Using benefit levers to develop an operational plan for spread of best practices in health systems

W.H. ten Ham

21608288

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Promotor: Dr. C.S. Minnie

Co-promotor: Prof. S.J.C. van der Walt

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“We can make big changes by targeting on the right things”

(Coulson, Goldstone, Ntuli & Pillay, 2010:29)

DECLARATION

I, Wilhelmina Hendrika (Wilma) ten Ham, declare herewith that the thesis entitled *Using benefit levers to develop an operational plan for spread of best practices in health systems* which I submit to the North-West University, Potchefstroom Campus in the fulfilment of the requirements for the degree Doctor of Philosophy at the School of Nursing Science, is my own work, and has not been submitted to any other university.

Student: University-number: 21608288

Date Place: Potchefstroom

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ABBREVIATIONS

CASP	Critical Appraisal Skills Programme
CEO	Chief Executive Officer
ILL	Inter Library Loan
JHNEBP	John Hopkins Nursing Evidence Based Practice
KMC	Kangaroo Mother Care
LBWI	Low birth weight infants
NDoH	National Department of Health
PHC	Primary Health Care
WHO	World Health Organisation

CLARIFICATION OF THE TERMS USED IN THE CONTEXT OF THIS STUDY

Benefit levers	Essential requirements for spread of best practices
Best practices	Nursing/midwifery practice informed by high-quality or 'best' evidence (such as KMC)
Change	To make a difference/improvement in e.g. an organisation
Innovation in health care	Best practices
Scale-up	Spread of best practices in the health system
Spread	The active disseminating of best practice and implementing each intervention in every available care setting

REFERENCING

Referencing in this study was done according to the Harvard Style outlined in the 'NWU Referencing guide' from the North-West University (NWU, 2012).

ABSTRACT

This study addressed the use of benefit levers to develop a guide for an operational plan for spread of best practices in the health system of South Africa.

Using the best evidence to inform practice is the cornerstone of quality patient care. Besides uptake and implementation, spreading best practices is crucial as this provides more patients with evidence-informed care and to improve practice and health (care) outcomes. However, spread of best practices is not always effectively done. An example includes Kangaroo Mother Care (KMC) as this best practice is translated for practice and implemented on a limited scale; spread to the whole system seems to be problematic.

Various factors can be used to facilitate the spread of best practices. Edwards and Grinspun identified four benefit levers which create the tipping point towards successful adoption, implementation and spread of evidence: alignment, permeation plans, leadership for change, and supporting and reinforcing structures. However, little is known about these benefit levers and it remains unclear what the use of benefit levers for system-wide spread would entail, specifically for other contexts as the model (including the benefit levers) has never been operationalised (Edwards & Grinspun, 2011:19).

The overall aim of this study entails therefore the development of a guide for an operational plan, formulating the use of benefit levers in the spread of best practices. To achieve this aim the following objectives for this study were set:

1. To explore and describe characteristics of benefit levers to facilitate spread of best practices.
2. To develop a guide for an operational plan to use benefit levers for the spread of best practices.

This study was embedded in the postmodern paradigm, whereby the systems theory was used as a theoretical framework.

The first objective was achieved by two steps. Firstly, an integrative literature review of concept clarification of the four benefit levers was done. Secondly, semi-structured individual interviews were conducted with key informants from a variety of levels of the health system involved in the spread of KMC in South Africa.

Findings were used to achieve objective two. A draft guide for an operational plan was developed, based on the findings of the individual interviews. A logic model was used as format. This guide was refined by experts using the Delphi technique. The Delphi involved two rounds. From the feedback of the first round of the Delphi, a logic model which provides a graphic outlook of the guide, was suggested and refined in the second round, together with the guide. Further, after the Delphi, a template useable for practice was derived from the guide.

The guide, logic model and template could help organisations or departments planning to spread best practices in a certain context (e.g. South Africa), to develop an operational plan, where these benefit levers are considered. This is crucial as currently best practices (such as Kangaroo Mother Care) are often not spread on a system-wide basis to improve practice. The guide will therefore be made accessible to health care workers and researchers in South Africa

Finally, conclusions were drawn, the research was evaluated, limitations were identified and recommendations were formulated for nursing practice, education and research.

Overall, it can be concluded that for effective spread of best practices the benefit levers alignment, permeation plans, leadership for change and supporting and reinforcing structures are required. Further, specifically regarding the objectives and steps of this study the following conclusions can be made:

- Literature/studies about leadership for change and supporting and reinforcing structures was found, but regarding alignment and permeation plans, limited rigorous literature was found (Objective 1 – Step 1).
- Key informants involved in the spread of a specific best practice (Kangaroo Mother Care) could see the value of benefit levers used for the spread of best practices in the South African health system (Objective 1 – Step 2).
- Benefit levers were found useful for development of a guide for an operational plan to spread best practices. This guide will be made accessible to be used by healthcare organisations and departments in South Africa (Objective 2 – Steps 1 and 2).

Keywords: spread, best practices, benefit levers, guide, health system, South Africa

OPSOMMING

Hierdie studie het ondersoek ingestel na die gebruik van voordeel-hefbome om 'n gids vir 'n operasionele plan vir die verspreiding van beste praktyke in die gesondheidstelsel in Suid-Afrika te ontwikkel.

Die hoeksteen van kwaliteit-pasiëntesorg is die gebruik van die beste gegewens. Behalwe opname en implementering, is die verspreiding van beste praktyke van kardinale belang, aangesien dit meer pasiënt-bewese ingeligte sorg voorsien en dien om praktyk- en gesondheid (sorg)-uitkomste te verbeter. Verspreiding van beste praktyke word egter nie altyd effektief gedoen nie. Die geval van die verspreiding van *Kangaroo Mother Care* (KMC) as beste praktyk, oorgesit in praktyk, en op 'n beperkte skaal toegepas, blyk problematies te wees om in die hele stelsel te versprei.

