Designing, Developing and Evaluating a Management Information System for Vitamin A Supplementation Programme Managers In the Eastern Cape Through Action Research

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ABSTRACT

Periodic high doses of vitamin A supplementation has been demonstrated to have a dramatic impact on vitamin A status and general health of children, significantly improving child survival. The Eastern Cape Department of Health has therefore adopted a provincial policy on vitamin A supplementation to improve the high child mortality and vitamin A deficiency rates experienced in the province.

This study outlines a participatory approach to designing, developing and evaluating the implementation of a management information system (MIS) that will support district level Maternal, Women and Child Health programme managers in problem-identification, planning and decision-making when implementing the Eastern Cape policy on vitamin A supplementation. It is an iterative process that:

- Begins with a situational analysis
- Uses this situational analysis for the conceptualisation of the MIS
- Develops this MIS as a part of the vitamin A supplementation programme, embedding the MIS in the management structure and operational systems and
- Evaluates the implementation of this MIS

The study introduces the concept of trace tables, an integral part of the MIS. It is a unique tool that the researcher has developed to assist programme managers to monitor the implementation of the various elements of a primary health care programme like vitamin A supplementation.
The researcher discusses the key findings of the study, the participatory nature of this action research, and elements unique to this study in terms of the vitamin A supplementation programme, the development of a MIS, an action research approach and the context within which the development of the MIS occurred.

The study is concluded with key lessons to be learnt from this research and the postulation of a model on a participatory approach to the development of a MIS for Primary Health Care programmes.

DECLARATION

I declare that ***Designing, Developing and Evaluating a Management Information System for Vitamin A Supplementation Programme Managers In the Eastern Cape Through Action Research*** 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.

Full name: **Rolene Margaret Wagner-Meyer**

Date: **2 January 2003**

Signed: _____

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GLOSSARY

Abbreviation	Explanation
BCG	The immunisation given at birth to protect against TB
CLO	Community Liaison Officer
COSATU	Congress of South African Trade Unions
DHIS	District Health Information System
DOH	Department of Health
DTP-HIB1	Immunisation given to children at age 6 weeks against diptheria, tetanus and pertussis and haemophilus influenza
EC	Eastern Cape
ECDOH	Eastern Cape Department of Health
EPI	Expanded Immunisation Programme
HISP	Health Information System Project
IMCI	Integrated Management of Childhood Illnesses
INP	Integrated Nutrition Programme
MCWH	Maternal Women and Child Health
MEASLES 2	The second immunisation against measles given at age 18 months
MEDSAS	The pharmaceutical information system for stock control
MIS	Management Information System
MOST	Acronym for the USAID Micronutrient prgramme
NGO	Non-Governmental Organisation(s)
OPV	Oral polio vaccine
PHC	Primary Health Care
SACP	South African Communist Party
SAVACG	South African Vitamin A Consultancy Group
UNITRA	University of the Transkei
USAID	United States Agency for International Development
UWC	University of the Western Cape
VAC	Vitamin A Capsules
VAS	Vitamin A Supplementation

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CHAPTER 1

INTRODUCTION

1. INTRODUCTION

1.1 BACKGROUND

The Eastern Cape (EC) is recognized as having one of the highest child mortality rates in South Africa[i]. In predominantly rural areas of the province like the Alfred Nzo and Oliver R. Thambo municipalities, the under-5 mortality rate is 105 per 1000 live births. Most of these children die within their first two years of life, from diarrhoea, respiratory infections and vaccine-preventable deaths[ii]. In addition to these high mortality rates, the South African Vitamin A Consultation Group (SAVACG) in 1994 found 31% of all children in the EC under the age of 5 to be deficient in vitamin A[iii].

Periodic high dose vitamin A supplementation (VAS) has been demonstrated to have a dramatic impact on the vitamin A status and general health of children, reducing the risk of death from all causes by approximately 23%, measles mortality by 50% and diarrhoeal mortality by about 33%[iv]. Giving vitamin A supplements to children in the Eastern Cape will therefore not only improve their vitamin A status but can potentially improve their survival in those important first years of life. The EC has a population of 6.3 million people, with about 760 000 under the age of 5 years. A successful VAS programme can thus make significant contributions to a significant public health problem in the province.

The Eastern Cape Department of Health (ECDOH) adopted a policy for prophylactic vitamin A supplementation in 1998 with a decision to integrate this programme with the routine Expanded Programme for Immunisation (EPI). In 2001, the EC immunization coverage rates ranged from 88.7% for the first Oral Polio Vaccine (OPV1) to 68.9% for measles so the potential does exist for the vitamin A coverage to at least match these rates [ii].

Like most vitamin A supplementation programmes in the rest of the world, from August 2000 until August of 2001 vitamin A was promoted mainly during annual EPI campaigns. This approach has since been changed with a greater emphasis being placed

on routine child health services as the main mode of delivery. It is believed that the routine rather than a campaign approach will be more economical and sustainable in the EC.

Two challenges faced health care providers in the EC. The first challenge was to reach at least 80% of the target population in order to have an impact on mortality and morbidity rates. The second challenge was to reach this target through integrating the programme with the routine child health services. Where the routine approach has been adopted as a main strategy for VAS, the mean coverage rates have not exceeded 60%[v].

An 18month project was therefore undertaken as a joint venture between the ECDOH, the University of the Western Cape (UWC) and MOST, the United States Agency for International Development (USAID) Micronutrient Programme, to support the ECDOH in meeting these challenges. In October 2001, the researcher was appointed as the project manager for this supplementation programme.

1.2 PROBLEM STATEMENT

As mentioned above, in order to decrease mortality and morbidity rates, an operational target of 80% coverage of the target population was set. After providing vitamin A since August 2000, the provincial head of Maternal, Child and Women's Health (MCWH) together with her district programme managers, wanted to quantify achievements made until October 2001. However, what was found was that:

(a) There was no accurate and reliable information routinely available to indicate the coverage of vitamin A and

(b) Although anecdotal evidence listed inadequate drug supplies and too few health workers trained as major barriers hampering the programme delivery, programme managers at district level were unable to take appropriate action to improve suspected low coverage of vitamin A

1.3 PURPOSE

This study evolves out of the need to ensure that at least 80% of the target population receives prophylactic vitamin A according to the provincial protocol in order to achieve the morbidity and mortality benefits. The supplementation programme is delivered through routine child health services and the responsibility of ensuring that the target population is reached therefore rests with the district programme managers. A management information system (MIS) will greatly assist these managers to not only measure the programme outcomes, but also to improve their control over the key inputs and processes that drive these outcomes.

The purpose of this research is therefore to design, develop and evaluate the implementation of a management information system that could enhance district MCWH coordinators' abilities to plan and effect decisions for vitamin A supplementation. Child health services in the Eastern Cape as a whole will also benefit since management skills will be transferred to programme managers at both provincial and district levels.

CHAPTER 2

LITERATURE REVIEW

AND RATIONALE

2. LITERATURE REVIEW AND RATIONALE

2.1 INTRODUCTION

It is the author's contention that there are two factors that constrain the achievement of high coverage rates for vitamin A supplementation in countries using routine immunization services as their main mode of delivery:

(a) The lack of a systematic approach to ***managing*** the implementation of the programme at a district level

(b) The absence of a ***tool*** to assist programme managers at a district level to monitor the systematic implementation of vitamin A supplementation

A review was therefore conducted into four areas to investigate this more fully:

(a) *Vitamin A Programmes Using the Routine Approach*

- To review the performance of other countries using the routine approach in order to identify best management practices that could be adapted to address the problem of suspected low coverage in the Eastern Cape

(b) Management in the public sector

- To review the role of managers in the public sector so that there is an understanding of how vitamin A programme managers in the Eastern Cape fit within the paradigm of public health management

(c) Management Information Systems

- To contextualise and identify the best approach to the development of a MIS for vitamin A supplementation in the Eastern Cape by clarifying what a MIS is, and by reviewing current trends of MIS development within the public sector
- To identify factors that contribute to the success or failure of a MIS so that the researcher can anticipate pitfalls and plan for success

(d) Research Approaches to Information System Development

- To explore research approaches to the development of information systems in order to find an approach that will be consistent with and best suit the socio-political and cultural dynamics of the Eastern Cape public sector.

2.2 VITAMIN A PROGRAMMES USING ROUTINE APPROACH

Clinical research on Vitamin A efficacy predominates within international literature on vitamin A with a distinct paucity of research on programme management of vitamin A supplementation[vi]. In countries that have adopted the routine immunization service as their main mode of delivery, respective 3 year mean coverage has not exceeded 60% despite the immunizations rates in these countries being near 90%[vii]. A wide range of "programmatic issues (has been) identified as contributors to this comparatively low coverage [vii]."

The absence of an appropriate tool to assist managers to monitor the programme has been listed as one of these programmatic issues. Currently there has been no documented approach to systematically address this and other issues.

2.3 MANAGEMENT IN THE PUBLIC SECTOR

Managers in the public sector must constantly strive to act in a way that will lead to the improvement of the quality of service delivery by public institutions. The achievement of objectives, the economical use of resources and reasonable and fair distribution of resources between groups and projects must therefore be pursued by public sector managers[viii].

Management is divided into 3 levels: strategic (top-level), tactical (middle-level) and operational (low-level). Managers in each of these levels work towards goals through 5 major functions: planning, staffing, organizing, directing and controlling resources.

2.4 VITAMIN A PROGRAMME MANAGERS IN EC

The vitamin A programme managers at district level are the equivalent of middle managers, and they need to make short-term tactical decisions in all 5 management functions listed above. Programme managers at district level often have inherent generic organizing skills, but the reality is that across the board their ***management*** capacity is not developed systematically.

In the EC the focus to date has justifiably been on developing the management capacity of district health managers, the strategic managers in a primary health care setting[ix]. Programme managers, the tactical managers in this setting, receive regular in-service training on programmes under their control. These sessions tend to focus on the technical knowledge required to rollout these programmes but often do not include generic coordinating, monitoring and evaluation skills[x].

2.5 MANAGEMENT INFORMATION SYSTEMS

The literature was reviewed in the following systematic way:

(a) Management Information Systems

- To understand and define general management information systems
- To understand trends in health care MIS development

(b) Why Information Systems succeed or fail

- To be able to anticipate factors that contribute to system success or failure so that this can be built into the system design and development

2.5.1 MANAGEMENT INFORMATION SYSTEMS

(1) Understanding Management Information Systems

Information is generally regarded as one of the most important resources in modern institutions. Different levels of managers require different types of information in order to make decisions when performing the 5 broad functions outlined above.

Information systems arise out of the need to support these different levels of managers.

Management information systems (MIS) have been defined as information systems that provide reports that assist the managerial monitoring and control of organizational functions, resources or other responsibilities[xi]. Through strategic planning, targets and standards are set within an organization. The inputs, processes, outputs and outcomes can then be monitored and compared with set targets and standards. Managers can make informed decisions regarding the inputs or processes in order to improve the outputs and outcomes. A manager can even review the targets and standards and adjust these if they were unrealistic to start off with.

Conventionally, management information systems in the public health sector have been designed around finance and human resources, and patient care[xii]. Opit refers to these as "market-oriented systems"[xiii]. The emphasis in any of these systems has been on the control of health care costs. In addition, these systems are computerized systems and have been designed with top-level managers for top-level managers, predominantly in hospital settings. They are of very little value for decision-makers at community level.

(2) Health Management Information Systems (HMIS)

Information systems designed to support the district and program managers in the "new public health" arena with planning and decision-making, have been conceptualized as routine essential data systems[xiv, xv, xvi, xvii, xviii, xix, xx, xxi]. These information systems collect the minimum amount of data that is essential for the effective delivery of health services. This minimum dataset is reached by consensus between top and lower levels of management and service providers, often facilitated by technical support teams. The result is a standardized dataset. Competing interests are regulated when deciding on the essential dataset, but the information system remains flexible because it can accommodate the needs of managers at respective

levels[xxii]. These systems, unlike the MIS of the 80's, have the potential to monitor outcomes that are important to *every* level of health care provider.

(3) Eastern Cape Health Management Information System

The routine district health information system (DHIS) being utilized in the EC adequately identifies poor outcomes but it does not assist the programme manager at district level to have at hand information about program inputs and processes[xxiii]. Planning appropriate action to improve an identified poor outcome is therefore very difficult for managers at this level of care. It is a challenge to make informed decisions for the same reason.

Because there is no information system to support the ***management*** functions of middle-level, district program managers, there is a need to develop such a system. The next question is how to go about developing such a system.

2.5.2 WHY INFORMATION SYSTEMS SUCCEED OR FAIL

As early as 1981, it was realised that information intended for enhancing decision-making was in fact not being utilized for this exact purpose[xxiv]. Information systems were no longer systems based on logic, but instead were embedded in organizational social systems, and in turn influenced these social systems.

(1) Information Systems are Social Systems

Feldman and March observed that individuals and organizations collected more information than they used or needed to use for making decisions[xxiv]. Yet these same individuals or organizations were always requesting more information before making decisions. A behavioural model postulated two broad phenomena as contributing to this state of affairs:

- Information is used as incentives, gossip and misrepresentation
- Information is being used as signals and symbols

Organisations were accused of providing incentives for collecting more information:

- By omission – those who gather the data are separated from those who use the information to make decisions; and so there is very little incentive for gatherers to limit the amount of data colleted to what is needed for optimal functioning of the organization
- By commission – decision-makers have to act in the absence of certainty of outcome; this outcome is more likely to be successful if all necessary information is available; there is therefore an incentive to collect more data.

Data acts as a surveillance mechanism to anticipate surprises and so departs from the relevant decision mode, to instead gather "gossip". Feldman and March go on further to state that most information is a misrepresentation of the actual state of affairs of an organization because this information is gathered and communicated in the context of conflict of interest and with the consciousness of the consequences of making decisions.

Information becomes a symbol of competence and an affirmation of social importance. Resources are scarce and are therefore of social and individual importance. These scarce resources are allocated on the basis of decisions. Decisions are made using information. Ergo information gathering indicates social and individual importance. The more information you gather and command, the more important is your position within the organisation. This social dynamic becomes an integral part of the organizational and information system structure.

Once data is analysed, reports are generated to advertise positive outcomes. These reports signal the competency and efficiency of the organisation and the individuals that make decisions in that organization. Again, the social element of the organization is a part of the information system.

Braa uses the metaphor of reporting data as the imparting of a gift from the gatherer to the user[xxv]. The social norm is that this gift be accepted as a symbol of cooperation

and even friendship. And there is an expectation that this gesture be returned. An information system must therefore internalize this by ensuring that information received is fed back to those that gathered and reported the data.

In summary, social structures within an organisation will shape an information system as outlined above, just as an information system in turn shapes those social structures by reinforcing the social attributes of collecting and reporting data on a daily basis. An information system is therefore both a scientific and social endeavour. It is exactly this nature of an information system that has contributed to the failure of information systems of the 1980's.

(2) Why Health Care Information Systems Succeed or Fail

The 1990's saw the emergence of literature that attempted to address this failure in a rational way[xxvi], [xxvii]. Heeks postulated that health care information systems do not succeed because there is a "conception-reality gap" between the formal, rational design of an information system, and the reality of the behavioural context in which the information system has to operate[xxviii].

Heeks developed the ITPOSMO model of this conception-reality gap[xxviii]. This model identifies 7 dimensions that explain deficiencies in information system design and therefore contribute to system failure:

- **I**nformation - information being collected, collated and analysed is not relevant to the organization
- **T**echnology – the infrastructure around which the new system is designed may be inappropriate or the new design unaffordable
- **P**rocesses – systems developed for one sector cannot always be adapted to another sector because the processes differ between sectors and within a sector
- **O**bjectives and values –a system should reflect the objectives and values that are peculiar to an organisation
- **S**taffing and skills – there should be sufficient numbers of staff with appropriate skills to implement a system

- **M**anagement and structures – management must understand their role in the system implementation
- **O**ther resources such as money and time – Resources required for the system should match the resources available

Heeks further proposes some gap closure techniques to improve the chances of a MIS being successful[xxviii]:

- Organisational realities must be clearly mapped. Techniques that can be utilized here include observation by the system developer and encouraging participants to depict the reality
- System requirements must be consistent with the reality that exists within an organisation
- Systems should be custom-made to an organization, not merely adapted to that organization
- The system should be part of the process of change within an organization
- Participatory approaches can ensure that the world view of the stakeholders is included in the system design
- The systems developer should be a hybrid in that the developer should not only be an Information Technology expert, but should also have a firm understanding of the health care context
- Changes should be incremental and build on systems that are already in operation

In summary, to bridge the gap between conception and the reality the technology and design of a system must fit the reality of an organization and that any changes introduced need to be incremental. Whilst this may not change the way in which people in an organization collect and use information, it may make them use information ***more***.

2.6 APPROACHES TO DEVELOPING A HEALTH CARE MIS

The preceding review of literature defined a MIS as a system that is able to generate information that is useful to a manager. But the development of a MIS is not a simple exercise. In the 1980's Feldman and March recognized that the successful implementation of MIS was hampered by the fact that this MIS had to operate within the social context of an organisation[xxiv]. The 1990's saw researchers like Heeks[xxviii] and Opit[xiii] identify several factors that can contribute to a system failing and suggest ways of anticipating these factors by incorporating them into the design and development of the MIS. Bearing all this in mind, the next question facing the researcher was what approach to developing a MIS for the vitamin A supplementation programme would best suit the Eastern Cape.

The literature was reviewed in the following systematic way:

(a) Principles Guiding the EC Public Sector

- To understand the political context in which the MIS would be implemented

(b) An overview of approaches to research

- To gain an understanding of the paradigms of research so that a paradigm that matches the both the researcher and the Eastern Cape could be selected

(c) Action Research

- Once action research was intuitively felt to be a possible approach to the development of the VAS MIS, the researcher reviewed the literature to gain a more in-depth understanding of the nature of action research

2.6.1 PRINCIPLES GUIDING EC PUBLIC SECTOR

There is a clear political mandate in South Africa to democratize state functions[xxix]. This principle is consistently applied in the EC. Policy-makers acknowledge the importance of the participation of all levels of stakeholders in the design and development of public

service programs[xxx]. It is therefore important that a "top meets bottom" approach be utilized when designing the MIS required by district program managers, rather than a top down approach.

2.6.2 AN OVERVIEW OF APPROACHES TO RESEARCH

There are three broad philosophical approaches to research: positivism, interpretive constructionism, and critical postmodernism. Positivism assumes an objective world that scientific methods can more or less readily represent and measure[xxxi]. It seeks to predict and explain causal relations amongst key variables[xxxii].

However, as outlined by the information systems above, the social and political milieu does influence the occurrence and interactions of phenomena that are encountered in the "scientific" world. The context in which interactions occur is central to interpretive constructionism[xxxii]. In summary, this philosophical approach:

- Attempts to understand participants' definitions of a situation and the depth of interactions between the phenomena described by these participants
- Examines how the "objective realities" are produced
- Seeks to describe meanings of these phenomena

Critical postmodernism argue that the scientific phenomena under observation are products of capitalist structures and processes and perpetuate inequity[xxxii]. There is no scientific objectivity in the world. Although a system appears to be in equilibrium, there are tensions within this system

In this philosophical approach, the world view of the researchers is that of a struggle between an oppressor and the oppressed. The researchers commonly adopt a position that supports the oppressed and they advocate for radical change to the structures and systems that support the area being investigated.

2.6.3 ACTION RESEARCH

Action research is a form of both interpretivism and critical postmodernism . It has been typified as a way of building theory, knowledge and action by engaging with the world in

the context of the practice itself[xxxiii]. The presence of the researcher will affect the situation being investigated. The role of the researcher is to actively associate themselves with the practical outcomes of the research, as well as seek theoretical outcomes.

Action research in information systems has its roots embedded in a Norwegian history of industrial worker empowerment[xxxiv]. Research became a means of bringing about participative change in organizations. Two elements were identified as central to effecting change in an organisation:

- Workers must have the skills for operating in that technical environment and
- The technology must be designed with particular kinds of behaviour and group organizational features in mind

When designing work, the psychological demands of the job should be met in order to effect successful social change. A job should be meaningful, commanding respect in the community, and promote interdependence with colleagues. There should be channels of communication available for workers to communicate their concerns and requirements into the design of new jobs.

2.7 SUMMARY OF LITERATURE REVIEW

There is currently no tool available to assist district level, middle managers of routine vitamin A supplementation to:

(a) Identify programmatic issues that constrain high coverage of vitamin A supplementation and

(b) Direct their planning and decision-making to address these issues

A management information system would therefore be a useful tool to support decision-making at this level. To date all international, national and local health management information systems monitor programme outcomes. These systems assume that managers are able to use this information about outcomes to identify *causes* for poor outcome indicators. It further assumes that these managers will then plan appropriate action to improve the relevant service.

There is a paucity of literature on health management information systems that have been designed with district level, middle managers to systematically assist them to identify causes for poor programme outcomes so that their planning and decision-making is focused and relevant.

The design and development of a MIS for vitamin A supplementation must not only be logical but must become embedded in the social context in which it will operate, as well as influence that social milieu. In the Eastern Cape, this means that "top and bottom" stakeholders must be involved in the design and development of such a system.

3. RESEARCH DESIGN AND METHODOLOGY

3.1 AIM

To design, develop, implement and evaluate a management information system that will assist district level Maternal, Women and Child Health programme managers in the Eastern Cape with planning and decision-making in the implementation of the vitamin A supplementation programme.

3.2 OBJECTIVES

(1) To perform a situational analysis in order to gain a consistent understanding of the components of the vitamin A supplementation programme in the EC

(2) To identify and understand the information system(s) that are being utilized to support the delivery of the vitamin A supplementation programme

(3) To assess the adequacy or potential of these systems for:

- Measuring vitamin A coverage
- Comparing this to district coverage targets
- Enabling programme managers to take appropriate action to improve low coverage

(4) To identify the critical pathway for ensuring that 80% of the target population is reached through the programme

(5) To develop a management information system that will assist district level MCWH programme managers to effectively and efficiently implement the vitamin A supplementation programme

(6) To design and test tools required for the management information system with programme managers, making adjustments where needed so that the system is practicable

(7) To implement the vitamin A supplementation MIS

(8) To evaluate the development and implementation of the vitamin A supplementation MIS of the Eastern Cape

3.3 METHODOLOGY

3.3.1 STUDY DESIGN

This study employed an action research approach. The research was conducted as a continuum of 3 phases:

- Situational analysis of vitamin A supplementation programme and supporting systems
- Design, development and implementation of the MIS for vitamin A supplementation
- Evaluation of this MIS

The situational analysis and evaluation were held as interviews, whilst the design and development phase was held as a series of workshops.

Why Action Research

Action research was the most appropriate design for this study, for two reasons:

- The prevailing socio-political environment of the Eastern Cape Department of Health in which the MIS was to operate
- The involvement of the author in the design and development of the MIS

These two reasons are expanded upon below.

(1) Socio-political Context

The aim of this research was to design and develop a logical MIS that is in synergy with the politics, culture and social dynamics of the Eastern Cape Department of Health. The current political climate in the Eastern Cape is committed to worker empowerment. This is borne out by a political tri-partite alliance between the:

- African National Congress (ANC), the ruling political party in South Africa and the Eastern Cape
- Congress of South African Trade Unions (COSATU), the largest trade union in South Africa and
- South African Communist Party (SACP), the largest communist party.

Channels of communication and structures exist for all levels of managers and workers to give direct input into policies and processes related to the Eastern Cape public service. It follows that any system or process designed for the Eastern Cape Department of Health should directly involve the workers in that design and delivery of the system.

(2) Researcher's Level of Involvement

The author was directly involved in the strategic planning and implementation of the vitamin A supplementation programme in the Eastern Cape. This included:

- Advocating for a participatory, information-based approach to management
- Developing and implementing the strategy for training health workers at all levels of the health care system.

The researcher has a personal commitment to empowering health workers by developing their technical capacity in order to improve health service delivery in the Eastern Cape (EC). This will ultimately contribute to the improvement of the health status of people in the EC. The researcher also holds a firm belief in achieving this outcome in a democratic manner that is socially and politically endorsed by the culture of these workers.

3.3.2 STUDY POPULATION

Participants in this study were drawn from "top" through "bottom" management levels of the ECDOH to promote the participatory approach of action research.

(1) "Bottom" Management

VAS is a province-wide programme. There are 25 health districts, including the Nelson Mandela Metropole, in the EC. There should be 1 MCWH programme manager at assistant director level in each of these districts involved in the management of the VAS programme. Each of these managers was encouraged to participate in the study. In addition, because the delivery of VAS at facility level requires funding, vitamin A capsule supply, training of health workers, recording and

reporting on supplementation given, and mobilization of the community, one representative from each of the above support staff categories, at district level, in all 25 districts, were also invited to participate in the study.

(2) "Top" Management

The ECDOH has seven programmes operating at provincial level. The core business of the department is delivered through programmes 2, District Health Services (mainly Primary Health Care) and programme 3, Health Management Services (mainly hospital services). Senior managers of both the District Health Services and Health Management Services divisions of the ECDOH were therefore also part of the MIS design sessions.

There are some key stakeholders supporting PHC development in the Eastern Cape, The researcher identified the stakeholders relevant to the vitamin A supplementation programme and included them in the design and development of the MIS:

- Equity Project, a USAID funded initiative that supports the development of a District Health System
- Health Information System Project (HISP), a Norwegian and UWC collaboration that developed the information system for PHC in the EC
- Technical assistants from the donors of the programme, MOST (USAID Micronutrient Programme)

3.3.3 DATA COLLECTION

Five phases emerged during the evolution of this study:

- Situational analysis and design of the MIS
- Development the MIS as a part of the VAS management System
- Follow-up, consolidation and embedding of the MIS
- Implementation of the MIS
- Evaluation of the MIS

Data was collected during each of these phases through in-depth semi-structured interviews and/or workshops and/or observation utilizing the following tools:

- Tape recording of sessions
- Flip chart recording of ideas generated during whole group discussions
- Flipchart recordings of the District breakaway group discussions
- Researcher summary notes

This section will discuss the data collection method used during each phase of the MIS development.

Phase I: Situational Analysis & Design of MIS

Interviews, workshops and observations were utilized during this phase. The aim of this phase was to support the objectives outlined in 3.2 (1–3) above.

The desired output of this phase was the conceptualization of a design for the MIS that will support the district level programme managers.

(i) Interviews

A series of in-depth semi-structured interviews were conducted from October to December 2001 with senior provincial level, middle district level and lower facility level managers. The anticipated outcome of these interviews was a consistent understanding of all the systems that would support the implementation of the VAS programme at the different service delivery levels in the EC.

(ii) Workshops

The MCWH hosts a quarterly cluster meeting of community liaison officers and MCWH programme managers. This opportunity was utilized in October 2001 to:

- Establish a rapport with district level programme managers
- Review progress made with VAS at district level
- Identify potential areas where challenges were being experienced

At this workshop, participants worked in their district groupings, and answered the last two points that had been phrased as questions to the participants. A discussion then followed the presentations of their responses to the questions.

(iii) Direct Observation

The drug supply, training and information systems were directly observed by the researcher: Drug Supply system- at the 2 provincial depots in Umtata and Port Elisabeth; Information system - at the provincial, district and facility levels; Training system – at district level.

The researcher did not have a structured checklist for the observations, but used an open mind- a blank slate- when documenting the processes taking place at these different checkpoints. This was an attempt to record real situations as opposed to an anticipation of processes occurring.

As iterated above, the researcher utilized the findings of this phase to design a MIS.

Phases II and III: Development of MIS as part of Management System for VAS and Follow-up, Consolidation and Embedding of the MIS in this System

Once the MIS had been conceptualised by the author it was developed through a series of workshops with relevant stakeholders. The first workshop was held with senior managers during May 2002; the next occurred as two rounds of district workshops. The district workshops were held in 4 and 5 sites, respectively, in the province during June and July 2002. As far as possible, a health district met with other health districts that make up a municipal district. The workshops were conducted this way in order to promote a functional district health system approach to primary health care service delivery.

The researcher deliberately selected multiple sites in the province as opposed to the custom of selecting a centralized workshop point. Managers in the far outskirts of this

vast province often experience transport problems and are unable to attend workshops. The selection of multiple venues was an attempt to increase the chances of attendance of the workshop by the relevant stakeholders by holding the workshops in areas accessible to the health workers. Travel time from the district offices to the workshops was also decreased, so most participants could go straight home once the workshops closed. This reduced:

- The participants' time away from their families
- The cost of overnight accommodation
- The time lost when managers stay at the workshop venue overnight and have to travel back to the offices the following day

The workshops aimed to:

- Exchange information about activities related to VAS in the EC, identifying barriers to delivery of VAS in the districts. This would contextualise the system the MIS has to support as well as highlight what elements need to be included within the MIS
- Develop a consistent understanding of the design of the MIS by these managers and train them to mobilize a district team to develop the data collection tools specific to their needs
- Provide support where challenges had been experienced. A greater emphasis was placed on the district level team utilizing the MIS to assess performance of the programme within each health district.

Please refer to Appendix 1 for the programme of events of the workshops for June and July.

Phase IV Implementation of the MIS

As outlined above managers and the district working groups had been trained during June and July, respectively, in:

- The essential operational system requirements for the VAS programme and
- The development of trace tables and the use of these trace tables and the DHIS in monitoring and evaluating programme performance

The implementation phase was conceptualized as these working groups, lead by the MCWH programme managers, using their initiative and understanding of the concepts to put the theoretical development of the MIS into practice within their respective districts. The reason for this approach was that the EC is a geographically large province. It was not practical nor affordable for the researcher to do a round of all 25 districts to assist with implementation. Because of the June and July training sessions, the researcher had also developed a faith in the programme managers' abilities to rollout, coordinate and monitor the implementation of both the VAS programme as well as the MIS.

It was initially planned that the researcher would:

- Monitor the DHIS statistics to identify the districts that were not performing well
- Conduct ***interviews*** with these managers and their working group members to identify and quantify the challenges being experienced and then
- Assist these districts with the implementation of the VAS programme and the MIS.

This did not materialize, however, because of the pressure of time to develop manuals and assist districts with the rollout of training.

Phase V: Review and Evaluation

Both in-depth semi-structured interviews and workshop formats were utilized to evaluate the MIS. Specifically, the author wanted to determine whether the MIS is able to:

- Assist the programme managers to identify inputs and processes that contribute to poor performance
- Enhance that manager's ability to make decisions around these inputs and processes to improve vitamin A coverage

Because of other departmental priorities, the cluster meeting was postponed from September 2002 until November 2002. This delayed the evaluation process somewhat.

3.3.4 SAMPLING PROCEDURES

Purposive sampling was used but the final sample size was subject to the availability and willingness of those invited, to participate in the study. As far as possible, interviews with identified key stakeholders were scheduled at their convenience. But they also arose opportunistically and occurred at any ECDOH meetings organized for another purpose.

The author took advantage of scheduled ECDOH workshops/ meetings to be held in October 2001, and in 2002 during the months of February, May, August and October.

The reason for this approach was that the EC is undergoing a transformation in its health system development. This means that the targeted sample population is committed to attending several meetings and workshops for different provincial programmes. Purposive, opportunistic sampling was the best way of maximizing the researcher's interactions with the sample population at minimal disruption to the participants' arranged schedules.

3.3.5 SAMPLE SIZE

Bearing in mind the purposive sampling approach used, the following sample sizes were determined:

(a) ***Interviews:***

- Fourteen members of senior management were interviewed

(b) Workshops:

- The focus of this study was on the active participation of the 24 MCWH district level programme managers
- The144 support staff to these MCWH programme managers were also involved in the workshops held

(c) Observations Points:

- The two pharmaceutical depots (Umtata and Port Elisabeth)
- The ECDOH head office – Pharmaceutical, Health Management Services, MCWH, Nutrition, Training, Information sections
- The East London District Office – information section
- A Primary Health Care clinic in King Sabata Dalindyebo district
- Training workshop on vitamin A supplementation

3.3.6 DATA ANALYSIS

The data was analysed by the researcher. Themes that emerged from information gathered during interviews, workshops and observations were unpacked, reworked, and reorganized. The themes were then written up as summary notes at every stage of the study.

The summary notes were compiled into official reports for the ECDOH at each stage of the study. These reports were reflected upon and corrected by the Integrated Nutrition Programme (INP) steering committee members (see Appendix 2) or during follow-up interviews with the relevant stakeholders Consensus was reached on the findings and recommendations of these reports so that any information was endorsed by the ECDOH before being released for public scrutiny.

3.3.7 VALIDITY

Validity in the study was promoted by:

(a) Declaring vested interests of the author as both project manager and researcher up front to participants

(b) Addressing power differentials that arose between senior and lower ranking officials by having no symbols highlighting seniority, and by using a team-building approach

(c) Addressing inherent selection bias by having mop-up rounds with managers that were unable to attend because of conflicting schedules

(d) Triangulation of data collection methods

(e) Different data collection tools to increase accuracy of data

(f) Increasing technical soundness of the research by having direct input from an information systems developer

3.3.8 RELIABILITY

An explicit recording of the various stages was made, and included a feedback/review process conducted by the researcher with the relevant stakeholders at provincial and district to ensure that the essence of the process had been captured accurately. Any adjustments and the motivation for these were also recorded and reported on.

3.3.9 GENERALISABILITY

There were three elements in this study that can be reproduced by senior and lower level health mangers that support a Primary Health Care Approach to delivering public health services:

- The *process of participation* of middle-level district health management with top-level provincial management in the design and delivery of both a PHC programme and a MIS
- The *trace table* as a tool to monitor the implementation of any PHC programme, identifying barriers to this implementation along any critical pathway of such a programme
- The use of the MIS to assist district level programme managers to identify problem areas, *plan and effect appropriate actions* to address these problem areas.

The application of these three elements is not limited to vitamin A programme managers in South Africa or other countries only, but can be applied by managers in *other* primary health care programmes, to strengthen their monitoring capacity and thereby improve the systematic rollout of programmes within a district.

3.4 ETHICS

Ethical standards were maintained in this study by:

(a) Ensuring support from ECDOH through wide-spread consultation (including the head of department)

(b) Ensuring informed verbal consent was obtained from all participants

(c) There was no threat of job loss or demotion should a participant have refused to participate in this study

(d) Names of participants were not used in the reporting of the data and confidentiality was maintained at all times

(e) Information was not disclosed without the review and ratification of the ECDOH.

The ethics review committee for the ECDOH is currently inactive and therefore was unable to review the protocol and give its comment. Instead, the protocol was presented to and authorized by the Head of Department who is the accounting officer of the department.

The UWC ethics committee has also approved the protocol for this study.

CHAPTER 4

RESULTS AND DISCUSSION

4. RESULTS AND DISCUSSION

This section will present the results of the research as undertaken according to the methodology outlined above. As the study evolved, the development of the MIS occurred along a continuum of 5 phases as listed in Table 1 below.

TABLE 1: PHASES OF DEVELOPMENT OF THE MIS

PHASE	ACTIVITY
I	**ANALYSIS** • Situational Analysis→ Gap Analysis→ Work Plan
II	**DEVELOPMENT OF MIS AS PART OF MANAGEMENT SYSTEM OF VAS** • Clarify management structures and systems • Identify roles and responsibilities of management • Develop data collection tools
III	**FOLLOW-UP, CONSOLIDATION AND EMBEDDING OF MIS IN MANAGEMENT SYSTEM** • Follow-up programme plans and tools developed • Consolidate through practical exercises • Embed in management role
IV	**IMPLEMENTATION OF THE MIS** • Monitor the DHIS to detect areas requiring assistance with implementation
V	**EVALUATION OF IMPLEMENTATION OF MIS** Review management outputs: • Statistics • Quarterly reports Assess MIS

The results will be detailed for each of the phases listed in Table 1. The researcher will indicate which mini-thesis objectives (as listed in 3.2 above) were achieved in the relevant phases.

The format of each of these sub-sections will be to:

- Review any background by way of an introduction to the section
- Present the results
- Discuss the results

This will be followed by a presentation of the participatory elements of the study, highlighting their relevance to the development of the MIS.

4.1 PHASE I: ANALYSIS

The mini-thesis objectives (as listed and numbered in 3.2 above) achieved in this phase:

1. To perform a situational analysis in order to gain a consistent understanding of the components of the vitamin A supplementation programme in the Eastern Cape
2. To identify and understand the information system(s) that are being utilized to support the delivery of the vitamin A supplementation program
3. To assess the adequacy or potential of these systems for:
   (a) Measuring vitamin A coverage
   (b) Comparing this to district coverage targets
   (c) Enabling program managers to take appropriate action to improve low coverage

A summary will be presented of the findings of the situational analysis. This analysis explored 3 broad areas:

- Coordination of the VAS programme
- Status of VAS-related activities
- Operational Systems- vehicles of VAS delivery

4.1.1 COORDINATION OF VAS PROGRAMME

There are 3 levels of management line functions in operation within the EC:

- Provincial level
- Health sub-district level
- Facility level

Semi-structured in-depth interviews were conducted with relevant managers within each of these levels. The results of these interviews are summarised below.

Provincial level

The interviews were conducted with the provincial Nutrition Directorate programme manager for VAS, the deputy director for MWCH, and the UWC coordinators. In summary, originally the VAS programme was situated within the Nutrition Directorate because this unit has budget line items dedicated to this programme.

UWC had been working closely with the management of this directorate in the planning of the VAS programme elements like the ordering of capsules and the training of health workers. Unfortunately, due to problems in another programme that the Directorate was running, senior management in the Department of Health de-seconded its acting manager in December 2001. The lack of leadership and the ensuing confusion about the scope of responsibility of the Directorate threatened the future of the vitamin A supplementation programme.

An urgent meeting was therefore sought with the Chief Director of Primary Health Care, to advocate for the importance of the vitamin A supplementation programme and the need for it to have a secure institutional base within the Department. A briefing document was prepared and presented. One of the outcomes of this meeting was that the Maternal, Child and Women's Health (MCWH) Directorate would now host the programme within the EPI programme. Expenditure for VAS would still be against the Nutrition budget line allocation.

District Level

This was determined by semi-structured in-depth interviews with a district manager, a Community Liaison Officer and an MCWH programme manager at district level. The summary of these interviews was that the drivers of the programme at a district level were the CLOs. Their duties pertaining to the VAS programme included:

- Training health workers at facilities within their geographical boundaries on theoretical elements of VAS (why Vitamin A is important; what clinical symptoms of vitamin A deficiency are; what are vitamin A-rich foods) as well as on the correct administration of capsules

- Advocating vitamin A supplementation to mothers awaiting treatment at the PHC facility

PHC Facility Level

The above interviews as well as interviews with a facility manager determined that at a PHC facility level the sister-in-charge coordinated VAS activities. The duties of such a sister-in-charge included:

- Ordering vitamin A capsule supplies
- Administering VAS to identified target groups
- Collating data on the number of capsules given during a campaign

4.1.2 STATUS OF VITAMIN A SUPPLEMENTATION ACTIVITIES

The ECDOH held a quarterly Nutrition Directorate workshop on the 25 October 2001. The opportunity was utilised by the researcher to determine the status of VAS activities within the EC at that stage.

Results: Workshop 25 October 2001

District health officials were requested to report on 3 issues pertaining to the launch of the Vitamin A project in July 2001:

- What has been done within each district
- What the achievements have been to date
- What challenges were being experienced

These are expanded upon below.

