schon's new epistemology of the reflective practitioner challenged the conventional technical-rational view of professional practice in which professionals operate by applying formally learned specialist or technical knowledge. He maintained that the crucial competence is reflection, 'reflection-in-action' (during an activity) and 'reflection-about-action' (after an activity).

A few years later a broader interpretation of professional competency gained acceptance in the health professions. Epstein and Hundert (2002), writing in the USA about physicians, proposed seven dimensions of professional competence shown in Box 2.9. Some of the key issues they highlight include that competence is defined by 'tacit' rather than 'explicit' knowledge, the need for an integrative approach, importance of context and its developmental nature (Epstein and Hundert, 2002).

**Box 2.9: Dimensions of professional competence (Epstein and Hundert, 2002)**

1. Cognitive
2. Technical
3. Integrative
4. Context
5. Relationship
6. Affective/Moral
7. Habits of mind

Frenk and others (2010) recent report, *Health professionals for a new century: transforming education to strengthen health systems in an interdependent world*, emphasises the importance of competency-based education for health professionals, and suggests that competency-based approaches can be used 'transformatively', to strengthen health systems, by breaking down traditional professional boundaries and allowing innovative ways of building teams based on competencies rather than professionals. These ideas may be useful in developing district health teams, including pharmacists, in South Africa and is worthy of future exploration.

## 2.4.3 Pharmacy competency frameworks

Several countries, mainly in the developed world, have published competency standards or frameworks for practising pharmacists, with the USA and UK being the leaders in this field. Some standards were adapted from entry-level qualifications required by registering boards, whilst others have been developed using other methodologies. In general these standards are intended to be used by pharmacists from initial professional registration and through the first few years of practice. In addition to the USA and UK, several other countries have published comprehensive competency standards with competency clusters or domains, competence standards, performance criteria and evidence examples plus behavioural statements. These include Australia, Canada, New Zealand and Thailand (National Association of Pharmacy Regulatory Authorities, 2003, Pharmaceutical Society of Australia, 2003, Pharmacy Council of New Zealand, 2006, Thai Pharmacy Council, 2002). Whilst South Africa does not have a framework for practising pharmacists, it published a list of seven entry level outcomes for

pharmacists in 1997, and this was followed by a revised list of nine outcomes in 2009 (South African Qualifications Authority, 2009).

The USA and UK have produced pharmacy competency frameworks applicable to pharmacists working in patient-focused activities in hospital, retail and primary care pharmacy settings (Table 2.2.3). They are not intended to apply to pharmacists working in other settings such as industry or academia, unlike some of the other country specific frameworks which relate to wider outcomes expected of pharmacists when they enter the profession. In the UK the General Level Framework (GLF) developed by a consortium, Competency Development and Evaluation Group (CoDEG), has established itself as the most widely used generic framework, and has been adapted for use in several other countries including several Eastern European countries (Comptency Development and Evaluation Group, 2007). In the USA, the American Association of Colleges of Pharmacy, Center for the Advancement of Pharmaceutical Education (CAPE) developed Educational Outcomes which serve a similar function (The Council on Credentialing in Pharmacy, 2009). Recently, the FIP published a Global Pharmacy Competency Framework and, although they acknowledge that pharmacy practice varies considerably between countries and settings, say that the framework is intended to act "as a mapping tool" that should be adapted to national needs (FIP, 2012). There are commonalities between competency clusters in these three frameworks in that each include pharmaceutical or patient care and management and two of the three include personal and public health (Table 2.2.3).

**Table 2.2.3: Patient-focused pharmacy competency frameworks**

| Country | Framework | Date | No. of domains | Name of domains/competency clusters/outcomes |
|---------|-----------|------|----------------|-----------------------------------------------|
| United Kingdom | General Level Framework (GLF) 2nd ed. | 2007 | 4 | Delivery of patient care<br>Personal<br>Problem solving<br>Management and organisation |
| United States of America | CAPE Educational Outcomes | 2004 | 3 | Pharmaceutical care<br>Systems Management<br>Public Health |
| Global | Global Competency Framework | 2012 | 4 | Pharmaceutical public health<br>Pharmaceutical care<br>Organisation and management<br>Professional/personal |

Competency frameworks developed for primary care pharmacists are particularly relevant to this research project, and three different examples shown in Table 2.2.4 include probably the first to be developed, the most widely used and the most recently developed, respectively.

**Table 2.2.4: Primary care pharmacist competency frameworks**

| Country/organisation | Framework | Date | Domains/Competencies |
|---|---|---|---|
| United Kingdom National Prescribing Centre & NHS Executive | Competencies for pharmacists in primary care | 2000 | Working as a pharmacist<br>Working with information<br>Working with people<br>Personal contribution |
| United Kingdom CoDEG | GLF adapted for primary care and community pharmacists | 2005 | Delivery of patient care<br>Personal<br>Problem solving<br>Management and organization |
| Canada | Primary care competencies for pharmacists | 2012 | Advocate<br>Health care provider<br>Collaborator<br>Communicator<br>Manager<br>Professional<br>Scholar |

The development of the first primary care pharmacist competency framework in 2000 in the UK has synergies with this project in that it was initiated in response to the new roles that pharmacists were moving into in primary care in the country (National Prescribing Centre, 2000). The development commenced by categorising the potential roles of pharmacists working in primary care into three levels, shown in Table 2.2.5, and then used these roles as a basis for the production of a generic core competency framework which applied to all pharmacists working in primary care (National Prescribing Centre, 2000). This developmental process was influential in guiding my methodological approach to identify the roles and competencies of district and sub-district pharmacists in Cape Town. The use of this framework was subsequently superseded by the GLF (Table 2.4) but it remains a significant step in elucidating primary care roles of pharmacists and production of competency frameworks for pharmacists in the UK.

**Table 2.2.5: A level-based definition of primary care pharmacists' roles (Centre 2000)**

| Level | Description | Example of roles |
|-------|-------------|------------------|
| Level 1 | Facilitator/provider (practice level) | Facilitating the implementation of prescribing action plans; reviewing repeat medication with patients and other healthcare professionals (e.g. GPs and community pharmacists); providing clinical input (e.g. disease management clinics). |
| Level 2 | Local coordinator (PCG/PCT level)[7] | Comparative PACT/ePACT analysis; prescribing budget monitoring; generation of action plans; point of contact for local liaison e.g. primary/secondary care, community services, community pharmacists, LPCs; management of practice level pharmacists and pharmacy technicians. |
| Level 3 | Strategic lead (PCG/PCT/HA level) | Services commissioning and delivery; performance management; strategic planning of pharmaceutical services across health and social services; allocation of resources; co-ordination of policy development across PCGs/PCTs/HAs; education and training role. |

The second framework for primary care and community pharmacists, also from the UK, was adapted from the first GLF, which was originally developed for hospital pharmacists, with the main difference being the addition of a fourth competency domain, management and organisation (Mills et al., 2005). The authors of this framework say it is aimed at pharmacists working in various primary care settings, including retail pharmacies and in general practices, but that it is not applicable to pharmacists working at strategic management levels in primary care trusts or health authorities. They recommend that, for this category of pharmacists, the Advanced and Consultant Level Framework (ACLF) is more relevant (Mills et al., 2008). Judging by the fact that district and sub-district pharmacists are part of district and sub-district management teams, the ACLF, which is described in the next section, is more applicable to them, whilst the GLF may be relevant for pharmacists working within the DHS as facility-level pharmacy mangers or production pharmacists.

The third primary care framework for pharmacists is from Canada and consists of seven domains, and again the authors say it was developed in response to new roles of pharmacists

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[7] **Primary care groups (PCGs), primary care trusts (PCTs)** and **health authorities (HAs)** were structures of the National Health Service in UK

in primary care. It was based on the Association of Faculties of Pharmacy educational outcomes, which aligns with the format of the CanMeds framework, the Royal College of Physicians and Surgeons of Canada framework, that identifies the essential competencies required of physicians (Kennie-Kaulbach et al., 2012). A very different set of competencies emerged but, consistent with expectations of other professions, the authors found that competencies most directly related to patient care were rated as most important and pharmacists' expertise in identifying and managing medication therapy was the highest rated. Competencies related to management, health advocacy and scholarship were rated lowest. This probably reflects that activities related to patient care are the main focus of most practising pharmacists.

### 2.4.4 Pharmacy competency frameworks for advanced practice

Developments in several countries, again mainly in the developed world, over the past few years have introduced the concepts of 'advanced', 'expert' or 'specialised' pharmacy practice (Galbraith, 2011, Hill et al., 2006, McKenzie et al., 2011, The Council on Credentialing in Pharmacy, 2009, Obiols et al., 2005). The Royal Pharmaceutical Society of Great Britain defined Advanced Practice as follows:

*"Advanced Practice is practice that is so significantly different from that envisaged at initial registration that it warrants recognition by professional peers and the public of the expertise of the practitioner and the education, training and experience from which that capability was derived."* (Royal Pharmaceutical Society of Great Britain, 2009)

The difference between advanced practice and specialisation has been pointed out by some, and the Australia Advanced Practice Framework Steering Committee states that specialisation generally relates to scope of practice which is narrowed or focussed and is not necessarily associated with an enhanced level of performance, whereas advanced practice is used to describe practice at a level which is beyond a level that is usually observed (Australian Association of Consultant Pharmacy et al., 2010). The USA led the way by proposing a conceptual model to articulate the relationship between the scope of a pharmacist's practice, qualifications and post-qualification education and training (The Council on Credentialing in Pharmacy, 2009). This model was later adapted by pharmacists

in Australia to classify professional practice in terms of scope of practice and performance level into four broad categories: generalist pharmacists, focussed (specialised) pharmacists, advanced generalist pharmacists and advanced focussed (specialised) pharmacists (Box 2.10) (Australian Association of Consultant Pharmacy et al., 2010)

**Box 2.10: Scope of practice and performance level (Australian Association of Consultant Pharmacy et al., 2010)**
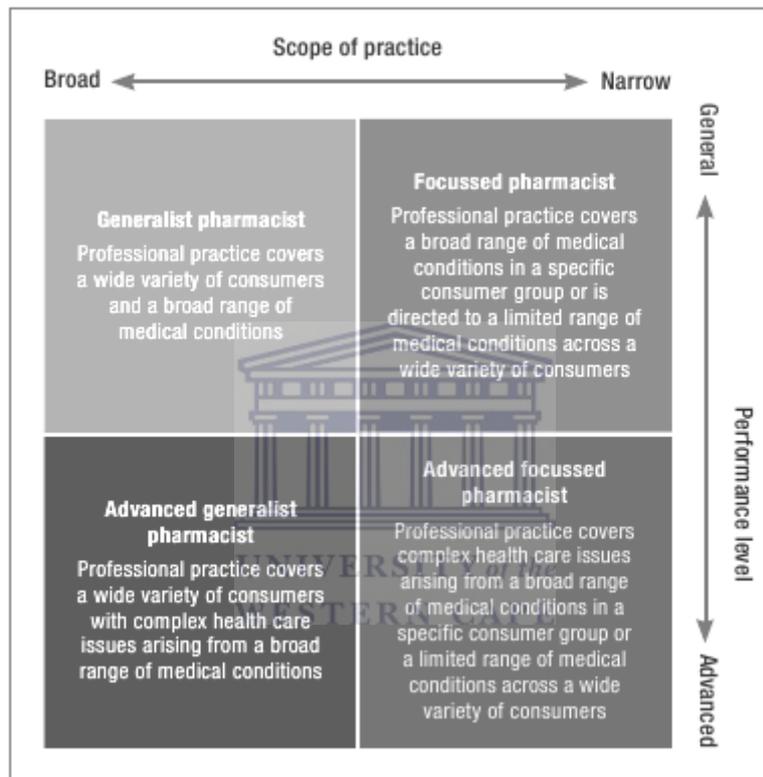


Whilst the Board of Pharmaceutical Specialties of the American Pharmacists Association certifies pharmacists in a number of specialties, the UK was the first country to develop a generic framework for pharmacists working at advanced practice level (The Council on Credentialing in Pharmacy, 2009). The Advanced and Consultant Level Framework was first developed for hospital pharmacists working in specialist practice areas and then modified for hospital pharmacists in senior management positions (Meadows et al., 2004, Fernandes et al., 2008). The framework was derived from a literature review and consensus panel development. The final framework consisted of six competency clusters and 34 competencies. It was subsequently used as the basis for the development of a framework for

chief pharmacists, pharmacists working at senior management level in health authorities and primary care trusts (Fernandes et al., 2008). This framework was particularly relevant to this research, as district and sub-district pharmacists are generally considered experienced practitioners working in primary health care management (Table 2.6).

**Table 2.6: Advanced and Consultant Level Competency Framework with modifications for expert professional management for pharmacists in hospital and primary care management (Fernandes et al., 2008)**

| Competency clusters | Expert professional practice competencies | Modifications for expert professional management |
|---|---|---|
| Expert professional practice (or expert professional management) | Expert skills and knowledge<br>Patient care responsibilities<br>Reasoning and judgement<br>Professional autonomy | Effective and strategic influencing<br>Intellectual flexibility<br>Integrity<br>Achieving work-life balance<br>Resilience<br>Personal resources<br>Managing stress |
| Building working relationships | Communication<br>Teamwork and consultation | |
| Leadership | Strategic context<br>Clinical governance<br>Vision<br>Innovation<br>Service development<br>Motivational | Delegation |
| Management | Implementing national priorities<br>Resource utilisation<br>Standards of practice<br>Managing risk<br>Managing performance<br>Project management<br>Managing change<br>Strategic planning<br>Working across boundaries | Human resources |
| Education, training and development | Role model<br>Mentorship<br>Conducting education and training<br>Continuing professional development<br>Links practice and education<br>Educational policy | |

| Research & evaluation | Critical evaluation<br>Identifies gaps in the evidence base<br>Develops and evaluates research protocols<br>Creates evidence<br>Research evidence into practice<br>Supervises others undertaking research<br>Establishes research partnerships | |
|---|---|---|

## 2.4.5 Other competency frameworks

In addition to the profession-specific frameworks for pharmacists, I also examined a number of cross-cutting competency frameworks including health leadership, management, public health and inter-professional practice, as these were illustrative of areas that emerged during my literature review of district pharmacists. Some frameworks were developed in South Africa, some in developed countries, mainly the UK and the USA, and others globally. Together, they provided useful insights as we engaged with developing competency frameworks for district and sub-district pharmacists.

Whilst a variety of public health competency frameworks have been developed around the globe, one that resonated with this study was the competency framework developed for Public Health Nutrition in Australia (Hughes, 2005). This was because the competency framework focussed on a cadre of health professional practitioners working in somewhat comparable positions to district pharmacists. The framework contained six competency clusters: foundation and theoretical knowledge and skills; analytical skills; public health system knowledge and skills; socio-political knowledge and skills; management and leadership knowledge and skills; professional and communication knowledge and skills (Hughes, 2005).

Several inter-professional competency frameworks have been developed in recent years, probably due to the increasing emphasis on the importance of inter-professional practice in health delivery, and pharmacy organisations have been involved in some of them (Calhoun et al., 2008, Canadian Interprofessional Health Collaborative, 2010, Frenk et al., 2010, Health

Professions Networks Nursing & Midwifery: Human Resources for Health, 2010). Common competencies that emerged in these frameworks include teamwork, communication and ethical practice.

The importance of health managers having management competencies to deliver quality health services has been emphasised by many over the past few years (Egger et al., 2005). Filerman (2003), writing about management competencies required by health mangers, identified three categories of essential core management competencies – human resources competencies, general management skills and advanced or senior management skills. He emphasised that management competencies were not the same as public health competencies, and that both were required by managers in the health system (Filerman, 2003). Several frameworks have been developed for health managers in South Africa and they are discussed in the next section.

A number of competency frameworks have been developed for health leadership, mostly in developed countries and two were of particular interest to this study for their conceptualisation of leadership and inclusion of developmental strategies. The Health Leadership Competency Model was developed in the US in response to the Institute of Medicine's report *Health Professions Education: A Bridge to Quality.* It used an evidence-based and behaviourally focused approach to evaluate leadership skills across health professions and career stages. Three competency domains: transformation, execution and people emerged with a total of 18 behavioural and 8 technical competencies and the model supported identification of leadership development opportunities throughout career progression (Calhoun et al., 2008).

The second framework, the National Health Service (NHS) Leadership Framework, was developed for the NHS in the UK in response to major challenges they were experiencing in management and leadership several years back (NHS Leadership Academy, 2011). The framework comprises seven domains: demonstrating personal qualities; working with others; managing services; improving services; setting direction; creating the vision; and delivering the strategy. It mentions that the last two are particularly applicable to those in senior roles. Critical features of this framework are that it applies to all staff working in the NHS, irrespective of role or seniority, and its philosophical approach is that leadership occurs at all

levels and is not restricted to those with designated leadership responsibilities. Distributed leadership is consistent with principles of decentralisation, integral to development of South Africa's DHS and made this made the framework particularly relevant to this study (Department of Health, 1997). Furthermore, the framework helpfully includes tools to support its use for self-assessment and 360$^{o}$ feedback and to integrate competencies into curricula and learning experiences (NHS Leadership Academy, 2011)

### 2.4.6  South African management competency frameworks

Although South Africa has not developed competency frameworks for district pharmacists, several frameworks with a management focus have been developed in the country, and as management was one of the central roles of district pharmacists identified from the literature review I interrogated them for relevance to this study (Table 2.7).

**Table 2.7: Selected South African health management competency frameworks**

| Framework | Author | Date | No. of competencies | Competencies |
|---|---|---|---|---|
| Middle management competency framework | Department of Public Service & Administration | ? | 14 | Applied strategic thinking<br>Applied technology<br>Budgeting & financial management<br>Communication & information management<br>Continuous improvement<br>Customer focus & responsiveness<br>Developing others<br>Diversity management<br>Impact & influence<br>Networking & building bonds<br>Planning & organising<br>Problem solving & decision making<br>Project management<br>Team leadership |
| Managerial competencies of hospital managers in South Africa | R Pillay | 2008 | 7 | Specific healthcare skills<br>Planning<br>Organising<br>Leading<br>Controlling<br>Legal & ethical<br>Self management |
| Generic framework for medical professionals | Unpublished | | 5 | Knowledge, experience & qualifications<br>Professional competence<br>Personal competencies<br>Public Service Orientation<br>Management |

| | | | | |
|---|---|---|---|---|
| District Managers | Haynes et al. (DOH/HST) | 2008 | 14 | CORE<br>People management & empowering environment<br>Self-management<br>Honesty & integrity<br>Client orientation & customer focus<br>Communication<br>MANAGEMENT<br>Financial management<br>Resource management & allocation<br>Problem solving & analysis<br>Programme & project management<br>Community/partnership collaboration<br>Knowledge management<br>LEADERSHIP<br>Strategic leadership<br>Change management<br>Service delivery innovation |
| Senior managers (health) | DOH | 2010 | 11 | Strategic capability & leadership<br>Programme & project management<br>Financial management<br>Change management<br>Knowledge management<br>Service delivery innovation<br>Problem solving & analysis<br>People management & empowerment<br>Client orientation & customer focus<br>Communication<br>Honesty & integrity |
| Sub-district managers | Moyo et al., 2013 (DOH/HST) | 2013 | 6 | Advanced management skills<br>Advanced leadership skills<br>Controlling (Resource and Process management)<br>Management & use of health information<br>Knowledge of health and public health issues<br>Knowledge of epidemiology and biostatistics |

The first listed is the Middle management competency framework which was developed sometime ago by the South African Public Service and Administration for all mangers employed in the public sector at salary levels 11 and 12. Sub-structure pharmacists in this study were appointed at level 12, and in other provinces in the country district pharmacists and sub-district pharmacists have been appointed at levels 10 and 11. It contains 14 generic management competencies relevant to positions where management is the primary or partial focus of the job (Republic of South Africa, 2003). The second, developed by Rubin Pillay (2008) is Managerial competencies of hospital managers, key members of a well-functioning health system and, in addition to traditional management competencies, it includes specific

healthcare skills, legal and ethical competencies and self management. The third is an unpublished framework, under development at the time of the study, which contained five competences encompassing elements of the previous two frameworks (Unknown, 2008).

Over the last few years increasing concerns about poor management within the country's health system have surfaced and prompted the national Department of Health to commission work in this area. Near the completion of this project the District Management Study was published which included a competency framework for district managers (Haynes et al., 2008). This framework is particularly relevant to this study as it relates to managers working at similar levels within the district health system as district pharmacists was interrogated critically in identifying the list of competencies for district and sub-district pharmacists. Subsequently in 2010, during the thesis write up, a competency framework for senior health managers was developed as part of a country-wide assessment and this was followed later on by the development of a framework for public health and general management competencies for sub-district managers (Gilson and Daire, 2011, Moyo et al., 2013). Whilst there are considerable similarities between the competency frameworks developed for senior managers and district managers, the one for sub-district managers is considerably different. This is possibly due to its specific focus on public health and general management competencies.

In conclusion, the plethora of competency frameworks is overwhelming and some may question the value of developing yet another competency framework. However, as health priorities change and health reforms are introduced, the importance of re-defining the roles of health workers and ensuring they have the competencies required to perform optimally and improve health outcomes has been highlighted from the 1980s through to the current day (WHO, 1985a, Frenk et al., 2010, WHO, 2006).

Recent national initiatives have developed competency frameworks, and some training and support, for managers at various levels of the DHS in the country (Gilson and Daire, 2011, Haynes et al., 2008, Moyo et al., 2013). This commitment signifies the importance placed on having qualified health managers to deliver quality health services. As medicines are an essential part of the DHS, and increasingly important in this era of HIV/AIDS and chronic non-communicable diseases, the relevance of looking at district and sub-district pharmacists,

and similar cadres such as sub-structure pharmacists in Cape Town, usually entrusted with managing medicines at these levels, is opportune.

## 2.5 Summary

This chapter has outlined how pharmacists' roles around the globe have been changing over the years in response to developments in technology, reforming health systems and imperatives to balance an increasing disease burden with workforce shortages and cost-efficiencies. It discussed the emergence of district pharmacists in SSA, and specifically South Africa, as the result of a re-orientation of the health system towards a PHC approach implemented through the DHS. The challenges of establishing district and sub-district pharmacists, in the country were examined, and the importance of identifying their roles and functions and related competencies within an emerging district health system was discussed. The competency approach was critiqued and relevant competency frameworks for pharmacists working in management positions were discussed.

# Chapter 3:    Research design and methodology

## 3.1  Introduction

In this chapter I describe the aims and evolution of the research. This is followed by the main methodological influences of the study, participatory action research (PAR) and case studies, and a discussion on how I applied these approaches and dealt with issues and dilemmas, including the research techniques and aspects relating to the quality of the research and ethical considerations. Finally, I outline how I will present the research.

## 3.2  Aims and evolution of the research

The aims of the research were to explore the contribution of sub-structure and sub-district pharmacists to health system development and how to support them, by considering their roles and related competencies in the South African health system and piloting an intervention to enhance their competencies.

I chose a PAR approach, involving pharmacists and managers working in the two primary health care (PHC) organisations in Cape Town. The research was carried out between March 2008 and November 2011. I originally envisaged the research in two defined phases and expected that it would proceed sequentially with equal weight apportioned to the phases. In the first phase we planned to identify current and future roles of sub-structure and sub-district pharmacists and then use these as the basis for identifying related competencies (Whiddett and Hollyforde, 2003). The second phase comprised an intervention to enhance competencies. As the research unfolded the unique circumstances of the research context, and the emergent nature of the research approach, evoked adjustments to the scope and outcomes of the project (Reason, 2006, Winter, 1998).

Phase one progressed more slowly than anticipated primarily due to the involvement of pharmacists and health managers in the restructuring processes of Cape Town health services that occurred during the second year of the project. However, this situation provided valuable opportunities to engage with the four sub-structure pharmacists and their directors to reflect on the identified roles and competencies in the light of their experiences one and two years

after taking up their new appointments in Metro District Health Services (MDHS). At the same time, the extended period facilitated two engagements with managers and pharmacists at City Health to investigate the situation concerning sub-district pharmacists in the organisation. These initiatives generated deep insights and understanding of the development of sub-structure and sub-district pharmacists in the two organisations undergoing structural changes which significantly enhanced the research findings and endorsed the responsiveness and flexibility of the PAR approach (Dick et al., 2009, Waterman et al., 2001).

When the time came for the research to move into the second phase, the pharmacists and health managers were engrossed in the establishment of the new structures and were not enthusiastic about participating in a major intervention, even though they acknowledged there were competency gaps. I recognised the importance of listening to the health services participants and re-negotiating plans so, after discussions, we agreed on a smaller intervention that would be beneficial to them (Cornwall, 1996).

As a result, after an Initiation stage, the research developed into a series of five iterative cycles of action and reflection each providing increasing understanding of the roles and related competencies of sub-structure and sub-district pharmacists in the evolving health system in Cape Town. Figure 3.1 provides a schematic representation of the research, and details of the research activities carried out during the cycles are shown in Table 3.1 following that.
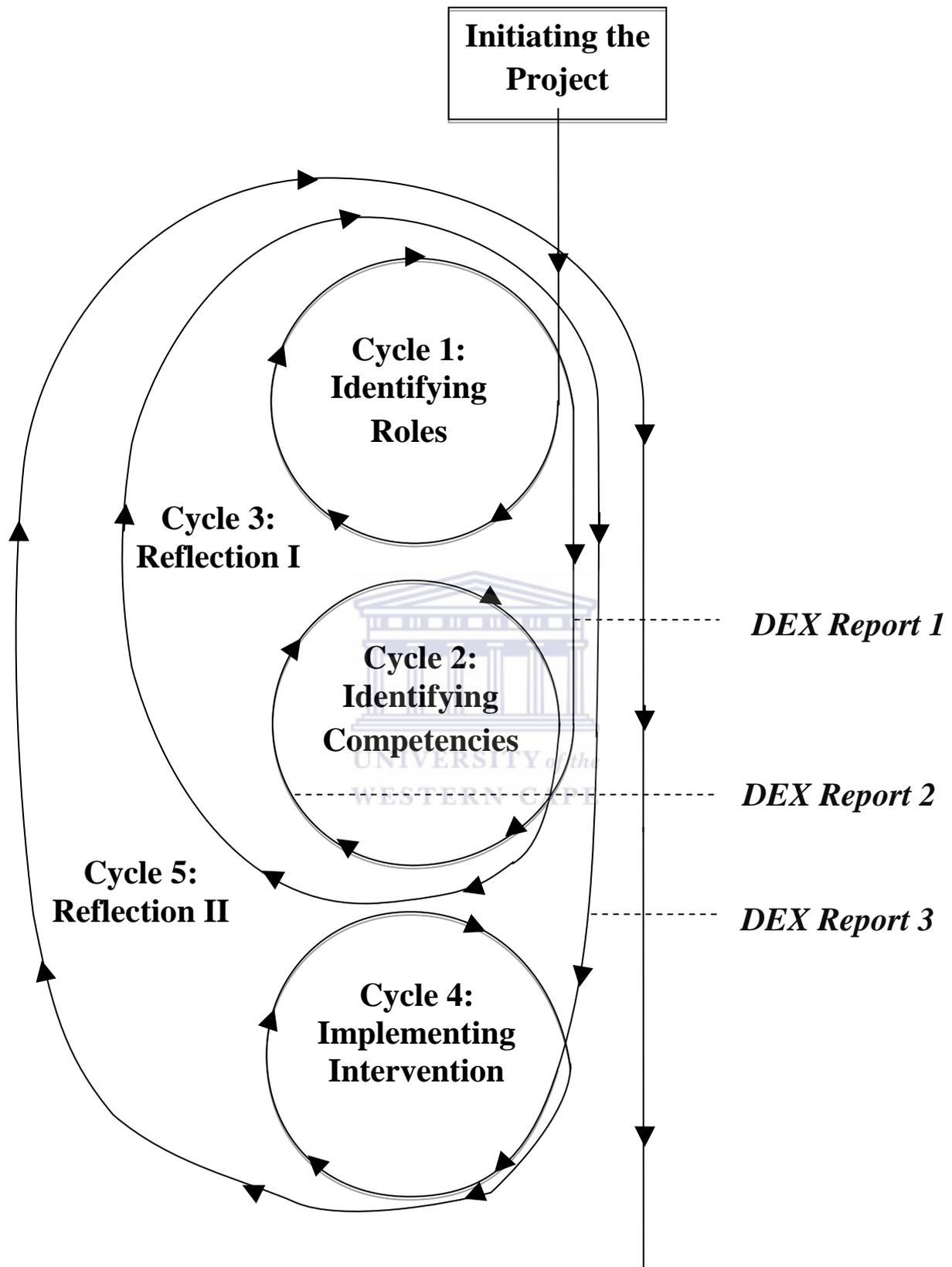
**Figure 3.1: Schematic representation of cycles of research project**

**Table 3.1: Project Cycles showing research objectives and activities**

| Stage | Objectives | Research activities |
|---|---|---|
| **Initiating the project**<br><br>*Aug 2007 - Feb 2008* | Initiating the project | Requesting assistance<br>Negotiation<br>Planning & Workshop 1<br>Implementing |
| **Cycle 1**<br><br>*Mar – Nov 2008* | Identifying roles of sub-structure and sub-district pharmacists | 1 Key informant interviews<br>2 Workshop 2<br>3 Additional interviews<br>4 Sub-group meeting |
| **Cycle 2**<br><br>*Nov 2008 – Oct 2009* | Identifying competencies of sub-structure and sub-district pharmacists | 1 Workshop 3<br>2 Reviewing literature<br>3 Presentation at local conferences<br>4 Refining competencies<br>5 Presentation at FIP Congress<br>6 Workshop 4 |
| **Cycle 3**<br><br>*June 2010* | Reflection I on roles and competencies of sub-structure and sub-district pharmacists | 1 Interviews with pharmacists<br>2 Refining roles and competencies |
| **Cycle 4**<br><br>*June 2010 - June 2011* | Implementing an intervention to enhance competencies | 1 Negotiation (Focus Group)<br>2 Planning<br>3 Intervention workshop 1<br>4 Intervention workshop 2<br>5 Intervention workshop 3 |
| **Cycle 5**<br><br>*Aug – Sep 2011* | Reflection II on roles and competencies of sub-structure and sub-district pharmacists | 1 Interviews with MDHS pharmacists and directors<br>2 Interviews with City Health pharmacists and managers |

## 3.3 Methodological orientation and influences

In this section I discuss this project's major research influences and their relevance to developing knowledge and understanding of new roles and practices in health care and to this project. The first influence was PAR, a dynamic, circular and evolving research process, which is increasingly used in a wide range of healthcare settings in both Western and developing countries (Baum et al., 2006, Meyer et al., 2000). It has been found to be useful in innovation, improving healthcare and developing knowledge and understanding in practitioners of new roles and practices, including new pharmacist roles (Iles and Sutherland,

2001, Tanna et al., 2005, Waterman et al., 2001). Several researchers have advocated support for PAR as a complementary methodology to other research approaches used in the health services, with some indicating that PAR may fill the theory-practice gap in healthcare (Meyer et al., 2000). More recently, increasing interest in applying systems thinking to health systems has resulted in suggestions of the applicability of PAR to the growing field of Health Policy and Systems Research (HPSR) (Gilson, 2012, Swanson et al., 2012). Although there are not many examples of published research, evidence that the PAR approach is being taken seriously as an approach was the inclusion of two sessions on PAR at the first Global Symposium of Health Systems in Montreux in 2010, in which presenters from around the globe shared their experiences using PAR approaches in health systems research (Loewenson et al., 2011). This was followed by further sessions on PAR at the second Health Systems Conference in Beijing in 2012.

The second methodological influence was case study methodology which has been used for some time in health services research. It provides useful ways of understanding complex systems in a state of flux and was a suitable way to present this research, given the complexities of Cape Town health services (Yin, 1999).

### 3.3.1 Participatory Action Research

PAR is part of the broader action research *family of approaches* that include action (or change) and research (or understanding) (Reason and Bradbury, 2008). It differs from established quantitative deductive research or qualitative interpretive approaches by focusing on *"engaging people in dealing with issues in their lives"* (Greenwood and Levin, 1999, Reason, 2006). This characteristic is based on the 'moral dimension' of AR and relates to AR's focus on 'improvement', either in society or healthcare, whereas most conventional research typically focuses on 'acquiring knowledge' (Reason, 2006, Waterman et al., 2007). In Meyer's (2001: 173) words *"Essentially action research is concerned with generating knowledge about a social system, while, at the same time, attempting to change it".* Dick and others (2009) claim that for most action researchers the primary purpose of AR is the service of their participants resonate with Waterman and others (2001) and Robson's (2011) notion of action researchers in healthcare. It is something I identified with, as the practical value of

the research findings to the Cape Town PHC organisations was as important to me as submitting the doctoral thesis.

Kemmis and McTaggart (2003) point out the term PAR is contested with, in their view, most of the approaches falling within action research and the remainder included in the overlapping participatory research. They include themselves with other researchers who have expressed favour for the term 'collaborative action research' (Kemmis and McTaggart, 2003). Hughes (2008), writing about action research in healthcare, suggests a classification that distinguishes between action research, participatory research and participatory action research, illustrated in the diagram below (Figure 3.2) (Hughes, 2008). He classifies PAR as including *"three elements: systematic inquiry, a professional practice intervention and participation in decision making by key stakeholders"* (Hughes, 2008: 385).
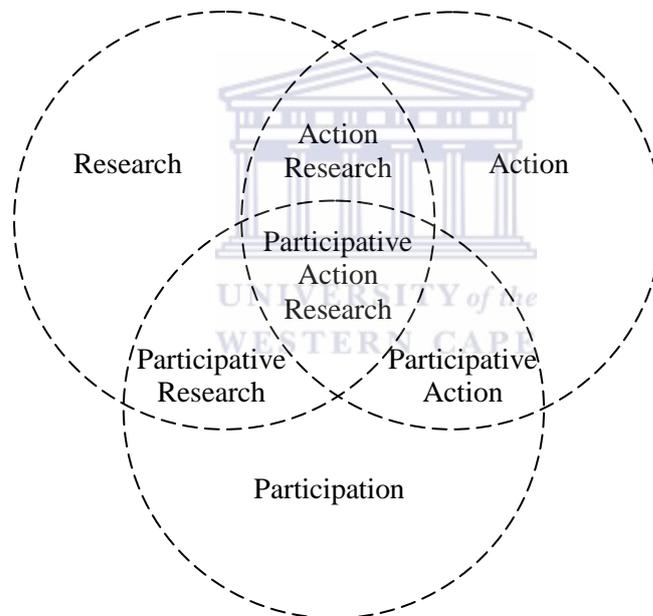


**Figure 3.2: Relationship between participation, action and research (Hughes, 2008)**

Reason and Bradbury (2008) questioned the need for strict delineation and take a more inclusive view seeing action research as a *"family of approaches where different needs and interests will pull practitioners and participants in different ways"* (Reason and Bradbury, 2008: 698). I have chosen the term PAR because this research draws on a variety of PAR approaches and traditions and comprises features typifying the PAR approach.

Whilst there is no one accepted definition of PAR, researchers have identified a number of characteristics which include participation, the cyclical process, the emergent nature of the engagement and the use of reflection (Reason and Bradbury, 2008).

Participation is a fundamental characteristic of PAR, with some researchers linking the participative nature of PAR with the democratic process (Greenwood and Levin, 1999), (Reason, 2006). Fals Borda and Rahman (1991 as cited in De Koning and Martin, 1996) maintain that people have a right to contribute to decisions that affect them and to knowledge about them. Their work in participatory research, which had its roots in liberation theology and the neo-Marxist approach to community development in developing countries, emphasised empowerment (De Koning and Martin, 1996). Shared goals, commitment of the researchers and participants and an orientation towards action at organisational levels were important features integral to this study (Herr and Anderson, 2005, Kemmis and McTaggart, 2003, Waterman et al., 2001).

Participation in PAR can occur at any or every stage of the research from setting the agenda, clarifying the research focus, undertaking fieldwork and analysing findings, through to managing the research, advocacy and using the results (Laws et al., 2003, Reason, 2006). Typologies on the degree of participation or involvement, developed mainly from work on engagements with communities or partnerships, was schematised as a 'ladder of participation' by Arnstein, describing a continuum of increasing stakeholder involvement, and later a 'wheel of participation' by Davidson in recognition of the legitimacy of different degrees of engagement (Reed, 2008). Whilst some researchers have advocated strongly that authentic PAR means participation by researchers and participants in all stages, especially at the initiation stage, others including Reason (2006), adopted a more pragmatic stance by saying participation should be in areas most relevant to the research project (Bless and Higson-Smith, 2004, Cornwall and Jewkes, 1995, Reason, 2006).

In this research there was a high level of participation. The idea for the research emerged from conversations with a health services manager and pharmacists, and after developing a proposal, it was approved by the DEX Committee which comprised senior managers from the two PHC organisations in Cape Town. The next step of clarifying and agreeing on the research goals, methodologies and timelines took place at the first workshop with participants

from both PHC organisations. At this workshop we agreed that the number and length of the workshops for the first phase should be limited to three half-day workshops, so as to obtain the maximum involvement of a wide range of stakeholders. This is in line with Laws and others (2003) suggestion that factors to take into account in deciding on the level and type of participation are complex and should include: wishes of the participants, existing relationships, time available, and skills in working with the participants or community members. Most of the data gathering, analysis and interpretation occurred at these participatory workshops, and I documented the processes and outcomes which were then sent to the participants for verification.

Another consideration, related to participation, is the positionality of the researcher in the research. Herr and Anderson (2005) described a continuum of six positions from insider to outsider in the setting. The middle two positions reciprocal collaboration (insider-outsider teams) and outsider(s) in collaboration with insider(s) represent PAR, with the former being most closely aligned to what is viewed by some as the ideal (Herr and Anderson, 2005). In this study I considered my position to be an 'outsider in collaboration with insiders' as I was a researcher from an academic institution partnering with pharmacists and managers employed in two PHC organisations. Cornwall talks of a 'continuum of purpose' with the ideal being 'co-learning'. She says that for true reciprocity to be achieved each stakeholder must negotiate carefully what they want out of the research (Cornwall, 1996). In this research we established goals and the research approach during the initiation phase of the research and re-negotiated during the course of the project. Some authors point out that during the research process itself positions may change and, although positions in terms of insider-outside remained the same, there were structural and organisational changes within the two PHC organisations which influenced the project (Herr and Anderson, 2005).

Other issues of positionality identified relate to hierarchical positions within the organisation and the dominance of groups, race, religion or age (Herr and Anderson, 2005). In general these issues were not problematic in this study as the majority of the participants from the health services were at middle-manager level and were comfortable interacting with each other and me. However, at one workshop the views of one senior manager on the identification of sub-district pharmacists' roles took precedence over those of several pharmacists present. An aspect raised by one pharmacist during the third workshop was the

timing of workshops which coincided with Friday prayers at the mosque, and subsequent workshops were planned for a different day of the week.

As already mentioned the idea for this research originated from conversations with the Director of one of the PHC organisations and discussions with pharmacists from the other organisation, and subsequently shared goals and time-lines for the project were developed with both organisations. Reinharz (1993 in De Koning & Martin, 1996) identified two qualities required for co-operative and trusting relationships to be established in PAR. They include research aims of interest to the researched and researcher and secondly, the outcomes of the research should be relevant to the needs of all involved (De Koning and Martin, 1996). Reinharz went on to say that *"one's trustworthiness is not confined to what one says but also how one acts and who one is"* (Reinharz, 1983:177 in De Koning and Martin, 1996:85). Others highlight the extended periods of time and high levels of commitment required to build high levels of trust and engagement between stakeholders (Herr and Anderson, 2005).

Several factors contributed to the development of trust in this project, including previous experiences and professional collegiality (Calnan and Rowe, 2006). I had worked with the two providers of PHC services, City of Cape Town and MDHS, in joint health research projects with the School of Public Health (SOPH) during the four years prior to commencing this project, and as a registered pharmacist, I personally knew some of the participants through involvement in the professional pharmacy organisation, Pharmaceutical Society of South Africa. Other researchers have emphasised the importance of prior relationships and familiarity of research context as important in PAR (Khresheh and Barclay, 2007).

Maintaining partnerships in PAR over protracted periods is challenging (Waterman et al., 2001). This was certainly the case in this project which extended over four years and in which MDHS was re-structuring and sub-structure pharmacists were appointed mid-way into the research; and in the City Health new service delivery challenges for sub-district pharmacists were emerging.  I communicated regularly with the two senior pharmacists through face to face meetings, augmented with telephonic and email communication, and we discussed issues concerning the research process together. They provided detailed insights into the changing context of the health services and assisted with logistical arrangements for the workshops, which were mostly held in the health department premises.

I was aware of some of the issues concerning the time and availability of health services participants at the beginning of the research; so in discussion with the two senior pharmacists after the introductory workshop, we decided to focus the main engagement and consensus building around a limited number of half-day workshops (three were held) to which pharmacists and health managers were invited.  In general this worked well and, although not ideal, if critical stakeholders were unable to attend workshops I arranged interviews with them instead. Smaller sub-groups of pharmacists met in-person or communicated electronically to carry out additional tasks between the main workshops.

Coghlan and Casey (2001 as cited in Waterman et al. 2001) assert that 'performing' and 'backstaging' are important aspects for securing and maintaining participation. Performing is where the action researcher plays the formal role in organising meetings, and backstaging is the work done behind the scenes to encourage attendance and commitment. In addition to my role in performing I found backstaging was important throughout the study but especially during the intervention phase of the study, when participants' energy and enthusiasm seemed to be waning. In the first phase of the study I backstaged with the two senior pharmacists in each organisation, and they played useful roles in facilitating the involvement of pharmacists and health managers in the study. During the second phase, in which the intervention was carried out, one of the newly appointed sub-structure pharmacists fulfilled this role, as she was accessible and interested in developing the intervention and was in touch with the situation in the health services.

Another typical feature of PAR is the cyclical process where cycles of activities form a spiral of continuous and overlapping cycles of self-reflection (Adam et al., 2011), Each action research cycle may either consist of small scale interventions or changes in understanding, beliefs, values or behaviours (Waterman et al., 2001). Gummesson (1991 as cited in Dick et al., 2009) calls them "hermeneutic spirals" where each turn of the spiral builds on understanding of the previous turn.

The process, however, is not always neat, discrete spirals, as stages frequently overlap and plans become obsolete (Kemmis and McTaggart, 2000). In this research the cyclical process contributed to deepening understanding of the contribution of sub-structure and sub-district pharmacists to health system development through exploring their roles and related

competencies in the two PHC organisations in Cape Town. It links to the work of Argyris and others who emphasise the study of practice in organisational settings as a source of new understandings and improved practice and to whole systems approaches to health systems strengthening more recently promoted by several authors involved in HPSR (Argyris et al., 1985, Gilson, 2012, Swanson et al., 2012). The 'messy' nature of PAR highlighted by Kemmis and McTaggart (2000) resonated with this study, which set out to achieve its aims and objectives in two neat phases but was modified in response to opportunities and challenges posed by the setting and the wishes of the health services partners.

The 'messiness' of PAR exemplifies another central feature of PAR - its emergent process of engagement.  Reason (2006) maintains that good PAR evolves over time, and because PAR starts with situational knowledge the process of inquiry is as important as the specific outcomes:

*"Good (P)AR emergences over time in an evolutionary and developmental process, as individuals learn skills of inquiry, as communities of inquiry develop, as understanding of the issues deepens, and as practice grows and shifts change over time"* (Reason, 2006: 197)

Emergence signifies that during the research there may be changes in the questions, relationships and purposes of the research. Winter (1998) argues that the generation of knowledge by participants in the context of an inquiry inevitably leads to a change of focus and scope of the inquiry (Winter, 1998). In this way PAR does not have a strictly prescribed research design and methodology, but is characterised by an evolving research process (Reason, 2006). This evolutionary process of inquiry emerging out of a period of collaborative engagement is suited to complex situations, environments in transition or where there is a desire for change (Gilson, 2012).

This characteristic made PAR particularly appropriate for this research in which the health services were re-structuring into the district health system model and new sub-structure-level teams with sub-structure pharmacists were being established. It provided the opportunity to respond to the slower pace of process in phase one by expanding this part of the study to include more in-depth information on sub-structure and sub-district pharmacists roles and competencies through reflective interviews and focus groups I conducted with sub-structure pharmacists and directors in MDHS after they had commenced in their new positions. In

addition, the extended engagement on this phase allowed me to carry out additional interviews with sub-district managers and sub-district pharmacists in City Health. These interviews and focus groups provided rich information and contributed to a greater understanding of sub-structure and sub-district pharmacists' roles and related competencies and their development in the DHS than had been originally envisaged. In a similar way, the emergent process contributed to decisions on the nature and timing of the intervention implemented to develop pharmacists' competencies.

Reflection and reflexivity (self-reflection) are integral parts of the action research cycle and were important in this research study (Kemmis and McTaggart, 2003). Reflection has been defined as *"an exploration of experience to lead to a new understanding"* and *"(making) meaning of the situation in ways that enhance understanding"* (Boud et al., 1985, Loughran, 2002). It places an emphasis on learning through questioning and investigation that leads to the development of understanding (Smyth 1992 as cited in Loughran 2002). Schon (1983) introduced the concept of the reflective practitioner as one who uses reflection as a tool for revisiting experience both to learn from it, and for *"the framing of murky, complex problems of professional practice".*

The approach is widely used in professional practice development in education and health care, including pharmacy, where the reflection and reflective practice are increasingly included as attributes of competent practitioners, and are seen as assisting professionals in complex and changing health systems where they continually need to update skills and solve complex problems (Mann et al., 2009, Waterman et al., 2001). Some researchers have noted that reflective practice is triggered by a particular need or disruption to usual practice and others have reported it being valuable in complex situations (Mann et al., 2009). As such, I felt that reflective practice would contribute to learning about the roles and competencies of sub-structure and sub-district pharmacists and their development within the emerging DHS in Cape Town. I facilitated this by giving pharmacists and managers the opportunity to reflect on the professional practice of district and sub-district pharmacists at several stages during the research process.

Two major dimensions of reflection have been identified: iterative and vertical, and both concepts have value and were used in this study. In the iterative dimension the process of

reflection is triggered by experience which produces new understanding and the potential to act differently in response to future experience (Boud et al., 1985, Schon, 1983). The vertical dimension includes different levels of reflection on experience, with surface level reflection being more descriptive and deeper levels of reflection being more analytical and critical (Mann et al., 2009).

Reflexivity or self-reflection is the recognition of my own presence in the study and the interplay between me as the researcher, the research context and the data. McNiff and Whitehead (2010) write of the importance of demonstrating critical engagement with our own thinking at every stage of the research, and in addition to reflexive critique, mention dialectical critique, an awareness of historical, political and cultural forces that have led to one's current situation and the way one thinks, as well as engaging with the thinking of others on the topic, such as in the literature (McNiff and Whitehead, 2010). In this research I reflected critically on my own role and position in this project, as well as previous experiences as a pharmacist, my background from the UK and ways of thinking that influenced the research (McNiff and Whitehead, 2010).

### 3.3.2 Case studies

A second methodological influence was the case study approach which has been used for some time in health services research, and is a useful way to understand complex systems in a state of flux (Gilson et al., 2011, Yin, 1999). A feature of case studies is that they explicitly include context, and in this way researchers retain holistic and meaningful characteristics of real-life events whilst trying to understand their complexities (Yin, 2003). Case studies facilitate interrogation of contextual factors and relationships among individuals and how they change over time and this is particularly useful in health systems research (Gilson et al., 2011). This PAR project was conducted in Cape Town PHC services and was written up as a case study in which descriptions of the dynamic organisational environment and interactions between stakeholders were considered critical to the research.

Over the years many established researchers have expressed their reservations on the methodological value of case studies, some strongly, but later altered their views to become proponents. They include Donald Campbell, Hans Eysenck, Charles Ragin, Howard Becker

among others (Flyvbjerg, 2006). Eysenck, who at one time regarded the case study as nothing more than producing anecdotes, later said that *"sometimes we simply have to keep our eyes open and look carefully at individual cases – not in the hope of proving anything, but rather in the hope of learning something"* (Flvbjerk, 2006: 224)

Case studies share several of the criticisms of action research: lack of rigour, provide little basis for generalisation, take a long time, and result in massive documents (Yin, 2003). Gilson (2012: 162) says that *"rigour in case study work is secured by fully reporting on the methods of data collection and analysis so that the reader can assess whether the analysis and interpretation is credible"*. Some of the strategies put forward by Yin and others in mitigation of these criticisms are similarly applicable to PAR, and have influenced the methodological choices I made carrying out this research. They suggest several tactics for assuring quality: using multiple sources of evidence, establishing a chain of evidence, addressing rival explanations and using a study protocol (Flyvbjerg, 2006, Gilson, 2012, Gilson et al., 2011, Yin, 1999). Regarding generalisation they point out that the goal of case studies is not to generalise but to gain an in-depth understanding of a particular situation. Whilst they warn against losing the rich depth of information gained from case studies, they say it is possible to set realistic limits on the time and the volume of documentation collected and analysed to provide meaningful information (Flyvbjerg, 2004, Yin, 2003, Flyvbjerg, 2006). I have described how I ensured trustworthiness in this research in section 3.6.