Verskeie faktore kan gebruik word om die verspreiding van die beste praktyke te fasiliteer. Edwards en Grinspun identifiseer vier voordeel-hefbome wat die omslagpunt skep vir suksesvolle aanvaarding, implementering en verspreiding van gegewens: belyning, deursypeling-beplanning, leierskap vir verandering en die ondersteuning en versterking van strukture. Daar is egter min bekend oor hierdie voordeel-hefbome en dit bly onduidelik wat die gebruik van die voordeel-hefbome vir stelselwye verspreiding sou behels, veral vir ander kontekste, omdat die model (met inbegrip van die voordeel-hefbome) nog nooit geoperasionaliseer is nie (Edwards & Grinspun, 2011:19).

Die oorkoepelende doel van hierdie studie behels dus 'n gids vir 'n operasionele plan wat die formulering van die gebruik van die voordeel-hefbome in die verspreiding van beste praktyke ontwikkel. Om dit te bereik, is die volgende doelwitte vir hierdie studie gestel:

1. Om eienskappe van voordeel-hefboom-verspreiding wat beste praktyke fasiliteer, te verken en te beskryf.

2. Om 'n gids te ontwikkel vir 'n operasionele plan om voordeel-hefbome te gebruik vir die opskaling van beste praktyke.

Hierdie studie is ingebed in die postmoderne paradigma, waarby die stelselteorie as teoretiese raamwerk gebruik is.

Die eerste doel is in twee stappe behaal. Eerstens is 'n geïntegreerde literatuuroorsig van konsep-verduideliking van die vier voordeel-hefbome gedoen. Tweedens is semi-

gestruktureerde individuele onderhoude gevoer met sleutel-informante uit 'n verskeidenheid van vlakke van die gesondheidstelsel betrokke by die verspreiding van KMC in Suid-Afrika.

Bevindings is gebruik om doelwit twee te bereik. 'n Ontwerp-gids vir 'n operasionele plan is ontwikkel, gebaseer op die bevinding van die individuele onderhoude. 'n Logiese model is gebruik as formaat. Hierdie gids is deur kundiges verfyn met die gebruik van die Delphi-tegniek. Die Delphi het twee rondes behels. Uit die terugvoer van die eerste ronde van die Delphi, is 'n logiese model, wat 'n grafiese oorsig van die gids bied, voorgestel en in die tweede ronde verfyn. Verder, na die Delphi, is 'n sjabloon uit die gids afgelei, wat in die praktyk bruikbaar is.

Die gids, logiese model en sjabloon kan organisasies of departemente wat beplan om beste praktyke in 'n sekere konteks te versprei (bv. Suid-Afrika), help om 'n operasionele plan te ontwikkel waar hierdie voordeel-hefbome oorweeg kan word. Dit is noodsaaklik aangesien beste praktyke (soos *Kangaroo Mother Care*) tans dikwels nie op 'n stelsel-wye basis versprei word om praktyk te verbeter nie. Die gids sal dus vir gesondheidswerkers en navorsers in Suid-Afrika toeganklik gemaak word.

Ten slotte, gevolgtrekkings is verskaf, die navorsing is geëvalueer, beperkings is geïdentifiseer en aanbevelings is geformuleer vir die verpleegpraktyk, onderrig en navorsing.

Oorsigtelik kan afgelei word dat, vir die doeltreffende verspreiding van beste praktyke, die voordeel-hefbome: belyning, deursypeling-beplanning, leierskap vir verandering en die ondersteuning en versterking van strukture, vereis word. Verder, spesifiek oor die doelwitte en stappe van hierdie studie, kan die volgende gevolgtrekkings gebruik word:

- Literatuur/studies oor leierskap vir verandering en die ondersteuning en versterking van strukture is geidentifiseer, maar rigorous literatuur oor belyning en deursypeling-beplanning was beperkend (Doelwit 1 – Stap 1).

- Sleutel-informante wat in die verspreiding van een sekere beste praktyk (*Kangaroo Mother Care*) betrokke was, kon die waarde eien van hierdie voordeel-hefbome wat gebruik word vir die verspreiding van beste praktyke in die Suid-Afrikaanse gesondheidstelsel (Doelwit 1 – Stap 2).

- Voordeel-hefbome was toepaslik vir die ontwikkeling van die gids rakende ‘n operasionale plan om beste praktyke te versprei. Hierdie gids sal beskikbaar gestel word vir gebruik deur gesondheidsorg organisasies en departemente in Suid-Afrika (Doelwit 2 – Stappe 1 en 2).

Sleutelwoorde: voordeel-hefbome, verspreiding, beste praktyke, gids, gesondheidstelsel, Suid Afrika

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CHAPTER 1

Overview of the study

1.1. Introduction

This study addressed the use of benefit levers to develop a guide for an operational plan for the spread of best practices in the South African health system. In this chapter the background and rationale for the study are systematically explained, as well as the problem statement, the research questions, the concept clarification, the paradigmatic perspective of the study, the research approach and study design, the methods and procedures, and rigour and ethical considerations. Finally, a summary of this chapter is given.

1.2 Background

Today's healthcare undergoes constant changes through a continuous development of innovations with the aim to improve health and health care outcomes for patients (Porter & Teisberg, 2007:1103; Grol & Grimshaw, 2003:1225). Innovations should be evidence-based and can be used to guide healthcare professionals to provide high-quality patient care in order to achieve the best outcomes on individual, organisational and the health systems level (Edwards & Grinspun, 2011:2).

