THE IMPLEMENTATION OF THE INTEGRATED MANAGEMENT OF CHILDHOOD ILLNESSES STRATEGY

by

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DECLARATION

I declare that **THE IMPLEMENTATION OF THE INTEGRATED MANAGEMENT OFCHILDHOOD ILLNESSES STRATEGY** is my own work and that all sources I have used or quoted have been indicated and acknowledged by means of complete references and that this work has not been submitted before for any other degree at any other institution.

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SIGNATURE DATE

DEDICATION

In memory of my parents Mack and Pat Pillay

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- The KwaZulu-Natal Department of Health, for giving me permission to conduct the study

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ABSTRACT

This non-experimental, descriptive, quantitative survey attempted to evaluate IMCI implementation in the eThekwini district of KwaZulu -Natal. The study focused on IMCI implementation by IMCI trained registered nurses, health facility support and follow-up and supervision. The research population comprised of all IMCI trained registered nurses working in health facilities in the eThekwini district. The convenient sample consisted of 40 research subjects. Data was collected by means of an interview schedule and a checklist, and analysed using Microsoft Excel 2007. Findings of the study revealed that many of the IMCI trained registered nurses were unable to assess, classify and treat the sick child comprehensively and consistently. The recommended follow-up visit at six weeks after completion of IMCI training, and lack of on-going supervision remains an area of concern. Recommendations were that district or clinic supervisors can enhance the skills of IMCI trained registered nurses through recommended follow-up visits and on-going supervision and the provision of updated IMCI chart booklets.

KEY TERMS

IMCI, childhood illnesses, implementation, IMCI trained registered nurses, health facility support, follow-up, supervision

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LIST OF ABBREVIATIONS

IMCI	Integrated Management of Childhood Illnesses
WHO	World Health Organization
UNICEF	United Nations Children's Fund

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CHAPTER 1

ORIENTATION TO THE STUDY

1.1 INTRODUCTION

High morbidity and mortality rates in children under five years globally, led to the World Health Organization and UNICEF developing a strategy in 1995 to combat this problem (Report of IMCI…2001). This strategy was called Integrated Management of Childhood Illnesses (IMCI) and focused on three components: developing the case management skills of health workers, strengthening health system support for child health service delivery and improving family and community practices relating to child health. Gouws (2004:509) states that health care workers in more than 100 developing countries have since received in-service or pre-service training in IMCI.

The IMCI strategy became a South African government policy in 1998 (Saloojee & Bamford 2006:189). The first case management course was conducted in Mpumalanga, in the same year (Report of IMCI… 2001). The Department of Health (DOH) aimed to ensure that all districts were implementing the case management component of IMCI by 2005. Data from the DOH for March 2006 showed that this target had been achieved. More than three-quarters (76%) of the PHC facilities are now implementing IMCI, whilst 48% of the PHC facilities have achieved the WHO target of having 60% of professional nurses working at the facility, IMCI-trained (Saloojee & Bamford 2006:189).

First level health care workers are trained in the use of the IMCI case management guidelines during an eleven day training course, which is led by IMCI facilitators. The facilitator to participant ratio of 1:4 as prescribed by WHO guidelines is vital to the success of the programme. Approximately 30% of training time is spent in clinical practice. Based on early field experience, the 1999 IMCI information package supported continued adherence to these guidelines (WHO: IMCI information package booklet 1999). Follow-up is seen as vital to the success of IMCI. Follow-up visits are designed to support the transfer, application and reinforcement of new skills acquired during training (WHO: IMCI information: Follow-up after training 1999:1). One of the key challenges facing IMCI presently is the lack of supervision, follow-up and health system support (The Multi- Country Evaluation … 2002:17).

Other challenges facing IMCI are high attrition rates amongst PHC staff, rotation of staff and weak or absent district management structures. The latter is said to impact on ensuring supportive supervision and updating of staff (Saloojee & Bamford 2006:191).

1.2 THE RESEARCH PROBLEM

A research problem is an area of concern in which there is a gap or, a situation in need of solution, improvement or alteration (Brink, van der Walt & van Rensburg 2006:58-59).

1.2.1 Source of and background to the problem

Brink et al (2006:59) state that research problems may arise from many sources such as clinical areas, literature that is reviewed, observations made on health and illness patterns, ethical dilemmas and interactions with students, colleagues, patients and the community at large. Researchers may use more than one of the above-mentioned sources to access relevant researchable data.

1.2.1.1 Source of the research problem

The researcher's own experience and that of colleagues following IMCI training identified the gap that existed in follow-up and supervision. There was only one supervisory visit six weeks after training. Thereafter there were no follow -up visits to reinforce skills or identify constraints. In reports as early as 2001(Report of IMCI…2001) and as late as 2007(Saloojee 2007:175) pertaining to IMCI implementation in South Africa, it was identified that supervisory visits fall short of what is recommended by the Department of Health (The Primary Health Care Package … 2001:19-20), and by the WHO in their guidelines for follow-up after training (WHO 1999:1).

1.2.1.2 Background to the problem

According to Bryce, Cesar, Habicht, Vaughan and Black (2004:406), the second component of the IMCI strategy aims to ensure that the health system provides adequate support for the implementation of IMCI which includes effective supervision.

In May of 2001, health facility surveys carried out in Limpopo, Mpumalanga, Northern Cape and KwaZulu-Natal showed that of the 82 facilities in the study, only 33 facilities had received at least one supervisory visit in the last six months, whilst 49 facilities were never visited by supervisors in the last six months. In KwaZulu-Natal, of the 17 facilities that were reviewed, only 5 facilities received at least one supervisory visit in the last six months. One of the recommendations at both national and district levels was the dire need to provide adequate support and guidance to IMCI trained health workers as it impacts negatively on the quality of care provided at the primary level (Report of… 2001:24).

According to research carried out on IMCI implementation in South Africa, a key strategy to ensure that the quality of IMCI implementation is maintained is the provision of adequate support and updating of IMCI trained staff. It was cited that "weak or absent district management structures hampers support and updating of staff" (Saloojee & Bamford 2006:191).

It is interesting to note that the lack of supervisory visits was not only common in different provinces in South Africa, but also to different countries implementing IMCI such as Brazil, Tanzania and Uganda (The Multi-Country … 2003:12). In a review of twelve countries to be used for an IMCI multi-country evaluation, nine of the twelve countries identified weak supervisory systems as a major constraint to the implementation of IMCI (The Multi-Country … 2002:14).

The WHO views follow-up as an integral part of IMCI training and prescribes at least one follow-up visit within one month of the training course. Thereafter IMCI practitioners should receive ongoing support or supervisory visits on a regular basis (IMCI Training … 2011:5). The Primary Health Care Package for South Africa prescribes that the IMCI trainer makes regular mentoring/ supervision visits, initially six weeks after training, thereafter every three months. Each clinic has an annual

review of the quality of care by an IMCI supervisor. Adherence to these norms and standards will ensure the provision of health services at acceptable levels (The Primary Health Care Package 2001 part 1:19-20). However, findings do suggest that the frequency of supervision does vary from place to place (Supervision [Sa]:1).

1.2.2 Statement of the research problem

In a survey examining the knowledge, attitudes and practice of registered nurses in primary health care facilities in KwaZulu -Natal, it was reported that nearly 40% of the registered nurses did not receive any supervision. Fifteen percent of these registered nurses received one visit more than one year ago, and 68% of these nurses did not have any feedback on their working performance (Mariani, Gcaba & Dalton 2003:11).

Previous surveys have reported a lower performance of health service delivery in KwaZulu -Natal (KZN) compared with other provinces with specific reference to essential public health programmes. The performance score, which was based on several questions related to the implementation of IMCI was 6.1 for KZN whereas other provinces scored higher, for instance the Free State scored 9.3 (Mariani et al 2003:5).

Follow-up is an essential component of the IMCI training process to reinforce skills acquired during training and to solve problems encountered during the implementation of IMCI (Follow-up…1999:1). Supervision plays a key role in maintaining the quality of performance of health providers and the services they deliver (Supervision [Sa]:1).

This raised the question of whether inadequate follow-up, supervision and facility support impacts on IMCI implementation by IMCI trained registered nurses.

1.3 AIM OF THE STUDY

It is here that the goal/s of the study will be identified. The researcher may wish to find solutions to problems, evaluate programmes that are being implemented or

develop new instruments for measurement purposes (Brink et al 2006:52).

Saloojee and Bamford (2006:191) say ‘Supportive supervision and updating of staff have been identified as key strategies to ensure that the quality of IMCI implementation is maintained.’ Chaudhary, Mohanty and Sharma (2005:735) state that follow-up is essential to not only reinforce learned skills, but also to solve any problems that have been encountered by the health care workers during the implementation of IMCI.

The aim of this research study is to describe the impact of follow-up visits and supervision, level of facility support and skills of the IMCI trained registered nurses on IMCI implementation.

1.3.1 Research question

In order to achieve the aim, the researcher formulated the following research question:

What is the level and impact of follow-up visits, supervision and facility support on the functioning of the IMCI trained registered nurses?

1.3.2 Research objectives

The objectives of the study are to:

- ascertain whether the IMCI trained registered nurses received follow-up visits and ongoing supervision
- assess the skills of the IMCI trained registered nurses
- assess the level of facility support that the IMCI trained registered nurses receive
- describe the views of the IMCI trained registered nurses with regards to follow-up and supervision
- make recommendations for the improvement of follow-up, supervision and

facility support, so as to strengthen the implementation of the IMCI strategy

1.4 SIGNIFICANCE OF THE STUDY

The study would contribute to the improvement in the implementation of IMCI, as the impact of inadequate follow-up, supervision and facility support is identified and addressed. Knowledge gained from the findings of this study would highlight the importance of adhering to the norms and standards for follow-up and supervision as laid down by WHO. The results of the study can also assist in the formulation of a strategy that will aid in the improvement of follow-up and ongoing supervision. The development of mentorship programmes in the absence of district IMCI supervisors can be used to facilitate follow-up and supervision and should not be overlooked.

1.5 DEFINITION OF KEY CONCEPTS

For the purposes of this study, the following terms were used as defined below:

Implementation

According to The Compact Oxford Dictionary and Thesaurus (2006), implementation is defined as “that which is put into effect or put into practice.”

In IMCI, implementation refers to the application of the IMCI algorithm in the examination and treatment of sick children and sick young infants by IMCI trained registered nurses.

Follow-up

The Free Dictionary by Farlex (2008) defines follow-up as” the act or an instance of following-up, so as to further an end or review new development.”

In IMCI, follow-up is an essential component of the IMCI training process to reinforce skills acquired during the training and to solve problems encountered during the implementation of IMCI. The WHO prescribes at least one follow-up visit within one month of the training course (IMCI 1999:5).

Supervision

The Free Dictionary by Farlex (2008) defines supervision as “management by overseeing the performance or operation of a person or a group.”

In the context of IMCI, supervision entails observation of IMCI trained nurses as they assess, classify and treat sick children, and counsel the mothers and caregivers. It also involves identifying and solving case management problems, reinforcing and encouraging the practice of case management skills and demonstrating correct case management when necessary.

Integrated Management of Childhood Illnesses (IMCI) Strategy

The IMCI strategy is an integrated approach to child health that focuses on the well-being of the whole child. IMCI aims to reduce death, illness and disability, and to promote improved growth and development among children under five years of age. IMCI includes both preventive and curative elements that are implemented by families and communities as well as by health facilities (WHO/IMCI- Background 2009:1).

In this study it refers to a programme that is used in the screening and treatment of sick children and sick young infants that are attended to at clinics.

IMCI Trained Registered Nurse

A registered nurse, also known as a professional nurse, is qualified and competent to independently practice comprehensive nursing in the manner and to the level prescribed, and who is capable of assuming responsibility and accountability for such practice. She/he is registered with the South African Nursing Council in terms of The Nursing Act 33 of 2005 (South Africa 2005:18).

In this study, an IMCI trained registered nurse, is a professional nurse, who has undergone and successfully completed the 11 day training course for IMCI implementation.

IMCI case management training

The Free Dictionary by Farlex (2008) defines case management as “the monitoring

and co-ordination of treatment rendered to patients with specific diagnoses."

According to the guidelines laid out by WHO and UNICEF, IMCI is taught using a structured 11-day training course that combines classroom work with clinical practice; a variety of training techniques are used, supported by comprehensive training materials and detailed instructions for facilitators (Horwood, Voce, Vermaak, Rollins & Qazi 2009b:1). In IMCI, case management is the individual management and treatment of all children as they present with their specific problems.

Facility support

According to The Compact Oxford Dictionary and Thesaurus (2006), facility is defined as "a building, service, or piece of equipment provided for a particular purpose," and support is defined as that which maintains or sustains.

In the context of IMCI and according to WHO and IMCI guidelines, facility supports are space and equipment, the availability of drugs and other supplies, immunization policies and clinic hours (WHO: IMCI information: Follow-up after training 1991:vii).

1.6 FOUNDATIONS OF THE STUDY

It is at this point that the researcher will formulate basic assumptions and develop a conceptual framework. Assumptions are basic ideas that are held to be true but have not necessarily been proven (Brink et al 2006:198). In research, assumptions help to structure a study and to gather and analyse relevant data. According to Brink et al (2006:199) a conceptual framework is the background or foundation for the study. The researcher is able to relate concepts to each other in a logical manner.

1.6.1 Assumptions

Assumptions are "basic principles that are accepted as being true based on logic or reason, but without proof or verification" (Polit & Beck 2004:711). In this research study, ontological, epistemological and methodological assumptions are explained from a positivist approach. This is because the research study is quantitative in nature.

According to Polit and Beck (2004:14), ontologic assumptions refer to the existence of reality. The ontological assumptions regarding reality underlying this study were that:

- Many children from low and middle income countries will die before their fifth birthday
- Children have multiple concurrent illnesses therefore integrated care is important
- Teaching mothers /caregivers how to feed and treat their children at home, can save the lives of these children

Polit and Beck (2004:14) define epistemological assumptions as scientific facts that are free from bias. In this study, epistemological assumptions were that:

- IMCI case management training will improve health worker performance
- IMCI is associated with improved quality of care
- A combined, integrated approach to treating childhood illnesses is better than treating a single illness
- IMCI can be adapted in countries based on local epidemiology, health system characteristics and culture

According to Polit and Beck (2004:14), methodological assumptions are concerned with the “how” of research. It outlines the way research should be conducted using scientifically accepted methods. The methodological assumptions of this study were that:

- Quantitative research is an orderly, scientific process used to acquire information in a disciplined manner
- Generalizability is important in assessing the quality of quantitative studies
- Quantitative studies are based on theoretical or conceptual frameworks

- Questionnaires are a quick way of obtaining data from a large group of people

1.7 CONCEPTUAL FRAMEWORK

In this study, the conceptual framework will be based on the course objectives, course organisation, materials and training methods of IMCI implementation, as laid out by WHO and UNICEF (IMCI training …2011:1).

1.7.1 Course objectives

On completion of the IMCI training course, all health care workers are expected to have the following knowledge and skills to:-

1.7.1.1 Assess, classify and treat sick children accurately following the IMCI case management guidelines

The health worker assesses a child by checking for general danger signs first, asks questions about common problems (cough or difficulty breathing, diarrhoea, fever and ear problems), examines the child and checks the nutritional and immunisation status. The health worker also checks to see if the child has any other health problems. The health worker classifies a child's illnesses using a colour-coded triage system. The triage system gives the health worker some indication as to the severity of the child's condition. Some children may have more than one problem hence they will have more than one classification. The classification determines whether the child requires urgent pre-referral treatment and referral, specific medical treatment and advice, or advice on home management.

1.7.1.2 Administer pre-referral treatment correctly and refer seriously ill children

After classification and dependent on the classification, an appropriate treatment plan is selected and implemented. If a child requires urgent referral, the health

worker gives essential treatment before the child leaves the health facility. If the child requires treatment that can be given at home, the first dose is always given in the health facility by the health worker.

1.7.1.3 Counsel caregivers

Caregivers are counselled about how to give treatment and take care of the sick child at home, what signs to look for to indicate that the child needs to return immediately to the health facility, and when to return for follow-up. The health worker provides practical treatment instructions, including advising the caregiver on how to give oral drugs, how to feed and give fluids during illness, and how to treat local infections at home. The health worker will advise on a follow-up date to re-assess the child's progress. The caregiver will also be taught to observe for signs when the child is not doing well, and, needs to return immediately to the health facility for further re-assessment and treatment.

1.7.1.4 Check the child's immunization status and give the immunization if required

Every contact with a child is an immunization opportunity. If the child should be immunized, the health worker gives immunization as per EPI schedule.

1.7.1.5 Carry out feeding assessments of children under two years old or who are very low weights for age

If a child is underweight, it is necessary to assess the feeding patterns of that child. This is done by asking the caregiver specific questions about the child's usual feeding and feeding during this illness. The caregiver's answers are then compared to the feeding recommendations for the child's age, as per IMCI. The health worker then advises the caregiver accordingly or refers the child when appropriate.

1.7.1.6 Counsel caregivers, if necessary, on nutrition and breastfeeding

The health worker also provides counselling to solve feeding problems, including assessment on breast feeding practices. The caregiver is praised for breastfeeding and encouraged to continue with breastfeeding. Any problems regarding breastfeeding are attended to, and positioning and attachment are assessed.

1.7.2 Course organisation, materials and training methods of IMCI implementation

All registered nurses undergoing IMCI training receive case management charts, as well as a series of booklets, called modules, which explains each step. They are titled:

- *Assess and Classify the Sick Child Age 2 Months Up To 5 Years*
- *Identify Treatment*
- *Treat the Child, Counsel the Mother*
- *Management of the Sick Young Infant Age 1 Week Up To 2 Months*
- *Follow-Up.*

The modules include exercises that will help them learn the steps. Most exercises provide clinical information describing a sick child and ask questions. Some exercises use showing of photographs or videos and also include role-plays. Learners complete a module by reading it and working through the exercises. For approximately half of each day, they go to nearby clinics to observe and practice managing sick children. In these clinical sessions they assess, classify and treat sick children, including teaching their mothers/caregivers how to care for the ill children at home. The clinical sessions give them the opportunities to practice the skills that they have learnt about in the modules. They may ask questions and receive guidance if difficulties arise. By the end of the course, they will have

experienced managing children according to the case management process and can feel comfortable continuing at their own clinic. A facilitator guides them through the activities and exercises in the modules, leads group discussions and review their individual work on the modules. A facilitator will also supervise them practicing during clinical sessions. They are encouraged to discuss any questions or problems with a facilitator (IMCI Introduction Module … 2000:4-5).

By carrying out the training in this way, the primary IMCI teaching objective which is to prepare health professionals to prevent and manage childhood illnesses in an effective and integrated manner will be met (IMCI information: introducing IMCI into pre-service training…. 1999:2). In addition it is also mentioned that adequate time be devoted to comprehensive review and supervised clinical practice to synthesize previous teaching into an integrated approach to case management (IMCI information: introducing IMCI into pre-service training …1999:2)

1.7.3 Objectives of follow-up

This researcher also needs to examine the following objectives of follow-up as prescribed by WHO (.2011:1).