## 3.4 Collecting the data

Although quantitative and qualitative methods are used in action research, in general qualitative methods are more widely used, particularly in action research with a strong participatory focus as is the case here. In this research a number of data gathering methods were used. They include participative and qualitative methods and reflect the collaborative and iterative research process. As discussed previously, the variety of data collection processes used in PAR, as in case studies, contributes to the quality of the study (Meyer, 2006, Stake, 2003). Data collection techniques used in this study included:

- Interactive workshops
- Individual interviews
- Focus group discussions

- Review of health policy documents
- Field notes and journal

## 3.4.1 Interactive Workshops

Interactive workshops attended by pharmacists and health managers were the major source of generating data. It was envisaged that having pharmacists and managers present would increase opportunities for joint understanding and learning which would be beneficial both for this research process and for future working relationships. My main role at the workshops was as a facilitator. After giving time for participants to contribute and discuss from their own perspectives, at times, I added information from my literature search and personal experience. A research assistant supported me with note taking and practical logistics.

After an initial workshop to clarify goals, two series of three workshops were conducted, with each workshop lasting about three hours. The first series of workshops focused on identifying the roles and related competencies of sub-structure and sub-district pharmacists and the second series of three workshops on the implementing the intervention. The initial workshop and first series of workshops took place in a central venue at premises of the health department in Cape Town and was purposely selected to maximise attendance. During these workshops I considered it important to cultivate ownership of the project by holding the workshops in a venue in a health department building which was arranged by the health services partners. The venue selected was centrally situated in Cape Town and familiar and convenient for participants from both health departments. Both pharmacists and managers from both PHC organisations attended these first four workshops and attendance ranged between 9 and 17 participants.

The second series of workshops to implement the intervention were held at the SOPH at the UWC because by this time the health services participants were firmly on board, and due to the splitting of MDHS into four sub-structures, the central location previously used was no more convenient than the university. In addition, as there were many demands on their time it was felt that conducting the workshops away from their work environment would enable them to focus more constructively on the workshops. In contrast to the first series, these workshops only involved pharmacists. Although this was not the original intention, and

contrasted with the overall collaborative research approach, the ongoing structural changes happening in the organisations made it more difficult for managers to attend. It was decided to pilot the intervention at one site in each sub-structure and each sub-structure was represented by their sub-structure pharmacist and a facility pharmacy manager or a sub-district pharmacists. These workshops were attended by six, eight and eight pharmacists from the two organisations, in addition to me and a research assistant.

The information generated at these interactive workshops was recorded on newsprint, which was subsequently transcribed into a word document and diagrammatic representations were photographed. A research assistant recorded verbal interactions and observations on a laptop computer and I subsequently expanded the notes to add in my observations and reflections. A summary of the workshop proceedings and outcomes was sent to all present for checking and then circulated to all key stakeholders. This was a seen as a means of updating stakeholders, even those not present at the workshop, on the progress of the project.

## 3.4.2 Individual interviews

Interviews are one of the most frequently used methods of gathering data in qualitative research (Green and Thorogood, 2005). They range from structured interviews in which the interviewer follows a specified set of questions to informal interviews which are similar to normal conversations. The most common interview types are semi-structured or in-depth interviews which fall between these extremes. In these interviews the researcher sets the agenda regarding topics covered but allows the interviewee space to recount issues of importance to them (Green and Thorogood, 2005).

In action research it is particularly important that interviewing is philosophically congruent with the values and processes of action research, which includes cognisance of power differentials and respect between interviewer and interviewee. A limitation of interviews is that they provide information on what people 'say', rather than 'do' and they are time consuming (Green and Thorogood, 2005). In this study I conducted semi-structured interviews at a number of stages in the research process. In the early stages their major function was to gather data and in the latter stages they were used for reflections.

Face-to-face interviews took place mostly at participants' workplaces and were conducted in English, as all participants were health professionals, pharmacists, doctors or nurses who used English as their main medium of professional communication. Interview schedules were used to guide the interviews, which were audio-recorded, and this assisted in ensuring that key topics were covered during the interview, as well as providing opportunities for open-ended discussions (Liamputtong and Ezzy, 2005). Individual interviews provided participants with the opportunity to give the information and their perspective in a safe and contained environment (Liamputtong and Ezzy, 2005).

I carried out interviews at several stages during the research project. I conducted four during the preliminary phase when the research was being conceptualised. A total of 14 interviews were conducted during the first phase when roles and competencies were being identified. They were used to supplement and clarify information generated at the workshops. At one and two year intervals ten interviews with pharmacists and 11 interviews with managers were conducted to reflect on sub-structure and sub-district pharmacists unfolding experiences in the two evolving organisations.

I conducted more individual interviews than originally envisaged due to the time and availability constraints of participants, so that when key participants were not available to take part in workshops I arranged individual interviews with them. In addition I had expected to conduct focus groups discussions with pharmacists but later realised that, again, it was not always possible to get everyone together, so I organised individual interviews with pharmacists at their work sites. The fact they readily agreed to the interviews was illustrative of their willingness to contribute to the project, although not ideal.

I conducted and audio-recorded all the face-to-face interviews. Immediately after the interviews I made notes on the key areas raised at the interviews and my feelings of the interview engagement. The interviews were transcribed verbatim by a professional transcriber with knowledge of this field of work. I checked the transcripts and clarified any problems and if necessary re-listened to the audio-tape.

### 3.4.3  Focus group discussions

Focus groups are widely used as methods of gathering data in health settings (Green and Thorogood, 2005). Each focus group consists of between 6-12 people, usually with similar professional experiences or areas of concern, who are brought together to discuss a specific issue. A facilitator introduces the topic and moderates the discussion and a second person assists by operating an audio-recorder, taking notes and recording non-verbal responses. They typically last between one and two hours (Liamputtong and Ezzy, 2005).

The advantage of focus groups is that they allow a broad range of responses to a particular issue and facilitate synergistic interactions between group members that result in combined understanding of the group (Liamputtong and Ezzy, 2005). There are several limitations of focus groups including group dynamics, with dominance by particular group members, sometimes related to hierarchical status or conformity of responses (Liamputtong and Ezzy, 2005).

 In many ways focus groups are more congruent with participative methods than individual interviews as they facilitate exchange of ideas, and collaborative learning and reflection (Waterman et al., 2001). For this reason I planned to conduct several focus groups during the study but, as discussed above, I only completed two, one with the four sub-structure pharmacists and one with the four sub-district pharmacists; instead I conducted additional interviews. I facilitated the focus group discussions myself, which were audio-recorded, and the recordings were used to enhance notes taken during the focus groups.

### 3.4.4  Document collection

Documents are important sources of information in qualitative research, as they are generally easy and cheap to collect and are an unobtrusive way of gathering information (Hodder, 2000). I collected official health policy documents, health plans and reports on governance and the health system published by the South African government and the Provincial Government of the Western Cape (PGWC) post 1994. In addition to providing historical and contextual information which helped develop my understanding of the health setting, I used them to identify aspects which were likely to influence district pharmacist roles and

functions. Whilst I recognise that the documents *per se* were not written with the research project in mind they, nevertheless, provided valuable information for the project.

### 3.4.5  Field notes and journal

Clandinin and Connelly (2000) highlight the importance of keeping detailed field notes and journal entries as a means of recording existential and inner responses respectively in narrative inquiry, as they say *"memory tends to smooth out the details, leaving a kind of schematic landscape outline"*. I made notes of key conversations and observations that occurred with participants during formal data collection processes and at other times when we met during the research period. Sometimes these were planned conversations either face-to-face, by telephone or electronically, and at other times they were occasions we met during the course of other work or, in the case of pharmacists, through professional society meetings. These informal exchanges are central to PAR and were critical to the collaborative learning approach and to pacing the project. These notes were captured electronically and filed under the research cycles. In addition, I made journal entries of my personal reflections on situations, and I found the process of writing assisted in clarifying my understandings and helped me work out the next steps.
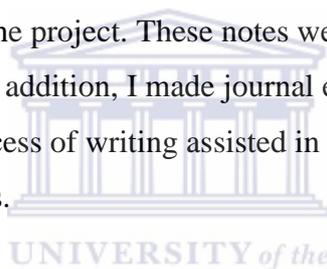
## 3.5  Managing, analysing, interpreting and reflecting on the data

In action research data management, analysis and interpretation is a complex process, as frequently large amounts of data are generated from a variety of sources over extended periods, a characteristic it shares with case studies (Yin, 2003). Flyvbjerk (2004) cautions against condensing data and instead emphasises the value of having rich descriptive information sources, whilst pointing out the importance of developing and maintaining an organised data collation system. In this research, data was collected from documents, workshop notes, transcripts, emails and journal notes over a period of four years. Apart from the policy documents which were filed separately, the remainder of the data was filed together in chronological order in the action cycles.

In PAR, data analysis is not undertaken solely by the researcher at the end of the data gathering, but interpretation takes place collaboratively during the action research process itself.  So, data collection and data analysis is an iterative process in which analysis occurs

even while data is still being collected (Winter, 1987). I analysed the transcriptions from the interviews and focus groups using thematic analysis, and contributed this information to the workshops, along with information from the documentary review and literature search. In this way all the information was brought into the participatory process providing opportunities for collaborative analysis and interpretation. These initial analyses, for example of roles of sub-structure pharmacists identified after Workshop 2, were circulated to stakeholders and became the basis for further reflections during subsequent workshops and interviews, which produced deeper understanding and clarification resulting in modifications to draft list of roles.

The integration of literature into data analysis and interpretation is a characteristic of action research, and Winter (1987) calls this process 'dialectical analysis', contemplating and reflecting on the data and placing it in a wider context. The iterative nature of the research gave rise to new areas of investigation which caused me to search for literature in new areas, such as, taking on new roles which became a line of inquiry that I had not considered at the beginning of the study (Herr and Anderson, 2005). Another contribution of literature, which Dick (1993 cited in Davis, 2007) suggests strengthens the confidence of the final outcomes, is the search for confirming and disconfirming evidence during analysis and interpretation, when tentative findings have been produced.

## 3.6 Quality in this research

A critical issue in PAR is quality, with some academics and practitioners labelling the approach as 'unscientific' and 'not research' and Reason (2006) stating that poor understanding of the approach has contributed to it being at the margins of academia (Waterman et al., 2001). When I submitted this study proposal to UWC for research and ethical approval, I was aware that most committee members would have a limited understanding of PAR, and I attempted to make the research design and methodological aspects as clear as possible, paying particular attention to explain how I planned to address the validity and rigour of the research.

In recent years a number of terms have been put forward to describe good action research including quality, validity, trustworthiness, authenticity and credibility (Marti and Villasante,

2009, Herr and Anderson, 2005). Whilst validity is the term preferred by positivists and trustworthiness by naturalistic researchers, several researchers have suggested that neither is suitable for action research as they do not account for the action and participative engagement (Herr and Anderson, 2005). Reason et al. (2001) and (2006) and Marti and Villasante (2009) favour the use of quality and this is the term I have chosen to use, as for me it encapsulates the broadness of the criteria required for PAR.

Action research uses both qualitative and quantitative methods, with the former being the more common and what I have used in this project. Despite the wide use of qualitative methods, the stance of the majority of action researchers is to acknowledge the distinction between qualitative research and action research, with several researchers emphasising the importance of measuring quality in action research against its own criteria (Marti and Villasante, 2009). Feldman (2007 as cited in Marti, et al., 2009) points out that a key difference is that, whereas the criteria for qualitative research focus on the final product of the research, AR criteria pay attention to the research process itself.

While several action researchers have proposed criteria for evaluating quality in action research, I will mention those relevant to my research (Herr and Anderson, 2005, Marti and Villasante, 2009). Herr and Anderson (2005) suggested five validity criteria each linked to the goals of action research: outcome validity (achievement of action-oriented outcomes), process validity (sound and appropriate research methodology), democratic validity (results relevant to local setting), catalytic validity (education of both researcher and participants), and dialogic validity (generation of new knowledge).

Reason (2006), in his article *Choice and Quality in Action Research*, introduced four dimensions of AR, which he says represent a wide range of criteria: pursuing worthwhile purposes, democracy and participation, many ways of knowing, and emergent development form. Whilst in many ways these resonate closely with the criteria identified by Herr and Anderson (2005), they add an emergent, evolutionary process.

In addition to these two research groups, two systematic reviews of action research in the health field provided helpful viewpoints on quality criteria. Waterman et al. (2001) developed 20 questions to assess the quality for action research proposals and reports in health from

their systematic review, with four questions relating to the defining characteristics of action research:

- Were the phases of the project clearly outlined?
- Were the participants and stakeholders clearly described and justified?
- Was consideration given to the local context while implementing change?
- Was the relationship between researchers and participants adequately considered?

Viswanathan and colleagues (2004) developed guidelines for quality of PAR in health for their systematic review of Community-Based Participatory Research. They assessed three broad areas: quality of research methods, quality of community involvement (participation), and whether projects achieved their intended outcomes. They made the critical point that few PAR research studies were rated highly for both participation and research quality (when measured using conventional research quality criteria).

As a consequence I applied criteria developed for PAR and several techniques commonly used in case studies and qualitative research to address quality in this study, including transparency, member checking, triangulation and self-reflexivity (Gilson et al., 2011, Green and Thorogood, 2005, Meyer, 2006, Yin, 1994).

Transparency, in qualitative research terms, includes maintaining a clear account of the procedures used in the study and establishing an audit trail (Green and Thorogood, 2005). These methods fit in well with action research as key features identified by action researchers are providing detailed descriptions of the research context and processes, including the choices made during the research. As Reason (2006) says researchers need to be aware of the choices open to them; to make these choices clear and transparent to themselves and to their inquiry partners; and, in writing and presenting, to articulate them to a wider audience. In this project I systematically described the phases of the project, together with a detailed description of the research context and the involvement of health services participants (Waterman et al, 2001, Viswanathan et al 2004). I established an audit trail by maintaining a research log of all activities, developing a data collection chronology, and recording all data analysis procedures which were organised into the action research cycles.

Member checking is a feature of action research, as findings are typically fed back to participants for verification and to inform decisions on the next stage of the study (Meyer, 2006). In this project a summary of workshop proceedings were sent to those who attended for verification, and after finalising they were circulated to the wider stakeholder group to keep them fully informed of the study. Although not many responded to the invitation, a few participants regularly provided feedback. I found these processes helpful as sometimes the workshop proceedings had not been clearly captured and it reinforced the collaborative and participatory aspects of the research.

Triangulation is another strategy common to qualitative research, case studies and action research (Gilson, 2012). In this research triangulation of methods and sources was used. Methods used included workshops, interviews, focus groups and documentary review. A key feature of this research was the involvement of a wide range of stakeholders, and particularly the engagement of pharmacists and managers, as this was expected to provide the widest range of perspectives. Additionally, the inclusion of participants working at a variety of levels in both health organisations increased the breadth of contributions.

Critical self-reflexivity, whereby the researcher acknowledges the perspectives with which they enter the research, articulates these biases and examines them critically throughout the research through journaling during the research process, is another approach used to ensure quality in PAR (Herr and Anderson, 2005). I commenced this thesis with an outline of my background and experience in pharmacy practice and health systems and reflected on its influence on this project (chapter one). During the research I kept a reflective journal and used this to engage critically with the research findings and research process and also during the writing-up of the thesis report (Lincoln and Guba, 1985).

## 3.7 Generalisability or transferability

Generalisability or transferability, sometimes known as external validity, may be considered in a number of ways in PAR. Although developed in the context of qualitative research, Stake's (1987, as in (Herr and Anderson, 2005) concept of naturalistic generalisation and Lincoln and Guba's (1985) notion of transferability, in which findings are not generalised but transferred from a sending context to a receiving context have relevance to this project.

Lincoln and Guba (1985) put the onus on the person *"seeking to make the transfer to accumulate empirical evidence about contextual similarity; the responsibility of the original investigator is to provide sufficient descriptive data to make such similarity judgments possible"* (Lincoln and Guba, 1985: 298).

I prefer the term transferable and argue that the findings of district pharmacists' roles and competencies are transferable to similar settings and, taking the cue from Lincoln and Guba (1985), I argue that the responsibility lies with the person making the claim to provide evidence for the claim. This, however, does not let me as the researcher off the hook as, Lincoln and Guba's (1985) caveat for the researcher's responsibility resonates with Reason (2006) who says that: *"quality in (P)AR will rest internally on our ability to see the choices we are making and understand their consequences; and externally on whether we articulate our standpoint and the choices we have made to a wider public"* (Reason, 2006: 190). For my part as the researcher I have attempted to construct a transparent and detailed descriptive report of the research process and context to facilitate decisions on transferability.

## 3.8  Ethical issues

In this section I outline key ethical issues in action research and discuss how they were handled in this study. Addressing ethical issues is important at all stages of the PAR process: planning, executing and reporting. In planning research it is important to try and minimise any risks to the research participants, but as action research is an emergent process it is difficult to know all the ethical issues that may arise during the research (Herr and Anderson, 2005). Cassell (1982 as cited in Herr and Anderson, 2005) points out that it is critical that action researchers are able to recognise ethical concerns and address them as they occur.

Ethical permission for the project was requested from the UWC Research Ethics Committee and from the two PHC organisations in Cape Town, MDHS and City Health. The UWC Research Ethics Committee has experience of action research, and obtaining ethical permission for the study was straightforward (Registration No. 8/1/10). Some researchers have reported difficulty in gaining ethical research approval for AR from university ethics committees, probably due to limited understanding of this type of research (Herr and

Anderson, 2005). This has led to some researchers suggesting the development of ethical guidelines appropriate to AR (Herr and Anderson, 2005).

The directors of the two PHC organisations suggested I present my request for permission to conduct the study to the DEX Meeting. The DEX Meeting comprises representatives of senior management from both organisations and meets monthly to discuss health delivery matters of mutual interest. I attended the DEX Meeting in February 2008 and was granted verbal permission. During 2010 I was asked to formalise the approval process for the research by City Health, as they were updating their research databases, and this project received approval before formal procedures were introduced by City Health and the Western Cape provincial department of health. This was essentially an administrative process of completing a research proposal form and attending a City Health Management Team committee meeting (ID No. 10226). No formal research approval procedures were instituted by MDHS.

The DEX Meeting requested regular feedback on the progress of the study, which I provided annually as a short written report and a verbal presentation by myself and the two senior pharmacists from MDHS and City Health. These processes of keeping stakeholders informed of how the research is evolving and the next steps envisaged is considered important in PAR research (Herr and Anderson, 2005). DEX Reports are included as appendices (Appendices 4, 5 and 6).

Renegotiating permission during action research is quite usual as the research process is not mapped out at the out-set, and during 2010 when the Intervention Phase was being planned, the newly appointed sub-structure pharmacists asked that I request permission from each of their directors for their involvement, and that of the chosen facilities and personnel in the intervention (Reason, 2006). Sub-structure pharmacists said they felt it was appropriate to re-negotiate permission within the new sub-structure framework and did not foresee any problems. Permission was readily granted by the four directors and proved beneficial to the project as it renewed awareness and support for the project.

Informed and voluntary consent is a key ethical issue and in PAR it is important that no-one feels coerced into participating in the project for any reason including being influenced by the participation of their manager. In this research all research participants were provided with an

information sheet about the project (Appendix 2) and signed a consent form (Appendix 3) before participation. One of the features of action research is its emergent nature, and it was explained to the participants that it was not possible to prescribe the precise details of the research process at the commencement (Reason, 2006). Individuals approached were given the opportunity not to participate in the study or withdraw at any time without any adverse effects. The only event of this nature occurred when one for the appointed sub-structure pharmacists said they did not want to be actively involved in the Intervention phase of the project; although they were comfortable remaining engaged in the project as a whole. It later transpired that the pharmacist was about to resign from the health department and commence a new job.

Some have stressed the need for an on-going dialogue between the researcher and participants and have proposed periodic reaffirmations of consent as useful in research projects such as this one that cover extended periods (Herr and Anderson, 2005, Waterman et al., 2001). However, the fact that one of the sub-structure pharmacists indicated he was not available to participate in the intervention phase, although he was subsequently interviewed as part of the follow-up, seemed to illustrate that this participant was comfortable with negotiating his involvement in the project.

It was explained that identities of participants would be not be disclosed but that I would refer to participants by their rank of employment by the organisation in which they are employed and codes have been assigned to quotations to protect identification. I made it clear that in PAR it is difficult to protect individuals as the research is based in one setting with a small number of individuals with specific roles (Stake, 2003). All participants indicated that they were comfortable with this arrangement and this was probably facilitated by their trust in me from previous research projects.

In view of the busy schedules of participants employed in the health services, it was decided that broad stakeholder engagement, considered to be a critical feature of this research study, would be best achieved by limiting the number and length of the workshops and holding them in a central venue. These were supplemented by smaller working groups and use of email and telephonic communication. At times when key participants were not available for the workshops, I conducted individual interviews at times and places suitable to them and

incorporated these inputs into the research process. Convening workshops and interventions at times suitable to health services participants, whilst being critical in PAR, meant that these events sometimes took place later than anticipated by the researcher (Dick et al., 2009, Waterman et al., 2001). The Intervention Phase was affected in this way and took place six months later than scheduled. Whilst these types of negotiations are usual in PAR, it caused me considerable frustration and delayed submission of my PhD thesis.

## 3.9 Reporting action research and structuring this thesis

Whilst I reported interim findings to the DEX Meeting at regular intervals, when it came to presenting the research as an academic manuscript I found it challenging to present the thesis in its traditional academic format of sequenced chapters: introduction, literature review, research design and methodology, results, discussion and conclusions. This was due to the collaborative and iterative nature of participatory action research project, being conducted in a health service setting that was transforming into district health structures, which did not lend itself to this linear structure

In PAR the data analysis and sense-making processes occur collaboratively throughout the research process, with some maintaining that the outcome of action research is not definitive answers, but rather provisional findings of on-going situations (Dick, 1993 as cited in Davis, 2007). These ideas seem to concur with Lindblom (1995, as cited in Herr and Anderson, 2005) who says that in the social sciences research *"often moves toward divergence rather than convergence"*, implying that findings should demonstrate a deepening of understanding (Herr and Anderson, 2005).

Another issue in presenting a PAR report was how much emphasis to place on the PAR process and how much on the 'findings'. As I considered this, I realised that it was important for me to present both the process and findings as clearly as possible. A detailed description of the PAR process, presented as a critical narrative with myself as the main actor, was important from the academic perspective as a demonstration of my understanding and use of the research approach. It also served to demonstrate methodological quality which is relevant to the health services organisations too, even though most will have a limited understanding of quality in PAR (McNiff and Whitehead, 2010). The 'findings', that is, the roles and related

competencies of district and sub-district pharmacists and their development in the emerging DHS, were the main interest from the health services standpoint, but the 'findings' were also important from the academic perspective to demonstrate the transformational and catalytic capacity of the research (McNiff and Whitehead, 2010).

As I struggled with shaping the thesis into a meaningful format, and it became increasingly obvious that I could not mould it into the conventional structure, I came across action researchers who have grappled with this problem. They acknowledged some of the difficulties of presenting action research dissertations and suggested alternative formats which guided me in choosing a suitable framework for my thesis (Davis, 2007, Davis, 2003). Elliott (1994, as cited in Davis, 2003) suggested that action research be presented as action cycles of narrative accounts, critiques, ending with questions and further possibilities. Lincoln (1998) proposes 'portrayal' as a better term than 'reportage' for describing action research as it permits the crafting of narratives *"which give outsiders a vicarious experience of the community, and which give insiders both a deeper understanding of themselves, and the power to act"* (Lincoln, 1998).

After considering other action researchers experiences I decided that the first three chapters of the thesis should follow the conventional thesis report format, introduction, literature review and methodology. After this, in order to reflect the iterative and reflexive nature in which understanding develops in PAR, I have followed with a chapter in which I present a critical narrative, analysis and interpretation of the research project as it unfolded. Next is a chapter which discusses the main findings of the research, and the thesis concludes with a chapter reflecting on using PAR as methodological approach in this project and its relevance to the emerging field of HPSR.

## 3.10 Summary

This chapter described the research design and methodological approach used in the project. It discussed the main characteristics of PAR - participation, cyclical process, use of reflection and the emergent nature of the engagement - and how they were applied in this research. This was followed by a description of the tools and techniques used in data collection, analysis, interpretation and reflection. Importantly, it explained how quality was addressed, and the

chapter concluded by discussing how ethical issues were handled and a justification for the reporting strategy.

# Chapter 4:    Cycles of action and reflection

## 4.1  Introduction

In this chapter I describe the participatory action research (PAR) project as it unfolded, commencing with the initiation stage. When the co-researchers were on board and the plans approved, the research evolved into a series of five action research cycles structured around workshops with broad stakeholder participation and smaller working groups, augmented with information from interviews, documentary and literature reviews and personal contributions. A schematic representation of the research project (Figure 3.1) is shown above, on page 73.

## 4.2   Initiating the project

In this first section I introduce the initiation stage of the research. Although PAR does not have a strict methodological framework, the steps taken to initiate this research were closely aligned to those proposed by several researchers (Bless and Higson-Smith, 2004, Cornwall and Jewkes, 1995). The initiation stage comprised four steps: request for assistance, negotiating with the primary health care (PHC) organisations, planning and finally, implementing the research. Although the initiation stage appears as a linear process, this was not the case, as iterations moved backwards and forwards not only during this stage but throughout the whole research project (Herr and Anderson, 2005, Waterman et al., 2001).

**Initiating the
Project**

**Aug 2007-Feb 2008**

Request for assistance

Negotiating with City Health and
MDHS

Planning: Workshop 1

Implementing the research
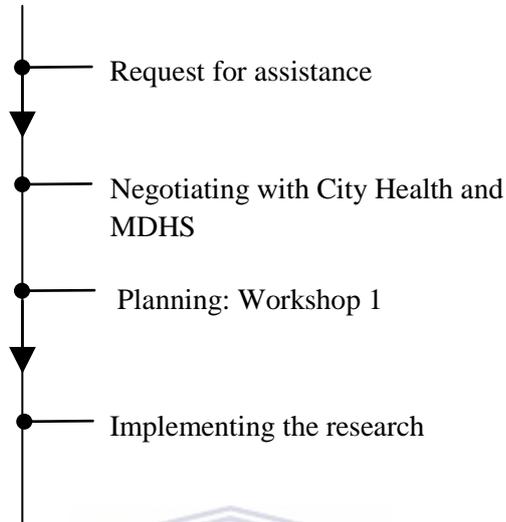
**Figure 4.1: Initiating the project**

## 4.2.1  Request for assistance by City Health Director

The idea for this research emerged from discussions between the former Executive Director
of City Health and me over a number of years about sub-district pharmacists employed by
City Health, and his request to investigate concerns about the support they were providing to
sub-district managers and clinics. I have already reflected on this and my own position in
initiating the research in Chapter one. The fact that the idea for the research project came
from the health services themselves is put forward by some as the authentic starting point for
PAR (Bless and Higson-Smith, 2004).

## 4.2.2  Negotiating with City Health and MDHS

Negotiating the setting up of the research with City Health and Metro District Health Services
(MDHS), the other PHC service provider in Cape Town, took about eight months and was
punctuated by two significant events, a key informant interview I conducted with an
international expert in medicines policy and attendance at the International Pharmacy

Federation (FIP) Congress in Beijing, China. First, I commence with negotiations with MDHS.

In addition to my on-going discussions with the Executive Director of City Health concerning sub-district pharmacists, I was in contact with pharmacists and managers employed by MDHS through a joint research project involving MDHS, the School of Public Health (SOPH) and Health Systems Trust (HST), to strengthen pharmaceutical information systems which commenced in 2003. Through this research I got to know the new project manager for pharmaceutical services at MDHS and became aware of the imminent re-structuring of MDHS into four sub-structures and the impending appointment of four sub-structure pharmacists[8]. These were new positions and job descriptions and key performance areas had not been defined. I felt these new positions provided important opportunities for pharmacists to play a meaningful part in delivering pharmaceutical services at primary-level. This led me to contemplate focusing my PhD research on roles and related competencies of pharmacists moving into management positions in the district health system (DHS) in Cape Town. I discussed these ideas with the project manager and other pharmacists in MDHS and they expressed interested.

As I was considering this topic for my PhD, an international expert in medicines policy visited the SOPH at the end of August 2007, and I took the opportunity to interview him about district pharmacists. He pointed me to research on the roles of district pharmacy managers in Zimbabwe in managing medicines supply and promoting rational medicines use, and affirmed that district pharmacists have an important function in ensuring accessibility and availability of essential medicines (Castiglia et al., 1996, Jameson et al., 1991a, Trap et al., 2001).

The other significant event during this period was my introduction to the Pharmacy Education Taskforce (PET) at the FIP Congress I attended in Beijing in September 2007. PET was established by FIP and WHO in 2006 to investigate the global development of pharmacy education and the pharmacy workforce (Anderson et al., 2007). PET originally had three domains: Academic and Institutional Capacity; Vision and Competency; and Quality

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[8] **Sub-structure pharmacists** should be considered equivalent to district pharmacists in other settings

Assurance, and two additional domains on Pharmacy Support Workforce and Leadership added later (Anderson et al., 2009). I was encouraged to meet other pharmacists researching pharmacist competencies and saw opportunities for mutual learning and support. I subsequently joined the electronic PET Communities of Practice which introduced me to other researchers and literature in the field, particularly Prof Ian Bates, the PET Competency domain leader from the School of Pharmacy in London, and the work of the Competency Development and Evaluation Group (Co-DEG) in the United Kingdom (UK). The insights I gained from published literature on competency development helped me conceptualise a suitable research methodology for this study, and introduced me to the idea of using a stepped approach to identifying roles and competencies of district and sub-district pharmacists (Whiddett and Hollyforde, 2003).

Meanwhile, City Health had been searching for some time for a senior pharmacist to oversee pharmaceutical services to the City, and in October 2007 they finally made the appointment. I met the senior pharmacist shortly afterwards and spoke to her about initiating a joint project looking at roles and related competencies of pharmacists working in management positions in the Cape Town. She was interested in the idea, partly prompted I suspect by the fact that she was recently appointed and could see the benefit of being involved with initiatives looking at areas relevant to her new responsibilities. The enthusiasm of senior pharmacists from both PHC organisations led me to hope that their senior management would similarly perceive mutual benefit and endorse the research project.

When I contacted City Health and MDHS for permission to initiate the research, they suggested that, as the project involved both City Health and MDHS, the most suitable forum to present the research would be the DEX Committee meeting, as this was where both City Health and MDHS managers met to discuss issues concerning PHC services in Cape Town.  I was initially surprised by this request but I later I realised presenting at this forum would provide me with a valuable opportunity to engage directly with senior management on this topic. This was significant as I considered it was important to involve health managers as well as pharmacists in this project. I presented an outline of the research at the DEX Meeting at the beginning of February 2008. After a few questions of clarity, both directors granted me permission to proceed with the research project. They requested regular feedback on the project to the DEX Committee, and assigned the two senior pharmacists in each organisation

as contact persons. Although being designated these roles could potentially have had ethical implications if the pharmacists did not want to engage in the project, in this situation we had already discussed the ideas prior to this meeting and they had assured me of their support.

I sensed that DEX readily gave permission for the project because the managers from both organisations could see the value of this research to them. From City Health's perspective, they had appointed sub-district pharmacists in 2005; but management was unhappy with the current situation and this project presented the opportunity to explore issues concerning sub-district pharmacists. Meanwhile, MDHS was moving into new territory with sub-structure pharmacists about to be appointed, having been planned as part of the Comprehensive Service Plan (CSP) for the Implementation of Healthcare 2010 (Western Cape Department of Health, 2007). The awareness of MDHS management of the high cost of medicines and negative consequences of medicine stock outs on perceptions of the quality service delivery by the public may have spurred MDHS to capitalise on this opportunity to gain insights into this new cadre of health worker Other reasons that were likely to have contributed to DEX's willingness to participate in this project were positive experiences of working with me and the SOPH on previous projects, including Strengthening Pharmacy Information Systems and the Equity Gauge Project (Bradley et al., 2008b).

### 4.2.3 Planning the research

After receiving permission, I met with two senior pharmacists and we formed the core research project group and together commenced the planning process. We communicated regularly throughout the project to plan and reflect through face-to-face meetings, email or telephone. I realised that the three of us would need to work together closely on this research project if it was going to succeed. I was aware that we came from different backgrounds with divergent experiences, and our relationship at this stage was based on previous interactions together, which were significant enough to form the basis of mutual respect and trust required for a collaborative research project (Reinharz, 1983 as cited in De Koning and Martin, 1996). The pharmacist appointed as the project manager for pharmaceutical services at MDHS was appointed to the position from the private sector and was from outside Cape Town. He was not known to me prior to commencing the Strengthening Pharmacy Information Systems

Project. I had known the senior pharmacist from City Health for a few years through the Pharmaceutical Society of South Africa but we had not worked together (Table 4.1).

**Table 4.1: Characteristics of two senior pharmacists in core research project team**

| Organisation | MDHS | City Health |
|---|---|---|
| **Sex** | M | F |
| **Age** | 40s | 40s |
| **Position in organisation** | Project manager: Pharmaceutical services | Senior pharmacist |
| **Appointment date** | 2003 | October 2007 |
| **Responsibilities** | Responsible for pharmaceutical supplies to MDHS; Line manager for MDHS head office pharmacists and facility pharmacy managers | Oversight of pharmaceutical services to City Health; Professional oversight of sub-district pharmacists and facility pharmacists |
| **Previous experience** | Private sector: Pharmacy manager, private hospital group (Gauteng) | Public sector: Chief pharmacist, head office (PGWC); Pharmacist-in-charge, Red Cross Children's Hospital |

Although the two pharmacists from the health services had not worked together in the past, developments in integrating local authority (City Health) and provincial (MDHS) PHC services in Cape Town meant that they would expect to collaborate more closely in the future. Another factor that may have contributed to this willingness was that the Senior pharmacist had previously worked for MDHS at hospital and provincial-level pharmaceutical services and was eager to collaborate with MDHS on matters of mutual interest with respect to primary level pharmaceutical services (Cornwall and Jewkes, 1995). Additional factors that seemed to cement our relationship at this stage were professional collegiality and our vision of utilising pharmacists optimally to deliver good quality primary level pharmaceutical services (Waterman et al., 2001).

**4.2.3.1 Identifying the participants**

At our first meeting we set about identifying participants from the two organisations and planning the way ahead. I suggested that we involve a broad range of stakeholders, including pharmacists and managers from both organisations in the research project as this was

expected to provide the widest range of perspectives on the topic. The two senior pharmacists identified suitable participants (Table 4.2).

**Table 4.2: List of stakeholders identified to participate in the project**

| Participants | MDHS | City Health | Others |
|---|---|---|---|
| **Pharmacists** | MDHS head office pharmacists (4) to 8/2009<br><br>Sub-structure pharmacists (4) from 9/2009<br><br>Facility pharmacy manager | Sub-district pharmacists (4)<br><br>Facility pharmacy manager | PGWC head office - chief pharmacist<br><br>PGWC rural district - district pharmacist<br><br>NGO (ARV services) - pharmacist manager |
| **Managers** | Chief medical officer<br><br>Facility manager<br><br>Human resources manager | Sub-district manager<br><br>PHC Programme manager<br><br>Facility manager<br><br>Human resources manager | |

We invited the four sub-district pharmacists employed by City Health and all pharmacists working at the head office in MDHS at the time the project commenced. At a later stage, when this office was disbanded and the MDHS sub-structures formed, the four sub-structure pharmacists appointed were approached to participate in the project. The value of including those holding the actual positions under scrutiny in the role identification process has been demonstrated (Whiddett and Hollyforde, 2003). We identified other pharmacists working at various levels in both services to participate in the project, including those working as facility pharmacy managers and at the provincial head office, as we believed we would benefit from their input. Pharmacists working at facility level could contribute their expectations of district and sub-district pharmacists, whilst we considered the involvement of pharmacists working at

provincial level was important to maintain linkages between the two levels of pharmaceutical services.

We purposively selected health managers working in a variety of positions from both organisations, including human resource managers, chief medical officers, sub-district managers and facility managers, as they interact directly with sub-district and sub-structure pharmacists, as well as those specifically involved in pharmaceuticals, for example members of the Pharmacy and Therapeutics Committee (PTC). Involving health managers was deemed critical to the success of the project, and again we considered that it was important to include representatives from provincial, metro district, sub-district and facility levels, as each was likely to contribute different perspectives.

During the course of the project, participants suggested that training managers from each service, a district pharmacist from one of the rural districts and a pharmacist from a non-governmental organisation (NGO) should be invited to join the project. The five rural districts in the Western Cape established integrated district health system (DHS) in 2006, and we thought that their experiences would be valuable to the project. The NGO was supporting the implementation of new ARV services in Cape Town and we agreed that including a pharmacist working for this organisation would also be useful, and was in line with the inclusive principles of the DHS (Tarimo, 1991).

We thought that having health managers and pharmacists together would be mutually beneficial in that pharmacists would hear what managers and other members of health team expected of them and managers would hear what services pharmacists could provide. We hoped this interactive process would facilitate utilisation of the research findings in future practice.

### 4.2.3.2 Preparatory activities

During this planning period I continued to advance my understanding of district and sub-district pharmacists by carrying out a documentary review and conducting some key informant interviews. I scrutinised relevant health policy, legislation and strategic documents from South Africa and the Western Cape from 1994 onwards, to identify implications for

primary level pharmaceutical services and the current and future roles and competencies of district and sub-district pharmacists

Table 4.3 identifies key policies, legislation and strategic documents from 1994 onwards that have impacted on primary level pharmaceutical services. Other aspects, such as the increase in disease burden, particularly that of HIV/AIDS and chronic non-communicable disease with the requirement of regular medication, have affected primary level pharmaceutical services. The overall picture illustrates the tension of increased need for pharmaceutical services at primary level including the introduction of new services (HIV/AIDS), alongside guidelines and regulations for rational medicine use, professional practice and facilities, and strategies to increase pharmaceutical human resources. Whilst the research project was being implemented, several other national initiatives were launched which would potentially impact on pharmaceutical services, including *Re-engineering PHC strategy*, National Health Insurance and the Policy on Quality of Care for South Africa (Department of Health, 2010, Department of Health, 2011c, Minister of Health, 2011).

In addition to these national level initiatives, the *1995 Health Plan*, *Health Care 2010* and the *2010 Comprehensive Service Plan* provided the policy and planning frameworks in the Western Cape (Western Cape Department of Health, 2003, Western Cape Department of Health, 2007, Western Cape Province Ministry of Health and Social Services, 1995). In November 2011, shortly after the fieldwork for this research project ended, the Western Cape Government published a draft discussion document *2020: The future of health care in the Western Cape* (Western Cape Department of Health, 2011a). Other local initiatives impacting on primary level services in Cape Town include the Chronic Dispensing Unit (CDU) which was set up in 2006 to provide ready packaged medicines to stabilised chronic patients at public sector primary health care facilities (du Toit et al., 2008).

**Table 4.3: Key national policy and legislation impacting on primary level pharmaceutical services since 1994**

| Area | Date | Policy/legislation | Intent | Impact on primary level pharmaceutical services |
|---|---|---|---|---|
| Health Services | 1994 | Free PHC services pregnant women & under 16 years | Increase accessibility of services to most vulnerable | Increased services |
| | 1996 | Free PHC services for all without medical insurance | Increase accessibility of services to uninsured | Increased services |
| | 2003 | Operational Plan for Comprehensive HIV & AIDS Care, Management & Treatment for SA | Increase access to HIV/AIDS treatment including ARVs at PHC level, in collaboration with NGOs | Establishment & delivery of new ARV services |
| | 2006 | Policy & Guidelines for implementation of PMTCT programme | Access to preventive ARVs for pregnant women | Establishment & delivery of new services |
| | 2011 | New ARV Plan | Increases accessibility of ARVs (by reducing CD4 cut-off) | Increased ARV services required |
| Infra-structure | 2001 | PHC Package for SA | Norms & standards for PHC clinics | Comply with norms – availability of medicines, management of medicines, information, facilities & equipment |
| | 2002 | District Hospital Package for SA | Norms & standards for district hospitals & other PHC facilities | Comply with norms – availability of medicines, management of medicines, information, facilities & equipment |
| Medicines | 1996 | Primary Healthcare Standard Treatment Guidelines & Essential Drugs List (EDL) | Treatment guidelines & list of essential medicines to be available at PHC level | Comply with EDL list & ensure rational medicines use by prescribers according to guidelines |
| Human resources | 2000 | Re-launch of pharmacist's assistant (PA) training | Increase trained pharmacy support workforce | Tutoring & training of PA's at workplace leading to increased pharmacy support workforce |
| | 2000 | One year community service for pharmacists | Increase numbers of pharmacists in rural & underserved areas | Increased number of pharmacists in rural & underserved areas (not all retained) |
| | 2004 | Rural allowance for pharmacists | Increase recruitment & retention of pharmacists in rural areas | Increased numbers of pharmacists in rural areas |
| | 2007 | Scarce skills allowance for pharmacists | Increase recruitment & retention of pharmacists | Increased numbers of pharmacists |
| | 2008 | Occupational specific dispensation for pharmacists | Increase recruitment & retention of pharmacists | Increased numbers of pharmacists |
| | 2009 | Pharmacist's assistants working under indirect supervision | Increase ARV dispensing services | Supervision of PA's providing ARV services |

The second preparatory activity I undertook during this time was to interview three purposively selected key informants with expertise in district pharmacy services in other parts of South Africa, to obtain their insights into current roles and responsibilities of district pharmacists. Two were employed as district pharmacists in another province and the third was head of pharmaceutical services for a metro health authority (local government) in a third province. Both district pharmacists had considerable experience in pharmaceutical services and in the development of district pharmacists in their province; the third one was actively involved in the development of pharmaceutical services in a large metro with a large number of clinics. Key aspects of their roles were management functions within the district management team (DMT) and supporting and monitoring pharmaceutical services at clinics in the district. The district pharmacists described significant challenges in adjusting to these new roles, particularly general district management responsibilities which included acting for the district manager on occasions. They felt that, at times, these responsibilities detracted from their core functions of managing pharmaceutical services. They attributed some of the difficulties they were experiencing to their exclusion from processes to develop job descriptions for these new positions. All three interviewees provided me with copies of their job descriptions.

These preparatory activities increased my understanding of key areas of development of district pharmaceutical services since 1994 and provided me with information to contribute to the participatory processes of this project.

**4.2.3.3 Workshop 1: Clarifying goals, methodology and data collection**

Next, we invited the identified participants to a half-day workshop to present the project and participate in the next steps in the process which were confirming participants, establishing goals and data collection processes, and developing an activity plan.

Workshop 1 took place on a Friday afternoon in April 2008 in a boardroom at Woodstock Hospital, the MDHS head office at the time, and we were pleased with the attendance of 10 pharmacists and five managers from both PHC organisations and provincial level pharmaceutical services. I introduced the proposed project and explained that the objectives were to explore the contribution of sub-structure and sub-district pharmacists to health system development in Cape Town through identifying their roles and related competencies and to

pilot an intervention to enhance competencies. I explained that we planned to use a PAR approach involving MDHS, City Health and SOPH, UWC, and that the two senior pharmacists from the PHC organisations and I would form the core project research team. Participants from City Health and MDHS said that the project would provide valuable information for their health organisations, and commented that exploring sub-structure and sub-district pharmacists' roles and competencies together would be useful, particularly in view of future integration of PHC services in Cape Town.

A two phase framework to the project running over three years was agreed by the participants present:

**Phase 1: Identifying roles, competencies and developing competency framework**

**Phase 2: Developing and piloting an intervention**

It was arranged that a series of three ½ day stakeholder workshops (in addition to this introductory workshop) would be held for Phase 1, and these would be supplemented by smaller working groups and individual interviews of key informants, who had important contributions to add to the process but were unavailable to attend the workshops. We proposed this pragmatic approach because, whilst we recognised the benefit to the project of having wide stakeholder contributions, we were aware of health services staff's heavy workload and limited time availability. The framework for Phase 2 was not discussed at this stage. This was in line with the emergent process of action research, where inputs gained from initial phases were expected to influence the direction and scope of the project (Reason, 2006, Winter, 1998).

Next, participants from City Health and MDHS worked in two groups and drew a visual diagram of pharmaceutical services in each of the organisations, and then presented this to all the workshop participants. The diagrams illustrated the main lines of responsibility for pharmaceutical services in each organisation, and participants discussed together what they understood as the main functions of pharmaceuticals services. It was particularly useful to have senior medical personnel and the pharmacy project manager working at MDHS head office present to clarify how MDHS would be restructuring into four sub-structures in the future. The exercise proved to be valuable in facilitating active participation in the workshop,

as well as encouraging interaction between pharmacists and managers in each PHC organisation, many of whom said they had worked in the same organisation for years but had not previously had the opportunity to meet each other.

The presentations enabled workshop participants to appreciate primary level pharmaceutical services in both PHC organisations, and this was considered valuable by the participants as most did not know much about the other organisation. In MDHS, pharmaceutical services are provided by substantial numbers of pharmacists and pharmacist's assistants based at all Community Health Centres (CHCs), whereas at City Health, most pharmaceutical services at clinics are delivered by nurses with sub-district pharmacists providing support to sub-districts. It was interesting to note that although the senior management of both health departments have established a good rapport and have had regular monthly meetings (DEX) to plan and monitor operational matters of PHC services, there appeared to be limited interaction between the staff of the two organisations at service delivery level. Bearing in mind the structural changes about to be implemented in MDHS, and the move towards future integration of services, the participants considered that this exercise was beneficial in clarifying understanding of primary level pharmaceutical services in Cape Town. This pointed to the value of outsider facilitation, performed as part of this project, in promoting dialogue between the two organisations.

After this exercise, participants suggested that training, human resources and finance managers, as well as post-basic pharmacist's assistants, should be included in the project, and it was agreed that we would invite them at a later stage. By the end of this first workshop there was a shared understanding of the research project's purpose and significance; the participatory methods that would be used; and the phased design of the project (Kemmis and McTaggart, 2003).

### 4.2.4  Implementing the research project

Once the co-researchers were on board and the plans approved, we commenced with Phase 1 of the project, identifying roles and competencies of sub-structure and sub-district pharmacists. These first steps resulted in the commencement of the research project. Although conversations about the performance of sub-district pharmacists in City Health had

been happening for a few years, and serious thinking about the project started in the middle of 2007, it took until March 2008 to obtain permission from the health organisation, establish the participants and refine the project goals, research approach and activity plans.

## 4.3 Cycle 1: Identifying roles of sub-structure and sub-district pharmacists

The next section covers the first cycle, identifying the roles of sub-structure and sub-district pharmacists, which is illustrated in Figure 4.2. The participatory process centered on a workshop with health services participants, and was augmented by key informant interviews and a sub-group meeting. Data gathering, analysis, interpretation and critical reflection occurred at each of these stages contributing to the list of roles identified for sub-structure and sub-district pharmacists.
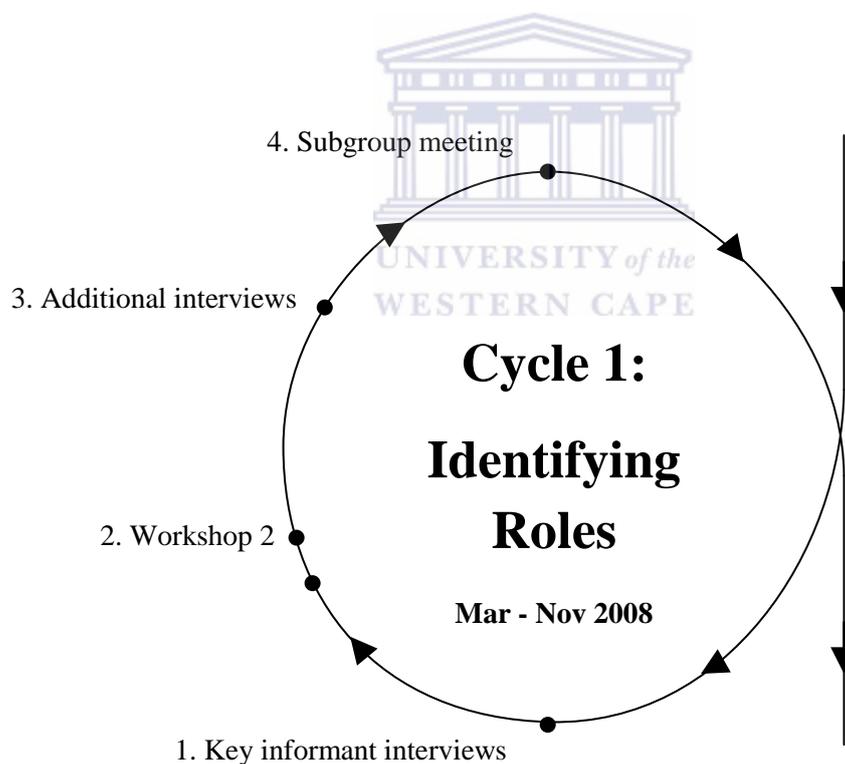


**Figure 4.2: Cycle 1: Identifying roles of sub-structure and sub-district pharmacists**

### 4.3.1  Key informant interviews

After the first workshop the core project research group identified a number of pharmacists and managers who were not present but whom we felt would contribute valuable insights to this project. This included some who had been invited to the workshop but were unable to attend and others we had not invited. I followed this up by interviewing two senior managers from MDHS who were intricately involved in the district development process in Cape Town and two pharmacists. One pharmacist had previously worked as a sub-district pharmacist in another province and had recently been appointed by MDHS and now was responsible for co-ordinating services between primary level facilities, and the other was working with an NGO providing ARV services at PHC facilities in Cape Town.