High-quality evidence-based products are part of best practices. Although there is no universal definition of best practice, according to Grol and Grimshaw (2003:1225), best practices are related to nursing practice, methods, procedures and techniques based on high-quality evidence in order to obtain improved patient/health outcomes. However, Harrison, Legare, Graham, *et al.* (2010:E78) argue that although evidence and evidence-based products may be necessary, evidence alone is not sufficient to ensure evidence-based decision making. They also indicate that the uptake and implementation of evidence do not occur with simple decision-making, as a variety of interrelating factors influence the uptake, implementation and spread of evidence into practice. Further, globally evidence-based products are developed and made available, but the challenge remains to get evidence implemented and then spread into practice (Grol, 2001:II-46).

For the purpose of this study, implementation is a process of integrating high-quality research findings into nursing or healthcare practice (Van der Walt & Minnie, 2008:30; Kitson, Harvey & McCormack, 1998), which usually happens in organisations. “Spreading”, on the other hand involves the active disseminating of best practice and knowledge about every intervention and implementing each intervention in every available care setting (adapted from IHI, 2008:3), from an organisation to the rest of the health system or vice versa. Spread is crucial as this can help to provide more patients with evidence-informed care (Edwards & Grinspun, 2011:9). However, according to IHI (2008:40) spreading can take place only *after* successful implementation. Although other words for spread are used, such as roll-out and scale-up, this study uses spread in line with Edwards and Grinspun’s definition and model. Further, spread can occur within organisations (organisational spread) and at the system level (system scale-up) (Edwards & Grinspun, 2011:18). However, often best practices have been identified but remain inaccessible and unidentified to others (Massoud, Nielsen, Nolan, *et al.*, 2006:1) and therefore are not spread and do not improve practice. To improve health and health care outcomes various (interrelated) aspects (which can happen simultaneously) are required.

Spread requires a point when evidence is accepted by most individuals and cannot be turned back and therefore change is inevitable: the so-called tipping point (Bodenheimer, 2007:7,11). To create that tipping point towards successful adoption, implementation and spread of evidence and to ensure that innovations (such as best practices) in the healthcare system are spread, certain requirements are needed. Edwards and Grinspun (2011:18) in their “Evidence Informed Model of Care” (see Appendix A), identified the following four requirements for spread (the so-called benefit levers): alignment, permeation plans (plans for spread), leadership for change and reinforcing and supporting structures.

In the South African context, best practices are often identified and evidence-based products developed, but not optimally implemented and spread to lead to improved health outcomes. A case of ineffective spread involves the spread of the Kangaroo Mother Care (KMC) method. Although KMC as best practice is translated into practice and implemented on a limited scale, spread to the whole system seems to be problematic (Bergh, Van Rooyen & Pattinson, 2008:1).

It is against this background that the critical points previously discussed can be used to provide a summary of the problem, which will be outlined in the next paragraph.

1.3 Problem statement

The background stated the importance of evidence-based practice to improve the quality of care. However, there is a low uptake and spread of evidence-based practices. Various factors can be used to facilitate the spread of best practices. Edwards and Grinspun identified four benefit levers which create the tipping point towards successful adoption, implementation and spread of evidence: alignment, permeation plans, leadership for change, and supporting and reinforcing structures. However, little is known about these benefit levers and it remains unclear what the use of benefit levers for system-wide spread would entail, specifically for contexts other than that of the Evidence Informed Model of Care (including the benefit levers) has never been operationalised (Edwards & Grinspun, 2011:19).

Further, the use of benefit levers in developing a guide for an operational plan for the spread of best practices has not been investigated yet. An operational plan could be helpful to guide the spread of best practices in a certain context (e.g. South Africa) and improve health outcomes as currently best practices (such as KMC) are often not spread on a system-wide basis to improve practice.

1.4 Research question, purpose and objectives

From the problem statement mentioned above, the research question for this study was: *"How can benefit levers be used to facilitate spread of best practices in the South African health system?"*

The purpose of this study was to improve practice and health care outcomes through exploring and describing benefit levers and to guide the development of an operational plan for the use of benefit levers in the spread of best practices.

The overall aim therefore is to influence spread of best practices through development of a guide incorporating a benefit levers framework, within the context of a logic model. To achieve this aim, the following objectives were set:

1. To explore and describe characteristics of benefit levers to facilitate spread of best practices.
2. To develop a guide for an operational plan to use benefit levers for the spread of best practices.

By developing and refining a guide for an operational plan for the use of benefit levers, which will be made accessible for health care workers and researchers in South Africa, spread of best practices in the South African health system will be enhanced.

1.5 Paradigmatic perspective

Science tries to create understanding of the world and phenomena occurring in the world to develop a body of knowledge of this world or phenomena using systematic methods (Downe, 2008:5; King & Fawcett, 1997:38). The basis for all research is a *philosophical belief* concerning the world, a *"worldview"* or *"paradigm"* (LoBiondo-Wood & Haber, 2002:127). The concept paradigm is explained as: *"a way of viewing a phenomenon or group of phenomena that attracts a group of adherents and raises many questions to be answered"* (George, 1990:388) and consists of *"attitudes, values and believes"* (Downe, 2004:32). Within the conduct of research the researcher develops and reveals certain assumptions. These assumptions are implanted in a philosophical basis of framework, or study design (Burns & Grove, 2005:39).

In this section the researcher explains her paradigmatic perspective by firstly setting out the ontological assumptions (in the researcher's meta-theoretical assumptions) and the epistemological assumptions, followed by the theoretical assumptions, including the central theoretical argument and theoretical framework, and methodological assumptions that direct the study.