- Assist health workers and health facilities in the transition to integrated case management
- Reinforce the case management skills of health workers trained in IMCI
- Identify and solve problems faced by health workers in managing cases and help solve these problems
- Collect information on the performance of health workers and the conditions that influence performance, in order to improve the implementation of IMCI

1.8 RESEARCH DESIGN

Bowling (2009:468) defines a research design as " the strategy of the research- how

the sampling is conducted, whether a descriptive or experimental design is selected, whether control groups are needed, what variables need to be operationalised and measured, what analyses will be conducted." Burns and Grove (2009:362) define a research design as a "blueprint or detailed plan of how a research study is to be conducted in a way that maximises control over factors that could interfere with the study's desired outcome." Polit and Beck (2004:162) state that a research design "spells out the basic strategies that researchers adopt to develop evidence that is accurate and interpretable." A quantitative research design is said to be scientific in nature as set procedures are followed in a systematic way and according to a plan. Formal instruments are used to collect data which is then carefully analysed, so as to provide unbiased, accurate findings (Polit & Beck 2004:15).

The quantitative, non-experimental, descriptive survey was therefore ideally suited to address the research problem, which was to determine whether the lack of follow-up, ongoing supervision of IMCI trained registered nurses and poor facility support, impacted on the implementation of IMCI.

According to Brink et al (2006:11), the following are the main characteristics of quantitative research:-

- The focus is on a relatively small number of concepts – in this specific research study, the focus was on follow-up, supervision, facility support and IMCI implementation

- The researcher already has preconceived ideas about the interrelatedness about concepts – this is true about the researcher in this case, who knows that follow-up and ongoing supervision is poor in KwaZulu- Natal. The researcher has a preconceived idea that this together with inadequate facility support will impact negatively on the implementation of IMCI.

- Uses structured procedures and formal instruments to collect information. Information can be collected through structured observation, questionnaires and interviews or survey studies. The researcher used structured observation and an interview schedule to gather information for this research study.

- Collects information under conditions of control. The researcher only selected

IMCI trained registered nurses for this study. The researcher observed all IMCI trained nurses carrying out an assessment of a child. The researcher followed the checklist in its set format for all research subjects.

- Emphasizes objectivity in the collection and analysis of information. Only valid information accessed and used during the research process will afford it a degree of objectivity. The researcher used the same tool during the observation of all the research subjects. The researcher also asked the research subjects the same open-ended questions in the same order.
- Analyses numeric information through statistical procedures. Data collected were analysed and interpreted jointly with a statistician.
- Investigator does not participate in the events under investigation. The researcher only observed and collected data, but was not directly involved in the assessment of the babies, or in the follow-up or supervision of IMCI trained practitioners.
- Incorporates logistic, deductive reasoning. The researcher used evidence gathered to reach a sound conclusion.

It is therefore evident from the above-mentioned data, that a quantitative study was most suited to the research. The research design as well as the research method will be discussed in detail in Chapter 3.

1.9 DATA QUALITY

The quality of data collected in a research study is vitally important in sustaining that study, so as to ensure that it can be replicated, and also that it has reflected accurately what occurs in real life situations. However, data quality can only be ensured if valid and reliable instruments are used in the collection of data. However, reliability and validity are not independent qualities of an instrument. An instrument that is unreliable cannot be valid. Similarly, an instrument cannot validly measure an

attribute if it is inconsistent and inaccurate (Polit & Beck 2008:458).

1.9.1 Validity

According to Brink et al (2006:159) validity refers to whether an instrument accurately measures what it is supposed to measure. Content validity is “an assessment of how well the instrument represents all the components of the variable to be measured.” In this research study, content validity is pertinent as a questionnaire was developed following a literature review. Only relevant and essential aspects related to the study were included in the questionnaire, ensuring completeness of the instrument and good content validity. Criterion-related validity will be ensured if there is a relationship that exists between the scores on the instrument in use and other external criteria. In this research study, the skills of IMCI trained registered nurses are being assessed in relationship to follow-up and supervision. Construct validity is concerned with whether the instrument is actually measuring the construct it is supposed to measure, and, in this study it is an assessment of the actual skills of the IMCI trained registered nurses (Brink et al 2006:162).

1.9.2 Reliability

Reliability of data collection instruments refers to the degree to which an instrument yields the same results each time it is used (Brink et al 2006:161). According to Polit and Beck (2008:452), “the less variation an instrument produces the higher its reliability” and “reliability can be equated with a measure’s stability, consistency or dependability”.

According to Brink et al (2006:164), stability of a research instrument refers to its consistency each time it is used. In this research study the questionnaire will be assessed for stability so that meaningful results can be obtained. Internal consistency or homogeneity refers to the extent to which all items on an instrument measure the same variable (Brink et al 2006:164). This type of reliability will be appropriate to this research study as the construct that is being assessed is skills related to IMCI.

Validity and reliability is discussed in more detail in chapter 3.

1.10 ETHICAL CONSIDERATIONS

Whenever human subjects are used for research purposes, as is the case in this research study, special attention must be paid to the rights of these individuals. The researcher must conduct the research study in an ethical manner. According to Polit and Beck (2008:753) ethics is defined as “a system of moral values.” Research ethics comprises principles, values and standards that guide appropriate conduct related to research decisions and actions (Cottrell & McKenzie 2011:95). Ethical considerations addressed in this study are informed consent and voluntary participation, anonymity and confidentiality, respect and dignity and the protection of the rights of the research subjects.

1.10.1 Protecting the rights of the respondents/subjects

The rights of the research subjects are to be considered above all else. No harm should befall them, and they should take part in the research study of their own free will.

1.10.1.1 Autonomy

According to this ethical principle, individuals have the right to self-determination, which means that they have the right to choose to be a part of the research study or not, without fear of a penalty or unfair treatment (Brink et al 2006:32; Polit & Beck 2004:147). The research subjects also have the right to expect a full explanation concerning the study, can refuse to give information, or can withdraw from the study at any time (Brink et al 2006:32; Polit & Beck 2004:147).

To ensure adherence to this ethical standard, the IMCI trained registered nurses were informed about the research study verbally and in an information sheet (Annexure F), and what their contributions would mean in terms of IMCI implementation and standards of care for sick children attending the health facilities. The IMCI trained registered nurses gave an oral consent to participate voluntarily in

the study. They were assured that their participation and views would not impact negatively on their job status. The caregivers of the sick children signed a written consent form (Annexure C) after voluntarily consenting to participate in the research study. They were given a full explanation of what the study entailed and were also informed of the benefits of the study in respect of the quality of care for sick children.

In this study there was no threat of physical or psychological harm to the IMCI trained registered nurses, the caregivers or the sick children. A full explanation regarding the research study and expectations of the researcher were given to all the aforementioned individuals. They were told that they could withdraw from the study at any time.

1.10.1.2 Justice

This principle includes the right to fair selection and treatment of the subject, respect of the subjects' right to privacy, anonymity and confidentiality (Brink et al 2006:33-35; Polit & Beck 2004:149).

In this study confidentiality and anonymity were maintained by not recording the names of IMCI trained registered nurses on the research instrument. All research instruments were allocated a random number and data was also coded numerically. The research subjects were guaranteed that their identities would not be disclosed to avoid any discrimination following thoughts and opinions that were disclosed.

1.10.1.3 Beneficence

To adhere to this principle the researcher needs to ensure that the well-being of the research subject is not compromised during the research study.

- The researcher always needs to ensure the physical, emotional, social, economical and legal well-being of the research subject (Brink et al 2006:32-33; Polit & Beck 2004:143).
- The researcher ensured that the well-being of the babies that were assessed by the research subjects, were not compromised in any way.

1.10.2 Protecting the rights of the institution

It is the duty of the researcher to ensure that the rights of the institutions are not compromised in any way.

1.10.2.1 Autonomy

The institution to be involved in the research study has the right to refuse to be a part of /participate in the study. The institution itself should not be coerced into partaking in any research study by being offered monetary incentives (Brink et al 2006:32; Polit & Beck 2004:147). The University of South Africa's Health Studies Research and Ethics Committee approved the research study and granted ethical clearance on the 2nd December 2010 (Annexure E). Permission to conduct the study was obtained from the Department of Health, KwaZulu - Natal, eThekwini district (Annexure B). The managers from the district office informed the health facility managers of the permission that was granted to the researcher to conduct research in the said facilities. The researcher presented each manager with a copy of the permission letter (Annexure B) to share with the IMCI trained registered nurses who were conveniently selected.

1.10.2.2 Justice

The institution to be involved in the research study has the right to request for privacy and anonymity, where the employees and the name of the establishment concerned. The researcher should also honor all agreements that are entered into with the institution. The researcher has to ensure that she is always available to clarify information, as well as debrief the employees of the institution when the research study is complete (Brink et al 2006:33-35; Polit & Beck 2004:149).

1.10.2.3 Beneficence

The institution to be involved in the research study has the right to protect itself in respect of the law (Brink et al 2006: 32; Polit & Beck 2004:143).

- The researcher must obtain permission to conduct the study from relevant authorities, employers and owners of the institutions which he/she intends to use. Permission was obtained from the Department of Health,

Ethekwini district to conduct research at their health facilities (Annexure B).

- Consent for the research was obtained from the appropriate research and ethics committees for example the Research and Ethics committee, Department of Health Studies, UNISA (Annexure E) by submission of the research proposal, data collection instrument and consent form.
- The researcher must be aware of any ethical rules and regulations governing research at the institution she intends using, before embarking on data collection.

1.10.3 Scientific integrity of the researcher

The researcher must not only respect the rights of the research subject, but must also demonstrate respect for the scientific community (Brink et al 2006: 40-41). The researcher has ethical responsibilities where research is concerned, which include honesty and competence.

The researcher provided the following information to the research subjects:-

- The title of the research project
- Extend an invitation to the research subject to be a part of the research study
- The researcher's title and position
- The purpose of the project
- The selection of the study population and the sample
- An explanation of methods and procedures by which data will be collected
- The offer to openly and freely answer any questions
- Confirmation of anonymity and confidentiality if required
- The voluntary nature of participation

- A description of any risks or benefits

(Brink et al 2006:36).

The researcher avoided the following activities:-

- Fabrication, falsification or forging information or manipulation of designs and methods..

Plagiarism was avoided by the researcher as all work from others were referred to in the research report (Brink et al 2006:40-41).

1.11 SCOPE AND LIMITATIONS OF THE STUDY

It is difficult to ascertain the limitations of the study before it is undertaken. However, listed below are what the researcher views as possible limitations in this study:-

- The limitations to the use of structured observation are that research subjects may become self-conscious, and change their behaviour to suit the situation for example the 'Hawthorne effect.'
- Although confidentiality and anonymity will be maintained, research subjects may be fearful of participating in the study and they may choose to withdraw.
- Although simple random sampling is the technique to be used when selecting research subjects, the danger of bias may exist although it may not be deliberate.

1.12 CONCLUSION

The Integrated Management of Childhood Illnesses (IMCI) is a WHO and UNICEF strategy to combat high morbidity and mortality rates in children under five years globally.

The IMCI strategy became a South African government policy in 1998. Registered nurses in primary health care settings are currently being trained in the use of IMCI

case-management guidelines during an eleven day training course, which is led by IMCI facilitators. One of the key challenges facing IMCI presently is the lack of supervision, follow-up and updating of staff.

The focus of this study is therefore on the follow-up and ongoing supervision of registered nurses after IMCI training. The researcher in this instance will gather information to establish the levels of follow-up, ongoing supervision and facility support, and whether these impacts on the practice and implementation of IMCI, by IMCI trained practitioners in eThekwini district, KwaZulu-Natal. The proposed research is going to be a quantitative study, with the research design being descriptive in nature. In this research study the target population would be registered nurses in eThekwini district who are IMCI trained by the Department of Health.

CHAPTER 2

Literature review

2.1 INTRODUCTION

A literature review is an organised written presentation of what has been published on a topic by scholars, with the purpose of conveying to the reader what is currently known regarding the topic of interest (Burns & Grove 2005:93). According to Brink et al (2006:67), 'literature' refers to sources that provide the information that the researcher requires, which is relevant to the research topic. A literature review allows for the thorough examination of publications on the topic, which facilitates a better understanding of, as well as a more focused research study (Polit & Beck 2004:722). Through the literature review, researchers can conduct a critical appraisal of recent published research, determine what is already known about the topic and identify gaps in the literature (Brink et al 2006: 67-68; Polit & Beck 2004:88). The rationale for reviewing literature relevant in this study was to gather information on and have an understanding of IMCI implementation, and the challenges faced in South Africa and other countries. The review also allowed the researcher the opportunity to view pertinent references thus building up her knowledge base on the subject. Published information pertaining to IMCI implementation in South Africa, specifically KwaZulu-Natal is very limited which served as a starting point for this research study.

2.2 THE IMCI STRATEGY

2.2.1 Background

Infant and child mortality remains high in developing countries. Many children succumb to illnesses or conditions that are treatable like, acute respiratory infections (pneumonia), diarrhea, measles, malaria, malnutrition and HIV (IMCI information …1999:1; Child and adolescent health 2009:1). According to Woods (2010:28) the Integrated Management of Childhood Illness Strategy (IMCI), developed by the World Health Organization (WHO) and UNICEF in 1996, is advocated globally and in developing countries, as a child survival strategy to improve the health of children

and reduce under five mortality.

The disease profile of the under-5 year population of South Africa is not dissimilar to other developing countries. Although HIV contributes to 50% of the deaths in children under five years, other contributors include diarrhoeal disease, lower respiratory infections and malnutrition. Integrated management of childhood illness (IMCI) was therefore adopted as the gold standard in South Africa for the management of sick children at primary health care level (Horwood, Butler, Vermaak, Rollins, Haskins, Nkosi, Neilands & Qazi 2011:42). According to Chopra, Daviaud, Pattinson, Fonn and Lawn (2009:835), South Africa is currently one of 12 countries in which mortality rates for children have increased. South Africa has therefore adopted the IMCI strategy in the hope that it would not only reduce mortality and morbidity in children under five years of age, but also help with the attainment of the Millennium Developmental Goals for child survival.

2.2.2 What is IMCI?

"IMCI" stands for "integrated management of childhood illnesses." It is a WHO/UNICEF initiative that was launched globally in 1996. It aims to decrease morbidity and mortality rates in children under the age of 5 years, as well as improve growth and development in the afore-mentioned age group. IMCI also focuses on improving the skills of health workers, strengthening the health system and improving the health practices of the community at large (Goga, Muhe, Forsyth, Chopra, Aboubaker, Martines & Mason 2009: [2]).

"Integrated" refers to many aspects of this strategy, but, most importantly the holistic care of the child under 5 years of age (What is IMCI… 2004: [3]).
The rationale for the integrated approach is that most children present with signs and symptoms related to more than one condition. This overlap means that a single diagnosis may not be possible or appropriate and combined treatment regimens may need to be adopted (Management of …2011:1; Integrated management… 2011: [1]).

"Management" refers to the case management guidelines that focus on asking

caregivers simple questions, identifying specific signs and symptoms, classifying the illness and providing appropriate treatment (Prosper, Macha, Borghi 2009:13). According to WHO, IMCI clinical management adopts a syndromic approach with the emphasis being on the classification which enables the health care worker to select a management plan rather than make a diagnosis (What is IMCI… 2004:[3]).

"Childhood "refers to children under the age of 5 years, who are most at risk to illness and death (What is IMCI…2004[4]; Integrated management… 2011:[1]). According to WHO, about 12 million children from developing countries die before they reach their fifth birthdays (Management of …2011:1; Integrated management… 2011: [1]). Children in this age group are deemed the most vulnerable to illness and death.

"Illness" refers to the conditions that are a major cause of severe illness, disability or death amongst children in the under 5 age group and include the following: - acute respiratory infections, diarrhoeal diseases, meningitis, malaria, HIV/AIDS, measles, ear infections, malnutrition and anaemia (What is IMCI …2004:[4]). In low and middle income countries, the death toll of children under 5 years runs into the millions with 7 out of 10 deaths resulting from diarrhoea, pneumonia, measles, malaria or malnutrition (Prosper et al 2009:12).

The benefits of the IMCI strategy in health facilities is that it promotes the accurate identification of childhood illnesses in outpatient settings, ensures appropriate treatment is prescribed and administered for all of the major illnesses, strengthens the counselling of caregivers and speeds up referral procedures for severely ill children (Management of…2011:3; Integrated management… 2011:[1]).

2.2.3 Components of the IMCI strategy

IMCI is a strategy which has three main components which aim to: improve case management skills of health care workers; improve overall health systems; improve family and community health practices (Pan American Health Organization [s.a.]: [2]).

2.2.3.1 Component One: Improving case management skills of health care workers

In an effort to improve the case management skills of health care workers the IMCI guidelines outline a process which primary level health workers can use to assess and manage ill children. The guidelines outline how and where an ill child should be treated, how the caregiver should be counselled and how the child should be followed up (IMCI training …2011:2). Health care workers are trained by 'IMCI facilitators' or trainers in the use of the IMCI case-management guidelines, during an eleven day training course. Thirty percent of the training time is set aside for supervised clinical practice which allows for the acquisition of new skills, and relevant feedback. According to the WHO guidelines all health facilities should ensure that at least sixty percent of the health care workers, who manage children, are IMCI trained (IMCI indicators…2011:2). Statistics from a Child and Adolescent Health and Development Progress Report 2006-2007, pointed out that of the 58 South African health facilities visited in 2003, 44% had at least 60% of the health workers trained in IMCI (Child and Adolescent…2006-2007:31). All IMCI-trained health care workers should receive a follow-up visit from an IMCI facilitator within four weeks of completing the training (IMCI training …2011:5). The objectives of follow-up visits are to improve health worker skills by reinforcing IMCI skills in the clinical setting, identifying problems related to the managing of sick children and gathering information on the performance of health care workers in order to improve IMCI implementation (Follow-up after …2011:1).