Both senior managers I interviewed envisaged sub-structure pharmacists as being responsible for all issues relating to medicines supply and use in the sub-structure, from planning through to monitoring and quality assurance. During the interviews I discovered that one of the senior managers was responsible for drafting the generic job-descriptions for district deputy directors, including Deputy Director: Pharmaceutical services, and he made this available to me. The other senior manager had been involved in the primary level PTC for a number of years and he, together with the two pharmacists, provided useful perspectives on pharmacists' roles at PHC level. This senior manager and the two pharmacists attended the next workshop on identifying roles of district and sub-district pharmacists and were able to contribute directly to the participatory process.

In order to investigate the situation concerning the performance of sub-district pharmacists in City Health I interviewed all four sub-district pharmacists working for City Health and purposively selected two sub-district managers and two programme managers. The managers I had selected represented three sub-districts that had reported lack of support from sub-district pharmacists. I explored the roles sub-district pharmacists were currently performing and how this correlated with their job descriptions and the expectations of sub-district management and sub-district pharmacists themselves. I also explored facilitatory and constraining factors influencing sub-district pharmacists' performance.

After these interviews, the core research project group reconvened in August 2008 to plan the next workshop, and whilst we realised it was not ideal having such a long gap between the first and second workshops it was a consequence of the participatory process.

## 4.3.2  Workshop 2: Identifying roles of sub-structure and sub-district pharmacists

Identifying the roles of sub-structure and sub-district pharmacists in Cape Town began during Workshop 2; this took place on a Friday afternoon in September 2008 in the same building as Workshop 1, and was attended by 14 pharmacists and three managers from both PHC organisations. We were disappointed with the low attendance of managers, as well as the fact that they were different ones from those who had attended Workshop 1, but we nevertheless valued their presence. The lack of involvement of managers from MDHS was exacerbated by the re-structuring process and changes in management positions at the time.

I gave a short presentation on the background and rationale of the project and an outline of the project plans that we had agreed at Workshop 1. This was done for the benefit of all participants, but especially for those who had not attended the first workshop. The main aim of this workshop was to identify current and future roles of sub-structure and sub-district pharmacists.

At the commencement of this workshop, one of the managers from MDHS felt strongly that the key aspects of the (Comprehensive Service Plan) CSP for Healthcare 2010 and its implications for pharmaceutical services should be clarified for all present (Western Cape Department of Health, 2007). He took the lead in describing the CSP and the unbundling of MDHS into four sub-structures and appointment of sub-structure pharmacists. He emphasised that City Health services would be subsumed into MDHS at a future date, and that we should not consider the roles of sub-district pharmacists now, but focus on sub-structure pharmacists. The CSP for Healthcare 2010 articulates the PGWC's plan for re-orienting health services to an integrated DHS, with an increased focus on PHC services, as envisaged by the White Paper on Transforming the Health System (Republic of South Africa, 1997). Whilst full implementation of the CSP would result in an integrated district health structure, with the province as the sole provider of PHC services, and is in line with national policy, the process

has taken time to implement in the Western Cape. Although the five rural districts were fully integrated in 2005, the City of Cape Town is still not fully integrated; hence the involvement of staff from two PHC organisations in this research. (Western Cape Department of Health, 2003, Western Cape Department of Health, 2007). This input resulted in palpable tension at the workshop, as City Health sub-district pharmacists felt marginalised because their positions were not included in the CSP.

The pharmacist representing one of the rural districts in the Western Cape, which had already completed service integration between provincial and municipal health services, explained how pharmaceutical services were functioning in her district. She supported the idea of including sub-district pharmacists in the project and said that she felt that she was functioning as she envisaged sub-district pharmacists in City Health operated – primarily overseeing pharmaceutical services to nurse-driven clinics. My understanding was that the City Health model of sub-district pharmacists overseeing supplies to nurse-driven clinics without pharmacists mirrored the situation other parts of South Africa, and indeed sub-Saharan Africa, and for this reason I was keen to include sub-district pharmacists in the research project. However, to move forward, we decided to focus only on the MDHS sub-structure pharmacist for the remainder of this workshop. The antagonism expressed was representative of feelings between some stakeholders in the two PHC organisations and, although at the time, it was an awkward situation to handle, there was sufficient goodwill amongst the participants to move ahead with the workshop programme.

We continued by clarifying the definition of a district[9]. As we had correctly suspected most participants did not have a clear understanding of the DHS concept, even though the workshop was held more than ten years after the publication of the White Paper on Transforming the Health System in South Africa (Department of Health, 1997, Tarimo, 1991). At this stage, participants, both pharmacists and managers, who were involved in district development and the CSP, provided input on their understanding of a district which was based on the WHO definition, and a working definition was agreed (Box 4.1) (Tarimo, 1991).Then, we attempted to define the overall role of a district pharmacist. Pharmacists and

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[9] **Sub-structures in MDHS** are similar to districts envisaged by WHO and have been conceptualized as units modeled on the DHS, hence it was pertinent to clarify these concepts with participants (Tarimo, 1991).

managers who were part of the district development process again provided useful input and motivated that district pharmacists functions should include some responsibility for all pharmaceutical services in the district, including private and NGO sector. This notion was new to most workshop participants and the contribution by participants with greater insight into the DHS was valued. These inputs guided the agreed working definition of a district pharmacist (Box 4.1).

**Box 4.1: Definitions of district and district pharmacist adopted at Workshop 2**

A **district** refers to a geographical area and includes all healthcare activities in the area including the district hospital, primary level facilities, community-based services and NGOs, and appropriate support services.

A **district pharmacist** manages and is accountable for all pharmaceutical services in the district.

Next, we commenced identification of the roles of sub-structure pharmacists required to fulfil the overall role of district pharmacist discussed and defined in Box 4.1. We divided participants into two groups to brainstorm sub-structure pharmacist roles and emphasised that participants should think as broadly as possible and include both current and future roles. Each group included a mix of pharmacists and managers from the two different organisations and those involved with district development and those without this experience. We considered the participation of pharmacists and managers critical at this stage of the project as we saw it as an opportunity to develop a shared understanding of district pharmacists' roles. Both groups fully engaged in this exercise and it was evident that participants who had been involved in district development made the most substantive contributions. There was a high level of congruency in the opinions of pharmacists and managers in each group on each of the current and future roles of sub-structure pharmacists.

The two groups presented their lists of current and future roles of sub-structure pharmacists in plenary, with the pharmacists and managers who were involved in district development again leading the way, and each group presenting fairly similar lists. I contributed additional

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information from documentary reviews and interviews with district pharmacists from other provinces in South Africa. This included advisory roles on the establishment of new ARV services, and technical and professional pharmaceutical support to the DMT. The pharmacist who had worked as a sub-district pharmacist in another province shared her experiences with the whole group, and emphasised the supportive and monitoring role of district pharmacists to clinics and facilities without pharmacists. We used all this information, as well as that from the rural district, to compile a summary list of the current and future roles of district pharmacists. We reached agreement on the list of roles without much contestation amongst participants, and by this stage of the workshop the atmosphere was much more convivial than at the commencement (Box 4.2).

**Box 4.2: Current and future roles of sub-structure pharmacists identified at Workshop 2**
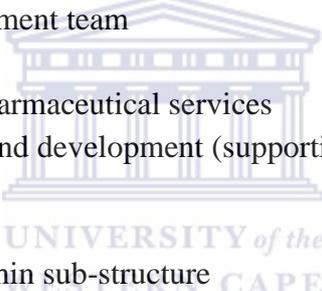
Strategic planning of pharmaceutical services
Core member of district management team
Drug supply management
Monitoring and evaluation of pharmaceutical services
Human resources management and development (supportive role & professional input)
Budget control
Policy implementation
Standardisation of processes within sub-structure
Communication on pharmaceutical matters to all role players
Advisory role on technical and professional pharmaceutical matters within sub-structure
Clinical governance – pharmacy therapeutic committee, rational prescribing
Quality assurance including cold chain, rational drug use and drug utilisation reviews
Planning of new services including physical infrastructure & staffing requirements
Liaise with NGOs

Although at the start of the workshop there were tensions between the two organisations, or rather between some individuals, as the workshop progressed the participants settled and contributed actively. Overall, we felt the workshop had provided a productive space for establishing a shared understanding of sub-structure pharmacists' roles. The inputs from the rural district perspective were particularly useful, as they had already implemented the DHS and integrated local authority and provincial services, and we felt the project benefited by hearing about district pharmaceutical services in that setting. As a result, after the workshop,

I arranged to interview the district pharmacist from the rural district represented at the workshop as well as the head of pharmaceutical services in the Western Cape, as we expected that they would contribute useful perspectives on sub-structure pharmacists' roles that we could use to further inform those identified at Workshop 2.

At the end of the workshop a sub-group of four pharmacists agreed to meet to refine the list of roles we had developed. The four pharmacists represented the two PHC organisations, the rural district and an NGO. We agreed to take the proposed job description of the MDHS sub-structure pharmacy manager and those of district pharmacists from the two other provinces, as well as information from the interviews, into consideration.

### 4.3.3 Additional interviews

After the workshop I conducted the two interviews as agreed, as well as additional interviews with two more City Health sub-district managers and one programme manager, to continue exploring the sub-district pharmacist situation in City Health.

We expected the head of pharmaceutical services in the Western Cape to provide a good overview of the development of district pharmaceutical services in the province, and used the opportunity to update her about the project which had been discussed with her during the Initiation Stage. She said that she envisaged that district pharmacist would be responsible for all pharmaceutical services in the district *"down to mobile clinics"* and including the private sector. This was a similar inclusive understanding of a health district and a district pharmacist's broad role to that agreed at Workshop 2. She mentioned that key roles would include strategic and some operational planning activities in the district, and envisaged this would include advice and support to the DMT and responsibility for ensuring rational medicines use, including budgetary control. There were many synergies between the roles she visualised and those identified at the workshop.

I expected the interview with the district pharmacist from the rural district to generate valuable information, as he appeared to have successfully established himself as a district pharmacist in a rural district of the province. One of the critical aspects that emerged from this interview was his position as an integral member of the DMT. He said he was involved in all management aspects of the district, including policy development, strategic planning and

representing the district on various provincial committees. Some of these committees were related directly to medicines, including the PTC and CDU, whilst at other committees he was representing the district in a more general management capacity as was the case for Information Technology and Psychiatric Care Committees. His positive perception of his functions on the DMT contrasted sharply with those of the district pharmacists interviewed from the other province, who appeared to resent these general management responsibilities.

A significant aspect he raised was that his office is situated in the district office and he said this physical co-location supported his engagement with other members of the DMT. This issue had not been discussed in detail at the workshops but it is planned that each MDHS sub-structure will have an office located in the sub-structure, and sub-structure pharmacists will be situated in these offices with the rest of the sub-structure management team. It is hoped that this will facilitate close collaboration. In City Health, however, sub-district pharmacists are not based at sub-district offices and this may influence their functionality.

The interviews with two sub-district managers and one programme manager from City Health provided further insights into the roles of sub-district pharmacists, and some of the current challenges with pharmaceutical support being experienced by sub-districts in City Health.

### 4.3.4 Sub-group meeting

The identified list of roles of sub-structure pharmacists from Workshop 2 were refined further during a sub-group meeting in October 2008 attended by seven pharmacists representing City Health, MDHS, a rural district and a NGO, and this was followed by further electronic input during November 2008. At the commencement of the meeting the group decided that there was a need to develop the list of roles for both sub-structure and sub-district pharmacists. They argued that sub-structure pharmacists in Cape Town would be expected to play a strategic role at sub-structure management level, whereas sub-district pharmacists were more likely to be involved in co-ordination and provision of operational support. This was based on experiences in the rural district and those of Cape Town, where current sub-district pharmacists seemed to have different roles from those identified for sub-structure pharmacists at the previous workshop. I was supportive of this inclusive approach as I considered the research project would benefit by exploring the situation in the two different

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PHC organisations in Cape Town. Participants again mentioned that it was important to consider the roles and competencies of facility-level pharmacy managers too as this would impact on sub-district and district pharmacists, and it was agreed that there was a need to develop a professional framework for pharmacists working within PHC services. I pointed out this was beyond the scope of this project, but that it was a valid point that we should keep in mind for the future.

We spent time elaborating the roles of both sub-structure and sub-district pharmacists in detail, with participants' contributions being supplemented with information from job descriptions of the district pharmacist from the rural district, the draft job descriptions of the sub-structure pharmacy manager and sub-district pharmacists in City Health. I added information from interviews with the head of pharmaceutical services of the Western Cape, the rural district pharmacist, as well as from the managers from City Health.

Only pharmacists attended this sub-group meeting, even though the invitation was extended to all participants, which seemed to confirm the assumption we made in the planning stage that we could only expect engagement of the broad stakeholder group at a limited number of workshops. However, we were satisfied that the group was representative of pharmacists from a variety of settings. It was significant that this group felt strongly that both sub-district and sub-structure pharmacist roles should be considered, and seemed to reject the strong views of the MDHS manager at the previous workshop, who emphasised that it was not relevant to consider sub-district pharmacists as they were not part of CSP and would not exist in future. The meeting was highly interactive and productive, and we wondered if the presence of only pharmacists may have contributed to a greater freedom of expression by the group. On the other hand, it may have been because participants were feeling more comfortable with the process and had increasing understanding about the subject matter. Subsequent to this meeting the list of roles of sub-structure and sub-district pharmacists were further elaborated, with electronic input from two pharmacists, and they were presented to the DEX Meeting along with a report on sub-district pharmacists in City Health.

## 4.3.5 DEX Report No 1

The core research project group provided the first update on the project to the DEX Meeting in November 2008. We submitted a short written report and attended the meeting to present a verbal update (DEX Report No1 in Appendix 4).

 The report was part of the commitment I had made to provide regular feedback on the project when DEX granted permission at the beginning of the year. We hoped that our attendance at the meeting would keep the project in the minds of the senior managers, as well as provide opportunities to discuss the project's progress and findings, exchange information and confirm the next stages.

In the first part of our report we provided information on the three workshops that took place during 2008, and provided a preliminary list of roles of sub-structure and sub-district pharmacists, and the second part included specific information about sub-district pharmacists in City Health. There was a short discussion on our progress and DEX appeared satisfied and said they looked forward to the outputs. We committed to continue working on the list of roles and competencies during 2009.

The second part of our report contained information on sub-district pharmacists' roles in City Health, together with specific information about whether the 'City Health sub-district pharmacist model' was optimal in providing pharmaceutical support to sub-districts. The key findings are summarised in Box 4.3.

After hearing our findings, City Health management commented that we had not provided sufficient detail and were critical of the qualitative methodologies we had used to explore the issue. I suspected their response was largely prompted by lack of understanding of the methodological approaches used in PAR. Never-the-less, after this meeting we took no further action, and according to the senior pharmacist at City Health no other specific engagement on our findings took place. We felt frustrated that efforts to carefully describe the situation and perceptions of key stakeholders on the issues of sub-district pharmacists in City Health did not appear to result in any changes to the unsatisfactory *status quo*. However, we later learned that one of the sub-district managers present at the meeting, whose sub-district was receiving very little support from the allocated the sub-district pharmacist,

went on to successfully motivate for an additional sub-district pharmacist for her sub-district.

**Box 4.3: Summary of sub-district pharmacists' situation in City Health in 2008**

> **Current situation**
> Four sub-district pharmacists each allocated two sub-districts. Two sub-district pharmacists have regular responsibility for dispensing medicines making it difficult to fulfill envisaged sub-district pharmacist roles. Two sub-district pharmacists are performing the majority of envisaged functions but both work 5/8ths so time is a major constraint.
>
> **Key roles of sub-district pharmacists**
> Support sub-district manager in managing medicines and vaccines in sub-district
> - Monitor all aspects of drug supply management, including use & expired stock:
> - Proactive role in ensuring continuity of medicines to clinics
> - Regular visits to clinics to support clinic staff (auditing and on site-training)
> - Provide up to date information on medicines and vaccines
> - Implement new policies and services
> - In future responsible for post-basic pharmacist's assistants
>
> Sub-district managers indicated that they would value the input of a competent sub-district pharmacist, but that to perform optimally sub-district pharmacists must not have regular dispensing responsibilities and they must be willing to acquire competencies required to perform optimally.
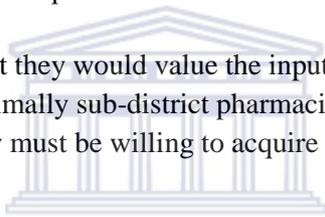
This presentation at the DEX Meeting brought the first year of the project to an end. We felt that overall the year had been fairly productive, even though we had not made as much progress as we had hoped. We were pleased with the level of engagement with a broad range of stakeholders and felt that the project was receiving support from the health organisations. Maintaining participation was an issue we had expected and the individual interviews I conducted ensured we obtained input from key stakeholders and even enabled a deeper engagement, which on reflection, complemented the participatory workshops.

## 4.4 Cycle 2: Identifying competencies of sub-structure and sub-district pharmacists

Identifying the competencies of sub-structure and sub-district pharmacists was the next stage. This involved two workshops and was supplemented by a review of published literature on competency frameworks and information on initiatives on competency development in the

health services in Cape Town. I contributed insights from the presentation of preliminary findings I made at a local and international conferences, which assisted with refinement of both the roles and competencies (Figure 4.3). This illustrated the iterative nature of the development process.
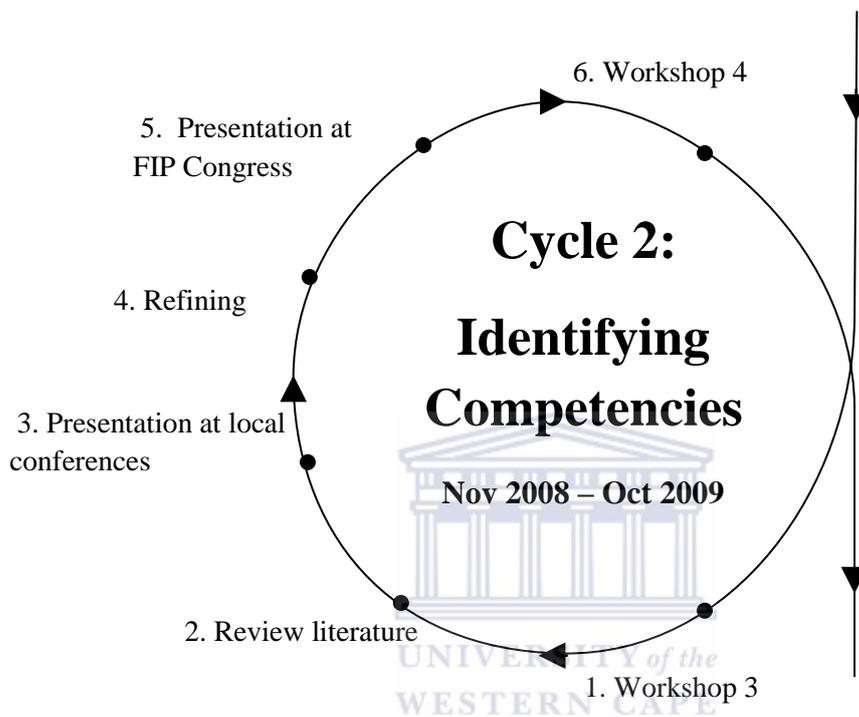


**Figure 4.3: Cycle 2: Identifying competencies of sub-structure and sub-district pharmacists**

## 4.4.1 Workshop 3: Identifying competencies of sub-structure and sub-district pharmacists

The work on competency identification commenced at Workshop 3, held in November 2008, which was attended by ten pharmacists and one manager who was from City Health. Whilst we were pleased with the number of pharmacists attending the workshop, we were disappointed in only one manager being present and realised this was due to several other

meetings happening at the same time. We decided that in future we would check the schedules of pharmacists and managers of both organisations more carefully prior to finalising the dates of future workshops.

In accordance with our agreed methodological approach, the list of roles of sub-structure pharmacists was used as a starting point for identifying competencies that were required to fulfil these roles. At the commencement of the workshop I gave a short presentation introducing the competency concept and competency frameworks, and followed this by proposing definitions of competencies and competency frameworks to be used in this project, citing the work of Whiddett and Hollyforde (Whiddett and Hollyforde, 2003). Most of the group said they were familiar with the competency approach, although their understanding appeared limited, as they associated it with skills development, as opposed to the broader definition of competency proposed here. Participants agreed to adopt the proposed definitions (Box 4.4).

**Box 4.4: Competency and competency framework definitions adopted by the project**

A **competency** is a quality or characteristic of a person that is related to effective or superior performance. Competencies can be described as knowledge, skills, motives and personal traits.

A **competency framework** is a collection of those competencies which are thought to be central to effective performance.

Whiddett and Hollyforde (2003) outlined three key principles for successfully developing competency frameworks:

- Involve people who will be affected by the framework
- Keep people informed
- Create competencies that are relevant

We noted that these principles were in line with the PAR approach adopted by our project. We were involving sub-structure and sub-district pharmacists and managers in the process, and we were keeping a wide stakeholder group informed by circulating the Workshop Notes and DEX Reports. Finally, we felt that by addressing the first two principles, together with

participants combined knowledge of the local and national settings and review of international literature, we would succeed in developing relevant competencies.

Workshop participants brainstormed competencies required for sub-structure and sub-district pharmacists, based on the list of roles compiled during Workshop 2, and refined at the October 2008 working group meeting and further electronic inputs. They recorded information on competencies on flipchart sheets, and the lists derived were transcribed and are shown in their raw state in Table 4.4. An interesting feature of this workshop was that participants started off mentioning pharmacy specific competencies covering drug supply management, but as the workshop progressed, both pharmacists and managers noted that generic competencies, particularly in management and interpersonal skills, were important for sub-structure and sub-district pharmacists. This reflected the management roles that had been identified for sub-structure pharmacists previously. As participants suggested competencies, there was substantial discussion around similarities and differences between competencies required by sub-structure and sub-district pharmacists. As information on competencies was fairly new to most of the group, and considering the pharmaceutical and medical background of most of the participants, it was not surprising that most mentioned technical skills first and only later thought of cognitive and affective competencies (Bloom et al., 1956, Krathwohl et al., 1964).

**Table 4.4: List of competencies of sub-structure and sub-district pharmacists (transcribed directly from flipcharts at Workshop 3)**

| Sub-structure pharmacist | Sub-district pharmacist |
|---|---|
| Communication skills: various written, report writing | Communication skills<br>Consultation & negotiation planning skills; conflict resolution vs. disciplinary processes; teamwork |
| Set target; identify indicators<br>Adaptability – broad range of understanding<br>Proactive/creative/realistic/lateral thinking<br>Problem solving | Motivational skills<br>Change agent<br>Adaptability – broad range of understanding<br>Proactive/creative/realistic/lateral thinking<br>Problem solving |
|  | Financial drug supply management skills (formal training) |
| Budget: allocation<br>Analytical skills – trends<br>Financial reporting & forecasting<br>Managerial competencies: Finance management Act<br>Coding & tender system, procurement procedures | Budget monitor & manage<br>Financial understanding<br>…..collate info for DP<br>Health profession support<br>Professional competencies: procurement; coding-implementation |
| Influence<br>Impact<br>Convince<br>Overview of needs<br>Prioritise resources<br>Best practice | Prioritising; training; meeting skills; "bird's eye view=commonality<br>Responsive to needs<br>Presentation skills; writing; facilitation; liaison/network educate; influence health workers mentoring |
| Internal & external communication | More internal communication |
|  | Validation of data<br>Interpretation of information |
| Interpersonal skills<br>Relationship building | Interpersonal skills<br>Relationship building |
| Management experience & skills (competencies)<br><br>Valid manual drivers licence<br>Assertiveness<br>Time management | Management experience & skills (competencies)<br>Valid driver's licence<br>Personal competencies:<br>Attitude<br>Willingness to learn<br>Supervisory skills (PBPAs)<br>Time management |
| Systems thinking | Technical & professional support inc HR processes<br>Change management & adaptability |
|  | Special programmes – understanding/knowledge CPD |
| Computer literacy & special programmes | Computer literacy & special programmes |

## 4.4.2  Reviewing the literature

Between this workshop and the second one on competency development (Workshop 4), I spent time reviewing the literature on competency frameworks and presented preliminary findings at three conferences. These activities played a part in informing the development of the competency framework for sub-structure and sub-district pharmacists. I will highlight some of main the aspects, starting with my review of the literature.

My initial proposal to explore sub-structure and sub-district pharmacists' roles and competencies was primarily based on the contextual situation of the DHS in Cape Town, my previous experiences in primary level pharmaceutical services, and a fairly limited understanding of human resource development. Although I undertook a review of relevant literature when preparing my PhD proposal, as I engaged more rigorously with the literature, I came to realise that applying the competency approach to professionals is rather contested. One of the chief critiques is its focus on measurable technical skills and its limited application to the more complex work of health professionals and managers (Chappell et al., 2000). Despite this, the competence of the health workforce in developed and developing countries has been an important theme in global health literature in recent years, and I subsequently became familiar with work on holistic models of professional competence harmonising competency-based approaches and the reflective practitioner approach of Schon (Cheetham and Chivers, 1996, Cheetham and Chivers, 1998, Schon, 1983).

At this time I explored the work on competency frameworks for pharmacists and found that, whilst a number of countries had frameworks for entry-level pharmacists, the UK had developed frameworks for advanced and consultant level pharmacists (Fernandes et al., 2008, Meadows et al., 2004). The Advanced and Consultant Level Competency Framework (ACLF)  had recently been adapted for pharmacists working at a senior management level in health authorities and primary care management, and this seemed relevant to our research (Fernandes et al., 2008). This competency framework consisted of six domains: expert professional management; building working relationships; leadership; management; education; training and development; and research and evaluation (Fernandes et al., 2008). Box 4.5

**Box 4.5: Advanced and consultant-level framework (ACLF) adapted for chief pharmacists (Fernandes et al., 2008)**

**Competency clusters**

Expert professional management

Building working relationships

Leadership

Management

Education, training & development

Research and evaluation

As management roles and competencies seemed to be emerging in our work on sub-structure and sub-district pharmacists, I consulted management frameworks to inform my thinking. I scrutinised two management and leadership competency frameworks from the USA and Filerman's Essential Core Management Competencies, in addition to three frameworks from South Africa: Rubin Pillay's Managerial Competencies for Hospital Managers, the Department of Public Service and Administration's Middle Management Competency Framework, and a Generic Framework for Medical Professionals which was being considered by City Health (Calhoun et al., 2008, Department of Public Service and Administration, 2006, Filerman, 2003, Pillay, 2008).

During this time, I also became aware of the increasing imperative, from the WHO and other international and national bodies, of building the capacity of health managers, especially in developing countries, some in the context of district development. This body of work influenced my thinking about the list of roles and competency clusters for sub-structure and sub-district pharmacists (Egger and Ollier, 2007, Egger et al., 2005, Takemi et al., 2009). (Egger and Ollier, 2007, Egger et al., 2005, WHO, 2007c, WHO, 2007b)

## 4.4.3 Presentation of preliminary findings at local conferences

I presented preliminary findings of our work on the roles and competencies of sub-structure pharmacists at the South African Association of Hospital and Institutional Pharmacists

(SAAHIP) Conference held in April 2009 (Bradley et al., 2009a). This sector of the Pharmaceutical Society of South Africa comprises pharmacists working in public sector health services, and the presentation would provide an opportunity to exchange ideas with pharmacists interested in this research. I condensed the list of roles to eleven and grouped the competencies we had identified into five competency clusters (Box 4.6 and Box 4.7).

**Box 4.6: Preliminary list of roles of sub-structure pharmacists presented at SAAHIP Conference (April 2009).**

<div style="border:1px solid">

**Preliminary list of sub-structure pharmacist roles**

1. Drug supply management (procurement and distribution)
2. Rational prescribing and use of medicines (selection and use - by prescribers, dispensers and patients)
3. Financial management
4. Legal, professional and technical advice
5. Quality assurance and clinical governance
6. Liaise and communicate on pharmaceutical matters to key role players in district (priority programme managers, state-subsided institutions, NGOs and private providers)
7. HRM (recruitment; performance reviews, disciplinary matters)
8. HRD (training – interns, PAs and CPD)
9. Health Information
10. Plan, authorise, monitor and participate in research activities
11. Represent district on any other pharmaceutical matters

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After the presentation, the heads of pharmaceutical services and senior pharmacists from five provinces in South Africa expressed interest in the research, and shared their perspectives and challenges with me after the presentation. These ranged from difficulties of attracting and retaining district pharmacists in some provinces to the lack of funds for transportation to district offices and clinics for visits in another province. A senior health service manager confirmed the importance of 'soft skills' for district pharmacists, and senior staff from the South African Pharmacy Council (SAPC) were interested in the competency framework, especially with respect to the SAPC establishing specialist pharmacist positions, one of the

specialists was expected to be in Public Health and Management (South African Pharmacy Council, 2011b).

**Box 4.7: Preliminary list of competency clusters for sub-structure pharmacists presented at SAAHIP Conference (April 2009)**

**Preliminary list of competency clusters**
1. Professional
2. Management
3. Public Health
4. Personal and interpersonal
5. General

This feedback was useful and highlighted the timeliness of the research to developing pharmacy practice in the country. The presentation at the Public Health Association of South Africa Conference, held later in the year, similarly generated interest from the audience, including a senior director in the National Department of Health involved in health policy and planning. I hoped this would open the way for engagement in the development of pharmaceutical services in the district health system (Bradley et al., 2009b).

## 4.4.4  Refining preliminary roles and competencies

After the SAAHIP Conference the senior pharmacist from City Health emailed me a suggestion:

*"Hazel, I wonder if some of these can be combined in any way – also to give more of a vision of the UMBRELLA function being the strategic, advisory, supervisory, supportive role rather than operational –worried that "DSM"(drug supply management) is seen as giving meds to clinic only".*

We worked together on reformatting the list of roles and, despite the strong motivation for including sub-district pharmacists in our research, we decided that in order to maintain focus and clarity we would concentrate on the sub-structure pharmacist role, and acknowledged that in our setting sub-structure pharmacists in MDHS and the senior pharmacist in City

Health were equivalent to district pharmacists. We exchanged a few drafts and the senior pharmacist from MDHS agreed with the proposed re-formatting of the list of roles. The re-formatted list of roles was presented at the DEX meeting in June 2009 (Table 4.5). We decided to include the information in italics as we felt that at this stage it was more important to clarify in detail the envisaged roles, rather than develop a neatly formatted list.

**Table 4.5: Roles of sub-structure pharmacists (presented in DEX Report No2) June 2009**

| Roles of district pharmacists |
| --- |
| Planning, management, co-ordination and monitoring of: |
| Medicines *(selection; supply, distribution & storage; rational prescribing & use)* |
| Pharmacy human resources *(management & development)* |
| Pharmaceutical budget |
| Health care facilities *(audit of facilities; planning of new facilities; advise on legislative compliance)* |
| Provide information and advice on professional, legal, clinical and technical aspects to: |
| Health managers |
| Health workers |
| Health programmes *(EPI, TB, STI, Nutrition, Mental Health, HBC etc)* |
| NGOs and private providers |
| Consumers |
| Participate in quality assurance and clinical governance of pharmaceutical services |
| Participate in research activities related to medicines and pharmaceutical services |

Shortly after we had developed the revised format, I reflected on the literature I had been reading on management in health systems strengthening and realized the similarity of the sub-structure pharmacists' roles to those identified by Egger et al. (2005)as the three areas that need to be managed by health managers:

- Volume and coverage of services (planning, implementation and evaluation)
- Resources (staff, budgets, drugs, equipment, building, information)
- External relations and partners – including users of services.

After further engagement with the literature on competencies, I refined the competencies to four broad competency clusters (Box 4.8: Competencies of sub-structure pharmacists (presented in DEX Report No2) June 2009) and these were presented along with the re-formatted list of roles at the DEX meeting in June 2009. (DEX Report No2 in Appendix 5).

**Box 4.8: Competencies of sub-structure pharmacists (presented in DEX Report No2) June 2009**

**Four broad competency clusters**

- Personal and interpersonal competencies
- Management competencies
- Health systems/public health competencies
- Professional pharmacy competencies

## 4.4.5  DEX Report No2

The three core research project group participants attended the DEX meeting on 4th June 2009 to provide an update on the project progress. We presented the reformatted list of roles and four broad competency groups shown as shown in Table 4.5 and Box 4.8, and the senior pharmacists pointed out how this information could be useful to both organisations. The senior pharmacist from City Health suggested that it could assist in clarifying expectations of staff of sub-district pharmacists in City Health, and the MDHS pharmacist indicated that the information could be useful in identifying skills development needs and career-path planning for pharmacists. This was supported by the MDHS director who said that this work would be useful in informing the setting up of the Sub-Structures and Sub-Structure Management Teams in MDHS.

The MDHS director alerted us to the recent publication: District management study: a national summary report, prepared by HST for the National Department of Health which had identified the competencies required for district managers. He said there was some similarity between the competencies we had identified for district pharmacists and those in the report.

We were not aware of this work and had not seen the report, nevertheless we felt it was significant that comparable competencies had been identified in these two completely independent research processes. We agreed to consult this report as we elaborated the competencies and moved into the next phase of the project, which was identifying competency gaps and developing a training intervention.

After the meeting I accessed the publication, which reported on a national assessment of existing district management structures, competencies and training programmes, with the view to informing a national strategy and plan to strengthen district management capacity (Haynes et al., 2008). The report highlighted the importance of leadership and management as critical in implementing health districts and used a competency rating tool composed of 14 competencies, generated from a documentary review of management competency frameworks, to assess district managers' perceptions of important competencies for district management (Box 4.9: List of competencies of district managers (Haynes et al., 2008). There was considerable commonality with the competencies we had earlier identified for district pharmacists with those identified for district managers in this report.

**Box 4.9: List of competencies of district managers (Haynes et al., 2008)**

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**Core competencies**

1.  People management and empowering environment
2.  Self management
3.  Honesty and integrity
4.  Client orientation and customer focus
5.  Communication

**Managerial competencies**

6.  Financial management
7.  Resource management and allocation
8.  Problem solving and analysis
9.  Programme and project management
10. Community/partnership collaboration
11. Knowledge management

**Leadership competencies**

12. Strategic leadership
13. Change management
14. Service delivery innovation   134

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### 4.4.6  Presentation of preliminary findings at FIP Congress

At the FIP  Congress held in Istanbul, Turkey in September 2009 I presented our preliminary research findings (Bradley et al., 2009c). At the oral presentation in the Joint FIP/WHO Session: Pharmacy Workforce Development – Challenges and Strategies, WHO Pharmacy programme officers from Nigeria, Ghana and Tanzania confirmed the lack of competency frameworks for practicing pharmacists in sub-Saharan African countries, and were interested in exploring how the findings of this research could be applied in countries with similar health systems. A critical issue raised was the importance of matching pharmacy education to the pharmaceutical workforce needs in countries.  The relationship between professional education and job performance was an area that was highlighted in the World Health Report 2006 which focussed on human resources for health (WHO, 2006). In addition to this opportunity to present our research, our preliminary findings on district pharmacists were submitted as a case study to the WHO World Medicines Situation Review 2010 (Wuliji et al., In press). Another benefit of attending the conference was the opportunity to meet Professor Ian Bates and Andreia Bruno, researchers from the School of Pharmacy, London University, who are working on competency frameworks and are members of the Pharmacy Education Taskforce (PET) of FIP.

### 4.4.7  Workshop 4: Refining competencies of sub-structure and sub-district pharmacists

Further work on the competencies took place during Workshop 4 held in October 2009. This workshop took place at the SOPH, UWC and was attended by eight pharmacists and one human resources development manager from PGWC.  The workshop commenced with an update of the project progress since the previous workshop, and I gave feedback from the FIP Congress in Istanbul.  I described the interest in the project expressed by participants who viewed the poster and attended the FIP/WHO Session on Pharmacy Workforce Development: Challenges and Strategies where I presented our preliminary findings.  In addition to WHO country officers, officials from the South African Pharmacy Council and the Pharmaceutical Society of South Africa who were attending the Congress also attended the session.

We continued the workshop by clarifying understanding of the competency concept and exchanging information on current initiatives in competency development in the province. These included the Generic Framework for Medical Professionals which was being considered by City Health, the PGWC Decipher process for scarce skills occupations, including pharmacists, a document for hospital level pharmacists (entry level), and the national District Management Study (Haynes et al., 2008).

Next, the workshop participants were divided into two groups and brainstormed competencies required for sub-structure pharmacists, this time using the reformatted list of sub-structure pharmacists' roles categorised into four main areas as their starting point (Table 4.5: Roles of sub-structure pharmacists (presented in DEX Report No2) June 2009). The competencies identified for the four areas by both groups were collated in plenary, and these notes are shown in Box 4.10: Brainstorm of competencies of sub-structure pharmacists at Workshop 4. We decided to approach the identification of competencies in this way as considerable time had lapsed between Workshops 3 and 4 resulting in a number of changes, notably the appointment of four new sub-structure pharmacists (three were present at this workshop), and because we had reformatted the roles list into a more concise form.

**Box 4.10: Brainstorm of competencies of sub-structure pharmacists at Workshop 4**

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**Role 1: Planning, management, coordination and monitoring**
**Related competencies identified**
Management training e.g. project management; financial management;
Coordination skills & communication – all media e.g. electronic, written; verbal; formal and informal;
Creativity and ability to make an impact.
Ability to analyse budgets; prioritising limited resources; cost effectiveness
Negotiation skills & networking; conflict management & cultural diversity; leadership skills; assertiveness; change management
Decision making & evidence based evaluation; monitoring & evaluation – organisational skills;
holistic approach & appreciation of the public health sector including Batho Pele principles; accountability & customer focused;
Time management; problem solving; relationship skills
Ability to strategise; analyse – general skills – planning & management; human development competencies: strategise how to provide a service then development of a recruitment strategy e.g. salesman and marketer of pharmacy careers; retention strategies; staff development (career paths); ID training needs and analyse opportunities of available training; cost effective; formal vs mentoring etc. supportive of employees; ambassador – external & internal to management

**Role 2: Advice & support on professional, legal & technical aspects**
**Related competencies identified**

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Conversant with applicable legislation; interpretation of legislation; broad & variable range of communication at all levels & networking skills; inter-sectoral collaboration; professional status

**Role 3: Participate in quality assurance & clinical governance of pharmaceutical services**
**Related competencies identified**
Conversant with legislation; consistency – reliability; setting of and adherence to standards; knowledge of tools to use e.g. auditing; apply standard tools etc; research skills; understanding principles e.g. of PHC
Need to develop competency to be pragmatic & to manage the risk; prioritise limited resources -ethical outputs/recommendations; (in relation to compliance to legislation)

**Role 4: Research activities related to medicines and pharmaceutical services**
**Related competencies identified**
Analytical skills; methodical; disciplined; ethical; organisational skills; objectivity; pharmacovigilance; develop & update skills; interpretation of data e.g. indicators (also what indicators to use to prove outputs?)
Report writing skills and presentation skills (also see under communication)

We were pleased with the broad representation of pharmacists attending the workshop, especially the presence of three of the four sub-structure pharmacists who had been appointed during the previous two months. This helped us achieve our objective of including those who would be affected by the roles list and competency framework in the research (Whiddett and Hollyforde, 2003). Attendance by a representative from human resources development department in the province was encouraging, although it was difficult for her to make significant contribution as this was her first exposure to the project. After Workshop 4 the list of competencies was used to elaborate the four competency clusters that had previously been identified and the resultant competency framework is shown in Box 4.11.

**Box 4.11: Elaborating the four competency clusters of sub-structure pharmacists after Workshop 4 (October 2009)**

| **Management** | **Professional** |
|---|---|
| – Planning & organising | – Technical & legal aspects of pharmacy practice |
| – Leadership | |
| – Financial | **Personal & interpersonal** |
| – Human resources | – Problem solving |
| – | – Time management |
| | – Communication (oral & written, presentation) |
| **Health system/Public Health** | – Relationship building |
| – Health systems | – Networking |
| – Health programmes | – Adaptability |
| – Information systems | – Assertive |

At this stage we were fairly satisfied that the list of roles and competencies we had developed, shown in Table 4.5 on page 132 and Box 4.11 on page 137, represented our current understanding. We had embraced the participatory processes with pharmacists and managers from both health services organisations, and benefited from triangulation (dialectic) with key informants outside of Cape Town and published literature (Gilson, 2012).

We expected to move directly into Phase 2 of the project, developing an intervention to enhance sub-structure and sub-district pharmacist competencies. However, due to work commitments we did not progress into the second phase as planned, and by June 2010 I was concerned about the loss of momentum and reflected on how I should proceed.  By this time the sub-structure pharmacists had been in their new posts for almost a year and I decided to move ahead by interviewing them and the senior pharmacist from City Health, asking them to reflect on the lists of roles and competencies we had developed, in the light of their practice during the past year, and to identify competency gaps which would inform the development of an appropriate intervention. I realised could provide valuable additional information for the project and the health services, particularly to MDHS who had recently appointed four sub-structure pharmacists (Reason, 2006, Schon, 1983, Wright, 2009).

## 4.5  Cycle 3: Reflection I – Sub-structure and sub-district pharmacists' roles and competencies

The first occasion we reflected on sub-structure and sub-district pharmacists' roles identified by the research was in mid-2010. This was almost one year after the four MDHS sub-structure pharmacists took up their posts. I interviewed the four sub-structure pharmacists individually and asked them to reflect on the roles and competencies of district pharmacists identified by the project in the light of their practice (See Table 4.5 on page 132 and Box 4.11 on page 137). I asked them to consider both the roles envisaged for sub-structure pharmacists, as well as their actual practice and their experiences during this first year in these positions. They reflected on the list of competencies in a similar manner. Finally, I asked them to identify their competency gaps and learning needs, as these would be used to develop an appropriate invention planned as Phase 2 of the research. At the same time I interviewed the senior pharmacist from City Health and, similarly, asked her to reflect on the roles and competencies identified in the light of her own practice, as well as her experiences during the

past year, as she was only appointed to her position in October 2007, a few months prior to the commencement of this project.
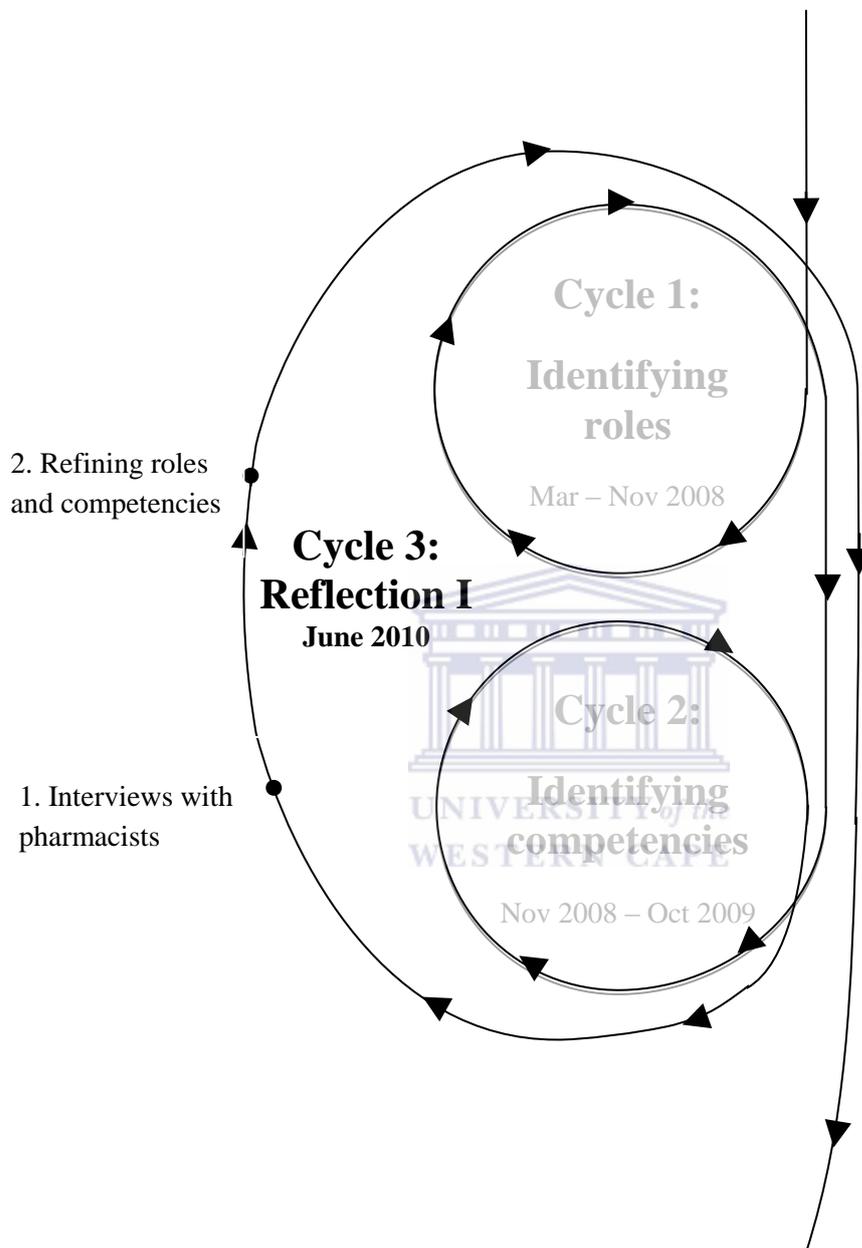


**Figure 4.4: Cycle 3: Reflection I**

## 4.5.1 Interviews with pharmacists

**4.5.1.1 Metro District Health Services – sub-structure pharmacists**

The sub-structure pharmacists commenced in their new positions between August and October 2009, and I begin by profiling the four pharmacists. Three of the four sub-structure pharmacists appointed were male and all were in their 40s. They had all worked in Cape Town prior to their appointment and were familiar with the setting and key stakeholders. Two were working in pharmaceutical services at the MDHS head office immediately prior to their appointment, one was working for the HAST Programme at provincial level, and one was working in the United States of America. All had some experience in pharmaceutical management in Cape Town and in other settings.

**Table 4.6: Profiles of four MDHS sub-structure pharmacists**

| Sub-structure pharmacists | M1P | M2P | M3P | M4P |
|---|---|---|---|---|
| **Sex** | M | M | M | F |
| **Age** | 40s | 40s | 40s | 40s |
| **Position prior to appointment** | Programme manager: Pharmaceutical services (MDHS) | Pharmacy manager: Private sector (USA) | Chief pharmacist: Pharmaceutical services (MDHS) | Chief pharmacist: HAST directorate (PGWC) |
| **Other work experience** | Hospital pharmacy manager: Private sector (Gauteng) | Chief pharmacist: Pharmaceutical services (PGWC) | Pharmacist (MDHS) | Hospital pharmacist: (PGWC); & Pharmacist (France) |

*4.5.1.1.1 Defining structures and functionality*

As the sub-structures were newly formed it was not surprising that all pharmacists mentioned that this first year was a time of adjustment, both for themselves as individuals and regarding setting up structures and defining functions within Cape Town Metro District and their own

sub-structures. Sub-structure pharmacists said that some of the processes of formulating structures and assigning functions were being led at a metro level by the Chief Director of Cape Town Metro District, and others by the directors within each sub-structure. They pointed out that as a consequence, although the main developments were common across the metro, each sub-structure was developing differently under the leadership of its director and guided by priority issues within the area. They highlighted two linked processes that were underway: clarification of functionality across the metro and within sub-structures and finalisation of job descriptions, the latter being led by one of the sub-structure directors.

Sub-structure pharmacists said that the Chief Director proposed that some 'transversal functions' would be allocated to the four pharmacists. By this he meant that one pharmacist would represent the four of them at certain MDHS meetings, and communicate information to the other three. The areas included human resources, chronic dispensing unit (CDU), HIV/AIDS, Expanded Programme on Immunisation (EPI), and other programme areas, and the subsequent allocation of these responsibilities reflected the previous experiences of the pharmacists:

*"… this year for the PTC, I am the co-ordinator, X is involved in HR….Y … involved in the interface between the province and the chronic dispensing unit and Z, because of her HIV/AIDS background, she deals with the programmes."(M2P)*

All mentioned that the four sub-structure pharmacists held regular meetings together every four to six weeks to discuss issues of common interest. They said they found the meetings were a useful way of exchanging information on MDHS meetings they had attended, discussing common problems and working together on resolutions to critical issues. They felt working together in this way minimised duplication of effort and confusion across the district. The senior pharmacist from City Health was invited to attend part of these meetings, as the pharmacists said that many new initiatives involved both PHC organisations. Co-operation at this operational level was in line with that taking place at the integrated sub-district management team (ISDMT) meetings and at senior management level at the DEX Meeting.