1.5.1 Ontological assumptions (meta-theoretical assumptions)

Meta-theoretical assumptions contain non-epistemic statements that cannot be tested (Mouton & Marais, 1994:192). In nursing research they reflect the researcher's worldview and assumptions regarding the concepts of man, society, health and nursing (King & Fawcett. 1997:2). Although these concepts are explained separately below, they are interrelated. For example, the following influence each other: man and health (in terms of well-being), person and society (e.g. human behaviour and life situations), health and nursing (nursing concerns health in terms of well-being of a person) and man, society and health (which involve the holistic view in nursing, including the interaction of man and society) (King & Fawcett, 1997:3). These assumptions collaboratively reflect the researcher's ontological or meta-theoretical beliefs.

1.5.1.1 The view of man

As a nursing researcher I see man as God's most beautiful, unique and holistic creation. Man is made according to God's image to take care of himself and others, and all that lives in His Creation: the world. Man has his/her own rights and responsibilities to do so. In this study, man is referred to as the healthcare practitioner/decision maker.

1.5.1.2 The view of society

The human being (or entity) interacts within systems, which interrelate with his/her society or environment. In this study, the system is referred to as the health system and the subsystems and entities within the larger system (South Africa). The environment controls and influences the systems.

1.5.1.3 The view of health

Outcomes in health science often focus on illness instead of health (Downe, 2008:19), but I agree with the definition of the World Health Organisation (WHO) which defines health as *'a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity'* (WHO, 2001:8). However, according to my assumptions, health involves not merely psychical, mental and social well-being but also includes *spiritual* well-being. Further, I believe that psychical, mental, social and spiritual well-being are interrelated factors which, when one or more factors is affected, cause illness. Therefore, consistent with the salutogenesis's view, I believe that '*meaningfulness'* ('the feeling that life makes sense emotionally'), *'manageability'* ('the extent to which people feel they have the resources to meet their demands in life') and '*comprehensibility"* ('the extent to which a person finds or structures his/her world to be understandable, meaningful and orderly') are all important aspects to achieve balance, create an overall well-being and to cope with life (Lindström & Erikson, 2005:441).

In this study, the underlying assumption is that, by developing a guide for an operational plan for the use of benefit levers to promote the spread of best practices in South African health systems, this theoretical foundation will result in improved spread of best practices and therefore an enhanced quality of specifically psychical, mental, social and spiritual well-being and generally practice, health and overall health outcomes.

1.5.1.4 The view of nursing

Nursing entails *'the use of clinical judgment in the provision of care to enable people to improve, maintain or recover health to cope with health problems and to achieve the best possible quality of life whatever their disease or disability, until death'* (RCN, 2003:527).

Nursing uses assessment with clinical judgment and provides care in order for people to improve and maintain health and, linked to that, quality of life. In order to improve, maintain or recover health, nursing needs to deliver the best evidence-based care. By supporting spread, more patients can receive care which is based on high-quality evidence which will help to improve, maintain or recover their health and health outcomes and finally improve quality of life.

However, providing health care (based on high-quality evidence) is becoming more complex due to an increasing number of new conditions creating a burden of disease, patients with different cultural and racial backgrounds in a variety of health care settings (McCurry, Revell & Roy, 2009:46). Therefore, this study help to improve the spread of best practices in health care to develop a refined guide for a operational plan which can be used by organisations or departments planning to spread a best practice. The complexity of spread of best practices was shown with different health care levels which were included in the guide.

1.5.2 Epistemological assumptions

As a nurse researcher, I find it important to conduct research in such a way that findings/outcomes of research can be implemented in practice. Therefore the best evidence-based care must be provided to improve health outcomes.

The question can be raised which evidence is 'best'. From an epistemological perspective, 'best evidence' can be defined in different ways. Best evidence is often viewed as "most certain evidence" and contributes to the body of knowledge. This body of knowledge is achieved by setting certain rules such as: studies should include a sample large enough for results to be generalised; and sources of bias should be removed by using randomisation and control. Evidence could, for example, be arranged according to specific study methods used to obtain evidence. Sometimes systematic reviews (Evans, 2003:77) or Randomised Controlled Trials (Frymark, Schooling, Mullen, *et al.*, 2009:177) are considered superior while case studies are seen as lowest in the hierarchy of evidence (Evans, 2003:77; Frymark *et al.*, 2009:177). Some research methods provide more valid outcomes compared to other methods for certain research questions. However, a method that might be assessed as superior (such as a rigorous Randomised Controlled Trial) could for example have high internal validity, which means that it is able to state that the intervention changed the outcome variable (Melnyk, 2004:323), but low external validity, which means outcomes cannot be generalised, in comparison to a 'less superior' method such as a descriptive study (Evans, 2003:77). Therefore, a range of research designs should be used based on one

single condition, namely that the design used must fit the research question (Mulhall, 1998:5–6).

Evidence, however, specifically in health sciences is never bias-free as the evidence includes, besides scientific evidence, also experiential and contextual evidence. The aim of evidence involves therefore reducing "uncertainty" rather than seeking the absolute truth (Downe, 2004:7,11). Therefore, I view best evidence (and research) as holistic, which should take different types of evidence (including a variety of views and methodologies) into consideration. For this study this means that I conducted this research as rigorously and honestly as possible (see paragraphs 1.7 and 1.8) while considering the health system as a whole, including all factors in the process of developing a guide for an operational plan which can be used to improve the spread of best practices in South Africa.

1.5.3 Theoretical assumptions

The theoretical assumptions include the central theoretical argument, theoretical framework and concept clarifications, which will be outlined in the following paragraphs.

1.5.3.1 Central theoretical argument

Best practices should be spread to be useable and improve health practice outcomes in the health system. Understanding the role of benefit levers can help to improve the spread of best practices in a certain context as the role of benefit levers may differ per setting. This study therefore developed guidance for an operational plan based on the exploration and description of the four benefit levers in the health systems in South Africa to improve the spread of best practices in this context. The spread of best practices happens in the context of a system. This study is therefore positioned in the systems theory which will be discussed in the next section.