2.2.3.2 Component Two: Improving the health system

This component aims to ensure that the health system provides adequate support for implementation of IMCI in primary level health facilities. The focus is on improving the organisation and functioning of the health care systems so that it can provide better quality health care (Pan American Health Organization [s.a.]: [2]). It focuses on policy, planning and management, human resources, availability of drugs and supplies, referral, monitoring and health information systems, supervision, evaluation and research (What is IMCI…2004:[5]). According to the WHO guidelines (IMCI indicators…2011:2) all health facilities should have the necessary manpower,

essential equipment, materials and IMCI drugs on hand. It is stated in a study done on IMCI implementation in South Africa that 1300 registered nurses have been trained in IMCI case management in KwaZulu- Natal, and are currently observing and treating sick children in PHC clinics (Horwood, Vermaak, Rollins, Haskins, Nkosi & Qazi 2009a:[3]). This accounts for thirty two percent of health workers in this province. Statistics from a Child and Adolescent Health and Development Progress Report 2006-2007, indicated that of the 58 South African health facilities visited in 2003, 73% of those health facilities had at least one supervisory visit, including observation of case management, during the previous six months (Child and Adolescent…2006-2007:31). Niger's approach regarding IMCI implementation differed vastly from other countries. According to a paper presented by Tawfik, Legros and Geslin (2001:1) the focus of their study were quality assurance interventions which looked at strengthening district level supervision and health systems support before the beginning of IMCI clinical training. There were positive outcomes in both these areas as improvements in supervision and availability of drug supply were documented. However, although district supervisors were now better qualified to support IMCI implementation, further studies are required over a longer period of time, to ascertain the long term impact of quality assurance measures to better prepare for IMCI implementation.

2.2.3.3 Component Three: Improving family and community practices

This component is related to child health and development. It refers to twelve key family and community practices that if properly promoted and adopted by the targeted communities, would potentially contribute to improving child survival, growth and development (What is IMCI …2004:[5]). According to Saloojee and Bamford (2006:189) more than half (58%) of all districts in South Africa are implementing the Household and Community component in at least one site.

2.2.4 Important principles of the IMCI strategy

According to Woods(2010:28) and Department of Health (South Africa 2008:7) the following principles must be adhered to in order for IMCI to be successful implemented as a strategy:

- The use of a chart booklet
- The recognition of the general danger signs in all sick young children under the age of five years which necessitates the need for urgent pre-referral treatment and transfer to hospital
- The use of the assess -classify- treat format (IMCI algorithm) where all sick children are first assessed for the main symptoms (cough or difficulty breathing, diarrhoea, fever and ear infection) and then routinely assessed for nutritional and immunization status, HIV and other potential problems.
- Only a limited number of clinical signs are used, selected on the basis of their sensitivity and specificity to detect disease. However, the integrated approach is important as many children present with more than one condition at the same time.
- A combination of individual signs leads to a child's classification (not diagnosis). The colour coded triage system (red, yellow or green) in the classification tables is an indication of whether the child has a serious condition requiring stat doses of drugs, requires antibiotics that can be taken at home or, simply needs home remedies and home care.
- IMCI management procedures use a limited number of essential drugs and active participation of caregivers in the care of their children is encouraged.
- Counselling of caregivers on homecare, feeding recommendations and when to return is an essential component of IMCI.
- A combination of individual signs leads to a child's classification (not a diagnosis). The colour coded triage system (red, yellow or green) in the classification tables is an indication of whether the child has a serious condition requiring stat doses of drugs, requires antibiotics that can be taken at home or, simply needs home remedies and home care.
- IMCI management procedures use a limited number of essential drugs and active participation of caregivers in the care of their children is encouraged.

- Counselling of caregivers on homecare, feeding recommendations and when to return is an essential component of IMCI.

2.3 IMPLEMENTATION OF THE IMCI STRATEGY

The WHO and UNICEF responded to the high global incidence of childhood morbidity and mortality, and together developed the Integrated Management of Childhood Illness (IMCI) strategy as a means of improving child survival in resource poor settings. To date IMCI has been implemented in over 113 countries and 5000 districts across all six WHO regions (Goga et al 2009:[2]).

The Department of Health (South Africa 2008:4) in an attempt to address the childhood morbidity and mortality rates in South Africa, accepted the IMCI strategy in 1996, with some adaptation to suit the South African situation. The first case management course was conducted in 1998 in Mpumalanga. Twenty four provincial representatives were trained, and they subsequently conducted training in their provinces namely KwaZulu-Natal, Limpopo Province and Northern Cape. By January 2001, all nine provinces in South Africa were implementing IMCI training (Report of IMCI….2001:6).

According to the KwaZulu-Natal Department of Health, as stated in their annual report of 2005/2006, forty six percent of professional primary health care nurses have been IMCI trained. Seventy five percent of the clinics in this province have at least one IMCI trained professional nurse. Thirty four percent of the clinics have trained at least sixty percent of their professional nurses in IMCI case management (KwaZulu-Natal Department of Health 2005/2006:57).

2.3.1 Course objectives

Although IMCI was developed as a child survival strategy to improve the health of children and reduce under five mortality from conditions like pneumonia, diarrhoea, malaria, measles and malnutrition, research studies also show that increased morbidity and mortality rates prior to IMCI implementation could be directly attributed

to sick children not being properly assessed and treated by health care workers and parents/caregivers not being properly counselled (Thandrayen 2008:6). The course objectives of the IMCI strategy therefore lend itself to improved care and management of all sick children in South Africa.

On completion of the training course, health care workers are expected to have the knowledge and skills to:

2.3.1.1 Assess, classify and treat sick children accurately following the IMCI case management guidelines

According to Woods (2010:28) and WHO (IMCI training …2011:3; Follow-up after training… 2011:2) the health care worker must be able to use the chart booklet to recognise the general danger signs in all sick young children under the age of five years, use the assess -classify- treat format (IMCI algorithm), apply the integrated approach in the management of the sick child and treat using the essential drugs available. The South African Department of Health, Quality Assurance Department states in their Primary Health Care Facility Supervision Manual that every primary health care facility must have nurse practitioners that are able to treat sick children according to IMCI guidelines (Primary Health Care Supervision Manual... [s.a.]5:17).

- Assessment of sick children

Assessment is the first step in IMCI case management where signs and symptoms are the entry point (IMCI training …2011:3). An absolute minimum number of signs and symptoms is used which have been validated by extensive research (South Africa 2008:8). The health worker assesses a child by checking first for danger signs, asking questions about common conditions (cough or difficult breathing, diarrhoea, fever, ear problems), examining the child, and checking the nutrition, HIV and immunization status. The health worker also assesses the child for other health problems.

- Classification of the sick child

Sick children usually present with signs and symptoms related to more than one condition. It is therefore not possible to make a single diagnosis. The IMCI strategy

introduced classification which allows for the integrated approach to managing children (IMCI training …2011:3). The classifications have the purpose of enabling the health care workers to select a management plan rather than make a diagnosis. Sometimes a child may have more than one classification and dependent on that classification may require urgent pre-referral treatment and referral, specific medical treatment and advice, or simply advice on home care or home remedies (South Africa 2008:8). Kerry (2005:33) states that in the IMCI strategy the classifications are colour-coded according to the levels of severity. A severe classification is coloured red, indicating that the child is seriously ill and requires hospitalisation. The less serious classification is coloured yellow indicating that the child requires antibiotics or other medications, whilst the least serious classification, coloured green indicates that the child requires home remedies that can easily be made up at home.

- Treatment of the sick child

After classification, the health worker identifies specific treatments and develops an integrated treatment plan for each child. If a child requires urgent referral, the sick child is transferred out. If the child is given treatment to take at home the first dose is given at the health facility with the caregiver playing an active role in the administration of this first dose. If the child is to receive home remedies, the caregiver is given specific instructions regarding the preparation of these home remedies (South Africa 2008:8).

The implementation of the IMCI strategy should improve the overall quality of care of sick children as well as the skills of the health care worker. A study in Uganda assessed the effects of IMCI on the quality of care received by sick children and found that health workers that were IMCI trained delivered better care than health workers that were not IMCI trained. The health care workers felt more confident about their ability to correctly classify and treat sick children. Although there were problems with drug supply, the use of first line drugs had improved (Pariyo, Gouws, Bryce & Burnham 2005: i62).

However, a study carried out in Tanzania revealed that although treatments with antimalarial drugs and antibiotics was appropriately administered health workers continued to make a diagnosis as opposed to a classification (Walter, Lyimo,

Skarbinski, Metta, Kahigwa, Flannery, Dowerll, Abdulla & Kachur 2009: 99).

Initial studies carried out in South Africa revealed positive aspects to IMCI implementation as reported by the World Health Organization on the results of the IMCI Health Facility Surveys in Africa conducted from 1998- 2004. By June 2004, 93% of the districts were implementing IMCI. It was reported that there was a marked improvement of quality of care with IMCI implementation (World Health Organization [s.a.]:3).Comprehensive assessments were carried out, and growth patterns and immunization status were closely monitored. There was also an overall improvement in health worker prescription practices and caregiver counselling (World Health Organization [s.a.]:3).

In a quasi-experimental pre and post-intervention study measuring the change in the quality of care provided to sick South African children as a result of the routine implementation of IMCI, findings revealed that nurses were able to carry out a more comprehensive assessment and not only focus on the presenting problems. There were improvements in the recognition of general danger signs and 'significant improvements' were also noted when prescribing and demonstrating administration of antibiotics (Chopra, Patel, Cloete, Sanders & Peterson 2005:399).

However between May 2006 and January 2007, IMCI trained health workers were randomly selected and observed during consultations, in 74 health facilities in two provinces viz. Limpopo and KwaZulu- Natal. The findings from this study show that although health care workers are implementing IMCI, their assessments are incomplete. The assessments were also not applied consistently with few health workers asking about all the main symptoms. Poor IMCI implementation could therefore be linked to incomplete assessments as opposed to lack of skills. Many of the health care workers also failed to explore each symptom further, thus making incorrect classifications. This study was unable to determine the reasons for poor performance, and was unable to prove any relationship between health worker performance and IMCI supervision (Horwood et al 2009a:8).

2.3.1.2 Administer pre-referral treatment correctly and refer seriously ill children

If a child requires urgent referral, the health worker gives essential treatment before the patient is transferred out. This essential treatment is called pre-referral treatment.

In a study carried out in Tanzania to determine why health care workers failed to follow IMCI guidelines for severely ill children, none of the children with severe classifications received treatment as per the IMCI algorithm, and only 25% of the severely ill children were referred. Most of the health care workers (91%) indicated that it was not necessary to refer children with severe classifications. This study concluded that contributory factors to health care workers non-adherance to IMCI included the belief that some medications are toxic and the perception that referring severely ill children is not necessary (Walter et al 2009: 99).

The World Health Organization reported on a health survey conducted in South African health facilities in 2002 where it was found that about half of the children that were seen and required urgent referral, were referred as per the IMCI strategy (World Health Organization [s.a.]:4).

2.3.1.3 Counsel caregivers

Caregivers are counseled about how to give treatment and take care of the sick child at home, what signs to look for to indicate that the child needs to return immediately to the health facility, and when to return for follow-up**.** The health worker provides practical treatment instructions, including advising the caregiver on how to give oral drugs, how to feed and give fluids during illness, and how to treat local infections at home. The health worker asks the caregiver to return for a follow-up date dependent on the classification, and also teaches them how to recognize when the child is not improving or responding to the treatment, and the urgency to return immediately to the health facility. The health worker also counsels the mother about her own health.

An integrative literature review focusing on the role of caregivers in IMCI implementation show that IMCI training facilitates an improvement in the understanding and practices of caregivers. Good communication skills for example

active listening, the use of simple language, asking relevant questions, praising the caregivers and verifying information about the care of the sick child forges a therapeutic relationship between the caregiver and the health care worker and thus enhances the quality of care for the sick child (Paranhos, Pina & de Mello 2011:210).

A baseline survey in the Western Cape Province, found that very few (25%) health care workers counseled caregivers on giving medications at home. Counselling caregivers on how to take care of their sick children at home, and when to administer prescribed medications is an important aspect of the IMCI strategy as it contributes directly to the morbidity and mortality rates of sick children(Chopra et al 2005 :399).

2.3.1.4 Check the child's immunization status and give the immunization if required

According to the IMCI strategy the health worker also checks the immunization status of the sick child and if necessary immunizes the child as per the immunization schedule. Thus missed opportunities are avoided.

The World Health Organization states that immunization is responsible for saving many lives globally. The South African Expanded Programme of Immunization (SA-EPI) "aims to decrease childhood morbidity and mortality from vaccine preventable diseases." South Africa follows the schedule and guidelines relating to immunization as prescribed by the WHO. The success of the immunization programme rests largely with improved health care services at primary health care facilities which includes the IMCI strategy (Saloojee & Bamford 2006:184).

Immunization is directly associated with child survival and under-five mortality rates, as is IMCI. Immunization rates against measles in South Africa have increased between 2001 and 2009. There was also an increase in the proportion of children under one year of age who had received all their primary vaccines for the period 2001 and 2009 (South African Government Online [s.a.]:[2]).

However, whether these increases in vaccinations can be directly attributed to the IMCI strategy is not known. In 2001, 2002 and 2003 South Africa conducted IMCI health facility surveys in all provinces that had completed two years of IMCI

implementation. Results indicated that during assessment, 88% of children had their vaccination status checked and during treatment 50% of the children needing immunization were correctly immunized while 73% of all the facilities had all four essential vaccines available (Report of IMCI…2005). In an evaluation of the quality of IMCI assessments conducted between May 2006 and January 2007 in two provinces viz. Limpopo and KwaZulu-Natal, IMCI experts observed consultations by the health workers. Findings revealed that IMCI assessments were frequently incomplete, and activities not related to the main complaint were frequently overlooked, in this case, immunization (Horwood et al 2009a:8).

2.3.1.5 Carry out feeding assessments of children under two years old or who are very low weights for age

The health worker assesses the feeding practices of all children under two years of age or if they are very low weights for age. Often these problems contribute to malnutrition and need to be resolved. If a child is underweight, the health worker identifies treatment or refers the child when appropriate.

In a study by Horwood et al (2011:43), it is stated that according to the *Road to Health Chart* guidelines for health workers, all children attending a health care facility in South Africa must be routinely weighed, and their weight plotted on the South African growth monitoring chart. Children were defined as being underweight if the weight was below the third percentile, and severe malnutrition was defined as those children whose weight fell below the 60% of the 50th centile (marasmic line). Children whose weights are plotted above the third centile are assessed as per the growth curve that takes shape as the weights are plotted. If the growth curve moves upwards it means there is good weight gain, a growth curve that is flattening indicates inadequate weight gain, and a growth curve that moves downwards indicates a weight loss.

The South African Department of Health, Quality Assurance Department states in the norms of their Primary Health Care Facility Supervision Manual that there should be an increase in the growth monitoring of all children under the age of two years. There should be a reduction in the prevalence of under-weight for age children and stunting, for children below five years of age. The prevalence of severe malnutrition

in children under five years should also be reduced (Primary Health Care Supervision Manual.[s.a.] 5:16).

According to Gombe, Mabaera,Tshimanga, Shambira, Chadambuka and Nkomo (2010:7) Bulawayo City, Zimbabwe, reported an increase in death rates for children under the age of five years from 2004 to 2005. Most of the deaths were attributed to preventable conditions like malnutrition. Nurses were trained in the implementation of the IMCI strategy in 2005. Gombe et al (2010:8) stated that during the assessment of nutritional status it was found that although IMCI trained nurses were able to recognize signs for visible severe wasting, non IMCI trained nurses were better at checking weight against growth.

Even in South Africa nutritional assessments were poorly done. Many children were not assessed for malnutrition and IMCI trained health care workers were unable to give nutritional advice (Horwood et al 2009a: [9]).

2.3.1.6 Counsel caregivers, if necessary, on nutrition and breastfeeding

The health care worker provides counselling to solve feeding problems, including assessment of breastfeeding practices where appropriate. Infants should be breastfed at least eight times in twenty four hours. Attachment refers to how well the infant sucks on the breast. All breast feeding mothers should be checked and counseled for attachment.

The South African Department of Health states in their Primary Health Care Facility Supervision Manual that there must be an increase in the number of mothers that exclusively breastfeed up to six months of age, and then who continue to breastfeed up to twelve months of age (Primary Health Care Supervision Manual.[s.a.]:section 5:16). Interventions and advice particularly about the importance and advantages of breastfeeding, as well as complementary feeding, and other nutritional interventions have been shown to substantially improve child mortality (Roth, Caulfield, Ezzati & Black 2008:358). However, the failure of health care workers to apply this aspect of the IMCI strategy, could impact on the potential for the strategy to change morbidity and mortality rates.

2.3.2 Course organisation, materials and training methods of IMCI implementation

The case management component aims at improving the clinical skills of health care workers providing care to sick children. This can only be done through a proper training process for case management and includes the following:-

- Course organisation

Health care workers attend an eleven day training course which should include at least thirty percent clinical contact time. Participant groups are relatively small and should not exceed twenty participants. The facilitator: participant ratio should be no more than 1:4. The course facilitators lead all the classroom activities whilst the skilled clinical instructor, either a doctor or an IMCI trained nurse, facilitates learning in the clinical area (South Africa 2008:6).

The WHO recommends that IMCI case-management training occurs over eleven days. However in an attempt to scale up IMCI implementation, numerous countries are exploring the possibilities of shortening IMCI case-management training. This would also overcome additional problems of cost of training and releasing of essential staff for off-site training (Woods 2010:28).

In 2006-2007, a multi-country exploratory questionnaire survey was conducted, to document the experiences of different countries regarding IMCI case-management training, and to determine the acceptability of shortening the duration of training. Results of the study showed that some countries were forced to shorten their IMCI case management training as a result of limited budgets, limited availability of facilitators and high staff turnover. No mention was made of whether the shortened courses impacted on the quality of care. However health care workers who attended the shorter course rated themselves to be less skilled than those health care workers who attended the full eleven day course (Goga et al 2009:[4]).

A systematic review of twenty nine studies was carried out to compare IMCI's effectiveness, with the standard eleven day course versus the shortened course of five to ten days. No real significance was noted in terms of quality of care. Even after

training of any duration, IMCI case management was still incomplete (Rowe, Rowe, Holloway, Ivanovska, Muhe & Lambrechts 2011:12).

- IMCI training materials

The IMCI training materials have been developed “based on expert clinical opinion and research results” (South Africa 2008:5). The training materials and guidelines have been carefully adapted to suit the country where they are being implemented, and include conditions that are prevalent in that country, as well as effective treatments and acceptable preventive practices. All nine provinces are using one South African generic version. The training materials include the following:- a set of wall charts that describe IMCI case management guidelines, a set of seven training modules, a photo exercise booklet, two videos and IMCI case record forms for use in the clinical areas (IMCI training …2011:4) .

Horwood et al (2009b:[3]) conducted a qualitative evaluation of the IMCI case management training course. Respondents commented that the training materials were well-developed which facilitated easy understanding of content being delivered. The chart booklet proved to be an invaluable desk aid as it guided health care workers in the management of sick children.

- Training methods

The course facilitators lead all the classroom activities which include written exercises, individual feedback, group discussions, drills, presentations, demonstrations, short answer exercises and role-plays. Several exercises cover the identification of clinical signs using a booklet of photographs and a video, which demonstrates the assessment of sick children and presents several case studies. The skilled clinical instructor facilitates learning in the clinical area. Each participant attends ten clinical sessions, consulting with thirty to fifty sick children in a children’s outpatient department or a paediatric ward. Clinical sessions allow participants to practice assessment, classification, treatment and counselling skills using the IMCI case management guidelines (IMCI training …2011:4).