These structural developments described by the sub-structure pharmacists seemed to highlight their integral positions as members of the sub-structure teams, as well as their

involvement at a central level in Cape Town Metro District. However, it was significant that all pharmacists appeared to place considerable value on meeting together regularly, even though they said that this was difficult given their busy schedules. This may have been because as they felt more comfortable working together in a pharmaceutical team rather than as members of the inter-professional sub-structure management team. In fact, one pharmacist specifically mentioned how he missed the professional engagement he experienced working at MDHS pharmaceutical services head office immediately prior to taking up his position as sub-structure pharmacist. These perspectives could be reflective of the pharmacists' professional educational and training and their prior work experiences, and may have been facilitated in this situation by the fact that the four pharmacists already knew each other fairly well.

### 4.5.1.1.2 Interrogating roles during the past year

As sub-structure pharmacists reflected on the list of roles that had been identified during the previous workshops, they said that there was significant congruence between them and what they envisaged their roles should be now they had started working. However, they reported significant divergence between their actual practice during this year and these roles.

All pharmacists said that strategic planning and monitoring of pharmaceutical services in the sub-structure were fundamental roles, as well as reporting on the overall situation to the sub-structure director. They stressed that, whilst it included some coordination, it did not include direct management of pharmaceuticals, human resources, budget or physical facilities. These were the responsibility of the facility pharmacy managers and ultimately the facility managers, who were the line-managers for pharmacy managers. They said that sub-structure pharmacists were expected to support the facility-level managers in these roles, by assisting with major medicines supply problems, guiding recruitment of pharmacy staff, and advising on infrastructural and equipment requirements for pharmacies.

Contributing pharmaceutical expertise to sub-structure activities had been a major function during this past year. All pharmacists said that they were working closely with health programmes including HIV, TB, nutrition, maternal and child health and reproductive health, as well as NGOs, private providers and City Health. These activities emphasised the integrated way sub-structure pharmacists were expected to function as members of the sub-

structure management team. Most sub-structure pharmacists anticipated further expansion of this area of work as they increased their involvement to Step-Down Facilities, Old Age Homes. Children's Homes and community-based organisations, which had previously received minimal pharmacist input. All mentioned drives within the province on service innovation, and provided examples of developments of new models of medicines delivery such as the CDU. These included "...*find[ing] alternative places to service customers, whether it is at a City site or in a totally new site such as a civic centre or whatever."(M1P)*

Sub-structure pharmacists interpreted their involvement in clinical governance and quality assurance as encompassing greater clinical involvement. They saw these as key responsibilities and unanimously welcomed the opportunities they brought. All mentioned attending Clinical Management Meetings in their sub-structures and participation in initiatives at district and sub-structure level to establish PTCs. One sub-structure pharmacist had arranged for pharmacists and doctors from his sub-structure to attend a therapeutics training course to enhance clinical skills, and he hoped this would build capacity so that *"pharmacists would be better utilised"(M1P).* Another pharmacist voiced that he saw quality assurance issues relating to drugs as 'political', in the sense that drug shortages at facilities were quickly picked up by the local media and became a 'hot' political issues.

All sub-structure pharmacists reported that the year had been challenging. Two sub-structure pharmacists reported that during this first year they had been largely involved in operational activities rather than the strategic roles they had envisaged. They described human resource matters, relating to the appointment of new staff and locum cover at the community health centres and issues relating to the training of pharmacist's assistants, as well as medicines supply problems, taking up most of their time:

*"I think it has been very much, I would say 'hands on' and not really strategic. I was involved in HR[human resources], including the whole recruitment and selection process for the pharmacist and pharmacist's assistant."(M4P)*

*"... from a drug supply management point of view, I was involved mainly in confirming orders, following up with CMD[Cape Medical Depot] and responding to patients who did not receive stock from facilities."(M4P)*

The two other sub-structure pharmacists described greater involvement in sub-structure wide activities. They seemed to have a more strategic vision of their position and appeared to be adjusting to their new roles fairly well. One mentioned his involvement with system issues such as waiting times and initiating a clinical training programme:

*"... also we are looking at system, making them more effective ... one of the issues when I started here was always 'the waiting time is too long' ..."(M1P)*

The other sub-structure pharmacist emphasised the importance of empowering facility pharmacy managers, and had developed monitoring tools for managing pharmaceutical supplies and medicines expenditure across his sub-structure:

*"... as far as drug supply management goes, and that's the area that I would like to develop as well as budget awareness and actually taking responsibility as far as ordering is concerned ..."(M2P)*

*"... when we talk about human resources, HRD (human resources development), it's about empowering the pharmacy managers to be managers."(M2P)*

These two sub-structure pharmacists appeared to have understood the need to move towards working in a more integrated fashion within the sub-structure management team. They termed this *MATRIX* management, and elucidated the changes required to move into new ways of working:

*"I think the difference is we addressed it as we are running pharmacy services ... HR ... finances ... but now you need to align those with the priorities of the health services, and that's the change ...."(M2P)*

Some reasons for these differences may be attributed to the prior experiences of the pharmacists. The two sub-structure pharmacists who had moved into their new roles more easily had previously worked at more senior management levels than the other two. Moreover, the two other sub-structure pharmacists may have felt more comfortable continuing with familiar functions in the new environment: one was previously involved in human resources for pharmaceutical services. This seems to indicate the influence of the prior

experience of the pharmacists on their performance during this first year as sub-structure pharmacists.

*4.5.1.1.3 Interrogating competencies during the past year*

All sub-structure pharmacists agreed that the list of competencies identified during the previous workshops generally reflected those required in their new positions. It was interesting that all sub-structure pharmacists highlighted the importance of interpersonal and personal competencies, soft skills, as critical. They highlighted relationship building, networking, teambuilding and communication as important:

"Y*ou need to build relationship, you can't just send out a letter ... you need working relationships; you know it's more than just speaking to a guy on the phone, you must put in some effort, you must go there and explain ...*"(M2P)

They mentioned networking as critical during the early stages of establishing the sub-structures, and said it was particularly important considering that their responsibilities for pharmaceutical services extended to NGOs and private providers in their sub-structures. They also emphasised the importance of working closely with City Health, the local authority, and said this was aided by good working relations with the senior pharmacist at City Health (who was also part of this project). Some talked about how these new positions provided greater opportunities for communicating with facility staff, and they said that as they now regularly attended management team meetings with facility managers it was easier to disseminate information about medicines issues directly with them than previously.

Two pharmacists said that the nature of this new job, particularly the heavy workload and diverse responsibilities, had challenged their personal skills, and they had to learn quickly how to prioritise and develop problem solving and decision-making skills. Other competencies highlighted were leadership, especially in connection with change management relating to the implementation of new accountability structures with facility pharmacy managers, as well as development of new service innovations.

Although pharmacy professional competencies were mentioned during the interviews in connection with various activities, they were emphasised less frequently than interpersonal

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and personal competencies. This was possibly because the sub-structure pharmacists were more familiar with these competencies and felt the most confident in using them in their new positions.

All said that management competencies were fundamental competencies in these new roles. They mentioned that their roles in change management and spearheading service delivery innovations required significant leadership competencies, and for this reason one sub-structure pharmacist motivated that leadership should form a separate competency cluster. In addition, having a good understanding of the health system and public health was considered important in being able to participate optimally in the sub-structure management team.

All pharmacists identified competency gaps, and significantly they included management and health systems/public health competency areas, including: conducting a situational analysis, drug utilisation reviews, monitoring, matrix management, public service management and financial management.

### 4.5.1.1.4 Key challenges during the past year

One of the challenges sub-structure pharmacists highlighted was getting used to new ways of working. They said this involved themselves and others, particularly facility pharmacy managers and facility managers. They said that the sub-structure pharmacist's new role was essentially a 'horizontal' one as a member of the sub-structure management team, rather than a 'vertical' one they were more familiar with within pharmaceutical services. They said this had been explained to the Chief Director of MDHS as 'matrix management'.

So, from both perspectives it involved moving away from entrenched ways of working:

*"... well, this facility has been functioning in a way that they have been functioning in the past 10 years. So, it's very difficult to change, but at the same time, it's like there needs to be change."(M4P)*

Other challenges highlighted by all the sub-structure pharmacists was the need to develop capacity in facility pharmacy managers 'to manage' their pharmacies with respect to staffing, medicines supply and physical requirements. Facility managers are their line managers and

should provide support to them in these roles, with the sub-structure pharmacist providing professional advice and performing strategic planning and monitoring roles.

### 4.5.1.2 City Health – senior pharmacist

The senior pharmacist from City Health was appointed to her position shortly before the research commenced and, as it was a newly created post, she said that her role was still evolving. In addition, the establishment of new services and increasing integration of the two PHC organisations were key developments which impacted on her.

#### 4.5.1.2.1   Interrogating roles and competencies during the past year

The City Health senior pharmacist described her main responsibilities during the past year by highlighting her involvement in planning and implementation of national and local immunisation campaigns, including the measles and polio campaign. She said the campaigns were complicated by a measles outbreak, *"nightmarish logistics"* and, as it was the first time she was involved in these activities, she confessed that *"it was all quite an eye opener" (CP)*. Other major activities during this period were the establishment of new services, including setting up new ARV sites and implementing the CDU at City Health clinics, which involved *" … a lot of co-ordination between us and province" (CP).* Another significant undertaking was initiating and supporting training courses for clinic staff, mainly nurses, in drug supply management, as well as providing input on drug supply management at in-house courses for City Health managers. The senior pharmacist's role was considerably different to those of sub-district pharmacists in City Health, as it was apparent that she worked at a much more strategic level which was comparable to that of sub-structure pharmacists in MDHS.

She agreed that most competencies listed were relevant to her role and highlighted strategic leadership and change management as critical. She mentioned several personal skills as being important, including being adaptable to working in a resource constrained environment, prioritising, problem solving and decision-making:

*"...it's about having that ability to look and see what we can do in the situation … you know technically you say 'no it can't be done' but finding the best solution."( CP)*

The main responsibilities and experiences mentioned by the senior pharmacist from City Health, although working at district level, were very different from those of MDHS sub-structure pharmacists. Of course, a major distinction was that City Health was an established organisation, as opposed to MDHS which had just been unbundled into four separate structures. Other major differences in her roles compared to the MDHS sub-structure pharmacists probably resulted from the different services and staffing of the two PHC organisations. City Health provides mainly promotive and preventive health care through nurse-run clinics, which likely influenced the senior pharmacist's involvement in immunisation campaigns and training of non-pharmacy staff from the clinics in drug supply management. MDHS, on the other hand, provides mainly curative care through CHCs staffed by doctors and pharmacists, in addition to nurses. It is important to note that the senior pharmacist appeared to reflect on roles that were significant to her during the past year, either in terms of her involvement for the first time, new initiatives to City Health, or took up considerable amounts of her time. She did not reflect directly on the roles developed during the workshops during this interview, possibly because she felt that her intervention in reformatting the roles list previously was sufficient confirmation of the relevance of the list of roles to her position as senior pharmacist at City Health.

It was significant that when the senior pharmacists reflected on the list of competencies identified at the workshops, she highlighted similar competency clusters, personal and interpersonal competencies, as had the sub-structure pharmacists, as being most critical during the past year. This was despite seemingly variant roles. She identified that her main competency gaps were in public service management, and financial management and budgeting.

## 4.5.2 Refining roles and competencies of sub-structure pharmacists

The list of roles and competencies of sub-structure pharmacists were revised based on the interviews with the four sub-structure pharmacists from MDHS and the senior pharmacist from City Health (Table 4.7 and Box 4.12 below). The main change made to the list of roles was the removal of "management" from the first block. Sub-structure pharmacists stressed that their main roles were planning, co-ordination and monitoring (from a strategic management perspective), and emphasised that they were not expected to be involved in day-

day operational management functions, such as ordering and supply of medicines and staffing issues.

**Table 4.7: Roles of sub-structure pharmacists (revised after 13 July 2010 and presented at DEX September 2010)**

| Roles of sub-structure pharmacists |
|---|
| Planning, coordination and monitoring of:<br>    Pharmaceuticals<br>    Pharmacy human resources<br>    Pharmaceutical budget<br>    Pharmaceutical facilities |
| Provide information and advice on professional, legal, clinical and technical aspects to:<br>    Health managers<br>    Health workers<br>    Health programmes<br>    NGOs and private providers<br>    Consumers |
| Participate in quality assurance and clinical governance of pharmaceutical services |
| Participate in research activities related to medicines and pharmaceutical services |

The competency framework received more substantial revision. Several additional management competencies were identified in the Management competency cluster, and Leadership was identified as a separate competency cluster, rather than as part of the Management cluster. This was in response to suggestions from district pharmacists who emphasised the importance of change management and service innovation initiatives in their new roles which demanded leadership. Some more specific competencies were identified in the Professional pharmacy practice competency cluster, and additional competencies were identified in the Personal and interpersonal competency cluster.

**Box 4.12: Competencies of sub-structure pharmacists (revised after 13 July 2010 and presented at DEX September 2010)**

| | |
|---|---|
| **Management**<br>　　Planning & organising<br>　　Financial management & budgeting<br>　　Human Resources management<br>　　Physical resources management<br>　　Project management<br>　　Information management<br>　　Monitoring & Evaluation<br><br>**Leadership**<br>　　Strategic leadership & vision<br>　　Change management<br>　　Service development & innovation<br><br>**Health system/Public Health**<br>　　Health systems and organisation<br>　　Health programmes<br>　　Public Health | **Professional pharmacy practice**<br>　　Legal & regulatory aspects of<br>　　pharmacy practice<br>　　Clinical aspects of pharmacy practice<br>　　Technical aspects of pharmacy<br>　　practice<br>　　Public Service legislation and practice<br><br>**Personal & interpersonal**<br>　　Professionalism<br>　　Self development<br>　　Problem solving<br>　　Prioritising<br>　　Decision making<br>　　Adaptability<br>　　Assertiveness<br>　　Negotiation<br>　　Time management<br>　　Cultural competency<br>　　Communication skills (oral &<br>　　written)<br>　　Relationship building<br>　　Networking<br>　　Teamwork |

## 4.5.3 DEX Report No 3

In September 2010 we reported to the DEX meeting for the third time (DEX Report No3 in Appendix 6). We presented the revised list of roles for sub-structure pharmacists (Table 4.7) and the substantially elaborated competency framework (Box 4.12). We pointed out the similarities between roles of sub-structure pharmacists and managers of health services as identified by Egger and Ollier (2007). The MDHS director confirmed that sub-structure pharmacists' roles in the SSMT involved largely generic management roles. He emphasised the important relationship between sub-structure pharmacists and facility pharmacists, and the need to clarify roles of each, and referred to the *Task meeting* held the previous day.

The City Health director raised the issue of sub-district pharmacists in City Health again, and asked if it was workable for sub-district pharmacists to be based in facilities and have responsibilities in facilities. He requested that the senior pharmacist City Health and I look into this further and report back, and we agreed to do so. After this we indicated that the next stage of the project was to develop a small intervention, and we proposed that we would probably focus on drug utilisation, possibly of chronic medications.

At this meeting we were pleased with the engagement of management of both organisations with the research, although we noted that each director focused on areas of particular interest to their own organisation. The MDHS director picked up on the requirement of management competencies of sub-structure pharmacists, which seemed to follow on from his notifying us about the District Management Project at the previous meeting. Surprisingly the director from City Health asked for our input on the sub-district pharmacists matter again, even though we did not feel they valued our previous attempts at investigating the situation.

## 4.6 Cycle 4: Implementing an intervention to enhance competencies

In this section I will describe and reflect on second phase of the project. In this phase we intended to develop and pilot an intervention that would enhance sub-structure and sub-district pharmacist competencies. We planned to commence by identifying competency gaps and learning needs of pharmacists providing primary level pharmaceutical management at sub-structure and sub-district levels, and then develop and pilot an appropriate intervention. Determining a suitable intervention was an iterative process involving participation of the health services partners. The intervention that emerged responded to the desires of the pharmacists and in this way it reflected important principles of PAR (Laws et al., 2003). It was piloted in each of the four sub-structures in Cape Town. Whilst the negotiation and planning of the intervention commenced in June 2010, delays encountered resulted in implementation between April and June of the following year.
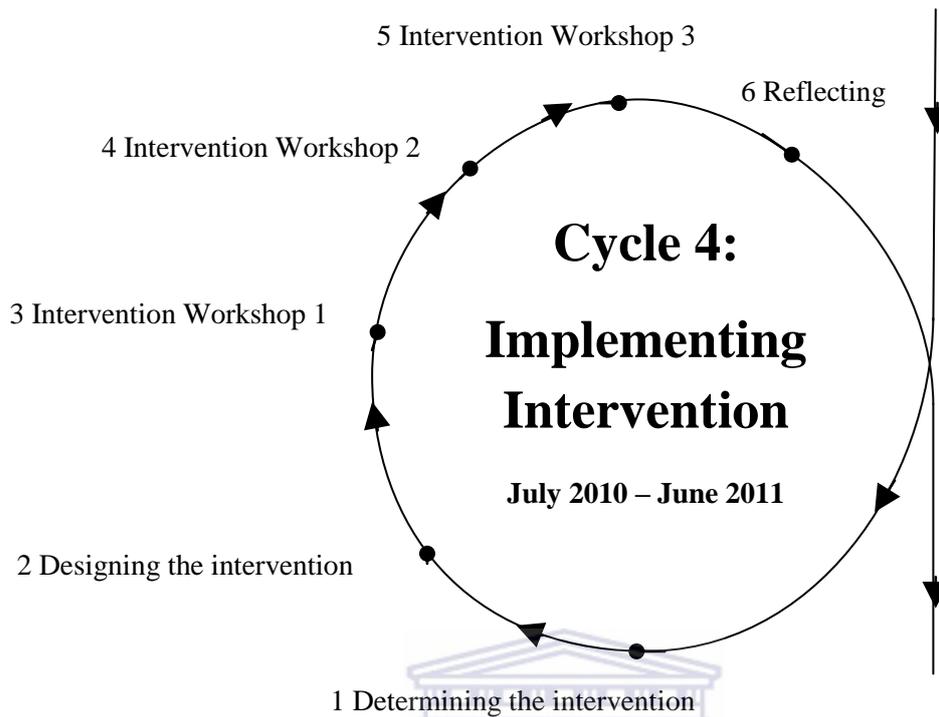
**Figure 4.5: Cycle 4: Implementing the intervention**

## 4.6.1 Determining the intervention

Determining the precise nature of the intervention involved several steps: individual semi-structured interviews with the four sub-structure pharmacists (MDHS) and senior pharmacist (City Health), followed by a focus group with the five pharmacists and further informal interchanges with one of the sub-structure pharmacists, until a proposal was developed and consensus on the intervention was reached amongst this group.

I conducted interviews with the five pharmacists in June 2010, almost one year after the sub-structure pharmacists took up their positions. I asked them to reflect on the relationship of the list of roles we had identified during 2008 and 2009 with respect to their actual work practice and experiences over the past year. I followed this by asking them to reflect similarly on the list of related competencies that had been identified and to describe their individual competency gaps and learning needs. The pharmacists mentioned a variety of learning needs that reflected the demands of their current roles as well as their previous experience. I had

asked the senior pharmacist from City Health to reflect similarly. I was aware that the sub-structures and City Health had different priorities, aligned to their own particular contexts, and this was also likely to influence the learning needs that the pharmacists identified. These reflections have been discussed in detail in section 4.5.

Approximately one month after these interviews, I convened a focus group with the five pharmacists, prior to one of their regular joint meetings, in which I shared feedback from the individual interviews with the group, and we reflected together on their experiences over the past year and identified common competency gaps that would inform the development of a suitable intervention. The main learning needs identified by the four sub-structure pharmacists included: monitoring, drug utilisation reviews, conducting a situational analysis, systems analysis, matrix management and public service management. The senior pharmacist from City Health mentioned public service management and financial management. In general learning needs in management and health systems competencies seemed to predominate.

As we reflected together on their experiences over the past year, a common thread running through the interviews was the inability of sub-structure pharmacists in MDHS to function optimally in their envisaged roles, due to facility pharmacy managers being either unable or unwilling to carry out functions appropriate to their positions. They indicated that they felt that this was due to lack of specific management competencies, as well as health system and public health competencies, exemplified by a poor understanding of their role within the new district health system. As we discussed this together, the pharmacists stressed the necessity of building the required competences in facility pharmacy managers. This emerged as the most pressing issue and so at the end of the focus group we agreed to develop an intervention that would focus on building competencies in facility pharmacy managers, rather than in the sub-structure pharmacists themselves.

At his stage the process seemed to stagnate. This was probably due to competing responsibilities, which was understandable as the new structures were still in their infancy, having been formed just one year earlier. In order to move forward I invited one of the sub-structure pharmacists to work closely with me to design the intervention. I realised that she would be able to provide information on the circumstances within the services, and these

additional insights proved to be critical in the development of the proposal we subsequently put to the other pharmacists. 'Backstaging', in this way, to secure commitment is an acknowledged feature of PAR (Coghlan and Casey, 2001 as cited in Waterman et al., 2001).

As the sub-structure pharmacist and I met to discuss a possible intervention, we acknowledged the need for facility pharmacy managers to have an improved understanding of the pharmaceutical services they delivered, particularly in terms of the broader primary health care services and the communities they service. At the same time, we were cognisant of the needs of sub-structure pharmacists, themselves, to have up-to-date information about each of the facilities in their sub-structure, in a format that would facilitate planning and monitoring of pharmaceutical services, as well as comparison across the Metro.

So, with this in mind we came up with the idea of developing a Pharmaceutical Profile for each facility in MDHS or sub-district in City Health. The Pharmaceutical Profile would comprise up-to-date information on pharmacy and health services provided at the facility or sub-district, as well as information on the community in which the facility or sub-district was situated. Facility pharmacy managers or sub-district managers would be able to use the Pharmaceutical Profile to critically analyse pharmaceutical services in light of the services being delivered and community needs. At the same time, district pharmacists from MDHS and the senior pharmacist from City Health could utilise the information for broader Metro-wide purposes. We presented these broad ideas to the four other pharmacists and they agreed that it would be beneficial to facility pharmacy managers and sub-district pharmacists, as well as themselves.

The proposed intervention was different from what I had anticipated, as I had expected to build competencies in the sub-structure pharmacists and the senior pharmacist themselves. However, as sub-structure pharmacists were now working as part of management teams, and the senior pharmacist (City) was increasingly involved in issues at City level, they were becoming more aware of the need for pharmacy services to be integrated into district health services as a whole. In addition, in these new management positions they had become more aware of the importance of information to plan and monitor PHC service delivery and the need to develop similar understanding and competencies in facility-based pharmacists and sub-district pharmacists (Mintzberg, 2011).

Although it was not our intention, only pharmacists were involved in the design and implementation of the intervention. This was in contrast to the inclusive approach we had successfully adopted in the first phase of the project, but it evolved in this way as the health managers seemed to have a myriad of more pressing responsibilities, leaving little opportunity to continue their engagement with this research.

Unfortunately we were not able to implement the invention as planned in October 2010, due to the pharmacists being busy with activities related to the new structures, and we agreed to commence the intervention in early 2011. The first workshop took place in April 2011 and the subsequent two workshops followed at monthly intervals in May and June 2011. Being sensitive to the competing needs of service delivery and being flexible about the timing of the intervention are known challenges of PAR, and handling them appropriately was critical to maintaining the co-operation of service partners (Laws et al., 2003).

## 4.6.2  Designing the intervention

As we commenced designing the intervention, we realised it was important to plan the intervention carefully by clarifying learning objectives, deciding who would be involved and mapping out the implementation process. Whilst I consulted several documents, including *How to conduct a rapid situation analysis: A Guide to health districts in South Africa* and *Using Information for Action: A manual for health workers at facility level*; pharmacists contributed information relevant to the setting and this lead to the development of Pharmaceutical Profile Intervention, outlined in (Heywood and Rohde, undated, McCoy and Bamford, 1998).

Section A comprises Learning outcomes, which aimed to increase facility pharmacy managers' and sub-district pharmacists' knowledge and understanding of the pharmacy services they provide within a broad community and health services context. The sub-structure pharmacists and senior pharmacist suggested piloting the intervention in one facility in each sub-structure, and that the facilities should cover a range of the different types of facilities across the Cape Town (including both MDHS and City). They identified suitable sites based on their knowledge of the settings invited three facility pharmacy managers to participate in the intervention along with the three sub-structure pharmacists representing MDHS (one district pharmacist indicated that he did not want to participate in the

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intervention) and one sub-district pharmacist to participate alongside the senior pharmacist from City Health. The sub-structure pharmacist that did not want to participate emphasised that he was not withdrawing his support for the project, but did not want to be involved in this next phase. Although he did not give a reason at the time, it later transpired that he was about the leave MDHS and commence a new job. The range of sites from which participants were selected is listed in Section B. Finally, a six step implementation process was developed and is shown in Section C.

We decided to implement the Pharmaceutical Profile Intervention using a participatory process in which the three sub-structure pharmacists, senior pharmacist (City), three facility pharmacy managers (MDHS) and one sub-district pharmacist (City) would participate in a series of three half-day workshops. We expected the pairing of more senior pharmacists with those who were in junior positions, and the participatory workshop format would contribute to the collaborative learning experience. It was agreed that I would facilitate the workshops and everyone would participate by carrying out specific tasks between the workshops. This approach was in line with the overall action learning principles of the research project.
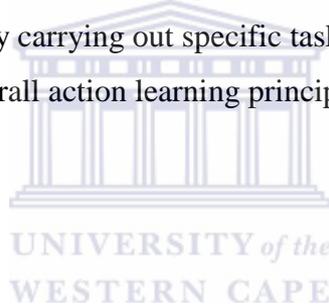
**Box 4.13: Summary of Pharmaceutical Profile Intervention**

**A. Learning outcomes**
**Facility pharmacy managers and sub-district pharmacists**
1. To demonstrate understanding of the community they are serving with pharmaceutical services
2. To demonstrate knowledge of health services provided by the facility (or sub-district)
3. To demonstrate understanding of pharmaceutical information (including sources of data and use of information)
4. To critically analyse pharmaceutical services the facility (or sub-district) is currently providing compared to needs
5. To share information with others in the pharmacy department, facility, and sub-structure (or sub-district)

**Sub-structure pharmacists (MDHS) and senior pharmacist (City)**
6. To build capacity in facility pharmacy managers in above five outcomes
7. To develop a suitable format to collate and monitor key information on facilities across sub-structure (or sub-district and across City Health)

**B. Sites**
One pharmacy manager from each type of facility listed below, one site to be identified from each sub-structure
- small-medium sized 8-hr CHC (MDHS)
- large 24 hour CHC with MOU (MDHS)
- new district hospital (still in planning phase) (MDHS)
- one sub-district (City Health)

**C. Six step process**
Step 1: Develop a community profile
Step 2: Develop a health services profile
Step 3: Develop a pharmaceutical services profile
Step 4: Analysis of pharmaceutical services
Step 5: Formatting the information
Step 6: Presentation of pharmacy profiles

## 4.6.1 Intervention workshop 1

The first workshop was held in early April 2011 and was attended by eight health services participants (all pharmacists) a research assistant who take notes and myself. Three of the four sub-structures were fully represented by either their sub-structure pharmacist (MDHS) or

the senior pharmacist from City Health; and respective facility or sub-district pharmacist that had been selected to participate in the intervention. After introducing each other, I provided a brief background to the project and progress so far. This was particularly for the benefit of the facility pharmacists who had not previously been involved in the project. I presented the six-step process and we discussed the rationale for the intervention. For the remainder of the workshop we focused on steps 1-3 and the key questions devised to guide our discussion are shown in Box 4.14.

**Box 4.14: Questions posed for steps 1-3 of intervention**

**Step 1: Developing community profile**
Key questions:
- *Why do we need to know the profile of the community where our facility is located?*
- *What type of information should we collect?*
- *Where can we access the information?*

**Step 2: Developing health services profile**
Key questions:
- *What types of health services does this facility offer?*
- *Where are they located (in facility or community)?*
- *Who provides them?*

**Step 3: Developing pharmaceutical services profile**
Key questions:
- *What types of pharmaceutical services do you provide?*
- *What information (statistics) do you have on these services?*
- *Who is involved?*
- *Where do they take place?*

Each question provoked lively debate between participants as they exchanged their ideas and understanding of the topics that were raised. Participants suggested the type of data that should be collected for each step and where this information could be accessed, On the whole the more senior participants, that is, the sub-structure pharmacists from MDHS and the senior pharmacist from City Health, had a fair comprehension of the key issues raised by the questions and their relevance to their roles as pharmacists providing PHC services. However, at this stage, the facility pharmacy managers and sub-district pharmacist were less aware of

the significance of engaging in this type of information. This was in line with our expectations and was precisely why we decided on this intervention.

After we had discussed the three steps, it was agreed that I would use the suggestions generated during the workshop to draft a template for facility pharmacy managers and the sub-district pharmacist to collect data relevant to steps 1, 2 and 3, and bring to the data to Intervention workshop 2. It was agreed that sub-structure pharmacists and the senior pharmacist (City Health) would assist the facility pharmacists and sub-district pharmacists, respectively, with accessing data. At the end of the workshop, two of the participants asked how this intervention correlated with the National Core Standards initiative, and we agreed that this was an area we should clarify further at the next workshop (Department of Health, 2011c).

I subsequently developed a template which included fields relating to community, health services and pharmaceutical services, as well as lists of information sources we had identifies at the workshop. This was sent out to workshop participants for feedback and the finalised version was sent out to all participants to use to compile the four profiles (Appendix 7).

## 4.6.2  Intervention workshop 2

The second workshop took place one month later, in early May 2011, and was attended by five health services participants, representing three sub-structures, a research assistant who took notes and me. Even though we had received several legitimate apologies, we decided to continue with the workshop as planned so that we could maintain the momentum of the intervention. At the commencement of this workshop, participants presented the data they had gathered for the community, health services and pharmaceutical services profiles of their facilities or sub-district (Steps 1, 2 and 3), and described the challenges they had encountered in accessing the data.

Participants reported that they had accessed data from a variety of sources, including the Western Cape Burden of Disease Study, sub-district information, City of Cape Town website, as well as from individual environmental officers and health information officers. Participants exchanged some additional website addresses with each other for future use. Several participants reported that they had difficulty accessing data, as some people who had agreed

to assist them with data did not deliver as promised, whilst others reported that the PGWC intranet site was busy when they wanted to access data.

Three sub-structures representing a small-medium 8-hour CHC, a new district hospital and a sub-district shared data they had accessed on each of the three steps. During discussions about the data that had been accessed, it was evident that in all three instances there was good collaboration between the two pharmacists working in the sub-structure. The sub-structure representing the large 24 hour facility was not present again at the workshop, and I agreed to follow up with this sub-structure pharmacist after this workshop to expedite this group's participation in the Intervention.

**Box 4.15: Questions posed for steps 4 and 5 of intervention**

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**Step 4: Analysis of pharmaceutical services**
Key questions:
*How do the pharmaceuticals services currently provided compare to overall PHC services and needs of community?*

**Step 5: Formatting the information**
Key questions:
*Who is the information for?*
*Which information to include?*
*What is the most appropriate format?*
*How can information be kept up-to-date?*

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As we moved to Step 4 (Box 4.15) we began to consider the value of the information from the community profile for health and pharmaceutical services.  Some of the points that emerged during our discussions on the type of information that can be extracted from the community profile data are shown in Table 4.8.

**Table 4.8: Implications of community profile information for health and pharmaceutical services**

| Data Type | What can be learnt | Implications for health services | Implications for pharmaceutical services |
|---|---|---|---|
| Demographic | Age range Gender structure | Health services priorities | Pharmaceutical services priorities e.g. <5 yrs –EPI; females 15-39yrs - reproductive health; >60yrs – CDU |
| Socio-economic | Accessibility to water, sanitation, adequate housing, % med aid coverage | Low access to services & med aid coverage increases health services needs & usage | Seasonal requirements for oral rehydration solutions Non-availability of fridges for insulin |
| Language & education | Language & literacy levels | Communication requirements | Appropriate communication strategies for information on rational medicines use – verbal & labelling |
| Burden of disease | Priority health problems | Prevention & treatment strategies required | Types of drug treatment required e.g. HIV/AIDS services, chronic diseases |

As the workshop progressed, participants became more aware of the value of this type of information to them in planning and delivering pharmaceutical services. They said that knowledge of the socio-demographic profile of the community could assist them in planning initiatives to improve rational medicines use and ensuring staff are able to counsel patients using appropriate languages. Although information on the range of health services offered by their facility was known by most participants, information on other health care providers in the vicinity was generally poor. As sub-structure pharmacists elucidated the DHS concept and outlined the inclusivity of NGOs and private providers, the relevance of this information became more apparent. Similarly, outlining the range of potential pharmaceutical services offered at facilities provoked discussion on innovative models of delivering medicines, including utilising community health workers as occurs in a pilot project in Khayelitsha. The discussions provided rich opportunities for sharing experiences and collaborative learning amongst health services participants themselves and between health participants and me as the researcher (Dick, 1993 as cited in Davis, 2007).

Finally, we moved to Step 5 (Box 4.15) in which we discussed suitable formats for compiling and displaying this information. We debated several aspects including: W*ho the information*

*is for? What information should be included?* and *How it could be kept up-date?*. At this stage, however, we did not make any decisions on suitable formats.

At the end of the workshop participants commented that they felt this type of information was useful, but pointed out that it should be more readily available. This seemed to indicate a positive shift in the understanding of health systems and public health principles by workshop participants. All participants were tasked with gathering further data before the final workshop.

## 4.6.5 Intervention workshop 3

The final workshop took place as planned in early June 2011 and was attended by eight health services participants representing all four sub-structures. After introductions and orientating one new member to the intervention, we commenced by sharing new data collected and discussing on-going challenges with accessing the data required to compile the Pharmaceutical Profile. Each of the four groups presented in turn.

The pharmacist from the 8-hour facility had gathered information from a variety of sources including the health information officer at the sub-structure office, community-based services manager and the City of Cape Town website. He said that he had not accessed burden of disease data yet. He commented on being previously unaware of all health activities happening at his facility and community around and said that it had really *"opened his eyes to what is around".* A sample of part of his Pharmacy Profile is included as Appendix 8. The pharmacist from the 24-hour facility reported that she felt very frustrated, as she had not been able to access data from her facility health information officer, even though she had enlisted the support of their facility manager. This pointed to real problems in this particular setting which could potentially have a negative impact on the ability to plan and monitor facility and sub-structure activities. The sub-structure pharmacist agreed to look into this situation. The sub-pharmacist representing City Health commented how she realised that aggregated data, even at sub-district level, masks differences between suburbs within the sub-district emphasising the importance of careful interpretation and use of information. Vast inequalities in socio-economic status are unfortunately a remnant of South Africa's apartheid history.

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Next, we continued with Step 5 and it was agreed that the use of visual display, such as graphs and posters, was suitable for presenting information at facility level. It was suggested that facility, sub-district or sub-structure health information officers could be involved, and greater use could be made of charts and graphs they already produce. The electronic format was considered most appropriate for maintaining up to date records and informing sub-structure pharmacists (MDHS) and the senior pharmacist at City Health. Other suggestions included the facility pharmacy manager presenting the Pharmaceutical Profile, using the information gathered on the template at various forums, including his/her own pharmacy department, facility staff and at the sub-structure pharmacy managers meeting or, in the case of City Health, at the City Health sub-district meetings. The presentations could be used to challenge other facility pharmacy managers to compile Pharmaceutical Profiles for their facilities and use them in similar ways. Those who had participated in the invention pilot could support them.

The possibility of using a standardised database, such as the National Core Standards, was discussed at length, but at the time we were not able to obtain precise information on what was available. We knew that baseline data was going to be collected on all health facilities in the country, facilitated by a team from Health Systems Trust (Department of Health, 2011c). In view of these developments, the sub-structure pharmacists and senior pharmacist felt that it would not be worthwhile continuing with developing our own Pharmaceutical Profiles, as they envisaged that the National Core Standard process would develop tools that could be used or adapted for the same purpose. This was understandable and so we decided we would not take this intervention any further.

### 4.6.6 Reflecting on the intervention

The intervention took longer than anticipated to develop and pilot, and was somewhat different from what I had envisaged, it was nevertheless in accordance with the desires of the sub-structure and senior pharmacists. The choice of intervention reflected the one of the critical roles and responsibilities of the pharmacists' new positions as middle managers; building capacity of other managers and staff (Galer et al., 2005). It was consistent with information from interviews concerning the necessity of building health systems and public health competencies in facility-level pharmacy managers and in line with similar findings

about the lack of capacity at facility level described by other researchers in this setting (Elloker et al., 2013).

The three participatory workshops and data gathering exercises generated interest amongst all the participants in areas that were largely new to most of them, and they commented how the experience had broadened their understanding of information sources and use of information to build a picture of the community in which they work. They voiced a sense of achievement and feelings of empowerment with the outcomes they had accomplished, despite serious challenges in accessing information, particularly from their own health services. This highlighted some of the difficulties in working with different sections of the health services, which unfortunately seemed to inhibit greater cooperation and collaboration between departments.  Whilst some participants had shared their findings with other members of the pharmacy department, by the end of the field work in September 2011 none had presented to other health workers in their facility as we had originally hoped. One of the factors that could have facilitated this would have been the involvement of a wider range of participants in the intervention workshops, as occurred in the workshops in phase one, rather than only pharmacists.

In the interviews that I subsequently conducted with the five pharmacists after the intervention, between August and October 2011, they indicated they would be actively involved in the baseline audit for the National Health Facility Audit (part of the National Core Standards for Health Facilities) as part of interdisciplinary audit teams (Health Systems Trust, 2011). Availability of medicines is one of the six priority areas that had been identified "to fast track quality improvement in health service delivery", and assessing this forms part of the audit. Other areas of the audit that will contribute to the picture of pharmaceutical services in the country include: equipment, human resources, information systems, utilisation rate, budget and expenditure. They also indicated that some facility pharmacy managers would be involved in peer evaluation audit processes.

Although it was disappointing not to continue further with the intervention, it was important to respect and listen to the services participants (Laws et al., 2003). Whilst this is a critical feature of action research it can, at times, feel frustrating for the researcher. However, the pharmacists involved in the intervention appeared to benefit from the experience both in

terms of specific information about their own facility or sub-district and, more importantly, in increased understanding of the value of information in the delivery of health services and how their pharmaceutical services fit into the broader DHS. As time progressed, it became evident that there were similarities between the Pharmaceutical Profile and the National Core Standards Audit, and it would be interesting to know if the pharmacists involved in this intervention responded to the audit in different way from their colleagues.

## 4.7   Cycle 5: Reflection II – Sub-structure and sub-district pharmacist roles and competencies

In the second half of 2011 we took the opportunity to reflect again on the roles and related competencies identified for sub-structure and sub-district pharmacists during the previous workshops and to explore their experiences in the evolving DHS in Cape Town. By this time it it was approximately two years since the MDHS sub-structure pharmacists had commenced in these new positions, and we were eager to capture their experiences. During the same period I interviewed the senior pharmacist, sub-district pharmacists and sub-district managers from City Health to explore the current situation concerning sub-district pharmacists in City Health. We anticipated that insights from these interviews would enhance to our understanding of the situation concerning sub-structure and sub-district pharmacists in Cape Town.

### 4.7.1   Interviews with MDHS sub-structure pharmacists and directors

I interviewed the four sub-structure pharmacists and three sub-structure directors, and asked them to reflect on the list of roles and competencies identified during 2008 and 2009 in the light of their experiences in the re-structured MDHS over the past two years. I was encouraged that three directors readily availed themselves for the interviews, even though they all had busy schedules. Their willingness seemed to indicate that they valued the project. The three district directors I interviewed were all medical doctors with extensive experience in health services management in the Western Cape, and one was Director of MDHS prior to the re-organisation.

**Initiating the project**

Cycle 1:
Identifying
Roles

2. Interviews with
City Health

Cycle 3:
Reflection I

Cycle 2:
Identifying
Competencies

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WESTERN CAPE

1. Interviews with
MDHS

**Cycle 5:
Reflection II**

Aug – Sep 2011

Cycle 4:
Implementing
Intervention
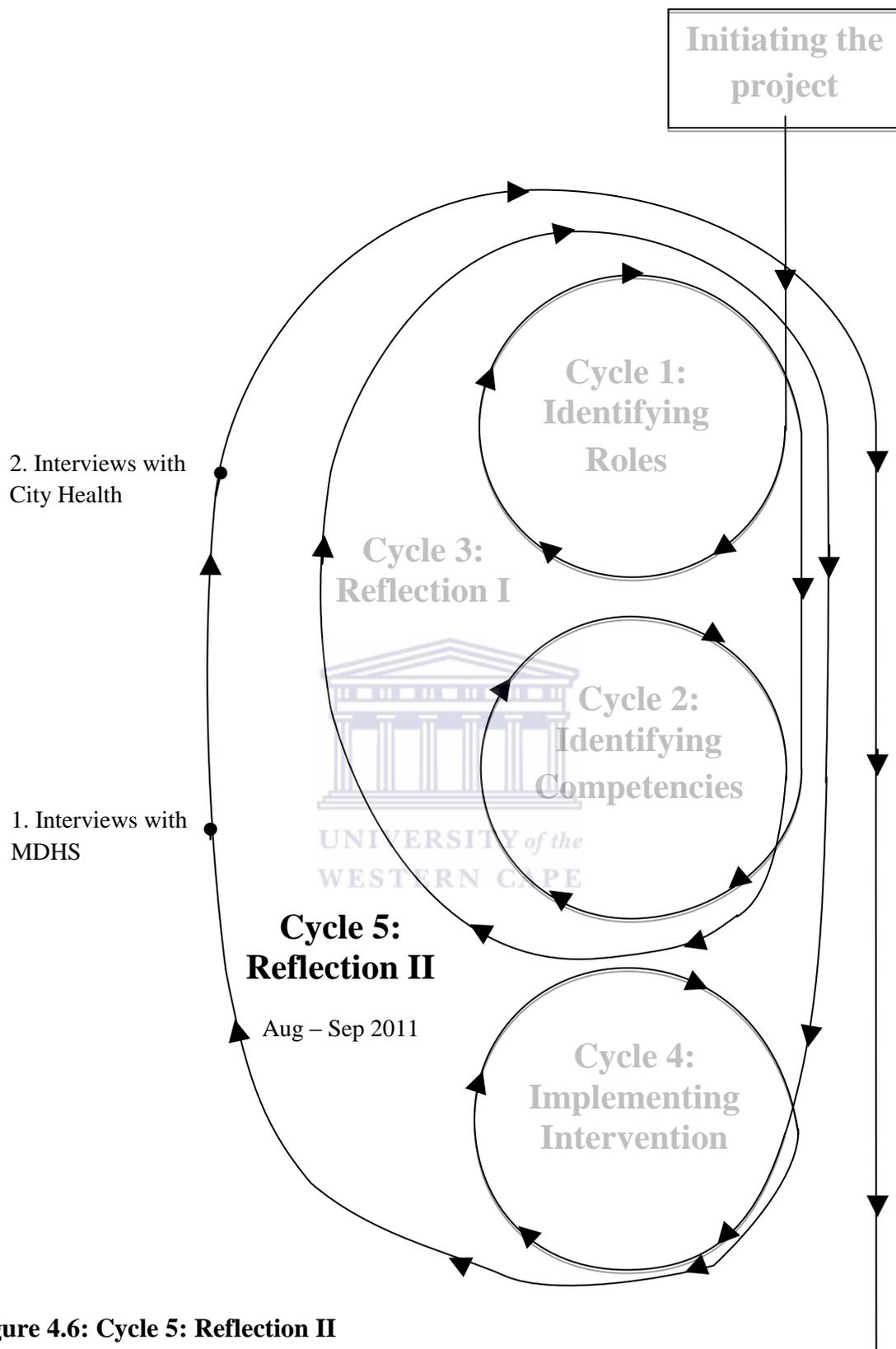
**Figure 4.6: Cycle 5: Reflection II**

I commenced the interviews by asking the sub-structure directors and sub-structure pharmacists to reflect on the list of roles of sub-structure pharmacists that had been identified through the participatory workshops, and to comment on their applicability to sub-structure pharmacists' roles (Table 4.7). I asked them to consider, in turn, how the identified roles related to envisaged roles and actual practice during the past two years, and then to comment similarly on the competencies that had been identified (Box 4.12). Next, I explored the sub-structure pharmacists' experiences in these new positions in the face of ongoing district development and then finally how this research had impacted on the sub-structure pharmacists.

### 4.7.1.1 Interrogating sub-structure pharmacists' roles

Firstly, reflecting on the list of roles that I had identified (Table 4.7, above), sub-structure directors and pharmacists agreed that *planning, co-ordination* and *monitoring d*escribed the main roles that were envisaged for district pharmacists, with one director adding *reporting* to this list. They confirmed that *pharmaceuticals, pharmaceutical human resources, budget* and *facilities* were the key areas of responsibility.  This is how one director summed it up:

*"… simply put, their role will be co-ordination, monitoring and reporting on pharmaceutical, cold chain, rational drug use, expenditure plus stock levels, pharmacy personal development and mentorship."(M1M)*

Sub-structure pharmacists suggested the term pharmaceutical infra-structure was preferable to pharmaceutical facilities, as it was more inclusive. They commented that whilst the pharmacy and facility managers were responsible for their own infrastructural requirements, as sub-structure pharmacists they were responsible for defining priorities within the sub-structure to guide allocation of resources, such as decisions during the past year relating to allocation of the Global Fund Grant.  They mentioned the importance of fulfilling these responsibilities from their positions as members of the sub-structure management team rather than only a pharmaceutical services perspective.

Sub-structure directors and pharmacists confirmed that providing information and advice on professional, legal, clinical and technical aspects related to pharmaceutical services, in line with *Good pharmacy practice in South Africa*, to a range of stakeholders was one of the

district pharmacists' central roles (South African Pharmacy Council, 2010a). This included in the sub-structure management team, as well as to other health workers at facility and community level. In this regard, directors reported that over the past two years sub-structure pharmacists had contributed to the setting up of new ARV services in PHC facilities, the planning and commissioning of new district hospitals underway in two sub-structures, as well as supporting the training of pharmacist's assistants.

All respondents mentioned sub-structure pharmacists' substantial involvement in health programmes, including the annual influenza campaign, and the HIV/AIDS, STIs and TB Programme. The closure of the Family Planning Store at Karl Bremer Hospital during the past year had necessitated sub-structure pharmacists' involvement in the distribution of family planning supplies to private providers in their sub-structure. Sub-structure pharmacists reported that this had proved challenging, particularly in the absence of detailed policies and distribution systems. All pharmacists reported regular interactions with NGOs through the provision of stock for Home-Based Care (HBC) Services and support groups, and said this was particularly challenging as NGOs were largely and unregulated entities. They expected their involvement with community-based groups, health forums, as well as private providers, to grow with current initiatives to re-engineer PHC and implement the National Health Insurance (NHI).

Quality assurance and clinical governance were identified by all sub-structure pharmacists as critical roles and they indicated that they saw this as an area of future development. They had all been involved in performing audits for the baseline health facility audit as part of the National Core Standards initiative with other members of the DMT (Department of Health, 2011c). This work links to broad preparations within the health services for the introduction of the NHI (Minister of Health, 2011). As sub-structure pharmacists, they saw their role in clinical governance focusing on ensuring rational drug use, including minimising wastage, by prescribers, dispensers and consumers. They said that they saw this role increasing through their involvement in the Clinical Management Team meetings and the PTCs. They stressed that it was critical to involve pharmacists working at facility level in these areas, but said this would require considerable capacity building and support. This requirement was congruent with findings from interviews with pharmacists a year ago, and confirmed our

implementation of an intervention that focussed on developing competencies in facility pharmacy managers earlier in the year.

All sub-structure pharmacists mentioned that they had not been very involved in research activities, although they confirmed this was a relevant role in their position. Some pharmacists said they would like to engage in operational research in areas relating to rational medicines use but they did not currently have the time. Directors, similarly, confirmed that sub-structure pharmacists had not really engaged in research in these new positions as yet, but said that if there was research involving medicines in the sub-structure then sub-structure pharmacists would be included.

### 4.7.1.2 Interrogating sub-structure pharmacists' competencies

Next, commenting on the competencies that had been identified during the previous workshops (Box 4.12, above), directors and pharmacists said that most of the competencies listed were important for sub-structure pharmacists, although there were some differences of opinion between directors and pharmacists.