(1) What has been done within each district

The researcher's report following this workshop is attached as Appendix 3. In summary, the activities focussed on:

- Training of health workers
- Awareness raising amongst the community
- Administration of vitamin A to target groups during the campaign

A number of innovative techniques were employed in each of these areas. For example:

- "Letters were distributed to churches and schools" informing them about the importance of vitamin A and the upcoming campaign
- Whilst mothers were attending clinics for other health services, staff held interactive talks with these mothers "on vitamin A-rich foodstuffs and why their children needed vitamin A supplements"
- A "fast-line specially for mothers who brought their children just for VAS (was made)"

(2) What the achievements have been to date

There were a number of achievements, too, during this time. For example:

- Some managers had recorded the number of capsules given out to the target groups, and compared this with the total population in their area for that target group and reported a 90% vitamin A coverage during the campaign
- Food gardens in communities and schools/preschools are growing vitamin A-rich foods
- Engagement of chiefs in rural areas increased participation of these communities

(3) What challenges were experienced

There were four main areas where challenges were experienced:

- "Logistics"
- Effectiveness of Programmes

- Monitoring and Evaluation
- Media

Most of the challenges experienced were logistical ones. Of relevance to the development of the MIS was the feedback on drug supply management, training materials, rolling out of the programme, the engagement of facility level staff and the perceptions of the managers as to the effectiveness of the VAS programme to date:

(i) Logistics

- **Drugs**
  - There was "not enough stock during the campaign"
  - The "ordering system (was) not user-friendly"
  - "Storage protocol (was) not clear"

- **Rolling Out**
  - How does one ensure rolling out of the programme – information and practices "to all communities- not only those with access to health facilities"
- **Training Materials on INP & Vitamin A**
  - Not every facility received materials with information on issues like drug toxicity before the campaign and some health workers therefore felt inadequately prepared for client queries
- **Staff**
  - Need ongoing training and more staff to be engaged in the programme
  - Advocacy did not guarantee participation by all staff

(ii) Effectiveness of Programmes

Although it was an achievement to have engaged the community and staff in advocacy on vitamin A supplementation, it was felt that there is a still an ignorance or lack of acceptance of the value of supplementation by both staff

and the community. This change in attitude and practice is a prerequisite not only for the vitamin A programme, but also has relevance to the broader INP.

- The challenge is therefore to translate the advocacy and education into practice.

(iii) Monitoring & Evaluation

Linked to the challenge of ensuring effectiveness of advocacy and education, was the challenge of monitoring and evaluation. Managers were unable to quantify the achievements gained nor the challenges encountered in the programme. There were no tools available to assist the CLOs and MCWH managers to monitor the programme implementation and no system of evaluation of the performance of the programme in relation to set targets. Even these "set target" were not clear to all health workers.

(iv) Media

There were conflicting messages in the media regarding supplementation, generally. An example quoted was the advocating of artificial milk supplements instead of the promotion of breastfeeding. As for vitamin A, there had been no mass media releases aside from local radio announcements of the vitamin A supplementation campaign launch in July 2001. Some posters were technically inaccurate in that it showed babies receiving injections when in fact they should receive drops from an opened capsule orally.

- The challenge was to reach the target audience with appropriate nutritional messages. Like the promotion of vitamin A–rich foods to breastfeeding mothers and children
- Another challenge would be to incorporate cultural factors into these messages. Like promoting basic foodstuffs that are a part of the culture of most people in the EC and the depiction of the appropriate caregivers in the media releases.

There was overwhelming agreement that there had been great successes achieved during the campaign of July/August 2002 and that the momentum of the initiatives taken needed to be maintained across the province.

4.1.3 OPERATIONAL SYSTEMS - VEHICLES OF SERVICE DELIVERY

The researcher investigated the four operational systems through a combination of semi-structured in-depth interviews and observation of the systems in operation:

- Drug supply management
- Training of PHC workers
- Social Mobilisation
- Information systems

(1) Drug Supply Management

Open-ended questions were asked around three areas of drug supply management:

- Coordination of the service
- Procurement & Distribution
- Supporting Information Systems

Coordination of the Service

The provincial pharmaceutical management coordinates the service through communication with depot managers of the 2 depots in the province. This communication occurs with the PE depot by email and/or fax. The Umtata depot received the installation of an email system last year but is still waiting to be connected. It does have a telephone/fax system in place.

Immediate stock status appears to be available to the provincial managers via telephone only; there is no computer system that allows the centre to access this information independently.

Procurement & Distribution

Both depots have a system whereby facilities are expected to order in predetermined cycles.

- In Umtata, 62 facilities are allocated to one of six groups and their orders are then processed at the depot every six weeks.
- In PE, orders from more than 600 demanders are processed in one week cycles for regional hospitals or 2- or 5-week cycles for the smaller facilities geographically further from the depot.

(i) PE Depot

- Facilities place orders with the depot on the routine requisition form
- The depot then issues the vitamin A capsules on the computer if in stock and bills the facility concerned
- If out of stock, the depot then places an order with the supplier, Pharmcare, who delivers this stock usually within 2 weeks; the stock is then issued to the facility
- Distribution to facilities is with DOH trucks for routine services and by courier for emergency deliveries
- Average lead time between facilities placing an order and actually receiving the stock when this stock is available at the depot is approximately 2 weeks

(ii) Umtata Depot

- Facilities place orders for VAC with the depot on the routine requisition form in 6 weekly cycles
- At present, the orders go via the depot manager who bills the Nutrition Directorate
- Sometimes, if he is not available, the orders go via the routine system and the facility is billed
- If VAC is in stock, the depot issues the stock on the computer system

- Because of staff shortages, it can take up to 3 weeks for the processing of a requisition from registering the order to issuing it on the computer
- The capsules are then distributed by one of 2 systems:
  (a) There are 2 trucks available but only one driver whose ill-health precludes him from undertaking further than 50km trips
  (b) The railway system is utilized to take stock to all facilities lying outside of this 50km radius
- Utilising the DOH trucks results in a lead time of 2 weeks between issuing the drugs on the computer and the facilities receiving the stock

- The railway system takes longer than this because:
  - Stock is not collected immediately after it has been issued on the computer
  - Thereafter the route to the facility is not always a direct one. For example, stock needed by a facility in Butterworth first goes via East London and then back to Butterworth

Supporting Information Systems

Two computer systems appear to be in operation – a basic system that monitors stock orders at the depot; and a central system that allows the central pharmaceutical manager to tap into stock orders and issues. Current stock information does not appear to be on this latter system.

(2) Training of PHC Workers

During the interviews conducted with relevant personnel, three areas in PHC training were researched:

- Coordination of PHC Training
- Content of VAS Training To Date
- Recording of Quantity and Quality of Training

Coordination of PHC Training

An interview was conducted with the provincial PHC trainer to determine how training is cascaded down to PHC health workers in the EC. The system in operation in the EC is illustrated in the table below.

TABLE 2: COORDINATION OF PHC TRAINING IN THE EASTERN CAPE

LEVEL OF PHC SERVICES	MANAGER	ROLE
Provincial	Provincial Training Coordinator for PHC	• Coordinates provincial programmes • Manages District Training coordinators
District	Training Coordinator	• Identities training needs • Ensures appropriate training • Provides logistical support
Facility	Sister-In-Charge	• Receives in-service training from training coordinators/MCWH manager • Relays information /in-service training of facility staff

Content of VAS Training

This information was gathered through a combination of semi-structured in-depth interviews with the trainers, observation by the researcher during one of these training sessions, and a review of the training materials utilised.

There were 2 training sessions held for CLO's and some MCWH managers:

- In the 2 weeks running up to the July 2001 campaign
- In January 2002

July 2001 Training

UWC and the ECDOH conducted training with nutrition and MCWH programme managers in the 2 weeks prior to the launch of the campaign in July 2001. The focus was on the baseline theoretical knowledge required; identifying the target group; and

administering the VAS correctly. Although CLOs were required to keep a tally of the total number of vitamin A capsules distributed during the campaign, there was no spreadsheet to record these figures in a systematic way across the province.

January 2002 Training

Helen Keller International (HKI) in conjunction with the national DOH held a 2-day training session on the 28 and 29 January 2002 with MCWH programme managers and community liaison officers, as it was expected that these delegates would become the master trainers in their sub-districts.

This training had gone ahead before the planning for rolling out had been thoroughly thought through, but the feeling within the EC DOH was that some vitamin A programme work had already occurred in 2001. Some "momentum (needed) to be maintained".

At the end of the workshop delegates were requested to forward their plans for rolling out the training received within their sub-districts to the EC DOH by 1 February by 2002.

Recording of Quantity and Quality of Training

The only records kept of quantity of training completed in each of these rounds of training, were the attendance registers. However, these were not reviewed in order to quantify the number of district managers that received vitamin A supplementation training.

A review of these registers revealed that the trainee information was not recorded in a consistent way. A new district demarcation system is in place. While some trainees record their district according to these new boundaries, others do not. The result is that one cannot beak this down to assess whether all 24health districts have been represented at any of the training sessions.

At a district level, managers were unable to provide objective evidence of the quantity of health workers trained. Training attendance registers were available but had never been scrutinised. No follow-ups were done after either of the training sessions to assess the quality of these two sessions.

(3) Social Mobilisation

Interviews were conducted with provincial and district level CLO's to determine the system utilised to mobilise communities within the EC.

There appears to be a well-oiled mechanism that local CLO's utilise to relay information from the provincial level to the communities within their geographical boundaries:

- CLO's are attached to a district office, and have facilities allocated to them
- CLO's have direct interaction with their communities not only through these facilities but also through women's church groups, local government forums and traditional structures
- The activities of CLO's from July 2001 until the October 2001 workshop have been expanded upon above.

The real challenges experienced are within the eastern part of the province, where health services do not have access to certain pockets of the community. The sheer remote location of a community limits access by health service providers to these communities.

(4) Supporting Information Systems

Semi-structured in-depth interviews were conducted with the provincial and district information officers, and a sister-in-charge at a PHC facility.

The following information systems were identified as operating in the EC and of relevance to the VAS programme:

- District Health Information System (DHIS), a minimum dataset that records PHC information
- MEDSAS, a pharmaceutical information system that monitors drug supplies at the 2 provincial depots

At the time of the interviews conducted in November 2001, the DHIS did not include any data fields for VAS.

MEDSAS has been commented on above. It tracks vitamin A capsule orders and supplies at the depots. There were no unique specification numbers for vitamin A 100 000iu and 200 000iu on the system. It shared an order number with vitamin E supplements.
The system was not real time, and so any provincial query on current stock of vitamin A capsules had to be confirmed telephonically with the depot managers.

As can be seen from above, the two information systems in the forms at the time of the interviews were not adequately supporting the VAS programme. However, a review of the system in operation together with the provincial level information officer and the senior manager at Equity (a supporting NGO in the EC), allowed the researcher to conclude that the DHIS had the potential to measure vitamin A coverage at a district and sub-district level. Managers can then manually compare their coverage data with their set targets.

4.2 DISCUSSION OF THE SITUATIONAL ANALYSIS AND USE OF SITUATIONAL ANAYLSIS IN PLANNING

This section will review the findings of the situational analysis. The researcher will then explain the actions that were taken as a direct result of the situational analysis presented above. It will then emphasise that:

- The development of the MIS will occur within the appropriate management systems of PHC in the Eastern Cape
- The MIS will build on the existing information systems.

There is also an overview of the components of developing the MIS:

(a) Plans for adaptation of the DHIS

(b) Participatory Approach to MIS Development

(c) Steps to be undertaken when developing the MIS

4.2.1 FINDINGS OF SITUATIONAL ANALYSIS

Coordination of VAS

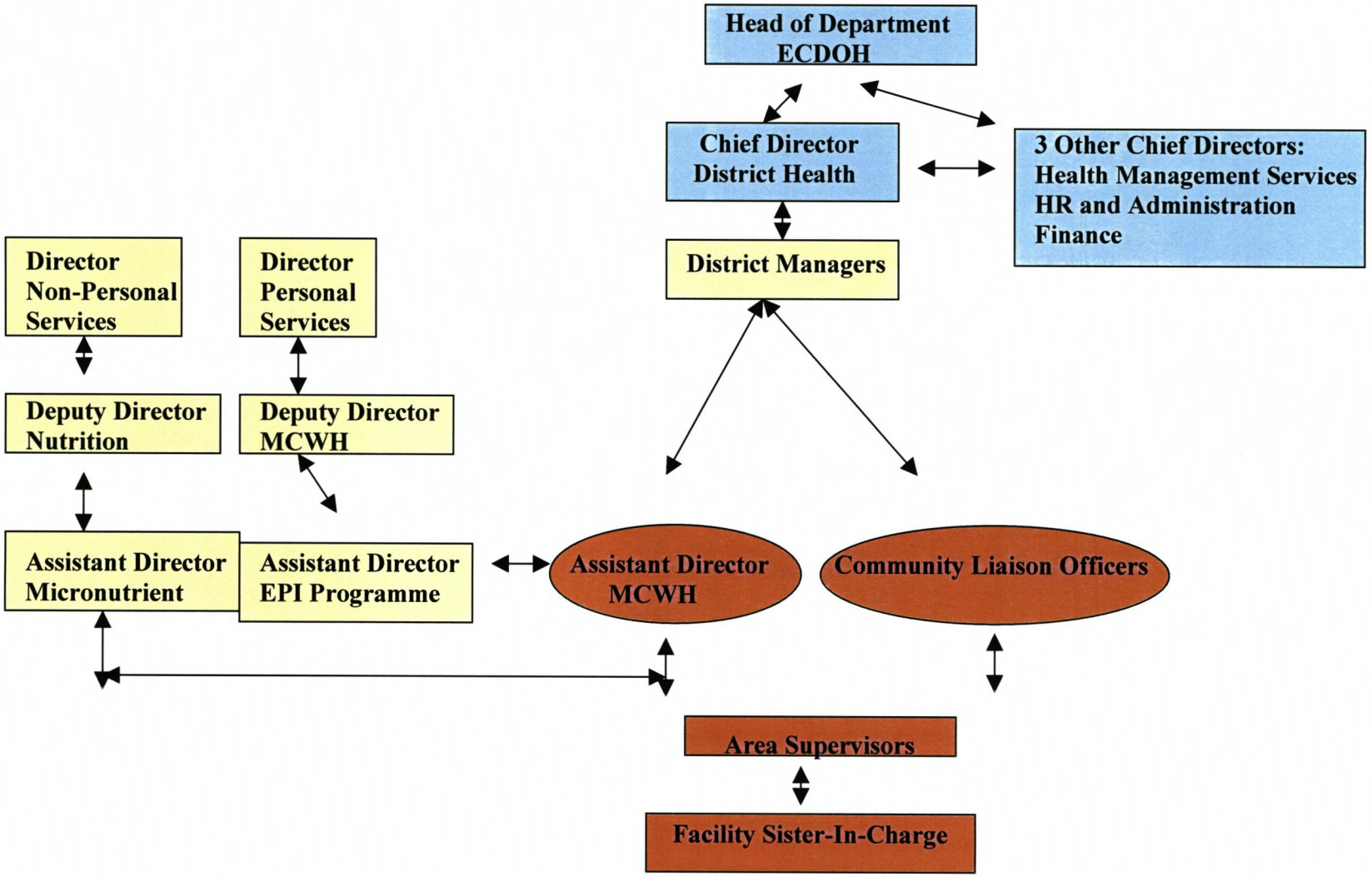
Diagram 1 below illustrates the management line functions at the end of the situational analysis period. The ECDOH was led by the Head of Department who had 4 Chief Directors supporting him. At provincial level, the vitamin A supplementation programme now fell under the Assistant Director for the EPI programme, who reported to the Deputy Director for MWCH, who in turn reported to the Chief Director for District Health Services.

The District Managers were the district level equivalents of the Chief Director of District Health Services. Each directorate that occurred at the provincial level was replicated at the district level. So, for example, there was a deputy director for MCWH at provincial level with an EPI coordinator. At a district level, there was also an assistant director for MCWH.

As can be seen in Diagram 1, interactions for programme implementation involved a complex web of horizontal interactions at provincial and district levels, respectively, and vertical interactions between provincial and district level equivalents.

For example ensuring that drugs were available at a facility would have involved vertical interactions between the facility sister-in-charge, the drug coordinator for the district, the depot manager and the provincial pharmaceutical deputy director. (The latter is not illustrated in diagram 1, but would fall under Health Management Services.) The horizontal interactions required in this example, would have to occur between the MCWH manager and drug coordinator at district level and the

DIAGRAM 1. LINE OF MANAGEMENT FOR VITAMIN A SUPPLEMENTATION PROGRAMME JANUARY 2002



equivalent at a provincial level, and then in a vertical way between these two horizontal groupings!

The complexity of interactions required between the different levels of management contributed to the shortcomings of the vitamin A supplementation programme, like vitamin A capsules not being available at facilities.

Results of October 2001 Workshop

Although the delegates at the workshop were quite explicit as described above, these statements remain qualitative. For example, nobody was able to quantify exactly how many health workers was still not "(accepting) the value of VAS". And there was no objective causal link to this lack of acceptance. It cannot be said for example that this lack of acceptance may be because only x% of all PHC staff received training on VAS. Or that, despite y % of staff having been trained, there still existed a lack of acceptance of VAS. Either scenario would allow a programme manager to plan and take appropriate action. A MIS that keeps track of these types of variables would greatly assist a manager at this level.

Drug Supply Management

There appears to be different procurement and distribution practises at the 2 depots. Facilities that order vitamin A supplies from the Umtata depot appear to be disadvantaged. The ordering cycles are far apart – six weeks as opposed to 2-5 week cycles at the PE depot. Missing an ordering date for any reason means that a facility can be without VAS for at least 15 weeks. In PE a courier service is utilised to distribute stock in the event of an emergency stock-out, but in Umtata there is no such back-up system.

The pharmaceutical information system does not allow the provincial managers to assess stock status in real-time. This compromises quality control. At a district level there is no mechanism that allows a manager to keep track of lead time between

orders placed and receipt of goods within her district. Again, quality control by management is compromised.

PHC Training

A well-organised system exists for disseminating information and cascading training down to facility level. However, there are gaps in the management of this system. For example, although attendance registers are kept, there is no consistent format utilised nor is the data completed in a consistent way. The end-result is an inaccurate account of the number of district managers trained. A provincial manager cannot therefore follow-up districts that did not receive training, because she cannot identify them from the attendance register.

At a district level, monitoring appears to be easier, since registers are kept of the trainees attending in-service training. However, these are never scrutinised to identify facilities that may not have received training and are therefore not providing the service. The relevance of this to the development of the MIS, is that it indicates the lack of utilisation of basic information for planning and decision-making. The culture of information-based management will have to be nurtured for the MIS to be successful.

In terms of quality assessment of training delivered, there has been no objective assessment done following any training session for VAS neither at provincial nor district levels. The relevance here to the development of the MIS is that in future, quality of training received may be an important variable to track since it can be linked to (un)successful implementation of the VAS programme.

In terms of the content of the training for VAS up until the end of the situational analysis, the focus had been on the theoretical aspects of VAS with an emphasis on the skill of administering the capsule to young children. There had been no focus on:

- How VAS was to be integrated into the routine functions of health workers at facility level

- How managers at district level have to plan and monitor the implementation of VAS in a district
- How managers will assess the performance of her district in relation to set targets

Training packages needed to be developed for the health workers as well as managers that were relevant to their respective roles as bulleted above. A MIS would greatly assist a manager to both monitor the implementation of district plans as well as assess the performance of VAS in relation to set targets.

Supporting Information Systems

The situational analysis revealed that there were no systems that assisted programme managers at district level to take appropriate action with regard to the inputs and processes of the supplementation programme, in order to improve coverage. For example if vitamin A coverage were low in a district, there was no documented, systematic way of identifying the potential cause of this poor output. There was no system that traced the flow from inputs via processes to achieved outputs and outcomes. Any barriers to this flow could easily be identified.

4.2.2 SITUATIONAL ANALYSIS →GAP ANALYSIS→WORK PLAN

The situational analysis provided the researcher with:

- A consistent understanding of the operational systems – management, drug supply, training, information- that the VAS programme would have to be integrated with
- A review of the VAS activities to date and the extent of its integration into PHC services

The researcher conducted a gap analysis of the reality on the ground and what was required to run an effective, fully integrated VAS programme. From this gap analysis, the researcher conceptualised a strategic framework. This framework was reviewed by the provincial INP steering committee on 20 February 2002. A revised work plan was then developed with an adjusted time frame for the project.

4.2.3 MIS DEVELOPED WITHIN APPROPRIATE MANAGEMENT SYSTEM

The development of a MIS occurred within the context of integrating VAS into an appropriate management system. A key focus area of the researcher was the development of a management system that would:

- Improve the coordination of the different elements of the programme (drugs, training, data recording and reporting, social mobilisation) that are needed for the programme to run smoothly and efficiently
- Integrate VAS into the routine PHC services being delivered at PHC facilities so that there is no additional burden placed on PHC staff and prevent VAS from becoming a vertical programme
- Improve the district level programme managers' control over the inputs, processes and outputs of the programme in her district in order to achieve the operational target of 80% coverage.

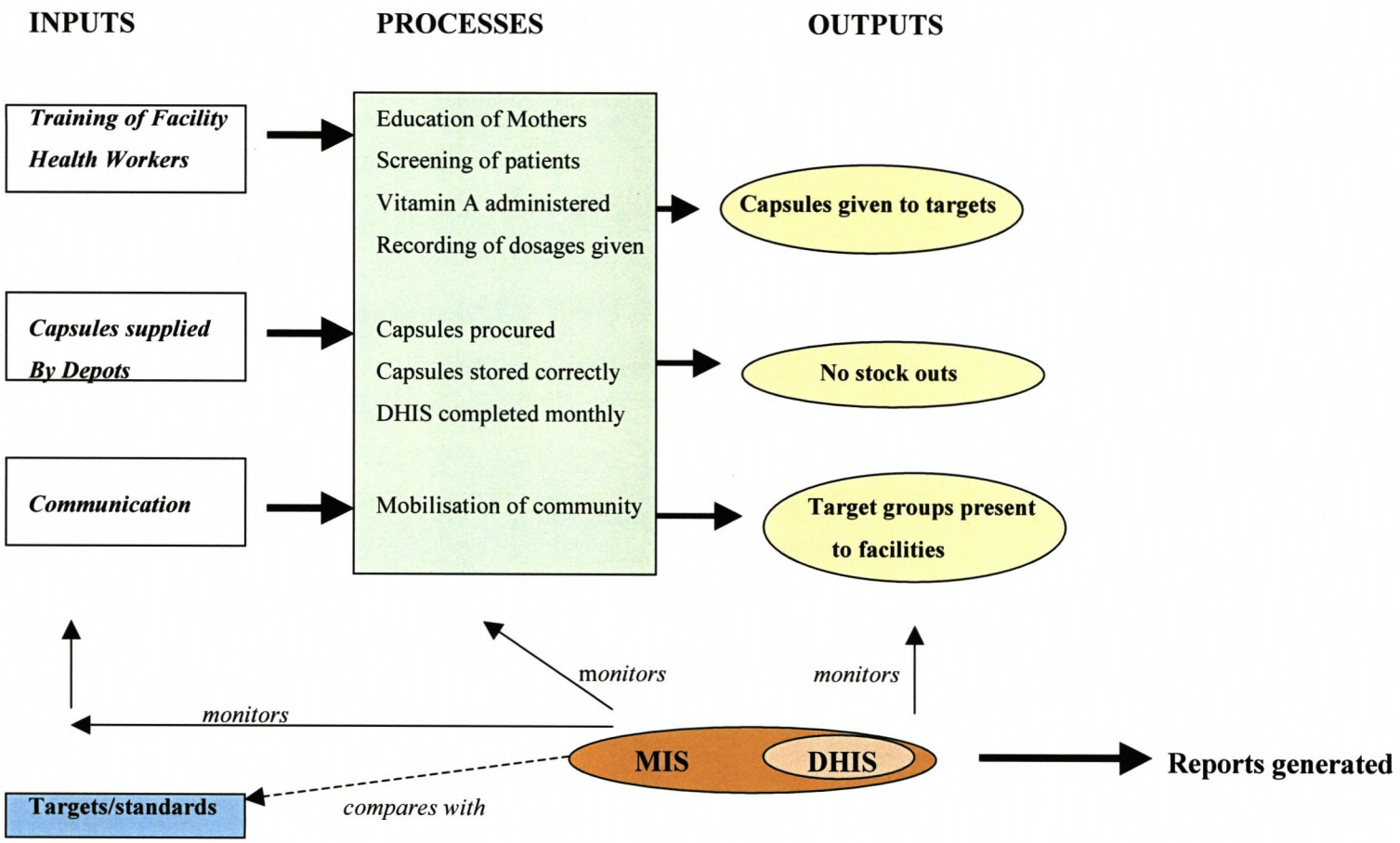
A management information system (MIS) would become the tool utilised by these managers to support the above objectives of the management system.

4.2.4 MIS TO INCORPORATE EXISTING INFORMATION SYSTEMS

As described above, the DHIS is a computerized information system that collects the minimum data required by a district. Whilst it has the potential to monitor outputs such as coverage of vitamin A supplementation, it was not able to assist district program managers directly with appropriate plans of action should the coverage in that district be low. There was therefore a need to develop a management information system (MIS) that would incorporate the potential of the DHIS but also assist programme managers with problem-identification and problem-solving. Such a system would have to be developed together with the program managers whose responsibility it is to perform this function.

Diagram 2 below, was conceptualized by the researcher and presented to the INP steering committee. It illustrates how the MIS could incorporate the DHIS.

DIAGRAM 2: PROPOSED MIS, INCORPORATING THE DHIS



From this diagram, it can be seen that the MIS will not only monitor the outputs of the VAS programme, but will also monitor the inputs and processes that are essential for the programme to be successful.

4.2.5 DEVELOPMENT OF MIS

Once there was acceptance of the proposal illustrated in diagram 2 above, through this senior management forum, the development of the MIS could take place. There were 3 strategic areas that supported the development of the MIS:

- Adaptation of the DHIS
- Mechanism promoting the participatory approach
- Operational steps required to develop the MIS

Adaptation of the DHIS

The MIS would incorporate the DHIS, but the DHIS would need to be adapted. Plans for the adaptation of the DHIS included:

- Including a minimum of 4 relevant vitamin A data fields on the DHIS software for the monthly data input form in February 2002
- Thereafter, circulating a memo instructing all district information officers to activate these fields when preparing the district monthly data input forms
- Monitoring implementation of this instruction, by reviewing submitted monthly statistics

Mechanism Promoting Participatory Approach

The approach for the development of the MIS agreed upon at senior management level was a participatory one. But there was also consensus that the MIS had to be developed in tandem with the development of the management and operational systems that VAS would be integrated with.

To promote a participatory approach, a mechanism had to be defined that would ensure that relevant stakeholders would be involved in the MIS and VAS programme

development. Workshops were considered the best approach to draw together the provincial and district level managers of the programme for this purpose.

Two workshops were therefore planned for June and July 2002. The complete objectives for these two workshops can be found in the report summarizing the two workshops (see Appendix 4). For the purposes of this mini-thesis the objectives relevant to the development of the MIS is listed below:

June Workshop Objectives

- To clarify the roles and responsibilities of the MCWH programme managers (who now were responsible for the management of the programme) and the CLO's (who previously drove the programme at facility level)
- To outline an approach to mobilise district level work teams that would plan and coordinate the activities required for a successful programme
- To develop tracking tools that will monitor the inputs, processes and outputs of the programme

July Workshop Objectives

- To perform a peer review of the action plans for each component of the vitamin A supplementation programme as developed by each health sub-district
- To gain a shared understanding of monitoring and evaluation, linking this to the VAS target groups
- To link the DHIS and trace table monitoring tools to the concepts of inputs, processes, outputs and outcomes
- To utilize the DHIS and trace tables to monitor the implementation of the programme and evaluate the performance of the programme at a district

Operational Steps Required to Develop MIS

Once the adaptations to the DHIS had occurred and the workshops set up logistically, the next step was to operationalise the strategic intent. The researcher therefore conceptualised the following operational framework within which the MIS would be developed:

- Identified the essential operational elements required to ensure VAS reached the target groups
- Defined the steps to be followed to ensure that these elements were functioning optimally

(1) Identified Essential Operational Elements

The researcher identified four areas at provincial and district levels as central to achieving the target of 80% coverage:

- PHC health workers must demonstrate the skills required to administer the correct vitamin A dose to the correct targets
- Vitamin A capsules should be available at all times at every PHC facility
- Communities must be mobilised so that target groups can be reached
- Data must be recorded accurately and reported regularly

These four areas became the operational targets or objectives that had to be achieved for the VAS programme to be effective.

(2) Steps To Be Taken to Ensure Operational Objectives Achieved

The MIS would be the tool that monitored the implementation of the operational objectives and so would have to incorporate these operational objectives. The researcher therefore conceptualized the systematic steps that needed to be taken in order to ensure that the operational objectives listed above, would be achieved:

- Programme managers would trace the critical pathway required to be able to provide vitamin A supplementation to the target groups at district level
- Barriers to the implementation of the program would be identified and

- Tracking tools would be developed to collect data on the inputs and processes related to these barriers
- Agreement would be reached on who collected what data, with what frequency, and reported this data via which forum and mechanism

This approach not only entrenched the participatory approach, but also ensured that managers only track the inputs and processes where they are currently experiencing challenges. In this way, it was anticipated that:

- The collection of unnecessary data would be reduced
- The collection and utilisation of relevant data would be promoted

The implications are, though, that because each district would record data that is relevant to their area, the possibility exists that the data may be unique and not systematically recorded across the province. There was therefore agreement at provincial level on the minimum data elements that would be required from all district managers. These elements were consistent with the national data requirements:

- Number of 200 000iu capsules given to post-partum mothers
- Number of 100 000iu capsules given to children 6-11 months
- Number of 200 000iu capsules given to children 12-23months
- Stock-outs experienced

In summary what was anticipated was that:

- The critical pathways across the province would be variations of the same theme because the systems are consistent across the province
- But that the barriers would differ from area to area
- Managers would focus on identifying the barriers specific to their area

This is appropriate because in addition to improving the manager's control over the inputs, processes and outputs of the VAS programme, this MIS would also assist these managers with problem- identification and problem-solving.

The MIS would:

- Enable the program managers to generate reports that not only identify poor outcomes, but also traces the potential cause of this poor outcome
- Increase the capacity of program managers at district level to support and monitor the vitamin A program
- Inform problem-solving and decision-making

For example, should the DHIS indicate low coverage in health district X the programme manager would confirm that there are no stock outs experienced in this district, and use his/her MIS to check that training of at least one health worker has occurred at every facility and that health workers have been observed to be following the protocol correctly. It may therefore be that the target groups are not presenting at clinics and therefore need to be mobilized.

Summary of Situational Analysis

The researcher had a clear understanding of the management and operational systems that were required for both the VAS programme and MIS development. Consensus had been reached on the strategic framework that would govern both the programme and the MIS elements. The MIS framework has been illustrated in Diagram 2 on page 48. What will follow next is a presentation of the results of the workshops.

4.3 PHASE II: DEVELOPING THE MIS AS PART OF MANAGEMENT SYSTEM FOR VAS

The mini-thesis objectives (as listed and numbered in 3.2 above) achieved in this section:

4. To identify the critical pathway for ensuring that 80% of the target population is reached through the programme
5. To develop a management information system that will assist district level MCWH programme managers to effectively and efficiently implement the vitamin A supplementation programme
6. To design and test tools required for the management information system with programme managers, making adjustments where needed so that the system is practicable

The results of the situational analysis informed the preparation of training manuals and operational guidelines for implementation of the policy on VAS in the EC. The steps to be followed when operationalising the strategies outlined above, were developed through the workshops planned for June and July 2002. The outcome of these workshops are presented below.

4.3.1 OVERVIEW OF WORKSHOP ATTENDANCE

Attendance At Workshops

Targets of June Workshop

- MCWH coordinators for each health sub-district because the VAS programme is now located in the MCWH EPI division of EC District Health Services
- Community Liaison Officer for each sub-district because the VAS programme was formerly driven by the Nutrition division of EC District Health Services

Targets July Training

- MCWH coordinators for each health sub-district
- Members of the health district VAS Working Group:
  - Drug Coordinator
  - Information Officer
  - Community Liaison Officer
  - Training Coordinator
  - Health Promoter
  - Clinic Supervisors

Actual Attendance

Table 3 below compares the number of attendees by district and lists those absent from the respective sessions. It must be noted that 23 out of the 24 sub-districts were functioning as discrete units at the time that the workshops were conducted. Elundini health district of the Uku-Hlamba municipal district was non-functional as it didi not have a District Manager before the 18 July 2002 nor a MCWH coordinator for that area at the time of the workshops.

TABLE 3: COMPARING WORKSHOP ATTENDANCE BY DISTRICT

District Municipalities	Number of Trainees		Sub-Districts Absent	
	June	July	June	July
Alfred Nzo	3	14		
Amatole	10	36	*Mbashe*	
Cacadu	9	7		*Camdeboo*
Chris Hani	8	20	*Emalahleni*	*Ixuba Yethemba*
Nelson Mandela M	3	3		
OR Thambo	8	17		
Uku-Hlamba	4	19	*Elundini*	*Elundini*
TOTAL	**45**	**116**		

June Training

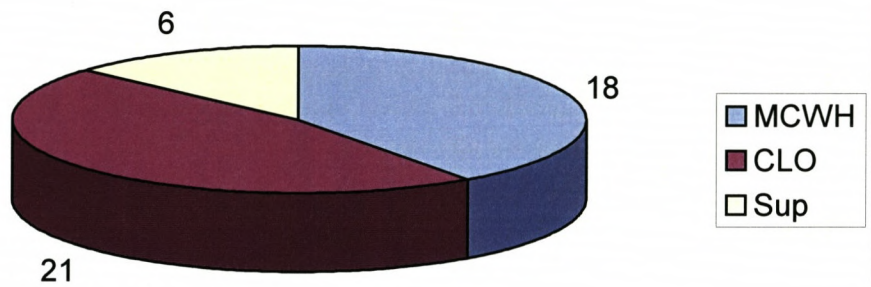
- **45 trainees** represented 21 out of the functioning 23 sub-districts
- Mbashe and Emalahleni had no representation

However, in July both of these groups attended and both had prepared master plans! Discussion with these MCWH Coordinators revealed that the operational guideline manual assisted them in the preparation of these plans

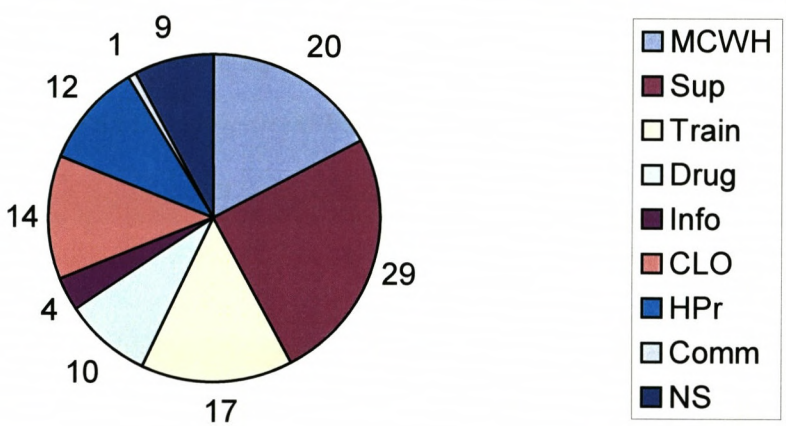
July Training

- **116 trainees** represented 21 out of the 23 functioning sub-districts
- This time, Camdeboo and Ixuba Yethemba were absent
- It is uncertain whether or not their master plans have been completed

GRAPH 1: Attendance June Training by Category of Health Worker (n=45)



GRAPH 2: Attendance July Training by Category of Health Worker (n=116)



MCWH = Child Health Coordinator Sup=Area/clinic supervisor

Train = Training Coordinator Drug = Drug Coordinator

Info = Information Officer CLO = Community Liaison Officer

HPr = Health Promoter Comm = Community member NS = Not specified

4.3.2 ACTUAL ACTIVITIES AT WORKSHOPS

A detailed summary report on actual activities at the two workshops has been written up. For the purposes of this mini-thesis, the researcher will focus on those aspects of relevance to the development of the MIS.

(1) June Workshops

As discussed above, there were four operational objectives (see (1) on page 51 above) relating to training, drug supply management, social mobilization and data collection and reporting. Having identified these four areas, the guidelines outlined in (2) on page 51, were followed at the June and July Workshops with the MWCH managers and CLO's and then with the rest of the district working group, respectively. This is detailed below.

Step 1: Critical Pathways

Data relevant to the VAS programme must be recorded and reported accurately and regularly. This data must reflect the four elements identified as essential to achieving the target of 80% coverage. With this in mind, critical pathways were developed with each of the above being the endpoints of the respective pathways. See Appendix 5 for an example of the critical pathways identified for drug supply management.

As can be seen in Appendix 5, the critical pathways are logarithms of the steps that are followed for ordering and receiving drug supply, for ensuring that health workers are trained and are recording and reporting data, and for mobilising the communities.

Step 2: Identifying Barriers

Delegates discussed barriers they encountered in these critical pathways. They shared best practises in overcoming these barriers. For example, several districts were not able to identify why certain facilities had not received vitamin A supplies as ordered within the usual time-frame. One district had developed a recording system that could be used to keep track of orders placed and received by the district office from the depot.

In terms of data capturing and reporting, there were several barriers to an efficient DHIS. Amongst these were:

- The DHIS monthly data input forms did not have the required vitamin A fields
- Data was not validated by the different levels of management
- Data was collected from the facilities by an area supervisor. This date of collecting the data did not always correspond to when the data was actually required by the district office.
- Consequently, data was submitted to the provincial information officer long after the agreed upon submission dates

There was consensus that these barriers would have to be monitored in order to address them systematically.

Step 3: Developing Tracking tools

Trainees worked in pairs. Each pair was given a blank trace table that was relevant to their district. An example of a blank trace table given to participants at this workshop can be found in Appendix 6.1. Table 4 below illustrates the concept of the trace table.

TABLE 4: THE TRACE TABLE CONCEPT

TARGET/ FACILITY	ACTIVITIES IDENTIFIED IN THE CRITICAL PATHWAY SELECTED FOR MONITORING→			
Empilweni				
Gompo				
Gugili				
Goqwana				

The first column simply lists every single facility that falls under the health district according to the new municipal boundaries i.e. it lists every single facility that that manager is responsible for ensuring programmes occur at.

The pairs then agreed on what data should be collected against each facility under their care, for drug supply management, training of PHC workers, social mobilisation and data recording and reporting. Each data element was listed as a column on the trace table. These data elements usually related to the critical pathway, and included those elements that were identified as potential barriers to this pathway. Examples of trace tables for drug supply, training, social mobilisation and data recording and reporting as developed by the MCWH managers are included as Appendix 6.2.

The researcher facilitated the first trace table for drug supply management. Thereafter, the trainees developed the trace tables one at a time for the other components of VAS. A pair volunteered to present their trace table. This acted as a departure point for discussion by the whole group. The emphasis was on the approach to developing a trace table because when these managers returned to their districts they would have to engage the drug coordinators, other CLO's, supervisors, health promoters and information officers in developing trace tables relevant to their district.

Step 4: Agreeing on Who? Collects What? When? ?How and Reporting to Whom?

Once the trace table format had been workshopped, the next step was to agree on who collected what data, with what frequency and what was the line of reporting for both the DHIS and the rest of the MIS.

The basic principles agreed upon for the DHIS across the province is illustrated in Table 5 below.

TABLE 5: DATA COLLECTION FOR THE DHIS

CRITERION	FACILITY LEVEL		SUB-DISTRICT LEVEL
Who Collects	PHC Worker	Sister-Charge of Facility	Area Supervisor
What is Collected	• Number of capsules give to each target group	• Monthly number of capsules given to each target group • Monthly stock outs of 200 000iu capsules	Collates monthly statistics as recorded on DHIS monthly data input form
Data Collection Tool	Road To Health Card Follow-up Card Daily Tick Register	DHIS monthly data input form	DHIS monthly data input form
Frequency of Data Collection	Daily	Once monthly	Once monthly
Reports this data to Whom?	Sister-in-charge once monthly	To area supervisor before the 7th of each month	To district information officer by the 7th of each month

TABLE 5: DATA COLLECTION FOR THE DHIS continued.