IMCI facilitators are carefully selected so as to ensure good quality IMCI training. The high ratio of facilitators to participants allows for careful monitoring of

participants, and the relationship is supportive as new information is transferred (Horwood et al 2009b:[4]).

2.3.3 Objectives of follow-up

According to WHO (Follow-up after…2011:1) follow-up is not only an essential aspect of the IMCI training process, but also plays a role in bridging the gap between supervision and the district health services. Follow-up consists of a set of well-defined tasks that is focused on reinforcing the skills of the health care worker and solving problems that may arise. In a study carried out by Chaudhary et al (2005:738) two groups of health care workers were followed-up after a five day IMCI training using the prescribed WHO package, in an attempt to assess the level of skills, and identify gaps in practice. Results indicated that the health care workers were more competent in their assessment and management of sick children using IMCI, if they were followed- up within 4-8 weeks as opposed to those health care workers who received their follow-up later. The researchers also concluded that a delay in follow-up can result in a loss of skill, therefore health care workers "benefit from frequent and regular follow-up from supervisors."

In a report compiled of a retrospective evaluation done in Peru between March and September 2001, many weaknesses to IMCI implementation were discovered viz. IMCI training and supervision. Based on verbal reports, and taking into consideration IMCI coverage indicators, very few health workers were IMCI trained. Supervisory activities specifically for IMCI were not done and follow-up visits on completion of training were limited (Huicho, Davila, Campos, Drasbeck, Bryce & Victora 2005:19).

The broad objectives of follow-up are:-

- Incorporate the IMCI case management strategy in the management of sick children in all primary health care facilities

The supervisor ensures that the health care workers use the IMCI case management strategy when examining all sick children. In the Thukela Health District, situated in north-western KwaZulu-Natal, the IMCI programme was adopted in 1999, in an effort to improve child health in the area. Training of health care workers started in May

1999 which ensured a “critical mass of IMCI trained practitioners.” Since then all categories of health care workers have been using the IMCI algorithm as a means of assessing, classifying and treating sick children, which has facilitated better management of the child. IMCI trained nurses have also attended the five-day supervisor’s course and now function as IMCI supervisors. Important lessons learnt regarding supervision and support were that supervisory visits are essential in ensuring standards of care. This report further cements the link between standards of care and supervision and support (Kerry 2000:[1]).

- Reinforce the IMCI case management skills of all IMCI trained health care workers

The supervisor observes the health care workers assessing, classifying and treating sick children and counselling their caregivers. The supervisor reinforces the health care workers skills by solving any case management problems, encouraging the practice of IMCI skills and making corrections where necessary.

Follow- up visits are considered part of IMCI training especially because the focus is on transfer of new skills and improved management of sick children. It is therefore vital for follow-up visits to be carried out four to six weeks after completion of training. However, respondents complain that it takes “months or sometimes years before they receive their follow-up visit.” Training alone does not improve health worker performance. It must be combined with other approaches namely follow-up and supervision (Horwood et al 2009b:[3]).

- Identify and solve problems related to IMCI case management

The supervisor meets with health facility staff to discuss any problems that have been noted, identifies any solutions and reviews procedures.

In KwaZulu- Natal and Limpopo clinical supervision is unsustainable as clinical supervisors do not have the necessary skill to observe and monitor health care workers carrying out IMCI assessments, making it necessary for IMCI facilitators to take on this task, which in some cases may not always be possible. Ongoing follow-up therefore becomes problematic (Horwood 2009b:[5]).

- Collect information on the performance of IMCI trained health care workers, and the conditions that influence performance, in order to improve IMCI implementation.

All the information that is collected during follow-up visits can be valuable when assessing the strategy as a whole. Strengths and weaknesses can be identified and changes can be made for the benefit of the health care workers as well as the sick children and their caregivers.

Mariani et al (2003:3) carried out a survey on knowledge, attitude and practice (KAP) on professional nurses working at primary health care level in KwaZulu-Natal, to identify the possible reasons for a lower performance of health service delivery in KwaZulu-Natal as compared to other provinces. Although the KAP methodology is frequently criticised for being complicated, this study found that although IMCI training was thought to be useful to the professional nurses, many nurses focused on other courses which would be more valuable to their professional development. However, the retention of knowledge in respect of IMCI was more significant as compared to other training courses (TB, STI's) that the professional nurses received, and could be directly linked to the quality of the training courses received. Mariani et al (2003:11) also mentions that performance depends on regular supervision and feedback, and "nearly 40% of the primary health care trained professional nurses did not receive any supervision from the area manager and 15% received one visit more than one year ago." Recommendations included periodical performance reviews to identify gaps.

2.4 CONCLUSION

The literature review allowed for a better understanding of, as well as more clarity on IMCI implementation globally, nationally and in particular the province of KwaZulu-Natal. Many of the research studies looked at how sick children were being managed at local health facilities and whether health care workers were competent when using the IMCI algorithm. Other studies paid particular attention to health facilities support and whether this impacted on IMCI implementation. Most of the studies indicated

that IMCI could be highly effective in decreasing the mortality rates amongst sick children, if correctly implemented and supported. Many of the studies cited follow-up and on-going supervision by clinic managers as a means of ensuring success where IMCI is concerned. The area of concern regarding this research study is whether IMCI trained registered nurses in the eThekwini district are competent in carrying out an IMCI assessment and whether follow-up and on-going supervision play any role in their levels of competency.

Chapter 3 describes the research design and methodology.

CHAPTER 3

Research Design and Methodology

3.1 INTRODUCTION

This chapter describes the research design and methodology used to determine the levels of follow-up and supervision, level of facility support and skills of the IMCI trained registered nurses in IMCI implementation. It was not the intention of the researcher to attempt to establish relationships between any of the variables. The research design, population and sample, data collection and instrument, data analysis, validity and reliability, and the ethical considerations are discussed.

The study was guided by the following question:

What is the level and impact of follow-up visits, supervision and facility support on the functioning of the IMCI trained registered nurses?

The following objectives of the study are to:

- ascertain whether the IMCI trained registered nurses received follow-up visits and ongoing supervision
- assess the skills of the IMCI trained registered nurses
- assess the level of facility support that the IMCI trained registered nurses receive
- describe the views of the IMCI trained registered nurses with regards to follow-up and supervision
- make recommendations for the improvements of follow-up, supervision and facility support, so as to strengthen the implementation of the IMCI strategy

3.2 RESEARCH DESIGN

The researcher selected a quantitative, non-experimental, descriptive design, using the survey approach.

- **Non-experimental**

Polit and Beck (2004:188) state that the reasons for using a non-experimental design is if variables are not subject to manipulation, or if the research situation does not lend itself to experiments being undertaken or if the experimental design is not appropriate for answering the research question. According to Brink et al (2006:102) in a non-experimental design "there is no manipulation of the independent variable, and therefore no intervention." This study focused on the implementation of the IMCI algorithm by IMCI trained registered nurses in the eThekwini district, and further examined the views of the IMCI trained nurses on health facility support and follow-up and supervision.

- **Quantitative**

Bowling (2009:467) defines quantitative research as the "measurement and analysis of observations in a numerical way." It involves the collection of highly structured data, from a situation or environment in which there exists information that is already known, using standardised data collection methods (Bowling 2009:214). This study is quantitative in nature because it involves observing IMCI trained registered nurses as they assess, classify and treat sick children, and then ascertaining whether they are competent or adherent to the gold standard of the implementation of the IMCI strategy. The information collected on the skills of IMCI trained registered nurses can also be quantified. The researcher in this study collects the information using an interview schedule and the same checklist for every IMCI trained registered nurse that is examining sick children.

- **Descriptive**

This study is descriptive because the researcher wants to gain more information about IMCI implementation in the clinical areas in eThekwini district. The researcher also discovered that there was insufficient existing literature regarding research on IMCI implementation in eThekwini district, KwaZulu-Natal. According to Burns and

Grove (1999:192) a descriptive design maybe used for “identifying problems with current practice, justifying current practice or determining what others in similar situations are doing.” Bowling (2009:216) states that descriptive studies “literally describe the phenomenon of interest.” The descriptive design was selected because the researcher felt it was the most suitable design when observing the implementation of the IMCI algorithm by IMCI trained nurses, and identifying problems (if they existed) in current practice.

- **Purpose of descriptive studies**

The purpose of a descriptive design is to provide accurate information about the characteristics of a particular individual, group or event and to also provide clarity on a situation as it occurs in “real life”(Burns & Grove 2009:696). In addition, the purpose of descriptive designs is to also observe and document aspects of that situation as it naturally unfolds, and to serve as a starting point for hypothesis generation (Polit & Beck 2004:192). Brink et al (2006:102) state that descriptive designs” describe the variables in order to answer the research question, and there is no intention of establishing a cause-effect relationship.”

- **Survey**

McMillan and Schumacher (2001:602) define a survey as “the assessment of the current status, opinions, beliefs and attitudes by questionnaires or interviews from a known population.” Cohen, Manion and Morrison (2001:169) make the assertion that surveys “set out to describe and to interpret what is.” According to Polit and Beck (2004:234) a survey focuses on “obtaining information regarding the activities, beliefs, preferences, and attitudes of people through direct questioning of a sample of respondents.” The survey was applicable to this research study for the following reasons (Bowling 2009: 216):-

- It can cover a large number of the population and in doing so is cost-effective
- It focuses on what people do, as well as being able to collect information on their knowledge, opinions, attitudes, and values
- It can test as well as generate hypotheses

- The information obtained can be used for many purposes eg. improve the way IMCI is implemented or improve the quality of care that sick children receive or improve health facility support

The survey approach was appropriate for gaining insight into and new information about IMCI implementation in eThekwini district, KwaZulu-Natal.

This study focused on the following variables viz, IMCI implementation by IMCI trained registered nurses, health facility support, and follow-up and supervision. However, whether there exists any cause and effect relationship between these variables is unknown. The researcher's aim in this study is not to manipulate any of these variables with the intent of establishing cause-effect relationships, but rather to observe phenomena as they occur.

3.3 RESEARCH METHOD

The study used a quantitative research design with a structured interview and an interview schedule with a checklist as a data collection instrument.

3.3.1 Population

Population universe

Brink et al (2006:206) defines a population as "a complete set of persons or objects that possess some common characteristic, of interest to the researcher" while Polit and Beck (2004:727) state that "a population is the entire set of individuals (or objects) having some common characteristics (for example All RNs in the state of California); sometimes referred to as universe". In this research study the population universe would be all IMCI trained registered nurses in KwaZulu- Natal. Forty IMCI trained registered nurses were selected for this research study.

Target population

A target population, according to Polit and Beck (2008:338) is that group of individuals that meet the requisite criteria that allows the researcher to generalize.

In this research study the target population would be all registered nurses in

eThekwini district who are IMCI trained.

An *accessible population* is a portion of the target population to which the researcher has reasonable access (Burns & Grove 2009:687). The accessible population for this study is the IMCI trained registered nurses who work in the eThekwini district.

Eligibility criteria

Polit and Beck (2008:338) state that eligibility criteria specify characteristics that allow for inclusion in the target population. In this study the following inclusion criteria were used:

- IMCI trained registered nurses working in health facilities in eThekwini district
- IMCI trained registered nurses examining sick children between 2 months and 5 years using the IMCI algorithm

3.3.2 Sampling and sampling technique

A sample is simply the potential participants of the research study (Cottrell & McKenzie 2011:331), and sampling entails selecting a few individuals that would be representative of the total population, so that inferences can be made about the population at large. It is important to note that the sample must have the same characteristics as the entire population in order to ensure representativeness (Polit & Beck 2008:339).

- **Sample frame**

Polit and Beck (2004:731) describe a sampling frame as "a list of all the elements in the population from which the sample is drawn" while Brink et al (2006:125) define a sampling frame as "a comprehensive list of the sampling elements in the target population from which a sample is to be chosen.

In this research study the researcher's intent was to select the sample using the most basic of the probability sampling methods namely a simple random sample. This method was chosen to ensure most importantly that each participant had an equal chance of being included. Probability sampling also reduces bias and allows

generalisation of findings (Brink et al 2006:102). However, due to the many challenges encountered by the researcher namely

- the failure of eThekwini district office to furnish a list of names of IMCI trained registered nurses
- some of the IMCI trained registered nurses being on night duty or vacation leave
- many of the IMCI trained nurses not attending to sick children, but rather placed in other areas eg. antenatal clinic, general clinic and labour ward,

  The researcher was not able to select the participants randomly as there was no sampling frame available.

In this case a non-probability sampling method had to be used. According to Brink et al (2006:131) non-probability sampling "is economical and convenient, and has the potential to produce high quality data when the research subjects are willing and able."

- **Convenience sampling**

Convenience or availability sampling was the type of non-probability sampling that was selected. Polit and Beck (2008:750) define convenience sampling as "the selection of the most readily available persons as participants in a study." Research subjects are selected based on inclusion and exclusion criteria, and their proximity and accessibility to the researcher (Cottrell & McKenzie 2011:132). Research subjects were selected because they happened to be at the clinics at the time that the researcher visited the clinical facilities. The research subjects were all IMCI trained registered nurses consulting with and examining sick children on those days. Brink et al (2006:132) state that although the element of bias cannot be excluded from this type of sample, it is still frequently used in health studies. Other advantages include time and money savings, and the ability to collect large amounts of data in the shortest time period (Cottrell & McKenzie 2011:132) from research subjects that are readily available.

Sampling technique

A sample of 40 IMCI trained registered nurses working at health care facilities (1 community health centre and 15 clinics) in the eThekwini district was considered adequate. The researcher visited some of the health care facilities first thing in the morning and others during the course of the day. Permission was already obtained from the relevant authorities to enter into the health facilities. Introductions to the staff were made by the district managers as well as the registered nurses in charge of the health facilities. The researcher shared relevant information regarding the study namely the purpose of the study and its benefits with the IMCI trained registered nurses and the mothers/caregivers. The IMCI trained registered nurses and the mothers/caregivers were approached on a one-to-one basis. Verbal consent was received from the IMCI trained registered nurses regarding their willingness to participate in the research study. Mothers/caregivers were asked to sign a consent form. They were approached in the consulting rooms and full explanations were given. Data was collected over a period of time, usually intermittently and guided by the availability of the district managers who facilitated access into the clinics. The researcher carried out all the observations and interviews personally.

3.3.3 Data Collection

Collecting data simply means to gather pertinent information. Burns and Grove (2009:695) define data collection as “the precise, systematic gathering of information relevant to the research purpose or the specific objectives, questions, or hypotheses of a study.” According to Polit and Beck (2004:716) data collection is “the gathering of information to address a research problem.”

3.3.3.1 *Data collection approach and method*

The structured data collection approach was used in this study. According to Polit and Beck (2008:372) the structured data collection approach “yields information that

is easily quantified." Structured observations as well as structured interviews were carried out. The instrument used to gather the data was an interview schedule with a checklist. Observation is a technique that is widely used in health care research, as it allows the researcher to observe phenomena as they occur. The purposeful act of collecting the data must be done objectively and under controlled conditions, in order for it to be scientifically acceptable (Brink et al 2006:143). Structured observation entails careful planning so that behaviours and events can be observed and carefully recorded. Especially important is that the researcher carrying out the structured observation must be knowledgeable about the behaviour or phenomenon being studied. An interview schedule with a checklist was used by the researcher during structured observation. The researcher was solely responsible for completion of the checklist and conducting the interview. The IMCI trained registered nurses were given the requisite information regarding the study and collection of information through structured observation. Both the IMCI trained registered nurses as well as the mothers/caregivers of the sick children were given an explanation on the factors that govern the ethics of research viz confidentiality, anonymity and respect which the researcher adhered to during the course of this study.

In this research study the interview schedule contained both a checklist as well as open- and closed- ended questions. The structured interview allowed for the research subjects, which are the IMCI trained registered nurses, to be asked the open and closed ended questions in the same order and manner. Polit and Beck (2008:424) mention the following advantages of an interview schedule:

- it is economical in terms of time and money
- response rates tend to be high as this is a face-to-face interview and it is usually difficult for research subjects to refuse to participate in the research study once they interact with the researcher
- confusion over questions is rare as the researcher conducts the interview and is able to offer clarity on the information that is required; "don't know" responses and unanswered questions are not an option
- the order of the questions are maintained as the researcher directs the

interview and is in control

- the interview schedule allows the researcher greater control over the sample, as the researcher is able to select only those respondents that are suitable for the study

Disadvantages are that research subjects tend to feel intimidated by the presence of the researcher and therefore information given maybe limited by the type of questions they are asked, and there might be no room for further discussion.

- **Construction of the interview schedule**

Ideally data collection instruments (in this case an interview schedule) should be clearly worded so as to minimise bias, be unambiguous and easily understandable in terms of what type of information is required and well organised (Polit & Beck 2008:426). The researcher kept in mind the above-mentioned considerations during construction of the interview schedule to ensure that data collection and analyses could be as simple and accurate as possible. The researcher with assistance and guidelines from the supervisor developed the interview schedule after carrying out an intensive literature review in order that a suitable tool could be developed to answer the research question. The interview schedule is in English. It contains both open-ended and closed -ended questions, as well as a checklist.

- **Structure of the interview schedule**

The interview schedule was divided into three sections (A-C). These sections were designed to elicit information about the skills of the IMCI trained nurses in assessing, classifying and treating sick children, the assessment of health system support and the frequency and impact of follow-up and supervision.

Section A

A checklist pertaining to the demographic data of the IMCI trained registered nurse as well as specific information pertaining to IMCI follow-up and supervision.

Section B

A checklist pertaining to the assessment skills of the IMCI trained registered nurse

as she applies the IMCI algorithm in her screening of a sick child, an assessment of the health system support and assessment of records.

Section C

Section C contains open-ended questions on follow-up, supervision and facility support.

3.3.3.2 *Pre-test*

According to Polit and Beck (2008:762) a pre-test involves use of the new instrument in a scaled down version of the actual research study to ascertain whether there are any flaws with the instrument, so that it can be adjusted accordingly. Polit and Beck (2008:380) also state that ideally all instruments whether new or existing should be subjected to a pre-test. A small scale study was conducted to pre-test the interview schedule using five IMCI trained registered nurses at two health facilities in eThekwini district. They were not included in the main study. The exercise assisted the researcher to determine the amount of time required to carry out each structured observation and structured interview. The researcher was able to ascertain that there was no problem with the instrument.

3.3.3.3 *Administration of the interview schedule*

The researcher administered the interview schedule on her own at all of the health facilities. The researcher using the checklist, structured observation and structured interview instrument to collect the requisite data. Data was collected from the last week of June till the middle of August 2011.

3.4 VALIDITY AND RELIABILITY

In order for a quantitative instrument to be deemed useful for research purposes, it must produce data that is both accurate and consistent.