Two directors specifically mentioned that professional pharmacy practice competencies were critical for sub-structure pharmacists, as this was the unique contribution sub-structure pharmacists brought to the sub-structure management team, and where they are looked to '*as the expert*' on these matters. However, both directors qualified this by emphasising that it was essential that sub-structure pharmacists applied legal and technical areas of pharmacy practice pragmatically within the current context of the sub-structures. All directors and pharmacists voiced the tension between the ideal situation and reality, with regard to pharmacy practice. Two directors provided examples of pharmacists' ability to surmount these tensions; in one case this included transfer of obstetric services from Mowbray Maternity Hospital to the Midwife Obstetric Unit (MOU) at a CHC in his sub-structure. However, the third director spoke about conflict between the sub-structure pharmacist and some facility-based nursing staff in his sub-structure with respect to the current situation of infrastructure for pharmaceutical services at some CHCs.

Directors mentioned that in order to be effective in their positions, the sub-structure pharmacists needed management competencies in addition to a good understanding of the

health system and health programmes. Two directors mentioned that leadership was an important competency for pharmacists, as they were not line-managers for facility-based pharmacists, and only supervised the community-service pharmacist and the pharmacist's assistant working in their office. However, they appeared to contradict this later in the interviews by saying that leadership in spearheading professional pharmacy practice within the sub-structure was important.

Sub-structure pharmacists, on the other hand, said they felt that all the listed competencies were important for their new positions, highlighting management, professional pharmacy practice, understanding of the health system and programmes and certain personal and interpersonal competencies. In contrast to the directors, pharmacists indicated that they felt leadership competencies were important, as they played a central role in initiating service innovation across the sub-structure and driving change management processes, particularly amongst facility pharmacy managers. They viewed their responsibilities in promoting and supporting the development of new roles, skills and ways of working amongst pharmacy managers as being critical in supporting the sub-structure from a pharmacy practice perspective. This linked closely with similar perspectives expressed by the directors.

As sub-structure pharmacists established themselves in the restructured organisations, both directors and pharmacists rated good personal and interpersonal competencies as critical for these new management positions and highlighted adaptability, relationship building, networking and teamwork. Similarly, directors and pharmacists both mentioned the importance of cognitive competencies, such as problem solving, prioritising and decision making. Two district pharmacists said that prioritising was the most critical competency for them because of the demanding nature of their job: compare previous year

*"But I think for me to survive, personally, I have to prioritise because there's just so many things. And perhaps, you must communicate while you are prioritising. I realise everything cannot be perfect. You must start somewhere."(M2P)*

In addition, one director commented on the use of the list of competencies to assess competence of sub-structure pharmacists and mentioned that it would be useful to develop a tool that could be used as part of regular performance appraisal.

The interviews with pharmacists and directors contributed additional insights into the competencies required by sub-structure pharmacists and after the interviews the list of competencies was updated (Box 4.16).

**Box 4.16: Competencies of sub-structure pharmacists (September 2011)**

| | |
|---|---|
| **Professional pharmacy practice**<br>　　Legal & regulatory aspects of  pharmacy practice<br>　　Clinical aspects of pharmacy practice<br>　　Technical aspects of pharmacy practice<br>　　Public Service legislation and practice<br><br>**Health system/Public Health**<br>　　Health systems and organisation<br>　　Health programmes<br>　　Public Health<br><br>**Management**<br>　　Planning & organising<br>　　Financial management  & budgeting<br>　　Human resources management<br>　　Physical resources management<br>　　Project management<br>　　Information management<br>　　Monitoring & Evaluation<br><br>**Leadership**<br>　　Strategic leadership & vision<br>　　Change management<br>　　Service development & innovation | **Personal & interpersonal**<br>**Personal**<br>　　Self development<br>　　Adaptability<br>　　Assertiveness<br>　　Time management<br>　　Professionalism<br><br>**Interpersonal**<br>　　Relationship building<br>　　Networking<br>　　Negotiation<br>　　Teamwork<br>　　Cultural competency<br><br>**Cognitive**<br>　　Problem solving<br>　　Prioritising<br>　　Decision making<br>　　Communication skills (oral & written) |

### 4.7.1.3 Implications of moving into sub-structure pharmacist positions

Directors and sub-structure pharmacists reported that moving into the new sub-structure pharmacist positions involved considerable adjustments on the part of all the pharmacists, and they said practices had developed differently across the sub-structures. The following opinion expressed by one of the directors was supported by other interviewees:

*"I think the current practice has evolved differently across the sub-structures ... depending on the experience of the person who is appointed ... and also depending on whether they were working in the system or not (before)."(M1M)*

All four pharmacists commenced as sub-structure pharmacists with considerable pharmaceutical experience from a variety of settings, and all had worked in public sector pharmaceutical services in the Western Cape. One of the directors suggested that adjustments may have been different for the two pharmacists working in MDHS pharmaceutical services head office immediately prior to commencing at sub-structure pharmacists, compared to the other two pharmacists:

*"... those working in the system ... had two challenges ... the first one ... to move away from older practices ... (and the second) ... working in smaller geographical areas."(M1M)*

*"... and the two new ones I think they have taken time to adjust to the system, to understand how it works ... to adapt to new practices ..."(M1M)*

Sub-structure pharmacists said a major change was moving from working 'vertically' in a pharmaceutical services silo to 'horizontally' as a member of the sub-structure management team:

*"So that's why I'm busy, we are busy working now to break down the verticals and making them ... into an integrated type of thing."(M3P)*

In general, pharmaceutical services, like health programmes, in the South African health system were essentially a vertical service. So in the past, the MDHS head office pharmaceutical services were directly responsible for managing pharmaceutical services at the PHC facilities. This included managing pharmaceutical staff, medicines supply and use, the physical infrastructure, and even the pharmaceutical budget. In the DHS model that was now being implemented, management was devolved to facility level presenting quite a different situation with regard to managing pharmaceutical services.

### 4.7.1.3.1 *Working in the sub-structure management team*

Two directors emphasised that the main focus of the sub-structure pharmacist's role was as a fully integrated member of the sub-structure management team (SSMT), and this involved a broad range of activities within the sub-structure, in addition to specifically contributing their pharmaceutical expertise to pharmaceutical services:

*"... what we are seeing now in practice is that our pharmacist is a fully fledged member of the district (sub-structure) management team, or sub-structure management team."(M3M)*

*"... from where I am sitting, suddenly there is a far greater integration of the pharmacists into the management team at a sub-structure level."(M3M)*

Active participation in the SSMT was reported by three sub-structure pharmacists who mentioned their involvement in sub-structure activities, such as conducting facility audits with the other sub-structure deputy directors. Two directors gave examples of sub-structure pharmacists playing strategic roles in sub-structure matters, such as taking on leadership responsibilities in influenza and measles immunisation campaigns:

*"And I can tell you, and you can go and look at the data, before, the immunisation campaigns, particularly around influenza, was not well managed and we often ended with stock being wasted. It changed last year, and this year it changed completely everything was used, virtually everything was used."(M3M)*

Whilst the importance of working as part of the SSMT was clearly articulated by two of the directors, in one sub-structure the notion of the working together was not directly expressed, and instead the director seemed to suggest a more peripheral role for the sub-structure pharmacist and implied a more isolated way of working:

*'... the pharmacists, we'll call them 'professional support services'... and they should just be technical advisors ... "(M1M)*

*"So most of the times now they are mainly on the computers, doing the clinical work, and then going out in the facilities to check out whether things are working."(M1M)*

In view of these comments it was not surprising then, when the pharmacist from this sub-structure commented that 'programmes' were still running in silos and he found it difficult to engage with them, suggesting that this was not just an issue affecting the district pharmacist.

### 4.7.1.3.2 *Moving away from vertical management of pharmaceutical services*

The second implication for sub-structure pharmacists was moving away from vertically managing facility pharmaceutical services. This involved adjustments in the roles of facility

pharmacy managers and facility managers too. While sub-structure pharmacists had to stop performing direct line management of pharmaceutical services at facility level, facility pharmacy managers and facility managers had to take on management functions that they had not previously carried out. Sub-structure directors and pharmacists indicated that, whilst they appreciated this concept 'fits in with the responsible pharmacist' legislation, they saw it as a 'process of devolving responsibility to facility level'. They recognised it would take time to accomplish this transition.

Sub-structure pharmacists pointed out that the facility level needed to understand what it meant to function in a devolved structure and learn to work differently as they were used to looking to the central MDHS level to manage these functions. As one director said 'accountability lies with the facility manager'. One sub-structure pharmacist said he had just had a workshop with facility managers, pharmacy managers and other stakeholders in his sub-structure to map out each other's functions. He said:

*"… I had to explain that my role is planning, M and E and quality assurance you know? I can't get on efficiently if I'm doing **your** work … each person has their own role."(M3P)*

All sub-structure pharmacists raised concerns about the capacity of pharmacy managers and facility managers to take on these managerial roles. One voiced his opinion that:

*" … facility managers do not currently have capacity to manage pharmaceutical services … "(M1P)*

In the same sub-structure, the sub-structure pharmacist reported difficulties between facility managers and pharmacy managers:

*" … they (facility pharmacy managers) feel very strongly that they shouldn't report to a facility manager, but that they should rather report to us (SS pharmacists)."(M1P)*

Some reasons for this relationship between the pharmacist and managers emerged later in the interview when the sub-structure pharmacist recounted a difficult meeting he had attended with facility mangers in the sub-structure.

This position was in contrast to other sub-structure pharmacists who had adopted a more pragmatic approach, and seemed to be working towards handing over management responsibilities to facility level, whilst continuing to provide support when needed. Two sub-structure pharmacists cited examples of responsibilities, such as ensuring the pharmacy is licensed with the South African Pharmacy Council (SAPC), and said that due to the time consuming nature of contacting the council, they had taken on this responsibility themselves. The other pharmacist said:

*" ... I'm not a line manager. So depending on the strength and capacity of the facility manager, some of it spills over into my domain and then you need to do something because, otherwise you know, eventually if the pharmacy is not working ... "(M2P)*

All directors seemed to recognise capacity deficiencies at facility level, and said that one of the sub-structure pharmacist's roles was to assist in building the capacity in areas of pharmaceutical services at this level. This included identifying training needs, co-coordinating training opportunities, and one director also suggested a mentoring role. One sub-structure pharmacist had organised a clinical training course for pharmacists and doctors in his sub-structure, and was hopeful of their increased involvement in clinical areas of pharmaceutical practice such as rational drug use and drug utilisation reviews. One pharmacist articulated his stance in the following way:

*"If there is a pharmacy that renders a service we need to support it ......build capacity at CHC level so they can function as a team."(M2P)*

After these interviews the list of sub-structure pharmacists' roles was modified to include the fundamental role sub-structure pharmacists were playing in the sub-structure management team. This had emerged clearly after the pharmacists commenced in their new positions (Table 4.9).

**Table 4.9: Roles of sub-structure pharmacists (September 2011)**

| Roles of sub-structure pharmacists |
| --- |
| Contribute to Sub-structure Management Team |
| Planning, coordination and monitoring of: |
|        Pharmaceuticals |
|        Pharmacy human resources |
|        Pharmaceutical budget |
|        Pharmaceutical facilities |
| Provide information and advice on professional, legal, clinical and technical aspects to: |
|        Health managers |
|        Health workers |
|        Health programmes |
|        NGOs and private providers |
|        Consumers |
| Participate in quality assurance and clinical governance of pharmaceutical services |
| Participate in research activities related to medicines and pharmaceutical services |

*4.7.1.3.3 Adjusting took time*

Sub-structure directors and pharmacists acknowledged that adjusting to these new roles took time; however, all indicated progress over the past two years. One director said:

*" ... I think most managers (directors) will tell you the same thing, I think there's an improvement, I think there's an improvement in first of all understanding their role ... they also understand that they are middle managers and if you are a middle manager there are clear, defined functions and responsibilities and the way that you must do that… "(M1M)*

Sub-structure pharmacists indicated that during these past two years they were busy setting up structures, clarifying roles and functions between levels and in the sub-structure teams, and working on their own job descriptions. As one pharmacist said:

*" ... I would say that the first year it was a new structure across the board in the City. So support functions, the programmes, the general, you know, corporate governance had to be established and there was a lot of clarification about what happens where and who is responsible."(M2P)*

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Two directors said they were pleased with the progress made by their sub-structure pharmacists, and said their performance was now much more in line with the decentralised model envisaged. In both these sub-structures the sub-structure pharmacists indicated that they had received support from their directors. Directors mentioned that sub-structure pharmacists were less involved in routine drug supply, although they were still involved in assisting with major issues that arose, such as stock-outs. One cited the example of his district pharmacist having moved away from 'confirming' or 'vetting' medicines orders from facilities to developing an electronic tool to monitor drug supply and expenditure.

### 4.7.1.3.4  Value of supportive structures

Despite substantial support three of the sub-structure pharmacists had received from their directors, all mentioned that they missed having other pharmacists in close proximity to discuss pharmaceutical issues. The two pharmacists who had previously worked together at MDHS head office raised this as a key issue for them, whereas the two other pharmacists placed less emphasis on it. This may be because one of these pharmacists had worked in a multi-professional programme team at provincial level immediately prior to taking up this position and the other also had experience working in multi-professional teams. Two directors also recognised this aspect, with one director saying:

*" ... I suppose in many ways that's the one drawback of decentralisation, is that people are kind of dislodged from where before you had four or five people working together in a close-knit community... and they could share ideas and they could share experiences so on. We've now cut them loose ... though they do meet from time to time you know as a collective. But it is more difficult and that's where I suppose the role of, the role of someone like me becomes more important. I then do provide some of the leadership and mentoring and training ... "(M3M)*

Two of the directors and all the pharmacists mentioned the regular meetings the four district pharmacists had instituted amongst themselves every four to six weeks. The sub-structure pharmacists said the meetings were important opportunities to discuss problems, share ideas, as well as work together to standardise some practices and procedures across the Metro. They indicated that one of the main functions was to exchange information with each other on the transversal functions they had been allocated by the chief director of MDHS. Under the

present arrangement, one of the sub-structure pharmacists sits on the MDHS Executive Committee, and all sub-structure pharmacists are allocated specific transversal functions. They also commented that during this second year they had realised it was more effective to have a united opinion on issues they wanted to raise at MDHS executive level and the Provincial Pharmaceutical Services Management Team meetings. Overall, the sub-structure pharmacist meetings appeared to play a valuable function in providing a supportive environment for the pharmacists as they adjusted to their new positions and ways of working, and offered them a forum to discuss and liaise on matters relevant across the Metro.

Other aspects raised by some sub-structure directors and pharmacists were the need for increased collaboration between MDHS and City Health, and greater support from the provincial level. The importance of sub-structure pharmacists liaising with City Health on pharmaceutical services was emphasised, especially with regard to future service integration and national initiatives such as Re-engineering PHC and the NHI. The regular attendance of the City Health senior pharmacist at the sub-structure pharmacist meetings, and the good working relationship between the pharmacists, clearly indicated in this research, was seen to facilitate the current productive engagements between the two organisations. The role of the provincial level was raised in terms of support for pharmaceutical services as well as general district health services, and was identified as an important area for improvement.

## 4.7.2  Interviews with City Health pharmacists and managers

I conducted semi-structured interviews with the senior pharmacist, the new sub-district pharmacist, seven sub-district managers and one programme manager, as well as a focus group with all sub-district pharmacists from City Health between August and September 2011. I explored the situation of sub-district pharmacists in City Health and in response to the Executive Director's request we attempted to establish if the 'City Health sub-district pharmacist model' was optimal in providing pharmaceutical support to sub-districts. The senior pharmacist and I analysed the findings, and we submitted a report to the City Health Executive Director in November 2011. The City Health Report is attached as Appendix 9 and the key issues that emerged are highlighted.

**4.7.2.1 Sub-district pharmacists in City Health in 2011**

The situation with respect to sub-district pharmacists in City Health was varied. The pharmacists performed varying roles and there was considerable divergence in the levels of support they provided to the sub-districts. By this time there were five sub-district pharmacists were employed across the eight sub-districts in City Health, with three sub-district pharmacists covering two sub-districts each, and two sub-district pharmacists covering one sub-district each. Four sub-district pharmacists worked fulltime whilst one worked 5/8[ths]. This was an increase from the two full-time and two 5/8[ths] sub-district pharmacists when the project commenced in 2008.

In the current 'City Health sub-district pharmacist model', all sub-district pharmacists were based clinics, as opposed to the sub-district offices. Some were based in clinics with pharmacies and had considerable dispensing responsibilities, whereas others were based in clinics and had no direct dispensing functions. In this respect they differed from sub-structure pharmacists whose posts were considered full-time management posts with no expectations of dispensing and who were based at the management offices..

**4.7.2.2 Interrogating sub-district pharmacists' roles and competencies**

There was general agreement by sub-district managers and pharmacists that the overall role of sub-district pharmacists was to support the sub-district management team and clinics on all matters relating to pharmaceutical services. A comprehensive list of different roles sub-district pharmacists were currently performing was compiled, including attending sub-district management team meetings, actively managing medicine stock shortages, providing medicines and vaccines information, carrying out scheduled clinic visits and dispensing medicines at clinics (Box 4.17).

**Box 4.17: List of identified roles of sub-district pharmacists in City Health in 2011**

| | |
|---|---|
| Attend sub-district management meetings | Provide on-site support to clinic staff |
| Coordinate pharmaceutical services across sub-district | Provide medicines & vaccines information |
| | Perform rational medicines use reviews |
| Assist with planning new services and facilities | Support & indirectly supervise PBPAs |
| Participate in clinic audits | Identify training needs of PBPAs & clinic staff |
| Scheduled visits to clinics | Assist with recruitment of pharmaceutical staff |
| Ad hoc visits to clinics in response to problems | Assist with coordination of leave & locum cover |
| Authorise medicines & vaccines orders | Provide professional support for facility-based pharmacy staff |
| Monitor expenditure | |
| Actively manage stock shortages | Dispensing responsibilities at clinic |
| Monitor stocks at clinics | |

Overall the roles demonstrated a greater involvement in direct medicines management, as well as more direct support at the clinics. This was not surprising given the nurse-driven clinic model in which the vast majority of clinics across the organisation did not have dedicated pharmacies and pharmacists.

During this part of the research, several critical sub-district pharmacist competencies were identified. They included management competencies and professional pharmacy competencies, especially in relation to setting new ARV services, and in some respects these were similar to those identified for sub-structure pharmacists. Interestingly, the competencies that were rated particularly critical, and at the same time raised some of the greatest concerns during this research, were personal, interpersonal and cognitive competencies. There was a feeling among some sub-district managers that some sub-district pharmacists were not performing optimally, due to lack of these competencies and specifically mentioned communication skills, time management, self development, adaptability and assertiveness.

**4.7.2.3 Interrogating sub-district pharmacists' performance**

The key roles that were identified for sub-district pharmacists were listed and information was obtained on each sub-district pharmacist's current performance of these roles was rated on a four point performance scale (regularly, sometimes, hardly ever or senior pharmacist performs). A colour-coded chart was created to provide a visual depiction of the current situation (see end of Appendix 9). In most sub-districts there was consensus between the sub-district manager and sub-district pharmacist on the performance rating, and where there were

differences that could not be resolved, the senior pharmacist made the final pronouncement. Scanning the chart provided a clear indication of the variation of roles sub-district pharmacists performed in each sub-district, with some performing most of the roles listed and others performing few.

Several facilitators and constraints to sub-district pharmacists performing the identified roles were noted, and they are summarised in Table 4.10. A major constraint to performing these roles, raised by sub-district managers and pharmacists alike, was sub-district pharmacists having regular dispensing responsibilities at clinics. In these situations, sub-district pharmacists had little time to attend to the other, more authentic 'sub-district functions', and were unable to regularly attend sub-district management team meetings or visit clinics. Most sub-district managers and all sub-district pharmacists said that clinic dispensing duties should be removed from sub-district pharmacists so that they were free to focus on their other broader roles and responsibilities. Another critical perception of several respondents was that some sub-district pharmacists did not have optimal competencies for their envisaged roles; City Health sub-district pharmacists had been appointed from existing pharmacy store managers, rather than selected for these positions.

**Table 4.10: Facilitators and constraints to optimal performance of sub-district pharmacists in City Health**

| Facilitators | Constraints |
|---|---|
| Considered members of SDMT | Regular dispensing responsibilities |
| Regularly attend & contribute to SDMT meetings | Large numbers of clinics |
| Reliable communication systems in place | Wide geographical area |
| Ability to apply managerial and professional pharmaceutical competencies | Poor personal and interpersonal competencies |
| Good personal and interpersonal competencies | |

Overall, sub-district managers' levels of satisfaction with sub-district pharmacists were found to be dependent upon their capability to regularly carry out what were identified as authentic sub-district pharmacist roles and responsibilities. At the time the research found that good support by sub-district pharmacists was reported in five sub-districts, whilst three sub-districts reported minimal support. This finding was similar to that found in 2008, with the

exception of one sub-district which appointed its own sub-district pharmacist in 2010. The report concluded with several specific recommendations.

### 4.7.3 Contribution of this research

During interview sub-structure directors and pharmacists commented on the value of this research in understanding the roles and functions of sub-structure pharmacists as MDHS was evolving during the project. Two directors said that whilst they had a clear understanding of decentralisation, they had not formulated the precise implications of implementing the new structures on pharmacy management. They commented on the significance of this research, with one saying:

*"I think it is through their work that a lot of us have gained clarity of exactly what the function of a district (sub-structure) pharmacist is… So it has been highly beneficial."(M3M)*

The other director, who had been assigned the task of overseeing the development of job descriptions for the sub-structure pharmacists, described how the research process had contributed to MDHS. He recounted how during workshops held by MDHS to clarify the functions of different role-players in the sub-structure management teams, the four sub-structure pharmacists had readily clarified their functions. He attributed this to fact that they had already previously spent time considering sub-structure pharmacists' roles are part of this project.

Similarly, sub-structure pharmacists also commented positively on the role the research had played. One said:

*"… the beginning of the workshops was very critical for me because I didn't know much about the functionality of the district (sub-structure) pharmacist … "(M3P)*

He said that identifying the sub-structure pharmacists' roles was valuable, and had assisted in developing job-descriptions and elucidating their functions in the management team. As I reflected back to Workshop 2, when we discussed the key concepts including definitions of a *district* and *district health system,* it was evident that many present were not familiar with these models, and fewer had thought about them in relation to pharmacists and pharmaceutical service. It was encouraging to hear how the PAR process had contributed to

developing understanding among pharmacists and managers about sub-structure pharmacists roles and that they were empowered to use amongst in their sub-structures to clarify functions and develop job descriptions.

In City Health the research also contributed to the development of sub-district pharmacists. When the project commenced senior management and several sub-district managers perceived that sub-district pharmacists were not supporting pharmaceutical management in sub-districts optimally. As this time their functions were unclear and in some sub-districts there was considerable frustration with the manner in which sub-district pharmacists were appointed and the functions they were expected to carry out. However, during the course of the research several positive developments occurred including some clarity on sub-districts primary functions, improvements in relationships between sub-district pharmacists and managers and appointment of an additional sub-district pharmacist. These developments and their implications are discussed in greater detail in the subsequent chapter.

During the research, several pharmacists commented on including facility level pharmacists in the project but I indicated at the first two workshops that, although this was an important suggestion, it was outside of the scope of this project. Significantly, the intervention that was developed and implemented with the input of senior pharmacist from MDHS and City Health implemented did involve facility pharmacy managers. In line with sub-structure and sub-district pharmacists' management roles, it sought to build capacity in facility-level pharmacy managers by improving their understanding of how they as pharmacists and pharmaceutical services fit in the DHS in Cape Town and those involved acknowledged the positive contribution of the intervention to their understanding.

## 4.8 Summary

This chapter commenced with a description of how this PAR project was initiated with participants from two PHC organisations in Cape Town. It was followed by five action research cycles, each increasing understanding of the emerging roles and related competencies of sub-structure and sub-district pharmacists in Cape Town and their experiences as they established themselves in these positions in the evolving health system. It described sub-structure pharmacists in MDHS as they were appointed and during their first

two years in their new positions. The evolving situation of sub-district pharmacists in City Health was explored over the four years and factors that facilitated and constrained sub-district pharmacists' performance were identified. Finally, the intervention to enhance competencies of pharmacists working in sub-structure and sub-district pharmaceutical services was described.

# Chapter 5: Discussing the research

## 5.1 Introduction

This chapter discusses the nuances and complexities of the roles and competencies of sub-structure[10] and sub-district pharmacists in Metro District Health Services (MDHS) and City Health, respectively, two organisations delivering primary health care (PHC) services in Cape Town. I used a participatory action research (PAR) approach, partnering with pharmacists and managers in both organisations over a four year period between 2008 and 2011 as they were at different stages of establishing sub-structure and sub-district pharmacists. City Health had appointed sub-district pharmacists in 2005, prior to the commencement of this research, and MDHS appointed sub-structure pharmacists in late 2009, approximately mid-way through the research. The research was initiated in response to concerns of City Health management about the performance of sub-district pharmacists and interest expressed by pharmacists and managers from MDHS as they considered the appointment of sub-structure pharmacists as part of the re-structuring of PHC services. We identified current and future roles and related competencies of sub-structure and sub-district pharmacists and explored their experiences as they transitioned into these management positions in the two evolving organisations.

As the research engaged with pharmacists and managers in the two organisations during a period of re-structuring, it offered a unique opportunity to observe and reflect on sub-structure and sub-district pharmacists' roles and competency needs and challenges as they unfolded. It provided a comparative perspective of two different organisations, doing somewhat similar work in the same area, as they each adjusted to functioning as sub-structures and sub-districts. The involvement of stakeholders from both organisations, pharmacists, managers and nurses working at several levels of the health system contributed to a 360 degree understanding of the roles and competencies of sub-structure and sub-district pharmacists. Workshops attended by stakeholders with different professional backgrounds from the two PHC organisations and me, as the researcher, provided a collaborative learning

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[10] **Sub-structure pharmacists** should be considered equivalent to district pharmacists in other settings

environment which facilitated the development of shared understanding (Kemmis and McTaggart, 2003, Gilson, 2006).

The learning and understanding that emerged about sub-structure and sub-district pharmacists' roles and competencies and their experiences in their new positions evolved over the four years as the sub-districts in City Health became more established and sub-structures in MDHS were created mid-way through the research. This information was shared with both organisations as the research progressed and contributed directly to the development of pharmacists within these organisations (Meyer, 2001). As the research extended over four years, and involved regular engagements with stakeholders, it provided useful insights into the transition of pharmacists as they took up these management positions in each organisation, which provided PHC services within different organisational models across the same geographic area (Reason, 2006).

A key feature of the PAR approach was collaborative learning among health services participants and me, as the researcher, through iterative cycles of action and reflection. The purpose of the PAR is not only to understand but also to effect change through generating new learning and empowering participants (Huang, 2010). Significantly, the approach acknowledges the importance of context and the dynamic interplay of elements of the health system, and was thus suited to exploring the emerging roles and related competencies of sub-structure and sub-district pharmacists as they unfolded in the two PHC organisations (de Savigny and Adam, 2009, Van Olmen et al., 2012). This systems perspective facilitated deeper understandings about sub-structure and sub-district pharmacists' contribution to district health system development than a more traditional research approach (Swanson et al., 2012).

Although implementing the DHS has resulted in the emergence of district pharmacists, and similar cadres with responsibilities in pharmaceutical management positions, around the country, their precise roles and competencies have not been systematically articulated (Groenewald, 2006). The increasing burden of disease, particularly HIV/AIDS and chronic non-communicable diseases, has highlighted the importance of accessibility and availability of medicines at primary level, usually considered to be part of district pharmacists' responsibilities (Bradshaw et al., 2006).Consequently, in Cape Town, understanding sub-

structure and sub-district pharmacists' roles and the competencies they require to perform optimally would support DHS development in MDHS and City Health in several ways. Increased clarity of sub-structure and sub-district pharmacists' roles would assist with defining their functions and allocation of responsibilities within their management teams. Understanding what competencies they require would facilitate the development of job descriptions, appointment of candidates, implementation of performance appraisal systems and assessment of training needs. Furthermore, insights about the transition of pharmacists into these management positions would provide valuable information about the support pharmacists taking up these positions require and this information could be used to guide the development of appropriate interventions.

## 5.2  Roles and competencies of sub-structure and sub-district pharmacists

Sub-structure and sub-district pharmacists' roles and competencies were identified iteratively throughout the four year research project as sub-structures and sub-districts evolved in the context of ongoing DHS development in the city. We used a two stage process in which we first identified roles of sub-structure and sub-district pharmacists and then used these to identify competencies required to fulfil these roles (Whiddett and Hollyforde, 2003). The first phase comprised a series of three interactive workshops involving pharmacists, managers and other health workers from both PHC organisations and these were augmented by 28 individual interviews with key stakeholders. This facilitated a collaborative learning environment which we considered optimal to developing a shared understanding of sub-structure and sub-district pharmacists' current and envisaged roles and competencies. The next phase included 21 interviews and two focus groups, with sub-structure and sub-district pharmacists and their managers which took place one and two years after the workshops. These reflections generated an enhanced understanding of sub-structure and sub-district pharmacists' roles and related competencies as they unfolded in the two organisations and was used to refine the lists of roles and competencies (Meyer, 2001).

## 5.2.1  Roles of sub-structure and sub-district pharmacists

The five main roles that emerged for sub-structure and sub-district pharmacists during the research are shown in table 5.1. The broad categories of roles for sub-structure and sub-district pharmacists look similar, and are not very different from those proposed for district drug co-ordinators and district pharmacists from South Africa and several sub-Saharan African countries, although there were subtle but significant differences between them (Groenewald, 2006, Suleman et al., 1998, Trap et al., 2001). The differences are discussed in greater detail in section 5.3.1.2.

**Table 5.1: Roles of sub-structure and sub-district pharmacists**

| Sub-structure pharmacists | Sub-district pharmacists |
|---|---|
| Contribute to Sub-structure Management Team | Contribute to Sub-district Management Team |
| Planning, co-ordination and monitoring of: *Pharmaceuticals* *Pharmaceutical human resources* *Pharmaceutical budget* *Pharmaceutical infrastructure* | Planning, management and monitoring of: *Pharmaceuticals* *Pharmaceutical human resources* *Pharmaceutical budget* *Pharmaceutical infrastructure* |
| Provide information and advice on professional, legal, clinical and technical aspects to: *Health managers* *Health workers* *Health programmes* *NGOs* *Private providers* *Consumers* | Provide information and advice on professional, legal, clinical and technical aspects to: *Health managers* *Health workers* *Health programmes* *NGOs* *Private providers* *Consumers* |
| Participate in quality assurance and clinical governance | Participate in quality assurance and clinical governance |
| Participate in research activities | Dispense medicines at clinics |

The first role, membership of the sub-structure or sub-district management team, was previously proposed in the South African setting by Suleman et al. (1998).and Groenewald (2006) and was similarly identified in several other countries including Tanzania and Zimbabwe (Maluka et al., 2010, Trap et al., 2001). It was considered critical that one person

had responsibility for overseeing management of medicines in the district, liaised with other health workers and reported to the district management team (DMT) (Barrington et al., 2010, Groenewald, 2006, Semali et al., 2005).. Although in this research pharmacists fulfilled these roles, in some resource constrained settings this role may be undertaken by a pharmacy technologist, as in Zimbabwe, or a nurse with additional experience as proposed recently in Malawi (Lufesi et al., 2007, Suleman et al., 1998, Trap et al., 2001).

The second role comprised management - planning, co-ordination and monitoring, of pharmaceuticals, pharmaceutical human resources, budget and infra-structure. Typically, the most recognisable role of district pharmacists is medicines supply management involving procurement, distribution and inventory control of medicines, and in most settings this includes vaccines and medical sundries such as condoms (Management Sciences for Health, 1997). In this study both sub-structure and sub-district pharmacists were engaged in distribution and monitoring of stocks at clinics, especially at times when there were problems with availability of stock from the central depot serving the Western Cape Province. Published literature from several sub-Saharan countries identifies distribution as a role of district pharmacists. But the same literature is less clear about how much district pharmacists are involved in monitoring medicines and vaccines at clinic level. Several publications from Malawi, Kenya and Uganda suggest that district pharmacists should get more involved at clinics to avoid stock outs of medicines (Ansah et al., 2009, Asiimwe et al., 2011, Barrington et al., 2010, Jenkins et al., 2010, Lufesi et al., 2007). Recent problems have been reported about stock-outs of ARVs and other essential medicines in clinics in the Eastern Cape Province and several other provinces. Although there are problems at various levels in the system, the importance of monitoring stocks at clinics was raised as critical and district pharmacist involvement in these key roles in these provinces has been raised (Stop Skock Outs Project, 2013).

Sub-structure and sub-district pharmacists' roles in the management and development of pharmaceutical human resources included responsibility for pharmacists and pharmacist's assistants, as well as nurses at clinics. They involved supervision and training, especially in drug supply management, and were in line with other reports from South Africa and several countries, including Zimbabwe and Tanzania (Groenewald, 2006, Mariacher et al., 2008, Trap et al., 2001). Although supervision is complex, there is evidence of its value in PHC and

several studies found that supervision of a variety of health workers resulted in improvements in drug management and prescribing practices in PHC clinics and community settings (Bosch-Capblanch and Garner, 2008, Ross-Degnan et al., 1997, Rowe et al., 2005, WHO, 2001). Critically, a study from Zimbabwe demonstrated the importance of combining training and supervision for sustained improvements in stock management and improved prescribing practices (Trap et al., 2001)

Similarly, sub-structure and sub-district pharmacists roles in financial management of pharmaceuticals corresponded with those mentioned in some other settings, although there was variation in responsibilities with sub-structure pharmacists having input into planning and allocation of resources and sub-district pharmacists mostly responsibility for monitoring expenditure (Castiglia et al., 1996, Trap et al., 2001).

Another area of sub-structure and sub-district pharmacists' management responsibilities that featured prominently in this setting was pharmaceutical infrastructure. Although it is widely recognised that that medicines require special storage and handling at medical stores, in general, less emphasis is placed on what happens to medicines and vaccines at clinic level (Management Sciences for Health, 1997). In South Africa, however, this aspect has received considerable attention over the past few years in response to the shift towards to primary level services since 1994. It includes the publication of a Primary Health Care Package of Services in 2001 containing norms and standards for PHC clinics and aspects related to medicines; legislative changes in the Medicines Act which had implications for all pharmaceutical services at all public sector facilities; and more recently requirements to introduce new ARV services at PHC level (Department of Health, 2001a, South African Pharmacy Council, 2010a). In addition, there have been two national evaluations of public sector pharmaceutical infrastructure at primary level as part of the Essential Drug Programme, in 1996 and 2003, which demonstrated improvements around the country, and more recently a baseline study of PHC facilities carried out by the Office of Compliance Standards in 2011 (Department of Health, 2003b, Health Systems Trust, 2011).

Sub-structure and sub-district pharmacists' third role was providing information to a range of stakeholders, including managers, nurses and pharmacy staff working in their organisations, as well as others outside. Sub-structure and sub-district pharmacists played significant roles

supporting management teams regarding the legal and technical pharmaceutical implications of rolling out new ARV services and innovative medicines delivery systems for chronic diseases. This was in addition to providing regular medicines-related information at sub-structure and sub-district management team meetings and responding to queries. Sub-structure and sub-district pharmacists' increasing engagement with NGOs, community care workers and private providers were emerging features of implementing the DHS model, with similar responsibilities reported in Ghana, Tanzania and Kenya (Agyepong, 1999, Goodman et al., 2007, Wamae et al., 2006).

Quality assurance and clinical governance was the fourth role identified for sub-structure and sub-district pharmacists' and during this research it was most closely linked to the national baseline study carried out as part of work of the Office of Compliance Standards (Health Systems Trust, 2011). However, sub-structure and sub-district pharmacists mentioned that in future they expected greater involvement in quality improvement initiatives as they further integrated into management structures. For example, sub-structure pharmacists envisaged contributing as part of specialist teams, that are being initiated as part of *PHC re-engineering* by assessing rational medicines use by prescribers and consumers and reporting adverse drug reactions, especially of new ARV medicines. Similar roles in rational medicines use, together with the establishment of Pharmacy and Therapeutic Committees (PTCs) were identified of district pharmacists in South Africa and other sub-Saharan African countries (Castiglia et al., 1996, Groenewald, 2006, Pillay, 2012, Sevene et al., 2008, Trap et al., 2001).

The fifth role identified for sub-structure pharmacists in MDHS, but not for City Health sub-district pharmacists, was involvement in research activities. This role is not typically associated with district pharmacists or similar cadres and may have been due to the plethora of research being carried out in Cape Town in PHC and health systems strengthening initiatives on account of its proximity to three universities and two research councils. It may also reflect the close working relationships that exist between provincial and local authority health services and academia in the Western Cape, an aspect promoted by the national Department of Health as a means of improving service delivery. Several recent publications from sub-Saharan African countries have mentioned district pharmacists' involvement in research initiatives, often in conjunction with global health initiatives, such as use of SMS

messaging for reporting malaria cases and managing stock control of antimalarials in Uganda, although their precise roles are mostly unclear (Asiimwe et al., 2011).

Finally, the fifth role identified for sub-district pharmacists in City Health was dispensing at clinics. Interestingly, although this was listed as one of their responsibilities, during interviews towards the end of the research almost all managers and pharmacists said that this should not be one of sub-district pharmacists' primary roles, but that other roles focusing on their sub-district management responsibilities should be prioritised. These sentiments reflected a significant shift during the research, emerging out of understandable conflicts in responsibilities experienced by sub-district pharmacists performing both technical and management roles. These struggles resonated with those experienced by others in district and sub-district management positions and raise the issue of which roles should be prioritized to facilitate optimal health service delivery

In summary, sub-structure and sub-district pharmacists' roles evolved in both organisations in Cape Town during the research but, in general, they required pharmacists to shift from direct service provision to playing a support and middle management role, and from interacting within the profession to a working as part of a multi-professional team to oversee delivery of pharmaceutical services across the sub-structure or sub-district.

## 5.2.2 Competencies of sub-structure and sub-district pharmacists

The second stage of the research identified competencies that sub-structure and sub-district pharmacists required to fulfil their roles. As largely similar roles for sub-structure and sub-district pharmacists were identified it was not surprising that participants' identified comparable competencies for sub-structure and sub-district pharmacists but with different emphases between the two cadres. The list of competencies identified during workshops were categorised and subsequently refined during the project after additional interviews and focus groups. Five competency clusters were identified: Professional pharmacy practice; health system/public health; management; leadership; and personal, interpersonal and cognitive, with each competency cluster comprising of a number of competencies (Box 5.1).

**Box 5.1: Competencies of sub-structure and sub-district pharmacists**

**Professional pharmacy practice**
Legal & regulatory aspects of pharmacy
practice
Clinical aspects of pharmacy practice
Technical aspects of pharmacy practice
Public Service legislation and practice

**Health system/Public Health**
Health systems and organisation
Health programmes
Public Health

**Management**
Planning & organising
Financial management & budgeting
Human resources management
Physical resources management
Project management
Information management
Monitoring & Evaluation

**Leadership**
Strategic leadership & vision
Change management
Service development & innovation

**Personal, interpersonal, cognitive**

**Personal**
Self development
Adaptability
Assertiveness
Time management
Professionalism

**Interpersonal**
Relationship building
Networking
Negotiation
Teamwork
Cultural competency

**Cognitive**
Problem solving
Prioritising
Decision making
Communication skills (oral & written)

One of the competency clusters, professional pharmacy practice, was pharmacist specific, whilst the other four were generic and could apply to other managers working at sub-structure or sub-district levels. Professional pharmacy practice competencies were rated highly by both pharmacists and managers. Managers, in particular, valued the professional pharmaceutical expertise pharmacists brought to the management team especially regarding planning and establishing new services and facilities and participating in clinical governance and quality assurance initiatives. Pharmacists emphasized that the professional pharmacy practice competencies they required for these positions were different from those gained in their pre-service training where the main focus was individual patient care as opposed population level competencies (Frenk et al., 2010).

In this research, managers and pharmacists identified health system and public health competencies as important. This was understandable considering Cape Town Metro was implementing the DHS model, and the decentralisation processes required sub-structure and

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sub-district pharmacists to have conceptual understanding of the new system and to be able to operate at a population-level in multi-professional teams (Frenk et al., 2010).

Given the focus of sub-structure and sub-district pharmacists' roles, it was not surprising that management and leadership competencies were identified as critical. Management was considered a fundamental competency by both managers and pharmacists, whilst leadership was considered important by sub-structure pharmacists in MDHS, but less so by their managers or with respect to sub-district pharmacists in City Health. Although there is a close relationship between management and leadership, there are differences, with *"management focusing on being efficient, doing things right; and leadership focusing on being effective, doing the right thing"* (Mintzberg, 2011). Management competencies typically include planning, organising, implementing and monitoring; whereas leadership competencies centre on creating a vision, setting strategic direction, taking risks and motivating others (Galer et al., 2005). Many involved in health system strengthening maintain that health systems particularly those undergoing change, as is the case in South Africa, require managers with both of these competencies, in the words of (Chatora and Tumusiime, 2004b, Galer et al., 2005).

As the research progressed, and particularly after sub-structure pharmacists commenced in their new positions, the significance of personal, interpersonal and cognitive competencies became increasingly evident to all stakeholders. Recent health system strengthening initiatives have highlighted the importance of building systems software, in addition to hardware, as critical for improving organisational performance (Sheikh et al., 2011). Whereas in the past there was little emphasis on the development of these, so called, 'soft skills' the importance of including these skills in training of health professionals, including pharmacists, is becoming more widely acknowledged (Frenk et al., 2010, Royal Pharmaceutical Society of Great Britain, 2011). Epstein and Hundert (2002), for example, included 'soft skills' in the seven dimensions of professional competence (cognitive, technical, integrative, context, relationship, affective/moral and habits of mind) they identified for physicians in the USA. Software, or soft skills have been divided further into 'tangible' and 'intangible', with tangible skills including knowledge, skills and processes of planning, evaluation and decision making, and intangible skills as relationships, communication, values and norms. Intangible skills have been recognised as important for organisations to have the *"ability to function as*

*a resilient, strategic and autonomous entity"* (Kaplan 1999: 20 as in Aragon 2010: 37). This study illustrated the importance of sub-structure and sub-district pharmacists' developing these competencies in order to perform optimally in their challenging settings.

Management capacity at district levels has for some time been recognized as key to delivering quality health services, both in South Africa and globally (Egger et al., 2005, Schaay et al., 1998). Over the past few years there has been increasing acknowledgement of the importance of good management practice within the South African health system, with several strategic initiatives emphasising the need to strengthen management capacity, particularly of hospital CEOs and district managers. These include the Negotiated Service Delivery Agreement between the president and the Minister of Health, the National Health Insurance (NHI) Green Paper and the Human Resources for Health (HRH) Strategy for the Health Sector 2012/13 – 2016/17 (Minister of Health, 2011, National Department of Health, 2010, National Department of Health, 2011). These initiatives raised management practice onto the national agenda, and brought to the fore the development of competency frameworks and management training and support in the country's health sector.

During the second year in their new positions, sub-structure pharmacists identified leadership as critical, especially in the context of supporting facility pharmacy managers and pharmacists in new ways of working and in developing innovations in service delivery. The significance of leadership in the health system has received greater prominence of late. Several authors have suggested that complex health systems, in both developed and developing countries, require leadership models embracing collaborative and distributed leadership, in preference to traditional hierarchical leadership (Dickson, 2009, NHS Leadership Academy, 2011, WHO, 2008). These concepts of distributed and collaborative leadership resonate with decentralization principles of the DHS being implemented across the country (Department of Health, 1997). In MDHS the four sub-structure management teams, which include pharmacists, have considerable decentralised authority to lead and manage health services. This is facilitated by the overall governance model of the organization and practical aspects such as each management team being based together at its sub-structure office. In City Health, sub-district pharmacists and managers did not rate leadership competencies so highly and, significantly, the organizational governance structure is more hierarchical with less evidence of sub-district pharmacists having decentralized authority and

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taking up leadership roles (Elloker et al., 2013). These differences illustrate how organisational context affects the roles and competencies required by pharmacists in these type of management positions.

The importance of good personal, interpersonal and cognitive competencies was recognized by sub-structure pharmacists and their managers in MDHS after they took up their new positions. In particular, they mentioned problem solving, prioritizing and decision-making as key competencies they required as they took up their new management and leadership functions. Mintzberg (2011) similarly identified these cognitive competencies as essential for leaders and managers. In addition, sub-structure pharmacists said that their new roles demanded a good understanding of themselves, sometimes referred to as self management and self awareness, as well as the ability to manage relationships and others, sometimes categorised as social awareness and relationship management (Boyatzis, 2009, Goleman, 1998) Balgoun et al. (2003) highlighted the importance of managers engaging in personal growth, particularly in organisations undergoing change (like MDHS) and Watson (2001) asserted that it was an essential step in moving successfully into other management tasks. Developing relationships was stressed by Chatora et al. (2004b) as a crucial for members of the DMT and in this setting sub-structure pharmacists reported forging relationships within a multi-professional team, as well as networking with stakeholders outside of the public sector health system, including GPs and other private providers. Whilst sub-district pharmacists and their managers agreed that these were important competencies for sub-district pharmacists, managers felt that, in general, sub-district pharmacists were weak in these competency areas. These perceptions corroborated with concerns about the performance of sub-district pharmacists in City Health which was the starting point for this research.

While there are not any competency frameworks developed for district or sub-district pharmacists, or similar cadres working in pharmaceutical management positions, in South Africa or any LMIC, there are several other frameworks that are relevant to this research. These include those of developed for pharmacists and health professionals in developed countries and the recent competency frameworks developed for health managers in South Africa.

The Advanced and Consultant Level (ACLF) Framework, adapted for senior pharmacy managers overseeing primary-level services in the National Health Service in the UK, was pertinent to this research (Fernandes et al., 2008). This is because of comparable roles of pharmacists working at various management levels in primary care in the UK and sub-structure and sub-district pharmacists in Cape Town, as discussed previously (National Prescribing Centre 2000). The framework comprises six competency clusters: Expert professional management; building working relationships; leadership; management; education, training and development; and research and evaluation, shown in Table 2.6 in Chapter Two (Fernandes et al., 2008). The first four competency clusters are similar to those identified for sub-structure and sub-district pharmacists in this study. Personal development which was identified as a critical competency cluster for sub-structure and sub-district pharmacists did not feature with the same prominence, however, several competencies including integrity, resilience, personal resources and managing stress were listed in the Expert professional management cluster. Public health and health system competencies did not feature as in this study but this may be due to significant health system changes occurring in South Africa which require pharmacists to have a good understand of developments.

In South Africa a competency framework for middle managers in Public Service and Administration was developed some time ago but it was only in the last few years, as the dire situation of management in the country's health system has surfaced, that competency frameworks specifically for health managers have been developed (Republic of South Africa, 2003). A competency framework for district managers was developed by Haynes et al. (2008) as part of the District Management Study commissioned by the national Department of Health and this was followed by one for senior health managers developed as part of a country-wide assessment in 2010 (Gilson and Daire, 2011). Last year, further work was commissioned on the assessment of Public Health and General Management Competencies of health facility managers and sub-district managers (Moyo et al., 2013). Although several other frameworks have been developed for managers in health services, as these three focus specifically on managers working in the public sector at different levels within the district health system they were considered to be particularly relevant to this research. Details of these three frameworks are shown in Table 2.7 in Chapter Two.

The competency framework for district health managers comprises 14 competencies in three clusters: core, management and leadership, and the one for senior managers comprises 11 of these 14 competencies and the competencies were not grouped into the three competency clusters (Haynes et al., 2008). Apart from the first two competency clusters (professional pharmacy specific competencies and public health/health systems competencies) that were identified for sub-structure and sub-district pharmacists, there were similarities between them and those identified for district managers. Both comprised management and leadership competency clusters, with the management competency clusters in each framework comprising technical management competencies and the leadership clusters comprises visioning and strategic competencies. The personal, interpersonal and cognitive competencies of the sub-structure and sub-district pharmacists' framework corresponded closely with the core competency clusters of district managers which comprised primarily affective and cognitive competencies.

The competencies identified for sub-district managers were somewhat different from those of senior managers and district managers in that they only included six competencies which focused on management and leadership and public health. This was surprising as personal, interpersonal and cognitive competencies were included in the competency frameworks of senior and district managers and in this research were considered critical for both sub-structure and sub-district pharmacists. Although one of the reasons may have been that the brief provided was to identify management and leadership and public health competencies specifically, in view of the importance of these 'softer competencies' for managers, this seems to be a critical omission (Frenk et al., 2010, Mintzberg, 2011, Sheikh et al., 2011).

The National Health Service (NHS) in the UK developed several leadership competency frameworks, in response to major challenges they were experiencing in management and leadership several years back. These include the Leadership Competency Framework for Pharmacy Professionals which is based on the Medical Leadership Competency Framework and is congruent with the Clinical Leadership Competency Framework and the NHS Leadership Framework, which applies to all staff working in the NHS (Department of Health, 2011a, NHS Institute for Innovation and Improvemnt and Academy of Medical Royal Colleges, 2010, NHS Leadership Academy, 2011, Royal Pharmaceutical Society of Great Britain, 2011).  As the philosophical approach of these frameworks is that leadership occurs

at all levels and is not restricted to those with designated leadership responsibilities they embrace the distributed leadership principles of decentralisation integral to this country's health system.