1.5.3.2 Theoretical framework

This study was embedded in the postmodernism paradigm whereby the study was positioned in the systems theory using Edward and Grinspun's "Evidence Informed Model of Care" as a framework, as well as the concept clarification of the study which is outlined in the following sections.

The systems theory

Science includes (from lowest to highest in the hierarchy of evidence) information (descriptive in nature by asking what, which, when, where, etc.), knowledge (instructive in nature by asking how to) and understanding (explanatory in nature by asking why)

(Gharajedaghi, 1988:1). However, science becomes increasingly complicated (Kramer & de Smit, 1977:1) as research tries to measure phenomena which occur in 'systems'. A 'system' is defined as 'a set of interrelated entities, of which no subject is unrelated to any other subset' (Kramer & de Smit, 1977:14). Systems exist in the empirical world and in science. Further, measurement of the system and entities is determined by the researcher's values and beliefs, which are outlined in the following sections.

The empirical world, for example, consists of 'sets of entities' such as people together in a group, organisations, etc. Only when the 'sets of entities' are related with each other, it is called a 'system', while when there is no relationship, it is an 'aggregate' (Kramer & de Smit, 1977:13). The system includes a large number of components, which are 'interdependently' related to each other and exists of a 'wholeness', which means as something in the system changes, this can have an impact on the whole system (Skyttner, 2005:68). The relationships in the system determine the structure of the system. The structure and members of a system determine the system's culture (Gharajedaghi, 1988:17). Within the system, subsystems exist which play their own role in the 'suprasystem' (Kramer & de Smit, 1977:26; Skyttner, 2005:66). Due to the system's interrelated entities and subsystems, the system cannot be broken in parts, which is contradictive to what the "machine metaphor" believes (Richardson, 2004:76; Begun, Zimmerman & Dooley, 2003:252). Further, a system is also operating in the environment. Although the system is influenced by its environment, a system, however, cannot control its environment (Skyttner, 2005:63-64).

Science consists of interactions of a great number of both non-human and human elements in complex systems, which are dynamic and not always stable (Fraser & Greenhalgh, 2001:799; Haigh, 2002:463) and are completely different from the "closed, well-behaved" systems which were however the original focal point of systems science (Begun *et al.*, 2003:255).

According to Kramer and de Smit (1977:13) systems are made measurable in research. To be measurable, the entities in the system should be related, which means that when one entity changes, other entities in the whole system change (Kramer & de Smit, 1977:15, 17). However, I believe some systems and entities are difficult to measure due to their level of abstraction and their number of entities. The researcher should therefore treat systems as a whole, combined of connected parts (Stewart & Ayres, 2001:81).

However, Richardson (2004:77) mentions that not all members of the system contribute to the system change, which means that when those members will be removed, the system

remains the same. Therefore, while trying to analyse and describe the system (and the entities in the system) researchers should acknowledge the unique situation of the system, which requires a 'holistic' approach involving different methodologies (Kramer & de Smit, 1977:2, 7). Further, also the role of the members and entities in the system should be considered in order to get a better understanding of the deeper connections in the system (Richardson, 2004:79). Therefore, in order to explain concepts, a holistic approach is required whereby all the aspects of the system and the system's environment or context is considered (Stewart & Ayres, 2001:79; Gharajedaghi, 1988:7).

Globally, organisations have an interest in understanding how health systems perform and how they motivate enhancement and to ensure health care quality (Arah, Klazinga, Delnoij, *et al.,* 2003:377). Understanding of a concept in health care, such as risk assessment and the management techniques helping organisations to make complex decisions requires the leveraging of underlying conceptual roots of the concept, systems theory and systems analysis (Hatfield & Hipel, 2002:1043-1044). The complexity of the system usually acts as a facilitator or barrier to spread of best practices. In case of a barrier, Becker (1970:301) mentioned the term 'system delay' which involves that potential adopters, delay until the first risks of the innovation have been taken by others in the system.

Further, innovations spread through networks and communication. However, not all members in a system (e.g. health systems and health organisations) are equal. Besides, the system usually consists of two systems: a formal system (with titles and hierarchies) and an informal or 'shadow system' (Plsek, 2003). This complicates the spread of best practices in the system. A solution might be the creation of an 'adaptive' environment in which best practices can be spread (Anderson, 1999:216). The next section will outline the methodological assumptions of this study.

The Evidence Informed Model of Care

The Evidence Informed Model of Care, developed by Edwards and Grinspun (2011:18), recommends the use of benefit levers in the "spread of best practices in nursing" using a whole systems approach (see Appendix A).

According to the model, spread of best practices occurs in organisations and in systems. In order to understand the spread of best practices, spread needs to be analysed. Analysis must be done of both organisations and the system as a whole, including units or larger organisations within the health system (individual level), several units (organisational level) and provincial (provincial level) with other (non-health) interrelated systems (Edwards &

Grinspun, 2011:4,16). This analysis requires a broad approach, namely the whole systems approach. The systems theory explains this approach and is outlined in the study's theoretical framework.

The model is supported by evidence of five (unpublished) studies which are outlined in Table 1.1.