Validity is concerned with whether the instrument measures what it is supposed to measure. When evaluating the instrument the researcher must identify what the instrument is measuring and ascertain whether the data generated by the measuring

instrument is directly related to the phenomenon being studied.

Reliability is the extent to which the instrument will produce the same result each time it is used. When evaluating the instrument the researcher has to assess whether the instrument is accurate, consistent and stable.

3.4.1 Validity

According to Bowling (2009:11) validity is concerned with "whether the instrument measures the underlying attribute or not." Brink et al (2006:159) state that the instrument being used must be applied in the correct context in order for the data produced to be valid. In this study it was therefore important to establish the validity of the instrument.

- **Content validity**

Content validity according to Polit and Beck (2008:750) deals with how representative items in the instrument are, with due regard to the concept being measured. The researcher had to consider content validity during the development of her questionnaire. Firstly, an exhaustive literature review was undertaken and the researcher read widely on the differing views and research studies presented and undertaken by the WHO, UNICEF and the health ministries of numerous countries on IMCI implementation. The review also assisted the researcher in identifying aspects or variables that should be and may not have necessarily been included in the questionnaire. The content validity was further enhanced, as the questionnaire was presented to the supervisor of this research study and the statistician who evaluated the instrument. Questions were rephrased and changes as well as recommendations were made to ensure the suitability of this instrument (Brink et al 2006:160).

- **Criterion related validity**

According to Brink et al (2006:160) criterion related validity allows for the researcher to test whether the instrument measures what it is supposed to measure through comparison with another measure known to be valid. The other measure is called "criterion measure." In this research study the skills of the IMCI trained registered nurses are being assessed against the IMCI algorithm and follow-up and

supervision. The IMCI algorithm would be the criterion measure in this research study. The IMCI algorithm identifies specific areas that need to be assessed during examination of a sick child. If the algorithm is not followed the assessment, classification and treatment would then be incorrect and ineffective. The research instrument developed by the researcher mirrors the algorithm, further enhancing its validity. Other valid research tools do exist. However for the purposes of this research study a new tool was developed (Brink et al 2006:161).

- **Construct validity**

Construct validity is linked to hypothesis testing with due regard to the phenomenon being studied and its underlying theoretical base (Polit & Beck 2008:461). According to Bowling (2009:167) construct validity "corroborates" that the instrument measures what it is supposed to, by using the instrument to test the hypothesis, and then closely examining the data which when collated, should support the hypothesis. In this research study various aspects surrounding IMCI implementation is being studied namely the skills of the IMCI trained registered nurse, health systems support, follow-up and supervision. Whether a relationship exists between the above-mentioned is not known, although the instrument includes all of the above because it is part of the conceptual framework.

3.4.2 Reliability

Reliability is the extent to which an instrument will produce the same result every time it is used. An example would be the use of a scale when weighing a baby at the clinic. The scale would be considered reliable if each time the baby is weighed (taken off and then put back on the scale), the reading is the same. If the reading is different each time baby is weighed then the scale is unreliable (Cottrell & McKenzie 2011:151). Reliability refers to how accurate, consistent and dependable the research instrument is when measuring a variable. Reliability testing also minimizes random error. In this research study a pre-test was conducted to check on the reliability of the instrument. The researcher adhered to the research instrument when interviewing and observing the IMCI trained registered nurse. The research instrument , of which Section B corresponds to the IMCI algorithm, was applied in

the same manner for all sick babies that were observed. This ensured that classifications as per the IMCI strategy, could be accurately made.

3.5 DATA ANALYSIS

Data analysis refers to sorting through and making sense of pieces of information or facts collected during a research study. This research study was quantitative, hence descriptive statistics were used to organise, interpret and communicate the data. This was portrayed using tables and graphs. The researcher captured the data. The statistician assisted the researcher with analysis of the data using Microsoft Excel 2007.

3.6 CONCLUSION

This chapter described the research design and methodology used in the study, including population, sampling, data collection and analysis, data collection instrument, validity and reliability.

Chapter 4 discusses the data presentation, analysis and interpretation.

CHAPTER 4

Data presentation, analysis and interpretation

4.1 INTRODUCTION

The study was a quantitative, non-experimental, descriptive survey to determine the level and impact of follow-up visits, supervision and facility support on the functioning of the IMCI trained registered nurses.

The objectives of the study were to

- ascertain whether the IMCI trained registered nurses received follow-up visits and ongoing supervision
- assess the skills of the IMCI trained registered nurses
- assess the level of facility support that the IMCI trained registered nurses receive
- describe the views of the IMCI trained registered nurses with regards to follow-up and supervision
- make recommendations for the improvement of follow-up, supervision and facility support, so as to strengthen the implementation of the IMCI strategy

4.2 DATA ANALYSIS

The researcher administered the interview schedule to the respondents (see chapter 3). Forty IMCI trained registered nurses were observed for a single consultation with sick children presenting at the health facility. Hence in total 40 interview schedules were completed by the researcher as she observed and interviewed the respondents.

The items on the interview schedule were coded as indicated on the interview schedule (see annexure D). The interview schedule consisted of three sections, namely:

Section A: Demographic data

Section B: Assessment of the skills of the IMCI trained registered nurses

Section C: Open-ended questions on follow-up, supervision and facility support

The statistician cleaned, and statistically analysed and interpreted the data, using Microsoft Excel 2007. Descriptive statistical tests including frequencies and percentages were used. The presented percentages were rounded off to one decimal point. The researcher's initial intention was to use chi squares, but due to the small sample size this was not possible..The responses from the open-ended questions contained in section C of the interview schedule were categorised and analysed also using Microsoft Excel 2007.

4.3 SECTION A: DEMOGRAPHIC DATA

Section A of the interview schedule consisted of 6 questions, covering general information about the IMCI trained registered nurses namely demographics, type of health service where they are presently employed and whether they received the prescribed follow-up visit and ongoing supervision as per the IMCI gold standard.

4.3.1 Age distribution

The age distribution for the IMCI trained registered nurses are as follows and appear in Table 4.1

Table 4.1: Age distribution (n=40)

Age	n	%
21-30	8	20.0
31-40	7	17.5
41-50	17	42.5
51-60	8	20.0
TOTAL	40	100.0

This table shows that most of the IMCI trained registered nurses interviewed fall into

the 41-50 years age category. According to statistics published by the South African Nursing Council (South African Nursing Council 2010) in their age distribution table for the year 2010, the highest number of registered nurses, registered midwives is in the age category 40-49 years. The statistics of the IMCI trained registered nurses therefore correspond to that of the general nursing population.

4.3.2 Gender

Of the 40 IMCI trained registered nurses, 38 were female and 2 were male. Thus more female than male IMCI trained registered nurses were observed and interviewed in this study. Figure 4.1 depicts the gender status.

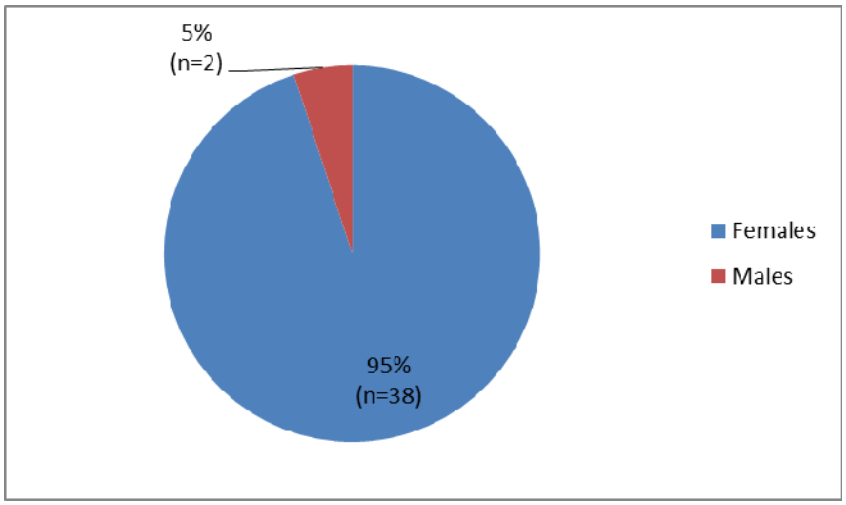

Figure 4.1: Gender Distribution (n=40)

According to statistics published by the South African Nursing Council in their geographical distribution of the population of South Africa versus nursing manpower for the year 2010, a gender breakdown has been done (South African Nursing Council 2010). In KwaZulu- Natal 6.0% of the nursing population was male. These statistics correspond to those in figure 4.1 which show that in this study there are 38 (95.0%) female IMCI trained registered nurses and 2(5.0%) male IMCI trained registered nurses, hence more female than male IMCI trained registered nurses .

4.3.3 Type of Health Service

In total 40 IMCI trained registered nurses were observed in 16 health care facilities. The health care facilities included both primary health care clinics and a community

health centre.

Table 4. 2: Type of health service visited (n=40)

Type of service	Number of health facilities	Number of IMCI trained registered nurses (n = 40)	%
Hospital	0	0	0
Clinic (PHC)	15	34	85.0
Other (CHC)	1	6	15.0
TOTAL	**16**	**40**	100.0

The IMCI has been implemented in many primary health care facilities around the world in an effort to improve the case management skills of health care workers and the quality of care that sick children receive (Woods 2010:28). In South Africa, since the implementation of the IMCI strategy, of the 8695 health care workers that have been trained, many are primary health care nurse practitioners (Kerry 2005:32). The South African Department of Health, at national level, states in their Primary Health Care Facility Supervision Manual that every PHC facility must have nurse practitioners that are able to treat sick children using the IMCI strategy (Primary Health Care Supervision Manual [s.a.]:5:17).

In this study, all of the health facilities that were visited had IMCI trained registered nurses. Most (85%; n=34) of the IMCI trained registered nurses interviewed were working in the primary health clinics. However, in most clinics only one or two IMCI trained registered nurses were consulting with sick babies, as the other IMCI trained registered nurses were either engaged in other clinical duties, or were not on duty, or had since left the service.

4.3.4 Length of Service

Of the 40 IMCI trained registered nurses that were observed and interviewed in this study, 11 (27.5%) registered nurses had been working as an IMCI trained registered nurse for a period of five years or more, and 16 (40.0%) had been working for a period of three to four years. Over two thirds of the sample were working as IMCI

trained registered nurses for three years and longer and should therefore be experienced in the IMCI protocol.

Table 4.3: Number of years working as an IMCI trained registered nurse (n=40)

Years working as an IMCI trained registered nurse	Number of nurses (n= 40)	%
Less than 1 year	4	10.0
1-2 years	9	22.5
3-4 years	16	40.0
5 years and more	11	27.5
Total	40	100.0

4.3.5 First follow-up visit on completion of IMCI training

The IMCI course was designed to ensure that health workers learned how to assess sick children more effectively. The IMCI strategy is therefore strongly skills based. To ensure that the health workers are able to transfer and apply their learned skills to the clinical area, follow-up is deemed as essential to this process. Follow-up also offers the opportunity to reinforce the new skills that were acquired and solve any problems that may have arisen (IMCI training …2011:5). WHO states that "at least one follow-up visit should be conducted within one month of the training course (IMCI training …2011:5)." In South Africa the recommendation by the national Department of Health for follow-up was that an IMCI trainer would make regular mentoring/supervision visits, initially six weeks after training ,and thereafter every three months(The NDOH Primary Health Care Supervision Manual.[s.a.]:5:17).

Table 4.4: First follow-up visit (n=40)

First follow	Number of nurses (n=40)	%
At 6 weeks	4	10.0
More than six weeks to six months	14	35.0
Six months to one year	3	7.5

One year and more	5	12.5
No follow-up visits	14	35.0
Total	40	100.0

In this study, of the 40 IMCI trained registered nurses who were observed and interviewed, only 4(10.0%) received the recommended follow-up visit at six week after completion of IMCI training. Over half received the first follow-up visit after the six week period, with 5 (12.5%) IMCI trained registered nurses claiming to have received their follow-up visit a full year after completion of training. A further 14 (35%) of the interviewed IMCI trained registered nurses claim not to have received a follow-up visit at all. This may have an impact on the performance of the IMCI trained registered nurses in following the IMCI strategy, if the training is not reinforced through the follow-up visits.

4.3.6 Ongoing supervision for IMCI implementation

Ongoing supervisory visits are essential in ensuring that the IMCI strategy is properly implemented. According to the WHO, supervision should be done at least once every six months and should include observation of case management (IMCI indicators…2011:2). Ongoing supervision is said to improve the performance of IMCI trained health workers (Horwood et al 2009b: [5]).

Table 4.5: Ongoing supervision for IMCI is implemented (n=40)

Item description	**Strongly disagree**		**Disagree**		**Neutral**		**Agree**		**Strongly agree**		**Total**	
	n	**%**	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**
Ongoing supervision for IMCI	**19**	**47.5**	**12**	**30.0**	**1**	**2.5**	**8**	**20.0**	**0**	**0**	**40**	**100.0**

In this study, over three quarters (77.5%) of the IMCI trained registered nurses interviewed, disagreed that they received ongoing supervision. Again, this is likely to

have a negative impact on the performance of these IMCI trained registered nurses in following or applying the IMCI strategy, as evidenced later in this chapter. Only 8(20%) of the IMCI trained registered nurses interviewed agreed to receiving ongoing supervision.

4.4 SECTION B. ASSESSMENT OF THE SKILLS OF THE IMCI TRAINED REGISTERED NURSES

This section assessed the skills of the IMCI trained registered nurses as they examined sick children using the IMCI strategy. The IMCI strategy focuses on improving the skills of the health care worker so that they are better equipped to manage sick children in an effective and integrated manner (Introducing IMCI…2011:2). IMCI guidelines assists health care workers to accurately identify common childhood illnesses, give appropriate treatment for these illnesses, and refer seriously ill children when necessary (Introducing IMCI…2011:2).

4.4.1 Screening of the sick child

According to the IMCI strategy, when sick children arrive at a clinic it is important that health care workers ask a set of defined questions, and include the weight and temperature as part of the screening process. The child's age determines which case management chart is selected (IMCI SA Module 2… 2009:5). In this study, although only sick children, age 2 months up to 5 years were selected, the age of the child is also a determining factor when prescribing treatment when a weight is not available. It is important that the health care worker ask what the child's problems are to determine whether the IMCI assess and classify chart will be used, and also most importantly to ascertain whether the child is seriously ill or not. The assessment and classification chart is not used for children brought in for immunization or those that have sustained injuries (IMCI SA Module 2… 2009:5). It is also important to determine whether this is an initial visit (first visit for that problem) or follow-up visit (assessing the child's response to treatment given for a particular problem on a previous visit). This ensures that the sick child is attended to promptly, as a follow-up visit has a different purpose to an initial visit (IMCI SA Module 2… 2009:6). Table 4.6 indicates that not all of the IMCI trained registered nurses screen the sick children on arrival at the clinic, as per IMCI strategy. Although all 40 (100 %) IMCI trained

registered nurses asked about the children's problems, only 8 (20 %) checked on whether this was an initial or follow-up visit.

Table 4.6: Screening of sick children by IMCI trained registered nurses (n=40)

Screening questions asked by the IMCI trained registered nurse	Yes		No		Total	
	n	%	n	%	n	%
7.1 Name of child	32	80	8	20	40	100
7.2 Date of birth	18	45	22	55	40	100
7.3 Age of child	34	85	6	15	40	100
7.4 Problems of the child	40	100	0	0	40	100
7.5 Initial or follow-up visit	8	20	32	80	40	100

Figure 4.2 reveals that whilst some questions are asked more comprehensively than others only 5 (12.5%) IMCI trained registered nurses asked all of the questions which were name of child, date of birth and age of the child, as well as what the problems of the child are, and whether this is an initial or follow-up visit.

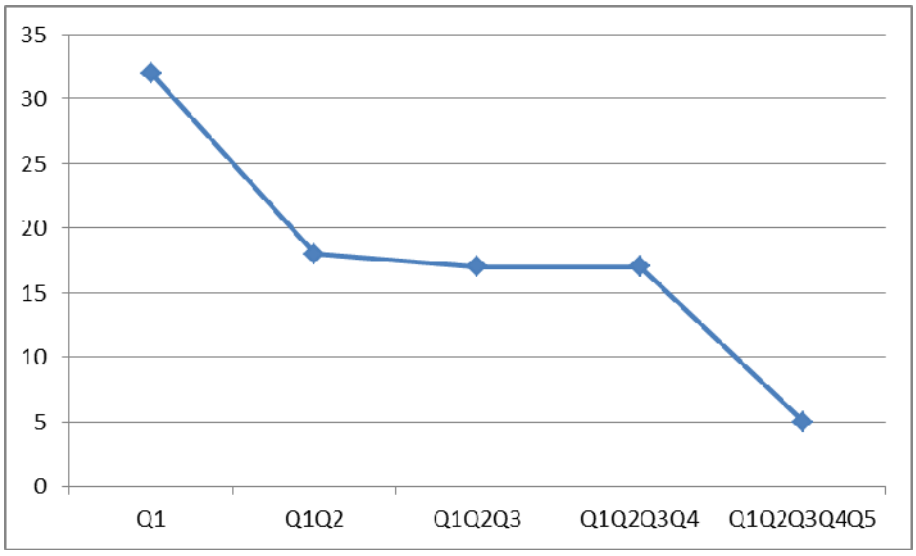

Figure 4.2: A combination of screening questions asked by IMCI trained registered nurses (n=40).

Evidence of one screening question was asked by 32 (80%) of the IMCI trained registered nurses, whilst 18 (45%) of the IMCI trained registered nurses enquired

about two screening questions. A combination of three and four screening questions was asked by 17 (42.5%) of the IMCI trained registered nurses. A combination of all 5 screening questions was asked by 5 (12.5%) of the IMCI trained registered nurses.

All sick children must be accurately screened on first contact and figure 4.2 shows that the screening of sick children is done piece-meal. Failure to ask these questions could contribute to incorrect management of the sick child.

Table 4.7: Measuring weight and temperature (n=40)

Item	Yes		No		Total	
	n	%	n	%	n	%
8.1 Weigh the child	23	57.5	17	42.5	40	100
8.2 Take the temperature of the child	27	67.5	13	32.5	40	100

All sick children also have to have their weight and temperature measured and recorded (IMCI SA Module 2… 2009:5). Taking the temperature of a sick child gives an indication of the severity of the child's illness. A child with a fever may have a mild infection or a severe illness eg meningitis or malaria (IMCI SA Module 2… 2009:37). The weight of a child is important when determining the correct dose of medication to give (IMCI SA Module 3…:18). In this study only 23 (57.5%) of the 40 IMCI trained registered nurses weighed sick children, whilst 27(67.5%) of the 40 IMCI trained registered nurses measured their temperature.

These findings suggest that IMCI trained registered nurses are not carrying out comprehensive assessments on sick children. Aspects such as taking a temperature or a weight, or ascertaining whether it is an initial or follow-up visit are frequently overlooked. Similarly, a study carried out by Horwood et al (2009a:[4]) on the quality of assessments carried out by IMCI trained health workers in South Africa, also found that the IMCI assessment was not comprehensively applied and activities not related to the presenting problem was frequently omitted.