CRITERION	DISTRICT LEVEL	PROVINCIAL LEVEL	
Who Collects Data	District information officer	Provincial information officer	
What is Collected	• Monthly data input forms with 4 data elements as agreed upon from each facility in that district	• Monthly data input forms with 4 data elements as agreed upon from each facility in the province by district	
Data Collection Tool	Computerised DHIS monthly data input form	Computerised DHIS monthly data input form	
Frequency of Data Collection	The 7th of each month	Once monthly	
Reports this data to Whom?	Provincial information officer via email	To MCWH manager and Head of ECDOH	

For the rest of the MIS, two types of trace tables (concept described on page 48) would be utilised to collect relevant data for each component of the VAS programme (training, drug supply management, social mobilisation and data capturing and recording):

- Master Trace Tables
- Area Trace Tables

Master Trace Tables

Each district would have a master trace table for each of the components listed above:

- Every single facility within a district is listed on these master trace tables
- These master trace tables would be completed and monitored by the MCWH programme managers
- Data for completion of these master trace tables would be collected by the area supervisors on their area trace tables

Area Trace Tables

- Each area supervisor would maintain trace tables for drug supply, training, social mobilisation and data recording and reporting for each of the facilities under his/her care. The area supervisors are responsible for collecting the data relevant to the trace table.
- The drug coordinator, training coordinator, CLO's and information officer in a district will assist the area supervisor with the completion of the required data elements as agreed upon when developing the trace table.

4.3.3 SUMMARY & DISCUSSION OF JUNE WORKSHOP

The scene had been set for the development of the MIS for VAS. This was occurring within the context of the management system that would sustain efforts towards achieving the target of 80% coverage.

Each district MCWH programme manager would have to develop master operational plans to ensure that vitamin A capsules are available, that training of all PHC workers occurs and is followed-up, that VAS-related data is recorded and reported, and that communities are mobilised. In this process, each district working group would develop trace tables for each component of the VAS programme. These trace tables would become the tools that could be used to track or monitor the implementation of their operational plans, thus ensuring that the critical pathways are followed.

Reflection on the workshop conducted in June 2002 by the researcher and the rest of the facilitating team raised the following concerns:

- Using information to improve management both at district and provincial level is not fully established as part of the culture of management in the EC as yet
- Trainees were expected to return to their districts, mobilise a team for VAS, develop master plans to ensure the four components of the programme are achieved, and develop trace tables to monitor implementation of each component of the programme. Beside the inherent capacity of the manager to perform these tasks, was the question of time available to the MCWH manager to do all of this.

Dates for follow-up were agreed upon with these managers for July 2002. These next contact sessions would provide the researcher with the opportunity to:

- Follow-up on tasks agreed upon in June
- Identify managers who required additional support

4.4 PHASE III: FOLLOW-UP, CONSOLIDATION & EMBEDDING THE MIS IN THE MANAGEMENT OF VAS

This section will describe the outcome of the workshops held in July 2002. These workshops had four objectives (as listed in Appendix XX), and the presentation of the results will be by these workshop objectives. In addition, the researcher will take the reader through:

- The practical exercises designed by the researcher for the participants to practise the utilisation of the MIS
- The feedback from participants and a
- Brief discussion of the July round of workshops

4.4.1 RESULTS OF JULY WORKSHOPS

As mentioned before, the results/outcomes of this workshop will be presented by the objectives of the workshop.

Objective 1: To perform a peer review of the action plans for each component of the vitamin A supplementation programme as developed by each health sub-district

The trainees were divided by sub-district, with at least 2 sub-districts in each group. This promoted the exchange of ideas between sub-districts. Where possible:

- Drug coordinators and staff managing drug supply reviewed the capsule supply plans
- Training coordinators and staff involved in VAS training reviewed the training plans
- Information Officers and staff involved with collection and reporting of data reviewed the data recording and reporting plans and
- CLO's, Health Promotion Officers and staff involved in community mobilization reviewed the social mobilization plans

Ten out of the 21 health sub-districts that attended came to the training with drafted master plans of action. The session therefore became an opportunity to both review these plans as well as provide the remaining sub-districts with an opportunity to draft their outstanding plans. By the end of this round of training all 21 sub-districts had completed their master plans for VAS. A sample for each component of the VAS master plan is attached for your perusal (see Appendix 7).

The trainees raised a number of additional issues, relevant to the VAS programme. These issues are recorded in Appendix 5 (referred to above) and included clarifications such as the drivers of the components of the programme, mathematical calculations of coverage, drug re-ordering principles.

Objective 2: To gain a shared understanding of monitoring and evaluation, linking this to the VAS target groups

Trainees were asked to define monitoring and evaluation. Trainees were then asked to provide examples of how monitoring and evaluation can be useful to managers. Examples cited included:

"They allow us as managers to evaluate our performance. Are we performing in comparison to what is expected of us?"

"It is not only for identifying problem areas, but is also for identifying best practises"

Objective 3: To link the DHIS and trace table monitoring tools to the concepts of inputs, processes, outputs and outcomes

Trainees who were familiar with the concept of inputs, processes, outputs and outcomes were invited to cite an example in everyday living to illustrate the concept to the other trainees. One of the examples is described below:

Baking a Cake:

Inputs – the things you put into the bowl in order to make the cake

- *Flour, oil, eggs, water, butter, etc*

Processes – the things you do with the ingredients

- *Mix (stir/ beat/ whisk); place in the oven to bake*

Output- the thing you get after the processes

- *A baked cake*

Outcome- the effect of the output

- *Enjoyment when eating the cake*

This concept was then applied by the trainees themselves, to the VAS programme and recorded on a flipchart. For example, training of health workers would be an input; the identification of the target groups, the administration of VAS would be a process, and the number of target groups that received VAS would be an output.
The DHIS and the trace tables respective roles in monitoring input, processes and outputs as illustrated in Diagram 2 (see page 48), were identified during this process.

Objective 4: To utilize the DHIS and trace tables to monitor the implementation of the programme and evaluate the performance of the programme at a district level

Utilising the DHIS

By July 2002, some facilities and districts had conformed to the memo circulated by the ECDOH in February 2002. There was some collection and reporting of VAS-related data. These districts provided examples of how the data from the DHIS can be analysed. This was shared with other health districts using actual data from the Kouga district (see Appendix 8).

However, *everyone* claimed that they were dispensing VAS. The researcher then invited participants to guess the current coverage in their district. These guestimates ranged from 60% - 85%. The researcher then confronted them with the DHIS analysis

of actual data submitted in April 2002. The vitamin A coverage in all districts across the province was very low. From this it was obvious that:

- If data is not being recorded nor reported, it will appear that the nothing is being done for VAS in that district
- If facilities continued to give out the total number of capsules distributed in the month of April 2002 to mothers and children, the vitamin A supplementation coverage across the province at the end of 1 year would be ***less than 10%!***

There was consensus that the April coverage was very poor. Participants were asked for the reasons for this low coverage. It was agreed that the DHIS could not identify why the coverage rates were poor. It was emphasised by the researcher that for this there is a need to monitor the inputs and processes of the programme. This led on to the discussion on how trace tables could assist to monitor inputs and processes.

How Trace Tables Can Be Used

The researcher explained the concept of the trace table, referring to the flipchart example of inputs, processes and outputs. This explanation was then consolidated with a practical exercise that used DHIS monthly input forms, and trace tables with live data in them (see Appendix 9).

The key concept was that the first aim of the EC VAS programme is to reach at least 80% of the target groups i.e. a coverage rate of 80% for eligible mothers and children under 2 years. It was highlighted that the current immunization rate on average is about 80%. It follows therefore that if districts match the immunizations given every month, there should be vitamin A coverage close to the immunization coverage!

Trainees were divided into health district teams, and each team was given an exercise to complete. The approach to utilising the MIS was a two-step approach:

Step 1: Compare VAS data with the relevant immunisation data

The DHIS as mentioned previously has been in operation since 1997. Immunisation data was already being captured on this system as of that time. This was well known to the participants. Table 6 illustrates how the vitamin A capsules given to the different target groups should be compared with the relevant immunisation.

TABLE 6: COMPARING VITAMIN A CAPSULES WITH RELEVANT IMMUNISATION

Number of Vitamin A Capsules Given	Immunisation to Be Compared With
New Mothers	DTP-HIB1
6-11month infants	Measles 1
12-23 month children	Measles 2

- The total number of capsules given to new mothers in a sub-district should match/be close to the DTP-HIB1 vaccinations given within a district
- At a hospital, the number of capsules given to new mothers should match the number of BCG vaccinations given
- The total number of capsules given to 6-11 month infants should match the number of measles 1 vaccinations
- The total number of vitamin A capsules given to 12-23 month old children should be at LEAST 2-3 times the number of measles 2 vaccinations given. Table 7 illustrates why this is the case:

TABLE 7: WHY VAC TO 12-23 MONTH CHILD IS 2-3 TIMES THAT OF MEASLES 2

Age of Child	12months	18mths	24mths	Total
No. of measles given		*		1
No of VAC a child given	*	*	*	2-3

(* indicates when the child should receive measles or vitamin A)

Step 2: Where coverage was not matched, refer to the master trace tables to identify potential causes for the low coverage

If the number of vitamin A capsules given is much less than the corresponding immunization given, then we need to ask why?

(a) Have there been any stock-outs experienced?

(b) Could it be training quantity or quality?

(c) Are the targets not attending the facilities?

(d) Is the data accurate

For step 2, a review was needed of the relevant trace tables to check on the activities conducted within the health district. The researcher had prepared dummy trace tables for the purposes of this exercise (as seen in Appendix 9).

Once each team had completed their answers, they then reported back to the larger forum. These answers were the departure points for discussion by the larger forum. Model answers were noted for inclusion in an operational manual for these district level managers.

In order to consolidate the training of the July workshop, a way forward was agreed upon (see Appendix 10). The monitoring of implementation and monthly evaluation of performance of VAS by the district MCWH programme manager was institutionalised into his/her management function through the development of a standardised format for the quarterly report that would be submitted to the provincial MCWH manager (see Appendix 11). This quarterly report included the utilisation of information from the DHIS and trace tables to motivate actions planned and decisions taken with regards to the VAS programme.

Feedback from Participants on the July Workshops

There was a very positive feedback about the content of the workshop, the manner in which it was conducted and its relevance to the programme managers. The negative feedback was about the unsuitability of some of the venues because this workshop was conducted in the very heart of winter. It was snowing in the north-east of the

province, whilst windstorms besieged other areas. Some venues did not have central heating, in others the lighting failed.

Discussion of the July Workshops

The concern, again from the perspective of the researcher and the team of facilitators, was on the capacity of ALL programme managers to implement the MIS. This was because:

- The culture of information-based management is relatively underdeveloped in the province as a whole both at district and provincial levels (there some pockets of excellence, though)
- Over 50% of facilities were not recording nor reporting data in good time (there was a lag time of 2-3months for these facilities and some had not submitted data at all for the 6 months of 2002)
- There is competition for the programme managers' time to institutionalise the MIS because there is a lack of coordination between the different provincial managers and the district manager. Managers complain of being called out to workshops by different provincial managers, leaving little time in a monthly cycle to focus on their required duties.
- Some district managers/coordinators may find the completion of tables tedious. In an attempt to counter this, the researcher deliberately left some gaps in the trace tables. The obvious irritation of the trainees provided the ideal opportunity to highlight the importance of good quality data and the fastidiousness required in maintaining the trace tables.

From the examples cited above, the concern is not so much about the system and its usefulness, but more about the capacity to institutionalise it. A follow-up meeting was therefore scheduled with the managers. This contact session would occur as a part of the quarterly MCWH cluster meeting organised by the ECDOH and would again provide the researcher the opportunity to:

- Follow-up an unsupervised test period of the MIS in the PHC field
- Identify managers requiring additional support

4.5 PHASE IV: IMPLEMENTATION OF THE MIS

The mini-thesis objective (as listed and numbered in 3.2 above) achieved in this section:

(7) To implement the vitamin A supplementation MIS

Implementation was planned as a partially-supervised phase. This means that only districts requiring assistance with implementation would be targeted during this phase. Following the July round of workshops, the plan was for the researcher to monitor the vitamin A-related information available on the DHIS. In this way, those districts that were not demonstrating an increase in VAS to target groups would be identified and would receive direct assistance from the researcher and the provincial EPI manager with both VAS programme and MIS implementation.

The main reason for this as mentioned in the methodology, is that the EC is a vast province with a large number of health districts. With the pressure of time and funding constraints, this approach was deemed the most cost-effective and practical. However, at the July workshops, there was a request from district managers and the training coordinators for assistance with the training of trainers in each of their districts. And so, in the months of August and September additional training workshops were held again in multiple venues across the province.

In support of these workshops, the researcher was involved in designing three practical manuals for each level of health workers in the VAS system: the PHC facility health worker, the area supervisor and the district manager. These manuals (see Appendix 12) focused on the practical skills uniquely required at these different levels. The format was a systematic step-wise listing of the essential steps that needed to be taken, where applicable, a test-yourself section followed by model answers.

For example, a PHC health worker at a PHC facility on a daily basis needs to take 5 simple steps to ensure that a targeted child received VAS:

(a) Determine the age of the child

(b) Decide on the appropriate dose of VAS required

(c) Record the dose given on the Road To Health Card and the daily tick register

(d) Prepare for the return date of the child

(e) At the end of the day add up running totals of VAS given

The material required for each of the above steps were also tabulated, as well as the actual actions that needed to be taken to execute the above steps. This was another attempt by the researcher to reduce the gap between understanding and practice by actually providing the actions required for each step. The practical exercises again, tries to consolidate understanding in a practical way. The model answers is an attempt to ensure that any health worker out in a rural facility can read the manual, can independantly take him/herself through the necessary skills required without the researcher or the provincial manager having to be there.

Those districts that had participated in the first workshops held at the beginning of July completed their trainer of trainers (TOT) training at the beginning of August. The implementation of the VAS programme and MIS therefore rolled out in these districts from the middle of August. About one-third of the districts only completed their TOT training towards the middle of August, and so there was a slight delay in implementation here.

The researcher monitored the DHIS in August to try and identify areas that required assistance, but the DHIS data reporting to the province at that time was not complete-data for June and July was still outstanding for more than half of the districts. This was not the best means of monitoring implementation and so a back-up was developed. This back-up involved telephoning each district programme manager to determine:

- Progress being made with implementation
- Identify any support required
- Reinforce the use of the DHIS and
- Emphasise the cluster meeting where the information on VAS would have to be presented in the quarterly report

All districts indicated that they were making progress, although sometimes taking longer than planned for in their master plans. Where managers had not made any progress at all (3 in total), the district managers were working with adjacent district MCWH managers to get the programme on track.

The researcher then focused on the assessment of the MIS planned to be undertaken at the MCWH quarterly cluster meeting. Originally scheduled for September 2002, it was postponed to 13 November 2002. By the 1 October 2002, the researcher was no longer employed as the VAS project manager. There was therefore no contact between the project manager and the VAS programme and MIS during the implementation phase until the cluster meeting in November 2002.

4.6 PHASE V: REVIEW AND ASSESSMENT

The mini-thesis objective (listed and numbered in 3.2 above) achieved in this section is:

(8) To evaluate the development and implementation of the vitamin A supplementation MIS of the Eastern Cape

This was done in two ways:

- A review of the DHIS monthly statistics
- Semi-structured in-depth interviews with MCWH programme managers, also reviewing their quarterly reports

The monthly statistics provided an objective way of assessing the progress being made with the VAS programme and the MIS whilst the interviews provided more insight into the implementation of the VAS programme and the MIS. The comments given by the managers during the interviews were triangulated with the quarterly reports they presented to the provincial manager. Each of the two ways is expanded upon below.

Review of the DHIS Monthly Statistics

A review of the statistics available from the DHIS monthly report at the end of August 2002 demonstrated a general increase of VAS given out to all target groups (see Appendix 13). Table 9 below lists the total number of vitamin A capsules given to the

respective target groups from January until end the end of July 2002 as well as the total number of measles vaccinations given to children at 18 months.

TABLE 9: TOTAL NUMBER OF VITAMIN A CAPSULES GIVEN TO TARGET GROUPS JANUARY – JULY 2002

TARGET GROUP	MONTHS OF THE YEAR							
	J	F	M	A	M	J	J	Total
Vitamin A supplement to new mother	0	0	447	96	974	283	1,066	2,935
Vitamin A supplement to 6-11 months infant	119	93	1,490	1,933	3,176	3,304	5,148	15,468
Vitamin A supplement to 12-23 months child	76	107	2,308	2,546	3,529	3,450	4,668	16,794
Measles 2nd dose at 18 months	6,166	5,977	5,761	7,631	8,141	5,108	4,956	44,021

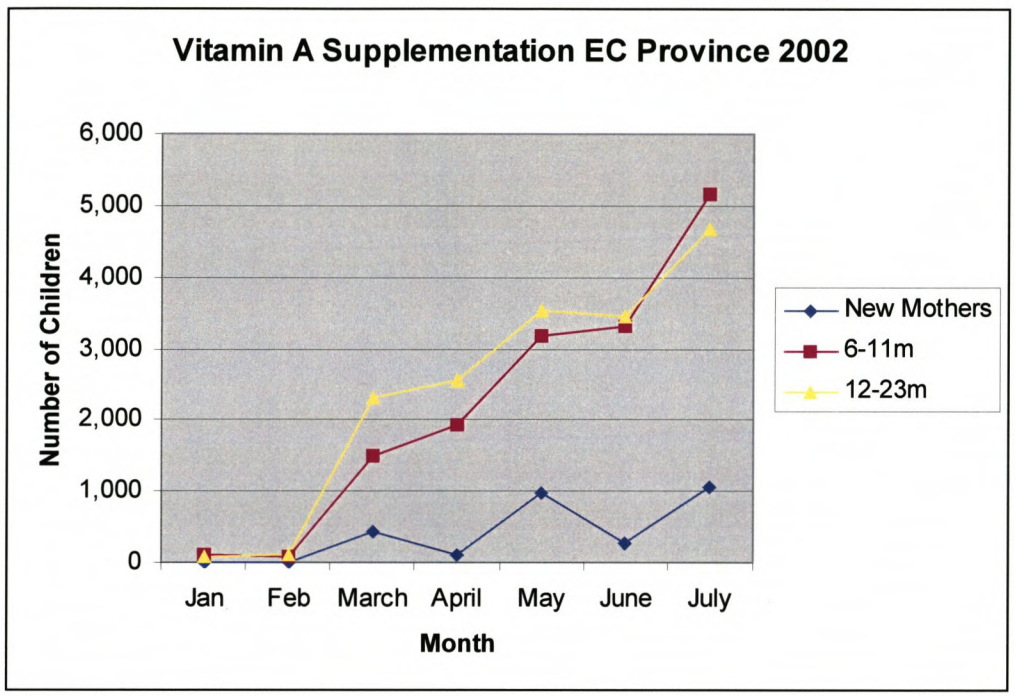
Because of the lag in collation of the data at provincial level, only data until the end of July could be analysed in any meaningful way at that stage. Measles at 18 months is included to give the reader a sense of the missed opportunities that existed- VAS to 12-23 month old children should be 2-3 times that of the number of measles vaccinations given at age 18 months (see table 7, page 68). From table 9 it can be seen that measles to 18month old children is more than 2.5 times that of VAS to 12-23 moths. This pattern needs to be reversed. From appendix 13, it can be seen that there are some parts of the province that are already effecting a reversal of this pattern.

The data in table 9 is illustrated graphically in Graph 3 below. From this graph it is quite apparent that there is:

- A general increase in Vitamin A Supplementation in all 3 target groups in 2002
- That VAS to new mothers is lagging far behind
- The steepest increases follow training sessions conducted with programme managers and the immunization mop up campaign conducted during April aimed at catching up those children who were behind on their immunization schedules

GRAPH 3: TRENDS IN VITAMIN A SUPPLEMENTATION IN THE EC

JANUARY – JULY 2002



Assessment of the MIS Through Interviews

Semi-structured in-depth interviews were conducted with 3 MCWH programme managers at the provincial MCWH cluster meeting held on 13 November 2002. The researcher requested these interviews with these managers, because they had indicated that they were utilising the MIS for planning and decision-making for the VAS programme and were willing to be interviewed.

An example of the "step 1: Comparison of vitamin A data with relevant immunisation" by the area supervisor of the Lusikisiki sub-district is included for perusal as Appendix 14.

The master training trace table of the Umzimvubu LSA is included as Appendix 15.

All three supervisors found the MIS a useful tool. As one manager stated:

> "It is very good because it can pinpoint exactly where the problem is. I could see which clinics had not received training and why they didn't get the training on the planned date. We could then make sure this clinic did get the necessary training"
> "I use the trace tables for my other programmes, too...like the IMCI programme"

On how reliable the data was all 3 asserted that area supervisors reported information accurately. One manager said:

> "When I have a chance, I go to that clinic and I can see for myself that what is reported, does happen"

On the security of the system, all 3 reported that they kept written copies of trace tables given to them by the area supervisors in a file for VAS. This was in addition to them compiling a master trace table.

The main difficulty experienced was the time factor. As one manager put it:

> " I just don't get the time to update this as regularly as I'd like. I do update it, but sometimes 5 to 6 weeks go by before I get a chance to follow-up with the supervisors or the training coordinators"

4.7 PARTICPATORY NATURE OF ACTION RESEARCH METHODOLOGY

Action research methodology was the approach motivated (see 3.3.1 on page 17) above as best suited to the development of the MIS for the VAS programme in the EC. This section will focus on three elements that reflect the participatory nature of action research methodology utilised in the study:

- The active participation of the health workers in the study
- The cycles of reflection within the study
- The involvement of the researcher in all aspects of the study

4.7.1 Active Participation of Health Workers

This entire research involved consultation with "top" and "bottom" levels of management in the EC district health system. This was done through a combination of one-on-one interviews and group workshops. This was cross-checked where possible with observation in the actual field of practice.

The interviews were semi-structured and thereby promoted a natural flow of discussion that yielded elements the researcher had not thought of including in the semi-structured questions.

The group workshops were held in at least 5 geographically convenient venues across the province, as opposed to the usual practice of at a single central venue. This promoted the attendance of 21 out of the 23 functioning districts in both the June and July sessions.

At the sessions, participants worked in health districts or pairs. The former encouraged the cross flow of ideas, whilst the latter promoted an unthreatening environment to explore, practice and share knowledge. Pairs naturally assisted other pairs once they had completed their tasks.

The researcher and the team of facilitators made a conscious effort to promote an environment of active participation. There was a two-way flow of ideas, with participants citing examples or providing definitions according to their understanding of concepts. At the end of each session, the team would meet and review the workshop held that day. Constructive comments were shared about how to:

- Improve the interaction with participants
- Actively engage the participants
- Improve the flow of the programme in terms of content, timing and social breaks

4.7.2 Cycles of Reflection

In addition to participation being a key tenet of action research, the other key elements are that of reflection and the involvement of the researcher. There were distinct cycles of reflection on the progress of the mini-thesis and the broader VAS programme. The researcher reviewed progress in regular reports and these reports became the basis of discussion by a high level provincial steering committee. This steering committee consisted of representatives from the:

- ECDOH (MCWH, Nutrition, Pharmaceuticals, Information directorates)
- NGO's (Equity Project)
- Academic Institutions (University of the Transkei; and University of the Western Cape)

The cycles of review by this committee in relation to the programme has previously been referred to as Appendix 2. The discussions led to consensus on the strategic direction required and formed the basis of operational plans for the MIS developed by the researcher. These operational plans were then reviewed with the ECDOH.

4.7.3 Involvement of Researcher

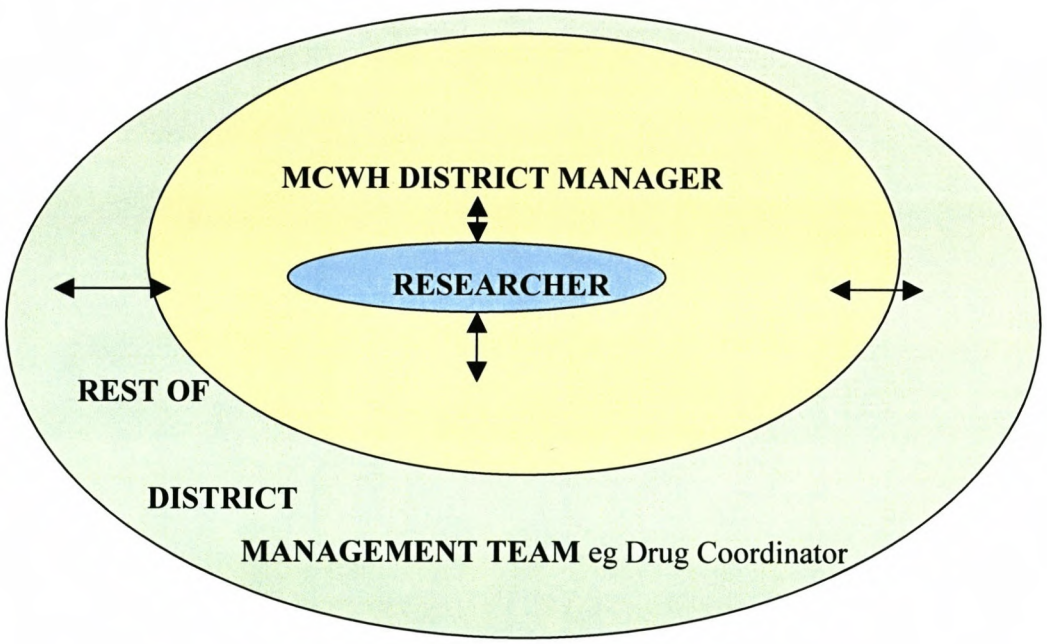
The researcher as mentioned earlier was also the project manager assisting the ECDOH to improve the VAS programme in the province. This did mean that the researcher was involved in all elements of the MIS and VAS programme development- strategic

development as well as the operational planning to support this strategic intent. This was advantageous because:

- The MIS could be developed alongside the management system that would utilise and drive the maintenance of the MIS
- There was a continuous flow between the strategic intent and the actual operational plans

There was a conscious attempt, however, not to undermine the MCWH district managers. Diagram 3 below illustrates the researcher's interaction with the different spheres of district management that can best be described as a ripple effect of interaction:

DIAGRAM 3: RIPPLE EFFECT OF INTERACTION BEWTEEN RESEARCHER AND DISTRICT MANAGEMENT



The researcher met with the MCWH managers who were taking over the management of the VAS programme for the first time in June 2002. These managers agreed to a reasonable time frame wherein they would mobilize their respective district teams or working groups. The researcher then gave these managers the opportunity to interact with the rest of the support staff that would make up the district working group.

Thereafter in July 20002 the researcher met with the district working groups headed by the MCWH programme managers. At this meeting the researcher then interacted with the whole group.

The cascade continued when the working groups went back to their districts and interacted with the area supervisors who in turn interacted with the respective sisters-in-charge of the PHC facilities.These sisters-in-charge relayed information to the remaining staff at the PHC facilities

4.8 SUMMARY OF RESULTS

In summary, this mini-thesis is an iterative process of developing a management information system to assist district level MCWH programme managers with their planning and decision-making in the VAS programme.

An outline of the five phases that the study underwent has been presented and moves from the situational analysis begun in October 2001, through the conceptualization of the MIS and the participatory approach to further develop this concept, to the implementation (August 2002) and assessment of the implementation (November 2002).

The researcher also demonstrated how the MIS was developed alongside and within the development of the managament and operational systems required for the VAS programme. This was an attempt to embed the MIS in the management of the VAS programme and thus promote its successful implementation.

The MIS was built onto the DHIS that has been operating in the EC since 1997. It introduces several new concepts like trace tables, and new approaches to VAS programme development, like the linking of VAS to immunization management and the systematic operational approach to PHC programme development. There were also spin-offs for other PHC programmes as well as the functioning of the DHIS. These will be unpacked during the general discussion that follows.

CHAPTER 5

GENERAL DISCUSSION &

KEY LESSONS TO BE LEARNT

5. GENERAL DISCUSSION & KEY LESSONSTO BE LEARNT

This general discussion will:

- Review the background to this study to reorient the reader
- Highlight the key findings of the situational analysis to understand their significance
- Emphasise the factors incorporated into the study to highlight the unique features pivotal to this study
- List the spin-offs being experienced in other PHC programmes and the DHIS
- Comment on whether this MIS is a success or failure.

During this general discussion, the researcher will be referring to the literature review where applicable. This discussion will be followed by the limitations of the study and will lead into the recommendations of the researcher in the next chapters.

5.1 BACKGROUND

Extensive research has underscored the potential of vitamin A supplementation to:

- Improve morbidity of certain childhood illnesses, as well as
- Improve mortality rates amongst children under the age of five years

Because of the high mortality rates experienced across the EC province especially in children under the age of two, the ECDOH adopted a policy on VAS. When the provincial manager attempted to quantify progress made with VAS from August 2000 until October 2001, it was found that:

(a) There was no accurate and reliable information routinely available to indicate the coverage of vitamin A and

(b) Although anecdotal evidence listed inadequate drug supplies and too few health workers trained as major barriers hampering the program delivery, programme managers at district level were unable to take appropriate action to improve suspected low coverage of vitamin A

This mini-thesis evolved out of the need to ensure that a significant proportion of the target population (at least 80%) receives prophylactic vitamin A according to the provincial protocol in order to achieve the potential decrease in morbidity and mortality rates in the EC. Strategically, the supplementation programme is delivered through routine child health services and the responsibility of ensuring that the target population is reached therefore rests with the district MCWH programme managers.

The researcher's intent was to design, develop, implement and evaluate a management information system (MIS) that would greatly assist these managers to not only measure the programme outcome(s), but also improve their control over the key inputs and processes that drive these outcomes. This enhanced control would improve these managers' planning and decision-making capabilities.

5.2 FINDINGS OF SITUATIONAL ANALYSIS

The findings of the situational analysis were consistent with experiences of other countries that have opted for the routine approach as opposed to the campaign approach to VAS- the management and operational systems supporting the programme were underdeveloped. Along any one operational pathway were a number of obstacles that hampered programme delivery. However, managers were not monitoring these operational pathways- there was no tool at their disposal to systematically identify problem areas. Without an objective assessment of the inputs, processes and outputs of the VAS programme, planning and decision-making to improve suspected low coverage in their health districts was based on intuition rather than information.

This is unpacked below, by management and operational system (drug supply, training, data recording and reporting, social mobilisation).

5.2.1 THE MANAGEMENT SYSTEM FOR PHC IN THE EC

A complicating factor in this study was that the location of the VAS programme was moved from the Nutrition Directorate to the MWCH unit. The implications of such a move included:

- That a completely new cadre of health workers was now responsible for driving the programme
- These MCWH managers indicated that they were concerned about being overburdened with what was deemed to be a nutrition-related programme- an additional responsibility was not welcome
- The focus shifted from addressing a micronutrient deficiency to integrating this programme with relevant routine child health programmes like the EPI.

The shift to MCWH fortunately occurred at the beginning of the project during the planning stages of the study and so could be incorporated into the planning and development of the study. Other enabling factors include that the Nutrition and MCWH units have always had a mutually supporting working relationship and so areas of potential conflict were kept to a minimum. This good relationship was in evidence from the provincial level all the way down to a district level. At provincial and district levels, senior managers of the two units would hold regular meetings to reach consensus on and coordinate programme activities.

The shift in focus to that of integrating the VAS programme with EPI was the turning point in the project and a major contributor to the successes of the study for two reasons related to:

- The line management of MCWH programmes
- The DHIS

These are explained below.

Line Management of MCWH

The line management of the MCWH unit in the EC is well developed and fully functional. This meant that the VAS programme had managers at the different levels that

could drive the implementation and be held accountable for monitoring and evaluating the programme. The relevance to the MIS was that:

- A clear target group was identified for participation in the design and development of the MIS
- The MIS could be embedded within a management system that already existed and was functional

Even at a national level, the VAS programme is located within the Nutrition programme. Unintentionally, VAS is perceived to be a micronutrient programme rather than a programme that can save the lives of children. It is the researcher's opinion that this programme therefore does not receive the importance it deserves. There was a "silo" approach rather than an integrated, and coordinated effort to combat vitamin A deficiency from the national level all the way down to the district level. This study reversed the silo approach and focussed on integrating VAS with the practise of routine child health services, in particular the EPI programme.

The DHIS

The other MCWH programmes like immunisation were already being monitored by the DHIS. The implications for the development of the MIS was that managers' use of information for planning and decision-making occurred along a continuum of:

- Knew about the DHIS but never received information from the information officers
- Received MCWH-related information that quantified programme outcomes and identified problem areas
- Used this information to plan interventions to improve poor outcomes

Irrespective of the extent of a manager's utilisation of the DHIS along this continuum, these managers had a baseline understanding of the DHIS because the DHIS had been developed and implemented since 1996. A lack of acceptance of information systems was not encountered.

It must be said, though, that the researcher did not emphasise that managers were going to be developing a MIS, but rather that:

- They were going to ensure that the four operational objectives were to be achieved within their district
- This would be done in three easy steps
- Trace tables were tools that would assist them to trace and identify barriers in operational pathways

This approach kept away from potentially intimidating high-tech jargon, and instead remained focussed on what managers were interested in:

- What were their roles and responsibilities for the VAS programme?
- How were they supposed to perform these roles and responsibilities?
- What could assist them in their duties?

So, in summary the line management structures and system in the MCWH directorate was well developed. This contributed to the MIS becoming embedded within this management system. The researcher focussed on training district MCWH managers to manage the implementation of the VAS programme –something that had never been done in PHC in the EC before. The end result was that the development of the MIS occurred within the context of managing the operational systems that were essential for the successful outcome of the programme. A trace table was therefore seen to be a tool that could assist the managers identify and quantify progress or barriers to progress. This could therefore increase their control and better direct planning and decision-making by these managers.

5.2.2 DRUG SUPPLY MANAGEMENT

The Eastern Cape has two pharmaceutical depots in the province. The Port Elisabeth depot served the previous South African areas, whilst the Umtata depot served the Apartheid driven Bantustans of the Transkei.

The different efficiencies of the two depot systems are a direct result of the political system of Apartheid. In the Port Elisabeth depot drainage area for example, courier services are an accepted backup system that delivers drugs to a facility that has run out of stock within 24-48 hours of receipt of the emergency order. In the Transkei, no such system is utilized.

Plagued by a host of other challenges, the future of the Umtata depot is still to be decided upon. At the time of the situational analysis, facilities particularly beyond the depot's 50km radius were without essential items including vitamin A capsules. The challenge was to ensure that every facility had vitamin A capsules available on their shelves. This had to occur within the context of an inefficient supply management system.

Although managers were quick to blame the depots for lack of stock, interviews conducted with depot managers placed the blame firmly at the doors of the facility and district manager! The researcher exploited this situation by highlighting that unless district managers were keeping track of the flow of orders within their district to the depot, they had to accept responsibility for drugs not being available in facilities within their districts.

The strategy for the improvement of the drug supply management system was developed at a provincial level and district level. At provincial level, the depot challenges were being systematically addressed and ranged from appropriate stock numbers to developing standardized protocol and having this passed by the provincial Pharmaceutical Therapeutics Committee.

At a district level, the strategy included:

- The use of trace tables to identify potential barriers
- Synchronizing the placement of orders within the correct ordering cycle per facility

Having the vitamin A capsules in place at facilities was an essential prerequisite for delivery of the VAS programme by trained facility health workers. A delay in the availability of capsules could have had the following implications:

- Physically health workers could not put their training into practise
- This could demoralize potentially motivated staff
- Not rendering a service to communities mobilised by health promoters and CLO's would contribute to the communities' loss of faith in health services and a decreased responsiveness to future mobilization exercises

For these reasons a back-up system was put into place giving the routine drug supply system time to get sorted out. During the training rounds in June and July vitamin A capsule starter packs were given directly to district managers who signed for stock received. All 23 of the functioning districts received these supplies; where district managers were absent, neighbouring managers attending the training distributed the stock to the absent managers. District MCWH managers in turn, distributed the stock to each PHC facility within their drainage areas. Records were kept of facilities that received their starter packs of vitamin A capsules.

Another contingency plan was to train health workers to halve the 200 000iu capsule when the 100 000iu capsule was out of stock. This proved to be useful when there was a delay in the supply of 100 000iu capsule by the national office to the provincial office.

The relevance of the above to the development of the MIS includes:

- The MIS was seen by the district MCWH managers as a tool to refute blame laid at their door for the lack of vitamin A capsules in their facilities
- The back-up plan meant that the momentum gained during the June and July training would not be lost because of the lack of supplies (as happened during the campaign of August 2001). VAS could take place.
- Health workers felt motivated to put their training into practise, and communities did not lose faith since their children received the service as promised when they

arrived at facilities. These successes contributed to the development of the MIS because motivated staff participate more freely in programmes.

5.2.3 TRAINING OF HEALTH WORKERS

A well-organised system exists for disseminating information and cascading training down to facility level. However, there are gaps in the management of this system. For example, although attendance registers are kept, there is no consistent format utilised nor is the data completed in a consistent way. The end-result is an inaccurate account of the number of district managers trained. A provincial manager cannot therefore follow-up districts that did not receive training, because she cannot identify them from the attendance register.

At a district level, monitoring appears to be easier, since registers are kept of the trainees attending in-service training. However, these are never scrutinised to identify facilities that may not have received training and are therefore not providing the service. The relevance of this to the development of the MIS, is that it indicates the lack of utilisation of basic information for planning and decision-making. The culture of information-based management will have to be nurtured for the MIS to be successful.

In terms of quality assessment of training delivered, there has been no objective assessment done following any training session for VAS neither at provincial nor district levels. The relevance here to the development of the MIS is that in future, quality of training received may be an important variable to track since it can be linked to (un)successful implementation of the VAS programme.

In terms of the content of the training for VAS up until the time of the situational analysis, the focus had been on the theoretical aspects of VAS with an emphasis on the skill of administering the capsule to young children.

There had been no focus on:

- How VAS was to be integrated into the routine functions of health workers at facility level
- How managers at district level were to plan and monitor the implementation of VAS in their districts
- How managers were to assess the performance of the programme in relation to set targets

Training packages needed to be developed for the health workers as well as managers that are relevant to their respective roles as bulleted above. The MIS is assisting programme managers to both monitor the implementation of district plans as well as assess the performance of VAS in relation to set targets.

5.2.4 SUPPORTING INFORMATION SYSTEMS

The situational analysis revealed that there were no systems that assisted programme managers at district level to take appropriate action with regard to the inputs and processes of the supplementation programme, in order to improve coverage. For example if vitamin A coverage was low in a district, there was no documented, systematic way of identifying the potential cause of this poor output. There was no system that traced the flow from inputs via processes to achieved outputs and outcomes. Any barriers to this flow could not easily be identified.

The one information system that the MIS could build on was the DHIS, the minimum dataset for PHC that had been in operation since 1996. The challenges that the researcher had to face with regards to the DHIS are listed below.

Collection of Data

→ Up until January 2002, vitamin A variables were not included in the DHIS

→ Some facilities did not collect the data and submit to the supervisors on time

→ Where data was submitted on time, the supervisors did not have always have transport to collect the data

Collation of Data

→ Where supervisors did collect the data on time, data was not validated before submission to the information officer- this resulted in delays when inaccuracies were detected because information had to be cascaded back down to the facility managers.

→ The end-result was a delay in the collation of the information at a district level and therefore a delay in submission at a provincial level

→ At the time of the situational analysis, over 50% of facilities had not submitted their data in the preceding 6 months to the provincial level

Utilisation of DHIS Information

The DHIS has an amazing capacity to assist managers with the monitoring of programme outcomes. However, not all managers were utilising this information for planning and decision-making. This was the case especially in the eastern half of the province, where health status indicators are the worst and programme indicators like immunization coverage is poorest. Some of the reasons identified during the course of the project in informal conversations, for this lack of utilisation of the DHIS information included:

- There was no information officer available at district level to collate information
- These information officers did not present the collated information into intelligible reports
- Managers often had no time to review work done on a regular basis because of competing duties
- Some managers even felt that they needed computer literacy training- they were willing to use the DHIS but did not feel comfortable with computers per se

5.3 FACTORS INCORPORATED INTO THE MIS DEVELOPMENT

There were a number of key innovations that contributed to the success of the development of the VAS programme and the MIS in the EC. These innovations are classified by the researcher as belonging to one of four areas:

- The Vitamin A Supplementation programme
- The Management Information System
- The Action Research approach
- The Context of the Eastern Cape

These are expanded upon below.