Table 1.1: Studies supporting the Evidence Informed Model of Care (Edwards & Grinspun, 2011:2; Edwards, Rowan, Marck, & Grinspun, 2011)

Research study	Study focus	Design
Study 1: Champions promoting the use of best practice guidelines in nursing	The role of champions in spreading guidelines	A mixed methods, sequential, triangulation design
Study 2: Early steps in innovation: What takes a good idea further?	What factors make an organisation to improve to innovate and make some innovations more probable to spread	A retrospective case study involving three innovations: early postpartum discharge, minimal/least restraint, and needle exchange
Study 3: Spreading innovation: The best routes to best practices	Expanding spread within and from organisation to other organisations	A secondary analysis of data from a previous study on long-term sustainability (phase 1) and exploratory qualitative case study (phase 2)
Study 4: Starting with basics: Improving communication to improve long-term care	Using feedback to support change in long-term care	A mixed method randomized controlled trial using participatory action research
Study 5: A new approach for analysing the costs and benefits of spreading nursing innovations system wide	Benefit levers and cost drivers of spreading innovations system-wide	A review to identify system-level structural cost drivers and benefit levers

The model addresses system scale-up, including benefit levers acting as facilitators for spread, social, political and economic context and system change mechanisms. Organisational spread on the other hand, involves contextualising to variations in sectors and communities, organisational dynamic capability and intra-inter organisational change processes (Edwards & Grinspun, 2011:18) which will be explained as follows:

System scale-up in the Evidence Informed Model of Care

System scale-up according to the model involves benefit levers and other factors influencing spread which are outlined as follows:

Benefit levers

Several studies (Argote & Ophir, s.a.; Okafor & Thomas, 2008; Bodenheimer, 2007; Zahra & George, 2002) have been done concerning the 'facilitators' needed for the spread of innovations. Facilitators for the spread of innovations can include: the presence of shared

goals for improvement in terms of alignment of agendas of policymakers; consensus between the stakeholders; a pilot plan (e.g. to measure capacity and is planned before the innovation is implemented); a plan for spread; leadership at all levels (leadership on top-level and champions, as well as front-line caregivers); resources/funding, 'openness' of leaders towards the innovation; risk/benefit ratio of the innovation (benefits should overcome the risks); time; absorptive capacity for new knowledge; the structure of the system, etc. (Argote & Ophir, s.a.:14-16; Okafor & Thomas, 2008:358; Atun, Kyratsis, Jelic, *et al.*, 2007:28; Bodenheimer, 2007:21; Massoud *et al.*, 2006:5-7; Nicholls & McDermott, 2002:142; Zahra & George, 2002:185; Rogers, 1983:20,24). The model combined these facilitators in four "leverage benefits", also called "benefit levers". Benefit levers promote the innovation process to 'flow' within systems which can be manipulated to a certain extent by ensuring their existence or 'putting them in place' for example in an organisation.
The four benefit levers are:

- alignment (which involves the general consensus between the different stakeholders involved in the change);
- permeation plans (plans for spread which should exist through all levels of the system);
- leadership for change (leaders who value system change such as champions); and
- supporting and reinforcing structures (which refers to system-wide advantages improving the process of implementation, monitoring compliance, evaluating and sustaining the change) (Edwards & Grinspun, 2011:15).

Benefit levers enhance the tipping point of an innovation when the adoption, implementation and spread of best practices cannot be stopped anymore (Bodenheimer, 2007:7), providing successful uptake, implementation and spread of best practices.

Other factors influencing spread (system-wide and organisational)

- *Social, political and economic contexts*: Besides the benefit levers, social, political and economic contexts wherein the best practice (and policies) are spread are important factors which can influence the system's change (USAID, 2012; Edwards & Grinspun, 2011:16). However, these aspects are hard to influence but can, to a certain extent, be predicted. Therefore, these factors must be considered when implementation and spread of best practices are done.

- *Systems change mechanisms*: In order to spread best practices, multifaceted joined networks of persons and organisations are needed to make change. Therefore, system change mechanisms must be put in place together with organisational change processes (organisational spread) to *sustain* the spread of best practices. Champions at all the levels of an organisation and the whole health system may be helpful to create these networks and speed up spread (Edwards & Grinspun, 2011:16; Aiken, Sochalski & Lake, 1997:NS6).
- *Contextualising to differences in spread in sectors and communities (organisational spread)*: Introducing change across the system requires special mechanisms, including intentionally pushing the boundaries of complex structures and delivery systems, increasing shared ownership of both the health issue and the evidence-informed practices between organisations and sectors, and planning resource use for the new models of care. Management can play a role in providing support to the special mechanisms (Edwards & Grinspun, 2011:18; Spender & Grinyer, 1995:909).
- *Organisational dynamic capability:* The organisation (including managers, employees and champions) must adjust their implementation approaches to have room for continuously developing systems. However, their capacity to adjust is influenced by the extent of dynamism in their organisation such as cost- and technical capabilities financial assets, technology, manpower, as well as more complex organisational issues such as the best way of allocating resources, and whether the work setting is sufficiently flexible to sustain change (Edwards & Grinspun, 2011:19; Schreyö & Kliesch-Eberl, 2007:914-915; Winter, 2003:992-993).
- *Intra- and inter-organisational change*: Change was found to occur within organisations (intra organisational) and between organisations in the system (inter-organisational) and is dynamic and non-linear. To understand intra- and inter-organisational change, organisational routines can be used which are the basic components of organisational behaviour and organisational capabilities (Edwards & Grinspun, 2011:17,19; Becker, Lazaric, Nelson & Winter, 2005:775).

1.5.3.3 Concept clarification

The following concepts used in this study are defined in Table 1.2.