4.4.2 Assessment, classification and treatment

According to WHO, when using the IMCI strategy (IMCI training …2011:3) the health worker assesses a child by checking for general danger signs and asking questions

about common conditions, classifies a child's illness by using a colour-coded triage system, and identifies specific treatments based on the classification.

- **Assessing for general danger signs**

In the IMCI strategy (IMCI SA Module 2… 2009:7) general danger signs in a sick child are an indication of a serious illness. IMCI trained registered nurses must be able to identify life threatening conditions in young children by asking or looking for the four general danger signs which are as follows :

- Is the child able to drink or breastfeed?
- Does the child vomit everything?
- Has the child had convulsions during this illness?
- Is the child lethargic or unconscious?

A child presenting with any of these four general danger signs requires urgent attention.

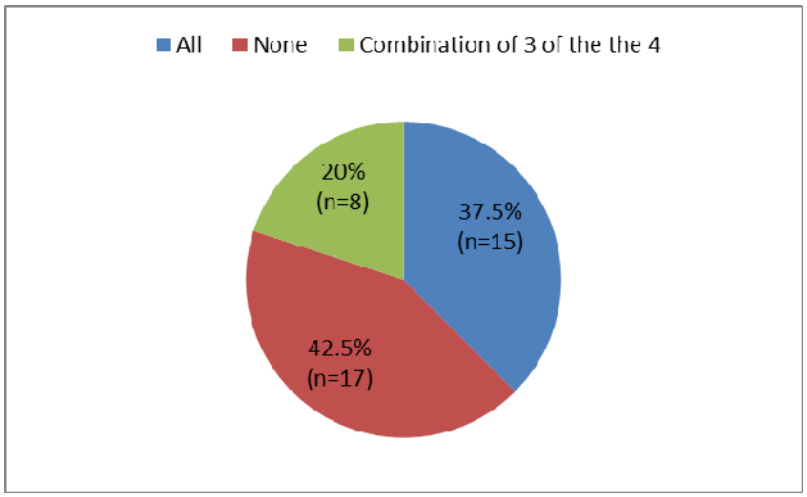

Figure 4.3 Assessing for general danger signs (n=40)

Of the 40 IMCI trained registered nurses that were observed carrying out an IMCI assessment, only 15(37.5%) asked about or checked for all the general danger signs, whilst 17(42.5%) did not ask about or check for any general danger signs. (see Figure 4.3). In this study, it appears as though IMCI trained registered nurses are not routinely assessing for the four general danger signs. The figures in Figure

4.3 also show that the IMCI trained registered nurse that asked about or checked for at least three of the four general danger signs is relatively low (n=8; 20%). In a report of a health survey carried out in South Africa for the periods 2001 to 2003 (Report of IMCI…2005:9), 47% of the IMCI trained health workers checked for three out of four general danger signs. Across all the provinces, only 59% of IMCI trained health workers checked for general danger signs. Similarly in a study conducted in KwaZulu-Natal and Limpopo province between May 2006 and January 2007, only 14 out of 77 IMCI trained health workers checked for all four general danger signs in every child (Horwood et al 2009a:[6]).

- **Assessment of main symptoms**

All sick children attending a health facility must be assessed not only for a presenting symptom, but also for other main symptoms related to the major childhood illnesses namely cough, diarrhoea, fever, ear problems, malnutrition and anaemia and HIV status. Questions about common conditions are asked, and a minimum number of signs and symptoms are used (South Africa 2008:8).

Table 4.8: Assessing for main symptoms (n=40)

Assessing for main symptoms	Yes		No		If yes, then ask further questions		Total	
	n	%	n	%	n	%	n	%
10.Cough/difficulty breathing	26	65.0	14	35.0	2	5.0	40	100
11.Diarrhoea	16	40.0	24	60.0	2	5.0	40	100
12.Fever	25	62.5	15	37.5	1	2.5	40	100
13.Ear problem	11	27.5	29	72.5	2	5.0	40	100
14.Malnutrition and anaemia	15	37.5	25	62.5	9	22.5	40	100
15.1. HIV status of child	15	37.5	25	62.5	0	0	40	100
15.2. HIV status of mother	19	47.5	21	52.5	0	0	40	100

Table 4.8 shows that very few IMCI trained registered nurses routinely assess all the main symptoms as per IMCI guidelines. The symptoms most frequently assessed include cough or difficulty breathing (n=26; 65.0%) and fever (n=25; 62.5%). However, it was observed that a few of the IMCI trained registered nurse only assessed these symptoms because the caregiver reported this when asked about what the child's problems were. It is not known whether they would otherwise routinely ask about cough or difficulty breathing and fever. A full exploration of these symptoms was not done as per the IMCI strategy and is reflected in table 4.8 i.e. only 2(5.0%) of the IMCI trained registered nurses asked all the pertinent information relating to cough or difficulty breathing and 1(2.5%) of the IMCI trained registered nurse asked all the relevant questions related to fever. Very few IMCI trained registered nurses asked about diarrhoea (n=16; 40%) and ear problem (n=11; 27.5%).

The assessments for malnutrition and anaemia, and the HIV assessment were poorly done. During the nutritional assessment, of the 15(37.5%) IMCI trained registered nurses that assessed malnutrition and anaemia, only 9(22.5%) asked about weight loss, plotted the weights on the road to health card, and assessed for visible severe wasting and palmar pallor.

Although the IMCI trained registered nurses enquired about the HIV status of the mother and child, only 15(37.5%) of them enquired about the child's status. Of the 15(37.5%) IMCI trained registered nurses, none of them asked, looked or felt for features of symptomatic HIV infection in the sick child. A greater number of IMCI trained registered nurses (n=19; 47.5%) enquired about the HIV status of the mother. A complete assessment as per IMCI strategy for HIV was not done. These findings indicated that a comprehensive and integrated assessment of sick children is not being done. Horwood et al (2009a:[8]) in their study on the evaluation of the quality of IMCI assessments also mentioned that although health workers were most competent in assessing cough and dehydration, very few asked about all main symptoms. Horwood et al (2009a: [8]) further stated that IMCI assessments were not being done "consistently or comprehensively".

- **Assessment of immunization status**

All children should receive the recommended immunizations at the appropriate age. According to the IMCI strategy all sick children must have their immunization status checked, so that no opportunity to immunize is missed (South Africa 2008:72).

Table 4.9: Assessment of immunization status (n=40)

Assessment of Immunization status	Yes		No		Not needed		Total	
	n	%	n	%	n	%	n	%
16.1 Immunization status	19	47.5	21	52.5	0	0	40	100
16.2 Examine RTHC	25	62.5	15	37.5	0	0	40	100
16.3 Administer immunization	13	32.5	16	40.0	11	27.5	40	100

In this study, although IMCI trained registered nurses were examining the road-to-health-card, only 19(47.5%) of the IMCI trained registered nurses asked caregivers about the current immunization status of the child. Only 13 (32.5%) IMCI trained registered nurses immunized the sick children that they were assessing on that day. It appears from table 4.9 that 16 (40.0%) of the IMCI trained registered nurses missed the opportunity to immunize, as the children who should have been immunized were asked to come back on another day, or wait in the treatment room for immunization. Initial studies carried out in South Africa by the World Health Organization as part of their health facility survey in Africa from 1998- 2004 revealed positive results i.e. 91% of the children seen at health facilities had their immunization status checked (World Health Organization [s.a.]:3). However, no mention is made of whether the sick children were actually immunized.

- **Assessment of feeding**

Feeding problems in a sick child can often lead to malnutrition. According to the IMCI strategy, a feeding assessment must be done for all children under the age of two

years, and for children who have a classification of not growing well or anaemia (South Africa 2008:52). Exclusive breast feeding is the ideal for all children up to six months of age, and then nutritious complementary foods should be introduced for all children over the age of six months (IMCI SA Module 4 2009:5).

Table 4.10: Assessment of feeding (n=40)

Item	Yes		No		N/A		Total	
	n	%	n	%	n	%	n	%
17.1.Check child's feeding-breast	11	27.5	28	70	1	2.5	40	100
17.2. Other foods or fluids	15	37.5	25	62.5	0	0	40	100
17.3.Check if feeding has changed	5	12.5	35	87.5	0	0	40	100

In this study, very few IMCI trained registered nurses did a feeding assessment as per IMCI strategy. The majority of IMCI trained registered nurses did not ask about breast feeding (n=28; 70.0%), or whether the sick children were taking other fluids or foods (n=25; 62.5%). Most importantly caregivers were not asked if the feeding patterns of the child had changed during this illness (n=35; 87.5%). According to Saloojee and Bamford (2006:191) the first National Health Facility Survey (NHFS) in South Africa reported that only 43% of children under the age of two were assessed for feeding. The Nutrition Directorate of KwaZulu -Natal in their guidelines states that the IMCI strategy is complementary to the Integrated Nutrition Programme, as the emphasis is on improved nutrition through exclusive breast feeding and micronutrient supplementation (KwaZulu - Natal 2010:11). The failure by IMCI trained registered nurses to complete feeding assessments can have far-reaching consequences for sick children with feeding problems and malnourishment.

- **Classify the sick child**

Kerry (2005:32) states that "a classification is similar to a diagnosis." According to

WHO a classification is dependent on the presence or absence of key signs and symptoms (What is IMCI…2004: [3]). A sick child may have more than one classification.

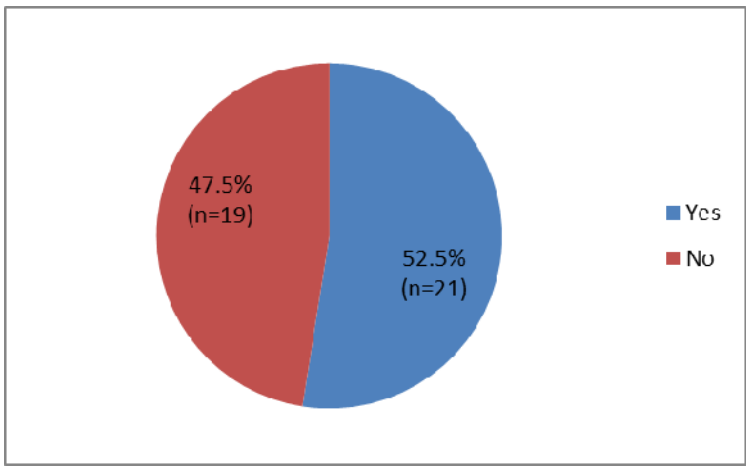

Figure 4.4 Classification of the sick child (n=40)

In this study 21 (52.5%) of the IMCI trained registered nurses were able to correctly classify a sick child, whilst 19 (47.5%) failed to do a correct classification. In order for the IMCI strategy to be successfully implemented as per objectives and principles, IMCI trained health workers, on completion of their training, must be able to classify a sick child correctly using the IMCI guidelines (IMCI training …2011:1). If a sick child is not correctly classified, the correct treatment is delayed, leading to a delay in the recovery or even death of the child.

- **Treat the sick child**

On completion of the assessment and classification of the sick child, appropriate treatment needs to be identified. According to the IMCI strategy, treatment protocols are clearly outlined in accordance with the classifications (South Africa 2008:9). However, 20(50.0%) of the IMCI trained registered nurses failed to identify the correct treatment protocols. Many of the IMCI trained registered nurses are also primary health care trained, and therefore although the correct assessment and classification of the sick child was done, the tendency was to prescribe medication as per essential drug list (EDL), instead of the IMCI treatment protocols.

Table 4.11: Treat the sick child (n=40)

Treatment	Yes		No		Total	
	n	%	n	%	n	%
18.2. Identifies correct treatment	20	50	20	50	40	100
18.3. Explains how to administer treatment	30	75	10	25	40	100
18.4. Demonstrates how to administer treatment	4	10	36	90	40	100
18.5. Assesses caregiver's understanding on how to administer treatment	8	20	32	80	40	100
18.6. Gives/asks mother to give first dose in facility	6	15	34	85	40	100

This meant that children were sometimes given unnecessary medications. Thandrayen (2008: 37) in his study on the quality of child health services at primary health care facilities reported that “a single nurse practiced a combination of IMCI and PHC.” This is consistent with the findings in this study. In a study carried out in Tanzania where it was reported that severe illnesses were managed as disease specific conditions, treatment was rarely according to IMCI protocols, and health care workers failed to prescribe antibiotics when necessary (Prosper et al 2009:[34]). The majority of the IMCI trained registered nurses (n=30;75%) explained how to administer the medication. However, demonstrating how to administer the oral medications, assessing the caregivers understanding regarding how to administer and asking the caregiver to give the first dose in the facility was poorly done, as reflected in table 4.11. In a health facility survey conducted in Malawi in 2004, findings showed 65% of caregivers were advised on how to administer the oral medication prescribed for their sick children, and consequently 71% of the caregivers knew how to administer the medications correctly. Similarly in the health facility survey conducted in South Africa in 2002, many of the caregivers (72%) were counselled on how to administer medications. Special mention is made of the improved prescription practices of the health workers which saw a reduction in the number of children who received antibiotics unnecessarily (World Health

Organization [s.a.]:3).This was not the case in this study. In a study carried out by Chaudhary et al (2005:737), significant improvement in the correct treatment of sick children was noted as a result of frequent follow-up of health care workers. It is not known whether there is a relationship between the follow-up of health care workers and treatment practices in this study.

4.4.3 Pre-referral treatment and referral

Pre-referral treatment is given to all sick children with a serious classification. Thus pre-referral treatment is the treatment that is given to seriously ill children prior to them being transferred to hospital (South Africa 2008:8).

Table 4.12: Administer pre-referral treatment and refer (n=40)

Give appropriate pre-referral treatment	n	%
No	3	7.5
N/A	37	92.5
Grand Total	40	100

Many of the sick children that were observed during this study did not require urgent pre-referral treatment. The three sick children that were seen by the IMCI trained registered nurses and required urgent pre-referral treatment did not receive the prescribed treatment as per the IMCI strategy. In a study on why first level health care workers fail to follow guidelines for managing severe disease in sick children, 64% of the health workers reported that they were able to manage severely ill children without referral. A further 91% of the health workers agreed that some severe illnesses like severe malaria and severe pneumonia can be safely managed without referral (Walter et al 2009:103). Identifying severe classifications, administering pre-referral treatment timeously and referring sick children promptly can reduce complications and mortality.

4.4.4 Counselling

Counselling is an important aspect of the IMCI strategy. Health care workers need to not only give relevant information during a counselling session, but are also expected to listen to and learn from the caregivers (South Africa 2008:76). IMCI counselling pays particular attention to the following:

- Administration of medication at home.
- Extra feeding for the sick child
- When to return immediately.
- Follow-up for all moderately ill children.

Table 4.13 (a): Counsel the caregivers (n=40)

Counsel	Yes		No		N/A		Total	
	n	%	n	%	n	%	n	%
18.7. Explain to give more fluids	8	20	3	7.5	29	72.5	40	100
18.8. Explain feeding to continue at home	8	20	7	17.5	25	62.5	40	100
18.10. Explain when to return for follow-up	6	15	34	85	0	0	40	100
18.11. Advise mother about her own health	1	2.5	39	97.5	0	0	40	100

Although some IMCI trained registered nurses did counsel the caregivers accordingly in areas related to feeding (n=8; 20%), others failed to provide vital information on when to return for follow-up (n=34; 85.0%) and advice to the mother about her own health (n=39; 97.5%). Karamagi, Lubanga, Kiguli, Ekwaru and Heggenhougen (2004:31) in their findings on assessing the counselling skills of IMCI trained health providers in Uganda reported that performance was poor in advising on fluid intake (44%), advising on medication (61%), and addressing caregivers' health problems.

Table 4.13 (b) : Counsel the caregivers on when to bring the child back

Signs to bring child back	n	%
All of Signs	1	2.5
Some of Signs	12	30
None of Signs	27	67.5
Total	40	100

Caregivers must be counselled on the importance of observing the sick child at home, so as to be vigilant and mindful of when the sick child is getting sicker, and requires further management at a health facility. More than half of the IMCI trained registered nurses (n=27; 67.5%) failed to counsel the caregivers on all of the signs that the child was getting sicker. Thandrayen (2008:44) in his study stated that counselling on home management, recognizing danger signs and follow-up were not routinely done.

4.4.5 Course Materials for IMCI

The IMCI course materials include the IMCI chart booklets, a set of wall charts that describe the IMCI case management guidelines, modules, photo exercise booklets, videos and IMCI case recording forms that have all been adapted for use in South Africa. The chart booklets, wall charts and recording forms should be used by all IMCI trained registered nurses during clinical practice as they are a guide to accurately recognize evidence-based clinical signs, choose appropriate treatments, and provide counselling and preventive care.

- **IMCI Chart booklets**

The IMCI case guidelines have been printed into a convenient chart booklet for use by IMCI trained health workers in the clinical area. The chart booklets act as a guide for IMCI trained health workers when they assess sick children.

Table 4.14: The use of IMCI chart booklets (n=40)

Use IMCI chart booklet	n	%
Yes	17	42.5
No	23	57.5
Grand Total	40	100

In this study 17 (42.5%) IMCI trained registered nurses used the IMCI chart booklets. Numerous reasons were given for not using the IMCI chart booklets which included reluctance to use outdated copies, the presence of wall charts on the walls and familiarity with the IMCI algorithm, and therefore no need to use the chart booklet. In a report of a health survey carried out in South Africa for the periods 2001 to 2003 (Report of IMCI…2005:16), 94% of the health facilities had IMCI chart booklets available; no mention is made of whether IMCI trained health workers used the chart booklets and its impact on IMCI implementation. Horwood et al (2009a:[6]) reported in their study on the evaluation on the quality of IMCI assessments, that all of the IMCI trained health workers, except one, used the IMCI chart booklet. However, 40% of the health workers referred to the IMCI chart booklet during every observed consultation, whilst 45% did so during some consultations. The use of the chart booklet was also used as a measure of the competency of the IMCI health worker, as it would contribute to the accuracy of the IMCI assessment, classification and treatment.

4.4.6 Assessment of health systems support

The IMCI strategy has three components, of which component two aims to improve the health system. An improved health system would be better able to support the implementation of IMCI in primary level health facilities. Health system support for IMCI includes an adequate number of trained IMCI practitioners at health facilities, an adequate supply of essential drugs, equipment and supplies and ongoing supervision (IMCI indicators…2011:2). In this study, after the assessment of the sick child was complete, the researcher inspected the health facility with regards to space, equipment, availability of drugs and vaccines.