5.3.1 VITAMIN A SUPPLEMENTATION PROGRAMME

There were five key elements that were pivotal in the development of the VAS programme in the EC:

- Focus on children under age 2 years
- Integration into routine child health services
- Vitamin A delivered like an immunization programme
- Conceptualisation of four operational objectives
- All development was skills-based and relevant to a level of health worker
- Advocacy of VAS

Focus on Children Under 2 Years

There are three main reasons for the ECDOH's strategic decision to focus on children under the age of two years:

(a) Morbidity and Mortality Highest Amongst Under Two's

The South African Demographic and Health Survey[i] demonstrated that the highest mortality and morbidity rates were experienced in the first two years of life

(b) Smaller Target Group Improves Feasibility

As mentioned in the introduction of this mini-thesis, there are 760 000 children under the age of five years in the EC. But most of these children are located within the north-eastern part of the province, the former Apartheid Bantustan called the Transkei. This part of the province bears the legacy of Apartheid in that it not only has the worst health status indicators of the province (infant mortality rate of 98 per 100 000 compared with 30 per thousand in the former South African parts of the province) but also experiences the most challenges in health service delivery.

There are approximately 150 000 children under the age of two years and so a smaller target group increases the chances of the successful implementation of this programme. Once the systems for providing the VAS was operating effectively, it was considered relatively easy to increase the two year old target range to under five years.

(c) Food Diversification After Age Two

Most diets tend to diversify once children are weaned. According to the dietetic experts on the provincial INP steering committee, by the age of two years children are being fed a wide range of foodstuffs. This increases the chances of securing vitamin A through their diets and decreased the likelihood of vitamin A deficiency.

For these reasons, the ECDOH policy on VAS differed from the national policy in terms of the target age groups. There were some potential areas of confusion for health workers in the EC. Firstly, in January 2001, the national DOH and Helen Keller International had trained MCWH managers and CLO's on the national protocol of under 5 years olds. Posters from the national DOH also reflected the under 5 target groups. These factors were addressed up front with health workers during the June and July 2002 training rounds. The EC policy was emphasized, and the reasons outlined above were explained to these health workers.

From a moral perspective, no health worker was prevented from administering the correct dose of VAS to any child between the age 2 and 5 years of age. Rather, trainers emphasized that health workers had to exercise their clinical judgment and administer to children that they felt needed the prophylactic VAS dose.

Clarifying the policy was no easy task. It was a process of debate and scenario generation by the provincial INP steering committee to anticipate pitfalls or gaps in the strategic policy. But it was well worth the time taken because in terms of the MIS, once the ECDOH clarified its policy, the correct data elements could be set in the DHIS. Health workers could be trained to collect, collate and report on appropriate data.

Integration into Routine Child Health Services

The EC was not unique in adopting this approach. As discussed in the introduction of this mini-thesis most countries prefer the campaign approach because the routine approach has been found to be fraught with many operational challenges. This discussion does not want to repeat the reasons for the EC deciding on the routine approach, but rather wants to highlight how the researcher together with the ECDOH integrated the VAS into the routine delivery of child health services in PHC facilities in the province. This was done from the ECDOH strategic policy statements to actual training to materials and tools utilised.

For example, when one reviews the training manuals developed by the researcher for health workers at a PHC facility, the first step listed for VAS is not to administer the correct dose of VAS, but rather to take the Road To Health Card (RTHC) and determine the age of the child. The next step is to look at the combined immunisation and VAS schedule and determine the appropriate dose for that child. This immediately entrenches VAS within the integrated management of childhood illnesses (IMCI) approach, a nationally driven programme to manage children and their presentation in a holistic manner. And the schedule entrenches the VAS prophylactic programme within the immunization programme.

The data elements for the MIS are also embedded within both this IMCI and immunization programmes. For example, the RTHC records doses of VAS given to children and health workers. Checking the RTHC and recording doses in the daily tick register as well, are the tools of data collection for the MIS.

VAS Linked to Immunisation

Again, the link with EPI is not unique to the EC. Countries that have adopted the routine approach do so via the EPI programme. What is unique to the EC, however, is the mechanism of this linkage.

In the EC, when an eligible child presents to a health facility whether or not he/she receives VAS is not determine by whether or not that child last received the dose 6 months ago (national policy advocates 6 monthly intervals between prophylactic doses of VAS) but rather by the age of the child. The VAS policy says that a child must receive VAS at 6 months, 12 months, 18 months and age 24 months. Should a child present in between those times, then the health worker should give the outstanding dose closest to that child's age. For example, a child presenting at age 9 months for the first time would be given the 6month dose if the child missed that dose. The next visit would be ***at 12 months of age,*** and not 6 months thereafter as previously understood by health workers. The only proviso was that there had to be a minimum of 1month gap between prophylactic doses. This is exactly like the "catch-up" concept applied to immunizations.

This was an almost revolutionary concept. It was consciously decided upon because in the EC many children are lost to follow-up. The immunization completion rates in the north-east of the province ranges from 37% to 60%. Parents for very real economic reasons are not able to bring their children in for immunizations when they are due. For this reason, it was felt that every opportunity that presented itself should be utilized to administer VAS.

The catch-up concept was emphasized and practiced through a wide range of scenario-sketching with health workers during each of the training rounds in June, July and August

2002. Health workers found it very easy to accept and practise VAS because the "catch-up" concept is very familiar to health workers- they were comfortable with deciding on the VAS dose required.

This catch-up approach did away with calculating when 6 months had elapsed and which month marked the end of the next 6month period. Technically it became simpler for health workers to merely refer to the combined immunization and VAS schedule to determine the next immunization/VAS required.

Another element of the integration of VASS into IMCI was that the "next visit" to the PHC health worker was not always an immunization or VAS visit, but in the first year of a child's life it could be a routine visit for growth monitoring.

The relevance to the MIS was that the correct administering of the dose to the correct target group improved the chances of recording and reporting accurate data. The alignment of the practice of VAS with that of immunization (a fairly successful PHC programme) increased the acceptance of the VAS programme and thereby the MIS by the health workers.

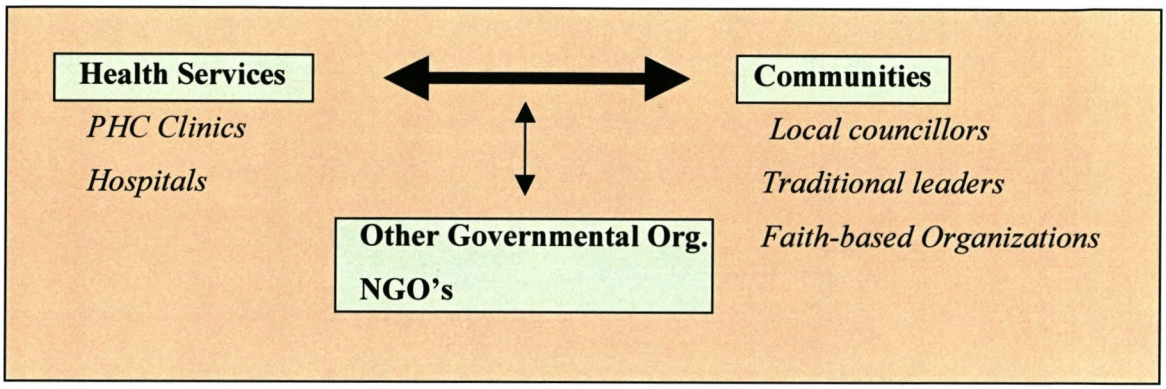
Conceptualisation of Four Operational Objectives

The introduction of this mini-thesis highlighted the fact that countries using the routine have experienced programmatic challenges. Because of this the researcher adopted a systematic approach to the development of the programme. The following question was asked:

"What must happen for this programme to be effective?"

Diagram 4 illustrates the researcher's view of the systems and potential role players in the EC that the VAS would have to be integrated into. This diagram guided the researcher's thinking and arrival at the four elements required.

DIAGRAM 4: IDENTIFYING SYSTEMS & ROLE PLAYERS IN THE EC



In the health services arena, the capsules have to be available and the health worker has to know what VAS needs to be given. Even if the capsules were available at every health facility in the province AND every health worker was highly skilled at giving VAS, if the target groups did not present to the PHC worker then the programme coverage would be low. This seems to the case with the immunization coverage in the Umzimvubu and Umzimkulu districts of the EC. The immunization completion rate very closely matches the BCG coverage rate, implying that those that attend the immunization service at the beginning with BCG tend to stay on and complete the immunization schedule. This can only mean that the target groups are not accessible to the health services and vice versa.

If the data is not recorded and reported there can be no way of monitoring the implementation of the programme. This was clear when the provincial MCWH programme manager was unable to quantify progress made with VAS up to August 2001.

These four factors were reworked into the operational objectives listed in (1) on page 51. Prior to this elucidation by the researcher, the VAS project focused on training of health workers and improving the monitoring and evaluation of the programme only. The strategic conceptualization of the four objectives replaced this old approach and underpinned all elements of the VAS programme and MIS development.

It identified the four systems that would result in the successful implementation of the VAS programme and lent a targeted, systematic approach to developing the programme that was previously missing.

All Systems Development Skills-based and Relevant to Level of Health Worker

Once the four operational objectives were outlined, the systems that were required were developed. But this development was always skills-based and relevant to that level of health worker. The researcher asked the question "what is the minimal requirement for this system by the relevant health worker?" The answer to this question formed the basis of the training materials and the systems developed.

So for example in developing the drug supply management system, the provincial pharmaceutical deputy director focused on the policy and strategic issues like:

- Clarifying the procurement and ordering processes
- Having the VAS accepted by the provincial Pharmaceutical and Therapeutics Committee
- Issuing a unique stock number required for the placement and recording of orders of the respective vitamin A capsules

At a district level, the drug coordinator had to know how to:

- Collect the orders from facilities in her district
- Order the capsules from the depots
- Monitor the placement and receipt of orders
- Monitor stock levels in the district

At a facility level, all a PHC worker needed to know was:

- On a daily basis, how to read the label on the bottle of capsules before administering the dose and ensure that the capsules were stored correctly when not in use
- On a monthly basis check that there was enough stock available

This not only developed the system logically ensuring that no gaps were present in the system, but also differed from the previous training approaches. In the national training, the MCWH programme manager had to know everything. In the new approach the researcher emphasized that the relevant health worker had to know and practise only what is required of him/her. Then as a group collaborating in a horizontal fashion at provincial and district levels, and in a vertical fashion between the province and the districts, all four operational systems would be developed.

The provincial INP steering committee and the district working groups became the structures utilized to promote this collaboration. The MIS became the shared tool that monitored the implementation of all four operational systems.

Advocacy for VAS

This is the last area that the researcher would like to highlight as being pivotal in the VAS programme and MIS development. The researcher met with the Head of the ECDOH in April 2002 to advocate for the prioritisation of the programme. This resulted not only in the support of the top-level administrative management of the ECDOH but also resulted in the support of the political head of the ECDOH. The VAS was included as a part of the provincial health strategic policy speech by the Minister for Health (MEC) in the annual policy and budget speech to the EC legislature in April 2002. This was the first time vitamin A was given this political profile in any province in South Africa. This high profile was utilized to good effect when emphasising the importance of the implementation of a successful programme and the MIS.

In summary, there were five key elements in the development of the VAS programme- that of the clarification of the policy, the integration of VAS into IMCI, the alignment with the immunization "catch-up" concept, the development of the four operational objectives and the skills-based and relevant approach to achieving these four objectives.

These factors contributed to the successful development of the MIS because:

- The data elements were concurrently clarified thus decreasing the chances of collecting inaccurate data
- Only relevant and appropriate data was collected thus increasing the usefulness of the MIS
- There were few gaps that could be missed by the MIS because each step critical to the four systems were unpacked

5.3.2 Management Information System

There were four key elements that were central to the development of the MIS:

- The inclusion of VAS variables in the DHIS
- The Trace Table Concept
- Information systems made easy
- The feedback and recognition of the VAS information
- The development of the MIS with the management system for VAS

These will be expanded upon below.

Inclusion of Vitamin A Variables in the DHIS

This was essential for a number of reasons. Firstly, it was a minimum requirement for the national level service. Secondly, in the future when the VAS programme systems are working effectively, only these outputs will need to be measured. Thirdly, the MIS would build on the DHIS, a system that had been in operation for over 5 years.

The advantage of this latter approach was that there was no need to develop a separate data collection tool and the principle of data collection and collation, though not perfectly practiced, was in principle well understood.

This also correlates with Heeks[xxviii] and Opit[xiii] who both advocate that health care information systems should be implemented in an incremental way to promote the chances of success of an information system.

The Trace Table Concept

The trace table is an original tool conceptualized by the researcher. It is a simple tool that any manager from facility level all the way up to provincial level can utilise to monitor any element against ALL targeted groups. It can be a simple listing trace table or a more elaborate trace table of a programme system.

An example of a simple listing trace table at a provincial level is a trace table that keeps track of who presented quarterly reports at a particular time. This allows the provincial manager to quantify the total number of reports submitted to her, as well as identify which of the 25 districts' reports are outstanding. In this way the trace table is a monitoring tool.

A more elaborate trace table was illustrated by the example of an actual VAS training trace table in Appendix 15. In this case, the trace table was a project management tool.

Already MCWH managers have extended the use of the trace table to monitoring other PHC programmes like the IMCI programme. This IMCI programme has been rolled out in the EC but MCWH managers have reported that they have no real control over the various elements of the programme. There has been no approach to monitoring implementation nor of quantifying progress to date. There has also been no systematic approach to developing the IMCI programme thus ensuring its success.

However, the trace table concept is already being used as a tool by some intrepid managers to monitor various elements of the IMCI programme like training of health workers on the IMCI approach. The approach of defining the operational objectives required for a successful PHC programmes and reviewing the systems in operation, has also been adapted by some MCWH managers for other PHC programmes like the IMCI programme.

Information Systems Made Easy

Some managers felt daunted at the prospect of having to work with computer information. But the exercises developed by the researcher assisted in overcoming this concern. These exercises were *practical* in that it included dummy data fields and they were *systematic.*

There were only two consistent steps for each exercise of analysing the presented information- compare the VAS with the relevant immunization data and if the VAS was not matching this immunization, look at the required trace table (in order: drug supply; training; social mobilization).

These exercises used actual data collection tools that were *familiar* to managers like the DHIS monthly report. This is important because the MIS was being built on something familiar and this reduced any anxiety or resistance to the system. It assisted managers to utilize information available to them that they previously were not certain about how to use in practical terms. In other words, managers knew that the information could be used, but were not sure how they could use the DHIS information in performing their duties.

Feedback and Recognition

At the follow-up sessions with the managers, DHIS information available at the provincial level was plotted as a line graph and fed back to managers at their management cluster meeting in November 2002. ALL health sub-districts demonstrated an increase in the vitamin A coverage in their areas from the inclusion of VAS variables in January until the final meeting with the researcher in November 2002

The provincial manager commended all managers for the improvement in their VAS coverage figures by the provincial manager. Top performing districts were identified and acknowledged. A graded award system for every facility in the province that achieved VAS coverage of 25%, 60% and 85% respectively was announced.

Peaks in supplementation were directly correlated with the training sessions and management action thereafter. This recognition of the managers' efforts served to encourage their continued participation in the programme and thereby in the MIS.

MIS, A Part of the Management System

The researcher sold the MIS not as an information system, but rather as a tool to assist managers perform their role and responsibilities in the programme. This link with the management role was entrenched by the researcher and the provincial managers in the following way:

- District managers were informed up front about what was expected of them and a consensus reached on their respective roles and responsibilities
- The researcher and the provincial managers then developed a format, the quarterly report- for routine reporting by district managers to provincial managers. This format included VAS indicators that were available from the DHIS
- The researcher together with the programme manager at Equity designed the DHIS monthly report that organized the VAS-related information into adjacent columns. This was then easily converted to a simpler, easier to understand graphic representation of the data for utilisation by the ECDOH management
- The provincial managers then reviewed the data collated at a provincial level by the provincial information officer
- And then provided feedback to district managers on progress being made.
- Where progress was not optimal, provincial managers then explored challenges being experienced, and offered support to the districts.

This approach was unique to the VAS programme in the EC. It is the researcher's contention that the only way the MIS will be sustained is if it is entrenched in the management system. If the provincial manager at the top expects a specific duty to be fulfilled and this is reached in consensus with the district manager, this duty will become part of a routine practice.

The time spent on clarifying the roles and responsibilities of the different levels of managers was important because it provided the context within which the MIS was to be

developed. The MIS became a tool to assist these managers to perform their roles and responsibilities effectively. And of this course, this role was always linked to the improvement of the health status of children in the EC.

5.3.3 Action Research

There were two areas that provided strong evidence of the action research approach and that directly contributed to the successful development of the VAS programme and the MIS:

- The researcher's involvement in the study
- The confrontation technique employed by the researcher

These are discussed below.

Researcher' Involvement in the study

The value of Feldman and March's work in 1981 [xv] was that they introduced the concept of the social milieu that contributed to the failure of information systems at that time. Other researchers like Heeks[xxviii], Opit[xiii] and Braa[xxiii] also referred to in the literature review recognized that information systems are social systems. This assisted the researcher in the conscious planning of the approach and manner to be employed when developing the MIS. Both of these factors, the researcher's approach and manner of conducting the sessions, were important factors that encouraged the utilisation of the MIS and information in general.

A conscious effort was made by the researcher *not to be highly technical* in presenting information. Terms like coverage were defined verbally then illustrated with mathematical examples. But the researcher merely *facilitated* participants' understanding. In this example of coverage, this means that the participants were encouraged to provide definitions of terms used. The researcher then presented figures for:

- A number of vitamin A capsules given out to an age group and
- DHIS information that lists the total numbers of boys and girls in that age group

Participant's then used this information to calculate the coverage. The emphasis was not placed on the answer but on the steps taken to derive these answers. In this way, the researcher was attempting to ensure that the managers would be able to replicate the application outside of the workshop.

Another matter to note is that managers were not only given baseline population data for each facility under their care, but were also informed where to find this type of information in future. The intention was to arm these participants with knowledge that could assist them in future when setting targets for other PHC programmes and determining whether these targets are being reached.

The researcher also kept a look out for signs such as a lack of understanding or non-participation. Where participants were frowning or sitting back, arms akimbo and not participating in the sessions, these participants were allocated for the practical exercises, to groups that were actively participating or had a good grasp of matters. In the case of the latter group, these participants taught those not understanding. This *teamwork* also decreased the potential anxiety factor, as participants assisted each other in the understanding and practice of a new concept.

Every effort was made to continue the session only when each participant was *on board* at each stage of understanding, but not in a way that stifled the flow of the workshop or embarassed the participant concerned.

The researcher also adapted the sessions to go with the natural flow of discussion. For example, a programme for each workshop had been prepared beforehand. But when the discussion jumped out of the prepared sequence, the researcher went with this flow. Once this flow reached its logical conclusion, the researcher would then bring the workshop back on track to the prepared format, adjusting and omitting what had inadvertently been covered during the spontaneous discussion. This *flexibility* was important as it encouraged the active participation of the managers and decreased the potentially dictatorial nature of a prepared format.

Theory was always supported by practice and this served to *consolidate* understanding. There is often a gap between the understanding of theoretical information and the application thereof in the field. The practical exercises using dummy data and actual data collection forms, was an attempt to bridge this gap.

Confrontation Technique Employed by the Researcher

When managers reported that the VAS programme was "going well", the researcher refuted this by hauling out the April 2002 DHIS report on VAS. In this report the annualised vitamin A coverage for the 6-11month age group ranged from 0% to under 10%. Managers and information officers realized that there was no objective evidence of the work that was being done on the ground. This technique motivated them to use the DHIS and MIS to prove that their VAS programmes were performing well.

5.3.4 CONTEXT OF THE EC

The MIS was developed within the context of the EC. The following were a part of this context:

- Transformation of health services and the district health system development
- The provision of comprehensive as opposed to vertical PHC services
- The move towards improving coordination of PHC services

The researcher would like to present this context, comment on the relevance to the development of the MIS, and discuss how this study attempted to incorporate this context into the development of the MIS.

Transformation and District Health System Development

The context in which this MIS was designed and developed was both challenging and enabling. It was challenging in that the EC is undergoing a transformation as it moves from a racially based, vertical health service towards the formation of the comprehensive PHC service. The District Health System has been identified as the vehicle to deliver PHC services. In December 2000, the Demarcation Act defined the new geographic boundaries of the EC. Health sub-districts have since been aligned within these new boundaries. In practical terms, however, there are still PHC facilities that now fall under

the functional jurisdiction of new PHC managers but are still being managed under the old managers.

Managers are grappling with this state of flux that is commensurate with transformation. The researcher adapted to this by embedding the system within the anticipated future DHS management paradigm. The prepared trace table templates were aligned with the new municipal boundaries and the new health sub-districts (see Appendix 6.1). Attendance registers at the workshops reflected the new boundaries and it became easier to monitor and identify districts that were excluded from the process through their absence.

Another element of transformation was that some PHC facilities fell under the municipal health services whilst others fell under what was called provincial health services. Often programmes would be implemented in one health service but not in the other. Many districts have made progress with functional integration of the two service providers but the challenges remain.

One of these challenges is that different conditions of service exist for the health workers of these two health service providers. This is not unique to the EC. Other provinces encounter the same challenge. The resolution of these challenges lies with the Collective Labour Bargaining Council at a national level

These challenges have hampered complete integration and the formation of a functional District Health System. The researcher factored this into the study by ensuring that managers from both services were invited to the workshops in areas where no integration had occurred. This ensured that all PHC facilities were included in the provision of the VAS programme as well as in the design and development of the MIS.

The Provision of Comprehensive as Opposed to Vertical PHC Services

The MIS design and development occurred within the design and development of the VAS project. Although the VAS programme had been launched in August 2002, there were several "programmatic issues" that needed reworking, from policy clarification to

operational systems fine-tuning. This was fortuitous for the MIS development because the MIS could evolve with the VAS programme. This made the integration of the MIS into the routine management of children easier.

An example mentioned above, was the challenge of the location of the VAS programme. At the national level, the programme is located within the Micronutrient section of the national Nutrition directorate. However, in the EC, this did not fit in with the strategy of providing VAS through routine child health services. VAS had to be integrated into the EPI programme, and not be touted as a vertical programme. Initially there was some skeptism from managers that the VAS was in fact a vertical system. This belief arose because of the resources allocated to the programme – time, funding, training manuals.

The facilitators took great care to ensure that vitamin A skills development was embedded in the EPI practice in PHC clinics (see Appendix 12). Steps for health workers and managers to follow for the VAS progamme were also embedded within the steps required for the integrated management of children. Manuals on skills to be practiced by different levels of PHC workers recorded, advocated and reinforced this integrated approach. And in this way, elements of the *MIS* (like the total number of vitamin A capsules given and the trace tables) were also integrated into the routine management of children under the age of 5 years.

Move Towards Improving Coordination of PHC services

The researcher as the project manager had to coordinate the VAS programme and the MIS development in both vertical and horizontal directions. In the vertical direction was the coordination required between the district and the provincial level. In the horizontal direction was the coordination exercised at the provincial and district levels, respectively.

Although the MCWH directorate has a well established vertical line of management that is adhered to, the absence of a functional District Health System presented a challenge of coordinating a provincial programme at a district level. At a district level, several programme managers need to work together in a horizontal manner. For example, an

information officer is responsible for the collection and collation of data within a district. An MCWH programme manager therefore has to work together with the information officer in order to ensure that data is collected accurately, and then to utilize this information. The same is true at a provincial level.

The researcher therefore ensured that structures existed at both provincial and district levels that would drive the VAS programme as well as ensure a coordinated approach. At a provincial level, the structure is the provincial Integrated Nutrition Programme (INP) steering committee and at a district level, it is the VAS working group.
The provincial steering committee for the Integrated Nutrition Programme (INP) became the vehicle utilized to coordinate the programme between the different directorates at a provincial level. The commitment of provincial mangers to this committee was a major factor contributing to the successful integration of the programme into child health services.

5.4 SPIN-OFFS

There were positive spin-offs for two areas:

- The DHIS
- Other PHC programmes

Spin-offs for the DHIS
The spin-off for the DHIS was that other data for other PHC programmes were now also being submitted on time as managers pushed to get their VAS data in from facilities. The VAS programme became a targeted way of addressing a systems problem because the barriers to the timeous collection and collation of accurate information and its subsequent use are the *same* barriers that hamper the collection, collation and utilisation of information for o*ther* PHC programes. Addressing these barriers for VAS automatically addressed the barriers for other PHC programmes being monitored by the DHIS.

The DHIS is under-utilised as a management tool at both provincial and district levels. The MIS now stimulated the increased utilization of information from the DHIS (like the comparison of VAS with immunization data or the baseline population data).

Spin-offs for Other PHC Programmes

This has been referred to under the section on the trace table concept on page 100. In summary, prompted by the researcher, the MCWH managers have recognized the applicability of the approach to VAS programme development as well as the trace table concept, to virtually any health programme. Some of these managers have used their initiative and started employing the approach and the trace tables to other programmes that they previously have had minimal control over such as the IMCI programme.

5.5 MIS FOR VITAMIN A SUPPLEMENTATIN, SUCCESS OR FAILURE?

The literature review identified the key elements required to promote a successful management information system. Opit[xiii] and Braa[xxv] emphasized the minimal dataset approach. And Heeks in particular, provided an erudite account of the ITPOSMO model that explained the gaps between the conceptualization of a health care management information system and its implementation[xxviii]. In the same article Heeks went on further to list ways of trying to address these gaps. The researcher noted these factors and built it into the conceptualisation of the MIS of this study.

This section will first comment on the evaluation of the MIS, and then relate how the researcher developed the MIS bearing in mind the above factors listed as important for a successful MIS.

Evaluation of the MIS

The evaluation of the MIS was not rigorous enough to comment on whether the MIS was successful or not. Nor had enough time elapsed after implementation to classify the system as a success or failure. In fact, implementation is still occurring as this mini-thesis is being written up. An informal review of the DHIS information for October 2002, revealed that the annualized coverage for vitamin A for 6-11 month age group was at

78%, and that for the 12-23month group was at 120%. The latter is an indication of the trend of the VAS being 2-3 times the total number of children in that age group.

Although the researcher feels that the evaluation was not rigorous enough, it has emphasized the *usefulness* of the MIS as a tool for district level programme managers and the potential of the system for improving the manager's control over programme elements in order to improve programme performance.

Addressing Criteria for a Successful MIS

The ITPOSMO Model

Heeks proposed an ITPOSMO model of gaps between conception of an information system and the reality of its implementation[xxviii]. The researcher has systematically included these ITPOSMO factors in the design of this MIS:

Only **I**nformation that was relevant and required by programme managers was included in the MIS. So trace tables only keeps track of barriers experienced within a district; the MIS only collects the minimum required data variables

Technology was kept simple. This MIS is a predominantly paper-based system that builds on the existing system and **P**rocesses. Processes conceived within the system design were in fact based upon or expanded upon processes that already existed. So, for example one of the data collection tools was the daily tick register. This register has been a part of the routine recording of information for over 5 years. It was therefore relatively easy to integrate the VAS data collection within this register.

The **O**bjectives and **V**alues of the health managers were always factored into the design and development of the MIS. Their inherent anxiety about automated systems and use of information and how this was approached has been commented on above.

The system is moderately challenging in concept. But 21 out of the 23 functioning district programme management **S**taff were available at the workshops and their practical **S**kills were developed alongside the development of the MIS.
Management and structures have been commented upon above.

In terms of **O**ther resources required for the MIS, this MIS is not costly to run. As far as possible, it uses data collection tools that are already in place, or is paper-based and can be hand-drawn. Templates were made available to managers. It takes no more time to collect the data than for any other programme. The time that is required, though, is in the accurate maintenance of the trace tables and the review of the data. However, it is easy to offset the time taken to review the information with time gained in appropriate planning and correct decisions taken.

MIS as a Social System

The participatory nature of this study balanced the technical elements of systems conceptualization with the practical social factors that influence the implementation of information systems referred to by Feldman and March[xxiv]. The fact that managers were an integral part of the design and development of the MIS secured their buy-in and increased the chances of the success of the MIS. The facilitators were conscious of the social dynamics (like attitudes to information utilisation) and adjusted approaches to individuals at workshops as discussed above. A district team approach that included information officers at the July workshop, was an attempt by the researcher to decrease the power differentials that may exist at district level between the information officers that control information and the programme managers that need to utilize this information.

CHAPTER 6

LIMITATIONS OF THE STUDY

CHAPTER 6: LIMITATIONS OF THE STUDY

This section will discuss the main limitations that were experienced during this study:

- Time constraints
- Selection Bias
- The vastness of the rural EC
- New mothers escaped the net

The researcher will conclude with potential threats to the project. This will pave the way for the conclusion and recommendations of the researcher in the next chapter.

Time Constraints

The greatest limitation of the study was the time constraints. The VAS programme had been launched through the immunization campaign in August 2001 and again specifically for VAS in November 2001. This all took place before any systematic planning was undertaken. This meant that planning and implementation had to happen concurrently.

Although five neat phases are outlined in this study for the MIS development, the reality is that operational objectives within these phases were developing at different paces. So drug supply management because it had been a focus according to the original work plan was more advanced than the training of health workers. With the strategic planning being concretized in April 2002, the programme and MIS developed in a more cohesive way.

There was always the pressure of time, though. Conceptualisation of the MIS, training approaches and manuals would often be rushed. And so there must be room for improvement. However, the cycles of reflection fortunately provided the researcher with the opportunity to review the concepts and discuss these concepts with a high level management structure like the INP steering committee.

Selection Bias

Of the factors listed under 3.3.7 on page 25, the only factor that ended up being a limitation of this study was the inherent selection bias. This bias was not addressed through mop up training rounds with managers who missed the round of workshops

because of conflicting schedules of these managers. Again, the main reason for this limitation was the pressure of time – there just was no time to do follow-up rounds after the July workshops, because the researcher responded to a need identified by the managers (additional training of their district trainers on how to rollout the programme to other health workers).

Vast Rural EC

The vast geographic territory that makes up the EC also placed limitations on the study in that managers could not be supported fully during the implementation phase. The fact that telephone contact was made with managers as opposed to physical contact must have limited the study because there was no objective evidence of what managers were reporting to the researcher.

New Mothers Escape the Net

The focus of this study has been on the PHC facilities. But many of the births in the province occur in one of two places - at home or in a hospital. Because the health workers at hospitals were not targeted specifically, during this study, the VAS coverage to new mothers is very low. This is consistent with the trend for this group in other countries. The researcher is certain that programmatic reasons underpin the low coverage. Nothing that a systematic approach to operational systems cannot address!

Giving VAS to a new mother not only ensures that VAS reaches the baby at risk of vitamin A deficiency, but also starts the new mother on the enlightened path of understanding the importance of building up the baby's immune system with vitamin A. This will increase the chances of the mother bringing her child in for the 6, 12, 18 and 24month doses later on in the child's life.

Threats to the MIS

A threat to the sustainability of the MIS is that the researcher has left the VAS project. And so the rigorous follow-up of each stage of the programme and MIS development, and the systematic problem-solving has slowed down. Fortunately, the researcher is now

employed by the ECDOH albeit in the Health Management Services division. There is continued communication between the researcher and the MCWH directorate at provincial level, and so the programme and the MIS are still on track, albeit at a slow tack.

The researcher recognizes that programmes and information systems go through a honeymoon phase when all is going well because of the initial targeted interventions. But with time the programme and systems should demonstrate a sustained positive change. The VAS programme and the MIS may well be in the honeymoon phase as the data for VAS on the DHIS continues to climb. It is too soon to say whether or not this will be sustained and result in coverage of at least 80% for the target populations.

CHAPTER 7

CONCLUSION AND RECOMMENDATIONS

7. CONCLUSION AND RECOMMENDATIONS

7.1 CONCLUSION

This study undertook to design, develop and evaluate a MIS for the VAS programme in the EC. It has been an iterative process that progressed through specific **stages of development:**

- The situational analysis that lead to the conceptualisation of the design of the MIS
- The development of the MIS that radically developed as an integral part of the management system of the VAS programme
- The follow-up, consolidation and embedding of the MIS in this system
- The implementation, review and assessment of the MIS

The many innovations employed in this study have been discussed above and are summarised below.

The VAS Programme

- The clarification of a policy for VAS that suited the epidemiology and resources available in the EC
- The integration of VAS and the MIS into routine child health services
- The alignment of VAS with immunisation through the catch-up concept
- The conceptualisation of operational objectives for the VAS programme that ensured a systematic approach to the development of both the VAS programme and the MIS
- The development of skills-based and relevant operational systems
- The securing of political support through the inclusion of the VAS programme in the policy and budget speech of the EC Minister for Health

The MIS Development

- The inclusion of VAS-related variables in the DHIS thus anchoring the minimal data requirements in a long-standing information system

- The conceptualisation of the trace table that is a simple project management and/or monitoring tool that can increase a manager's control over any element of health care against a given target
- The feedback and recognition of information from the MIS to managers through a graded award system that any facility can qualify for once it reaches the targets of 25%, 60% and 85% coverage
- The deliberate approach of the researcher to make information systems easy by not being highly technical, remaining flexible but within a framework of development and by keeping everything practical
- Developing the MIS in tandem with the development of the management system of the VAS programme.

Action Research Methodology

- The researcher was involved in all elements of the VAS programme development from strategic conceptualisation to the operationalising of this strategic intent. This meant that it was relatively easy for the researcher to integrate the MIS into the VAS programme and influence its direction

The Context of the EC

The EC is undergoing a transformation from a vertical, racially based health system to one that provides comprehensive primary health care services through a district health system (DHS). This had implications for the development of the VAS programme as well as the MIS, like the fact that the VAS programme had to be integrated into the comprehensive integrated management of childhood illnesses (IMCI) approach and tools had to reflect the new DHS demarcations.

Although it is too soon to say that the implementation of the MIS is successful, the development of the MIS was successful in that each mini-thesis objective was met. And there are objective signs of early success of the MIS as evidenced in graph 3 on page 74. Where MCWH managers are implementing and using the MIS, their control over the inputs, processes and outputs of the VAS programme has indeed increased. These

managers have reported an increased ability to plan appropriate actions and effect decisions that will improve poor VAS performance.

7.2 RECOMMENDATIONS

The researcher would like to make the following recommendations based on two types of scenarios:

- Taking the MIS in the EC forward
- A situation where the MIS is in the planning stages

Taking the MIS in the EC Forward

- The provincial MCWH and EPI managers would be well advised to continue analysing the monthly DHIS reports to identify where challenges are being experienced in VAS in the province
- These areas can then be targeted for specific interventions
- Provincial managers should actively promote the information-based approach to management by insisting on quarterly reports that are use information to quantify progress or demonstrate objective evidence of performance

Planning the MIS from scratch

The researcher would like to highlight the key lessons to be learnt from this study (a-e below) and then postulate a model for future programme and MIS development

(a) <u>A MIS must be embedded in the management structures and systems</u>

Strategically, for the MIS to be accepted and its maintenance and utilisation to be sustained, the managers must find it to be a useful tool and the information provided by the MIS must be reflected in ***routine*** reports to "top" management.

As with this MIS, the vitamin A coverage data has to be compared with the immunizations. Where this coverage is low, managers have to provide possible

explanations for this low coverage by using information from the MIS. Decisions or actions taken have to be supported by information gained from the MIS. The key is to entrench the information gained from the MIS in the routine reporting formats (like quarterly reports) and mechanisms (cluster meetings).

(b) A way forward must be agreed upon with these managers and there must be follow-up on this way forward

Operationally, at the end of a workshop, the concepts discussed must be captured forward in a way forward that is agreed upon by the participants. A session must be planned for a follow-up contact session to:

- Ensure that the way forward was followed
- Where this was not possible, to identify ways of supporting the managers concerned, addressing reasons for the inability to comply

(c) Workshop sessions must be interactive

This has been expanded upon above. The managers embraced previously intimidating concepts like "information-based management" because they were a part of the evolution of the VAS. As far as possible, experiences and baseline knowledge of the managers guided the process. There were some very astute managers with quick minds that not only grasped the concepts of trace tables, but quickly made the connection that it could be applied to and assist them with other PHC programmes. These same managers also became teachers themselves as they shared their ideas with others or explained their understanding of the concepts in a manner that was better understood by the other participants than the researcher herself could have attempted.

(d) Practical exercises incorporating live dummy data, bridged the gap between understanding and application of the MIS

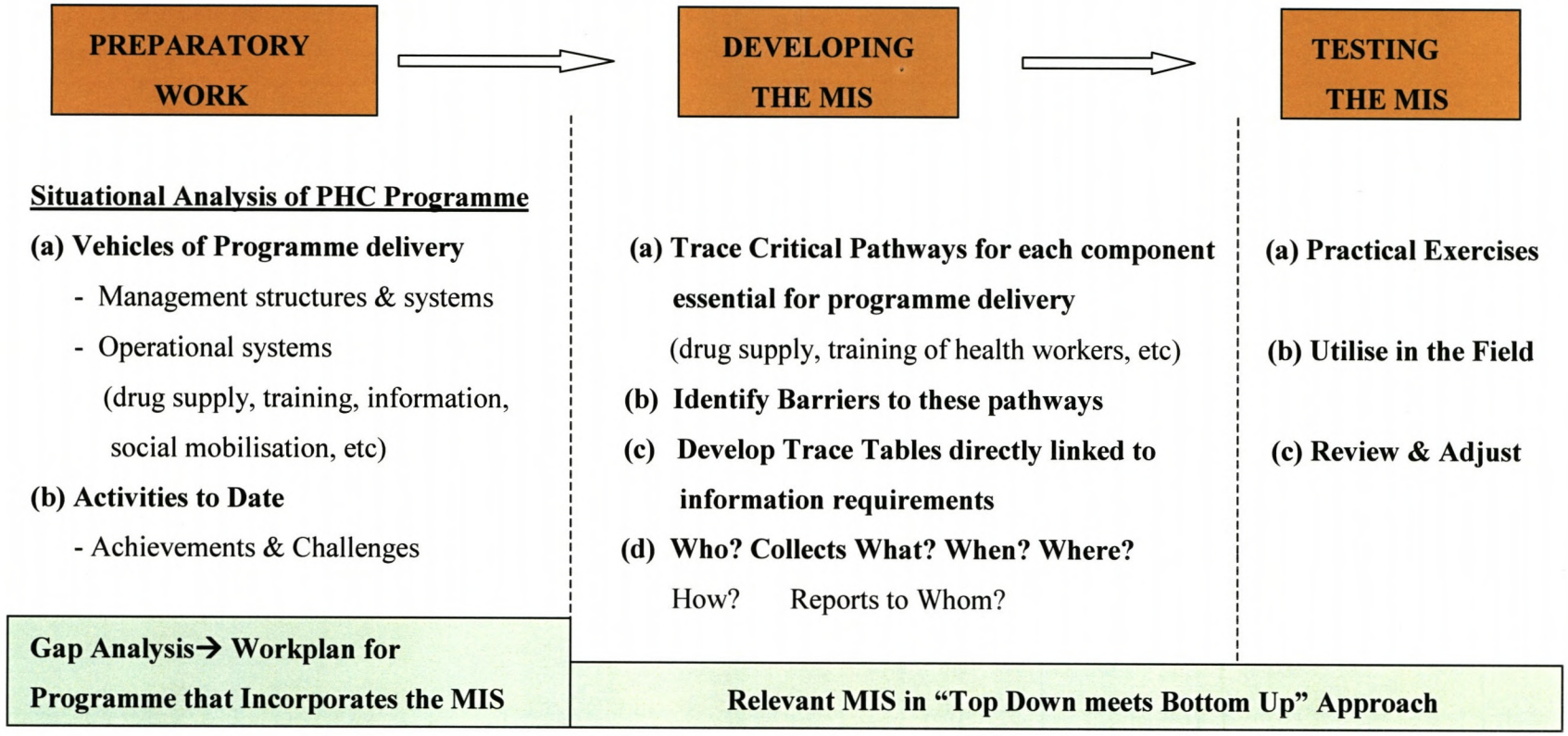
The researcher developed exercises that required the utilisation of provided MIS generated data. Participants were then guided through simple steps in the first exercise. Thereafter, participants applied these simple steps consistently for each exercise.