Table 1.2: List of definitions

Research title	**Using benefit levers to develop an operational plan for spread of best practices in health systems**	
	Definitions of the study	
	General definitions	*Operational statements*
Benefit levers as used in model	Factors that enhance the benefits of innovations, or make them quicker or less costly to achieve (Edwards & Grinspun, 2011:8)	The operational characteristics of the four benefit levers: "alignment"; "permeation plans"; "leadership for change", and; "supporting and reinforcing structures" were explored and described
Operational plan	Part of a strategic plan which defines: how to operate in practice to implement action and monitoring plans; what capacity needs are (e.g. human, financial and other capacity requirements); how to engage resources; how to deal with risks (risk assessment and mitigation plan); and how to ensure sustainability of the achievements (by estimating the project life span, sustainability and exit strategy) (Beale, Maquet & Tua, 2007:1)	Creating guidance for an operational plan for spread of best practices in health systems in South Africa
Spread	Active disseminating of best practice and knowledge about every intervention and implementing each intervention in every available care setting (adapted from IHI, 2008:3)	This study addressed the spread of best practices in health systems in South Africa
Best practices	Best practices are related to nursing practice, methods, procedures and techniques based on high-quality evidence (products) in order to obtain improved patient/health outcomes. (adapted from Grol & Grimshaw, 2003:1225)	Nursing/healthcare practice informed by high-quality or 'best' (scientific) evidence
Health Systems	All organisations, institutions, individuals and activities whose primary purpose is to promote, restore, and maintain health in terms of the efficient and effective delivery and use of products and information for the prevention, treatment, care, and support of people in need of these services (adapted from NDoH, 2012a:6; WHO, 2000:5)	This study addressed the South African health system
Knowledge Translation	The dynamic and iterative process that includes the synthesis, dissemination, exchange and ethically sound application of knowledge to improve health, provide more effective health services and products, and strengthen the health care system (CIHR, 2012)	For this study experts in the field of Knowledge Translation, such as the implementation and spread of best practices, were selected to provide their opinion/judgements/views regarding the design and content of the developed guide

1.5.4 Methodological assumption

According to Mouton and Marais (1994:7), social research entails the following elements: a *model*, *determinants and decisions*. These elements are explained below.

1.5.4.1 Model

In this study, the model for nursing research developed by Botes (1992, adapted from Mouton and Marais [1994]) is applied. The model shows nursing activities in three orders: *practice*, *nursing science* and *paradigmatic perspectives*. Although these orders are

explained separately, they are interrelated. In this study the first order aims to improve health practice using a whole system's level approach when developing an operational plan. This is realised by following a functional approach in research and positioning the study in the second order of nursing activities of Botes's model. The second order is the *nursing science*, which is developed both through research and theory generation. The third order concerns the meta-theoretical assumptions, theoretical assumptions and methodological assumptions (as discussed in paragraph 1.5). My methodological approach was influenced by my paradigmatic perspective and I endeavoured to ensure that the methods for this research were congruent with my meta-theoretical and theoretical assumptions (see paragraphs 1.5.1 and 1.5.3).

1.5.4.2 Functional approach - Determinants and decisions

Botes promotes a functional approach of knowledge into practice. This means that research should be utilised in practice to serve practice. This research was not conducted merely 'for the sake of research', but for a higher goal, namely to serve practice, as this study aimed to develop a guide for an operational plan, based on the synthesis of the use of benefit levers in health systems in South Africa to improve the quality of patient care.

The researcher approaches the research from her belief/worldview or paradigm. This worldview is interwoven within the theoretical/methodological framework (research strategy and research goal). Certain determinants serve as a framework for the decisions made in the research process. The decisions involve the selection of the research strategy and methods for sampling, the data collection, analysis of data and the methods to ensure rigour (Botes, 1992:42). Table 1.3 outlines the application of the determinants and research decisions for this study.

Table 1.3: Application of the determinants and research decisions in the research study (adapted from Minnie, 2007:16-17)

Determinants for research decisions	Applications and motivation of determinants in this research study
Researcher's assumptions Meta-theoretical assumptions Epistemological assumptions Theoretical assumptions Methodological assumptions	Application and motivation of the assumptions of the researcher are outlined in paragraph 1.5
Research objectives 1. To explore and describe characteristics of benefit levers to facilitate spread of best practices. 2. To develop a guide for an operational plan to use benefit levers for the spread of best practices.	Application and motivation of the objectives of this research study are outlined in paragraphs1.4 and 1.6
Research context National/provincial Management Individual	The context of this research study is multileveled and its application and motivation are outlined in Chapters 3 and 4
Attributes of the field of research Relationship key informants, ownership and involvement Development	The application and motivation of the relationship ownership and involvement of the key informants will be outlined in Chapter 3 The application and motivation of the development of a guide for an operational plan to enhance the spread of best practices in health systems in South Africa are outlined in Chapters 3-5

For this study, the focus was on spread at system's level. The system in this study refers to the health system in South Africa, in which best practices should be spread. More detail will be given regarding the context of the study in the next paragraph.

1.5.5 Context

This study was within the context of the South African health system.

When looking at the South African health system, this system exists of basically three levels: the individual, organisational and health system level. The health system level in the South African health system includes the community level, district level and provincial and national level (NDoH, 2007:10,11-14) which is outlined as follows:

Community level

At community level, the following facilities are in place:

- *Clinics:* the clinics are health care facilities which offer first basic care, including management of low risk emergencies and referral to the hospital;
- *Community health centres:* community centres offer a 24 hour comprehensive care.

District level

On district level, the following is offered:

- *Level one hospitals:* these are referred to as 'district hospitals', which offer the following: a 24 hour service for intermediate and high risk patients, referral from clinics and community health centres in the district, referral of complicated problems to level 2 or level 3 hospitals.