Table 4.15: Assessment of health systems support (n=40)

Health systems support	Yes		No		Total	
	n	%	n	%	n	%
20.1. Enough space	28	70	12	30	40	100
20.2. Adequate equipment & supplies	28	70	12	30	40	100
20.3. Functioning ORT	28	70	12	30	40	100
20.4. Functioning fridge, vaccines	33	82.5	7	17.5	40	100
20.5. All essential IMCI drugs available in stock	39	97.5	1	2.5	40	100
20.6. IMCI drugs available throughout the year	19	47.5	21	52.5	40	100
20.8. Supervisory visits received	6	15	34	85	40	100

It was noted that health systems support relating to space, equipment, ORT corners, vaccines and essential drugs in most facilities appeared to be adequate. Every IMCI trained registered nurse save for one (2.5%) reported that all IMCI essential drugs were available in stock. However, 21(52.5%) mentioned that the IMCI drugs were not available throughout the year, which in some instances could hamper the management of sick children. In a health facility survey conducted in Zambia in 2001 it is stated that the availability of drugs aside for treatment purposes is also an indication of the quality of health service that is being offered to the community. The availability of all recommended IMCI drugs also supports IMCI implementation (World Health Organization [s.a.]). Ongoing supervision, that is at least one supervisory visit that included observation of case management, is essential to maintain the competence of the IMCI trained registered nurses and support IMCI implementation. Many of IMCI trained registered nurses (n=34;85%) in this study disclosed that they did not receive supervisory visits. In a cross-sectional study carried out by Gombe et al (2010:9) in Bulawayo City, Zimbabwe although all facilities reported receiving a supervisory visit, in no case did this include observation of case management. Horwood et al (2009a:[10]) in their study was not able to draw

any relationship between health worker performance and IMCI supervision. Similarly, in this study it is not known whether ongoing supervision impacts on health workers' performance.

4.4.7 Assessment of records

According to WHO (IMCI training…2011:4) IMCI case recording forms should be in use during clinical practice in outpatient and inpatient clinical settings. IMCI recording forms should be available to enhance the implementation of the IMCI case management process, as it corresponds with the chart booklet. An OPD register should contain the personal information of the sick child, the IMCI classification, a record of the medications that were given and a follow-up date.

Table 4.16: Assessment of records (n=40)

Item	Yes		No		Total	
	n	%	n	%	n	%
20.7. Enough IMCI recording forms	2	5	38	95	40	100
21.1. IMCI recording forms properly filled	2	5	38	95	40	100
21.2. OPD register maintained	35	87.5	5	12.5	40	100
21.3. Record of follow-up maintained	15	37.5	25	62.5	40	100

In this study only 2(5.0%) of IMCI trained registered nurses had enough recording forms and accurately completed recording on the forms. Although OPD registers were maintained by the IMCI trained registered nurses (n=35; 87.5%), very few recordings were made by them (n=15; 37.5%) of follow-up for sick children. Many studies mentioned chart booklets and wall charts being available in health facilities, but no mention is made of IMCI recording forms. Similarly, Chaudhary et al (2005:739) in their study in India only mentioned IMCI registers and laminated wall charts being available in the health facilities. No mention is made of IMCI recording forms.

4.5 SECTION C: OPEN-ENDED QUESTIONS ON FOLLOW-UP, SUPERVISION AND FACILITY SUPPORT

This aspect of the interview schedule refers to the comments made by IMCI trained registered nurses on follow-up, supervision and facility support. The comments made by the nurses were analysed and were categorized into common themes, which were then summarised (see tables 4.17- 4.19). The views of the 40 IMCI trained registered nurses in this research study on follow-up, supervision and facility support were fairly different.

Table 4.17: Views on the importance of follow-up and supervision (n=40)

Why follow-up and supervision is important?	n	%
Clarification	14	35
Knowledge	10	25
Improves Practice	14	35
Support	2	5
Grand Total	40	100

Follow-up and supervision was viewed in a positive light as it was felt that it could enhance practice (n=14; 35.0%) and was an opportunity for clarification (n=14; 35.0%) if problems arose. According to Saloojee and Bamford (2006:191), supervision and continued support of IMCI trained nurses have been identified as important aspects in ensuring high standards in IMCI implementation. Numerous studies undertaken in Brazil, Tanzania, Uganda and South Africa, cited inadequate supervision as a reason for the poor performances of health workers trained in IMCI (Woods 2010:28).

Table 4.18: Views on the frequency of supervision (n=40)

How often would you like to be supervised	n	%
1 monthly	5	12.5
2 monthly	3	7.5
3 monthly	10	25
4 monthly	4	10
6 monthly	18	45
Grand Total	40	100

The views expressed by IMCI trained registered nurses on the frequency of supervisory visits ranged between six monthly (n=18; 45.0%) and monthly (n=5; 12.5%). In this study, all IMCI trained nurses were of the opinion that ongoing supervision is vitally important to the success of IMCI implementation. According to IMCI guidelines, IMCI trained health workers should receive a visit from IMCI-trained supervisors every six months. Chaudhary et al (2005:735) concluded from their study that gaps do exist in the skills of health workers when follow-up is delayed after IMCI training, and health workers do benefit from ongoing supervision from supervisors. Huicho et al (2005:22) stated in their study that one of the constraints to scaling up IMCI in Peru was the lack of follow-up after IMCI training was completed, and no routine supervision for IMCI trained health workers, with far-reaching consequences on child health, especially IMCI preventable conditions.

Table 4.19: Views on the impact of regular supervision on practice (n=40)

How will regular supervision impact on practice?	n	%
Current practice	10	25
Skills enhancement	30	75
Grand Total	40	100

The majority (n=30; 75.0%) of the IMCI trained registered nurses felt that regular supervision would enhance their skills in the case management process. In a systematic review that was conducted by Rowe et al (2011:11) to compare the effectiveness of shortening IMCI training, it was reported that extra supervision or ongoing support, after IMCI training, is an intervention that should be considered to

improve health worker performance and possibly adherence to clinical guidelines, irrespective of whether the IMCI training is shortened or not.

Table 4.20: Views on the impact of facility support on IMCI implementation (n=40)

Will facility support impact on the way you implement IMCI?	n	%
Combination of Efficiency and Patient Care	4	10
Efficiency	12	30
Patient care	24	60
Grand Total	40	100

Most of the IMCI trained registered nurses (n=24; 60.0%) felt that facility support would improve the levels of patient care. In this study it was noted that health systems support in most facilities appeared to be adequate (Table 4.18). Only one IMCI trained registered nurse (2.5%) reported that not all IMCI essential drugs were available in stock. Gombe et al (2010:10) stated in their discussion that the absence of certain medications could have a detrimental effect for seriously ill children who are not given first doses of medication at primary health centres.

4.6 CONCLUSION

This chapter discussed the data analysis and interpretation with the use of frequency tables and descriptive statistics. Although gaps were identified, the findings from this study can be viewed in a positive light so as to bring about meaningful change.

Chapter 5 concludes the study, discusses its limitations, and makes recommendations for practice, education and further research.

CHAPTER 5

Findings, limitations and recommendations

5.1 INTRODUCTION

This chapter discusses the findings and limitations of the study, and makes recommendations for practice, education and research.

5.2 OBJECTIVES OF THE STUDY

The objectives of this study were

- ascertain whether the IMCI trained registered nurses received follow-up visits and ongoing supervision
- assess the skills of the IMCI trained registered nurses
- assess the level of facility support that the IMCI trained registered nurses receive
- describe the views of the IMCI trained registered nurses with regards to follow-up and supervision
- make recommendations for the improvement of follow-up, supervision and facility support, so as to strengthen the implementation of the IMCI strategy

5.3 SUMMARY OF FINDINGS

The study found that the skills of the IMCI trained registered nurses remains an area of concern with most of the nurses not being able to assess, classify and treat the sick child comprehensively and consistently in line with the IMCI strategy. Many of them did not receive the recommended follow-up visit at six weeks after completion of IMCI training, and on-going supervision remains a problem. However, health systems support relating to space, equipment, ORT corners, vaccines and essential drugs in most facilities appeared to be adequate. Most of the IMCI trained nurses

expressed positive views regarding the need for follow-up, supervision and health facility support. The small sample size did not allow for the statistical testing of the relationship between health worker performance and lack of follow-up and supervision. However the researcher believes that the lack of follow-up and supervision, does contribute to health worker performance and case management according to the IMCI strategy.

5.3.1 Demographic data

Although the study had more females than males that were IMCI trained registered nurses, and most of them fell into the age category 41-50 years of age, these were not significant factors in the implementation of the IMCI strategy. Of the 40 IMCI trained registered nurses in this study, 34(85.0%) (table 4.3) currently work in 15 primary health care facilities. On average, every health facility that was visited had at least 2 IMCI trained registered nurses which appears to be in line with one of the WHO's priority IMCI indicators, that is, health facilities must have at least 60% of their health workers that have been IMCI trained. Of the 40 IMCI trained registered nurses that were observed, 27 (67.5%) (table 4.4) had three years and more of working as an IMCI trained nurse. Although a small sample size did not allow for the statistical testing of the relationship between years of experience and improved case management skills, anecdotal evidence and an extensive literature review, led the researcher to believe that years of experience can improve the clinical skills of an IMCI trained registered nurse, as IMCI is strongly skills based. The IMCI strategy is strongly skills based and follow-up provides health workers with the opportunity to reinforce new skills. Whilst only 4 (10.0%) of the IMCI trained registered nurses received a follow-up visit at six weeks as per the WHO's recommendation, 14 (35.0%) (table 4.5) received no follow-up visits at all. Ongoing supervision appeared to be problematic with 31 (77.5%) (table 4.6) of IMCI trained registered nurses in agreement that they did not receive ongoing supervision. Follow-up and supervision are said to be important factors in improving the case management skills of health workers.

5.3.2 Assessment of the skills of IMCI trained registered nurses

The assessment skills of the health worker are vital for the correct management of sick children. The IMCI case management guidelines assist the health care workers to assess, classify, treat and refer where necessary, all sick children in their care. All observed nurses were registered nurses that were also IMCI trained.

- **Screening of the sick child**

When screening a sick child it is important to identify the child by name, ask the age and date of birth, what the child's problems are and also ascertain whether this is an initial or follow-up visit. It is also important to measure the temperature and weight of the sick child. The answers and information will guide the health worker in the IMCI case management process. In this study only 5 (12.5%) (figure 4.2) of the IMCI trained registered nurses asked all of the questions which could hamper the management of the sick child and hamper the implementation of the IMCI strategy. The health workers did not use IMCI recording forms as they were not available at their facilities (table 4.19). IMCI recording forms contain all the above information and can act as a guideline in ensuring that health workers screen sick children as per IMCI strategy.

- **Assess, classify and treat sick children accurately following the case management guidelines**

During the period of observation 15 (37.5%) (table 4.10) asked about or checked for all the general danger signs whilst 17 (42.5%) (table 4.10) did not ask about or check for any of the general danger signs. Very few IMCI trained registered nurses routinely assessed all the main symptoms as per IMCI guidelines. The most commonly asked question about main symptoms (table 4.11), were cough and difficult breathing 26 (65.0%) and fever 25(62.5%) although a full assessment was not done. When asking about cough and difficult breathing 2(5%) (table 4.11) of the IMCI trained registered nurses asked all the pertinent questions and did the relevant observations, whilst with fever only 1(2.5%) (table 4.11) IMCI trained registered nurse completed a full examination of the sick child. Only 16 (40.0%) (table 4.11) of the IMCI trained registered nurses asked about diarrhoea and 11(27.5%) (table 4.11) asked about ear problems. Assessing for malnutrition and anaemia and checking the

HIV status of the mothers and children were also poorly done. Very few IMCI trained registered nurses consistently asked about all the main symptoms. It was noted with concern that 23(57.5%) (table 4.17) of the IMCI trained registered nurses did not use a chart booklet whilst consulting with sick children, and this could be a reason for doing an incomplete assessment as IMCI trained health workers are instructed to start at the top of the chart booklet and move downwards in a logical manner. This methodology ensures that no symptom is overlooked. Some of the IMCI trained registered nurses also focused only on the main complaints that are given by the caregiver and failed to assess the other main symptoms, which could also be a reason for an incomplete assessment. In this study 21(52.5%) of the IMCI trained nurses were able to classify sick children correctly. However, these classifications tended to be for mild rather than moderate or severe classifications, which are possible even when all questions pertaining to a symptom are not asked. Although treatment protocols are clearly outlined in accordance with the classifications in the IMCI strategy (South Africa 2008:9) only 20(50.0%) (table 4.14) of the IMCI trained registered nurses administered the correct treatment as per IMCI. Many of the IMCI trained nurses were PHC trained and although their assessments and classifications were correct they followed the EDL treatment protocols hence questions (Table 4.14) reflected medication administration generally, as well as when the treatment aspect of the IMCI strategy was used. IMCI trained registered nurses still failed to explain, demonstrate or assess caregivers understanding on how to administer medication as per the IMCI case management guidelines. The failure to treat sick children as per IMCI guidelines could be due to lack of confidence in applying the treatment regimens in the IMCI case management guidelines. Many of the mild classifications identifies home remedies for treatment of the sick child, and IMCI trained registered nurses felt uncomfortable sending sick children home without any medications. For the IMCI classification of cough or cold, many sick children received a cough mixture. It was observed that the caregivers' insistence for medications also puts pressure on IMCI trained registered nurses to administer medication even though it is not required.

- **Assessment of immunization status**

The eThekwini district and South Africa at large follows the EPI guidelines as

prescribed by WHO. All sick children should have their immunization status checked, as every contact with a child at a health facility should be an opportunity to immunize. Of the 29 children that should have been immunized only 13 (44.8%) of the children received their immunization in the researcher's presence. Many of the caregivers were asked to bring their sick children back to the clinic on another day, some mothers were directed to an immunization room and others were told to wait outside for immunization. Only 19 (47.5%) IMCI trained registered nurses (table 4.12) asked about immunization, although the road-to-health charts were examined by 25(62.5%) and mothers were told to wait for immunization. Sixteen (40.0%) children were not actively immunized by the IMCI trained registered nurses and this can be construed as a missed opportunity as it is not known whether the caregivers waited or received the immunization.

- **Assessment of feeding**

Assessing and classifying sick children for malnutrition in this study was poorly done. This impacted on the assessment for feeding, as all children under the age of two years and not growing well must be counselled about feeding. Enquiring about breastfeeding (n=11; 27.5%), complementary feeding (n=15; 37.5%) and feeding patterns during illness (n=5; 37.5%) were also poorly done. Many of the IMCI trained registered nurses in this study seem to only focus the problems of the sick children although nutrition plays a vital role in improving the health status of sick children.

5.3.3 Pre-referral treatment and referral

According to the IMCI case management guidelines, all sick children with a serious classification need pre-referral treatment and urgent referral. In this study the three sick children with the urgent classification were referred to the doctor in the health facility for further assessment. No urgent pre-referral treatment was given. It appears that IMCI trained registered nurses lack confidence in treating sick children with a severe classification.

5.3.4 Counselling caregivers

Counselling the mothers of sick children is valuable for information sharing and in this study, 8(20.0%) (table 4.16) of the IMCI trained registered nurses counselled the caregivers on fluid intake and feeding respectively. However counselling skills fell short when explaining when to return for follow-up (n=6; 15%) and advising the mother about her own health (n=1; 2.5%). More importantly 27 (67.5%) (table 4.16) of IMCI trained registered nurses failed to counsel the mothers about the importance of observing their sick children at home, and what signs to look for as an indication that they need to be brought back to the clinic. Some of the nurses 12 (30.0%) counselled caregivers on some of the signs, but only one nurse was able to counsel the mother about all of the signs (table 4.16). In this study the IMCI trained registered nurses did not seemed focused on counselling, but rather only on the assess-classify-treat aspects of the IMCI strategy.

5.3.5 Course materials for IMCI

In this study only 17(42.5%) (table 4.17) of the IMCI trained registered nurses used the IMCI chart booklets. Many of the IMCI trained registered nurses explained their reluctance to use the IMCI chart booklets because of the outdated copies. It was concerning that some nurses were still using 2003 and 2005 copies. Some of the nurses referred to wall charts which were attached above their tables as opposed to the chart booklets which they felt were more convenient to use. However, only certain aspects of the chart booklet had been copied. A few of the nurses explained their failure to use a chart booklet was because they were familiar with the IMCI algorithm, and they did not want to give caregivers the impression that they were not competent to treat the sick children by constantly referring to a book. Failure to use the chart booklet can impact on the competency of the IMCI trained nurse in making accurate classifications and on the implementation of the IMCI strategy.

5.3.6 Assessment of health systems support

At the time of this study, it was noted that most of the health facilities were

adequately equipped to support IMCI implementation. However, 7 (17.5%) of IMCI trained registered nurses (table 4.18) complained that although they had a vaccine friendly fridge they sometimes ran out of vaccines. A further 21 (52.5%) (table 4.18) of IMCI trained registered nurses stated that not all of the IMCI drugs were available throughout the year, which meant that they had to sometimes substitute the drugs as per the pharmacist's directions. Most concerning however was that 34(85.0%) of the IMCI trained registered nurses (table 4.18) disclosed that they were not receiving their supervisory visits. Ultimately this could impact on the competency levels of IMCI trained registered nurses and IMCI implementation.

5.3.7 Assessment of records

In this study only 2 (5%)(table 4.19) IMCI trained registered nurses had enough recording forms and accurately completed recording in the forms. Although 35 (87.5%) (table 4.19) of the IMCI trained registered nurses maintained the OPD registers, very few recordings were made by them 15 (37.5%) of follow-up for sick children. Recording was mostly done in out-patient cards and well-baby booklets. Main complaints, observations and IMCI classifications were recorded in the above-mentioned documents.

5.3.8 Views on follow-up, supervision and facility support

Follow-up and supervision are key aspects to improving skills of health workers and quality of care, during the implementation of the IMCI strategy. The views of the 40 IMCI trained registered nurses in this research study on follow-up, supervision and facility support were positive as it was felt that it could enhance practice (n=14;35%) and was an opportunity for clarification 14(35.0%) if problems arose. The frequency of supervisory visits ranged between six monthly 18(45.0%) and monthly 5(12.5%). The majority of nurses 30(75.0%) felt that regular supervision would enhance their skills in the case management process. Most of the nurses 24(60.0%) felt that facility support would improve the levels of patient care.

5.4 SCOPE AND LIMITATION OF THE STUDY

The study was conducted in health facilities that included primary health care clinics, community health centres and gateway clinics, in the eThekwini district. However, because this study was only carried out in a few clinics with a small sample size in this district, the researcher is unable to generalise her findings to other health facilities in the districts or in the province of KwaZulu- Natal at large. Difficulty accessing a list of IMCI trained registered nurses in the eThekwini district hampered the selection process of respondents for this study, as random sampling could not be done. In the health facilities, due to IMCI trained registered nurses either being on sick leave, vacational leave or no longer working at the facility, meant convenience sampling had to be used. Accessibility to health facilities also proved to be challenging as managers failed to respond to the researcher's numerous requests to undertake research at their facilities although permission had been granted by the KwaZulu- Natal Department of Health's Research Committee. If permission had been granted a larger sample size could have been included for this study. The sample population included only IMCI trained registered nurses who willingly agreed to being observed as they managed sick children. This may have introduced some selection bias, as those not willing to be observed might also have been less skilled. Caregivers of the sick children were given information about the study, and consent was signed prior to the researcher sitting in on an examination of the sick child. The interview schedule was in English, and all IMCI trained registered nurses were able to communicate their views in English.