(e) Manuals for the different levels of PHC workers and managers focused on the practical skills required by these different levels.

This differed slightly from conventional manuals that tended to focus on the theoretical. Where these manual discussed skills required the focus was only on the endpoint of service delivery, the PHC facility-based health workers. The 3 manuals that arose from this mini-thesis project, however, focused on the 3 different levels of management within a district health service (district MCWH programme manager, the area supervisor and the facility sister-in-charge). Naturally, these manuals embedded the MIS in the skills required.

Bearing these lessons in mind, the researcher would like to propose a model of a participatory approach to health care management information systems development. Please refer to diagram 4 on page 120 for the illustration of this model. Each of these steps has been described in this mini-thesis.

DIAGRAM 4: MODEL OF PARTICIPATO RY MIS DEVELOPMENT FOR PHC PROGRAMMES



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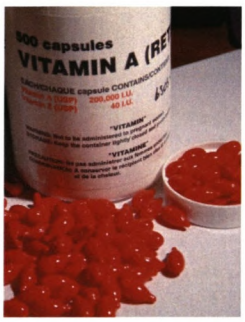
APPENDIX 1

OBJECTIVES OF

JUNE & JULY 2002 WORKSHOPS

DAY 1: INFORMATION EXCHANGE & TRAINING FOR INTEGRATION OF VAS WITH PHC **June Only**



- Review by program managers of vitamin A supplementation activities within their health districts for 2002
- Identify support needed by these program managers
- Review provincial level activities supporting implementation of vitamin A supplementation program
- Training health workers at facilities to integrate the components of the program into their primary health care activities

DAY 2: ENHANCING THE MANAGEMENT OF VITAMIN A SUPPLEMENTATION PROGRAM **June & July**

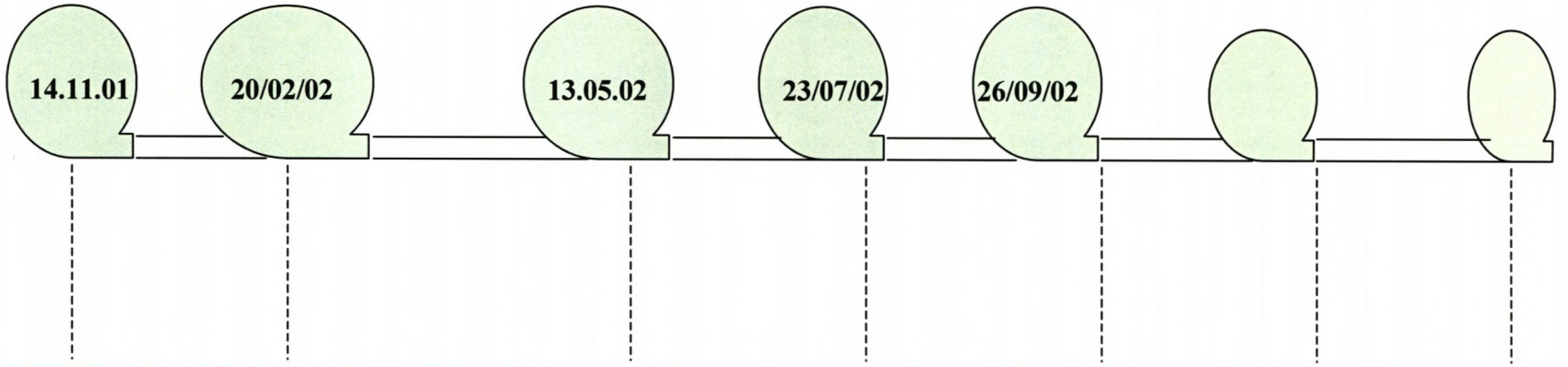
- Gain a shared understanding of the components of the project
- Develop an information-based approach to enhance management of the vitamin A supplementation program
- Design tracking tools for program managers to assist with monitoring and evaluation of program activities
- Identify areas of low coverage and use an information-based approach to develop appropriate actions to improve this low coverage
- Develop district action plans and quarterly reports for vitamin A supplementation

APPENDIX 2

REFLECTIVE CYCLES BY THE

INP STEERING COMMITTEE

Appendix 2: REFLECTIVE CYCLES BY THE INP STEERING COMMITTEE



SITUATIONAL ANALYSIS				STRATEGIC PLANNING		OPERATIONAL PLANNING		IMPLEMENTATION			ONGOING MONITORING & SUPPORT			EVALUATION & NEXT PLANNING CYCLE			
Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
2001			2002												2003		

KEY

	Provincial Steering Committee Review
	Phases of the Project
	Time-Frame

APPENDIX 3

25 OCTOBER 2001

WORKSHOP REPORT

E.C. PROVINCE DEPARTMENT OF HEALTH
NUTRITION DIRECTORATE WORKSHOP
THURSDAY 25 OCTOBER 2001

District health officials reported back on 3 issues pertaining to the launch of the Vitamin A project launched in July 2001:

1. What has been done within each district
2. What have the achievements been to date
3. What challenges were experienced

1. What has been done within each district

The Vitamin A programme was conducted as a part of the immunization campaign. Activities supported two main components of the campaign:

(i) Awareness Raising & Education/Training
(ii) Supplementation

- 10 000 children were reached as part of the awareness campaign and
- 6 000 Vit A capsules were dispensed during the immunization campaign week

(i) Awareness Raising & Education/Training

Awareness raising and education was aimed at both the staff and the communities served by the health facilities. And a number of innovative techniques employed by different district officials during the campaign, were reported upon at the workshop:

Awareness Raising

- Letters were distributed to churches and schools informing them about the importance of Vit A and the anticipated campaign
- Posters were placed in the communities as well as in clinics
- Clinic staff was interviewed on phone-in community radio programmes

Education/Training & Health Promotion

- Advocacy workshops were held with staff
- Training on supplementation were held with health workers, community/ village health workers and food services managers
- Whilst mothers were attending clinics for other health issues, staff held interactive talks with mothers on Vit A supplementation.
- Staff also took advantage of the opportunity to promote healthy feeding and encourage the initiation of the INP within their communities.
- Protocol for the supplementation of Vit A was circulated to all clinics within a district

(ii) **Supplementation**

- Some clinics had a week dedicated to Vit A supplementation
- Stock was ordered and packaged by staff upon arrival
- The next batch of capsules has already been re-ordered
- Vit A was administered by staff during the campaign

A particularly innovative yet simple practice was the creation of a ***fast-line*** specifically for mothers with children requiring Vit A supplementation. These mothers were taken out of the conventional queuing system and placed in the supplementation queue. This will surely promote responsiveness by mothers/caregivers to campaigns in the future.

Different districts selected different combinations of the activities described above. Factors that influenced the decision to adopt certain approaches included:

- Staff capacity
- Available resources
- Access to communities

2. What have the achievements been to date

- There was 90% coverage (supported by routine statistics)
- Defaulters on the immunization programme were detected when presenting for the Vit A supplementation. The opportunity was utilized to update the vaccinations on the spot. This has also stimulated the thinking by programme managers that there should be 1-3 monthly awareness programmes to boost EPI coverage
- Engagement of chiefs in rural areas increased participation of these communities
- Food gardens in communities and schools/preschools and clinics are growing Vit A enriched vegetables
- Networking with different sectors such as Agriculture and Education
- One district held a workshop where every facility was represented by at least one delegate.
- Information was disseminated to the community in a number of successful ways- the radio was a medium found to be particularly useful in rural areas
- That resources such as posters were made available at all, was felt to be an achievement

3. What challenges were experienced

There were four main areas where challenges were experienced.

(i) Logistics
(ii) Effectiveness of Programmes
(iii) Monitoring and Evaluation
(iv) Media

Most challenges were logistical ones. And some of the achievements led to further challenges.

(i) Logistics

- **Drugs**
  - There was not enough stock during the campaign
  - The ordering system was not user-friendly
  - Storage protocol was not clear
- **Time**
  - Time to organize the campaign and train staff on supplementation was not sufficient
  - Communities were not adequately sensitized because of the limited time available to staff
- **Transport**
  - There was not enough transport for all the potential mobile points
- **Rolling Out**
  - How does one ensure rolling out of the programme – information and practices to all communities- not only those with access to health facilities
- **Materials on INP & Vit A**
  - Not every facility received materials with information on issues like drug toxicity before the campaign and some health workers therefore felt inadequatle prepared for client queries
- **Staff**
  - Need ongoing training and more staff to be engaged in the programme
  - Advocacy did not guarantee participation by all staff

(ii) Effectiveness of Programmes

Although it was an achievement to have engaged the community and staff in advocacy on Vit A supplementation, it was felt that there is a still an ignorance or lack of acceptance of the value of supplementation by both staff

and the community. This change in attitude and practice is a prerequisite not only for the Vit A programme, but also has relevance to the INP.

- The challenge is therefore to translate the advocacy and education into practice.

(iii) Monitoring & Evaluation

Linked to the challenge of ensuring effectiveness of advocacy and education, is the challenge of monitoring and evaluation to quantify and qualify both the achievements and challenges encountered in the programme.

(iv) Media

There are conflicting messages in the media regarding supplementation, generally.

- The challenge is to reach the target audience with appropriate nutritional messages.
- Another challenge would be to incorporate cultural factors into these messages.

There was overwhelming agreement that there had been great successes achieved during the campaign and that the initiatives taken, need to gain momentum across the province.

Compiled By:
Dr Rolene Wagner-Meyer
University Of the Western Cape
25 October 2001

APPENDIX 4

JUNE & JULY 2002

WORKSHOP REPORT

AN INTERIM REPORT

VITAMIN

SUPPLEMENTATION PROGRAMME IN THE EASTERN CAPE

DECENTRALISATION OF MANAGEMENT

Compiled By
Dr Rolene M. Wagner-Meyer

For:
Eastern Cape Department of Health
23 July 2002

VITAMIN

INTERIM REPORT ON DECENTRALISATION OF MANAGEMENT OF THE SUPPLEMENTATION PROGRAMME IN THE EASTERN CAPE

Compiled By
Dr Rolene M. Wagner-Meyer

For:
Eastern Cape Department of Health
23 July 2002

Acknowledgments

I would like to thank the staff of the Nutrition Directorate and Maternal Woman and Child Health Directorate of the Eastern Cape Department of Health for their support especially during the conduct of the training during the months of June and July. The successful turnout of delegates for the training sessions bear tribute to your efforts.

I would like to extend a special word of thanks to Chantell Witten for her contribution to the June training, from the initial conceptualization to the actual participation in the June programme . Your technical expertise on training was invaluable.

Also thanks to Jane Rohde who was a part of the June training team- you kept us all sane!

To the rest of the steering committee meeting, a word of thanks for your input and direction. Especially to Jon Rohde who has been true mentor, willing to support where needed.

And finally, to the sub-district PHC staff that all participated in the June and July training sessions. The overwhelming response to our invitations was heartwarming. You all participated actively, always with great respect and tolerance for each other. It made the sessions so much smoother to conduct. I look forward to seeing you all in September.

Dr Rolene M. Wagner-Meyer
23 July 2002

GLOSSARY OF ABBREVIATIONS & TERMS

Action Plans	Plans prepared in response to a possible breakdown in operations
Area/clinic supervisor	These supervisors have 3-5 clinics under their direct supervision. In some districts they are called area supervisors, in others, clinic supervisors
CLO	Community Liaison Officers reporting to the Nutrition Directorate in Bisho
DHIS	District Health Information System
DOTS Volunteers	Directly Observed Treatment volunteers on the TB programme
DTP-HIB1	Diptheria Tetanus Polio and Hepatitis B first vaccinations
ECDOH	Eastern Cape Department of Health
EPI	Expanded Programme on Immunisation
Management Information System	An information system (computerized or paper-based) that collects, analyses data and generates reports for use by managers
Master Plans	The sub-district level strategic plans developed for vitamin A supplementation There are 4 components, one to support each objective of the programme: (a) Drug (vitamin A capsules) Supply (b) Training (c) Data recording and reporting (d) Social Mobilisation
MCWH	Maternal Woemn's and Child Health
NGO	Non-government Organisations
Operational Plans	These are the plans that outline specific activities to support the master plan
PHC	Primary Health care
SANTA	South African Tuberculosis Association
Sub-District	The Eastern Cape Province has 6 municipal districts which are sub-divided into a total of 23 smaller health sub-districts and 1 metropole
Trace Table	A data collection table listing the target audience and the essential activities directed at each of these targets. This table allows the user to keep a trace of activities planned for those targets.
Trainer of Trainers	These are the trainers identified by each health sub-district who will be responsible for rolling out the training to nurses in their sub-district.
VAC	Vitamin A Capsules
VAS	Vitamin A Supplementation
Working Group	A team of health workers in each sub-district who will work together to coordinate all activities related to vitamin A supplementation

VITAMIN

CONTENT

APPENDICES

BACKGROUND VITAMIN A SUPPLEMENTATION, EASTERN CAPE

PROBLEMS

- ***High Mortality Rates***: Infants (98 per 1000 live births) and Under 5 (105 per 1000 live births)
- ***Severe Vit A Deficiency*** (31%)

VITAMIN A PROTOCOL

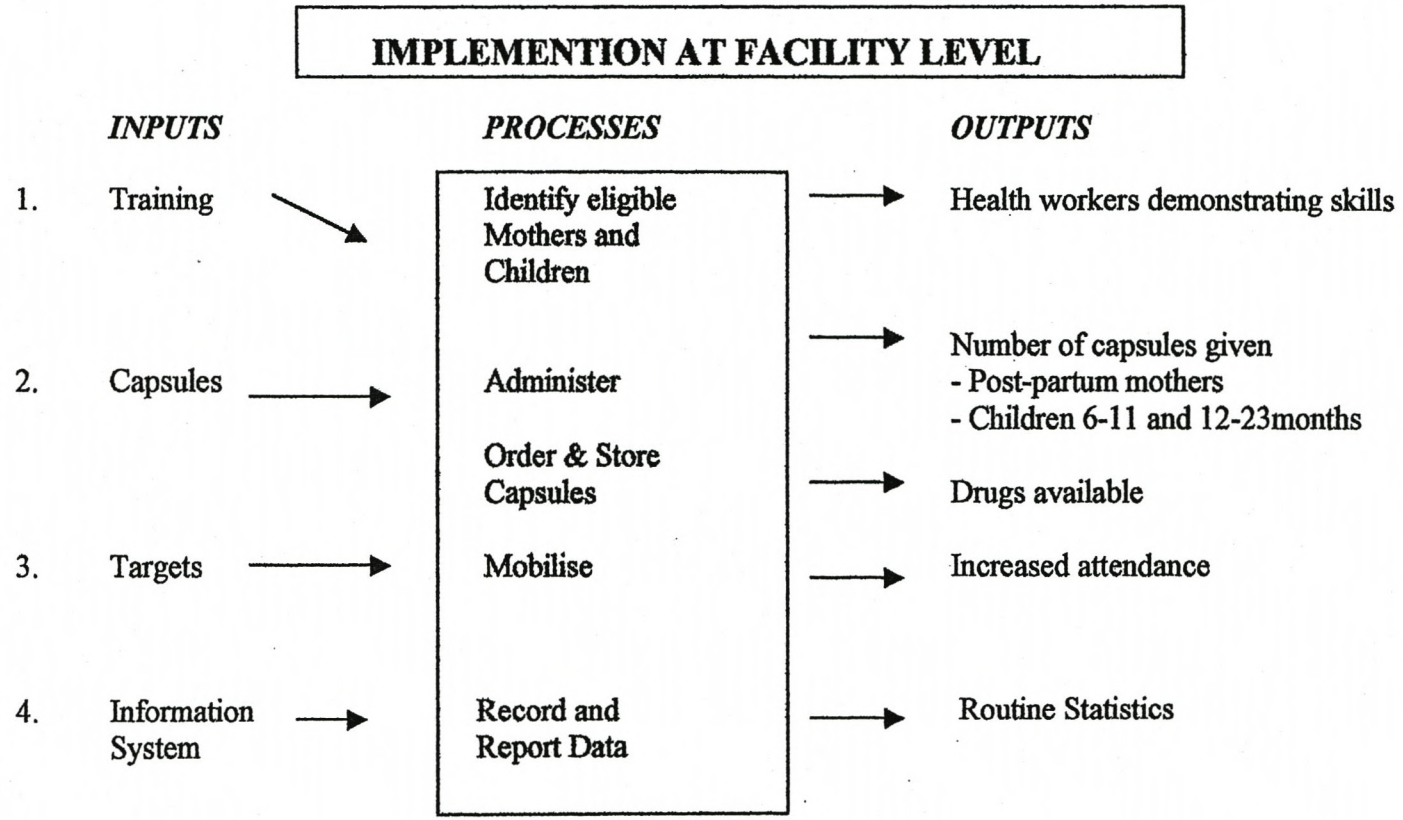
- ***Focus on Under 2 Year Olds***

Target Group		Dosage	Schedule
Infants	6 – 11 months	100 000 IU	A single dose at the age of 6 months
Children	12 – 24 months	200 000 IU	A single dose at the age of 12 months and then every 6 months until age 24 months
All post-partum women		200 000 IU	A single dose at delivery (or not later than 6 weeks after delivery)

IMPLEMENT

- ***Routine Maternal & Child Health Services*** < PHC
  Hospitals < District
  Provincial

SAVE AND IMPROVE LIVES



IMPLICATIONS

1. Vitamin A Supplementation to be located within appropriate directorate
2. Decentralise management to district MCWH programme managers
3. Systems in place to support district level management

THEREFORE:

1. Located VAS within **EPI programme of MCWH** division of District Health Services

2. **Developed an Operational Guideline to:**
   (a) Present an overview of why VAS needed in EC and what needs to be done
   (b) Clarify the objectives of the programme and the programme manager's role in achieving these objectives
   (c) Provide guidelines on how to manage the programme
      - ▶ Mobilise a district level VAS team
      - ▶ Develop a Master Plan, supported by operational plans
      - ▶ Monitor implementation of operational plans and evaluate sub-district performance

3. **Systems to support District Level Management**

3.1 Drug Supply Management

- Starter packs of 100 000iu and 200 000iu capsules
- Integrate with routine reordering system
- Decentralize funds to district level

3.2 Training

- June: MCWH coordinators and CLO's to manage VAS programme
- July: VAS district teams to monitor implementation and evaluate monthly performance
- August: PHC workers skills to provide service

3.3 Information System

- VAS data elements included in DHIS
- Develop a Management Information System (MIS)

3.4 Communication

- Formative research to inform develop strategy

3.5 Advocacy

- Senior managers within ECDOH
- Senior managers: Social Needs Cluster
  Traditional Leaders
  Provincial Council of Churches

VITAMIN

1. Aim of VAS in the Eastern Cape

To save and improve the lives of children under the age of 2 years

2. Objectives of VAS at District Level are to ensure that:

1. Vitamin A capsules are available at each facility in the district
2. Health workers demonstrate the knowledge and skills to provide the VAS service
3. Health workers record and report on VAS activities
4. Communities are mobilized for VAS

3. Training Goal

To enhance the capacity of the district MCWH programme managers in the Eastern Cape to implement the provincial vitamin A supplementation protocol by monitoring the achievement of the 4 objectives

4. Training Objectives

June Training

- To exchange information between provincial and district programme managers about activities related to vitamin A supplementation for 2002
- To provide district programme managers with the tools to train their PHC workers to integrate VAS with their current PHC activities
- To enhance the district programme manager's capacity to coordinate activities in their district so that:
  - Drugs are available at all facilities
  - Health workers are giving all eligible mothers and children correct doses of vitamin A
  - Health workers are recording and reporting accurately on VAS activities
  - Communities are mobilized to bring their children for VAS

July Training

- To perform a peer review of the action plans for each component of the vitamin A supplementation programme as developed by each health sub-district
- To gain a shared understanding of monitoring and evaluation, linking this to the VAS target groups
- To link the DHIS and trace table monitoring tools to the concepts of inputs, processes, outputs and outcomes
- To utilize the DHIS and trace tables to monitor the implementation of the programme and evaluate the performance of the programme at a district level

5. ATTENDANCE

Targets June training

- MCWH coordinators for each health sub-district because the VAS programme is now located in the MCWP EPI division of EC District Health Services
- Community Liaison Officer for each sub-district because the VAS programme was formerly driven by the Nutrition division of EC District Health Services

Targets July Training

- MCWH coordinators for each health sub-district
- Members of the health district VAS Working Group:
  - Drug Coordinator
  - Training Coordinator
  - Information Officer
  - Health Promoter
  - Community Liaison Officer
  - Clinic Supervisors

Actual Attendance

23 out of the 24 sub-districts are currently functioning as discrete units. Elundini of the Uku-Hlamba sub-district will only have an acting-District Manager as of the 18 July 2002. There is also currently no MCWH coordinator for that area.

District Municipalities	Number of Trainees		Sub-Districts Absent	
	June	[illegible]	June	[illegible]
Alfred Nzo	3	14		
Amatole	10	36	Mbashe	
Cacadu	9	7		Camdeboo
Chris Hani	8	20	Emalahleni	Ixuba Yethemba
Nelson Mandela M	3	3		
OR Thambo	8	17		
Uku-Hlamba	4	19	Elundini	Elundini
TOTAL	45	[illegible]		

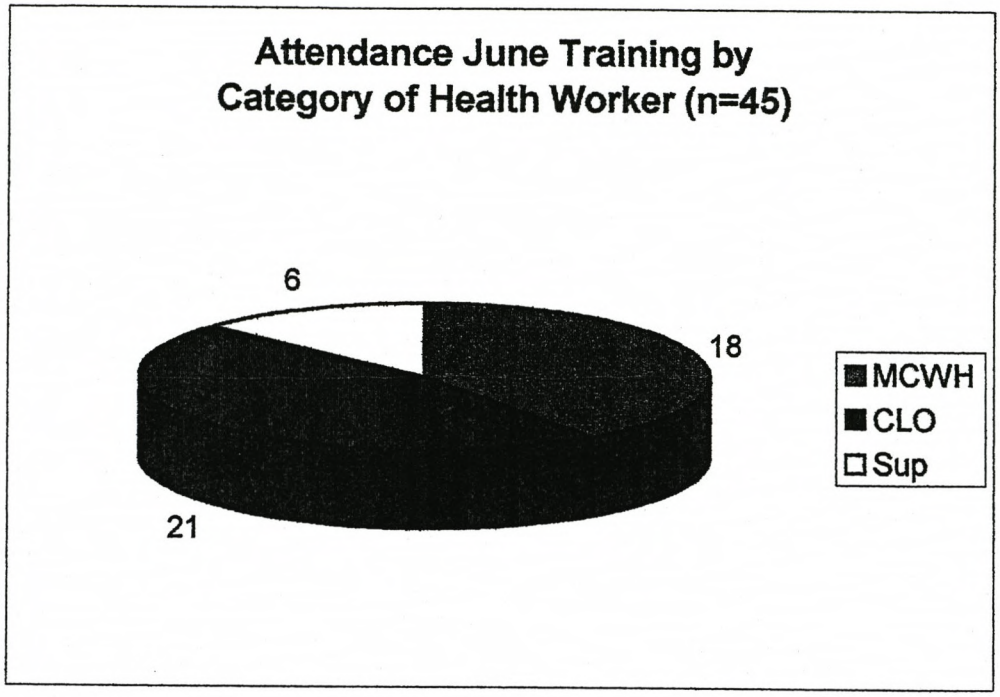
June Training

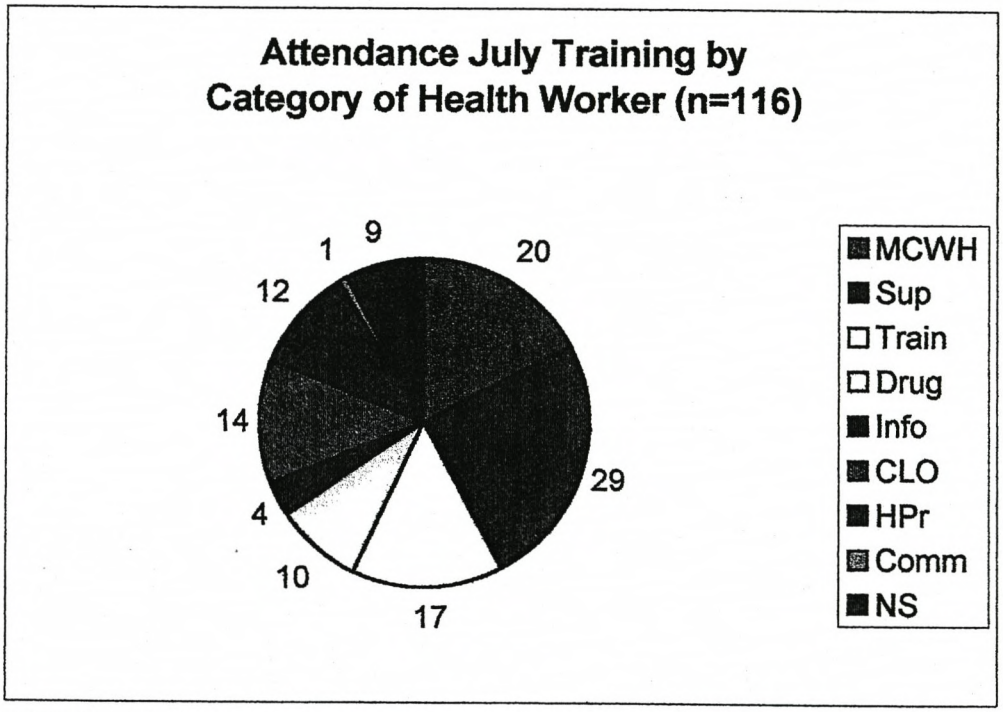
- **45 trainees** represented 21 out of the functioning 23 sub-districts
- Mbashe and Emalahleni had no representation

However, in July both of these groups attended and both had prepared master plans! Discussion with the MCWH Coordinators revealed that the operational guideline assisted them in the preparation of these plans

July Training

- **116 trainees** represented 21 out of the 23 functioning sub-districts
- This time, Camdeboo and Ixuba Yethemba were absent
- It is uncertain whether or not their master plans have been completed





MCWH = Child Health Coordinator
Train = Training Coordinator
Info = Information Officer
CLO = Community Liaison Officer
NS = Not specified

Sup=Area/clinic supervisor
Drug = Drug Coordinator
HPr = Health Promoter
Comm = Community member

6.1 REPORT ON ACTIVITIES DURING JUNE TRAINING

The **Orientation Course** reviews the actual activities undertaken with the MCWH programme managers and community liaison officers (CLO's). Please find the adjustments to the flow of the activities on day 2 below (the content remained the same as planned in the orientation course manual).

The Operational Guideline

(a) Presents an overview of why VAS needed in EC and what needs to be done

(b) Clarifies the objectives of the programme and the programme manager's role in achieving these objectives

(c) Provides guidelines on how to manage the programme

- ▶ Mobilising a district level VAS team
- ▶ Developing a Master Plan, supported by operational plans
- ▶ Monitoring implementation of operational plans and evaluating sub-district performance

Website:

Recommendation from information systems technical adviser to place these and updates on the ECDOH website.

Revised Programme of Activities on Day 2:

TIME	OBJECTIVE	ACTIVITIES
08:00	Provide an overview of the day	Welcome and Agenda for Day
08:15	Gain a shared understanding of the 4 objectives of the VAS programme at district level	Interactive review of roles and responsibilities of trainees
08:30	Identify essential activities to achieve the 4 objectives	Whole group: Capsule Supply 3 Groups: - training - social mobilization - data recording and reporting
09:30	Identify Role Players that will ensure these essential activities are conducted	Brainstorm by objective Elect best suited designation for each objective
10:15	Developing a Master Plan of Action	Whole Group: Capsule Supply
10:30		3 Groups to develop a POA, present
until	T E	A
12:30		Whole group discusses: Possible breakdown points Potential solutions to these challenges
12:30	Agree on Way Forward	Mobilised District Working Group & Master Plans drafted

6.2 REPORT ON ACTIVITIES DURING JULY TRAINING

Objective 1: To perform a peer review of the action plans for each component of the vitamin A supplementation programme as developed by each health sub-district

The trainees were divided by sub-district, with at least 2 sub-districts in each group. This promoted the exchange of ideas between sub-districts. Where possible:

- Drug coordinators and staff managing drug supply reviewed the capsule supply plans
- Training coordinators and staff involved in VAS training reviewed the training plans
- Information Officers and staff involved with collection and reporting of data reviewed the data recording and reporting plans and
- CLO's, Health Promotion Officers and staff involved in community mobilization reviewed the social mobilization plans

Ten out of the 21 health sub-districts that attended came to the training with drafted plans of action. The session therefore became an opportunity to both review these plans as well as provide the remaining sub-districts with an opportunity to draft their outstanding plans. By the end of this round of training all 21 sub-districts had completed their master plans for VAS.

A sample for each component of the VAS master plan is attached for your perusal *(appendix 1). This includes the trace tables for each component*

NOTED:

1. COORDINATION

MCWH coordinator has overall responsibility for the VAS programme in a sub-district. She is supported by a driver of each component of the master plan.

Who Drives each Component of Plan?

- Drug coordinator will coordinate and monitor all drug supply activities
- Training coordinator will drive and coordinate all training activities
- Information Manager will drive and ensure that data is recorded and reported by all facilities in a sub-district
- Health Promoter or CLO will coordinate all activities related to social mobilization for that sub-district

Area/clinic supervisors are like the MCWH coordinator because she has to coordinate and monitor drugs supply, training, information flow and community mobilisation activities

2. DRUGS

Vitamin A gets re-ordered like any other drug on the routine order form

The order number for

- 200 000iu is
- 100 000iu is

When do you re-order

- When you reach the minimum number of capsules on the shelf

What is that Minimum Number of Capules?

- A rough guide is the 1.5 times the number of capsules given out the previous month

Keeping Tracking of Stock

- The DHIS routine monthly data input form (statistics form) must include the data element:
- "Vitamin A 200,00 units capsule" under the section "Essential Drug Programme"
- This allows a facility to record if this capsule has been out of stock at any point in time during that month

At a facility level the blue and yellow stock cards will be utilised to follow all movement of stock

3. TRAINING

The ECDOH and UWC will train the Trainers for each sub-district during the month of July and August 2002

Quantity of Training

- These trainers will be responsible for ensuring that every facility has a PHC worker trained on integrating VAS into their activities and that these trained personnel go and in-service their staff

Quality of Training

- The trainers as well as supervisors need to do follow-up visits to ensure that the health workers are demonstrating the skills needed to manage the programme
- The supervisor's checklist for vitamin A is attached (see *appendix 2)*

Hospital Staff

- Nurses from paediatric and maternity departments of all hospitals within the geographic area of a sub-district should be included in the training of the sub-district trainers
- The doctors will be trained by the ECDOH MCWH division

4. DATA RECORDING AND REPORTING

The information officer must ensure that Vitamin A appears in **4 places** on the DHIS routine monthly input (statistics) form:

Section: ***"Immunisation"***

- "Vitamin A supplement to new mother"
- "Vitamin A supplement to 6-11 months infant"
- "Vitamin A supplement to 12-23 months child"

Section: ***"Essential Drug Programme"***

- "Vitamin A 200,000 unit capsule

Evaluation and Feedback

- The working group shall meet within 5 days of the 7th of each month to review the data of the preceding month.
- Their findings must then be fed back to the facilities in their sub-district as well as to the EPI coordinator for the province, Mrs Faith Manyakayaka

5. COMMUNITY MOBILISATION

The mobilization plans should only be implemented once a facility has capsules in stock and the health workers are demonstrating the skills needed to provide the service

Objective 2: To gain a shared understanding of monitoring and evaluation, linking this to the VAS target groups

Monitoring

This involves checking actual daily activities against planned activities to assess whether or not we are on track

Evaluation

Assesses whether we are achieving our aims

Monitoring and evaluation are mechanisms for us to:

- Evaluate our performance, identifying both good and bad practices
- Make comparisons with other sub-districts

We need to give vitamin A supplementation to ***at least:***

- **80%** of all mothers who have delivered and
- **80%** of all children under the age of 2 years in order to **SAVE and IMPROVE LIVES**

Objective 3: To link the DHIS and trace table monitoring tools to the concepts of inputs, processes, outputs and outcomes

Trainees who were familiar with the concept of inputs, processes, outputs and outcomes were invited to cite an example in everyday living to illustrate the concept to the other trainees. One of the examples is described below:

Baking a Cake:
Inputs – the things you out into the bowl in order to make the cake
Flour, oil, eggs, water, butter, etc

Processes – the things you do with the ingredients
Mix (stir/ beat/ whisk) ; place in the oven to bake

Output
A baked cake

Outcome
Enjoyment when eating the cake

This concept was then applied to vitamin A supplementation (see appendix 3)

HOW DHIS CAN BE USED
The DHIS allows us to monitor the ***outputs*** of the programme:

- The proportion of children and mothers that received vitamin A supplementation
- Whether a facility is out of 200 000iu stock

Review of Vitamin A Coverage in a year :

$$\frac{\text{Number of target group that received Vitamin A Capsules}}{\text{Total number of mothers/children in that target group}} \times 100\%$$

Eg

$$\frac{\text{Number of vitamin A given to 6-11 months infants}}{\text{Total Number of 6-11 month infants}} \times 100\%$$

$$\frac{\text{Number of vitamin A given to mothers}}{\text{Total Number of First Antenatal Visits}} \times 100\%$$

- Each sub-district received a copy of the total number of males and females under 1 year and 1 year olds for each of the facilities in their sub-district. This information is routinely available on the DHIS

Remember in the example above,

- Total number of 6-11 infants = (females under 1 + males under 1 year)
- Total number 12-23 children = (females 1 year + males 1year)

If you have the total umber of capsules given over 6 months:
Then the denominator becomes half the total number of the target group:

Number of vitamin A capsules given to the target group over the 6-month period ½ of the Total number of the target group

Trainees were invited to guess the current coverage in their sub-district. This was then compared with actual data from the April 2002 DHIS report:

- If we continue to give out the current number of capsules to mothers and children our coverage across the province will be ***less than 10%!***

Other examples of how the data from the DHIS can be analysed was shared with other sub-districts using actual data from the Kouga sub-district (*see appendix 4)*

But the DHIS cannot tell us why the coverage is poor. For this we need to monitor the inputs and processes of the programme.

HOW TRACE TABLES CAN BE USED

- Trace Tables allow us to monitor the essential activities required for each facility
- There should be a trace table for drug supply, training, information flow, and social mobilization activities
- The area/clinic supervisor should have these 4 trace tables listing her facilities in the first column and the essential activities that she is monitoring in the rest of the columns (see appendix 2 for examples of a trace table).
- The coordinators will also be keeping trace tables but for all the facilities in the whole sub-district. The supervisors will help the coordinators to maintain the sub-district trace tables

Objective 4: To utilize the DHIS and trace tables to monitor the implementation of the programme and evaluate the performance of the programme at a district level

The first aim is to reach at least 80% of the target groups ie a coverage rate of 80% for eliginle mothers and children under 2 years. Our immunization rate on average is about 80%. It follows therefore that if we match our immunizations given every month, we should get a vitamin A coverage close to the immunization coverage!

And so, each month the VAS working group needs to meet within 5 days of the 7th of each month to review the DHIS information (see operational guideline pages 14-15).

Step #1:

Compare the number of Vitamin A Capsules given to the relevant immunization

Number of Vitamin A Capsules Given	Immunisation
New Mothers	DTP-HIB1
6-11month infants	Measles 1
12-23 month children	Measles 2

- The total number of capsules given to new mothers in a sub-district should match/be close to the DTP-HIB1 vaccinations given within a district
- At a hospital, the number of capsules given to new mothers should match the number of BCG vaccinations given

- The total number of capsules given to 6-11 month infants should match the number of measles 1 vaccinations

The total least 2-3 number of vitamin A capsules given to 12-23 month old children should be at times the number of measles 2 vaccinations given:

Age of Child	12months	18 months	24 months	Total
No. of measles a child should receive		*		1
No of VAC a child should receive	*	*	*	2-3

(* indicates when the child should receive measles or vitamin A)

Step #2:

If the number of vitamin A capsules given is much less than the corresponding immunization given, then we need to ask why?

(a) Has there been any stock-outs experienced?

(b) Could it be training quantity or quality?

(c) Are the targets not attending the facilities?

- For step #2, one needs to review the relevant trace tables to check on the activities conducted within your sub-district.

- The trainees were divided into equal-sized groups to do exercises utilizing information from the DHIS and the trace tables (*see appendix 5*). The possible answers were then presented by members of the smaller groups, for discussion by the large group.