The Leadership Framework for Pharmacy Professionals, which included pharmacists and pharmacy support workers, describes the leadership competencies that pharmacists and pharmacy technicians in the UK require to be involved in the planning, delivery and transformation of health services (Royal Pharmaceutical Society of Great Britain, 2011). The framework comprises five domains: Demonstrating personal qualities; Working with others; Managing Services; Improving Services; and Setting Direction. The five domains corroborated with the competency frameworks identified for sub-structure and sub-district pharmacists in that they included two domains similar to personal and interpersonal competencies, which were considered critical for sub-structure and sub-district pharmacists, one domain for management and two domains which relate to leadership. It did not include profession specific or public health/health system domains as in this study.

A feature of this framework is that it includes both pharmacists and pharmacy support workers and supports leadership development across the career of a pharmacy professional with examples of learning and development opportunities and practice applications included for three levels: student, practitioner and experienced practitioner. A related document to support the development of leadership and management curriculum design at Schools of Pharmacy has been developed as well as an e-learning support tool, LeAD, to assist with integrating these competencies into curricula and learning experiences (Department of Health, 2011b).

The significance of this model is that it demonstrates how competency frameworks can be used to guide learning, in both pre-service and post-graduate training and in continuing professional development of pharmacy practitioners. Although it has been developed specifically for the UK, it would be worthwhile exploring its applicability to South Africa and other LMICs.

## 5.3  Three underlying themes

Three underlying themes emerged during the research. The first was the influence of context on the establishment of sub-structure and sub-district pharmacists in the two evolving PHC organisations in Cape Town Metro District. The second was uncovering the varied experiences of sub-structure and sub-district pharmacists as they transitioned into their new positions in the two organisations. Finally, the research pointed to the implications for supporting sub-structure and sub-district pharmacists as they take up these new positions in terms of appropriate the training and capacity development interventions.

### 5.3.1  Influence of context on sub-structure and sub-district pharmacists

The research illustrated that context was an important feature in the establishment of sub-structure and sub-district pharmacists in Cape Town, and subsequently on their roles and competencies. Although Cape Town is moving towards full DHS integration and the provision of comprehensive PHC services by a single authority, services are still delivered across the same geographic area by two organisations, the provincial health department as the MDHS and the municipality, City Health, the latter in terms of a service level and co-funding agreement with the provincial government. Each organisation provides a range of PHC services, has evolved their own model of management and sub-structure and sub-district pharmacists have evolved independently within these two organisational contexts (Barron, 2008).

Since the mid 2000s planning and delivery of PHC services across Cape Town have been in accordance with the provincial Comprehensive Service Plan (CSP) 2010 (Western Cape Department of Health, 2007). Operational planning and monitoring occurs at district level through monthly District Executive (DEX) Committee meetings involving senior management from both organisations and at sub-district level through the Integrated Sub-District Management Teams (ISDMTs). However, whilst joint activities contribute towards service integration, dual lines of accountability remain a challenge for managers and frontline health workers from both organisations.

**5.3.1.1 Establishment of sub-structure and sub-district pharmacists in Cape Town**

Sub-structure and sub-district pharmacists emerged in this context of ongoing district development, sub-district pharmacists in City Health in 2005 and sub-structure pharmacists in MDHS in 2009, however, the research identified significant differences between the establishment of these positions in the two organisations. These related particularly to processes leading to the creation of these new posts, the manner in which they were filled and their timing in relation to restructuring of the individual organizations.

In City Health the establishment of sub-district pharmacist posts was linked to decisions by senior management to streamline medicines distribution in the municipality and close three medical stores. The three pharmacy store managers were redeployed as sub-district pharmacists and one facility pharmacy manager was appointed to the fourth position. Each of the four sub-district pharmacist had responsibility for two sub-districts. The pharmacists involved said they had little meaningful input into decisions about the creation of these new sub-district pharmacist positions or what their responsibilities would entail. They felt they were presented with a *fait accompli.* When they commenced in these new positions in 2005 they were unclear what was expected of them and it was only in early 2007, following further meetings between pharmacists and management that a memorandum was sent out entitled *Pharmacist support for sub-districts,* that contained clarifying information about where each pharmacist would be based and outlining their responsibilities.

In MDHS, on the other hand, planning for sub-structure pharmacist posts was integral to the establishment of the four sub-structures. Pharmacists working at MDHS at the time were included in the development processes and sub-structure pharmacists were selected for these new positions through competitive selection procedures. These diverse developments influenced the characteristics and performance of sub-structure and sub-district pharmacists in the two organisations.

The circumstances in City Health resulted in pharmacists being redeployed to sub-district pharmacists' positions rather than being selected through a competitive process as occurred with sub-structure pharmacists in MDHS. As a consequence there were considerable differences between the skills and attitudes of the sub-district and sub-structure pharmacists. Some sub-district pharmacists were initially resentful about the changes and were not keen to

engage with their new responsibilities, which in any case were not clear when they first commenced in their new positions. Overall their performance was not what sub-district managers had hoped, and this was a major impetus for the initiation of my research project. In contrast, sub-structure pharmacists were highly motivated, had good prior experience and were well qualified and suited to these new positions.

Another difference between the two settings was the timing of the sub-structure and sub-district pharmacist appointments relative to major restructuring within the two organisations. In MDHS, sub-structure pharmacists benefited from being part of the new sub-structures and were involved in a number of metro-wide activities, as well as some within their individual sub-structures aimed at acquainting them with the new organisations and identifying their functions within the management team. Sub-district pharmacists in City Health, however, did not benefit from equivalent institutional activities as their posts were created several years after the main restructuring into sub-districts had occurred. This probably added to the challenge of integrating into an established management team, and as they were expected to support two sub-districts, they actually had to work with two separate sub-district management teams.

The identification of roles and responsibilities of district and sub-district pharmacists and production of job descriptions also occurred differently in the two organisations. Sub-district pharmacists in City Health felt that initially they were *"left to their own devices",* with little guidance about the expected responsibilities of these new positions with no job descriptions until a much later stage. These factors, together with the acrimonious deliberations between pharmacists and managers that preceded their moves into new positions, probably created uncertainty amongst sub-district pharmacists. This was exhibited by some making little attempt to fulfil sub-district management functions, such as attending sub-district management meetings and visiting clinics, and instead focusing on clinical and dispensing responsibilities. Others concentrated their efforts on one sub-district to the detriment of their second sub-district. Their resentment mirrored those of newly appointed district pharmacists in another province who revealed, during interviews at the commencement of this research, that they were similarly side-lined during the development of their job descriptions.

In MDHS, several processes were undertaken to identify roles and responsibilities of sub-structure pharmacists and to develop job descriptions, and from the outset these were collaborative activities involving managers and pharmacists. In the planning stages for the four sub-structures they involved the project manager: pharmacy services and other pharmacists working at the central level of MDHS; later they included a series of participatory workshops as part of this research part; and after sub-structure pharmacists were appointed they were themselves actively engaged in a number of activities. This high level of engagement between managers and post holders was likely to have contributed positively to the establishment of sub-structure pharmacists in their new jobs (Hall and Hord, 2001, Whiddett and Hollyforde, 2003). The factors influencing the establishment of sub-structure and sub-district pharmacists in Cape Town are shown in Table 5.2.

**Table 5.2: Factors influencing establishment of sub-structure and sub-district pharmacists in Cape Town**

| Sub-district pharmacists (SDPs) - City Health | Sub-structure (SSPs) - MDHS |
|---|---|
| SDP posts established consequent to closure of medical stores | SSP posts established as part of integral planning of new metro structures |
| SDPs redeployed from positions as pharmacists in charge medical stores & one facility pharmacy manager | SSP selected through competitive interview process |
| SDPs not part of formation of metropolitan metro or sub-districts | SSPs integral part of change management processes across metro and sub-structures |
| Acrimonious negotiations between senior management & SDP on roles & responsibilities | Good engagement between management and SSP in discussing roles & responsibilities |
| Weak relationship between acting senior pharmacist and management | Credible relationship between project manager: pharmaceutical services and management |
| Initially SDP job responsibilities unclear, later memo issued & much later job descriptions drafted (not formally ratified) | SSP job descriptions developed in consultation with managers & post holders |

### 5.3.1.2 Same roles, different roles

The practices and roles of pharmacists within the two organisations developed against the backdrop of the two PHC organisations. Whilst the broad categories of roles look similar for sub-structure and sub-district pharmacists there were significant differences between them, with the variation in roles influenced by a number of contextual factors including the

organizational set-up and nature of services provided by the two organisations, as well as the expectations of management accorded to the positions. On the whole, sub-structure pharmacists in MDHS were involved in greater strategic-level management functions across their sub-structure compared to sub-district pharmacists in City Health who, in addition to sub-district management activities, had some direct patient clinical and technical responsibilities in managing a clinic pharmacy and dispensing.

### 5.3.1.2.1 *Changing expectations of sub-district pharmacists roles in City Health*

As already described, City Health provides basic PHC services through 81 clinics, 23 satellites, 4 mobiles and 3 community health centres (CHCs) across the metro with services provided by PHC nurses and part-time medical practitioners with very few having pharmacists or pharmacy support workers on site at the commencement of the research. These numbers increased during the course of the research as more pharmacists' assistants were taken on to support the ARV rollout across the organisation.

Although not clearly defined at the outset, City Health envisaged that sub-district pharmacists would play a dual role combining part-time sub-district management with part-time technical dispensing services at the clinic where they were based. Initially, at least, senior management expected that they would perform the majority of their sub-district management roles from their clinic base.  In view of the fact that most clinics did not have pharmacy staff, sub-district pharmacists' roles in clinics in their two sub-districts were fairly hands on. For example, with respect to management of medicines and vaccines, sub-district pharmacists were involved with authorising clinic orders, monitoring expenditure and also assisting with stock control, medicines supply problems and suitability of clinic facilities. In addition they were expected to contribute proactive medicines information through attendance at the sub-district management team meetings. All sub-district pharmacists found fulfilling this range of activities difficult, although the situation of each varied somewhat. They found it particularly problematic juggling their clinic dispensing responsibilities – which demanded their immediate attention and physical presence – with the more strategic sub-district management functions. In this regard, their experiences corroborated those of other first level health managers balancing clinical or technical tasks with management responsibilities.

During the course of the research some of the initial ideas of sub-district pharmacists' responsibilities and ways of functioning were re-considered by their managers. These appeared to be prompted by sub-district managers' experiences of sub-district pharmacists' valuable contributions to the management team and to clinics and also to the learning gained from this research. As time progressed, attendance of sub-district pharmacists at sub-district meetings was recognized as important in keeping the sub-district management team abreast of medicines information and supply matters. Physically visiting clinics themselves enabled sub-district pharmacists to build relationships with clinic staff, make more meaningful contributions to managing medicines at clinics and provide direct supervision and support to clinic staff. This was line with research which has demonstrated the value of supervision in improving primary health care performance and drug management (Bosch-Capblanch and Garner, 2008, Trap et al., 2001). In addition, sub-district pharmacists were increasingly requested to provide technical advice regarding registration and establishment of new ARV services and to participate in sub-district quality assurance activities for COHERSA and later the baseline audit for National Core Standards (Health Systems Trust, 2011)..

As a result of these developments, during interviews near the end of the project, most sub-district managers were firmly of the opinion that sub-district pharmacists should prioritise sub-district management activities over dispensing at clinics. Some recommended that dispensing should not form part of sub-district pharmacists' responsibilities at all. Although they recognised this would pose some challenges for the organization increasing the use of pharmacy support workers would make this more feasible. By the time the project ended none of the sub-district pharmacists' job descriptions had formally been modified. However, in response to strong motivation from one sub-district manager, one additional sub-district pharmacist was employed to take on sub-district management activities in a sub-district that previously had minimal pharmaceutical input. Significantly her job-description focuses primarily on co-ordination of pharmaceutical management responsibilities across the sub-district and includes minimal clinic dispensing. Comparisons of the job descriptions are shown in Appendix 10 and demonstrate a shift in understanding about the primary functions of sub-district pharmacists during this research, which was probably due to a number of factors including the influence of this project.

*5.3.1.2.2 Emerging roles of district pharmacists in MDHS*

Compared to City Health, MDHS provides a broader range of more complex services through 42 CHC s and 9 district hospitals across the same geographic district. Services at CHCs and hospitals are provided by doctors, nurses, pharmacists and other allied health workers. In addition, MDHS also supports community and home-based services which are mostly provided through NGOs and NPOs contracted by the Department of Health. As MDHS was unbundled during the course of this project, the roles, responsibilities and job descriptions of sub-structure pharmacists were developed with direct contributions from this project as well as internal processes involving pharmacists and managers in the organisation.

Managers and pharmacists in MDHS were both involved in conceptualizing the new sub-structure pharmacist posts prior to and throughout the duration of project. Those engaged in the initial workshops were of the opinion that sub-structure pharmacists would be integral members of the management team and should focus on strategic management activities across the sub-structure. They should not be involved in clinical or technical tasks at facility level such as dispensing or ordering of medicines. Importantly, unlike sub-district pharmacists in City Health who were based at clinics, sub-structure pharmacists in MDHS were based at the management team offices which enabled regular interactions with their manager and facilitated development of relationships with other management team members.

All MDHS facilities have a pharmacy manager acting as the responsible pharmacist as well as pharmacy support workers. Medicines supply management, expenditure and pharmacy human resource matters at the facility are the responsibility of the facility pharmacy manager. Facility managers are line managers for facility pharmacy managers; hence sub-structure pharmacists' roles are to provide professional advice and support to the facility pharmacy manager, rather than direct involvement in activities related to managing medicines.

In addition to the workshops conducted as part of this project, the sub-structure pharmacists and managers engaged in several internal processes within MDHS, first at district level and then at sub-structure level to clarify their functions within the MDHS and the sub-structure management team. Managers and pharmacists commented during interviews that the research had positively contributed to their understanding of the roles of the new sub-structure pharmacists and had facilitated these internal processes. One manager said:

*"I think it is through their work that a lot of us have gained clarity of exactly what the function of a district [sub-structure] pharmacist is…so it has been highly beneficial."* (M3M).

The iterations in understanding of sub-structure pharmacists' roles can be traced through job descriptions drafted at different stages, and excerpts from four job descriptions between 2006 and 2013 are shown in Appendix 10. The first job description, for MDHS project manager, was developed in 2006, prior MDHS's unbundling into four sub-structures and so involves overall responsibility for pharmaceutical services in the whole of MDHS. The second was developed in 2008 during the early stages of the project, but still before the sub-structures had actually been created. The third was developed in 2010, towards the end of the project, one year after the sub-structures were created and the fourth was developed in 2013 after the project concluded.

The second job description shown was the first developed for sub-structure pharmacists and particularly emphasised the overall leadership and management role across the sub-substructure and membership of the sub-structure management team. Significantly, this aspect of their role was discussed extensively at workshops during 2008. The third job description, although similar, added some further detail about some aspects, such as human resources, and included quality of care/clinical governance, roles which had been specifically identified in this project.

Even though sub-structure pharmacist roles, responsibilities and job-descriptions in the four sub-structures were conceptualised collectively, during interviews two years after they had commenced in their positions, both pharmacists and managers reported considerable variations in sub-structure pharmacists' responsibilities. These were dependent on the specific needs and priorities of their sub-structures and were agreed between pharmacists and their managers as part of the performance management system. This again, illustrates the importance of considering context when defining district pharmacists' roles. The fourth job description illustrates one sub-structure pharmacists' job description in 2013 demonstrating ongoing developments in this regard.

**Table 5.1: Charting sub-structure and sub-district pharmacists tasks to management and leadership levels and tasks described by Galer et al (2005)**

| Level | Management & leadership tasks | Sub-district pharmacists tasks (City Health) | Sub-structure pharmacists (MDHS) |
|---|---|---|---|
| **Level 1 Managing a team** | Continues to work directly with patients and perform additional tasks including: | Dispensing at clinics | |
| | Makes sure work of team clearly defined | Provide guidelines (SOPs) for medicines supply management and use in clinics | |
| | Ensures tasks are assigned to right person | Ensure one person responsible for medicines at clinic | |
| | Spots new tasks and distributes among team | | |
| | Ensures each team member has resources and support to do job well | Advise & motivate for infrastructural requirements associated with medicines & vaccines | |
| **Level 2 Managing other managers** | Ensures that managers receive necessary support to fulfil mandate by: | | |
| | Ensures sufficient supplies of pharmaceuticals and supplies | Assists with monitoring of medicines stocks at clinics | Monitors medicines and expenditure at clinics |
| | Ensures facility's finances and information systems are in order | Monitors medicines & vaccines expenditure | Monitors medicines expenditure & workload & makes recommendations regarding budget and staff allocation |
| | Ensures facility and services comply with government quality standards and regulations | Participates in clinic audits and advises on technical and regulatory requirements for new services and clinics | Advises on technical and regulatory requirements for new services and facilities across district |
| | Maintains facility's reputation in the community & good relationships with authorities | | Proactively ensures community & patients are informed of medicines issues |
| **Level 3 Becoming a senior manager** | Involved in strategic issues rather than own technical expertise | | Participates fully in strategic management issues related to pharmacy services & other areas across the district with management team |
| | Greater interaction with external stakeholders | | Engages formally and informally about medicines supply & use with community-based organisations and private providers |
| | Facilitate development of managerial & leadership talent | | Supports facility pharmacy managers to fulfil management & leadership functions & |

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The learning about sub-structure and sub-district pharmacists' roles during this research was charted against roles or tasks of first, second and third level managers as categorised by Galer et al. (2005) (Table 5.1) It illustrates that sub-district pharmacists were involved primarily in level 1 and level 2 management tasks, whilst sub-structure pharmacists were involved in level 2 and 3 management tasks. These variations illustrated that sub-structure and sub-district pharmacists were essentially performing at different management and leadership levels (Galer et al., 2005, Mintzberg, 2011). Differences between the sub-structure and sub-district pharmacist roles in MDHS and City Health, respectively, have implications for the competencies that pharmacists require to perform optimally in these positions. It demonstrates that whilst competency frameworks are useful they have limitations and should be considered as guidelines of competencies required for cadres or jobs which need to be adapted for each specific setting.

## 5.3.2 Transitioning into sub-structure and sub-district pharmacists

As sub-structure and sub-district pharmacists moved into these new positions their roles changed significantly in that they were now involved primarily in management as opposed to performing technical and clinical functions associated with professional pharmacy practice. The situations concerning sub-structure pharmacists in MDHS and sub-district pharmacists in City Health were different and this resulted in diverse experiences of pharmacists in these two organisations. However, in line with other new managers, in both settings pharmacists took time to adapt to their new roles. It was an emergent process as they grappled with mastering new managerial tasks and establishing new relationships across professional boundaries (Watson, 2001). Ultimately, it required a shift in professional identity and mindset from that of a pharmacist to a manager in the health system, a change which seems to be particularly difficult for professionals, like pharmacists, with a scientific training (Gosling and Mintzberg, 2003). Several personal and organisational factors, in each organisation, as well as the PAR itself, influenced pharmacists' experiences as they transitioned into these new management positions.

**5.3.2.1 Professional practice to management practice**

As they took up these new positions, sub-structure and sub-district pharmacists needed to develop an understanding of what it meant to become a manager. In practice it entailed moving from positions where their primary role was to perform technical tasks, such as dispensing, to one where their main responsibility was co-ordinating pharmaceutical services across the sub-structure or sub-district in line with the broader DHS objectives. In this transition they were moving from a situation in which their performance depended mostly on their own individual expertise, experiences and actions to one in which their contribution to the organisation was achieved through others for which they have professional responsibility, such as facility pharmacy managers in MDHS or clinic nurses in City Health, and through working together with other members of the district or sub-district management teams (Hill, 1992).

The situations for sub-structure and sub-district pharmacists were somewhat different. In the case of sub-structure pharmacists, the published CSP 2010 clearly indicated that sub-structure pharmacists would be appointed to management positions in the new management team (Western Cape Department of Health, 2007). In individual interviews with managers involved in planning the new sub-structures they emphasised that these pharmacists would not have any direct technical or clinical responsibilities. However, during the first year in their new positions, two of the four sub-structure pharmacists reflected during interviews that they had struggled with this transition and had on occasions worked as locum pharmacists at community health centres. They acknowledged that this was not part of their new responsibilities as a manager and recognized that they needed to change. Significantly, the two sub-structure pharmacists who reported the most difficulty with adapting to their new management responsibilities were those who had less prior management experience.

On the other hand, sub-district pharmacists fell into the ambiguous positions of many first line managers where they were expected to perform sub-district management responsibilities on a part-time basis whilst still providing direct dispensing services at clinics. Although the circumstances of the four sub-district pharmacists varied, those with greater organisational expectations of providing dispensing services at clinics found it more difficult to fulfil sub-

district management functions. Their struggles were similar to those described in the literature of other health workers in part-time management positions in the DHS.

### 5.3.2.1.1  Ideal v reality

As sub-structure and sub-district pharmacists moved into these new positions they all experienced significant challenges. Sub-structure pharmacists in MDHS described the first year in their new positions as a 'huge shock'. This new job brought a heavy workload with numerous and diverse demands from all sides - fulfilling expectations of their managers (superiors) supporting facility pharmacy managers (subordinates); working with other members of the management team (colleagues); and liaising with outside organisations (partners). At times they felt overwhelmed that as a manager that had to rotate between managing up and down, in and out (Mintzberg 2011).

They felt they were juggling ongoing crises in pharmaceutical services in the sub-structure, whilst at the same time working out their new roles and responsibilities. This is a difficult balance to achieve but one recognized as critical for new managers. During this period pressing issues included managing the impact on facilities across their sub-structure of medicines stock-outs at the Cape Medical Depot and dealing, on a daily basis, with facilities that needed pharmaceutical staff to cover for sickness or leave. At the same time sub-structure pharmacists said that, in recognition of their new responsibilities, they were developing monitoring tools for managing drug supply across their sub-structure and encouraging facility managers and pharmacists to take responsibility for dealing with stock-outs and organising staff coverage themselves. Their chaotic experiences of *"days spent on the run"* mirrored the pace of managing characterised by others and contradicted their expected notions of managers as reflective, systematic planners (Mintzberg, 1990). Similarly, sub-district pharmacists reported tensions of balancing activities requiring their immediate attention, in terms of dispensing at a clinic and sorting out crises with medicines or vaccines stocks with other sub-district management team functions which they had expected to be the main focus of these positions.

### 5.3.2.1.2  Particular difficulties experienced by pharmacists

Several authors have pointed out that it seems to be particularly difficult for professionals who have precise technical backgrounds to move into management roles where they have to make decisions with incomplete information and pharmacists, with their scientific training and the highly regulated framework within which they practice, are likely to find it doubly difficult (Mintzberg, 1990). Navigating their way as managers and balancing the stringent regulations the South African Pharmacy Council place on professional pharmacy practice in the country with the realities on the ground proved challenging for sub-structure and sub-district pharmacists. This was particularly relevant as they were appointed in the midst of health system reforms and mandates to implement new services, including the roll-out of ARV services and innovative services for chronic non-communicable diseases despite local human resource and infrastructure constraints.

One of the MDHS managers described his apprehension about his sub-structure pharmacist's involvement in the transfer of obstetric services from the maternity hospital to the primary level midwife obstetric unit in the sub-structure as he feared that meticulous application of pharmacy regulations would hamper these decentralisation initiatives. However, he reported that he was pleasantly surprised as to how the pharmacist had sensibly and effectively handled the situation. In another sub-structure, there was conflict between the sub-structure pharmacist and facility managers regarding infrastructural requirements and the actual situation at the community health centres concerning pharmaceutical services. In this case the sub-structure pharmacist took a developmental approach to the situation whilst the facility managers were anxious about the consequences of failing to meet the rigid standards.

A pharmacist from City Health demonstrated her grasp of her new management role through her pragmatic stance towards implementing services in less than ideal circumstances by balancing professional constraints with the realities of service delivery requirements on the ground. *"It's about having that ability to look and see what we can do in the situation...you know technically you say 'no it can't be done' but finding the best solution." (CP)*

Balancing tensions of this nature were difficult for all the new pharmacy managers and would likely pose ongoing challenges throughout their tenure in these positions (Hill, 2003).

**5.3.2.2 Transitioning into a manager is an emergent process**

Pharmacists acknowledged that adapting to their new roles as managers took time and concurred with Watson (2001) others that learning to become a manager was a gradual emergent process. By the end of the first two years, sub-structure pharmacists considered they had made progress in understanding their new management roles and adjusted to new ways of working. This was substantiated by one of their managers commenting on their performance after two years.

*"I think most managers will tell you the same thing. I think there's an improvement, I think there's an improvement first of all understanding their role…they also understand they are middle managers and if you are a middle manager there are no clear defined functions and responsibilities…"* (M1M).

Sub-district pharmacists in City Health took longer to adapt to their new roles and this research was prompted by unhappiness with their performance voiced by senior management and sub-district managers two years after they had commenced in these positions. However, by the end of the four year research project sub-district pharmacists had made strides in adjusting to their new roles and most sub-district managers reported that they were receiving good support from their sub-district pharmacists.

"*She's doing well in terms of my expectations workwise. I cannot fault her in terms of rendering services in the clinics,"* (SDM2)

These findings corroborated with the experiences of Hill (1992) who suggested that individuals vary in how they make the transition into a manager and the time it takes them but suggested it typically takes two to three years to master a new job.

**5.3.2.3 Mastering management tasks and establishing new relationships**

At first sub-structure and sub-district pharmacists struggled to make sense of their new responsibilities, what it meant as a manager to have responsibility of the performance of others rather than primarily as an individual contributor (Hill, 1992). Although the process of learning to become a manger is often described as a combination of task learning, of new competencies required to fulfil managerial functions, and the establishment of key

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relationships, others have emphasized that it is much more than this. In Hill's (2003: 234) words *"New managers should see themselves as engaged in strenuous self development. Their task is to learn how to capitalize on their on-the-job learning. This requires a commitment to continual learning self diagnosis, and self management"*.

Becoming a manager involves considerable self effort, in which personal growth is a key component, and has been described by Watson as an emergent process which builds on experiences gained throughout life, in previous jobs and through doing the actual job (Watson. 2001). In this research, despite all the sub-structure and sub-district pharmacists commencing in these positions with some prior management experiences they all needed to develop further. The importance of personal growth was highlighted by Balogun (2003) who suggested two types of activities new middle managers need to engage in during change implementation: sense-making on the one hand, and co-ordination and management on the other. Co-ordination and management are traditional middle management activities and sense-making is the process individuals undertake to understand or *make sense* what is going on around them. He maintained that they need to engage in these two activities from an individual and team perspective, leading to four inter-related roles – undertaking personal change, helping others through change, keeping the business going and implementing necessary changes in their departments with the starting point being undertaking personal change.

Balogun (2003) asserts that *undertaking personal change* is one of the four roles is the starting point for moving onto the other tasks. This is supported by Watson (1994) who maintains that managers need to manage themselves at the same time as managing others. Sense-making for the four new sub-structure pharmacists was probably facilitated by regular meetings they had instituted together approximately every six weeks. Although they set up the meetings to collaborate together and synergise pharmaceutical services across the whole Metro District, at the same time, they provided a critical space for reflection on their experiences and peer support which helped them adjust to the changes of their new work environments. One of their managers recognised the value of these meetings to the pharmacists and said that they were particularly important in view of the 'dislocation' from their previous pharmaceutical services 'community'.

Initially, some sub-structure pharmacists in MDHS felt frustrated when they realised they were performing several functions that should be performed by facility pharmacy managers such as the appointment of pharmacy staff and registration of the pharmacy with the SAPC. However, during their second year they recognised the importance of supporting these managers through these changes and building their own management capacity. By supporting facility pharmacy managers to adjust to changes brought about through restructuring of the metro the sub-structure pharmacists were fulfilling another of Balgoun's (2003) roles - *helping others through change*.

Sub-district pharmacists in City Health, on the other hand, did not mention any initiatives that assisted them with sense-making. It was difficult for them to meet regularly, partly due to their dispensing responsibilities and the fact that two of them were only working part time. In addition, they did not appear to recognise the value of regular engagements together or their roles in *helping others through change*.

A major adjustment for sub-structure and sub-district pharmacists was working as members of a multi-professional management team, as opposed to pharmaceutical services which comprised pharmacists and pharmacy support staff. Recent systems thinking has emphasised a holistic approach and highlighted the '*multiple, dynamic relationships between building blocks*' which requires horizontal or diagonal ways of working across the system rather than vertical pharmaceutical services silos, the predominant model in this and other settings around the world (Bigdeli et al., 2012, Van Olmen et al., 2012). Although these ways of working are increasing in health systems, it is one which only a small number of pharmacists are familiar with (Kolodziejak et al., 2010). This is probably a consequence of few pharmacists experiencing inter-professional learning during pre-service training and the narrow supply-driven vertical approaches commonly applied to pharmaceutical services, leading to professional isolation and limited credible engagements with other health managers (Bigdeli et al., 2012, Frenk et al., 2010)

MDHS sub-structure pharmacists were aware of this adjustment and it was encouraging that two years after they moved into their new positions, despite having worked in traditional pharmaceutical services and with varying exposure to multi-professional working prior to their appointment, one manager commented *"…from where I am sitting, suddenly there is a*

*far greater integration of the pharmacists into the management team"* (M3M). On the other hand, sub-district pharmacists were less integrated into management teams, due to several different personal and organisational factors, although there were indications of good working relationships in some areas such as establishment of new ARV services and carrying out health facility audits.

In addition to these internal relationships, sub-structure pharmacists in MDHS developed working relationships with several organisations and individuals outside their own organisation. These included NGOs and NPOs providing community and home-based care, old age homes and private medical and nursing practitioners within their sub-structures who accessed various pharmaceutical supplies from the public sector, including family planning supplies and childhood immunisations. As recent policies such as re-engineering PHC and the NHI emphasise community-based care and integration of private practitioners into the health system, these types of relationships likely to become increasingly important.

Sub-district pharmacists in City Health were less involved in developing relationships external to their organisation. This was partly due to the PHC services offered by the organisation, although sub-district managers mentioned several areas where they would like sub-district pharmacists to be more involved such as community-based TB DOTS and immunisation campaigns.

**5.3.2.4 Shift in professional identity**

As they took up positions sub-structure and sub-district pharmacists found that they were no longer purely identified by their profession as a pharmacist but also as a manager. Identity refers to personal and behavioural characteristics and changes as work roles change at various points in a career (Ashforth and Johnson, 2001). Moving into a management role has been acknowledged as a profound identity shift which involves considerable adjustment (Hill, 1992). In addition, for pharmacists, as for others with a recognised and respected professional identity, it can be particularly difficult to move into a management position where their professional identifier is less apparent. Changing job roles is always difficult, and Bridges (2009) divided the transition in three stages, *the ending* which is a time of letting go, sometimes described as a bereavement; *the neutral zone* where everything is in flux and feels confusing; and *the beginning* when the new way feels comfortable. He emphasises that the

stages are natural and predictable but there are different speeds of transition affected by various factors which in this research included personal and organizational factors, noted below, as well as pharmacists' involvement in the processes of role and competency development.

In addition, in these two settings identity change for sub-structure and sub-district pharmacists was not straight forward as all juggled their previous professional identity with their new management identity. For sub-district pharmacists this was understandably difficult as they were still were performing technical functions as part of their job responsibilities. However, there were tensions in both organisations with sub-structure and sub-district pharmacists reporting that they felt they were sometimes wearing two hats, as even though they were part of the management team, their managers specifically valued their specific pharmaceutical expertise in areas such as establishing new services.

**5.3.2.5 Factors influencing transition into sub-structure and sub-district pharmacists**

As they commenced as sub-structure and sub-district pharmacists in the two organisations a number of factors influenced their transition into these new positions. These included personal and organisational factors, as well as the PAR process itself. Personal factors centred on pharmacists' career history and their aspirations of becoming a manager; organisational factors on pharmacists' involvement in organisational change processes, physical location and relationships with the management team; and research factors included collaborative learning opportunities which facilitated a shared understanding of sub-structure and sub-district pharmacists' emerging roles and related competencies in the evolving organisations.

*5.3.2.5.1 Personal factors*

In this setting all the sub-structure and sub-district pharmacists had previously worked in Cape Town before and most were working in the organisations when they were appointed to these positions. This meant that they brought an understanding of the context of the PHC organisations and some knowledge of the nature of work involved, although they were appointed to newly created positions as a result of organisational restructuring.

In addition to this historical understanding, pharmacists brought a variety of pharmaceutical expertise into their new positions. All four MDHS sub-structure pharmacists had extensive pharmaceutical experience and had worked with other organisations for significant periods, including private hospitals and retail pharmacies in South Africa, the USA and Europe. This depth of experience probably gave them confidence to contribute valued technical expertise to the sub-structure management team and this, in turn, likely played a part in growing their sense of self-worth as they found their place in new environments (Mintzberg, 2011). On the other hand, the pharmaceutical experiences of City Health sub-district pharmacists were generally limited to their previous roles in medicines stores, although some had worked in the local retail pharmacy sector. Significantly, those sub-district pharmacists with greater pharmaceutical experience performed better and were valued by their sub-district managers.

All pharmacists commenced in these new positions with some prior management experience, albeit mainly in the context of pharmaceutical services. However, the extent of their management experiences varied widely. This corroborated with others who found that people taking up management positions usually have some management experiences in their previous jobs (Balogun, 2003). The four sub-structure pharmacists all moved from management positions, one was previously the project manager: pharmaceutical services in MDHS, and one worked as a pharmacist manger with responsibility for pharmacy human resources at the MDHS central pharmaceutical services office. This gave them intimate knowledge of the developments within MDHS and the project manager, in particular, contributed significantly at an organisational level to planning the re-structuring processes. The two other sub-structure pharmacists had previously worked at provincial level in the Western Cape, one in pharmaceutical services and the other as part of the HIV, AIDS and STI Directorate, which entailed working in a multi-professional team. Although Mintzberg (2011) pointed out that success in previous management positions does not necessarily translate into success in others, it was noteworthy that during the first year the two sub-structure pharmacists with greater management experience adjusted to their new management roles more quickly than the two with less experience.

On the other hand, City Health sub-district pharmacists had more limited management experiences. Three sub-district pharmacists were previously in charge of medicines stores supplying local authority clinics and managed medicines procurement and distribution with a

small team of pharmacy support workers. The fourth sub-district pharmacist was a facility pharmacy manager prior to his appointment. In addition to more limited management experience, they also had less interaction with other health professionals and both these factors could have contributed to the challenges sub-district pharmacists experienced in developing relationships in their new positions as members of the sub-district management team.

A significant difference between the two organisations was the fact that sub-structure pharmacists in MDHS were selected for these positions through a competitive interview process, whereas in City Health sub-district pharmacists were deployed from their previous posts as managers of medicines stores or a facility pharmacy manager. As the new district pharmacists' posts in MDHS were deputy director posts (level 12), there was considerable competition for these positions which facilitated the selection of the most suitable candidates for these challenging positions. Having successfully attained these new positions all sub-structure pharmacists appeared strongly motivated to succeed in their new roles and generally moved through the change transition processes fairly swiftly (Bridges and Mitchell, 2000).

However, sub-district pharmacists in City Health were appointed in quite different circumstances in which pharmacists were given little choice about relocating to these new positions when the medical stores they managed were closed. They were not all enthusiastic about these new positions and consequently it was not surprising that sub-districts pharmacists generally found the transition difficult, with some appearing reluctant to take up their new responsibilities. This was illustrated by senior managers and sub-district managers describing some sub-district pharmacists as *'uncooperative'* and *'difficult'* during the early stages (Bridges and Mitchell, 2000).

### 5.3.2.5.2  Organisational factors

Despite the relevance of personal factors in managing the transition into a manager, Mintzberg (2011) warns against the danger of only attributing success as a manager to personal factors and highlights the part organisational factors play - *how do-able is the actual job?* In this setting, several organisational factors influenced sub-structure and sub-district pharmacists' transition into these new management positions. These included the

organisational restructuring processes, physical location and relationship with the management team.

Sub-structure pharmacists were appointed in MDHS as part of major restructuring in accordance with the CSP 2010 which involved the unbundling of MDHS into four sub-structures (Western Cape Department of Health, 2007). As such, sub-structure pharmacist appointments were integral to the changes processes occurring in that organisation. In contrast, sub-district pharmacists were appointed in City Health in 2005, several years after the main organisational changes which had amalgamated several local authorities under a united umbrella of City Health and subsequently established sub-districts. These organisational differences had several implications for the sub-structure and sub-district pharmacists as they transitioned into their new positions.

As MDHS moved into their new structures, the organisation initiated several activities for defining the roles and functions of all new sub-structure-level staff, including sub-structure pharmacists, such as developing job descriptions and working out responsibilities and relationships amongst members of the management team. These processes were co-ordinated by one of the sub-structure directors and comprised formal presentations and workshops which have previously been shown to facilitate understanding and engagement with new jobs (Hall and Hord, 2001).

In City Health on the other hand, sub-district pharmacists reported that they had very little say in their relocation which entailed taking on a new of range of responsibilities with different expectations and pressures, but with no difference in grading or salary. Initially their precise responsibilities were not clearly articulated, and sub-district pharmacists said they felt *'left to their own devices'* in shaping and making sense of their new roles. Sometime later, in early 2007 a memorandum was sent out detailing pharmacist support to sub-districts, including where the pharmacists would be based, the sub-districts they would support and their key roles and responsibilities. This lack of clarity about their new responsibilities and perceived minimal support provided at sub-district level likely contributed to some sub-district pharmacists' negative feelings about their new positions. This made adjusting to these positions more difficult, and consequently slower, for sub-district pharmacists in City Health compared to sub-structure pharmacists in MDHS (Bridges and Mitchell, 2000).

In addition to being included in change processes, sub-structure pharmacists mentioned that being located at the sub-structure offices with the other members of the management team assisted with building collegial relationships with other managers. It facilitated working together as a multi-professional team and sharing experiences with colleagues, which helped them to *make sense* of their new roles (Balogun, 2003). In contrast, all sub-district pharmacists were based at clinics, rather than at sub-district offices and during interviews some had openly bemoaned their isolation and frustration communicating with the management team and clinics. Some of the difficulties they experienced which hampered their engagement with sub-district management activities included irregular internal mail deliveries, out of order telephone and fax lines due to community vandalism and unavailability of official transport to visit clinics.

Most sub-structure pharmacists mentioned that their directors had played supportive roles during their first two years in these new posts. Two directors demonstrated understanding by commenting on the challenges these positions posed for district pharmacists who were stepping outside of the 'comfort zone' of their pharmaceutical services 'silos' and moving into the broader health management team. One director said *"...that's where the role of someone like me becomes more important. I do provide some of the leadership and mentoring and training…"* (M3M). The value of mentoring as a means of supporting new managers has been recognised for some time, but it is only more recently that it has been promoted as part of on-the-job support in the health sector (Kerrigan and Luke, 1987). Although there are serious initiatives to support mentoring of managers in the UK National Health Service South Africa is still looking at how to implement similar interventions.

Sub-district pharmacists felt that, on the whole, sub-district managers had played a minimal role in assisting them take on their new responsibilities and the relationship between the two was quite distant. In fact, when the project commenced there were strained relationships between some sub-district managers and sub-district pharmacists. However, during the course of the project, the situation improved with several sub-managers acknowledging the valuable role their sub-district pharmacist was playing.

*5.3.2.5.3  Influence of research*

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In this setting, an additional contributory factor to sub-structure and sub-district pharmacists' transition into their new positions was this PAR project. Although this research took place at different points in the trajectories of establishing sub-structure and sub-district pharmacists in MDHS and City Health, respectively, in each case the positive influence of the research was acknowledged by pharmacists and managers.

The research commenced in response to problems concerning the performance of sub-district pharmacists in City Health and over time clarified sub-district pharmacists' roles and required competencies amongst pharmacist and managers in the organisation, as well as identified several organisational constraints. During this period several positive changes in personal and organisational factors were noted. These included a greater engagement of sub-district pharmacists with their new management responsibilities and improved levels of satisfaction reported by sub-district managers. In addition, one sub-district pharmacist who was working part-time successfully motivated to have her post changed to a full-time position and a manager from a particularly challenging sub-district appointed an additional sub-district pharmacist, for her second sub-district. It was notable that her job description embraced some of the learnings of the project by having a greater focus on activities across the sub-district management as opposed to clinic dispensing. It is difficult to say how much of these changes were due to the research directly but managers and pharmacists engaged positively with the participatory processes which had created shared understanding about sub-district pharmacists' contributions in City Health.

In MDHS, the research engaged with managers and pharmacists prior to the restructuring of the metro and then at several stages subsequent to the establishment of the new structures. Although several parallel MDHS processes ongoing during the same period have already been mentioned, managers and pharmacists reported the positive contribution of this project to developing an understanding of sub-structure pharmacists' potential job roles and responsibilities. This facilitated clarification of their roles within the metro and sub-structure management team and development of job descriptions. Managers attributed the fairly smooth transition sub-structure pharmacists had made into their new positions to understanding gain from their involvement in the project. These outcomes demonstrated the strength of shared leaning experiences of the participatory research design which had

purposely involved a wide range of stakeholders including sub-structure and sub-district pharmacists themselves as well as their managers (Swanson et al., 2012).

The research also contributed at metro level through the DEX Committee. This monthly meeting of senior managers from both PHC organisations had granted permission to carry out the research and was the forum to which we reported regularly about the research project. This provided an excellent opportunity for me and the two designated senior pharmacists from each organisation to interact with senior managers from both organisations to discuss the research progress, share findings and agree on subsequent steps. Presenting at this forum facilitated the development of a shared understanding of sub-structure and sub-district pharmacists' roles, related competencies and their experiences in these new positions with stakeholders from both organisations. Given ongoing developments towards integration of PHC services in the Cape Town metro, it was beneficial for stakeholders from both organisations to discuss these issues together (Western Cape Department of Health, 2011b).

### 5.3.3 Developing competencies in sub-structure and sub-district pharmacists

Overall, sub-structure and sub-district pharmacists' roles shifted from direct service provision within a pharmacy professional setting to support and management roles as part of a multi-professional management team. The research identified five competency clusters for these pharmacists: one was related to pharmacy specific competencies whilst the other four were generic competency clusters that could be applicable to other managers working at similar levels in South Africa's health system. In addition to identifying competencies the iterative research process, which engaged with sub-structure and sub-district pharmacists and managers over a four year period, revealed several aspects which have implications for competency frameworks and the development of competencies in sub-structure and sub-district pharmacists.

The research found that the organizational context influenced the precise competencies required by sub-structure and sub-district pharmacists. The learning involved in mastering these new roles included a combination of technical tasks, some pharmacy practice specific and others generic management, and relationship development (Mintzberg, 2011)..

Transitioning into a sub-structure or sub-district pharmacist was an emergent process and whilst most pharmacists had some prior management experience, they all grew into their new roles over time (Hill, 2003). Sub-structure and sub-district pharmacists' involvement in clarifying their own roles and related competencies impacted on competency development in the two organisations and finally, organisational and environmental support played a critical part in facilitating competency development (Whiddett and Hollyforde, 2003).

### 5.3.3.1 Application of competency frameworks

Whilst the competency frameworks that were identified during the research usefully elucidate the main competencies required by sub-structure and sub-district pharmacists in MDHS and City Health, respectively, it is important to recognise that *one-size does not fit all*. The frameworks should be viewed as guides and tailored to the requirements of specific contexts. This was aptly illustrated through the similarities, but also the differences, between sub-structure and sub-district pharmacists' roles and experiences in the two PHC organisations.

In these settings the differences were primarily related to the PHC services provided, human resources providing pharmaceutical services and the organisational governance structures. These factors influenced the nature of sub-structure and sub-district pharmacists' involvement in service delivery and the management levels at which they operated which both have implications for the competencies they require. In other settings, pharmacists working at district management level would likely have variations on the roles identified by this research and this would influence the precise competencies they require to perform optimally. These competencies would then be used to guide the development of job descriptions and selection of pharmacists. The use of competency frameworks to assess training needs and implement performance appraisal should be used in conjunction with individual pharmacists' profiles, as this study demonstrated that pharmacists who took up sub-structure and sub-district pharmacist positions came with a variety of prior experiences which influenced the additional competencies they required to perform optimally in their new posts.

**5.3.3.2 Competency development approaches**

The competencies required by sub-structure and sub-district pharmacists included technical competencies, pharmacy specific and generic management, and 'softer' relational competencies. Kerrigan and Luke (1987) identified four training options suitable for developing competencies: formal training, on-the-job training, action learning and non-formal training. Each option has strengths and weaknesses and a combination of approaches would most likely to be required to develop the range of competencies required by sub-structure and sub-district pharmacists and other pharmacists working in similar positions.

The development of pharmacy specific, technical management, public health and health systems competencies lend themselves to traditional formal training. This consists of classroom training usually provided by academic institutions and includes accredited qualifications including Masters and Post-Graduate Diplomas as well as short courses of a few days or weeks in duration. Several options, including Master of Public Health (MPH) qualifications, are available in the country and up to now most have focused on the development of generic managers for the health system rather than specifically on pharmacy managers. There are plans to introduce a specialist qualification for pharmacists in public health and management which would be suitable for sub-structure and sub-district pharmacists amongst others (South African Pharmacy Council, 2011b). However, whilst this would be a good way to develop pharmacy specific competencies, given that working in multi-professional teams was a critical facet of their new roles, pharmacists in these type of positions are likely to benefit from training experiences which include other health professionals as opposed to only pharmacists.

Many maintain that 'softer' relational competencies associated with management and leadership, including cognitive and affective competencies, *"cannot be created in a classroom"* and require different approaches which reflect the emergent nature in which managers, including sub-structure and sub-district pharmacists, develop in their new jobs (Hill, 2003). According to Mintzberg (2011) *"managing is learnt on-the-job and enhanced by a variety of experiences"*. On- the-job training includes a variety of activities such as in-service training, internships, mentorships and coaching. In-service training can take the form of short training courses but has the advantage of being tailored to the specific needs of the

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organization and, if offered to a group of employees working together, its impact can be enhanced. Other in-service training initiatives include team training, sometimes facilitated by NGOs engaged in health systems strengthening initiatives. One such programme which has already been implemented in several parts of the country is Management Sciences for Health's Leadership Development Programme (LDP) for pharmacists, which has been adapted from its generic LDP. It engages with selected pharmacists, mostly working in management positions, from a specific district or province over a six month period and uses the challenge model as a means of facilitating practice-based learning (Galer et al., 2005).

Coaching and mentoring have been successfully used in other fields for some time and their value in health care is more being more widely recognized (Gilson and Daire, 2011). Although coaching and mentoring involve similar techniques, they do differ in various ways. Mentoring supports personal and professional development of individuals' careers whereas coaching is shorter term and tends to be task or project focused. Mentoring is likely to be a suitable way to develop relational competencies required by sub-structure and sub-district pharmacists and has the advantage that it is individually tailored to the person and setting. It is also a technique that is flexible and can be continued over an extended period of time. Several sub-structure pharmacists from MDHS mentioned the valuable mentoring role their sub-structure director was playing in assisting them to adapt to their new responsibilities, but such was not mentioned by sub-district pharmacists in City Health. In the UK various resources are available to support the growth of mentoring in the NHS, including a mentoring toolkit, and its applicability to South Africa and other settings could be investigated.

An innovative approach which combines formal learning with on-the-job problem solving is action learning. This approach is being used with some success in the DIAHLS project in Mitchells Plain sub-district in Cape Town, a joint initiative between the Universities of the Western Cape and Cape Town and MDHS and City Health which seeks to understand and improve health system governance (Elloker et al., 2013). The approach capitalizes on collaborative learning and reflective practice of managers and academics to build understanding and effect change in a complex environment.

Non-formal learning includes self-directed learning through peer groups and communities of practice and is a cost-effective and feasible intervention suitable for most settings. In this

research the four sub-structure pharmacists in MDHS established regular meetings together to share experiences and standardise services across the Cape Town metro. Although they did not use the term 'peer group' themselves, sub-structure pharmacists reported how this group had assisted them in making sense of their new roles and responsibilities and the changes occurring within their organization. Balgoun (2003) emphasised the importance of managers undergoing personal development in order to support others, particularly their subordinates, through organizational change. Encouraging peer group meetings among pharmacists working at these levels in other settings could similarly facilitate sense-making and adjustment to new management responsibilities.

### 5.3.3.3 Other considerations in developing competencies

Another significant learning from the project which has implications for supporting sub-structure and sub-district pharmacists as they adjust to these new positions was the positive impact of involving post holders and their managers in identifying their own roles and competencies (Hall and Hord, 2001). This was a critical feature of the research approach from the outset and facilitated shared learning and understanding, and hence ownership, amongst stakeholders, although it occurred differently and to varying degrees in the two organisations (Whiddett and Hollyforde, 2003).