5.5 RECOMMENDATIONS

The findings provided valuable information on the implementation of the IMCI strategy in the health facilities in the eThekwini district. A number of shortcomings were identified regarding the skills of the IMCI trained registered nurses and follow-up and supervision. Accordingly, based on the findings, the researcher makes the following recommendations for nursing practice, education and research.

- **Nursing practice**

Although every health facility that was visited had IMCI trained nurses, not every

nurse was benefiting from timeous follow-up and on-going supervision. District or clinic supervisors can enhance the skills of IMCI trained registered nurses by observing one case management every month so problems can be identified and solved. Regular updates and provision of updated chart booklets can enhance the practice of IMCI trained registered nurses and improve IMCI implementation.

- **Nursing education**

Integrated Management of Childhood Illness as a strategy has been included as pre-service training for student nurses. All registered nurses working in primary health clinics, community health centres and gateway clinics are IMCI trained as part of their professional development. However, in order to maintain competency levels, regular updates should be offered from a theoretical perspective followed by regular supervision in the clinical area.

- **Further research**

Further research should be undertaken on the following topics:

  - A similar study in other districts and provinces
  - A comparative study of the skills of IMCI trained nurses who received on-going supervision and its impact on IMCI implementation
  - An explorative study to investigate the factors that lead to the poor implementation of the IMCI strategy

5.6 CONCLUSION

This study has found that although IMCI trained registered nurses were implementing the IMCI strategy when consulting with sick children, assessments were frequently incomplete. They were therefore unable to make correct classifications and failed to give appropriate treatment. In addition, the outdated chart booklets and lack of recording forms further impacted on the implementation of the IMCI strategy. The IMCI trained registered nurses managed to express positive

views regarding follow-up and supervision despite the lack of it. Many areas of improvement in the implementation of the IMCI strategy have been identified. Despite this the “fixes” are not complex or difficult to implement. The IMCI strategy has been identified as an effective strategy in decreasing the morbidity and mortality rates in children under five years. Effective implementation of this strategy can have positive outcomes for child health.

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ANNEXURE A

From: Naidoo Udesvari [mailto:Udee.Naidoo@kznhealth.gov.za]
Sent: Monday, March 07, 2011 10:52
To: Shabane Gladys
Cc: Nduli Ntombi; Mthembu Ntongolosi; Roos, Janetta
Subject: Request for permission to carry out research on IMCI in the district health facilities
Importance: High

7 March 2011

The District Manager

eThekwini district

Dear Madam

Request for permission to carry out research on IMCI in the district health facilities

I, Mrs. U.Naidoo (Pillay), would like to request for permission to carry out research at your health facilities in the eThekwini district. I am a Lecturer in Community Nursing Science at the Addington Campus (KZNCN). I am currently studying with the University of South Africa for the Masters Degree (Public Health).

Find attached an information sheet concerning my research study, as well as a copy of the ethical clearance certificate endorsed by the University of South Africa.

South Africa, like other countries, has adopted IMCI as a key child survival strategy to address the mortality and morbidity rates in children under the age of five years. The department of health is therefore responsible for ensuring that the implementation of this strategy is carried out and supported. It is hoped that the recommendations from this research study will further strengthen IMCI implementation in South Africa, but more so in eThewini district, KwaZulu Natal.

I thank you in advance for your assistance and support.

Mrs. Udesvari Naidoo (Pillay)

ANNEXURE B

health
Department:
Health
PROVINCE OF KWAZULU-NATAL

Health Research & Knowledge Management sub-component
10 – 103 Natalia Building, 330 Langalibalele Street
Private Bag x9051
Pietermaritzburg
3200
Tel.: 033 – 3953189
Fax.: 033 – 394 3782
Email.: hrkm@kznhealth.gov.za
www.kznhealth.gov.za

Reference : **HRKM61/11**
Enquiries : **Mrs G Khumalo**
Telephone : 033 – 3953189

17 May 2011

Dear Ms U Pillay

Subject: Approval of a Research Proposal

1. The research proposal titled **'The implementation of the integrated management of childhood illnesses strategy'** was reviewed by the KwaZulu-Natal Department of Health.

   The proposal is hereby **approved** for research to be undertaken at **eThekwini District**.

2. You are requested to take note of the following:
   a. Make the necessary arrangement with the identified facility before commencing with your research project.
   b. Provide an interim progress report and final report (electronic and hard copies) when your research is complete.

3. Your final report must be posted to **HEALTH RESEARCH AND KNOWLEDGE MANAGEMENT, 10-102, PRIVATE BAG X9051, PIETERMARITZBURG, 3200** and e-mail an electronic copy to hrkm@kznhealth.gov.za

For any additional information please contact Mrs G Khumalo on 033-3953189.

Yours Sincerely

Mrs E Snyman
Interim Chairperson, Health Research Committee
KwaZulu-Natal Department of Health
Date: 20/05/2011

ANNEXURE C

CONSENT FORM

STUDY TITLE: THE IMPLEMENTATION OF THE INTEGRATED MANAGEMENT OF CHILDHOOD ILLNESSES STRATEGY

INVESTIGATOR: UDESVARI NAIDOO (PILLAY)

Mrs. Udesvari Naidoo (Pillay) is a Lecturer in Community Nursing Science at the Addington Campus (KZNCN). She is currently studying with the University of South Africa for the Masters Degree (Public Health). It is hoped that the study will contribute to the improvement in the implementation of IMCI, and thereby also improve patient care.

The eThekwini district has approved that the study can be conducted in their health facilities and facility managers have been notified that such a study will be conducted.

There will be no risk or harm to you or your child during your participation in the study. You are requested to allow the investigator to be present during the interview and examination of yourself and your child. You are free to ask any questions if clarity is required on any issue. Your participation in this study is voluntary and you are under no obligation to participate. You have the right to withdraw at anytime. However, if you do participate your assistance in this study will be greatly appreciated.

Your identity will not be revealed during the study, reporting or publishing of data. Data will be collected by Mrs.Naidoo who will not disclose personal information that will be detrimental to your person.

I have read this consent form and voluntarily consent to participate in this study.

---------- ----------

SUBJECT'S SIGNATURE **DATE**

I have explained the afore-mentioned content to the subject and have sought his/her understanding for informed consent

---------- ----------

INVESTIGATOR'S SIGNATURE **DATE**

ANNEXURE D

CHECKLIST FOR ASSESSING THE SKILLS OF IMCI TRAINED REGISTERED NURSES AND LEVEL OF FACILITY SUPPORT

Number of questionnaire	1	2	3

Name of health facility: …….

Date of visit …../…../……

All information herewith provided will be treated confidentially. It is not necessary to indicate the name of the R/N in this questionnaire.

INSTRUCTIONS

1. **Please answer all questions by marking a "X" in the corresponding box**
2. **Please answer all the questions as honestly and objectively as possible**
3. **Please return the questionnaire by the ……..**

Answer the questions by placing a "X" in the corresponding box and write down the responses for Section C

SECTION A: DEMOGRAPHIC DATA

1. How old are you? *For official use*

Age	Answer	
1.1. 21-30 years	1	
1.2. 31-40 years	2	
1.3. 41-50 years	3	
1.4. 51-60 years	4	4

2. What is your gender?

2.1. Female	1		
2.2. Male	2		5

3. Indicate the type of health service where you are presently employed?

Type of Service			
3.1. Hospital	1		
3.2. Clinic	2		
3.3. Other	3		6

4. Indicate the number of years working as an IMCI trained R/N *For official use*

Years working as an IMCI trained R/N			
4.1. Less than 1 year	1		
4.2. 1-2 years	2		
4.3. 3-4 years	3		
4.4. 5 years and more	4		7

5. Indicate how long after completion of your IMCI training, the first follow-up visit took place

First follow-up visit			
5.1. At 6 weeks	1		
5.2. Six weeks - six months	2		
5.3 Six months - one year	3		
5.4 One year and more	4		8

6. Indicate your agreement whether the IMCI trained R/N in your health service receives ongoing supervision for IMCI

Strongly disagree	1		
Disagree	2		
Neutral	3		
Agree	4		
Strongly agree	5		9

SECTION B

Assessment of Skills of the Health Worker

7. Does the health worker enquire about the following?

	Yes	No		
7.1 Name	1	2		10
7.2 Date of birth	1	2		11
7.3 Age in months	1	2		12
7.4 What the child's problems are?	1	2		13
7.5 Is this an initial visit or follow-up visit?	1	2		14

8. Does the health worker:

	Yes	No		
8.1 Weigh the child?	1	2		15
8.2 Check the child's temperature?	1	2		16

9. General danger signs

Does the health worker **ASK** about OR does the caretaker **REPORT**	Yes	No		
9.1 Not able to drink or breastfeed	1	2		17
9.2 Vomits everything	1	2		18
9.3 Convulsions this illness	1	2		19
Does the health worker **EXAMINE** the child for the following				
9.4 Look for lethargy or unconsciousness	1	2		20

10. Cough or difficult breathing?

Does the health worker **ASK** about OR does the caretaker **REPORT**	Yes	No		
10.1 Cough or difficulty breathing?	1	2		21
10.2 For how long?	1	2		22
Does the health worker **EXAMINE** the child for the following				
10.3 Counts the breaths p/min	1	2		23
10.4 Looks for chest retraction	1	2		24
10.5 Listens for stridor	1	2		25
10.6 Listens for wheeze	1	2		26
Does the health worker **ASK** about OR does the caretaker **REPORT**				
10.7 If wheeze noted asks about the wheeze	1	2		27

11. Diarrhoea?

Does the health worker **ASK** about OR does the caretaker **REPORT**	Yes	No

11.1. Diarrhoea?	1	2		28
11.2 For how long?	1	2		29
11.3. How much /what fluids given	1	2		30
Does the health worker **EXAMINE** the child for the following				
11.4 Observe feeding	1	2		31
11.5 Pinch the skin on the abdomen	1	2		32
11.6 Looks for sunken eyes	1	2		33

12. Fever?

Does the health worker **ASK** about OR does the caretaker **REPORT**	Yes	No		
12.1. Fever?	1	2		34
12.2 Malaria risk	1	2		35
12.3. Measles now or in the last three months	1	2		36
Does the health worker **EXAMINE** the child for the following				
12.4 Looks or feels for stiff neck	1	2		37
12.5 Looks for generalized rash	1	2		38

13. Ear problem?

Does the health worker **ASK** about OR does the caretaker **REPORT**	Yes	No		
13.1 Ear problem?	1	2		39
13.2 Ear pain	1	2		40
13.3. Ear discharge	1	2		41
13.4 If yes, for how long	1	2		42

Does the health worker **EXAMINE** the child for the following				
13.5 Looks for pus in the ear	1	2		43
13.6 Feels for tender swelling behind the ear	1	2		44

14. Malnutrition and anaemia?

Does the health worker **ASK** about OR does the caretaker **REPORT**	Yes	No		
14.1 Malnutrition and anaemia?	1	2		45
14.2 Asks about weight loss?	1	2		46
Does the health worker **EXAMINE** the child for the following				
14.3 Plots the weight	1	2		47
14.4 Checks for weight gain/loss on the RTHC	1	2		48

15. HIV status

Does the health worker **ASK**	Yes	No		
15.1 If mother was tested for HIV?	1	2		49
15.2 If child was tested for HIV?	1	2		50
15.3 If child has pneumonia now?	1	2		51
15.4 About persistent diarrhea now or in the past three months?	1	2		52
15.5 About poor weight gain?	1	2		53
Does the health worker **EXAMINE** the child for the following				
15.6. Oral thrush	1	2		54
15.7 Parotid enlargement	1	2		55
15.8. Ear discharge	1	2		56

15.9 Enlarged glands in two or more areas	1	2		57

16. Immunisation status?

Does the health worker **ASK**	Yes	No		
16.1 What was already given?	1	2		58
Does the health worker **EXAMINE**				
16.2 The immunization card	1	2		59
Does the health worker **ADMININSTERS**				
16.3 Immunization if needed today?	1	2		60

17. Child's feeding

Does the health worker **ASK** about OR does the caretaker **REPORT**	Yes	No		
17.1 Breastfeeding	1	2		61
17.2 About other foods/fluids?	1	2		62
17.3 If feeding changed with this illness?	1	2		63
Does the health worker **EXAMINE** the child for the following				
17.4 Assess other problems?	1	2		64

18. General

Does the health worker	Yes	No		
18.1 classify the child correctly?	1	2		65
18.2 identify the correct treatments?	1	2		66
18.3 explain how to administer oral treatment?	1	2		67

18.4 demonstrate how to administer the oral treatment?	1	2		68
18.5 assess the caretaker's understanding on how to administer oral treatment?	1	2		69
18.6 give or ask the mother to give the first dose of the oral drug at the facility?	1	2		70
18.7 explain to give more fluids (for diarrhea) at home?	1	2		71
18.8 explain that feeding must continue at home?	1	2		72
18.9 give appropriate pre-referral treatment if the child needs to be referred?	1	2		73
18.10 explain when to return for follow-up?	1	2		74
18.11 advise the mother about her own health?	1	2		75
18.12 use the IMCI chart booklet during the assessment and management of the sick child?	1	2		76

19. Child to be brought back to hospital

Does the health worker tell the caretaker to bring the child back immediately for the following signs?	Yes	No		
19.1 Child is not able to drink or breastfeed	1	2		77
19.2 Child becomes sicker	1	2		78
19.3 Child develops a fever	1	2		79
19.4 Child develops fast breathing	1	2		80
19.5 Child develops difficult breathing	1	2		81
19.6 Child develops blood in the stool	1	2		82
19.7 Child drinking poorly	1	2		83

20. **Assessment of Health System Support**

Are/is there	Yes	No		
20.1 Enough space and other pre-requisites available to see patients?	1	2		84
20.2 Equipment and supplies like thermometer, torch, tongue depressor, nebulizer, functioning weighing scale, cup with clean water, spoon, etc. available?	1	2		85
20.3 Functioning ORT corner established and required supplies like clean water, cups, spoons, ORS available?	1	2		86
20.4 Functioning refrigerator, all EPI vaccines and disposable syringes available and vaccines are kept according to required temperature?	1	2		87
20.5 All essential IMCI drugs available in stock.	1	2		88
20.6 IMCI drugs are available in the facility throughout the year	1	2		89
20.7 Enough IMCI recording forms are available and are regularly replenished.	1	2		90
20.8 During routine supervisory visits, district supervisors also supervised the IMCI activities including observation of at least one case management.	1	2		91

21. **Assessment of Records**

	Yes	No		
21.1 Are the individual IMCI recording forms properly filled and maintained?	1	2		92
21.2 Is the OPD register maintained and classification written according to the IMCI**?**	1	2		93
21.3 Is record of follow- up maintained in the OPD register as well as the recording forms?	1	2		94

SECTION C: OPEN-ENDED QUESTIONS

22. Do you think follow-up and supervision is important?

If yes, why?

……
……
……..

23. How often would you like to be supervised?

……

24. How will regular supervision impact on the way you practice IMCI?

……
……
……...

25 Will facility support impact on the manner in which you implement IMCI and how?

……
……
……
……

THANK YOU FOR YOUR PARTICIPATION

Ms.Udesvari Pillay is a Lecturer in Community Nursing Science at the Addington Campus (KZNCN). She is currently studying with the University of South Africa for the Masters Degree (Public Health).

This study is part of her dissertation for the Masters Degree titled

"THE IMPLEMENTATION OF THE INTEGRATED MANAGEMENT OF CHILDHOOD ILLNESSES STRATEGY"

You have been selected to participate in this study, and your co-operation is highly appreciated.

ANNEXURE E

UNISA university of south africa

UNIVERSITY OF SOUTH AFRICA
Health Studies Research & Ethics Committee
(HSREC)
Faculty of Human Sciences
CLEARANCE CERTIFICATE

Date of meeting: 2 December 2010 Project No: 759-438-0

Project Title: The implementation of the integrated management of childhood illnesses strategy

Researcher: Udesvari Pillay

Supervisor/Promoter: Prof JH Roos

Joint Supervisor/Joint Promoter: Mrs ME Chauke

Department: Health Studies

Degree: Masters in Public Health

DECISION OF COMMITTEE

Approved [√] **Conditionally Approved** [ ]

Prof TR Mavundla
RESEARCH COORDINATOR

Prof MC Bezuidenhout
ACADEMIC CHAIRPERSON: DEPARTMENT OF HEALTH STUDIES

PLEASE QUOTE THE PROJECT NUMBER IN ALL ENQUIRES

ANNEXURE F

INFORMATION SHEET

I am Mrs.Udesvari Naidoo (Pillay), a student at the University of South Africa. I am conducting a study on the status of IMCI implementation in eThekwini district, KwaZulu - Natal.

Invitation to participate : I am inviting you (district health services) to participate in this research study which is in part fulfillment of my Masters in Public Health degree.

Reason: The study aims to describe the relationship between follow-up and supervision, level of facility support and skills of the IMCI trained registered nurses on IMCI implementation.

Expectations from the participants: I will conduct a non-experimental, descriptive study in primary health clinics in the eThekwini district. I would like to carry out this study from 1st April 2011 to 31st May 2011. I would appreciate your assistance and co-operation in carrying out this study in the primary health clinics. I will randomly select between 80-100 IMCI trained registered nurses to be a part of this study.

The *questionnaire* will be completed by me. Responses to the open questions will be stated in the participants own words. It may take less than two hours of the participant's time for the completion of the questionnaire.

Benefits to the participants: It is envisaged that the study would contribute to the improvement in the implementation of IMCI. Knowledge gained from the findings of this study would highlight the importance of adhering to the norms and standards for follow-up and supervision as laid down by WHO. The results of the study can also assist in the formulation of a strategy that will aid in the improvement of follow-up and ongoing supervision.

Participation is voluntary: IMCI trained registered nurses are not compelled to participate in this study. The study is completely voluntary and non-participation by any single individual will not involve any penalty. There are no cost implications for any of the participants.

Confidentiality: I will ensure that all personal information is kept confidential. I will not record the personal details of any of the participants on the research tool itself. Organisations/ individuals that may inspect and or copy the research records for quality assurance and data analysis may include the Research Ethics Committee at the university and the statisticians.

For more information feel free to contact me on the following numbers: 031-3272067 (w); 0845544405(c) or email me at udee.naidoo@kznhealth.gov.za.

If you are in any way not happy with the way in which I have conducted myself during the data collection process, you may also contact my supervisor Professor J.H.Roos at the University of South Africa.