APPENDIX 1: SAMPLES OF SUBMITTED SUB-DISTRICT MASTER PLANS

1.1 *DATA COLLECTION AND REPORTING*

	ACTIVITY	RESPONSIBILITY	TIME FRAME	TARGET	OUTPUT	OUTCOME	MONITORING
1	Add vit A fields to monthly form ie Immunisation vit A to new mothers vit A to 6-11month infants vit A to 12-23 children Essential Drug Programme vit A 200,000 unit capsule	Information Officer PHC staff	Immediately		New Monthly statistics form	Collection of vit A stats	
2	Add vit A fields to computer DHIS system	Information Officer	Immediately		Updated DHIS system	Electronic capturing of vit A stats	
3	Training of PHC staff on new forms and tick register	District Office	By Mid-Aug	PHC supervisors PHC staff	Report	More accurate stats	Follow-up on ?'s and problems
4	Setting up of standard monthly reports	Information Officer District Office	End July		Standard Reports	Informed Management	
5	Monitor data collection and reporting	Vit A Team	Monthly	PHC Staff	Minutes and Reports	Improved vit A coverage	Follow-up
6	Feedback	MCWH coordinator District Office PHC Supervisors	Monthly	PHC staff	Minutes and Reports	Informed staff Improved vit A coverage	clinic visits
7	Evaluation	Vit A Team MCWH coordinator	Monthly	PHC staff	Minutes and Reports	Accurate stats Improved vit A coverage	Follow-up visits

1.2 CAPSULE AVAILABILITY

	OBJECTIVE	RESPONSIBLE	TARGET	ACTIVITY	INDICATOR	OUTPUT	OUTCOME	TIME FRAME
1	To ensure continuous	Drug Coordinator	PHC clinics	Education on:	Clinic stats DHIS	Vit A available	Increased vit A	4-6 weeks
	availability of vit A	Assisted by:		- Ordering	Tick Register	a all facilities	coverage	
		Supervisors		- Stock Control	Drug checklist			
		Clinic Sister		- Administration				
				- Storage				

1.3 TRAINING AND SOCIAL MOBILISATION

	ACTIVITY	TARGET GROUP	RESPONSIBLE	OUTPUT	TIME FRAME	OUTCOME
1	Vitamin A Workshop in sub-district monthly	Clininc nurses	TOTs	Attendance register	August to	100% trained nurses
	meetings		CLO's		September	
2	In-service raining in hospitals	Hospital Nurses	TOTs	Attendance register	August to	80% trained
		- Paediatric	CLOs		September	hospital nurses
		- Obstetric				
3	In-service training of community health	CHW, DOTS and	TOTs		End August	
	workers (chw) , DOTs and other volunteers	other volunteers	CLOs		onwards	
4	Community Based Organisations, NGO's,	SANTA	CLO's			Increased Demand
	health-related government workers	Rehab, Hospice				for vitamin A and
		Red Cross				promotion of breast
		etc				feeding and food
						gardens

Appendix 2. VIT A SUPPLEMENTATION SUPERVISORY CHECKLIST

Date of visit:_____Name of facility visited: _____

Name of visitor:_____Name of Person in Charge_____

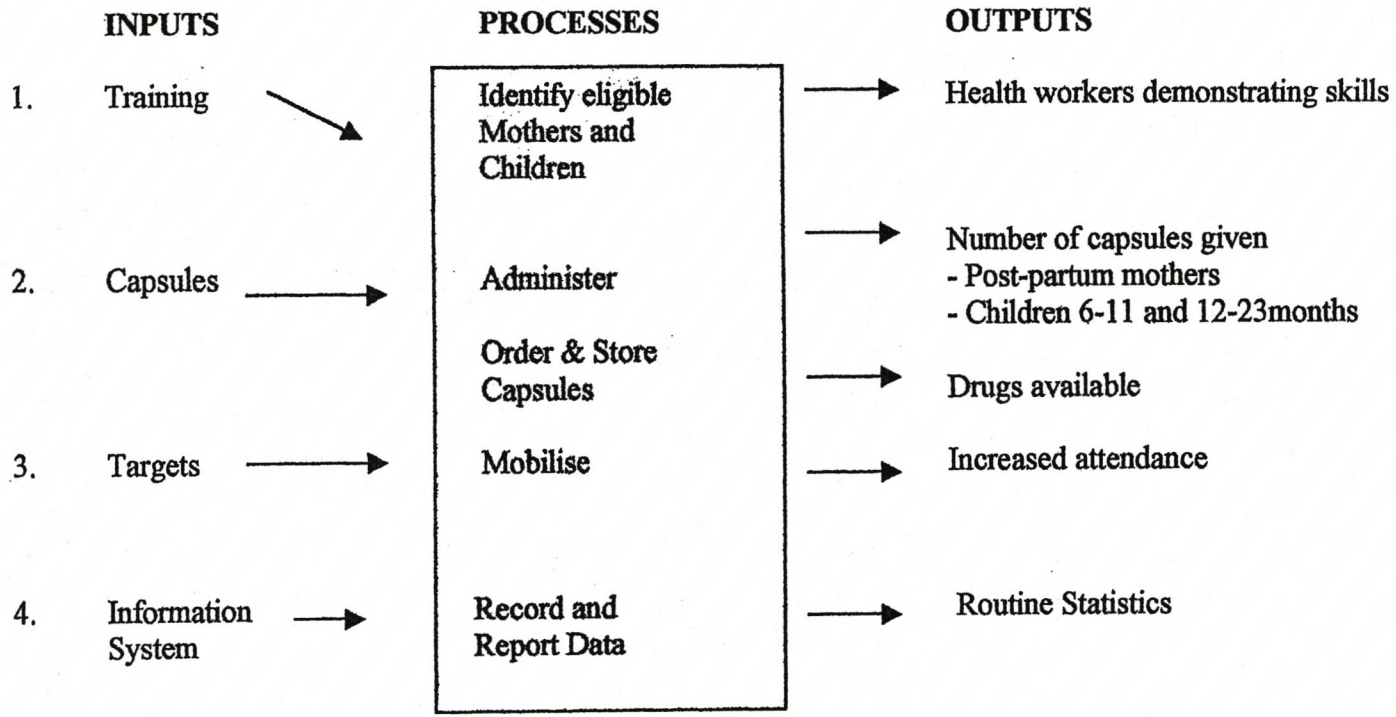
ACTIVITY	YES	NO	COMMENTS
Section 1: Logistics & Supplies			
Drug Supply (a) Are there sufficient stocks of vitamin A to last until the next batch arrives? (b) Are vitamin A supplies stored away from sunlight? (c) Is the drug ordering ledger book completed accurately for vitamin A? (d) Are the bin cards for vitamin A completed accurately			
IEC Materials (a) Are there sufficient job aids for each EPI staff (b) Is the integrated immunization schedule visible in EPI staff rooms? (c) Is the vitamin A Awareness poster? easily visible in patient waiting areas?			
Section 2: Staff Skills			
Method(s) Used: 1. Observation – if children under the age of 2 are present in in clinic during the supervisory visit AND/OR 2. 5 RTHC checked AND/OR 3. Tick Register checked			
For each of the methods chosen above: (a) Are staff correctly determining age of the child (b) Are staff deciding on the appropriate dose and correctly administering this dose? (c) Are staff recording vitamin A: • On RTHC • In Tick Register (d) Are staff preparing for return date correctly: • On RTHC and informing mothers • On launch card and in follow-up box (e) Are the total number of vitamin A doses for each target group at the bottom of the tick register page accurate?			

Section 3: Assessing Facility Performance			
DHIS Monthly Statistics Form: (a) Are the total number of vitamin A capsules given to each target group correctly added up in the tick register and transferred accurately to the 3 places on the DHIS stats form? (b) If the facility was out of stock of the 200 000iu vitamin A capsule, is this reflected on the DHIS stats form?			
Cumulative Graphs: (a) Is the cumulative graph (b) Has this graph been discussed with the clinic committee			
Community Participation Is vitamin A a standing item on clinic committee agenda?			

Actions Discussed and Agreed Upon:	**By Whom:**	**When:**
Section 1		
Section 2		
Section 3		

- (Sections 1-3 could be done as a once-off visit
- Section 3 should be done at least once monthly)

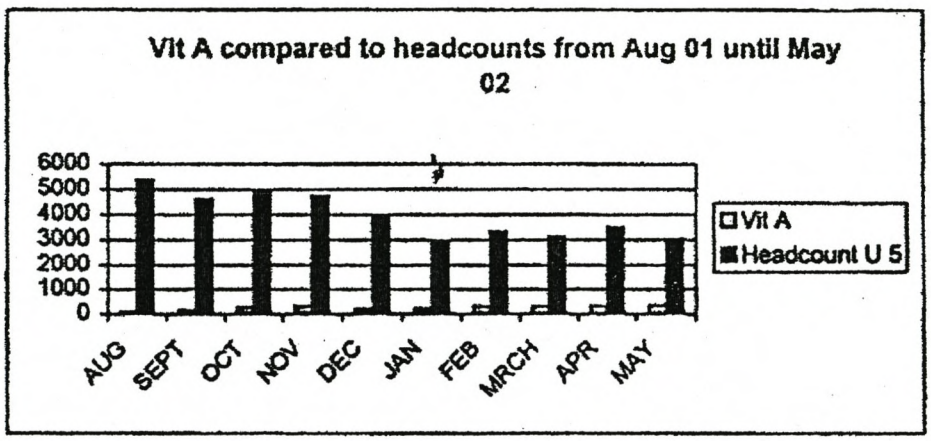
APPENDIX 3: VITAMIN A SUPPLEMENTATION



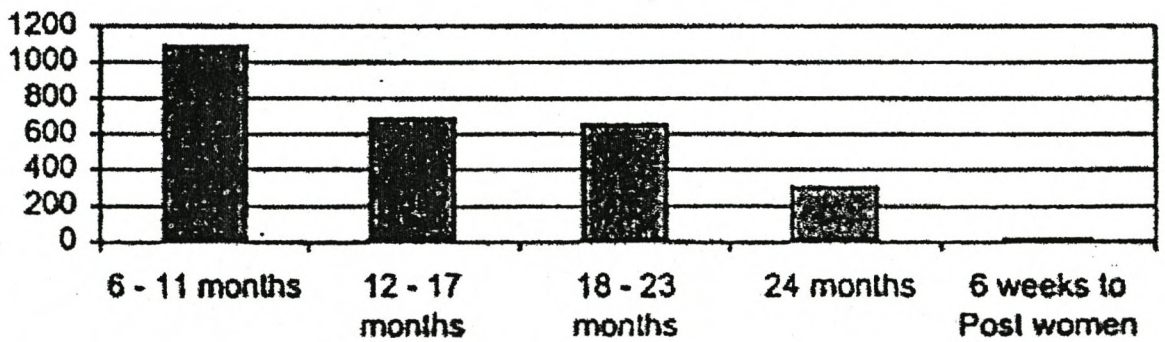
APPENDIX 4: CASE STUDY USING DHIS TO ASSESS PERFORMANCE

EXAMPLE GIVEN BY KOUGA SUB-DISTRICT

A. Comparing Total Number of Vit A Capsules given to Under 5 Head Count



B. Total Number of Vit A Capsules given August 2001 to June 2002 By Target Groups



APPENDIX 5:
MONITORING AND EVALUATION EXERCISES

Exercise 1:

FACILITY	*Data Input Coverage*	*No of VAC given to mothers*	*No of DTP-HIB1 given*	*%*	*No of VAC to 6-11 month*	*No of Measles 1 vacc. given*	*%*	*No of VAC to 12-24 month*	*No of Measles 2 vacc. given*	*%*	*Stock outs experienced*
Gugwini	*80*	*0*	*25*	*0*	*0*	*25*	*0*	*0*	*25*	*0*	*0*
Philani	*90*	*0*	*45*	*0*	*0*	*40*	*0*	*0*	*40*	*0*	*0*
Gowanlee	*85*	*0*	*30*	*0*	*0*	*20*	*0*	*0*	*20*	*0*	*0*
Ibisi	*83*	*0*	*35*	*0*	*0*	*32*	*0*	*0*	*32*	*0*	*0*
Lourdes	*85*	*0*	*20*	*0*	*0*	*10*	*0*	*0*	*10*	*0*	*0*
Rietvlei	*82*	*0*	*200*	*0*	*1*	*156*	*0*	*0*	*156*	*0*	*0*
Zingisa	*73*	*0*	*20*	*0*	*0*	*25*	*0*	*0*	*25*	*0*	*0*
Msendo	*87*	*0*	*18*	*0*	*0*	*20*	*0*	*0*	*20*	*0*	*0*
Zola	*97*	*0*	*20*	*0*	*0*	*15*	*0*	*0*	*15*	*0*	*0*
Empilweni	*88*	*0*	*35*	*0*	*0*	*28*	*0*	*0*	*28*	*0*	*0*
Total for District	***85%***	***0***	***448***	***0***	***1***	***356***	***0***	***0***	***532***		***0***

For this exercise, answer the following question:

(a) The information from the DHIS tells us how good or bad our coverage for vitamin A supplementation is. Bearing in mind that our first target is to match the number of relevant immunisations given each month, what is the DHIS information telling us?

HINT: ***Always start looking at TOTALS to give you an idea of the pattern of information***

Step #1: ***Compare number of vit A capsules given to relevant Immunisation***

- *No vit A capsules were given to mothers compared to 448 DTP-HIB 1 vaccinations during this month. This is very bad.*
- There are also no vit A capsules given out to children 6-11 months compared with 356 measles vaccinations given. This is bad
- There are also no vitamin A capsules given to children 12 –23 months compared with 532 measles 2vaccinations given. This is also bad.

Step #2: **Possible Explanation:**

- There have been no stockouts experienced

Exercise 2:

FACILITY	*Data Input Coverage*	*No of VAC given to mothers*	*No of DTP-HIB1 given*	*%*	*No of VAC to 6-11 month*	*No of Measles 1 vacc. given*	*%*	*No of VAC to 12-24 month*	*No of Measles 2 vacc. given*	*%*	*Stock outs experienced*
Gugwini	*80*	*24*	*25*		*5*	*25*		*50*	*25*		*0*
Philani	*90*	*44*	*45*		*8*	*40*		*78*	*40*		*0*
Gowanlee	*85*	*28*	*30*		*4*	*20*		*36*	*20*		*0*
Ibisi	*83*	*33*	*35*		*6*	*32*		*58*	*32*		*0*
Lourdes	*85*	*20*	*20*		*1*	*10*		*16*	*10*		*0*
Rietvlei	*82*	*198*	*200*		*20*	*156*		*304*	*156*		*0*
Zingisa	*73*	*3*	*20*		*2*	*25*		*8*	*25*		*1*
Msendo	*87*	*17*	*18*		*1*	*20*		*36*	*20*		*0*
Zola	*97*	*19*	*20*		*7*	*15*		*26*	*15*		*0*
Empilweni	*88*	*34*	*35*		*3*	*28*		*52*	*28*		*0*
Total for District	***85.5***	***419***	***448***		***57***	***356***		***986***	***532***		***0***

For this exercise, answer the following questions:

(b) The information from the DHIS tells us how good or bad our coverage for vitamin A supplementation is. Bearing in mind that our first target is to match the number of relevant immunisations given each month, what is the DHIS information telling us?

(c) Which trace table do we need to look at, to identify the possible breakdown?

(d) What does the trace table tell us?

(e) What are you going to do to address the breakdown(s)?

Step #1: Compare number of vit A capsules given to relevant Immunisation

- The number of vitamin A capsules given to mothers and children 12-23 months is close to the number of relevant vaccinations. However, number vit A capsules to 6-11 month group is very bad compared to measles 2

Step #2: Possible Explanations

(a) Stock Outs experienced

- Out of Vitamin A 100 000iu strength
  - "Stock outs experienced" only records when out of 200 000iu strength capsules. Hence, if out of 100 000iu strength this is not recorded on the DHIS
  - In this example, nurses may not know that they can halve the 200 000iu when out of stock
  - ***Plan of Action***: Train to halve 200 000iu capsule when out of 100 000iu stock

- Zingisa out of 200 000iu strength
  - DHIS shows this clinic experienced stock out during this month

Exercise 3:

FACILITY	*Data Input Coverage*	*No of VAC given to mothers*	*No of DTP-HIB1 given*	*%*	*No of VAC to 6-11 month*	*No of Measles 1 vacc. given*	*%*	*No of VAC to 12-24 month*	*No of Measles 2 vacc. given*	*%*	*Stock outs experienced*
Gugwini	*80*	*1*	*25*		*2*	*25*		*4*	*25*		*0*
Philani	*90*	*0*	*45*		*5*	*40*		*12*	*40*		*0*
Gowanlee	*85*	*2*	*30*		*4*	*20*		*4*	*20*		*0*
Ibisi	*83*	*4*	*35*		*3*	*32*		*6*	*32*		*0*
Lourdes	*85*	*2*	*20*		*0*	*10*		*2*	*10*		*0*
Rietvlei	*82*	*5*	*200*		*10*	*156*		*24*	*156*		*0*
Zingisa	*73*	*1*	*20*		*2*	*25*		*6*	*25*		*0*
Msendo	*87*	*4*	*18*		*4*	*20*		*4*	*20*		*0*
Zola	*97*	*18*	*20*		*1*	*15*		*12*	*15*		*0*
Empilweni	*88*	*2*	*35*		*3*	*28*		*8*	*28*		*0*
Total for District	***85%***	***39***	***448***		***34***	***356***		***82***	***532***		***0***

For this exercise, answer the following questions:

(f) The information from the DHIS tells us how good or bad our coverage for vitamin A supplementation is. Bearing in mind that our first target is to match the number of relevant immunisations given each month, what is the DHIS information telling us?

(g) Which trace table do we need to look at, to identify the possible breakdown?

(h) What does the trace table tell us?

(i) What are you going to do to address the breakdown(s)?

Step #1: Compare number of vit A capsules given to relevant Immunisation

- For all 3 target groups, the number of vit A capsules given is *much* lower than the relevant immunization given.

Step #2: Possible Explanation:

(a) No Stockouts were experienced

(b) Most likely that health workers have not been trained to provide the service because for all 3 targets there many missed opportunities eg there were possibly 356 children that could have gotten vit A capsules in the 6-11 month category

Exercise 4:

FACILITY	*Data Input Coverage*	*No of VAC given to mothers*	*No of DTP-HIB1 given*	*%*	*No of VAC to 6-11 month*	*No of Measles 1 vacc. given*	*%*	*No of VAC to 12-24 month*	*No of Measles 2 vacc. given*	*%*	*Stock outs experienced*
Gugwini	*80*	*20*	*25*		*22*	*25*		*6*	*3*		*0*
Philani	*90*	*41*	*45*		*38*	*40*		*18*	*10*		*0*
Gowanlee	*85*	*28*	*30*		*18*	*20*		*6*	*3*		*0*
Ibisi	*83*	*33*	*35*		*32*	*32*		*10*	*5*		*0*
Lourdes	*85*	*18*	*20*		*8*	*10*		*14*	*8*		*0*
Rietvlei	*82*	*198*	*200*		*149*	*156*		*38*	*20*		*0*
Zingisa	*73*	*18*	*20*		*25*	*25*		*2*	*1*		*0*
Msendo	*87*	*15*	*18*		*19*	*20*		*14*	*8*		*0*
Zola	*97*	*18*	*20*		*13*	*15*		*10*	*5*		*0*
Empilweni	*88*	*32*	*35*		*25*	*28*		*16*	*8*		*0*
Total for District	***85.5***	***421***	***448***		***334***	***356***		***134***	***71***		***0***

For this exercise, answer the following questions:

(j) The information from the DHIS tells us how good or bad our coverage for vitamin A supplementation is. Bearing in mind that our first target is to match the number of relevant immunisations given each month, what is the DHIS information telling us?

(k) Which trace table do we need to look at, to identify the possible breakdown?

(l) What does the trace table tell us?

(m) What are you going to do to address the breakdown(s)?

Step #1: Compare number of vit A capsules given to relevant Immunisation

- The number of capsules given to mothers and children 6-11 months really matches relevant immunization quite closely.
- However, after 12 months, there appears to be fewer children attending the services and getting vit A and measles 2

Step #2: Possible Explanation

(a) Stock outs - Drugs not out of stock

(b) Training - Been done and health workers not missing many opportunities

(c) Social Mobilistaion - However, communities do not bring children after 12 months of age

TRACE TABLES

Exercise 2.1: Drug Trace Table

Facility & Supervisor	*Date VAS ordered by facility (a)*	*Date VAS ordered by the district (b)*	*Time taken (b-a)*	*Date District receives VAS from Depot (c)*	*Time Taken (c-b)*	*Date Facility receives VAS (d)*	*Time Taken (d-c)*
Gugwini	***01/04/02***	***13/04/02***	***12***	***5/5/02***	***22***		
Philani	***04/04/02***	***17/04/02***	***13***				
Gowanlee	***03/04/02***	***17/04/02***	***14***	***5/5/02***	***24***		
Ibisi	***01/04/02***	***13/04/02***	***12***	***5/5/02***	***22***		
Lourdes	***03/04/02***	***17/04/02***	***14***	***5/5/02***	***24***		
Rietvlei	***04/04/02***	***17/04/02***	***13***				
Zingisa	***28/04/04***	***01/05/02***	***3***				
Msendo	***02/04/02***	***13/04/02***	***11***	***5/5/02***	***23***		
Zola	***04/04/02***	***17/04/02***	***13***				
Empilweni	***01/04/02***	***13/04/02***	***12***	***5/5/02***	***22***		

- Zingisi ordered late (only at end of April compared to the other facilities that ordered at the beginning of April)
- It is important to order drugs on your correct cycle date. Missing this date leads to delays in receipt of stock

Exercise 3.1: Training Trace Table

FACILITY	***WHO WILL TRAIN?***	***WHEN TRAINING OCCUR?***	***TRAINING CONDUCTED (Y)***	***FOLLOW-UP VISIT CONDUCTED (Y)***
Gugwini	*Matiwane*	*2 April*	*N*	
Philani	*Mjamba*	*3 April*	*N*	
Gowanlee	*Wagner*	*16 April 02*	*N*	
Ibisi	*Matiwane*	*9 April*	*Y*	
Lourdes	*Mjamba*	*10 April*	*N*	
Rietvlei	*Matiwane*	*16 April*	*N*	
Zingisa	*Matiwane*	*17 April*		
Msendo	*Wagner*	*18 April 2002*	*Y*	*Y*
Zola	*Mjamba*	*20 April 2002*		
Empilweni	*Matiwane*	*21 April 2002*	*Y*	*Y*

- Must reschedule training when opportunities were missed
- Must conduct follow-up tyo ensure health workers demonstrating required skills

Exercise 4.1: Social Mobilisation Trace Table

Facilities	*Means of Mobilising the Community*	*Contact Person(s)*	*What will take place*	*When will this take place*	*Took Place?*
Gugwini	*Clinic committees*			*10 April*	
Philani	*Clinic committees*			*28 April*	*N*
Gowanlee	*Ward Councilors*			*12 April*	
Ibisi	*Radio*			*7 April*	
Lourdes	*Clinic committees*			*28 April*	*N*
Rietvlei	*Radio*			*2 May*	
Zingisa	*Ward Councilors*			*20 April*	
Msendo	*Clinic committees*	*Mr Hongo*	*Presentation*	*16 April*	*Y*
Zola	*Ward Councilors*	*Mrs Cala*	*Public Meeting*	*23 April*	*N*
Empilweni	*Imbizo*			*22 April*	*Y*

- Ensure that health workers are trained and there is sufficient stock before mass mobilisation

APPENDIX 6: QUARTERLY REPORT FORMAT

When Due?
First one, mid-September Reporting on the Months of: June + July + August thereafter every 3 months

Heading of Report

Name of Sub-district: Total Number of facilities in your sub-district:

Main Body of Report:

1. **Comments on vitamin A supplementation compared with relevant immunization**
   How are you doing? Good (close matching) or bad (lots of missed opportunities) when compared with the relevant immunization?

2. **Why are you doing "good" or "bad"?**
   2.1 Vitamin A Capsule Supply
   - Comment on how many facilities were out of stock in the 3 months

   2.2 Training
   Quantity
   - Comment on the number of facilities that received training.
   - How does this compare with your original plan/trace table?

   Quality
   - Comment on the number of facilities that were visited to assess whether health workers are demonstrating the required skills.
   - How does this compare with your original plan/trace table?

   2.3 Social Mobilisation
   - If the drugs are available at every facility and the health workers at each facility are demonstrating the required skills, are the social mobilization activities taking place?

3. **What are you doing to improve the coverage?**
   If there are breakdowns or delays in implementation, what are you doing to address these?

Way Forward

(a) Working Group member's role each month to monitor implementation and evaluate performance as outlined in the operational guideline was highlighted
(b) The format of the quarterly report was reviewed (see appendix 6)
(c) The Training of Trainers dates by UWC and the ECDOH was agreed upon
(d) The vitamin A 100 000iu capsules were distributed amongst sub-districts
(e) Evaluation of the day – each delegate listed 2 good things and 2 bad, about the training

Appendix (at the back of your report)

1. Table 1 (to be completed):
   Comparison of vitamin A capsules given in each sub-district to the relevant immunisation

	New Mothers	DTP-HIB1	6-11 months	Measles 1	12-23 months	Measles 2
Totals for June						
Totals for July						
Totals for August						

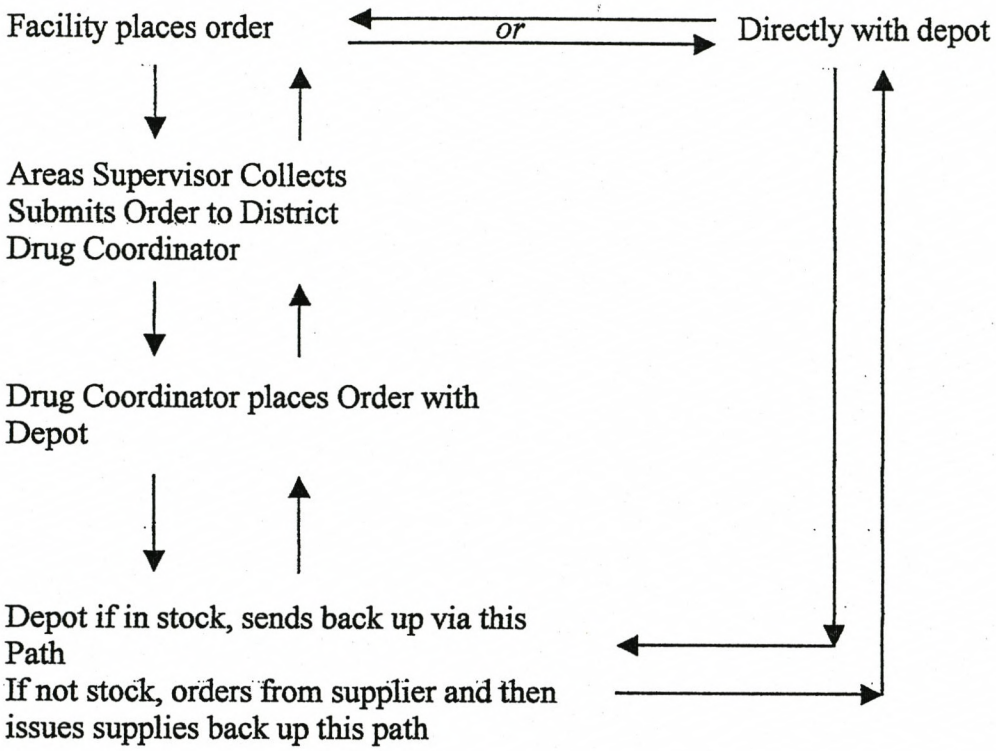
2. District Trace Tables
   (a) Training
   (b) Drug
   (c) Information Flow
   (d) Social Mobilisation

APPENDIX 5

VITAMIN A SUPPLEMENTATION

CRITICAL PATHWAYS

EXAMPLE: CRITICAL PATHWAYS FOR DRUG SUPPLY MANAGEMENT



APPENDIX 6

TRACE TABLES

6.1 Trace Table Template

6.2 Examples of Trace Tables

RegShort	DistShort	FacShort
A Nzo Mun	Umzimkulu LSA	Gowanlee
		Gugwini
		Ibisi
		Ladam Irene
		Lourdes
		Malenge
		Mvoti
		Mvubukazi
		Rietvlei CHC
		Rietvlei Hosp
		Rietvlei PHC
		Riverside
		Sihleza
		Singisi
		St Margaret's Hosp
		St Margaret's PHC
		Umzimkulu CHC
		Umzimkulu Hosp
		Umzimkulu Mob
		Umzimkulu Mob 1
		Umzimkulu Mob 2
	Umzimkulu LSA Total	

6.2 EXAMPLES OF TRACE TABLES

(A) EXAMPLE OF TRACE TABLE FOR DRUG SUPPLY MANAGEMENT

(read in conjunction with the example of the critical pathway outlined in Appendix 5)

Facility & Supervisor	Date VAS ordered by facility (a)	Date VAS ordered by the district (b)	Time taken (b-a)	Date District receives VAS from Depot (c)	Time Taken (c-b)	Date Facility receives VAS (d)	Time Taken (d-c)
Gugwini							
Philani							
Empilweni							

(B) EXAMPLE OF TRACE TABLE FOR TRAINING

FACILITY	WHO WILL TRAIN?	WHEN TRAINING OCCUR?	TRAINING CONDUCTED (Y)	FACILITY IN-CHARGE SISTER CONTACTED (Y)
Gugwini	Wagner	18 June 2002	Y	Y
Philani	Mjamba	20 June 2002	Y	
Empilweni	Matiwane	21 June 2002		

(C) EXAMPLE OF TRACE TABLE FOR SOCIAL MOBILISATION

Means of Mobilising the Community	Contact Person(s)	What will take place	When will this take place
Clinic committees	Mr Hongo	Presentation	16 July 2002
Ward Councilors	Mrs Cala	Public Meeting	23 August 2002

APPENDIX 7

MASTER PLANS FOR THE VITAMIN A SUPPLEMENTATION PROGRAMME

VITAMIN A SUPPLEMENTATION, EC

MASTER PLAN: DATA COLLECTION AND REPORTING

	ACTIVITY	RESPONSIBILITY	TIME FRAME	TARGET	OUTPUT	OUTCOME	MONITORING
1	Add vit A fields to monthly form ie Immunisation vit A to new mothers vit A to 6-11month infants vit A to 12-23 children Essential Drug Programme vit A 200,000 unit capsule	Information Officer PHC staff	Immediately		New Monthly statistics form	Collection of vit A stats	
2	Add vit A fields to computer DHIS system	Information Officer	Immediately		Updated DHIS system	Electronic capturing of vit A stats	
3	Training of PHC staff on new forms and tick register	District Office	By Mid-Aug	PHC supervisors PHC staff	Report	More accurate stats	Follow-up on ?'s and problems
4	Setting up of standard monthly reports	Information Officer District Office	End July		Standard Reports	Informed Management	
5	Monitor data collection and reporting	Vit A Team	Monthly	PHC Staff	Minutes and Reports	Improved vit A coverage	Follow-up
6	Feedback	MCWH coordinator District Office PHC Supervisors	Monthly	PHC staff	Minutes and Reports	Informed staff Improved vit A coverage	clinic visits
7	Evaluation	Vit A Team MCWH coordinator	Monthly	PHC staff	Minutes and Reports	Accurate stats Improved vit A coverage	Follow-up visits

VITAMIN A SUPPLEMENTATION EC

EXAMPLE OF A MASTER PLAN: DRUG SUPPLY MANAGEMENT

	OBJECTIVE	RESPONSIBLE	TARGET	ACTIVITY	INDICATOR	OUTPUT	OUTCOME	TIME FRAME
1	To ensure continuous	Drug Coordinator	PHC clinics	Education on:	Clinic stats DHIS	Vit A available	Increased vit A	4-6 weeks
	availability of vit A	Assisted by:		- Ordering	Tick Register	a all facilities	coverage	
		Supervisors		- Stock Control	Drug checklist			
		Clinic Sister		- Administration				
				- Storage				

EXAMPLE OF A MASTER PLAN: TRAINING OF PHC WORKERS

	ACTIVITY	TARGET GROUP	RESPONSIBLE	OUTPUT	TIME FRAME	OUTCOME
1	Vitamin A Workshop in sub-district monthly	Clininc nurses	TOTs	Attendance register	August to	100% trained nurses
	Meetings		CLO's		September	
2	In-service Training in hospitals	Hospital Nurses	TOTs	Attendance register	August to	80% trained
		- Paediatric	CLOs		September	hospital nurses
		- Obstetric				
3	In-service training of community health	CHW, DOTS and	TOTs		End August	
	workers (chw) , DOTs and other volunteers	other volunteers	CLOs		onwards	
4	Community Based Organisations, NGO's,	SANTA	CLO's			Increased Demand
	health-related government workers	Rehab, Hospice				for vitamin A and
		Red Cross				promotion of breast
		etc				feeding and food
						gardens

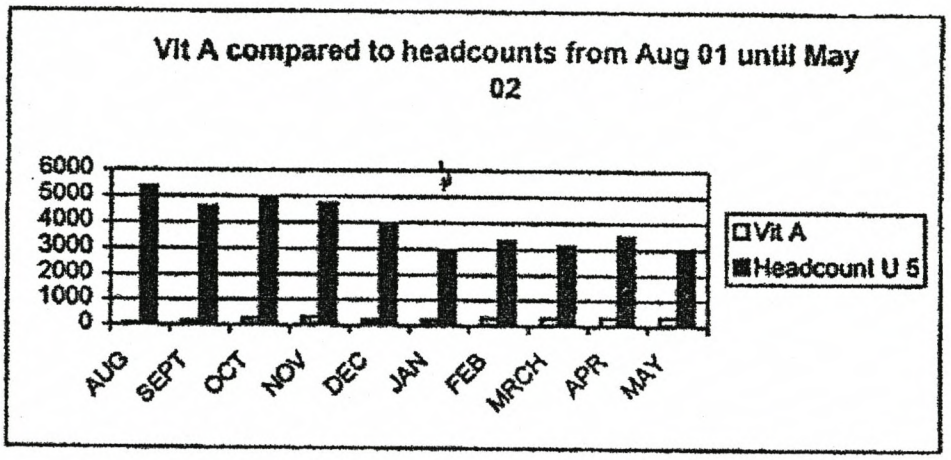
APPENDIX 8

KOUGA DISTRICT ANALYSIS OF VITAMIN A SUPPLEMENTATION DATA

CASE STUDY USING THE DHIS TO ASSESS PERFORMANCE

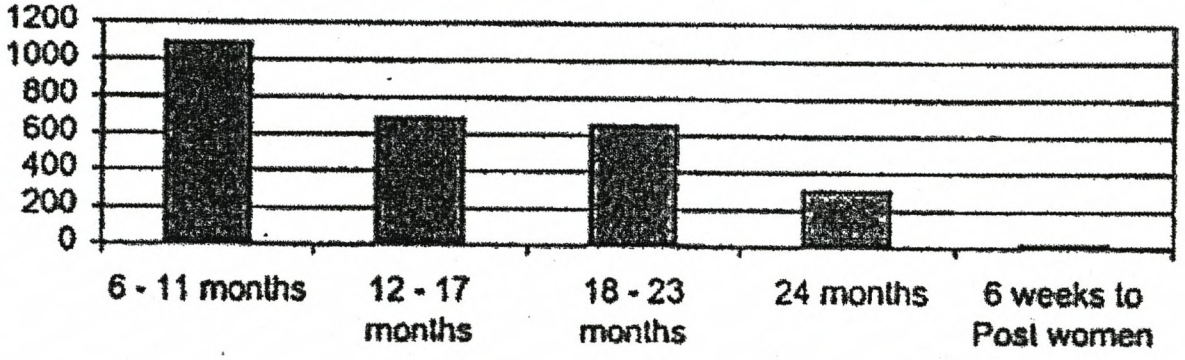
EXAMPLE GIVEN BY KOUGA DISTRICT

A. Comparing Total Number of Vit A Capsules given to Under 5 Head Count



B. Total Number of Vit A Capsules given August 2001 to June 2002

By Target Groups



APPENDIX 9

PRACTICAL EXERCISES UTILISING DATA FROM THE MIS

(Please refer to pages 18-23 of Appendix 4)

APPENDIX 5:
MONITORING AND EVALUATION EXERCISES

Exercise 1:

FACILITY	*Data Input Coverage*	*No of VAC given to mothers*	*No of DTP-HIB1 given*	*%*	*No of VAC to 6-11 month*	*No of Measles 1 vacc. given*	*%*	*No of VAC to 12-24 month*	*No of Measles 2 vacc. given*	*%*	*Stock outs experienced*
Gugwini	*80*	*0*	*25*	*0*	*0*	*25*	*0*	*0*	*25*	*0*	*0*
Philani	*90*	*0*	*45*	*0*	*0*	*40*	*0*	*0*	*40*	*0*	*0*
Gowanlee	*85*	*0*	*30*	*0*	*0*	*20*	*0*	*0*	*20*	*0*	*0*
Ibisi	*83*	*0*	*35*	*0*	*0*	*32*	*0*	*0*	*32*	*0*	*0*
Lourdes	*85*	*0*	*20*	*0*	*0*	*10*	*0*	*0*	*10*	*0*	*0*
Rietvlei	*82*	*0*	*200*	*0*	*1*	*156*	*0*	*0*	*156*	*0*	*0*
Zingisa	*73*	*0*	*20*	*0*	*0*	*25*	*0*	*0*	*25*	*0*	*0*
Msendo	*87*	*0*	*18*	*0*	*0*	*20*	*0*	*0*	*20*	*0*	*0*
Zola	*97*	*0*	*20*	*0*	*0*	*15*	*0*	*0*	*15*	*0*	*0*
Empilweni	*88*	*0*	*35*	*0*	*0*	*28*	*0*	*0*	*28*	*0*	*0*
Total for District	***85%***	***0***	***448***	***0***	***1***	***356***	***0***	***0***	***532***		***0***

For this exercise, answer the following question:

(a) The information from the DHIS tells us how good or bad our coverage for vitamin A supplementation is. Bearing in mind that our first target is to match the number of relevant immunisations given each month, what is the DHIS information telling us?

HINT: ***Always start looking at TOTALS to give you an idea of the pattern of information***

Step #1: ***Compare number of vit A capsules given to relevant Immunisation***

- *No vit A capsules were given to mothers compared to 448 DTP-HIB 1 vaccinations during this month. This is very bad.*
- There are also no vit A capsules given out to children 6-11 months compared with 356 measles vaccinations given. This is bad
- There are also no vitamin A capsules given to children 12 –23 months compared with 532 measles 2vaccinations given. This is also bad.

Step #2: **Possible Explanation:**

- There have been no stockouts experienced

Exercise 2:

FACILITY	*Data Input Coverage*	*No of VAC given to mothers*	*No of DTP-HIB1 given*	*%*	*No of VAC to 6-11 month*	*No of Measles 1 vacc. given*	*%*	*No of VAC to 12-24 month*	*No of Measles 2 vacc. given*	*%*	*Stock outs experienced*
Gugwini	*80*	*24*	*25*		*5*	*25*		*50*	*25*		*0*
Philani	*90*	*44*	*45*		*8*	*40*		*78*	*40*		*0*
Gowanlee	*85*	*28*	*30*		*4*	*20*		*36*	*20*		*0*
Ibisi	*83*	*33*	*35*		*6*	*32*		*58*	*32*		*0*
Lourdes	*85*	*20*	*20*		*1*	*10*		*16*	*10*		*0*
Rietvlei	*82*	*198*	*200*		*20*	*156*		*304*	*156*		*0*
Zingisa	*73*	*3*	*20*		*2*	*25*		*8*	*25*		*1*
Msendo	*87*	*17*	*18*		*1*	*20*		*36*	*20*		*0*
Zola	*97*	*19*	*20*		*7*	*15*		*26*	*15*		*0*
Empilweni	*88*	*34*	*35*		*3*	*28*		*52*	*28*		*0*
Total for District	***85.5***	***419***	***448***		***57***	***356***		***986***	***532***		***0***

For this exercise, answer the following questions:

(b) The information from the DHIS tells us how good or bad our coverage for vitamin A supplementation is. Bearing in mind that our first target is to match the number of relevant immunisations given each month, what is the DHIS information telling us?

(c) Which trace table do we need to look at, to identify the possible breakdown?

(d) What does the trace table tell us?

(e) What are you going to do to address the breakdown(s)?

Step #1: Compare number of vit A capsules given to relevant Immunisation

- The number of vitamin A capsules given to mothers and children 12-23 months is close to the number of relevant vaccinations. However, number vit A capsules to 6-11 month group is very bad compared to measles 2

Step #2: Possible Explanations

(a) Stock Outs experienced

- Out of Vitamin A 100 000iu strength
  - "Stock outs experienced" only records when out of 200 000iu strength capsules. Hence, if out of 100 000iu strength this is not recorded on the DHIS
  - In this example, nurses may not know that they can halve the 200 000iu when out of stock
  - ***Plan of Action***: Train to halve 200 000iu capsule when out of 100 000iu stock
- Zingisa out of 200 000iu strength
  - DHIS shows this clinic experienced stock out during this month

Exercise 3:

FACILITY	*Data Input Coverage*	*No of VAC given to mothers*	*No of DTP-HIB1 given*	*%*	*No of VAC to 6-11 month*	*No of Measles 1 vacc. given*	*%*	*No of VAC to 12-24 month*	*No of Measles 2 vacc. given*	*%*	*Stock outs experienced*
Gugwini	*80*	*1*	*25*		*2*	*25*		*4*	*25*		*0*
Philani	*90*	*0*	*45*		*5*	*40*		*12*	*40*		*0*
Gowanlee	*85*	*2*	*30*		*4*	*20*		*4*	*20*		*0*
Ibisi	*83*	*4*	*35*		*3*	*32*		*6*	*32*		*0*
Lourdes	*85*	*2*	*20*		*0*	*10*		*2*	*10*		*0*
Rietvlei	*82*	*5*	*200*		*10*	*156*		*24*	*156*		*0*
Zingisa	*73*	*1*	*20*		*2*	*25*		*6*	*25*		*0*
Msendo	*87*	*4*	*18*		*4*	*20*		*4*	*20*		*0*
Zola	*97*	*18*	*20*		*1*	*15*		*12*	*15*		*0*
Empilweni	*88*	*2*	*35*		*3*	*28*		*8*	*28*		*0*
Total for District	***85%***	***39***	***448***		***34***	***356***		***82***	***532***		***0***

For this exercise, answer the following questions:

(f) The information from the DHIS tells us how good or bad our coverage for vitamin A supplementation is. Bearing in mind that our first target is to match the number of relevant immunisations given each month, what is the DHIS information telling us?

(g) Which trace table do we need to look at, to identify the possible breakdown?

(h) What does the trace table tell us?

(i) What are you going to do to address the breakdown(s)?

Step #1: Compare number of vit A capsules given to relevant Immunisation

- For all 3 target groups, the number of vit A capsules given is *much* lower than the relevant immunization given.