In MDHS sub-structure pharmacists were actively engaged in several initiatives with managers to clarify their roles and functions within the management team, identify competencies and develop job descriptions. Some of these activities occurred as part of this research and others were initiated within the organisation at metro and sub-structure level. Managers attributed the relatively straightforward adjustment of sub-structure pharmacists to their new responsibilities to their involvement in these processes. In City Health, delays in clarifying sub-district pharmacists' roles and responsibilities contributed to initial frustration and poor performance. As the research proceeded the situation improved, possibly due to improved understanding among between stakeholders facilitated by the research. Whilst all settings will not benefit from similar PAR initiatives, involving multi-professional teams of stakeholders in clarifying roles and responsibilities together and identifying required competencies could facilitate similar shared understanding amongst stakeholders experienced in this setting (Dwyer et al., 2006).

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As the research explored sub-structure and sub-district pharmacist competencies, it amply demonstrated that it was not sufficient to think about developing competencies in isolation but that competencies should be considered in context. In these two organisations sub-structure and sub-district pharmacists' performance was governed not only by their own personal competencies but by several organisational factors related to their environment and health system functioning, including the support they receive from their managers, which have already been discussed (Baser and Morgan, 2008).

In conclusion, a model proposed by Wilson and Miller (2012) could usefully be applied to developing competencies in pharmacists working in management positions in the DHS. The model embraces some of the learning from this research about developing competencies in substructure and sub-district pharmacists in that it takes cognisance of context as well as other actors and elements of the health system (Figure X). It consists of three phases of learning, learning in action, learning from action and learning from action and Wilson and Miller (2012) suggested that all three phases were valuable and should occur as a cyclically.

**Figure 5.1: Three phases of learning (adapted from Wilson and Miller, 2012: 4)**



Learning in action    →    Learning from action    →    Learning for action

*"on the job" learning*      *learning from experience and reflection*      *formal learning of new knowledge*
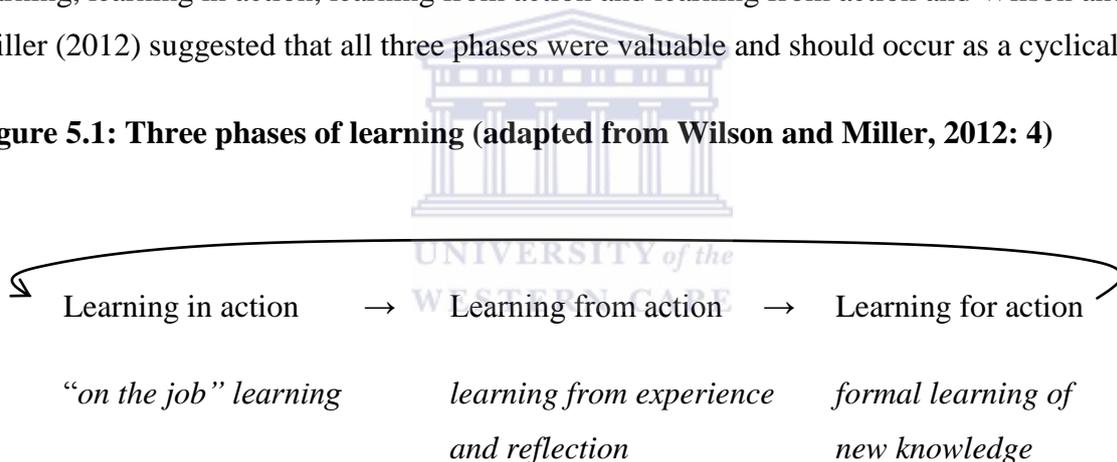
They argued, in accordance with Kerrigan and Luke (1987), that 'learning in action' and 'learning from action' are critical to improve job performance as that these two approaches are more in keeping with systems thinking (Wilson and Miller 2012).

## 5.4 Summary

This chapter discussed the main research findings and its contribution to DHS development using a PAR approach in the two evolving PHC organisations in Cape Town. It discussed the emerging roles and related competencies of sub-structure and sub-district pharmacists in MDHS and City Health, as they unfolded. It then considered three underlying themes that

emerged during the research: the different contextual influences of the two organisations on the establishment of sub-structure and sub-district pharmacists; transitioning into these new positions was an emergent process; and finally, the research suggested ways in which sub-structure and sub-district pharmacists could be supported to develop the competencies they require for these new positions.

# Chapter 6:    Final reflections

## 6.1  Introduction

In this chapter I critically reflect on using participatory action research (PAR) as a methodological approach in this project and its relevance to the emerging field of Health Policy and Systems Research (HPSR), which encompasses research on health systems and policies including the influence of interactions between different parts of the health system, as well as the broader social and political context (Gilson, 2012). Although several authors have suggested the applicability of PAR to HPSR, there are not many published examples illustrating how PAR can contribute to this field and what the implications are researchers (Swanson et al., 2012).

PAR is part of the broader action research family of approaches and includes as its distinctive features action, reflection and partnership (Huang, 2010, Reason and Bradbury, 2008). In PAR knowledge is created in the interplay between research and practice, thus requiring researchers to work with practitioners as active researchers and agents of change through iterative cycles of action and reflection (Huang, 2010). This contrasts with more traditional research approaches in which research is conducted on research subjects rather than collaborating together with them as partners. PAR's purpose is therefore not only to understand but to effect change through generating new learning and knowledge and empowering participants (Huang, 2010, Loewenson et al., 2011). PAR has its roots in emancipatory-empowerment research of Paulo Freire, and others, who used PAR to encourage poor and oppressed communities to examine and analyse structural reasons for their oppression (Baum et al., 2006, De Koning and Martin, 1996).

PAR has been extensively used in low and middle income countries (LMICs) in the fields of community health and development and increasingly in health promotion and evaluation activities in developed countries (Baum et al., 2006, Minkler and Wallerstein, 2003). More recently the approach has been used in health services research, particularly in health improvement initiatives and professional development in developed countries including the United Kingdom(UK) (Iles and Sutherland, 2001, Waterman et al., 2001). The approach has been successfully applied in several LMICs, although there are only a few examples of

published research so far. These include the development and implementation of clinical record keeping system in three hospitals in Jordan and health policy and systems work with communities in Southern and Eastern Africa (Khresheh and Barclay, 2007, Loewenson et al., 2011). In South Africa, Luckett and Grossenbacher (2003) used action research (AR) to employ a systems thinking approach to improve the implementation of the DHS in a province in South Africa. The examples emphasize an appreciation of the *"learning processes which iterate between theory and practice"* (Luckett 2004: 3), allowing social change in complex systems.

In common with other action researchers, I acknowledged that my methodological choice of PAR was prompted by its focus on research to effect change, as opposed to merely understanding, as this corresponded with my desire to make a positive contribution to the development of emerging pharmacy managers in the evolving the district health system (DHS) in the country (Dick et al., 2009, Huang, 2010, Robson, 2011, Waterman et al., 2001). Existing relationships with a range of health professionals in the two primary health care (PHC) organisations in Cape Town and knowledge of developments occurring in pharmaceutical management alerted me to the unique opportunity of partnering with pharmacists and managers in as systems were evolving. PAR's flexible and emergent approach facilitated responsiveness to the changes occurring in the two organisations during the research, such as the unbundling of Metro District Health System (MDHS) into four sub-structures and changes in City Health (Reason, 2006). Action and reflection facilitated iterative learning among participants about sub-structure and sub-district pharmacists which was progressively infused into several processes in both organisations.

## 6.2 Partnerships and collaborative learning

Partnership is a key feature of PAR and in this research I worked with a broad range of health services stakeholders. These included sub-structure and sub-district pharmacists and their managers directly implicated in the research and other key stakeholders from provincial and facility levels. The inclusion of stakeholders with different professional backgrounds and experiences working at different levels in the health system was expected to provide a broad range of perspectives to the research about pharmacists' contribution to district development and their emerging roles and related competencies in the evolving DHS in Cape Town. I

purposely partnered with those about which research was primarily concerned, that is sub-structure and sub-district pharmacists, as others found this important when conducting work on the development of competency frameworks and job descriptions (Hall and Hord, 2001, Whiddett and Hollyforde, 2003). Together we established shared goals of mutual benefit, with the partnership gaining from my evolving research skills and the deep insights of practice and context of the health services stakeholders (Kemmis and McTaggart, 2003, Orr and Bennett, 2012).

Workshops and focus groups facilitated collaborative learning environments between me as the researcher and health services stakeholders but also, importantly, between different health professionals and both PHC organisations. Several workshop participants mentioned the value of the workshops as opportunities for interactions between different health professionals and the two PHC organisations, which was particularly relevant in view of ongoing development of the health services and future integration of the two organisations. This exchange of information and collaborative sense-making of knowledge about sub-structure and sub-district pharmacists' development created 'ownership' of the learnings and built capacity of a broad group of stakeholders from both organisations (Gilson 2003, Dick, 1993 as cited in Davis, 2007).
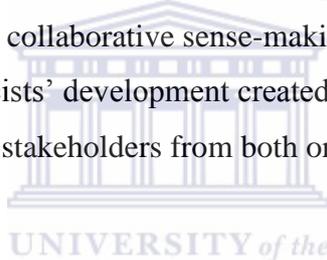
This facilitated the integration of the learnings into ongoing processes in the two organisations. Examples of such operationalization of collaborative learning include the clarification of roles and functions of sub-structure pharmacists within the new sub-structure management teams and the straightforward manner in which job descriptions for the new sub-structure pharmacists were developed, which managers credited to understanding gained from the research.  In City Health, a sub-district manager successfully motivated for an additional sub-district pharmacist and she was appointed with a job description that had a greater focus on sub-district management responsibilities than existing sub-district pharmacists. Generation of local capacity to strengthen health systems undergoing change emphasise the suitability of PAR for HPSR (Meyer, 2001, Swanson et al., 2012).

Whilst the partnership with health services stakeholders added deep insights of practice and context to the learning and understanding generated by the research, there were several challenges involved in initiating and maintaining these relationships (Gilson and McIntyre,

2008). In this project successful participation and partnership was build on the existing trusting relationships between the health services participants and me, cultivated through personal connections, institutional research linkages and professional affiliation over a number of years (De Koning and Martin, 1996). After agreeing to the research the District Executive (DEX) Committee demonstrated their trust by allowing me regular engagement with staff from both organisations (Iles and Sutherland, 2001). Gilson (2006) points to the importance of competence, sincerity and reliability as the basis for a trusting relationship and these were characteristics I attempted to emulate throughout the research. Khreshesh and Barclay (2007) in their work of developing and implementing clinical record-keeping in hospitals in Jordan similarly highlighted the importance of prior relationships with partners and familiarity of the context as critical for successful execution of PAR.

Although the collaborative approach included authentically shared goals, there nevertheless remained tensions between my agenda as a researcher and those of the health services participants. I realised that there were differences in our expectations, in particular with regard to time scales and understanding the methodological approach. Health service participants were expecting quick answers to the research questions whilst I aspired to more measured approach cognisant of attending to methodological rigour. Radin (2010: 289 as cited in Orr and Bennett, 2012: 4) similarly describes the difficulty of meeting the "twin hurdles" of academic rigour and practitioner relevance. This challenge was handled in various ways, such as including health services partners in addressing research quality. This involved making the research design and methodological approach as clear as possible and having a systematic and transparent approach to data collection and analysis. Member checking after workshops included sending notes of processes to participants for verification and information of decisions on next stages (Meyer, 2006). This collaborative approach facilitated understanding of research processes and the iterative learning was integrated into organizational processes as the research progressed.

Maintaining relationships over extended periods is another challenge of PAR and building research partnerships, and this study extended over four years. Providing regular feedback about the project to the DEX Committee (comprising senior managers from both organisations) assisted in keeping the project on the radar of senior management. Strategically limiting numbers of joint workshops to avoid stakeholder fatigue was a decision

we took together at the commencement of the research. However, competing interests and priorities sometimes made it difficult to maintain involvement of all stakeholders throughout the project (Orr and Bennett, 2012). My professional affiliation with pharmacists in the research played a supportive role in the partnership and included 'backstaging' behind the scenes to maintain participation and move the research forward (Calnan and Rowe, 2006, Coghlan and Casey, 2001). This involved me meeting with one of the newly appointed sub-structure pharmacists to discuss the intervention. Her situational insights were critical in the development of an suitable intervention and in encouraging participation of health services stakeholders during the final stage of the project.

Recently, collaborative engagement, one of the prominent features of PAR, has been highlighted by several authors as valuable to HPSR. This includes partnerships in which complementary forms of expertise are brought to the research by academics and practitioners for mutual gain to build shared understanding and empowerment to implement changes in their own settings (Loewenson et al., 2011). In this research, whilst I brought research skills, the practice partners brought knowledge of the practice context and this is particularly valuable in HPSR which situates research within the complex practice context. In this study, insights into the development of sub-structure and sub-district pharmacists gained from the inclusion of a broad range of stakeholders, pharmacists, managers and nurses, and this accorded with Loewenson et al. (2011) who noted the importance of including multi-professionals as critical for capturing the complexities of health systems research and supporting dialogue between health professionals.

Furthermore at a global level, WHO Options for Action/Changing Mindsets (2012) has promoted collaboration between decision makers and researchers which, they say could result in models integrating research and practice. These perspectives are not limited to the field of health or HPSR as stronger links between research and practice are being promoted in other areas. Orr and Bennett (2012), in a paper jointly authored by an academic and practitioner in the field of public administration in the UK, promote co-production of research as a way of *"better informed research, better informed policy, and better informed practice"* (Grace, 2006: 2 as cited in Orr and Bennett, 2012). However, it is important to remember, as illustrated by this research, that the benefits accrued from collaborative engagements depend on prior trusting relationships between partners and cost considerable investments in time

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flexibility and tenacity by all parties to maintain partnerships over extended periods of time and navigate the complexities of competing demands and interests to achieve goals of benefit the academic and practitioner (Khresheh and Barclay, 2007, Orr and Bennett, 2012).

## 6.3 Reflection and reflexivity

Reflection is a fundamental feature of PAR, both reflection with participants and self-reflection or reflexivity. Reflection has been described as *"an exploration of experience leading to a new understanding'* and *"(making) meaning of the situation in ways to enhance understanding"* (Boud, Keogh & Walker, 1985; Loughran 2002). In PAR action and reflection go hand in hand, with Freire asserting that critical reflection itself is already action, captured famously wrote in his Pedagogy of the Oppressed *"reflection without action is sheer verbalism or armchair revolution and action without reflection is pure activism, or action for action's sake"* (Baum et al., 2006: 856).

Two major dimensions of reflection have been identified: iterative and vertical, and both were applicable to this research. The iterative dimension triggered reflection by experience which produced new understanding and the potential for future change; the vertical dimension includes different levels of reflection, from a surface level descriptive reflection to a deeper analytical and critical reflection that in this research prompted consideration of the implications of findings within the complexity of the health system (Boud et al., 1985, Mann et al., 2009, Schon, 1983).

In this project the iterative research approach facilitated individual and collective reflections by sub-structure and sub-district pharmacists' and their managers on the development of the pharmacists in the changing environments of MDHS and City Health. In addition to the workshops, I carried out individual interviews with pharmacists and managers subsequent to identification of roles and competency frameworks; in MDHS at one and two year intervals after establishment of sub-structures and through engagements at the beginning and end of project in City Health. I also conducted two focus groups, one with sub-structure pharmacists in MDHS and one with sub-district pharmacists in City Health, towards the end of the project, which provided important opportunities for collaborative reflections, echoing the

shared learning environments of the workshops (Liamputtong and Ezzy, 2005, Waterman et al., 2001).

These reflections produced new understandings about sub-structure and sub-district pharmacists' roles and related competencies and their experiences are they were transitioning into their new management positions. They included identification of personal and organisational facilitators and barriers to sub-structure and sub-district pharmacists' performance in MDHS and City Health, respectively. These new learnings and understandings were incorporated into organisational developmental processes, such as the development of job descriptions in MDHS and appointment of an additional sub-district pharmacist in City Health (Boud et al., 1985).

Self-reflection, the critical interrogation of my own experience in the research and the interplay between me, the research context and the data occurred throughout the engagement (McNiff and Whitehead, 2010). Huang (2010) argues that reflexivity is important because action researchers acknowledge that all claims to knowledge are shaped by interests and autobiography helps to *"contextualise claims, create transparency and anchor ownership of expression"* (Huang 2010: 95). McNiff and Whitehead (2010) and Baum et al. (2006) highlight the importance of dialectical critique, which is an awareness of historical, political and cultural forces that have led to one's situation and the way one thinks, as well as the context in which one is engaging and planning to take action for change.

In this research I declared my professional background as a pharmacist, and whilst this professional identification with pharmacists in the study setting facilitated access and maintaining participation, at the same time it influenced my perspective and loyalties concerning sub-structure and sub-district pharmacists' roles and competencies and their contribution to the health system (Orr and Bennett, 2012). Similarly, my experiences working in a variety of pharmacy positions in the UK, India and a NGO providing services in disadvantaged areas of Cape Town contributed to understanding of DHS development. In the UK I had worked in a health authority in the north of England, in an equivalent position to sub-district pharmacists in City Health, during a time when community services were engaging in intersectoral collaboration between health, social services and education sector. These experiences provided me with insights into broad possibilities for pharmacists in

management teams within the DHS. My familiarity of working with multi-professionals in Cape Town, in the NGO and both PHC organisations in Cape Town, not only created trusting relationships which facilitated the research, but also contributed to a broad health systems perspective. These issues of reflexivity in PAR are applicable to HPSR in that they assist with contextualising the position of the researcher and this transparency contributes to the quality of the research, and in a similar way to reflections with participants, reflexivity assists with learning and understanding (Reason, 2006)..

## 6.4  Working in the quicksands of emergence and change

PAR is context specific and the extended engagement with the two PHC organisations in Cape Town provided a deep understanding of the nuances and complexities of the two settings. This facilitated a detailed appreciation of sub-structure and sub-district pharmacists' roles and competencies and how they developed in each organisation. The approach captured the interactions between sub-structure and sub-district pharmacists and a variety of actors, including their mangers, sub-ordinates, and peers, as well as the influence of organizational governance and environmental and systems factors on their development in these new positions overtime. This resulted in an enhanced understanding about sub-structure and sub-district pharmacists gained from an appreciation of the interactions amongst these different elements of the health system which included  the 'so-called' hardware (structure, organization, medicines and technologies, human resources) and software (values, norms, actors and relationships (Gilson, 2012).

Although the contextual nature of PAR was advantageous to this study; it posed challenges as the two PHC organisations were evolving throughout the research. Major structural re-organisation occurred in MDHS, which unbundled into four sub-structures, and several issues concerning sub-district pharmacists in City Health unfolded during the research period. Although these developments were part of the reason the organisations were interested in participating in the study in the first place, never-the-less they posed several practical challenges, including changing lines of accountability and fragility of newly emerging structures.

Whilst most of the original stakeholders remained within the structures, many MDHS staff moved to different positions, these included the MDHS director and senior pharmacists. The MDHS director at the commencement of the research was replaced by a new chief director and the original director became one of the four sub-structure directors. In a similar way the senior pharmacist working at the central level in MDHS became one of the sub-structure pharmacists after the unbundling, but in this case no overall pharmacist was appointed at MDHS head office. Sub-structure directors and pharmacists took time to establish their new organizational structures and this, along with other problems with medicines supplies to CHCs from the central dispensing unit (CDU), created a heavy workload which made it difficult for participants maintain commitment to research. However, the continuity of relationships, together with my intimate knowledge of the context assisted me throughout these developments. Sensitivity to the situation of the health services participants required me to resist the temptation to push the research towards the expected conclusion (Reason, 2006). This resulted in agreement to pare down and postpone the intervention phase for six months as sub-structure pharmacists in MDHS were engaged in these pressing issues. This was frustrating for me as I had hoped to implement a more substantial intervention to build competencies in sub-structure and sub-district pharmacists and the delay extended the time of the research by almost one year.

The insights that PAR generated based on the rich contextual understanding would not have been possible using narrower traditional research methodologies which tend to be reductionist and may have focused on one element of the health system, for example sub-structure and sub-district pharmacists roles and competencies, in isolation rather than allowing a whole systems perspective (Bigdeli et al., 2012, Brinkerhoff and Morgan, 2010). This makes the approach particularly suitable for HPSR which understanding of the complexities of the health system is an intrinsic feature (Swanson et al., 2012).

## 6.5  Learning through doing – becoming an action researcher

Another challenge was the PAR approach itself. I commenced on this complex research approach with some prior experience, but realized that it required evolving skill, flexibility and tenacity as I progressed (Herr and Anderson, 2005, Loewenson et al., 2011). In addition to sustaining the collaborative partnership over an extended period, adapting to a more

flexible and 'messy' way of working was difficult for me at first as I was more familiar with traditional research methodologies (Kemmis and McTaggart, 2000, Reason, 2006). In addition, although maintaining the partnership was exhausting at times, it also contributed positively by making me feel less alone in the research. I agree with Couch (Huang, 2010: 106) who commented that "*artistry is required to conduct good action research*".

The health services participants were largely unfamiliar with PAR, something which has been acknowledged by others who have been actively promoting the approach in recent times (Baum et al., 2006, Loewenson et al., 2011). Most participants had limited research expertise and those that did had a medical background and were familiar with quantitative research methods but had little experience of qualitative or participatory approaches. As a result it was not surprising that at one DEX Committee senior managers raised their concerns about the rigour of the research strategies and this provided the opportunity to discuss the research approach with them.

It is not surprising, then, that several authors have noted that whilst PAR is a useful research approach in HPRS, it is demanding in terms of researcher expertise, as well as time, and recommend that it is best conducted by those who have some prior experience of the approach and they recommend that they enlist support throughout the process (Loewenson et al., 2011, Swanson et al., 2012). Other challenges for academic researchers are the time consuming nature of the approach which is not a good investment in terms of the production of academic publications, critical for academics these days, and it is often difficult to attract funders (Loewenson et al., 2011, Orr and Bennett, 2012).

## 6.6  Conclusions

In conclusion, the research embraced the distinctive features of PAR, active partnership between researcher and health services participants and iterative cycles of action and reflection which generated shared understandings and promoted changes in the evolving district health system in Cape Town. Adopting a PAR approach facilitated applying a systems lens which yielded a deeper understanding of sub-structure and sub-district pharmacists and their development within the health system than would have been achieved with a narrower traditional research approach (Brinkerhoff and Morgan, 2010). It also resulted in

empowerment of health services partners to initiate changes within the two organisations, another element which makes the approach useful in HPSR (Swanson et al., 2012). (Swanson et al., 2012)

Some of the key features the approach included promoting dialogue and developing shared understanding about sub-structure and sub-district pharmacists' contribution to the district health system between me as the researcher and health services participants, and also health professionals of different backgrounds from the two PHC organisations in Cape Town. This occurred through iterative action and reflection cycles during which participants attended interactive workshops and through interviews and focus groups in which understandings were progressively generated throughout the research. In accordance with PAR, several actions resulted from the understandings and the most pertinent included changes in job functions and development of job descriptions in the two organisations. These initiatives suggested that health services partners felt ownership of the research learnings and were empowered to make changes which contributed to strengthening their own health systems. In addition, the research was presented as a case study in Cape Town and the four year engagement provided a deep understanding of contextual differences and nuances between the two organisations and how this influenced sub-structure and sub-district pharmacists' roles and related competencies and their establishment in the two organisations.

Many of the characteristics of PAR that have been applied in this project and discussed in this chapter have relevance to HPSR and point to its value as an approach in this field of research. These include its focus on understanding how the various parts of the health systems interact together within a political and social context. Although there are only a few published studies using PAR in HPSR, Loewenson et al. (2011) commented that experiences from two sessions on PAR at the First Global Symposium on Health Systems Research in Monteux in 2010 suggest that more PAR occurring than being published. Whilst this assertion is not particularly evident , the importance of the approach was reflected at the closing plenary of the Symposium when Etiayo Lambo, Nigeria's former Minister of Health, called for strengthening of HSR to include use of *"action orientated approaches like operations research and participatory action research"* (Loewenson et al., 2011: 37)

## 6.7 Summary

This chapter critically reflected on the use of PAR as a methodological approach in this research and its relevance to the growing field of HPSR. It reflected on the distinctive characteristics of PAR, action, reflection and partnership and illustrated how knowledge was created in the interplay between research and practice in which health services participants from the two PHC organisations partnered with me as active researchers and agents of change. It discussed how the approach facilitated an in-depth understanding about the establishment of sub-structure and sub-district pharmacists in the changing environments of MDHS and City Health, respectively, by considering their roles and related competencies. Finally, it acknowledged some of the challenges of using the approach for me and the health services participants.

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# Appendices

## Appendix 1: Metro Health Sub-Districts
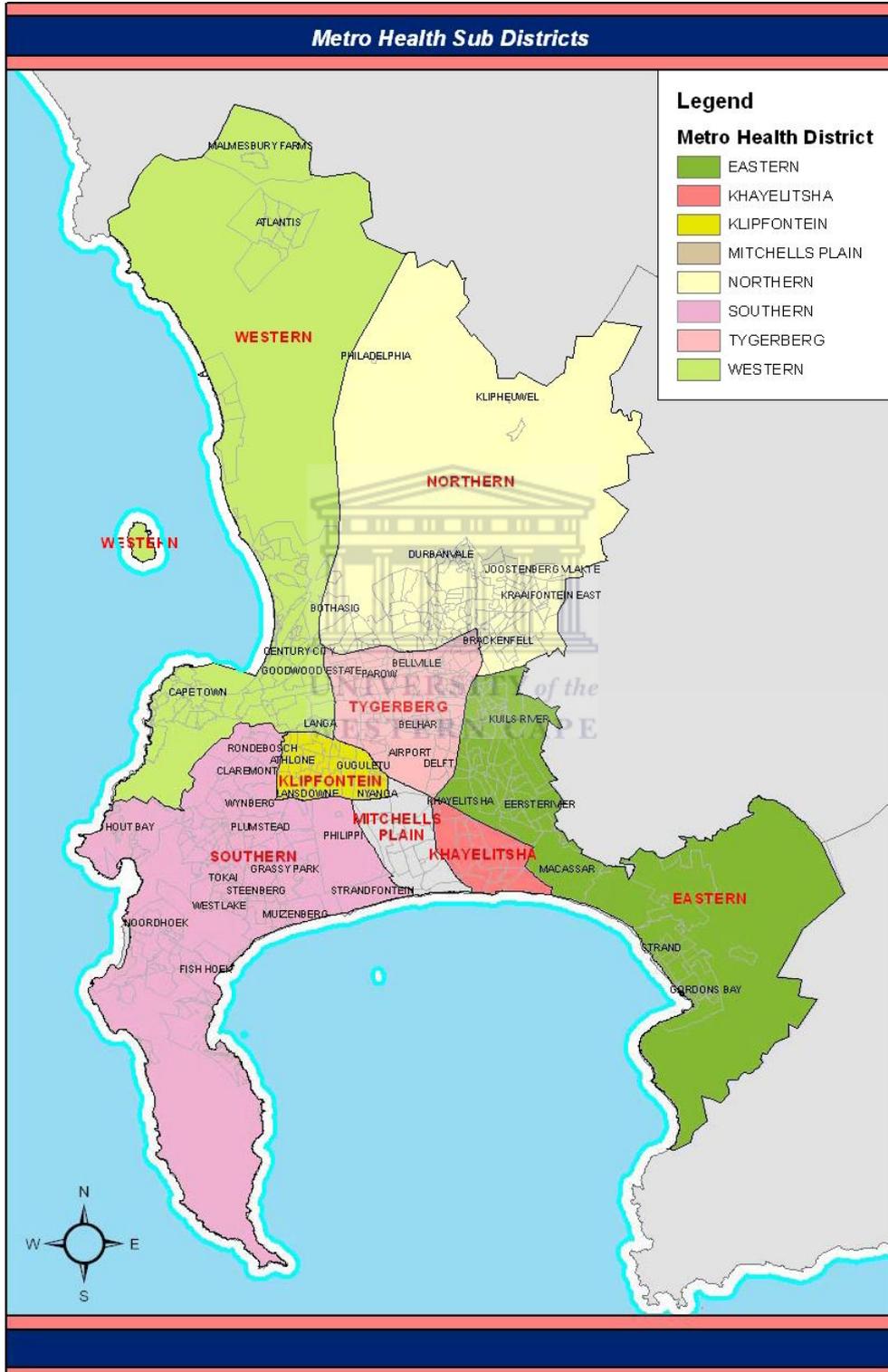
# Appendix 2: Information sheet

UWC Letterhead

## INFORMATION SHEET

**Project Title:**

# Developing roles and competencies of district pharmacists: a case study from Cape Town

### What is this study about?

This is a research project being conducted by Hazel Bradley at the School of Public Health, University of the Western Cape. I am inviting you to participate in this research project because you are a pharmacist or manager working in Cape Town primary level health services and I believe you will be able to assist me. The purpose of this research project is provide me with information on the roles and competencies of pharmacists working at district and sub-district level in Cape Town so that a competency framework can be developed, and then to develop and implement a training programme to improve the defined competencies.

### What will I be asked to do if I agree to participate?

You will be asked to contribute to the three phases of this participatory action research project in the following ways:

1    Attendance at a series of three workshops over an approximately 9 month period to identify roles and competencies of district pharmacists and develop a competency framework (all); the first workshop will be ½ day in duration and the second and third one to 1½ days.

2    Participation in the development and implementation of a training programme (pharmacists mainly);

3    Evaluation of the intervention (all).

You may also be asked to complete a questionnaire and take part in focus group discuss or be interviewed.

### Would my participation in this study be kept confidential?

I will keep your personal information confidential. To help protect your confidentiality, a code will be used to identify you. If a report or article is written about this research project, your identity will be protected.

This research project involves making *audiotapes* of you. This is in order for the information from focus group discussions, interviews and the workshops to be systematically documented and analysed. I will be the only person to access the tapes and they will be stored in a locked office.

### What are the risks of this research?

There are no known risks associated with participating in this research project.

**What are the benefits of this research?**
This research is not specifically designed to help you personally, but the results will help us all learn more about the roles and competencies of district and sub-district pharmacists. I hope that we will all benefit from an improved understanding of this subject, resulting in an improvement in the delivery of primary level pharmaceutical services in Cape Town.

**Do I have to be in this research and may I stop participating at any time?**
Your participation in this research is completely voluntary.  You may choose not to take part at all.  If you decide to participate in this research, you may stop participating at any time without any reason.  If you decide not to participate in this study or if you stop participating at any time, you will not be penalized or lose any benefits

**Is any assistance available if I am negatively affected by participating in this study?**
Not applicable

**What if I have questions?**
This research is being conducted by Hazel Bradley, School of Public Health at the University of the Western Cape.  If you have any questions about the research study itself, please contact Hazel Bradley at:

School of Public Health
University of the Western Cape
Private Bag X17, Belville 7535
Telephone: 021 959 2630
Cell: 072 297 9932
Fax: 021 959 2872
Email: hbradley@uwc.ac.za

Should you have any questions regarding this study and your rights as a research participant or if you wish to report any problems you have experienced related to the study, please contact:

Head of Department:
Dean of the Faculty of Community and Health Sciences:
University of the Western Cape
Private Bag X17
Bellville 7535

# Appendix 3: Consent form

UWC Letterhead

**INFORMED CONSENT FORM**

Title of Research Project:

**DEVELOPING ROLES AND COMPETENCIES OF DISTRICT PHARMACISTS: A CASE STUDY FROM CAPE TOWN**

I have been properly informed and I understand the nature and goals of the study. I freely and voluntarily agree to participate. My questions about the study have been answered. I understand that my identity will not be disclosed and that I may withdraw from the study without giving a reason at any time and this will not negatively affect me in any way.

\_\_\_     I agree to be audiotaped during my participation in this study.

Participant's name…………………………..

Participant's signature…………………………………….

Date………………………

Should you have any questions regarding this study or wish to report any problems you have experienced related to the study, please contact the study coordinator:

Study Coordinator's Name: Hazel Bradley
School of Public Health, University of the Western Cape
Private Bag X17, Belville 7535
Telephone: (021) 959-2630   Cell: 072 297 9932
Fax: (021) 959 2872   Email: hbradley@uwc.ac.za

# Appendix 4: DEX Report No1

## Developing roles and competencies of district pharmacists: a case study from Cape Town

**(Hazel Bradley, School of Public Health, University of the Western Cape)**

**An interim report for Dr Ivan Bromfield, Executive Director: City Health      26 November 2008**

*This report serves to provide preliminary information on the above project and highlights specifically information relevant on City of Cape Town Sub-district Pharmacists. A full status report of the project will be presented to a DEXCO meeting in early 2009.*

### Background and significance of the project

Since 1994, health care delivery in South Africa has moved to a primary health care approach based on the district health system. This shift has implications for human resource development, including district pharmacists who are usually tasked with managing pharmaceuticals in the district. It is hoped that this research will provide valuable new information for pharmacists and managers in Cape Town about district and sub-district pharmacists - relatively new positions in the South African public sector health system.  As districts in South Africa are considerably larger than the usually accepted size, it was decided to include both district and sub-district levels.

### Aim and Objectives

The aims of this project are to define the roles and competencies of pharmacists providing primary level services at district and sub-district levels in Cape Town; to develop a competency framework for these pharmacists; and to develop and pilot a training programme to enhance these competencies.
The study is divided into three phases, with each phase taking approximately one year. Phase 1 commenced in 2008 and Phases 2 and 3 will take place during 2009 and 2010, respectively.

### Phase 1: Identifying roles, competencies and developing the competency framework

1   To identify the current and future roles and responsibilities of pharmacists providing primary level pharmaceutical services at district and sub-district level.
2   To identify competencies of pharmacists providing primary level pharmaceutical services at district and sub-district level.
3   To develop and validate a competency framework for pharmacists working at district and sub-district levels.

### Phase 2: Developing and piloting Training Programme

4   To establish the learning needs to develop required competencies
5   To develop and pilot an appropriate continuing education training programme for pharmacists providing primary level services based on key gaps in competencies
6   To evaluate the success of the training programme in providing new competencies for pharmacists providing primary level services at district and sub-district levels.
7   To evaluate the appropriateness of the training intervention.

### Phase 3: Evaluating intervention

8    To evaluate the success of the training programme in translating new skills and competencies into practice

**Research methodology**

A participatory action research (PAR) approach is being utilised to partner with relevant stakeholders, including selected pharmacists and health managers with responsibility for district and sub-district primary level pharmaceutical services in Cape Town from Metro District Health Services and City of Cape Town.

During 2008 a series of three half-day Workshops took place attended by pharmacists and health managers from both services (Table 1) and these were supplemented with meetings and email communication. In addition 16 key informant interviews were carried out with pharmacists and health managers in Cape Town, and with pharmacists working at district level in the West Coast, KwaZulu Natal and Tshwane. Regular meetings took place with the main liaison persons in City Health (Margaret von Zeil) and MDHS (Stefan Venter) to discussion the planning and implementation the project.

**Table 1: District Pharmacist Project Workshops**

| Workshop/Date | Attendance | Main purpose |
|---|---|---|
| **Workshop 1**<br>**18 April 2008** | MDHS: 5 pharmacists; 4 managers<br>City:   3 pharmacists; 1 manager<br>Others: 2 | Introduce project, establish participants & objectives |
| **Workshop 2**<br>**19 September 2008** | MDHS: 6 pharmacists; 2 managers<br>City:   4 pharmacists; 1 manager<br>Others: 4 | To identify ROLES of district & sub-district pharmacists |
| **Workshop 3**<br>**20 November 2008** | MDHS: 3 pharmacists<br>City:   3 pharmacists; 1 manager<br>Others;  4 | To identify COMPETENCIES of district & sub-district pharmacists |

A preliminary document on Roles of District and Sub-District Pharmacists is attached (Appendix 1). The competencies identified for District and Sub-District Pharmacists during Workshop 3 are still being analysed and further work will take place in early 2009 on the competencies and competency framework to complete these areas of work. It is pertinent to note, however, that most of the competencies highlighted included strong management, communication and interpersonal skills, with professional pharmacy skills being taken as a given for pharmacists working at sub-district and district levels.

**Key information on the roles of sub-district pharmacists in City Health**

Four sub-district pharmacists and two sub-district managers and two programme managers from three sub-districts were purposively selected and interviewed on the roles of sub-district pharmacists in City Health - additional input was provided by the Senior pharmacist

There was a high degree of congruence from pharmacists and managers on most areas explored during the interviews. Health managers interviewed said that sub-district pharmacists have an important role to play in managing pharmaceuticals within the sub-district. Managers and pharmacists identified key roles they felt should be performed by sub-district pharmacists and both groups agreed that sub-district pharmacists were currently not functioning optimally in all areas. Particular constraints and facilitators to optimal functioning were identified.

**Recommended roles of sub-district pharmacists**

The main role of the sub-district pharmacist was to support the sub-district manager in managing pharmaceuticals in the sub-district. In order to do this it was stated that the sub-district pharmacist needs to be considered part of the sub-district management team and attend the regular sub-district clinic managers meetings.

A key task identified was monitoring the use of pharmaceuticals within the sub-district and this included all aspects of drug supply management (ordering, stock control and storage) and rational drug use, as well as monitoring the drug budgets. This includes monitoring of expired and returned medicines. It was strongly felt that the sub-district pharmacist should play a pro-active role in ensuring continuity of supplies and make contingency plans when problems are encountered.

Most respondents felt it was important that sub-district pharmacists should make regular visits to clinics to support the clinic staff in DSM - some saw this as an "auditing" function whereas others saw it as an opportunity to provide on-site training. However, there was also the view expressed that most of the support should be performed from a central location.

Providing sub-district staff with up-to-date information on pharmaceuticals & related matters was identified as one of the critical tasks pharmacists should play, and this included both a pro-active educational role, as well as responding the queries from sub-district staff. An aspect mentioned by some was that pharmacists should play a more active role in patient education, particularly around ARVs and TB medication.

Additional areas mentioned were pharmacists' role in implementation of new policies and in the planning of new services, particularly with respect to legal requirements of facilities and staffing, and the development of SOPs. In future some thought that sub-district pharmacists would have a role in being the responsible pharmacist for a number of post-basic pharmacist assistants working under indirect supervision.

**Current situation of sub-district pharmacists**

It appears that one of the main impetuses for the introduction of sub-district pharmacists at the end of 2005 was the closing down of the sub-depots and centralising of the main drug ordering to the Cape Medical Depot. Pharmacists employed in three sub-depots were appointed as sub-district pharmacists and an additional pharmacist working in a clinic pharmacy was appointed as the fourth sub-district pharmacist. At the time of their appointment, sub-district pharmacists were given a job description outlining a few basic tasks including authorising clinic orders for medicines and vaccines; dispensing MDR TB drugs; supervising pharmacists assistants, advising sub-district manager on quality issues.. Recently discussions have taken place between the pharmacists & the senior pharmacist to develop the job description further.

Each sub-district pharmacist is currently allocated two sub-districts. It appears that the sub-district pharmacists were mandated to be responsible for two sub-districts each without much negotiation and this seems to have resulted in uneven service provision to the two sub-districts. Pharmacists reported that the main reason for this was the lack of time to provide all services to two sub-districts.

Two sub-district pharmacists that do not have direct responsibility for dispensing medicines indicated that they currently carry out the majority of the functions listed under the "ideal", detailed above, albeit not to the same extent in both sub-districts. The main area in which they felt constrained was making regular clinic visits and time limitations was the main problem here, together with lack of available transport on occasions. (It should be noted that these two sub-district pharmacists are employed 5/8ths capacity)

Two sub-district pharmacists currently have responsibility for dispensing medication in clinic pharmacies and the senior pharmacist, sub-district pharmacists and managers reported that this situation seriously compromises pharmacists' ability to effectively function as a sub-district pharmacist. The two reasons identified were time constraints (a full day dispensing in the clinic pharmacy does not leave time to attend to sub-district responsibilities); and their inability to leave the clinic and attend meetings and visit other clinics (due to legal requirements).

Managers indicated that in order to function optimally, sub-district pharmacists need to be pro-active in problem solving and have good networking and communication skills. It seems that not all sub-district pharmacists currently have these skills.

**Conclusion**

Health managers indicated that they would value the input of a competent sub-district pharmacist in managing pharmaceuticals in their sub-district. This would assist them by addressing an important area of service delivery. A key point made was that in order to perform their duties, the sub-district pharmacists must not have responsibly for dispensing in a clinic pharmacy. Additionally, the pharmacist must have, or be willing to acquire, the competencies required to perform the job optimally.

Equally, pharmacists felt that sub-district pharmacists can play a significant role in supporting the supply and use of pharmaceuticals in the sub-districts. However, whilst some were enthusiastic about their contribution, others were frustrated by current constraints.

Additional roles of sub-district pharmacists were identified during the broader process of the project and these are detailed in Appendix 1 and work on the development of competency and a competency framework will be completed in early 2009.

# Appendix 5: DEX Report No2

## Progress report for DEX Meeting 4 June 2009

## Developing roles and competencies of district pharmacists: a case study from Cape Town

**Hazel Bradley, Senior Lecturer, School of Public Health, University of the Western Cape**
**Stefan Venter, Deputy Director, Pharmaceutical Services, Metro District Health Services**
**Margaret von Zeil, Senior Pharmacist, City Health, Cape Town**

## Background and significance of the project

Since 1994, health care delivery in South Africa has moved to a primary health care approach based on the district health system. This shift has implications for human resource development, including district pharmacists who are usually tasked with managing pharmaceuticals in the district. It is hoped that this research will provide valuable new information for pharmacists and managers in Cape Town about district and sub-district pharmacists - relatively new positions in the South African public sector health system. As districts in South Africa are considerably larger than the usually accepted size, it was decided to include both district and sub-district levels.

### Aim and Objectives

The aims of this project are to define the roles and competencies of pharmacists providing primary level services at district and sub-district levels in Cape Town; to develop a competency framework for these pharmacists; and to develop and pilot a training programme to enhance these competencies.
The study is divided into three phases and it is envisaged that each phase will take approximately one year.

### Phase 1: Identifying roles, competencies and developing the competency framework

2   To identify the current and future roles and responsibilities of pharmacists providing primary level pharmaceutical services at district and sub-district level.

3   To identify competencies of pharmacists providing primary level pharmaceutical services at district and sub-district level.

9   To develop and validate a competency framework for pharmacists working at district and sub-district levels.

### Phase 2: Developing and piloting Training Programme

### Phase 3: Evaluating intervention

## Research methodology and progress to date

**Phase 1 commenced in 2008 and is being completed during 2009.**

A participatory action research (PAR) approach is being utilised to partner with relevant stakeholders, including selected pharmacists and health managers with responsibility for district and sub-district primary level pharmaceutical services in Cape Town from Metro District Health Services and City of Cape Town.

During 2008 regular meetings took place with the main liaison persons in MDHS (Stefan Venter) and City Health (Margaret von Zeil) to discussion the planning and implementation the project. A series of three half-day Workshops took place, attended by pharmacists and health managers from both services (Table 1), and these were supplemented with meetings and email communication. In addition 16 key informant interviews were carried out with pharmacists and health managers in Cape Town, and with pharmacists working at district level in the West Coast, KwaZulu Natal and Tshwane. The information from the interviews and workshops was then triangulated with published and grey literature.

**Table 1: District Pharmacist Project Workshops**

| Workshop/Date | Attendance | Main purpose |
|---|---|---|
| **Workshop 1**<br>**18 April 2008** | MDHS: 5 pharmacists; 4 managers<br>City:   3 pharmacists; 1 manager<br>Others: 2 | Introduce project, establish participants & objectives |
| **Workshop 2**<br>**19 September 2008** | MDHS: 6 pharmacists; 2 managers<br>City:   4 pharmacists; 1 manager<br>Others: 4 | To identify ROLES of district & sub-district pharmacists |
| **Workshop 3**<br>**20 November 2008** | MDHS: 3 pharmacists<br>City:   3 pharmacists; 1 manager<br>Others:  4 | To identify COMPETENCIES of district & sub-district pharmacists |

The **overall function of the district pharmacist** was identified as: Planning, management, co-ordination and monitoring of pharmaceutical services in the health district in line with provincial and national policies**. Key roles** included:

- Planning, management, co-ordination and monitoring of:
  - Medicines *(selection; supply, distribution & storage (procurement & supply chain); rational prescribing & use)*
  - Pharmacy human resources *(management & development {training})*
  - Pharmaceutical budget
  - Health care facilities *(audit of current facilities; planning of new facilities; advise on legislative compliance)*

- Advice and support on professional, legal and technical aspects of pharmaceuticals to:
  - Health management
  - Health workers
  - Health programmes *(EPI, TB, ARV, STI, Nutrition, Mental Health, HBC etc)*
  - NGOs and private providers
  - Consumers

- Participate in quality assurance and clinical governance of pharmaceutical services

- Participate in research activities related to medicines and pharmaceuticals services

The workshops and interviews indicated that the roles required of district and sub-district pharmacists are fairly similar, with the major difference being that at the district level the pharmacist is involved in the strategic planning and management of district pharmaceutical services, whereas at sub-district level there is a far greater involvement with operational issues. Co-ordination and monitoring of

pharmaceutical services were highlighted as **key roles of sub-district pharmacists**, as well as a greater "hands-on" involvement in providing advice and support to health providers in clinics or facilities.

The **competencies** identified to perform these roles were identified and classified into four competency clusters.

- Personal and interpersonal competencies
- Management competencies
- Health system/Public health competencies
- Professional pharmacy competencies

Work is currently ongoing to triangulate the competencies identified in the workshops and interviews with the current literature and develop a competency framework. Validation of the roles and competencies of district and sub-district pharmacists is being undertaken with input from other provinces and Metros in South Africa. A questionnaire is being used to collect this information through the Heads of Pharmaceutical Services (HOPS) committee.

The process so far has been valuable in defining more clearly the roles and competencies of pharmacists working at district and sub-district levels and to clarify some of the differences between them. The project has benefited from the input of a wide range of stakeholders involved in primary level health services, from facility level to district managers. This has brought a welcome broad perspective to the issue of managing pharmaceuticals within the district or sub-district.

The first phase of this project has taken longer than planned for a number of reasons. One of these is that there has been considerable interest in the topic from pharmacists in other provinces and Metros which has provided the opportunity to collect information from a wider range of stakeholders, which will in turn provide a more robust basis to the research. In addition, recent developments from the national Department of Health have pointed to the co-ordination of health human resources across provinces and so it seems prudent to take the opportunity to obtain national input into the project at this time.

This research has only been possible with the commitment of pharmacists, managers and other health workers from Metro District Health Services, City Health and the Provincial Government of the Western Cape. We appreciate the time and interest of those who have been involved so far and look forward to their ongoing involvement in this project.

# Appendix 6: DEX Report No3

## Progress report for DEX Meeting 2 September 2010

## Developing roles and competencies of district pharmacists: a case study from Cape Town

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## Background and significance of the project

Since 1994, health care delivery in South Africa has moved to a primary health care approach based on the district health system. This shift has implications for human resource development, including district pharmacists who are usually tasked with managing pharmaceuticals in the district. It is hoped that this research will provide valuable new information for pharmacists and managers in Cape Town about district and sub-district pharmacists - relatively new positions in the South African public sector health system. Districts in South Africa are considerably larger than the usually accepted size, and for the purposes of this project the Senior Pharmacist, City Health and each of the Deputy Director Pharmaceutical Services of the four Sub-Structures of MDHS were classified as "district pharmacists".

## Aim and Objectives

The aims of this project are to define the roles and competencies of pharmacists providing primary level services at district and sub-district levels in Cape Town; to develop a competency framework for these pharmacists; and to develop and pilot a training programme to enhance these competencies. The study is divided into three phases.
**Phase 1: Identifying roles, competencies and developing the competency framework**
**Phase 2: Developing and piloting Training Programme**
**Phase 3: Evaluating intervention**

## Research methodology and progress to date

A participatory action research (PAR) approach is being used to partner with relevant stakeholders, including selected pharmacists and health managers with responsibility for district and sub-district primary level pharmaceutical services in Cape Town from Metro District Health Services and City of Cape Town.

During 2008 and 2009 four half-day workshops and 14 key informant interviews were conducted with pharmacists (9) and managers (6) in Cape Town. A number of additional meetings took place between the key stakeholders. At the first workshop the objectives and participation of stakeholders in the research was established. During the second workshop participants identified the roles of district pharmacists, with the author contributing additional information from documentary reviews and published literature. The third and fourth workshops identified competencies of district pharmacists. The roles and preliminary competencies of district pharmacists identified during the workshops were presented to the Cape Town District Executive meeting in June 2009. In mid 2010, approximately nine months after the Deputy Directors; Pharmaceutical Services of the four Sub-structures took up their

positions, additional interviews were conducted with them and the Senior pharmacist of City Health to provide further input into their roles as "district pharmacists" and to refine the competency framework.

## Roles of district pharmacists

The **overall function of the district pharmacist** was identified as: Planning, co-ordination and monitoring of pharmaceutical services in the health district in line with provincial and national policies. **Key roles** are shown in Table 1 below.

**Table 1: Roles of district pharmacists**

| Roles of district pharmacists |
| --- |
| **Planning, co-ordination and monitoring of:** <br> *Pharmaceuticals* <br> *Pharmacy human resources* <br> *Pharmaceutical budget* <br> *Pharmaceutical facilities* |
| **Provide information and advice on professional, legal clinical and technical aspects to:** <br> *Health managers* <br> *Health workers* <br> *Health programmes* <br> *NGOs and private providers* <br> *Consumers* |
| **Participate in quality assurance and clinical governance of pharmaceutical services** |
| **Participate in research activities related to medicines and pharmaceutical services** |

The workshops and interviews indicated that the roles required of district and sub-district pharmacists were fairly similar, with the major difference being that at the district level the pharmacist was involved in the strategic planning and management of district pharmaceutical services, whereas at sub-district level there was a far greater involvement with operational issues.

Follow-up interviews conducted with the four Sub-Structure Deputy Directors: Pharmaceutical Service and the Senior Pharmacist City Health in mid-2010 confirmed the roles identified for district pharmacists. All pharmacists, however, reported that there were currently "micro-managing" rather than strategically planning and monitoring pharmaceutical services. They highlighted the need to build skills and capacity in pharmacists, pharmacist's assistants and other health workers involved in drug management working at facility and community levels. The development of innovative service delivery models and working closely with health programmes, including planning and implementing national and local campaigns, emerged as important roles over the previous 9 months. Pharmacists mentioned that one of the key facilitators in fulfilling their roles was good working relationships with members of the Sub- Structure management team.

## Competencies of district pharmacists

 The **competencies** identified to perform these roles were identified and classified into five competency clusters (see Appendix 1 for details)

- Management competencies
- Leadership competencies
- Health system/Public health competencies
- Professional pharmacy practice competencies
- Personal and interpersonal competencies

## Discussion

Over the past few years the pivotal role of health managers in delivering district health services has been highlighted. Egger and Olliers (2007) proposed the following definition of the roles of managers of health services and similarities can be seen with the **roles of district pharmacists** identified by this project.

- *"Plan, support implementation and evaluate health activities (volume and coverage of services within catchment areas)*
- *Manage resources (e.g. staff, budgets, drugs, equipment, buildings, information)*
- *Manage external relations and partners, including service users." (Egger and Ollier, 2007)*

The **competency framework for district pharmacists** was developed with reference to other relevant frameworks, including the South African Public Service and Administration Middle Management Competency Framework (RSA, ?); Managerial competencies of hospital managers in South Africa (Pillay, 2008); Generic framework for medical professionals (City Health, 2008); Sustainable Management Development Program (CDC); WHO Global Competency Model and recent work on District Management by the Dept of Health/HST. Pharmacy managers' competencies from the United Kingdom (Advanced and Consultant-Level Framework, 2008) and United States (Educational outcomes - Developing Pharmacy Practice, 2006) were also consulted.

The first phase of this project has taken longer than planned for a number of reasons and an ongoing challenge for participatory research is balancing health department priorities and those of the researcher to produce maximal gain to stakeholders.

## Next phase of project

The next phase will use the competency framework to identify competency gaps of district pharmacists and then will develop an appropriate intervention to enhance competencies.

Identification of competency gaps – *development of tool, involvement line-managers* & *peers?*

Intervention: We propose to develop an intervention with a focus on drug utilisation – reviews and monitoring, possibly on chronic medicines using an "action learning" approach.

Finally, this research has only been possible with the commitment of pharmacists, managers and other health workers from Metro District Health Services, City Health and the Provincial Government of the Western Cape. We appreciate the time and interest of those who have been involved so far and look forward to their ongoing involvement in this project.

# Appendix 7: Pharmacy Profile template

**District Pharmacist Project**
**Pharmacy Profile**

**Data collection template (v2)**

Name of facility or sub-district……………………………………Name of Sub-structure……………………………………………
.

Name of pharmacist…………………………………………..Date……………………………………………………………….

**Step 1: Community Profile (demographic, socio-economic and disease burden)**

| Item | Amount | Area (state facility catchment area, sub-district, sub-structure etc) | Data source | Year (if known) |
|---|---|---|---|---|
| Total Population | | | | |
| Males | | | | |
| Females | | | | |
| Ages x-y | | | | |
| Ages y-z | | | | |
| % employed | | | | |
| Average income | | | | |
| % on medical aid | | | | |
| Languages spoken | | | | |
| Education | | | | |
| Housing types | | | | |
| % Access to Water | | | | |
| % Access to Sanitation | | | | |
| Disease burden (inc alcohol) | | | | |
| | | | | |

**Sources of information**

Population data
As per PGWC DOH Circular H13 (from Heli attached)

Socio-economic data
Sub-councils, wards & suburbs profiles http://www.capetown.gov.za/en/stats/2001census/Pages/Profiles.aspx

Burden of disease data
Western Cape Burden of Disease Reduction Project http://www.capegateway.gov.za/eng/pubs/reports_research/W/157844.

Groenewald P, Bradshaw D, Daniels J, Matzopoulos R, Bourne D, Blease D, Zinyakatira N, Naledi NT. *Cause of death and premature mortality in Cape Town, 2001-2006*. Cape Town: South African Medical Research Council, 2008.
http://www.capetown.gov.za/en/CityHealth/HealthInformation/Documents/Key%20Findings%20Cause%20of%20death%20and%20premature%20mortality%20in%20Cape%20Town%202001%20-%202006.pdf

**Step 2: Health services provided**

**Facility opening hours: (days & times)……………………..**

**2.1 Facility-based health services**

| Type of health service | Provided by whom (list all apply – Dr, Nurse, CHWs….etc) | Frequency<br>☐ Every day   ☐ Every week<br>☐ Every month☐ Every qtr<br>☐ When asked ☐ Occasionally | Ave per month (over past 12 months) |
|---|---|---|---|
| General consultations (Headcount) (all) | | | |
| General >5 years | | | |
| General <5years | | | |
| Child Health | | | |
| Child Health Curative | | | |
| Antenatal | | | |
| Midwife Obstetric Unit | | | |
| Woman's Health | | | |
| Reproductive Health | | | |
| TB Detection | | | |
| HIV | | | |
| ART | | | |
| CDL (Chronic care) | | | |
| Mental | | | |
| X-Rays | | | |
| Rehabilitation | | | |
| Dental | | | |
| 24 hour trauma/emergency | | | |
| Extended Hours | | | |

**2.2 Community-based health services**

| Type of health service | Provided by whom (List NGOs OA Homes etc) | Frequency<br>☐ Every day  ☐ Every week<br>☐ Every month☐ Every qtr<br>☐ When asked ☐ Occasionally | Ave per month (over past 12 months) |
|---|---|---|---|
| Home-based carer | | | |
| Community DOTS supporters | | | |
| Mental health Licensed Homes | | | |
| Mental Health Group Homes | | | |
| Mental Health Day Care Centres | | | |
| Sub-acute provincially aided Hosp | | | |
| Inpatient palliative care institutions | | | |
| Chronic care institutions | | | |
| | | | |
| Chronic care clubs | | | |
| Support groups | | | |
| School health | | | |
| Factory visits | | | |
| Nutrition outreach | | | |
| Old Age Homes | | | |
| | | | |
| **Private GPs** | | | |
| **Private Pharmacies** | | | |
| **NGOs** | | | |

**Sources**
RMR from Health Information officer at facility or sub-district
Community Based Services (CBS)

**Step 3: Pharmaceutical services provided**

**Pharmacy staff (FTE):**  **Pharmacist….......**  **Pharmacist's assistant……..**  **Others (specify)…………**

**Pharmacy hours of opening (Days & times)………………….…**

**3.1 Facility-based**

| Type of pharmaceutical services | Provided by whom (pharmacist, PA, PBPA, PBPA under indirect supervision. etc) | Frequency<br>☐ Every day  ☐ Every week<br>☐ Every month☐ Every qtr<br>☐ When asked ☐ Occasionally | Ave per month (over past 12 months) |
|---|---|---|---|
| General dispensing | | | |
| CDU dispensing | | | |
| ARVs dispensing | | | |
| Old Age Homes dispensing | | | |
| Add any other dispensing | | | |
| TB medication | | | |
| Supplies to facility | | | |
| Chronic Care Club health education in facility | | | |
| Other Health education for patients in facility (not above) | | | |
| Provide health information to staff | | | |
| Training in facility on DSM | | | |
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**3.2 Community-based services**

| Type of pharmaceutical services | Provided by whom (pharmacist, PA, PBPA, PBPA under indirect super. etc) | Frequency<br>☐ Every day ☐ Every week<br>☐ Every month☐ Every qtr<br>☐ When asked ☐ Occasionally | Ave per month (over past 12 months) |
|---|---|---|---|
| Home Based Carers supplies | | | |
| TB DOTs supplies for CHWs | | | |
| Health education for Chronic Care Clubs (outside facility) | | | |
| Campaigns | | | |
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**Sources**
Compile as completely as possible from pharmacy data available

# Appendix 8: Sample Pharmacy Profile (8 hour CHC)

**District Pharmacist Project**
**Pharmacy Profile**

**Data collection template (v2 revised)**

Name of facility or sub-district: Grassy Park CHC        Name of Sub-structure: Southern

Name of pharmacist: Ebrahim Wajoodien        Date: 07 June 2011

**Step 1: Community Profile (demographic, socio-economic and disease burden)**

| Item | Amount | Area (state facility catchment area, sub-district, sub-structure etc) | Data source | Year (if known) |
|---|---|---|---|---|
| Total Population | 568175 | Grassy Park, Zeekoevlei, Parkwood | PGWC DOH Circular | |
| Males | 284836 | | City of Cape Town Census | 2001-2006 |
| Females | 283339 | | | |
| Ages x-y<br>0-5yrs        1852<br>6-12yrs      2378<br>13-17yrs     1898<br>18-34yrs     5844<br>35-54yrs     5328<br>55-64yrs     1599<br>65+            1258 | | | Information Management based at Sub-structure office | |
| % employed | Males:4212 (46.87%)<br><br>Females:3624 (40.33%) | | | |
| Average income | | | | |

286

**Grassy Park**

| INCOME OF EARNERS (PER MONTH) | Male | % | Female | % | Total | % |
|---|---|---|---|---|---|---|
| 0 - R1 600 | 961 | 12.26 | 1,211 | 15.45 | 2,173 | 27.73 |
| R1 601 - R6 400 | 2,598 | 33.15 | 2,092 | 26.70 | 4,690 | 59.85 |
| R6 401 - R25 600 | 605 | 7.72 | 288 | 3.68 | 892 | 11.38 |
| R25 601 - R102 400 | 42 | 0.54 | 27 | 0.34 | 69 | 0.88 |
| R102 401 or more | 6 | 0.08 | 6 | 0.08 | 12 | 0.15 |
| *Total* | *4,212* | *53.75* | *3,624* | *46.25* | *7,836* | *100.00* |

| | | | |
|---|---|---|---|
| % on medical aid | | | |
| Languages spoken | | | |
| Education | | | |
| Housing types | | | |
| % Access to Water | | | |
| % Access to Sanitation | | | |
| Disease burden (inc alcohol) | Have not sourced any info yet | | |
| | | | |
| | | | |
| | | | |

**Sources of information**

Population data
As per PGWC DOH Circular H13 (from Heli attached)

Socio-economic data
Sub-councils, wards & suburbs profiles http://www.capetown.gov.za/en/stats/2001census/Pages/Profiles.aspx

Burden of disease data
Western Cape Burden of Disease Reduction Project http://www.capegateway.gov.za/eng/pubs/reports_research/W/157844.

Groenewald P, Bradshaw D, Daniels J, Matzopoulos R, Bourne D, Blease D, Zinyakatira N, Naledi NT. *Cause of death and premature mortality in Cape Town, 2001-2006.* Cape Town: South African Medical Research Council, 2008.
http://www.capetown.gov.za/en/CityHealth/HealthInformation/Documents/Key%20Findings%20Cause%20of%20death%20and%20premature%20mortality%20in%20Cape%20Town%202001%20-%202006.pdf

**Step 2: Health services provided**

**Facility opening hours: (days & times):** 07h00-16h00, Mondays to Fridays

**2.1 Facility-based health services**

| Type of health service | Provided by whom (list all apply – Dr, Nurse, CHWs….etc) | Frequency<br>☐ Every day   ☐ Every week<br>☐ Every month☐ Every qtr<br>☐ When asked ☐ Occasionally | Ave per month (over past 12 months) |
|---|---|---|---|
| General consultations (Headcount) (all) | **Dr, CNP** | **Everyday** | **4363** |
| General >5 years | **Dr, CNP** | **Everyday** | **4361** |
| General <5years | **Dr, CNP** | **Occasionally** | **3** |
| Child Health | **Dr, CNP** | **Not really seen at Grassy Park CHC. Done at Civic Centre Clinic** | |
| Child Health Curative | **Dr, CNP** | | |
| Antenatal | **Retreat MOU** | **Everyday** | |
| Midwife Obstetric Unit | **Retreat MOU** | | |
| Woman's Health | **Dr, CNP** | **Everyday** | |
| Reproductive Health | **Civic Centre Clinic** | **Everyday** | **15 (Cervical smears)** |
| TB Detection | **Dr, Klip Road TB Clinic** | **Everyday** | **20** |
| HIV | **HIV testing only. Full HIV services at Retreat and Lady Michaelis** | **Everyday at Retreat and Lady M, HIV testing at Grassy Park CHC only on a Monday Wednesday and Friday** | |
| ART | **Retreat and Lady Michaelis** | **Everyday** | |
| CDL (Chronic care) | **Everybody, Dr; CNP, Nurses, Pharmacy** | **Everyday** | **3499** |
| Mental | **Psych Sister and Dr** | **Tuesdays and Thursdays** | **208** |
| X-Rays | **None, only at Lotus River CHC and Retreat CHC** | **Everyday** | |
| Rehabilitation | **Lotus River and Retreat CHC's** | **Everyday** | |
| Dental | **Retreat and Lotus River CHC** | **Everyday** | |
| 24 hour trauma/emergency | **Retreat CHC** | **Everyday** | |
| Extended Hours | **Retreat CHC** | **Everyday** | |

**2.2 Community-based health services**

| Type of health service | Provided by whom (List NGOs OA Homes etc) | Frequency □ Every day □ Every week □ Every month□ Every qtr □ When asked □ Occasionally | Ave per month (over past 12 months) |
|---|---|---|---|
| Home-based carer | **4 funded NPO's** | **Daily** | |
| Community DOTS supporters | | | |
| Mental health Licensed Homes | **0** | | |
| Mental Health Group Homes | **2 –Com Care 2 Cape Mental Health** | | |
| Mental Health Day Care Centres | **3 Day care Centres** | **During school terms** | |
| Sub-acute provincially aided Hosp | **Nil in Southern both are situated in Western ( Booth and Conradie Care )** | | |
| Inpatient palliative care institutions | **Living Hope – Kommetjie** | | |
| Chronic care institutions | | | |
| | | | |
| Chronic care clubs | **All the HBC orgs run Chronic Care clubs in Southern except in Hout Bay** | | |
| Support groups | **All HAST NPO's run support groups and 2 of the 4 HBC orgs run support groups** | | |
| School health | **School Health attached to facility based at Retreat** | | |
| Factory visits | | | |
| Nutrition outreach | | | |
| Old Age Homes | **22 – Communicare and CPOA plus some private Homes** | | |
| | | | |
| **Private GPs** | | | |
| **Private Pharmacies** | | | |
| **NGOs** | | | |

**Sources**
RMR from Health Information officer at facility or sub-district
Community Based Services (CBS)

**Step 3: Pharmaceutical services provided**

**Pharmacy staff (FTE):    Pharmacist: 1          Pharmacist's assistant: 2 Post Basics                Others  (specify)…………**

**Pharmacy hours of opening (Days & times):** 07h30-16h00 Mondays to Fridays

**3.1 Facility-based**

| Type of pharmaceutical services | Provided by whom (pharmacist, PA, PBPA, PBPA under indirect supervision. etc) | Frequency<br>☐ Every day   ☐ Every week<br>☐ Every month☐ Every qtr<br>☐ When asked ☐ Occasionally | Ave per month (over past 12 months) |
|---|---|---|---|
| General dispensing | **Pharmacist, PA** | **Everyday** | **1500-1700** |
| CDU dispensing | **Pharmacist, PA** | **Everyday** | **1500-2000** |
| ARVs dispensing | **None yet** | | |
| Old Age Homes dispensing | **Pharmacist, PA, Collectors** | | **200** |
| Add any other dispensing | **Dispensing to Care Givers, Collectors** | **Everyday** | |
| TB medication | **None yet** | | |
| Supplies to facility | **Dressing Department and Psychiatric Sister** | **Once a week** | |
| Chronic Care Club health education in facility | **None Yet** | | |
| Other Health education for patients in facility (not above) | **Patient education talks, Tuesdays and Thursdays by Chronic condition organisations** | **Twice weekly** | |
| Provide health information to staff | **Medical Reps** | **Occasionally** | |
| Training in facility on DSM | **Pharmacist: w.r.t. Influenza Campaign and Cold chain** | **Campaign time** | |

**3.2 Community-based services**

| Type of pharmaceutical services | Provided by whom (pharmacist, PA, PBPA, PBPA under indirect super. etc) | Frequency<br>☐ Every day  ☐ Every week<br>☐ Every month☐ Every qtr<br>☐ When asked ☐ Occasionally | Ave per month (over past 12 months) |
|---|---|---|---|
| Home Based Carers supplies | **CBS coordinators liase with facilities to access required stock** | **Monthly** | |
| TB DOTs supplies for CHWs | | | |
| Health education for Chronic Care Clubs (outside facility) | **Health Promoters and CCW's** | **Daily during the week** | |
| Campaigns | | | |
| | | | |
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| | | | |

**Sources**
Compile as completely as possible from pharmacy data available

# City of Cape Town - Census 2001 - Grassy Park

**Demographic Profile**, **Employment Profile**, **Housing Profile**, **Service Profile**

*Compiled by Strategic Development Information and GIS from 2001 Census data supplied by Statistics South Africa*

## DEMOGRAPHIC PROFILE BY GENDER

## Ethnic Group, Age, Education, Language

| Grassy Park | | | | | | |
|---|---|---|---|---|---|---|
| **ETHNIC GROUP** | **Male** | **%** | **Female** | **%** | **Total** | **%** |
| **Black African** | 246 | 1.22 | 311 | 1.54 | 557 | 2.76 |
| **Coloured** | 8,925 | 44.28 | 10,029 | 49.75 | 18,954 | 94.03 |
| **Indian/Asian** | 229 | 1.14 | 254 | 1.26 | 483 | 2.40 |
| **White** | 69 | 0.34 | 93 | 0.46 | 162 | 0.80 |
| *Total* | *9,469* | *46.98* | *10,687* | *53.02* | *20,157* | *100.00* |

## Grassy Park

| AGE | Male | % | Female | % | Total | % |
|---|---|---|---|---|---|---|
| 0 - 5 | 863 | 4.28 | 989 | 4.91 | 1,852 | 9.19 |
| 6 - 12 | 1,180 | 5.85 | 1,198 | 5.94 | 2,378 | 11.80 |
| 13 - 17 | 954 | 4.73 | 944 | 4.68 | 1,898 | 9.42 |
| 18 - 34 | 2,840 | 14.09 | 3,004 | 14.90 | 5,844 | 28.99 |
| 35 - 54 | 2,449 | 12.15 | 2,879 | 14.28 | 5,328 | 26.43 |
| 55 - 64 | 719 | 3.57 | 880 | 4.37 | 1,599 | 7.93 |
| 65+ | 463 | 2.30 | 794 | 3.94 | 1,258 | 6.24 |
| Total | 9,469 | 46.98 | 10,687 | 53.02 | 20,157 | 100.00 |

| Grassy Park | | | | | | |
|---|---|---|---|---|---|---|
| EDUCATION LEVEL OF ADULTS (20+) | Male | % | Female | % | Total | % |
| No schooling | 84 | 0.64 | 112 | 0.85 | 197 | 1.49 |
| Grade 1- 6 | 371 | 2.80 | 496 | 3.75 | 867 | 6.55 |
| Grade 7 | 272 | 2.06 | 515 | 3.89 | 787 | 5.95 |
| Grade 8 - 11 | 2,773 | 20.96 | 3,300 | 24.95 | 6,073 | 45.91 |
| Grade 12 | 1,938 | 14.65 | 2,026 | 15.32 | 3,964 | 29.97 |
| Certificate with less than grade 12 | 51 | 0.39 | 78 | 0.59 | 129 | 0.98 |
| Cert/dip with grade 12 | 362 | 2.74 | 436 | 3.30 | 798 | 6.03 |
| Bachelor's degree | 103 | 0.78 | 108 | 0.82 | 211 | 1.60 |
| Bachelor's degree and diploma | 62 | 0.47 | 33 | 0.25 | 96 | 0.73 |
| Honour's degree | 42 | 0.32 | 27 | 0.20 | 69 | 0.52 |
| Higher degree (master's or doctorate) | 27 | 0.20 | 9 | 0.07 | 36 | 0.27 |
| Total | 6,086 | 46.01 | 7,141 | 53.99 | 13,227 | 100.00 |

# Appendix 9: City Health Report

## Report for City Health
## Sub-district pharmacists in City Health

**Summary**

This report focuses on whether the current 'sub-district pharmacist model' in City Health is optimal in providing support to sub-districts. Interviews conducted with seven sub-district managers, three programme managers and five sub-district pharmacists in 2008 and 2011 found that the situation across City Health was variable. In 2011, good pharmaceutical support by sub-district pharmacists was reported in six sub-districts (Northern, Eastern, Southern, Tygerberg, Khayelitsha and Klipfontein) and two sub-districts reported minimal support from sub-district pharmacists (Western and Mitchells Plain).

The main facilitators to optimal performance of sub-district pharmacists included active involvement in sub-district management team; applying technical pharmaceutical skills; possessing appropriate personal and interpersonal qualities; and having reliable communication systems. The main constraints mentioned were sub-district pharmacists being tied to dispensing responsibilities in clinics and time constraints in supporting two sub-districts. The original 'sub-district pharmacist model' was not considered suitable to permit sub-district pharmacists to provide good support to sub-districts.

It is recommended that:

- Sub-district pharmacist job-descriptions be updated, including taking away routine responsibilities for dispensing medicines and supervising PBPAs and replace with indirect supervision of PBPAs and emergency cover for pharmacists (cf TASK process);

- Share lessons of good practice and support provided by sub-district pharmacists across the City;

- Consider specific remedial action where sub-district pharmacist support is not functioning well , including creation of additional posts and appointment of facility-based pharmacists, and provision of appropriate training and in-service support for sub-district pharmacists;

- In future it may be necessary that a sub-district pharmacist be appointed per sub-district to accommodate the expansion of ARV services (requiring supervision of PBPAs working under in-direct supervision); and increased involvement in audit teams, in line current government initiatives of 'Re-engineering of primary health care' and improving the quality of services.

## 1. Introduction

Since 1994, health care delivery in South Africa has moved to a primary health care approach based on the district health system. This shift has implications for human resource development, including pharmacists working in primary level services. In 2008, a participatory research project commenced with City Health and Metro District Health Services (MDHS) (the two primary healthcare organisations in Cape Town) and a researcher from the School of Public Health (SOPH), University of the Western Cape to identify the roles and competencies of district and sub-district pharmacists, relatively new positions in the South African health system. City Health had appointed sub-district pharmacists in 2005 but City Health management were uncertain about the effectiveness of the sub-

district pharmacists and the Executive Director of City Health requested that, in addition to the main research aims, the group explore the whether current 'sub-district pharmacist model' in City Health was optimal in providing support for pharmaceutical services to sub-districts. This report will focus on this latter objective and details of the main project will be provided in separate report.

## 2. Background to sub-district pharmacists in City Health

In 2000 six municipalities namely, Cape Town/Central, Tygerberg, South Peninsula, Blaauwberg, Oostenberg and Helderberg, together with the Metropolitan Administration were merged to form a single metropolitan municipality, initially known as the Unicity and later the City of Cape Town. During the transformation of local government services the city was re-organised, first into 11 and subsequently into the current eight health sub-districts.  During this time, medical supplies were distributed to the municipal clinics via the municipal medical stores at Oostenberg, Ndabeni, South Peninsula, & Tygerberg with pharmacists in charge of each medical store.

During 2004 and 2005 decisions were made to streamline the ordering processes directly from the clinics to the Cape Medical Depot and two other provincial stores (Vaccines Store and Family Planning Store) and this resulted in the closure of three municipal medical stores (Oostenberg, South Peninsula and Tygerberg) and the retention of one central municipal medical store for City Health at Ndabeni. Pharmacists employed in the three medical stores, Oostenberg, Ndabeni and South Peninsula, were appointed at sub-district pharmacists and the pharmacist from Tygerberg moved to the Ndabeni Store and played a co-ordinating role between pharmaceutical services and specialised health services until he retired. A facility-based pharmacist was appointed as the fourth sub-district pharmacist and each sub-district pharmacist was assigned to support two sub-districts.

In February 2007, subsequent to meetings with pharmacists and decisions taken at a HMT meeting in August 2006, the Executive Director of City Health sent out a memorandum detailing pharmacist support for sub-districts, including where pharmacists would be based, the sub-districts they would support and their support roles. This formed the basis of the City Health sub-district pharmacist model and key details are shown in Box 1. A significant feature was that the four sub-district pharmacists would to be based in clinics and provide dispensing services to the clinics as well as provide pharmaceutical support to two sub-districts. Over time some of the details of sub-district pharmacists' bases and roles have changed from the original memorandum. Another point to note is that the pairing of the sub-districts differs from that of MDHS sub-structures making liaison with MDHS sub-structure deputy directors: pharmacy services and ISMT more challenging.

**Box 1: Support role of sub-district pharmacists (as detailed in Memorandum from Executive Director: City Health 28.02.2007)**

The support district pharmacist is expected to deal with dispensing at the facility where they are based as well as:

- Authorising the edge cards submitted for the relevant sub-districts
- Authorising the vaccine order forms from the relevant clinics
- MDR TB drug dispensing in respective sub-districts
- Advising the relevant Sub-district Managers on quality control issues
- Supervise Pharmacist's Assistants
- Attend monthly sub-district meeting with all clinic managers

A Senior Pharmacist for City Health was appointed in November 2007, the post having been previously advertised but not filled, and this new post included responsibilities to provide information

and support to the Executive Director: City Health and Manager Specialised Health Services. Recent developments include the appointment an of additional sub-district pharmacist to support Khayelitsha sub-district in mid-2010 and the conversion of one of the 5/8th sub-district pharmacist posts to a full-time position in September 2011.

## 3. Methodology

During 2008 all four sub-district pharmacists, two sub-district managers and two programme managers were interviewed to obtain their views on the functioning of sub-district pharmacists in supporting sub-districts. The sub-district managers and programme managers were purposively selected to include three sub-districts which had reported lack of support from sub-district pharmacists (Tygerberg, Mitchells Plain and Khayelitsha). A written report on the findings was presented at the DEX meeting in November 2008.

Between August and October 2011 additional semi-structured interviews were conducted with seven sub-district managers, one programme manager (in place of one sub-district manager that was unavailable) and the new sub-district pharmacist in Khayelitsha to explore the current situation with respect to the performance of sub-district pharmacists. All interviews were carried out by the researcher from SOPH and the interviews were audiotaped, transcribed and analysed using thematic analysis (with the exception of one telephonic interview). The findings of the interviews are presented below. In the discussion section which follows these findings have been interpreted and discussed with the findings of 2008, with the assistance of the Senior Pharmacist.

## 4. Findings

The situation with respect to sub-district pharmacist support in City Health is variable. Five sub-district pharmacists are currently employed across the eight sub-districts, with three sub-district pharmacists covering two sub-districts each and two sub-district pharmacists covering one sub-district each. Four sub-district pharmacists work fulltime whilst one works 5/8ths (One pharmacist was appointed to a fulltime position on 1 September 2011 after working 5/8ths for 6 years). The pharmacists have varying dispensing responsibilities in their clinics and the current situation of sub-district pharmacists is summarized in table 1 below.

**Table 1: City Health sub-district pharmacists – current responsibilities**

| Sub- district | No. of Clinics* | Sub-district pharmacist | Sub-district pharmacist base | Sub-district pharmacist dispensing responsibilities |
|---|---|---|---|---|
| **Northern** | 9 | Full-time (5/8th prior to 1.9.2011) | Wallacedene Clinic (ARV clinic) | Some support & supervision of PBPAs at Wallacedene & SD clinics |
| **Eastern** | 11 | | | Some support & supervision of PBPAs in SD clinics |
| **Southern** | 19 | 5/8th post | Klip Clinic | No dispensing responsibilities or supervision of PBPAs |
| **Klipfontein** | 9 | | | No dispensing responsibilities or supervision of PBPAs |
| **Tygerberg** | 12 | Full-time | Delft South Clinic (ARV Clinic) | Regular dispensing, support & supervision of PBPAs at Delft South |
| **Western** | 10 | | | No dispensing responsibilities or supervision of PBPAs |

| Mitchells Plain | 10 | Full-time | Tafelsig Clinic (Pharmacy) | Full-time dispensing services in pharmacy at Tafelsig Clinic (Responsible Pharmacist) |
|---|---|---|---|---|
| Khayelitsha | 10 | Full-time | Town Two Clinic (Pharmacy) | Regular support & supervision of PBPAs & some cover for pharmacists in SD clinics |

**\*excluding satellites and mobiles**

## 4.1 Roles performed by sub-district pharmacists

Most sub-district managers stated that the overall role of sub-district pharmacists was to provide support to the sub-district management team and clinics on all matters related to pharmaceutical services. Information from the interviews and observations was used to compile a table of the roles currently being performed by sub-district pharmacists in each of the sub-districts and this is shown graphically as a chart in Appendix 1. The list of roles was derived from job-descriptions and interviews. (Note that a green block indicates that the sub-district pharmacist is performing the role regularly, yellow indicates sometimes and red indicates hardly ever.) Viewing the table, it is evident that there are wide disparities between the services sub-district pharmacists are providing in the various sub-districts. In some sub-districts, notably Northern, Eastern, Southern, Tygerberg and Khayelitsha most of the roles listed were reportedly being performed regularly, whilst a few less were being performed at Klipfontein. In Western and Mitchells Plain, however, few of the sub-district functions were being performed regularly.

## 4.2 Satisfaction with performance

The sub-district managers' perceptions of sub-district pharmacists performance was reflective of their involvement in the various identified roles and the ways in which they carried them out. In sub-districts where sub-pharmacists were regularly carrying out most of the sub-district functions, managers were generally satisfied with the level of support they were receiving from the sub-district pharmacist.

"*For me things are working quite well.*" "(the sub-district pharmacist) *is very proactive, very, I would never say that she's working 5/8ths…..…..*" (Sub-district manager 3)

"*She's doing well in terms of my expectations work wise. I cannot fault her in terms of rendering services in the clinics*." (Sub-district manager 1)

"*Great having her around. …..…..Pharmacy services have improved, in terms of quality, managing expenditure……..*" (Sub-district manager 7)

Sub-district pharmacists' involvement as members of sub-district management teams and attendance at the sub-district management team meetings was perceived as critical to carrying out sub-district pharmacist functions. The meeting provided the opportunity to exchange information on pharmaceutical matters and to build up relationships with sub-district management and the clinics which facilitated on-site clinic visits and support by the sub-district pharmacist. An area of growth mentioned was the involvement of sub-district pharmacists in clinic audits with sub-district teams.

An area where sub-district pharmacists' contribution was valued was management of ordering, stock control and storage conditions (including cold chain management) of medicines and vaccines, as this input was seen as the means to control expenditure and minimize wastage. The specific legal and professional expertise of sub-district pharmacists, particularly with respect to planning and implementing new ARV and CDU services, was noted as being an important contribution to sub-district management in recent years.

## 4.3 Dissatisfaction with performance

In sub-districts where sub-district pharmacists' functions were not being performed regularly, managers were unhappy with the sub-district support they were receiving.

*"'...I mean we haven't had a real sub-district pharmacist here, but I think that there's a lot of value for that post....not linked to the way we have done it in the City, linked to a busy pharmacy where a person don't have the time to come out......"* (Sub-district manager 6)

*" so the only contact (we) have with (sub-district pharmacist) at the moment is telephonically..... you know it's one thing to say she can monitor from afar but it's that <u>active</u> supervision and going in, making record and saying, "look you have…got all this stock sitting here"...you know*?" (PHC programme manager 1)

## 4.4 Further areas of involvement

Even in sub-districts where sub-district pharmacists were performing most of roles expected of them, sub-district managers still wanted greater involvement in clinic audit teams, more on-site support at clinics (e.g. assist with putting learning from drug supply management (DSM) courses into practice), conduct rational medicines use reviews and provide more support to post-basic pharmacist's assistants (PBPAs) working under in-direct supervision and other pharmacists in clinics.

## 4.5 Disparity between two sub-districts

Where two sub-districts shared a sub-district pharmacist, there was a perception among sub-district managers that having the sub-district pharmacist based in your sub-district was advantageous as they felt their services were prioritised, and likewise those managers who shared a sub-district pharmacist based in the neighbouring sub-district said they felt disadvantaged. This was borne out in two cases where substantial differences in support provided by the sub-district pharmacists to two sub-districts was reported (Southern and Klipfontein; Tygerberg and Western) and illustrated in the chart in Appendix 1.

## 4.6 Facilitators to optimal performance

Several factors were mentioned as facilitators to enable sub-district pharmacists to perform their roles optimally. These included sub-district pharmacists:

- Being considered as members of the sub-district management team and regularly attending and contributing at sub-district management meetings on pharmaceutical issues;

- Being able to apply technical pharmaceutical skills appropriately;

- Possessing good personal and interpersonal qualities, those mentioned included good communication skills, being proactive, innovative, organized, assertive, a good team player and networker;

- Having reliable communication systems in place e.g. telephone, fax and e-mail (personal work address with own networked PC).

## 4.7 Constraints to optimal performance

The main constraints to performing optimal sub-district pharmacist roles that were identified were having responsibilities of dispensing medicines in a clinic; large number of clinics and distances across two sub-districts; and lack of suitable personal and interpersonal competencies.

- **Dispensing responsibilities**. It was the opinion of sub-district managers, from both good and sub-optimally supported sub-districts, that sub-district pharmacists with dispensing responsibilities were not able to either focus attention on sub-district functions, or to physically leave the pharmacy to attend meetings or visit clinics as they were occupied most of day. This was the case for Mitchells Plain sub-district pharmacist, who is the responsible pharmacist for at a busy clinic pharmacy. The Tygerberg and Western sub-district pharmacist also provides regular dispensing services and supports post-basic pharmacist's assistants at a clinic. The Khayelitsha sub-district pharmacist mentioned that she is currently able to fulfill her sub-district pharmacist functions but perceives the situation as fragile, as she has previously spent large proportions of her time either providing or supporting dispensing services due to shortages of pharmaceutical staff.

  *"What I don't think they should not be doing is sitting in pharmacies. If we were to be honest, and as the service is growing, I don't think there is a role for a sub-district pharmacist to be actually apportioning time* (dispensing medicines) *……………because then how will she react to problems that are outside* (of the dispensary)*".* (Sub-district manager 2)

  *"(*SD pharmacist) *should be fully available to support sub-districts….* (and) *sub-district manager* . (Sub-district manager 2)

  *"(*SD pharmacist job should)……*not (*be*) linked to the way we have done it in the City, linked to a busy pharmacy where a person doesn't have the time to come out......"* (Sub-district manager 6)

  *"And maybe just to say it's* (sub-district pharmacist role) *a full time job".* (Sub-district manager 6)

- The **large numbers of clinics and distances across two sub-districts** was mentioned by most sub-district managers as a constraint to sub-district pharmacists providing optimal support to two sub-districts. This was felt particularly by those sub-districts which share one pharmacist working $5/8^{ths}$. Sub-district pharmacists working in two sub-districts provide services to up to 28 clinics and distances across two sub-districts are great e.g. Wallacedene to Sir Lowry's Pass is 46 km.

  *"…it's too much you know for one person to manage, for example 28 clinics…."* (Sub-district manager 3)

  *"I think this is a, a fulltime job for her. I think our districts are big!"* (Sub- district manager 1)

- Lack of **personal and interpersonal competencies,** such as poor organizational, time-management and communication skills were mentioned by some managers as constraints.

## 4.8 Future considerations

Several sub-district managers mentioned the importance of considering future implications that will impact on sub-district pharmacists' work. This included the implications of additional supervision of PBPAs working under indirect supervision as more clinics expand services to include dispensing of ARVs. The responsible pharmacist is legally only allowed to supervise five PBPAs and needs to visit each site monthly, although current experience and practice in City Health sites functioning in this manner in Khayelitsha sub-district and those supported by NGO Kheth'Impilo find that at least a weekly supervisory visit is necessary, which sometimes includes dispensing and checking paediatric

ARV scripts. A couple mentioned that as the number of ARV sites increase, it may be necessary to have a sub-district pharmacist for each sub-district (as is the case in Khayelitsha already where the sub-district pharmacist supervises two PBPA under in-direct supervision and is responsible for three ARV sites. Another issue mentioned was to consider changing the pairing of sub-districts to match the MDHS sub-structures, in view of increasing integration of services and enabling the sub-district pharmacist to work more easily with one sub-structure pharmacist.

## 5. Discussion

The current situation across City Health is variable with good support by sub-district pharmacists being reported in six sub-districts (Northern, Eastern, Southern, Tygerberg, Khayelitsha and Klipfontein), whilst two sub-districts reported minimal support from sub-district pharmacists (Western and Mitchells Plain). This finding is similar to that of 2008, with the exception of Khayelitsha and Tygerberg sub-districts which now report good sub-district pharmacist support. Khayelitsha sub-district appointed its own sub-district pharmacist in 2010 and Tygerberg reported considerable change in the situation and now enjoy good sub-district pharmacist support. In the case of Tygerberg it is pertinent to note that the sub-district pharmacist that covers Tygerberg and Western sub-districts moved from having considerable facility-based responsibilities at Langa Clinic in Western sub-district to being based at Delft Clinic, with less direct dispensing responsibilities, in Tygerberg sub-district.

One of the initial challenges to the performance of sub-district pharmacists appears to be the transfer of pharmacists originally employed by the local authority as pharmacists in charge of Medical Stores to another role, that of sub-district pharmacist. The job function and competencies required for these two jobs are different, even though both require a registered pharmacist. Considerable adaption was required to move into the new sub-district pharmacist role, and some pharmacists have found it easier to take on the new role than others. Additionally, when they were first appointed there may have been lack of clarity of what was expected of sub-district pharmacists, but this gradually became clearer with a memorandum from the Executive Director in 2007. More recently a draft job description for sub-district pharmacists was developed in 2010 as part of the TASK process, but this is still awaiting evaluation and finalization.

The major constraints to optimal performance of sub-district pharmacists identified during interviews in 2008 and 2011 were the inability to leave dispensing responsibilities and time constraints. One sub-district pharmacist has full-time facility-based dispensing responsibilities as the responsible pharmacist. The facility pharmacist position is vacant and difficulties are being experienced in attracting and retaining pharmacists within City Health, which has been impacted on by the relative scarcity of pharmacists and the implementation of the occupational specific dispensation (OSD) at provincial sites. Another sub-district pharmacist spends a significant portion of her time dispensing and supervising PBPAs at a busy clinic and this appears to limit her ability to provide services at sub-district level. Time constraints to provide services to the large numbers of clinics and distances across two sub-districts were also challenging, particularly for the two sub-district pharmacists working 5/8[ths].

Since 2008 some of the challenges identified have been addressed by the appointment of a fulltime sub-district pharmacist for Khayelitsha sub-district in 2010 and the recent conversion of one 5/8th sub-district pharmacist post to a full time position. The sub-district pharmacist that was dispensing and supervising PBPAs at a clinic pharmacy is now reportedly providing good support to one of the sub-districts for which she is responsible but little support to the other. The Senior Pharmacist, appointed at the end of 2007, now performs a greater co-ordination and supporting role across the City and networking function with MDHS, NGOs and other key stakeholders. The Senior Pharmacist has also filled in some of the sub-district support role in some sub-districts. Whilst these initiatives have had a

positive impact on the sub-district pharmacist's supportive function, the situation remains largely unchanged and unsatisfactory in Mitchells Plain and Western sub-districts.

An important difference between 2008 and 2011 interviews was the emphasis of sub-district managers in 2011 on the critical involvement of sub-district pharmacists in on-site clinic support, both as part of the sub-district clinic audit team and in conducting follow-up visits with in-depth medicines focus. In 2008 the prevalent view was that sub-district pharmacists would provide most of their support from a central location. This role will probably become more important with the implementation of the National Core Standards initiative, particularly as availability of medicines is one of the six priority areas identified for measurement of quality of care at health facilities.

In conclusion, three sub-district pharmacists were performing most of their sub-district pharmacist functions regularly and there was a high degree satisfaction with the support they are providing for sub-district management of the five sub-districts (Northern, Eastern, Southern, Klipfontein and Khayelitsha). In addition, one sub-district pharmacist was providing good support to one sub-district (Tygerberg) but minimal support to the other (Western). One sub-district pharmacist, performing a full-time dispensing role was reportedly providing minimal support to the sub-district (Mitchell's Plain). This seems to indicate that the original 'sub-district pharmacist model' of sub-district pharmacists performing significant dispensing roles in their base clinic and sub-district pharmacist functions in addition, does not work, as the pharmacist is not able to devote adequate time to sub-district duties, or leave the facility to attend meetings and make clinic visits. This finding is supported by comments from sub-district managers who said that sub-district pharmacists need to be free to perform sub-district functions and not be tied to dispensing services in clinics.

## 6. Recommendations

- Update sub-district pharmacist job-description to take away routine responsibility for dispensing medicines and replace with indirect supervision of PBPAs (as per legal regulations) and occasional emergency cover for pharmacists.

- Share lessons of good practice and support provided by sub-district pharmacists with all sub-district managers and sub-district management, including PHC programme and clinic mangers, across City.

- Where sub-district pharmacist support not functioning well, consider specific remedial action including appointment of facility-based pharmacists and provision of appropriate training and in-service support for sub-district pharmacist.

- In future it may be necessary that a sub-district pharmacist be appointed per sub-district to accommodate the expansion of ARV services (and the additional support and supervision of PBPAs working under indirect required at new ARV sites); and increased involvement in audit teams, in line with current government initiatives of 'Re-engineering of primary health care' and improving the quality of services (National Core Standards).

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**10 November 2011**

**Appendix 1: Sub-district pharmacist roles currently being performed (based on interviews with SD managers, SD pharmacists and observations of Senior Pharmacist)**

| | Northern | Eastern | Southern | Klipfontein | Tygerberg | Western | Mitchells Plain | Khayelitsha |
|---|---|---|---|---|---|---|---|---|
| Attend SD management meeting | green | green | green | red | green | red | yellow | green |
| Authorise medicines & vaccines orders | green | green | green | green ● | green | green ● | yellow | green |
| Monitor pharmaceutical expenditure eg meds & vaccines | green | green | green | green | green ● | red | yellow | green |
| Actively manage stock shortages | green | green | green | green | green | red | yellow | green |
| Monitor medicines & vaccines stocks at facilities (storage, cold chain, stock levels, expired stock) | green | green | green | yellow | green | blue | yellow | green |
| Provide on-site support to clinic staff eg DSM, staff training etc | green | yellow | yellow | red | green | blue | red | green |
| Provide medicines & vaccines information - proactive (eg at meetings or electronicly) | green | green | green | yellow **Electronic only** | yellow | blue | red | green |
| Provide medicines & vaccines information - reactive (eg respond to queries) | green | green | green | green | green | blue | yellow | green |
| Co-ordinate pharmacy services across SD (reports) | green | yellow | yellow | yellow | green | red | red | green |
| Assist with planning new services & sites eg ARV & CDU; infrastructure | green | green ● | green ● | blue | yellow | blue | red ● | green |
| Participate in clinic audits with SD team | green | red | red | red | green | blue | red | red |
| Schedule visits to clinics | green | green | yellow | green | green | red | red | yellow |
| Visit clinics on ad hoc basis ie response to problems | green | green | green | yellow | green | blue | yellow | green |
| Perform rational medicines use reviews within/for sub district facilities | red | red | green | green | yellow | red | red **Tafelsig only** | red |
| Support & indirectly supervise PBPAs | yellow | yellow | red | green | yellow | yellow | red **Tafelsig only** | green |
| Identify training needs of PBPAs & clinic staff related to pharmaceutical matters | yellow | yellow | yellow | red | green | red | red **Tafelsig only** | green |
| Assist with recruitment processes for pharmaceutical staff | red ● | yellow ● | green ● | red ● | yellow ● | blue | red **Tafelsig only** | green ● |
| Assist with co-ordination of leave & locum cover for pharmaceutical staff | red | yellow | yellow | red | green | red | red **Tafelsig only** | green |
| Support for and professional liaison with facility based pharmacy staff | green | green | green | yellow | green | blue | red **Tafelsig only** | green |
| Dispensing responsibilities in clinic | red | red | red | red | yellow | red | green | yellow |

| KEY to frequency of roles performed | |
|---|---|
| green | SD Pharmacist regularly |
| yellow | SD Pharmacist sometimes |
| red | SD Pharmacist hardly ever |
| blue | Senior Pharmacist |
| ● | Senior Pharmacist contributes |

# Appendix 10: Developments in job descriptions

## Comparisons of job descriptions of sub-district pharmacists in City Health over time

| Source | City Health Sub-district pharmacist Memo (dated 28-02-2007) | City Health - Khayelitsha Sub-district pharmacist JD (accessed November 2010) |
|---|---|---|
| **Overall job purpose** | Pharmacist support to sub-districts | To ensure comprehensive, effective and cost-efficient pharmaceutical service for the designated SD(s) by co-ordinating pharmaceutical & related supplies for clinics within the SD and by supervision of PBPAs working under indirect supervision of the pharmacist at specified sites in order to ensure compliance with legislation and ensure an adequate and reliable supply of safe and cost effective pharmaceuticals. |
| **KPAs** | Dispensing at facility where based | To co-ordinate pharmaceutical services within the SD in order to ensure compliance with legislation and ensure an adequate & reliable supply of safe & cost effective pharmaceuticals & related products |
| | Authorise edge cards | To interface internally and externally as the SD pharmacist representative in order to provide an effective pharmacy service and comply with relevant legislation and policy standards. |
| | Authorise vaccine order forms from relevant clinics | To participate in SD forum, assist with interviews and to monitor PBPA in order to ensure the legal compliance of service delivery at clinic sites where dispensing service is provided by PBPA working under indirect supervision |
| | MDR-TB drug dispensing in sub-districts | To dispense patient medication at SD clinics sites in order to support a dispensing service at SD clinics |
| | Advising SD manager on quality control issues | |
| | Supervise PAs | |
| | Attend monthly SD meeting with all clinic managers | |

# Sub-structure pharmacists in MDHS

| Project Manager: Pharmaceutical Services | MDHS – Sub-structure (proposed) | MDHS – Sub-structure | MDHS – Sub-structure |
|---|---|---|---|
| 2006 | 2008 | 2010 | 2013 |
| DD: Pharmacy Services (12) | DD: Pharmacy Services (12) -proposed | DD: Pharmacy Services | Pharmacy Services Manager |
| To ensure a comprehensive, efficient and cost effective pharmacy service in the MDHS in line with statutory requirements, as well as the NDP and GPP. | 1. Strategic planning & implementation<br>2. Tech support to pharmacy staff & pharmacy QA<br>3. Overall leadership & co-ordination of pharmacy services.<br>The incumbent will not only ensure that good pharmacy practices are institutionalised in the SS but will also be part of the SS and DMT that is tasked with driving the Depts policy. | To plan, lead, operationalise and co-ordinate pharmacy services within the substructure | |
| 1. Facilitate improved access and quality of pharmaceutical care at all MDHS pharmacies.<br><br>2. Provide a cost effective pharmaceutical service to the patients of MDHS.<br><br>3. Pharmacy human resource management and development.<br><br>4. Ensure safe, clean work environment at all MDHS pharmacies. | 1. Manage & ensure provision of an accessible, cost efficient & quality pharmacy service.<br><br>2. Implement and maintain efficient and reliable drug supply management system.<br><br>3. Monitoring and evaluating the pharmacy service.<br><br>4. Facilitate the execution of statutory requirements and inspections.<br><br>5. Optimal management of budget and physical resources.<br><br>6. Human Resources | 1. Strategic planning and implementation of pharmacy services within the SS.<br>2. Implement & maintain efficient drug supply management system.<br>3. Monitoring and evaluation of pharmacy services.<br>4. Budgeting & expenditure control.<br>5. Human resources management (training, planning, support to line manager).<br>6. Line manage SS pharmacist's assistant.<br>7. Provision of quality of care/clinical governance | **Service provision (40%)**<br>Planning<br>M & E<br><br>**Corporate Governance (40%)**<br>Drug Supply Management<br>Finance & Supply Chain<br>Capacitated workforce<br>Legislative compliance<br><br>**Quality of care (20%)**<br>Pharmacy Therapeutics Committee<br>Quality of Care |