Step #2: Possible Explanation:

(a) No Stockouts were experienced

(b) Most likely that health workers have not been trained to provide the service because for all 3 targets there many missed opportunities eg there were possibly 356 children that could have gotten vit A capsules in the 6-11 month category

Exercise 4:

FACILITY	*Data Input Coverage*	*No of VAC given to mothers*	*No of DTP-HIB1 given*	*%*	*No of VAC to 6-11 month*	*No of Measles 1 vacc. given*	*%*	*No of VAC to 12-24 month*	*No of Measles 2 vacc. given*	*%*	*Stock outs experienced*
Gugwini	*80*	*20*	*25*		*22*	*25*		*6*	*3*		*0*
Philani	*90*	*41*	*45*		*38*	*40*		*18*	*10*		*0*
Gowanlee	*85*	*28*	*30*		*18*	*20*		*6*	*3*		*0*
Ibisi	*83*	*33*	*35*		*32*	*32*		*10*	*5*		*0*
Lourdes	*85*	*18*	*20*		*8*	*10*		*14*	*8*		*0*
Rietvlei	*82*	*198*	*200*		*149*	*156*		*38*	*20*		*0*
Zingisa	*73*	*18*	*20*		*25*	*25*		*2*	*1*		*0*
Msendo	*87*	*15*	*18*		*19*	*20*		*14*	*8*		*0*
Zola	*97*	*18*	*20*		*13*	*15*		*10*	*5*		*0*
Empilweni	*88*	*32*	*35*		*25*	*28*		*16*	*8*		*0*
Total for District	***85.5***	***421***	***448***		***334***	***356***		***134***	***71***		***0***

For this exercise, answer the following questions:

(j) The information from the DHIS tells us how good or bad our coverage for vitamin A supplementation is. Bearing in mind that our first target is to match the number of relevant immunisations given each month, what is the DHIS information telling us?

(k) Which trace table do we need to look at, to identify the possible breakdown?

(l) What does the trace table tell us?

(m) What are you going to do to address the breakdown(s)?

Step #1: Compare number of vit A capsules given to relevant Immunisation

- The number of capsules given to mothers and children 6-11 months really matches relevant immunization quite closely.
- However, after 12 months, there appears to be fewer children attending the services and getting vit A and measles 2

Step #2: Possible Explanation

(a) Stock outs - Drugs not out of stock

(b) Training - Been done and health workers not missing many opportunities

(c) Social Mobilistaion - However, communities do not bring children after 12 months of age

TRACE TABLES

Exercise 2.1: Drug Trace Table

Facility & Supervisor	*Date VAS ordered by facility (a)*	*Date VAS ordered by the district (b)*	*Time taken (b-a)*	*Date District receives VAS from Depot (c)*	*Time Taken (c-b)*	*Date Facility receives VAS (d)*	*Time Taken (d-c)*
Gugwini	***01/04/02***	***13/04/02***	***12***	***5/5/02***	***22***		
Philani	***04/04/02***	***17/04/02***	***13***				
Gowanlee	***03/04/02***	***17/04/02***	***14***	***5/5/02***	***24***		
Ibisi	***01/04/02***	***13/04/02***	***12***	***5/5/02***	***22***		
Lourdes	***03/04/02***	***17/04/02***	***14***	***5/5/02***	***24***		
Rietvlei	***04/04/02***	***17/04/02***	***13***				
Zingisa	***28/04/04***	***01/05/02***	***3***				
Msendo	***02/04/02***	***13/04/02***	***11***	***5/5/02***	***23***		
Zola	***04/04/02***	***17/04/02***	***13***				
Empilweni	***01/04/02***	***13/04/02***	***12***	***5/5/02***	***22***		

- Zingisi ordered late (only at end of April compared to the other facilities that ordered at the beginning of April)
- It is important to order drugs on your correct cycle date. Missing this date leads to delays in receipt of stock

Exercise 3.1: Training Trace Table

FACILITY	***WHO WILL TRAIN?***	***WHEN TRAINING OCCUR?***	***TRAINING CONDUCTED (Y)***	***FOLLOW-UP VISIT CONDUCTED (Y)***
Gugwini	*Matiwane*	*2 April*	*N*	
Philani	*Mjamba*	*3 April*	*N*	
Gowanlee	*Wagner*	*16 April 02*	*N*	
Ibisi	*Matiwane*	*9 April*	*Y*	
Lourdes	*Mjamba*	*10 April*	*N*	
Rietvlei	*Matiwane*	*16 April*	*N*	
Zingisa	*Matiwane*	*17 April*		
Msendo	*Wagner*	*18 April 2002*	*Y*	*Y*
Zola	*Mjamba*	*20 April 2002*		
Empilweni	*Matiwane*	*21 April 2002*	*Y*	*Y*

- Must reschedule training when opportunities were missed
- Must conduct follow-up tyo ensure health workers demonstrating required skills

Exercise 4.1: Social Mobilisation Trace Table

Facilities	*Means of Mobilising the Community*	*Contact Person(s)*	*What will take place*	*When will this take place*	*Took Place?*
Gugwini	*Clinic committees*			*10 April*	
Philani	*Clinic committees*			*28 April*	*N*
Gowanlee	*Ward Councilors*			*12 April*	
Ibisi	*Radio*			*7 April*	
Lourdes	*Clinic committees*			*28 April*	*N*
Rietvlei	*Radio*			*2 May*	
Zingisa	*Ward Councilors*			*20 April*	
Msendo	*Clinic committees*	*Mr Hongo*	*Presentation*	*16 April*	*Y*
Zola	*Ward Councilors*	*Mrs Cala*	*Public Meeting*	*23 April*	*N*
Empilweni	*Imbizo*			*22 April*	*Y*

- Ensure that health workers are trained and there is sufficient stock before mass mobilisation

APPENDIX 10

EXAMPLE OF A WAY FORWARD

JUNE 2002 WORKSHOP

Way Forward

(a) Working Group member's role each month to monitor implementation and evaluate performance as outlined in the operational guideline was highlighted
(b) The format of the quarterly report was reviewed (see appendix 6)
(c) The Training of Trainers dates by UWC and the ECDOH was agreed upon
(d) The vitamin A 100 000iu capsules were distributed amongst sub-districts
(e) Evaluation of the day – each delegate listed 2 good things and 2 bad, about the training

APPENDIX 11

QUARTERLY REPORT FORMAT

APPENDIX 6: QUARTERLY REPORT FORMAT

When Due?
First one, mid-September Reporting on the Months of: June + July + August thereafter every 3 months

Heading of Report

Name of Sub-district: Total Number of facilities in your sub-district:

Main Body of Report:

1. **Comments on vitamin A supplementation compared with relevant immunization**
   How are you doing? Good (close matching) or bad (lots of missed opportunities) when compared with the relevant immunization?

2. **Why are you doing "good" or "bad"?**

   2.1 Vitamin A Capsule Supply
   - Comment on how many facilities were out of stock in the 3 months

   2.2 Training

   Quantity
   - Comment on the number of facilities that received training.
   - How does this compare with your original plan/trace table?

   Quality
   - Comment on the number of facilities that were visited to assess whether health workers are demonstrating the required skills.
   - How does this compare with your original plan/trace table?

   2.3 Social Mobilisation
   - If the drugs are available at every facility and the health workers at each facility are demonstrating the required skills, are the social mobilization activities taking place?

3. **What are you doing to improve the coverage?**
   If there are breakdowns or delays in implementation, what are you doing to address these?

Appendix (at the back of your report)

1. Table 1 (to be completed):
   Comparison of vitamin A capsules given in each sub-district to the relevant immunisation

	New Mothers	DTP-HIB1	6-11 months	Measles 1	12-23 months	Measles 2
Totals for June						
Totals for July						
Totals for August						

2. District Trace Tables
   (a) Training
   (b) Drug
   (c) Information Flow
   (d) Social Mobilisation

APPENDIX 12

TRAINING MANUALS FOR VITAMIN A SUPPLEMENTATION

PROVIDING CORE SKILLS FOR HEALTH WORKERS INVOLVED IN VITAMIN A SUPPLEMENTATION

Training Booklet 1

CONTENTS

A. CORE KNOWLEDGE

1. Why Children in the EC need vitamin A supplementation

- The EC has high infant death rates. Most of these deaths are caused by infections and malnutrition.
- The EC also has severe vitamin A deficiency -1 in every 3 children is deficient in vitamin A. These children typically present with sores on the skin, frequent episodes of diarrhoea and respiratory tract infections.

→ Vitamin A plays a very important role in the immune system and is therefore essential for helping the body resist these infections

→ Giving children vitamin A can ***SAVE up to a quarter*** of the lives lost in the EC

2. Schedule to Supplement Children

There is a policy to supplement vulnerable children with vitamin A

Target Group		**Dosage**	**Schedule**
All post-partum women		200 000 IU	A single dose at delivery (or not later than 6 weeks after delivery)
Infants	6 – 11 months	100 000 IU	A single dose at the age of 6 months
Children	12 – 24 months	200 000 IU	A single dose at the age of 12 months, 18months and age 24 months

NOTE:

Post-Partum Dose

- Mothers pass the vitamin A onto their babies through their breast milk

Infants 6-11months and Children 12, 18,24 months

- Vitamin A is administered like an immunization: at 6, 12, 18 and 24 months of age
- If a child presents between these dates, "catch-up" the required immunization and vitamin A dose and inform the mother to bring the child back at the next due date

HIV Positive Mothers

- There will be no separate schedule for HIV positive mothers
- ***ALL*** mothers (positive and negative) will receive vitamin A at delivery or not later than 6 weeks after delivery

B. DEVELOPING CORE SKILLS FOR EVERDAY ACTIVITIES

STEP	*CORE SKILL*	*MATERIALS*	*ACTION*
Step #1	Determine the age of the child	RTHC	• The number above the month that the child presents to you, corresponds with the age of that child in months
Step #2	Decide on the appropriate dose and administer this dose correctly	Integrated Immunisation Schedule Vitamin A Capsules	• Check the Integrated Immunisation Schedule for the appropriate dose for that age • Cut or pierce the required capsule and squeeze the vitamin A into the child's mouth. • Ensure that the child swallows the vitamin A. • If the child spits it out repeat the dose.
Step #3	Record the dose given: (a) RTHC (b) Tick Register	RTHC Tick Register	***RTHC*** – Under "vitamin A" section ***Tick Register*** – Label a blank column "vitamin A" and record the dose given in this column
Step #4	Prepare For Return Date: (a) Tell mother when to return (b) Place launch card correctly in follow-up box		Write the date of the child's next visit in: ***RTHC*** - Under "Return Date" section - Tell the mother the date to return and - Show the mother the corresponding picture of the child at this date ***Launch Card*** - Place launch card correctly in follow-up box
Step #5	Add up the number of vitamin A supplemented that day for each target group: (a) Post-partum Mothers (b) Infants 6-11 months (c) Children 12-23 months	Tick Register	- At the bottom of each page, add up the number of VAC given for each target group and write down the totals for that page - These will be totaled at the end of that month

B.2 TEST YOURSELF

Case Study #1
Mrs Mjamba delivered at home. She brings her 5 week old baby, Litha, to the clinic. Manage Litha appropriately by performing steps 1-5 described above. Focus on the immunizations required

Case Study #2
Mrs Dlamini brings her 11 month old baby daughter, Buyiswa, to your clinic. You last saw Buyiswa at age 5 months. Manage Buyiswa appropriately by performing steps 1-5 described above. Focus on the immunizations required

Case Study #3
Mrs Goosen brings her 19 month old grandson, John, to your clinic because he has a runny nose. You last saw him when he was 12 months old. Manage John appropriately by performing steps 1-5 described above. Describe what you will do BEFORE managing the runny nose.

Case Study #4
Mrs Geleba brings her 23 month old daughter, Mbabalwa, to your clinic because she has had mild diarrhoea for 2 days. You last saw Mbabalwa when she was 9 months old. Manage Mbabalwa appropriately by performing steps 1-5 described above. Describe what you will do BEFORE managing the diarrhoea.

B.3 MODEL ANSWERS

Case Study #1	
Step #1:	Litha is 5 weeks old
Step #2:	He is too young to get vitamin A **BUT HIS MOTHER** delivered at home less than 6 weeks ago. She must swallow a 200 000iu capsule Litha must "catch-up" the other immunizations due up until 5 weeks
Step#3:	The mother's dose should be recorded in 2 places: • On the RTHC under the "vitamin A" section • In the tick register under a column for "Vitamin A New Mothers"
Step #4:	The date of the next visit is at 6 weeks. Write this date down in 2 places: • The RTHC and show the mother the picture of the child on the RTHC that corresponds with this date • The launch card and place this card in the correct month in the follow-up box
Step #5:	Add the doses given to each target group at the bottom of the tick register, before turning to the next page

- **All mothers must get 200 000iu vitamin A capsules at delivery or not later than 6 weeks after delivery**

Case Study #2	
Step #1:	Buyiswa is 11 months old
Step #2:	Catch-up Immunisations for Buyiswa include: Vitamin A 100 000iu drops from capsule (because 6-11month infant) Measles (because 9month measles 1 missed)
Step #3:	These doses should be recorded in 2 places: • On the RTHC under the "Vitamin A" section • In the tick register under a column for "Vitamin A 6-11 month Infants"
Step #4:	The date of the next visit is at *no less than 4 weeks* later, when Buyiswa is *12months old.* Write this date down in 2 places: • On the RTHC and show the mother the picture of the child on the RTHC that corresponds with this date • The launch card and place this card in the correct month in the follow-up box
Step #5:	Add the doses given to each target group at the bottom of the tick register, before turning to the next the page

- **Tell the mother to return when the next immunistaion is due, according to the Integrated Immunisation Schedule**
- **The minimum amount of time between vitamin A doses when catching up, is 4 weeks**

Case Study #3

Step #1: John is 19 months old

Step #2: Catch-up Immunisations to be given to John include:

- Vitamin A 200 000iu (because missed 18month vitamin A dose)
- Measles (because missed 18 month measles 2 dose)

Step#3: These doses should be recorded in 2 places:

- On the RTHC under the "Vitamin A" section
- In the tick register under a column for "Vitamin A 12-24 month children"

Step #4: The date of the next visit is when John is *24 months old.*
Write this date down in 2 places:

- On the RTHC and show the mother the picture of the child on the RTHC that corresponds with this date
- The launch card and place this card in the correct month in the follow-up box

Step #5: Add the doses given to each target group at the bottom of the tick register, before turning to the next the page

Case Study #4

Step #1: Mbabalwa is 23 months old

Step #2: Catch-up immunizations for Mbabalwa include:
Vitamin A 200 000iu (because she missed 12 and 18 month doses)
Measles (because missed 18 month measles 2 dose)

Step#3: These doses should be recorded in 2 places:

- On the RTHC under the "Vitamin A" section
- In the tick register under a column for "Vitamin A 12-24 month children"

Step #4: The date of the next visit is when John is ***no less than 4 weeks later***, when Mbabalwa is ***24 months old.***
Write this date down in 2 places:

- On the RTHC and show the mother the picture of the child on the RTHC that corresponds with this date
- The launch card and place this card in the correct month in the follow-up box

Step #5: Add the doses given to each target group at the bottom of the tick register, before turning to the next the page

If a child presents after the age of 18 months, and has never gotten any vitamin A during the 12-18 month period, then the child must get:

- **1 x 200 000iu immediately**
- **Then at 24 months (with no les than 4 weeks between doses)**
- **Then a third dose at 30 months**

C. Developing Core Skills for Monthly Activities

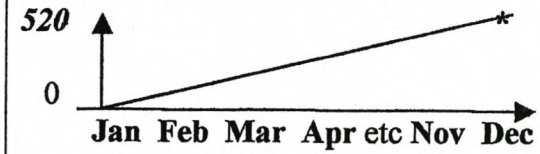
C.1 Ensuring Capsules Always Available at Your Facility

Step #1	Determine stock availability during the preceding month	Bin Cards for Vitamin A 200 000iu and 100 000iu	• Check if at any point during the previous month, your facility was out of vit A capsules
Step #2	Record if experienced stock outs of 200 000iu vitamin A capsules	DHIS Monthly stats form	• Put a tick in the "vitamin A 200, 000 capsule" box under "Essentail Drug Programme" section of the DHIS monthly statistics form
Step #3	Ensure enough stock on hand until the next batch of drugs arrive: (a) Determine minimum number of 100 000iu and 200 000iu required (b) If insufficient on hand, place new order along	Monthly stats form Routine Drug Ordering Form	• Multiply the total number of doses given to each target group to determine the minimum number of capsules that you require for the next month. • Don't forget to add the post-partum and children 12-23 monthly totals together to get the minimum number of 200 000iu strength needed

C.2 Reporting on monthly statistics form

STEP	*CORE SKILL*	*MATERIALS*	*ACTION*
Step #1	Determine total number of vitamin A doses given out for each target group for that month	Tick Register	• Add up total number of doses of vitamin A given to each target group in the tick register at the end of each page for that month
Step #2	Report on Monthly Statistics Form	DHIS Monthly Stats Form	• Enter on monthly stats form under "Immunisation" section

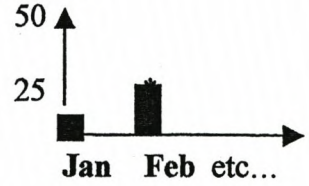
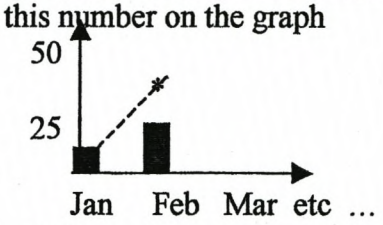
C.3 Drawing a Cumulative Graph for 6-11month Infants

<table>
<tr>
<td>Step #1</td>
<td>Label the Graph:
(a) X-axis with the months “Jan” to “Dec”
(b) Cumulative Table with “Monthly Doses” given and “Cumulative Total”</td>
<td>Blank A3 or A4 paper</td>
<td rowspan="2">• Draw and label the X-axis and Cumulative Table:
 

<table>
<tr><th></th><th>Jan</th><th>etc</th><th>Dec</th></tr>
<tr><td>Monthly Doses</td><td></td><td></td><td></td></tr>
<tr><td>Cumulative Total</td><td></td><td></td><td></td></tr>
</table>
Drawing the Target Line:
• Look up DHIS table which has “ 0-1F” and “0-1M” for this year
• Add up this number of males and females under 1years
• This number is the biggest value expected on your Y-axis, so plot this near the top of your Y-axis
• Plot with an asterisk on the graph where this number on the Y-axis meets the point above December
• Draw the target line from 0 to this asterisk</td>
</tr>
<tr>
<td>Step #2</td>
<td>Draw the Target Line:
(a) Determine total number of infants 6-11 months in your drainage area
(b) Label this number on your Y-axis
(c) Plot this number on your graph
(d) Draw a line from zero to this point</td>
<td>DHIS Population Informatiom

Cumulative Graph</td>
</tr>
</table>

<table>
<tr>
<td>Step #3</td>
<td>Draw the Bar Graph:
(a) Determine the total number of doses of vitamin A capsules given to infants 6-11 months for the month
(b) Enter this number in the "Monthly Doses" row of the table under the relevant month
(c) Plot this number on the graph as a bar graph</td>
<td>Monthly stats form

Cumulative Graph</td>
<td>• Read this from your DHIS monthly stats form
• Complete Table:
<table>
<tr><th></th><th>Jan</th><th>Feb</th><th>Mar</th><th>Apr</th><th>May</th><th>etc</th></tr>
<tr><td>Monthly Doses</td><td>12</td><td>24</td><td></td><td></td><td></td><td></td></tr>
<tr><td>Cumulative Total</td><td>12</td><td></td><td></td><td></td><td></td><td></td></tr>
</table>
• Plot the Bar:
 
</td>
</tr>
<tr>
<td>Step #4</td>
<td>Draw the Line Graph
(a) Determine the new cumulative total for that month
(b) Enter this number in the "Cumulative Total" row of the table
(c) Plot this total on the graph and draw a line connecting all cumulative totals</td>
<td>Cumulative Graph</td>
<td>• Add this month's total number of doses given to infants 6-11 months, to last month's cumulative total eg 24 + 12 = 36
• Complete Table:
<table>
<tr><th></th><th>Jan</th><th>Feb</th><th>Mar</th><th>Apr</th><th>May</th><th>etc</th></tr>
<tr><td>Monthly Doses</td><td>12</td><td>24</td><td></td><td></td><td></td><td></td></tr>
<tr><td>Cumulative Total</td><td>12</td><td>36</td><td></td><td></td><td></td><td></td></tr>
</table>
• Plot this number on the graph
 

• Connect to previous cumulative total with a dotted line</td>
</tr>
</table>

HOW TO MONITOR THE ROLLOUT OF VITAMIN A SUPPLEMENTATION TRAINING IN YOUR HEALTH DISTRICT

Training Booklet 2

There are two tools to assist with monitoring the quantity and quality of vitamin A supplementation training in your health district: Trace Tables and Supervisory Checklist

1. TRACE TABLE

- A Trace Table allows you to trace all essential activities that are undertaken for each facility under your care
- It can, at a glance, tell you about the quantity and quality of the vitamin A supplementation training in your district (see training trace table below)
- This information can be current and relevant to your decision-making, provided the table is kept updated at all times

Facility	Name of Trainer	Date of training	Logistics		Done	Follow-up Done	Comments
			Transport	Materials			
Gugwini	Buli	18 July	✓	✓	18 July	31 July	
Empilweni	Thandi	12 Aug	✓				Tandi on leave until 9 Aug
Guguletu	Buli	25 July	✓	✓	28 July		Postponed to 28th because transport not available as planned; Follow-up scheduled with sister for 2/08

1.1 Master Trace Table

- This trace table is kept by the training coordinator in your district
- It contains relevant information for ***EVERY*** facility in the district
- A copy of this updated table should be made every month for the Child Health Coordinator of your district

1.2 Trainer's Trace Table

- This trace table is kept by the trainers identified for vitamin A supplementation in your district
- It contains the same information as the master trace table ***BUT*** only for the facilities under the care of that trainer
- The trainer will regularly make a copy of his/her table for the training coordinator so that the master trace table can be updated regularly

2. SUPERVISORY CHECKLIST

- The supervisory checklist systematically allows a trainer/supervisor to review whether health workers are demonstrating the skills required to provide the vitamin A supplementation service
- Three areas are covered by this checklist: (1)Logistics and supplies (2) Staff skills (3) Assessing Performance
- Sections 1-3 could be done as a once-off visit; section 3 should be done once monthly thereafter

STEP	*CORE SKILL TO MANAGE TRACE TABLES*	*MATERIALS*	*ACTION*
Step #1	Set up the trace table: (a) Master Training Trace Table is for the Training Coordinator for the health district (b) Trainer's Trace Table is for each vitamin A supplementation trainer in the health district	List of all Facilities in the health district Blank A3 or A4 Sheet	***Master Training Trace Table***: • List of every facility in your district in the first column • List all essential activities to be conducted at each facility in the rest of the columns (see example above) ***Trainer's Trace Table*** • List every facility under your care in the first column • List all essential activities to be conducted at each facility in the rest of the columns (see example above)
Step #2	Ensure that every facility is allocated to a trainer	Master and Trainer's Trace Tables	• Each Trainer read out the names of the facilities under your care • On the Master Trace Table, place a tick next to each of these facilities as the name is read out • If there are any facilities with no tick next to it, allocate this facility to a trainer
Step #3	Set up schedule of training dates for each facility	Master and Trainer's Trace Tables	• Plan dates for training the health worker(s) from each facility • Confirm with staff of this facility • Inform the training coordinator so that these dates can be recorded on the Master Trace Table
Step #4	Finalise logistics for training sessions	Transport booking	• Finalise transport • Ensure enough materials copied for trainees etc
Step #5	Record when training has been completed	Master and Trainer's Trace Tables	• Trainers record in trace table immediately Inform training coordinator at earliest date to update the master trace table
Step #5	Follow-up visit to assess whether health workers are demonstrating required skills for vitamin A supplementation	Supervisory Checklist	***Training coordinator and trainers***: • Plan a follow-up visit at least 2-4 weeks after the training has been completed • Ensure that every facility has a follow-up visit

2. VIT A SUPPLEMENTATION SUPERVISORY CHECKLIST

Date of visit:_____Name of facility visited:
Name of visitor:_____Name of Person in Charge

ACTIVITY	YES	NO	COMMENTS
Section 1: Logistics & Supplies			
Drug Supply (a) Are there sufficient stocks of vitamin A to last until the next batch arrives? (b) Are vitamin A supplies stored away from sunlight? (c) Is the drug ordering ledger book completed accurately for vitamin A? (d) Are the bin cards for vitamin A completed accurately			
IEC Materials (a) Are there sufficient job aids for each EPI staff (b) Is the integrated immunization schedule visible in EPI staff rooms? (c) Is the vitamin A Awareness poster? easily visible in patient waiting areas?			
Section 2: Staff Skills			
Method(s) Used: 1. Observation – if children under the age of 2 are present in in clinic during the supervisory visit AND/OR 2. 5 RTHC checked AND/OR 3. Tick Register checked			
For each of the methods chosen above: (a) Are staff correctly determining age of the child (b) Are staff deciding on the appropriate dose and correctly administering this dose? (c) Are staff recording vitamin A: • On RTHC • In Tick Register (d) Are staff preparing for return date correctly: • On RTHC and informing mothers • On launch card and in follow-up box (e) Are the total number of vitamin A doses for each target group at the bottom of the tick register page accurate?			

Section 3: Assessing Facility Performance			
DHIS Monthly Statistics Form: (a) Are the total number of vitamin A capsules given to each target group correctly added up in the tick register and transferred accurately to the 3 places on the DHIS stats form? (b) If the facility was out of stock of the 200 000iu vitamin A capsule, is this reflected on the DHIS stats form?			
Cumulative Graphs: (a) Is the cumulative graph (b) Has this graph been discussed with the clinic committee			
Community Participation Is vitamin A a standing item on clinic committee agenda?			

Actions Discussed and Agreed Upon:	**By Whom:**	**When:**
Section 1		
Section 2		
Section 3		

- (Sections 1-3 could be done as a once-off visit
- Section 3 should be done at least once monthly)

ASSESSING PERFORMANCE OF VITAMIN A SUPPLEMENTATION IN YOUR HEALTH DISTRICT

Training Booklet 3

CONTENTS

1. WHO ASSESSES DISTRICT PERFORMANCE?

- The Child Health Coordinators will be responsible for assessing the performance of vitamin A supplementation programme within the health district. He/she will be supported by a vitamin supplementation team for that district.
- Child Health Coordinators will provide monthly progress reports to the District Manager and quarterly reports to the provincial EPI Coordinator.

2. MONTHLY REPORTS

STEP #1

Compare the number of Vitamin A Capsules given to the relevant immunization

Number of Vitamin A Capsules Given To:	*Compare with Immunisation:*
New Mothers	DTP-HIB1
6-11month infants	Measles 1
12-23 month children	Measles 2

- The total number of capsules given to **new mothers** in a sub-district should match/be close to the DTP-HIB1 vaccinations given within a district

- At a hospital, the number of capsules given to new mothers should match the number of BCG vaccinations given

- The total number of capsules given to **6-11 month infants** should match the number of measles 1 vaccinations

- The total number of vitamin A capsules given to **12-23 month old children** should be at least 3 times the number of measles 2 vaccinations given:

	12months	**18 months**	**24 months**	**Total From 12-24months**
No. of measles a child should receive		*		1
No of Vit A capsules a child should receive	*	*	*	3

* indicates when the child should receive measles or vitamin A

STEP #2

If the number of vitamin A capsules given is much less than the corresponding immunization given, then we need to ask why?

Potential Reason for Low Vit A Coverage:	*Trace Table to be Checked:*
Has there been any stock-outs experienced?	DHIS Stock Out Column
(b) Could it be training quantity or quality?	Training Trace Table
(c) Are the targets not attending the facilities?	Social Mobilisation Trace Table

3. QUARTERLY REPORTS

When Due?
First one, mid-September Reporting on the Months of: June + July + August thereafter every 3 months

Heading of Report

Name of Sub-district: Total Number of facilities in your sub-district:

Main Body of Report:

1. **Comments on vitamin A supplementation compared with relevant immunization**
   How are you doing? Good (close matching) or bad (lots of missed opportunities) when compared with the relevant immunization?

2. **Why are you doing "good" or "bad"?**
   2.1 Vitamin A Capsule Supply
   - Comment on how many facilities were out of stock in the 3 months

   2.2 Training
   Quantity
   - Comment on the number of facilities that received training.
   - How does this compare with your original plan/trace table?

   Quality
   - Comment on the number of facilities that were visited to assess whether health workers are demonstrating the required skills.
   - How does this compare with your original plan/trace table?

   2.3 Social Mobilisation
   - If the drugs are available at every facility and the health workers at each facility are demonstrating the required skills, are the social mobilization activities taking place?

3. **What are you doing to improve the coverage?**
   If there are breakdowns or delays in implementation, what are you doing to address these?

Appendix (see next page)

Appendix (at the back of your report)

1. **Table 1 (to be completed):**
   Comparison of vitamin A capsules given in each sub-district to the relevant immunisation

	New Mothers	DTP-HIB1	6-11 months	Measles 1	12-23 months	Measles 2
Totals for June						
Totals for July						
Totals for August						

2. **Health District Trace Tables**
   (a) Training
   (b) Drug
   (c) Information Flow
   (d) Social Mobilisation

4. TEST YOURSELF: MONITORING AND EVALUATION EXERCISES with MODEL ANSWERS

Exercise 1:

FACILITY	*Data Input Coverage*	*No of VAC given to mothers*	*No of DTP-HIB1 given*	*%*	*No of VAC to 6-11 month*	*No of Measles 1 vacc. given*	*%*	*No of VAC to 12-24 month*	*No of Measles 2 vacc. given*	*%*	*Stock outs experienced*
Gugwini	*80*	*0*	*25*	*0*	*0*	*25*	*0*	*0*	*25*	*0*	*0*
Philani	*90*	*0*	*45*	*0*	*0*	*40*	*0*	*0*	*40*	*0*	*0*
Gowanlee	*85*	*0*	*30*	*0*	*0*	*20*	*0*	*0*	*20*	*0*	*0*
Ibisi	*83*	*0*	*35*	*0*	*0*	*32*	*0*	*0*	*32*	*0*	*0*
Lourdes	*85*	*0*	*20*	*0*	*0*	*10*	*0*	*0*	*10*	*0*	*0*
Rietvlei	*82*	*0*	*200*	*0*	*1*	*156*	*0*	*0*	*156*	*0*	*0*
Zingisa	*73*	*0*	*20*	*0*	*0*	*25*	*0*	*0*	*25*	*0*	*0*
Msendo	*87*	*0*	*18*	*0*	*0*	*20*	*0*	*0*	*20*	*0*	*0*
Zola	*97*	*0*	*20*	*0*	*0*	*15*	*0*	*0*	*15*	*0*	*0*
Empilweni	*88*	*0*	*35*	*0*	*0*	*28*	*0*	*0*	*28*	*0*	*0*
Total for District	***85%***	***0***	***448***	***0***	***1***	***356***	***0***	***0***	***532***		***0***

For this exercise, answer the following question:

(a) The information from the DHIS tells us how good or bad our coverage for vitamin A supplementation is. Bearing in mind that our first target is to match the number of relevant immunisations given each month, what is the DHIS information telling us?

HINT: ***Always start looking at TOTALS to give you an idea of the pattern of information***

Step #1: ***Compare number of vit A capsules given to relevant Immunisation***

- *No vit A capsules were given to mothers compared to 448 DTP-HIB 1 vaccinations during this month. This is very bad.*
- There are also no vit A capsules given out to children 6-11 months compared with 356 measles vaccinations given. This is bad
- There are also no vitamin A capsules given to children 12 –23 months compared with 532 measles 2vaccinations given. This is also bad.

Step #2: **Possible Explanation:**

- There have been no stockouts experienced
- However, anecdotally, we know that at least some vitamin capsules have been given to children. Therefore, the data is probably not being recorded on DHIS monthly Data Input (statistics) Form.

Exercise 2:

FACILITY	*Data Input Coverage*	*No of VAC given to mothers*	*No of DTP-HIB1 given*	*%*	*No of VAC to 6-11 month*	*No of Measles 1 vacc. given*	*%*	*No of VAC to 12-24 month*	*No of Measles 2 vacc. given*	*%*	*Stock outs experienced*
Gugwini	*80*	*24*	*25*		*5*	*25*		*50*	*25*		*0*
Philani	*90*	*44*	*45*		*8*	*40*		*78*	*40*		*0*
Gowanlee	*85*	*28*	*30*		*4*	*20*		*36*	*20*		*0*
Ibisi	*83*	*33*	*35*		*6*	*32*		*58*	*32*		*0*
Lourdes	*85*	*20*	*20*		*1*	*10*		*16*	*10*		*0*
Rietvlei	*82*	*198*	*200*		*20*	*156*		*304*	*156*		*0*
Zingisa	*73*	*3*	*20*		*2*	*25*		*8*	*25*		*1*
Msendo	*87*	*17*	*18*		*1*	*20*		*36*	*20*		*0*
Zola	*97*	*19*	*20*		*7*	*15*		*26*	*15*		*0*
Empilweni	*88*	*34*	*35*		*3*	*28*		*52*	*28*		*0*
Total for District	***85.5***	***419***	***448***		***57***	***356***		***986***	***532***		***0***

For this exercise, answer the following questions:

(b) The information from the DHIS tells us how good or bad our coverage for vitamin A supplementation is. Bearing in mind that our first target is to match the number of relevant immunisations given each month, what is the DHIS information telling us?

(c) Which trace table do we need to look at, to identify the possible breakdown?

(d) What does the trace table tell us?

(e) What are you going to do to address the breakdown(s)?

Step #1: Compare number of vit A capsules given to relevant Immunisation

- The number of vitamin A capsules given to mothers and children 12-23 months is close to the number of relevant vaccinations. However, number vit A capsules to 6-11 month group is very bad compared to measles 2

Step #2: Possible Explanations

(a) Stock Outs experienced

- Out of Vitamin A 100 000iu strength
  - "Stock outs experienced" only records when out of 200 000iu strength capsules. Hence, if out of 100 000iu strength this is not recorded on the DHIS
  - In this example, nurses may not know that they can halve the 200 000iu when out of stock
  - ***Plan of Action***: Train to halve 200 000iu capsule when out of 100 000iu stock

- Zingisa out of 200 000iu strength
  - DHIS shows this clinic experienced stock out during this month

Exercise 3:

FACILITY	*Data Input Coverage*	*No of VAC given to mothers*	*No of DTP-HIB1 given*	*%*	*No of VAC to 6-11 month*	*No of Measles 1 vacc. given*	*%*	*No of VAC to 12-24 month*	*No of Measles 2 vacc. given*	*%*	*Stock outs experienced*
Gugwini	*80*	*1*	*25*		*2*	*25*		*4*	*25*		*0*
Philani	*90*	*0*	*45*		*5*	*40*		*12*	*40*		*0*
Gowanlee	*85*	*2*	*30*		*4*	*20*		*4*	*20*		*0*
Ibisi	*83*	*4*	*35*		*3*	*32*		*6*	*32*		*0*
Lourdes	*85*	*2*	*20*		*0*	*10*		*2*	*10*		*0*
Rietvlei	*82*	*5*	*200*		*10*	*156*		*24*	*156*		*0*
Zingisa	*73*	*1*	*20*		*2*	*25*		*6*	*25*		*0*
Msendo	*87*	*4*	*18*		*4*	*20*		*4*	*20*		*0*
Zola	*97*	*18*	*20*		*1*	*15*		*12*	*15*		*0*
Empilweni	*88*	*2*	*35*		*3*	*28*		*8*	*28*		*0*
Total for District	***85%***	***39***	***448***		***34***	***356***		***82***	***532***		***0***

For this exercise, answer the following questions:

(f) The information from the DHIS tells us how good or bad our coverage for vitamin A supplementation is. Bearing in mind that our first target is to match the number of relevant immunisations given each month, what is the DHIS information telling us?

(g) Which trace table do we need to look at, to identify the possible breakdown?

(h) What does the trace table tell us?

(i) What are you going to do to address the breakdown(s)?

Step #1: Compare number of vit A capsules given to relevant Immunisation

- For all 3 target groups, the number of vit A capsules given is *much* lower than the relevant immunization given.

Step #2: Possible Explanation:

(a) No Stockouts were experienced

(b) Most likely that health workers have not been trained to provide the service because for all 3 targets there many missed opportunities eg there were possibly 356 children that could have gotten vit A capsules in the 6-11 month category

Exercise 4:

FACILITY	*Data Input Coverage*	*No of VAC given to mothers*	*No of DTP-HIB1 given*	*%*	*No of VAC to 6-11 month*	*No of Measles 1 vacc. given*	*%*	*No of VAC to 12-24 month*	*No of Measles 2 vacc. given*	*%*	*Stock outs experienced*
Gugwini	*80*	*20*	*25*		*22*	*25*		*6*	*3*		*0*
Philani	*90*	*41*	*45*		*38*	*40*		*18*	*10*		*0*
Gowanlee	*85*	*28*	*30*		*18*	*20*		*6*	*3*		*0*
Ibisi	*83*	*33*	*35*		*32*	*32*		*10*	*5*		*0*
Lourdes	*85*	*18*	*20*		*8*	*10*		*14*	*8*		*0*
Rietvlei	*82*	*198*	*200*		*149*	*156*		*38*	*20*		*0*
Zingisa	*73*	*18*	*20*		*25*	*25*		*2*	*1*		*0*
Msendo	*87*	*15*	*18*		*19*	*20*		*14*	*8*		*0*
Zola	*97*	*18*	*20*		*13*	*15*		*10*	*5*		*0*
Empilweni	*88*	*32*	*35*		*25*	*28*		*16*	*8*		*0*
Total for District	***85.5***	***421***	***448***		***334***	***356***		***134***	***71***		***0***

For this exercise, answer the following questions:

(j) The information from the DHIS tells us how good or bad our coverage for vitamin A supplementation is. Bearing in mind that our first target is to match the number of relevant immunisations given each month, what is the DHIS information telling us?

(k) Which trace table do we need to look at, to identify the possible breakdown?

(l) What does the trace table tell us?

(m) What are you going to do to address the breakdown(s)?

Step #1: Compare number of vit A capsules given to relevant Immunisation

- The number of capsules given to mothers and children 6-11 months really matches relevant immunization quite closely.
- However, after 12 months, there appears to be fewer children attending the services and getting vit A and measles 2

Step #2: Possible Explanation

(a) Stock outs - Drugs not out of stock

(b) Training - Been done and health workers not missing many opportunities

(c) Social Mobilistaion - However, communities do not bring children after 12 months of age

TRACE TABLES THAT SUPPORT THESE EXERCISES

Exercise 2.1: Drug Trace Table

Facility & Supervisor	*Date VAS ordered by facility (a)*	*Date VAS ordered by the district (b)*	*Time taken (b-a)*	*Date District receives VAS from Depot (c)*	*Time Taken (c-b)*	*Date Facility receives VAS (d)*	*Time Taken (d-c)*
Gugwini	***01/04/02***	***13/04/02***	***12***	***5/5/02***	***22***		
Philani	***04/04/02***	***17/04/02***	***13***				
Gowanlee	***03/04/02***	***17/04/02***	***14***	***5/5/02***	***24***		
Ibisi	***01/04/02***	***13/04/02***	***12***	***5/5/02***	***22***		
Lourdes	***03/04/02***	***17/04/02***	***14***	***5/5/02***	***24***		
Rietvlei	***04/04/02***	***17/04/02***	***13***				
Zingisa	***28/04/04***	***01/05/02***	***3***				
Msendo	***02/04/02***	***13/04/02***	***11***	***5/5/02***	***23***		
Zola	***04/04/02***	***17/04/02***	***13***				
Empilweni	***01/04/02***	***13/04/02***	***12***	***5/5/02***	***22***		

- Zingisi ordered late (only at end of April compared to the other facilities that ordered at the beginning of April)
- It is important to order drugs on your correct cycle date. Missing this date leads to delays in receipt of stock

Exercise 3.1: Training Trace Table

FACILITY	***WHO WILL TRAIN?***	***WHEN TRAINING OCCUR?***	***TRAINING CONDUCTED (Y)***	***FOLLOW-UP VISIT CONDUCTED (Y)***
Gugwini	*Matiwane*	*2 April*	*N*	
Philani	*Mjamba*	*3 April*	*N*	
Gowanlee	*Wagner*	*16 April 02*	*N*	
Ibisi	*Matiwane*	*9 April*	*Y*	
Lourdes	*Mjamba*	*10 April*	*N*	
Rietvlei	*Matiwane*	*16 April*	*N*	
Zingisa	*Matiwane*	*17 April*		
Msendo	*Wagner*	*18 April 2002*	*Y*	*Y*
Zola	*Mjamba*	*20 April 2002*		
Empilweni	*Matiwane*	*21 April 2002*	*Y*	*Y*

- Must reschedule training when opportunities were missed
- Must conduct follow-up tyo ensure health workers demonstrating required skills

Exercise 4.1: Social Mobilisation Trace Table

Facilities	*Means of Mobilising the Community*	*Contact Person(s)*	*What will take place*	*When will this take place*	*Took Place?*
Gugwini	*Clinic committees*			*10 April*	
Philani	*Clinic committees*			*28 April*	*N*
Gowanlee	*Ward Councilors*			*12 April*	
Ibisi	*Radio*			*7 April*	
Lourdes	*Clinic committees*			*28 April*	*N*
Rietvlei	*Radio*			*2 May*	
Zingisa	*Ward Councilors*			*20 April*	
Msendo	*Clinic committees*	*Mr Hongo*	*Presentation*	*16 April*	*Y*
Zola	*Ward Councilors*	*Mrs Cala*	*Public Meeting*	*23 April*	*N*
Empilweni	*Imbizo*			*22 April*	*Y*

- Ensure that health workers are trained and there is sufficient stock before mass mobilisation

APPENDIX 13

TRENDS IN VITAMIN A SUPPLEMENTATION IN THE EC

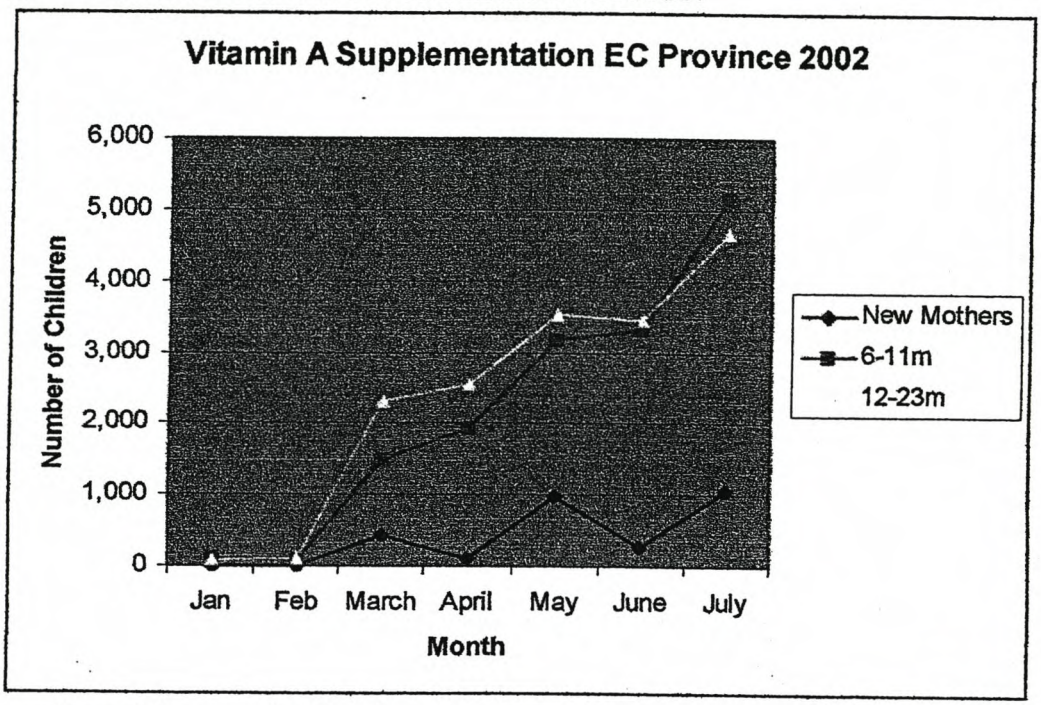
JANUARY – JULY 2002

VITAMIN A SUPPLEMENTATION INTERIM PROGRESS REPORT

A. TOTAL NUMBER OF VITAMIN A DOSES GIVEN JAN – JULY 02

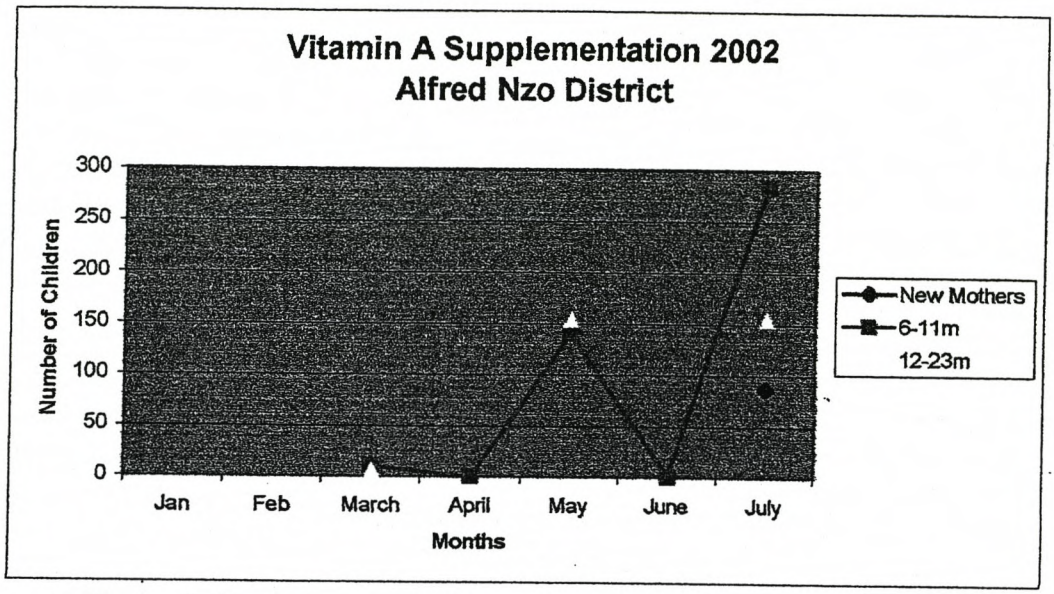
EC Province	J	F	M	A	M	J	J	total
Vitamin A supplement to new mother	0	0	447	96	974	283	1,066	2,935
Vitamin A supplement to 6-11 months infant	119	93	1,490	1,933	3,176	3,304	5,148	15,468
Vitamin A supplement to 12-23 months child	76	107	2,308	2,546	3,529	3,450	4,668	16,794
Measles 2nd dose at 18 months	6,166	5,977	5,761	7,631	8,141	5,108	4,956	44,021

B. TRENDS IN VIT A SUPPLEMENTATION



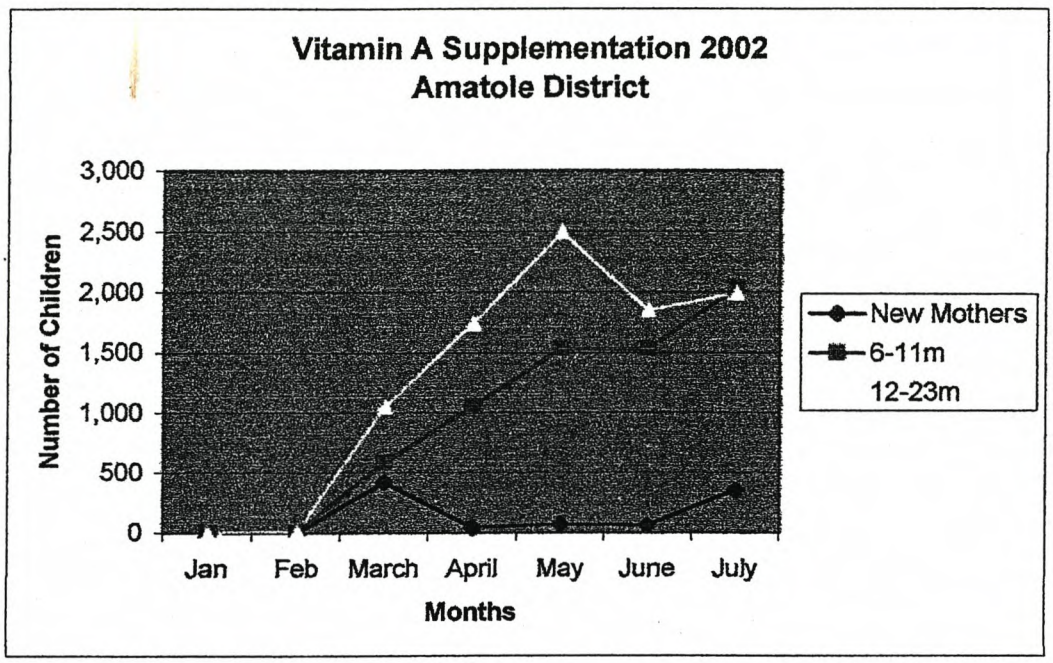
- General increase in Vitamin A Supplementation in all 3 target groups in 2002
- Steepest increases follow training sessions conducted with programme managers
- Key events that may have influenced trends of vit A supplementation in health sub-districts:

DATE	KEY EVENT
Jan 28-29	Training of MCWH programme managers and Community Liaison Officers (CLO's)by ECDOH, national DOH and Helen Keller International on technical aspects of vit A supplementation
Feb	Information managers instructed by official departmental memorandum to include data collection fields for vitamin A on DHIS
May-June	Mop up EPI campaigns in OR Thambo, Chris Hani and Alfred Nzo
June	Training of MCWH and CLO's on how to manage the programme
July	Training of district vit A team on how to monitor rollout and district assess performance
Aug	Training of trainers on skills required by health workers on daily & monthly basis plus use of cumulative graphs to assess performance

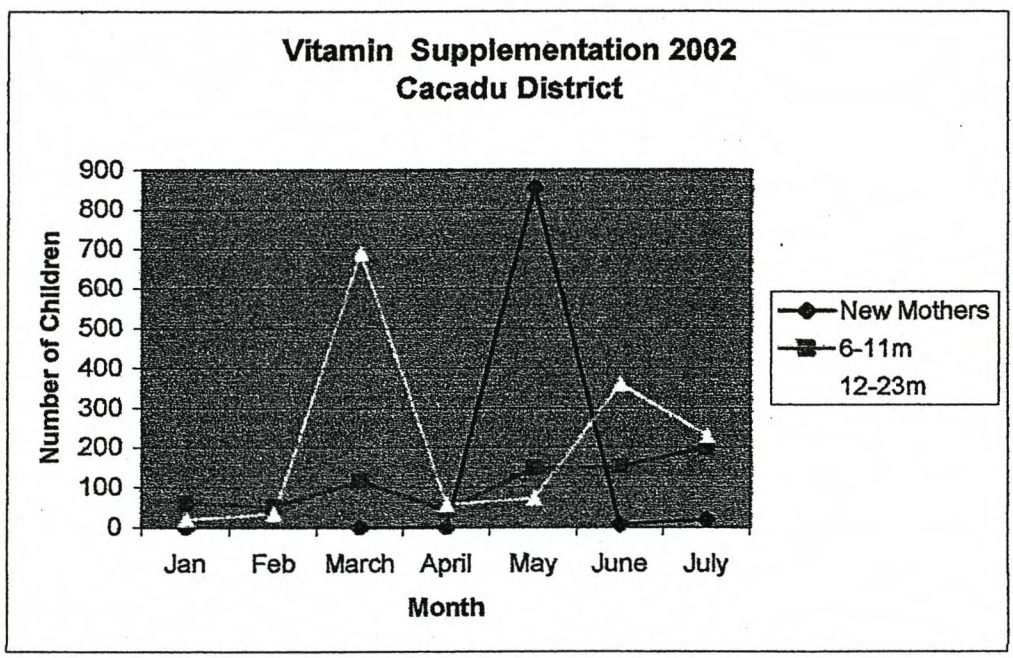


- Dramatic increases recorded in 6-11m and 12-23m age groups once data was included in DHIS
- Increases correspond to mop up campaign conducted May and training sessions with program managers in June and July
- Data for VAS not being collected nor reported consistently by facilities on DHIS monthly forms (see table below)

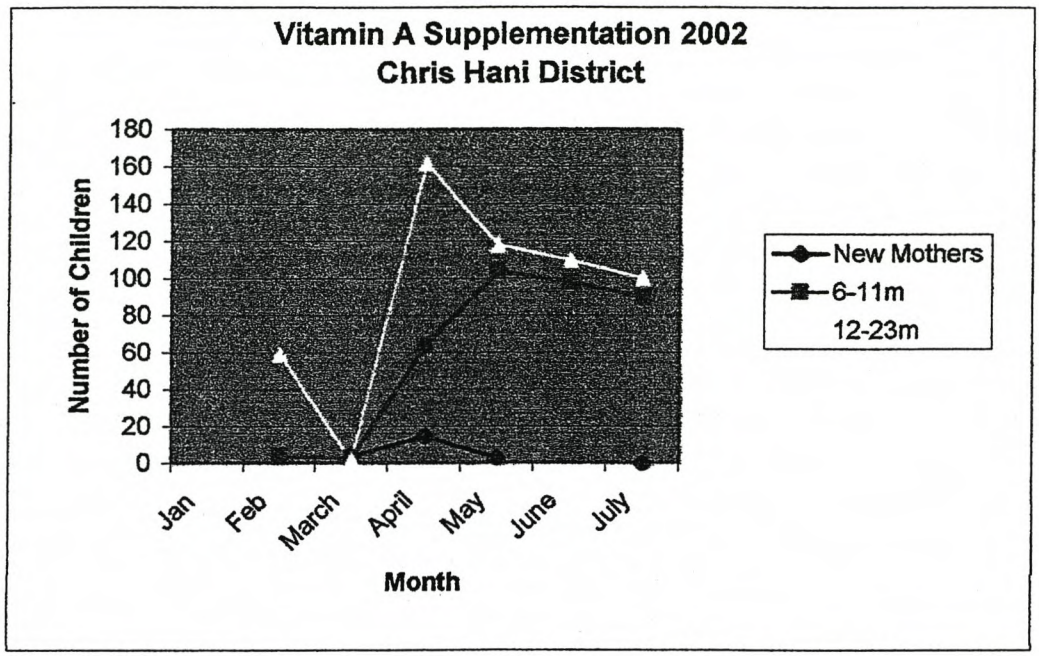
ALFRED NZO	New Mothers	6-11m	12-23m	Measles
Jan				370
Feb				353
March		10	6	362
April				704
May		141	154	1025
June		1		137
July	87	284	155	200
Total	87	436	315	3151



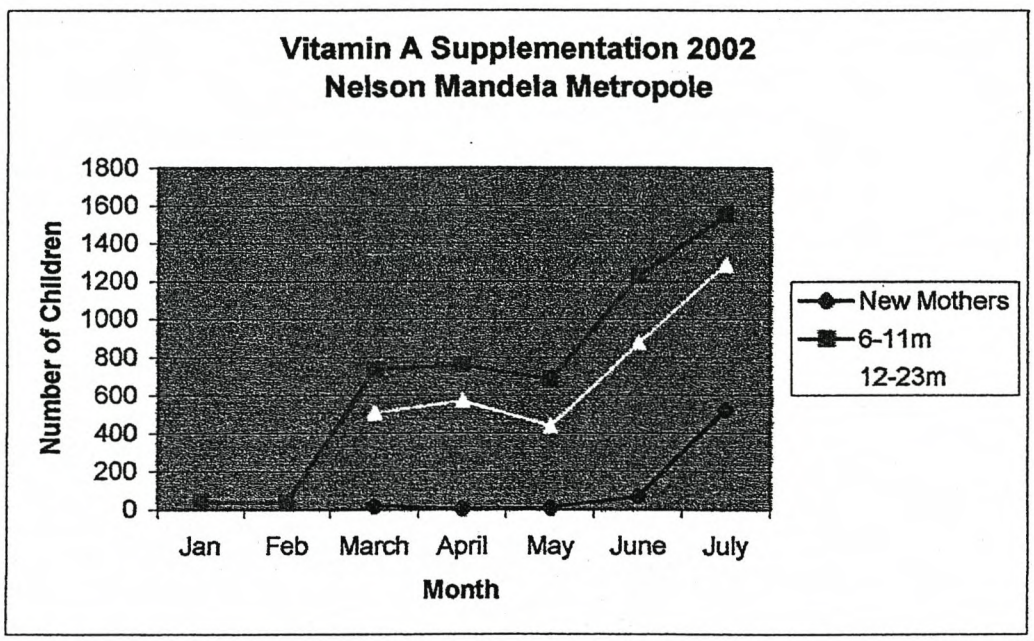
- Steady progression for 6-11month group with slight falloff in 12-23month group
- Supplementation to new mothers slower to take-off



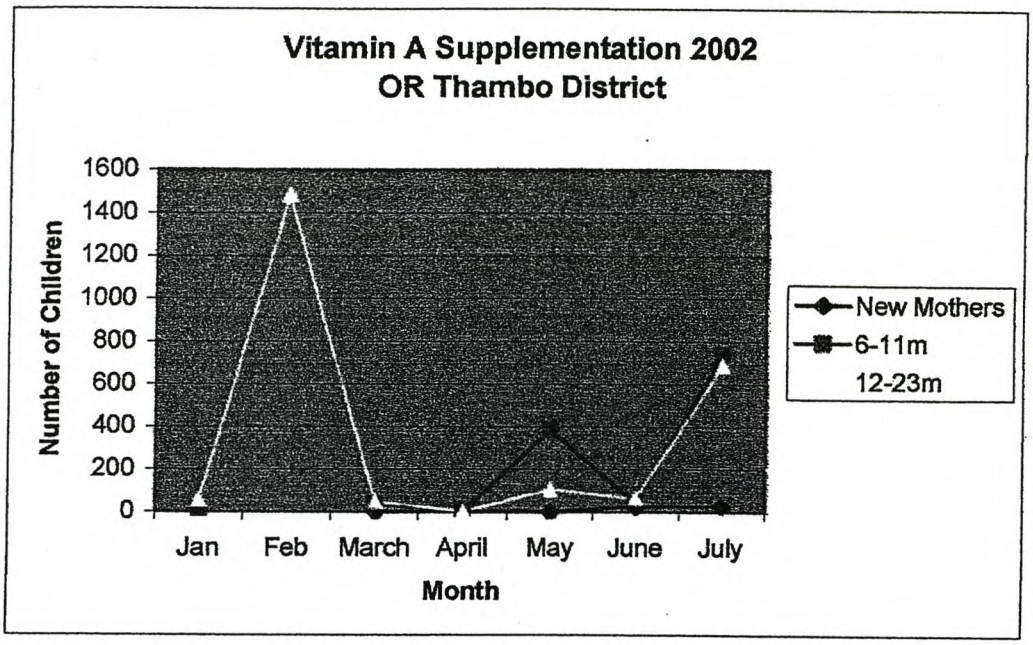
- Slow but steady increase in 6-11month group
- Large swings in 12-23month and new mother groups
- Suspect under-reporting of stats and-or error in reporting March/May could possibly account for wild swings in figures



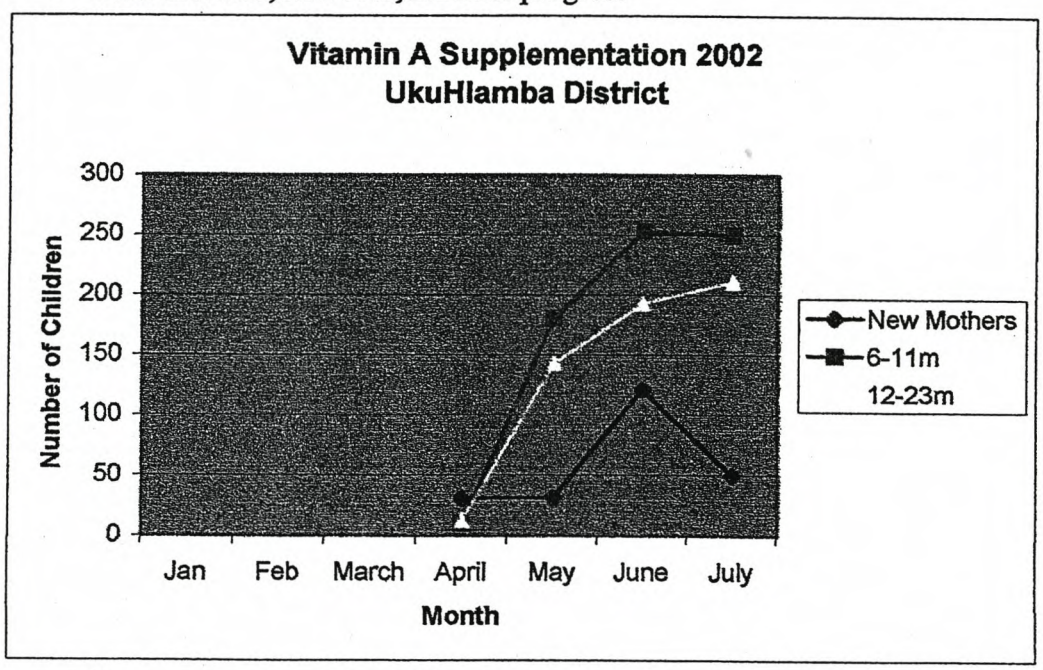
- Good take-off experienced in children doses; however, downward progression as of May
- New mothers not good progress- under-reporting or training of relevant providers not completed



- Excellent progression in all 3 groups with greater increases in doses given after June and July training

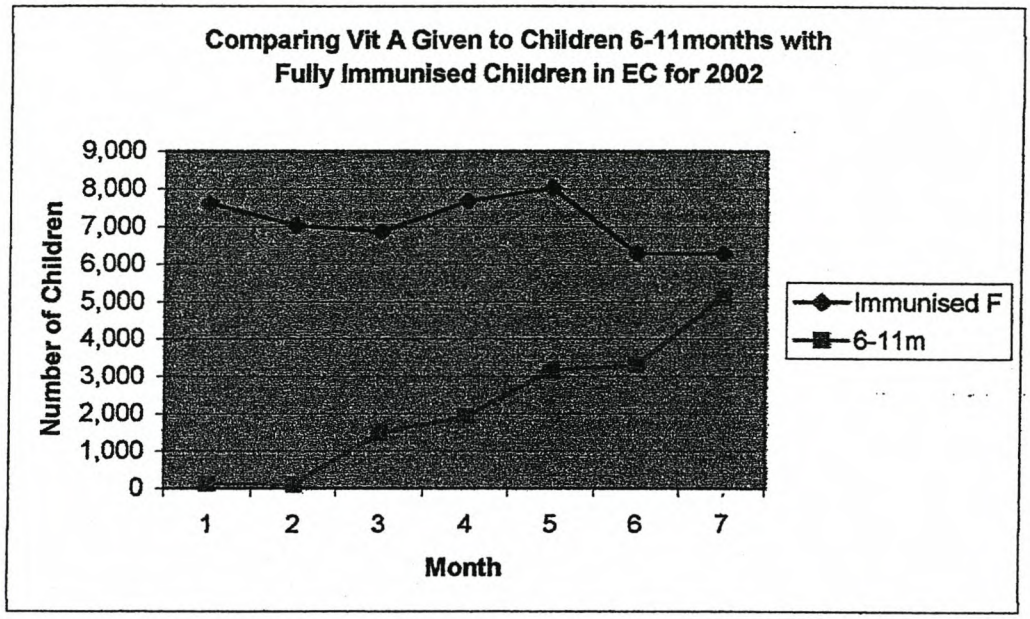


- Again, good progression in doses given to children especially after training was reinforced in June and July
- New mothers, however, minimal progress

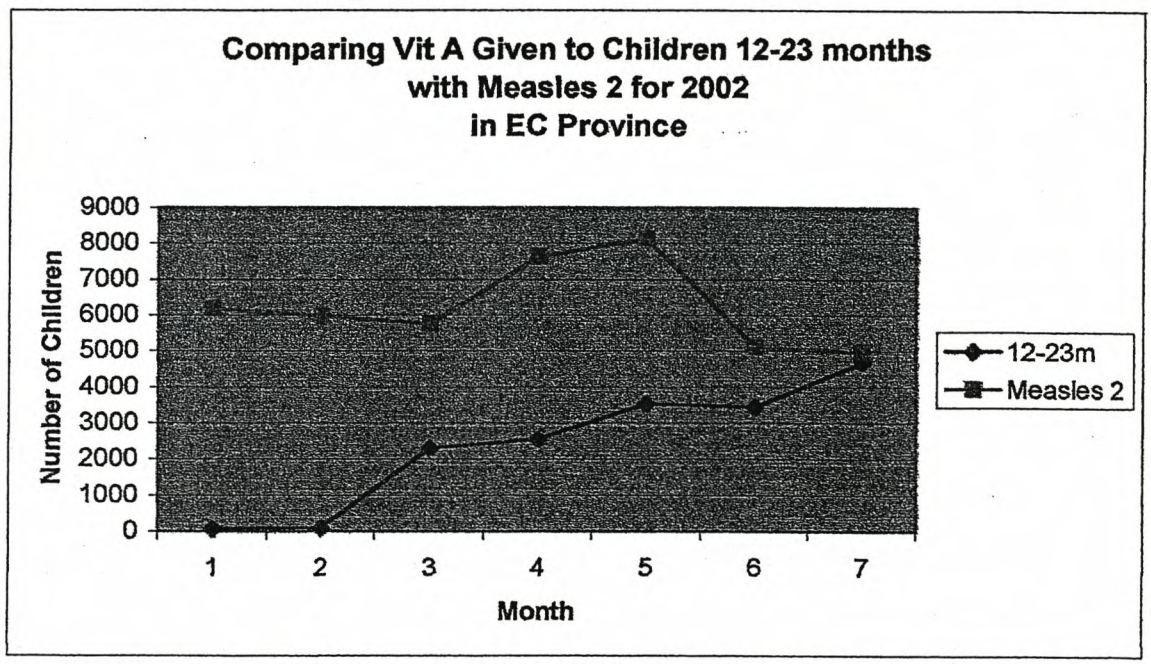


- Very good take-off in children's doses
- Slight tapering off in doses given to children
- New mothers again slowest progression experienced

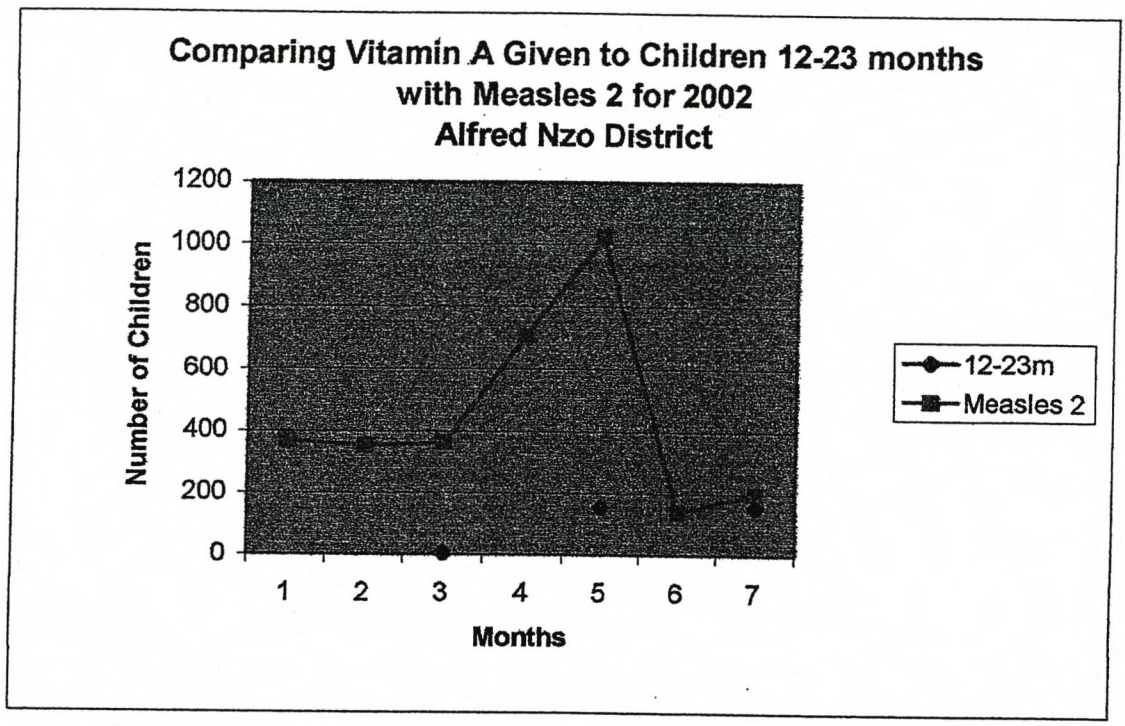
C. Proxy for Potential Missed Opportunities



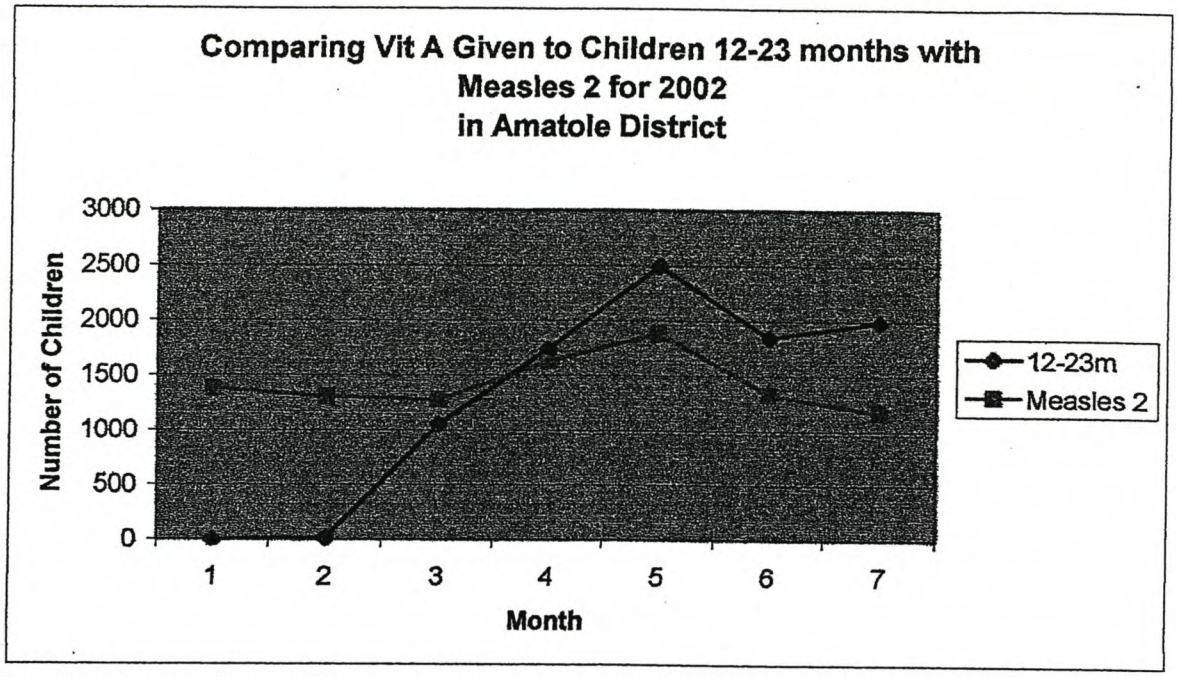
- Vit A doses given 6-11months approximating the total number of fully immunized children
- This is very good as one assumes that the number of children who have received the full schedule of imminsations including measles one should also have received vit A during this time



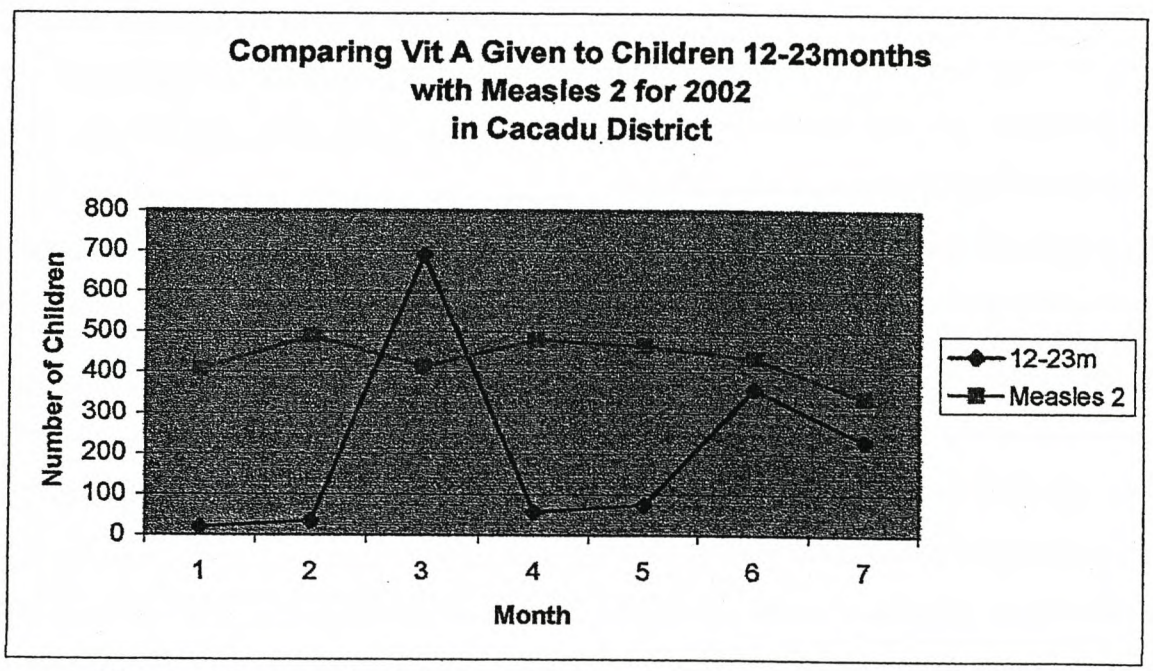
- Again, provincially, the number of vitamin A doses given has approximated the number of measles given out to children 12-23months
- This is good in terms of missed opportunities for the province



- The mop up campaign in May/June probably accounts for the large increase in number of measles 2 doses given
- However, this occurred before training of programme managers and so there were several missed opportunities experienced during these months
- Approximation does occur following the latter, though
- General concern for this are is the low coverage for both vit A and measles 2
-



- Excellent trend witnessed here- one expects the number of vit A doses given in this age group 12-23months to be at least 2-3 times the number of measles 2 doses given (children get vit A at 12; 18 and 24months compared with at 18 months for measles 2)
- Vit A doses in this district surpassed the number of measles 2 doses in April already and currently is almost double the number o measles 2 doses given



- Measles 2 has remained steady but both vit A and measles 2 is beginning to taper off in this district

APPENDIX 14

EXAMPLE OF THE COMPARISON OF VITAMIN A-RELATED DATA WITH RELEVANT IMMUNISATION DATA LUSIKISIKI DISTRICT

VITAMIN A STATISTIC OCTOBER 2002

Clinic NAMES	NEW Mothers	DPT H.B	VIT A 6-11 mnth	MEASLES 1.	VIT A 12-18 Months	VIT A 18-24	MEASLES 2
SEN. P.H.C II	302	387	233	115	128	119	83
MANTLANENI II	42	62	33	~~12~~ 11	12-60 months 20	—	13
TOSO FOREST	—	37	31	17	08	02	01
PALMERTON II	—	20	42	06	12-	100	02
MALANGENI	17	48	02	09	12-60 months	20	15
MPOZA II	04	21	04	05	—	02	02
QALIKELU II	~~04~~ 17	86	49	17	12-60 months	14	06
XURANA	04	37	52	17	12-60 months 43		04
GOOD HOPE II	09	60	61	22	13	18	12
MAGWA II	07	37	27	12	~~12~~-60 months	22	09
MOBILE II	05	108	25	51	17	57	49
VILLAGE							

APPENDIX 15

EXAMPLE OF MASTER TRACE

TABLE

UMZIMVUBU DISTRICT

REPORT ON VITAMIN A SUPPLEMENTATION

On the 12 August 2002 there was Vitamin-A training at Mt Currie In, which was conducted by Chantel Witten from UWC. Revision on the importance of vitamin-A was done. More emphasis was put on sources of Vitamin-A using the pyramid. When and who should be supplemented with Vitamin-A capsules was discussed at length and problems that could be encountered were looked into. Training booklets 1, 2 and 3 were given.

Following that training, training was conducted at Mt Frere on the 27/08/2002 and 7 out of 10 clinics were trained. At Maluti 10 out of 17 clinics were trained on the 27/08/2002 while in Mt Ayliff 8 out of 9 health facilities were trained on the 29/08/2002.

TRACE TABLE FOR TRAINING AT UMZIMVUBU LSA

FACILITY	DATE OF TRAINING	VENUE OF TRAINING	TRAINING MATERIAL	WHO DID THE TRAINING?	WAS TRAINING DONE?	
					YES	NO
Cancele	22/08/2002	Mary Terese Hospital	Booklets, Pamphlets, Flip Charts, Capsules, RTHC & Marking pens	Qwalana, Matinise and Ntutuka	Yes	
Lugangeni	-	-	-	-	-	No
Luyengweni	-	-	-	-	-	No
Machibini	-	-	-	-	-	No
Mary Terese Mobile	22/08/2002	Same venue	Same as above	Same people	Yes	
Mhlotsheni	23/08/2002	Same	Same as above	Same	Yes	
Mkemane	22/08/2002	Same	Same as above	Same	Yes	
Mntwana	22/08/2002	Same	Same as above	Same	Yes	
Mpoza	22/08/2002	Same	Same as above	Same	Yes	
Mt Frere PHC	22/08/2002	Same	Same as above	Same	Yes	
Ntlabeni	22/08/2002	Same	Same as above	Same	Yes	

Tshungwana	22/08/2002	Mary Terese Hospital	Booklets, Pamphlets, Flip Charts, Capsules, RTHC & Marking pens	Qwalana, Matinise and Ntutuka	Yes	
Alfsondering	27/08/2002	Maluti H/C		Mpumela, Magcai & Ndzimela	Yes	
Magadla	27/08/2002	Same venue		Same people	Yes	
Maluti CHC	27/08/2002	Maluti H/C		Same	Yes	
Mvenyane	-	-	-	-	-	No
Mzongwana	27/08/2002	Same as above		Same	Yes	
Ntlola	-	-	-	-	-	No
Queens Mercy	27/08/2002	Same		Same	Yes	
Mt Hargreaves	27/08/2002	Same		Same	Yes	
Elukholweni	27/08/2002	Same		Same	Yes	
Nyaniso	27/08/2002	Same		Same	Yes	
Rolweni	-	-	-	-	-	No
Isilindini	27/08/2002	Same		Same	Yes	
Lukhetlane	-	-	-	-	-	No
Shepherds Hope	-	-	-	-	-	No
Thabachicha	-	-	-	-	-	No
Umtumase	-	-	-	-	-	No
Paballong	27/08/2002	Same		Same	Yes	
Dundee	29/08/2002	Mt Ayliff PHC Boardroom		Rubulana, Mpumela & Nogwaja	Yes	
Lubaleko	29/08/2002	Same venue		Same people	Yes	
Mapheleni	29/08/2002	Same		Same	Yes	
Mt Ayliff Mobile	29/08/2002	Same		Nogwaja	Yes	
Mt Aylif PHC	29/08/2002	Same		Rubulana, Mpumela & Nogwaja	Yes	
Mwaca	-	-	-	-	-	No
Ntsizwa	29/08/2002	Same		Same people	Yes	
Rode	29/08/2002	Same		Same	Yes	
Tela	29/08/2002	Same		Same	Yes	

In Maluti 6 clinics, which are amongst those that did not receive training, have been closed because of staff shortage.