Provincial and national level

At provincial level the following is offered:

- *Level two hospitals:* these are referred to as regional hospitals, which also include a number of districts, which offer the following services: All the level one hospital services, plus management of very ill patients, specialist care, multidisciplinary care, supervisory and referral centre for level one hospitals.
- *Level three hospitals:* these are referred to as a central (or tertiary) hospitals, offering the following services: All level one and level two hospital's services plus specialist combined clinics, management of severely ill patients, supervision and support for level one and level two hospitals, and responsibility for policy and protocols distributed in the regions (NDoH, 2007:10,11-14).
- *Private hospitals:* private hospitals which are only accessible to people with private health insurance or who are self-paying (NDoH, 2007:10,11-14; Nolte, 1998:9).

Figure 1.1 outlines a simplified version of South African's complex health system and how spread or roll-out can occur.

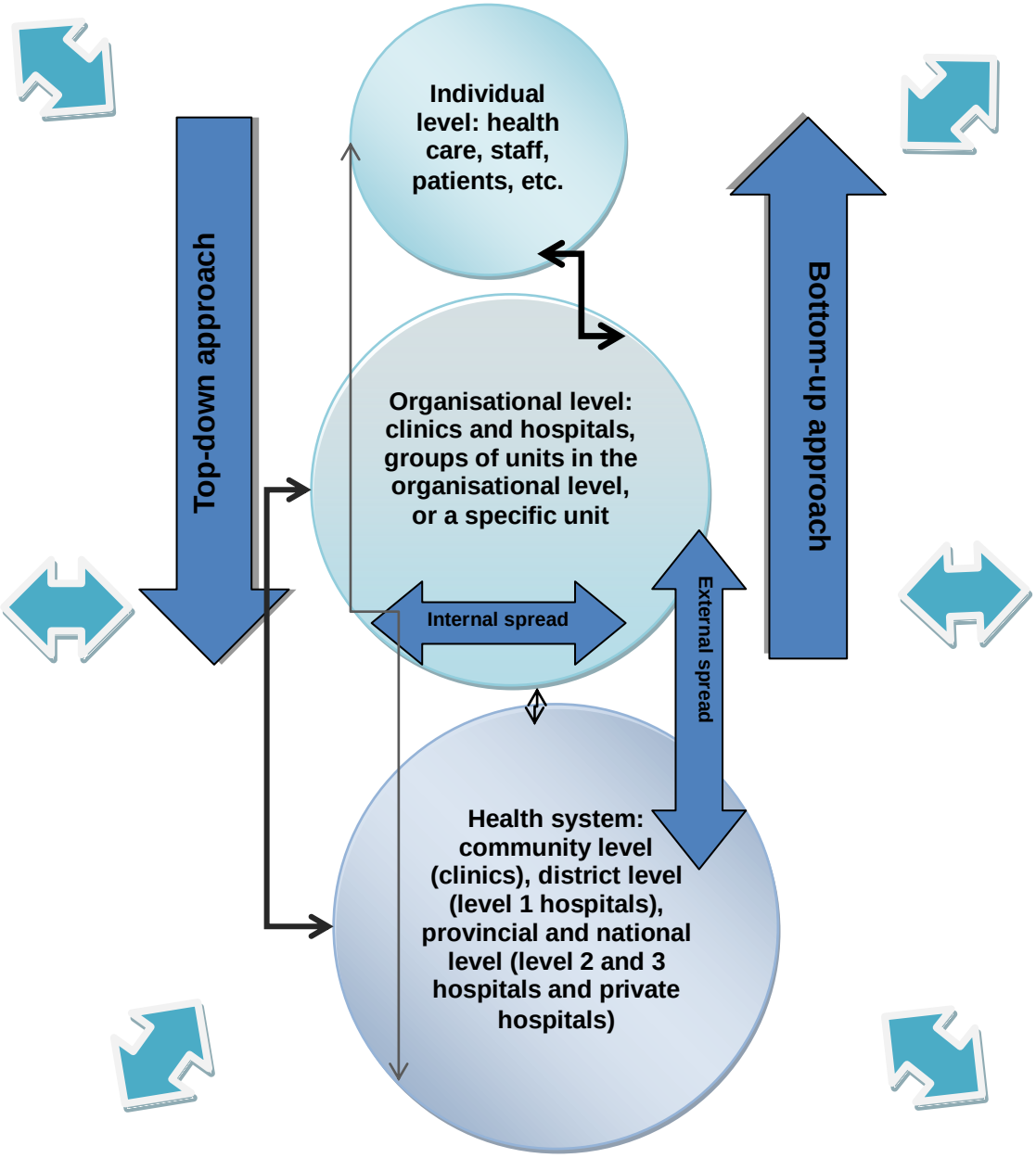


Figure 1.1: The complexity of the South African health system and spread of best practices in this system

The figure outlines the complexity of spread in the South African context as spread can happen at different levels: individual level, organisation level and health system-wide level. Further, spread occurs both internally (for example within an organisation) and externally (between levels, such as spread from hospitals, health system-wide, to individual organisations). Finally, either a top-down (from e.g. national level to organisational level) or bottom-up approach (spread from individual level to organisational level) can be used.

Complexity of a system is reflected in the amount, diversity and division of groups involved in the delivery of health care, such as: the 'consumers of prevention': the potential patients;

actual patients; health care professionals and organisations; insurers, payers and suppliers (Begun *et al.*, 2003:271). The health system of South Africa is a complex system as it shows non-linearity and includes a variety of elements, stakeholders, organisational forms, relations between organisations that are evolving and the levels of care (Atun, de Jongh, Secci, *et al.,* 2010:107; Begun *et al.*, 2003:252; Anderson, 1999:216).

1.6 Research approach and study design

The research approach and design of the study depends on the research question asked, and should fit the context wherein research is done (Crossan, 2003:48). This paragraph briefly points out the study design and different methods applied in this study.

1.6.1 Study design

The study addressed the 2 objectives with steps to develop the end-product. Table 1 outlines the applicability of the objectives of the study. The design and methods are outlined in figure 1.2.

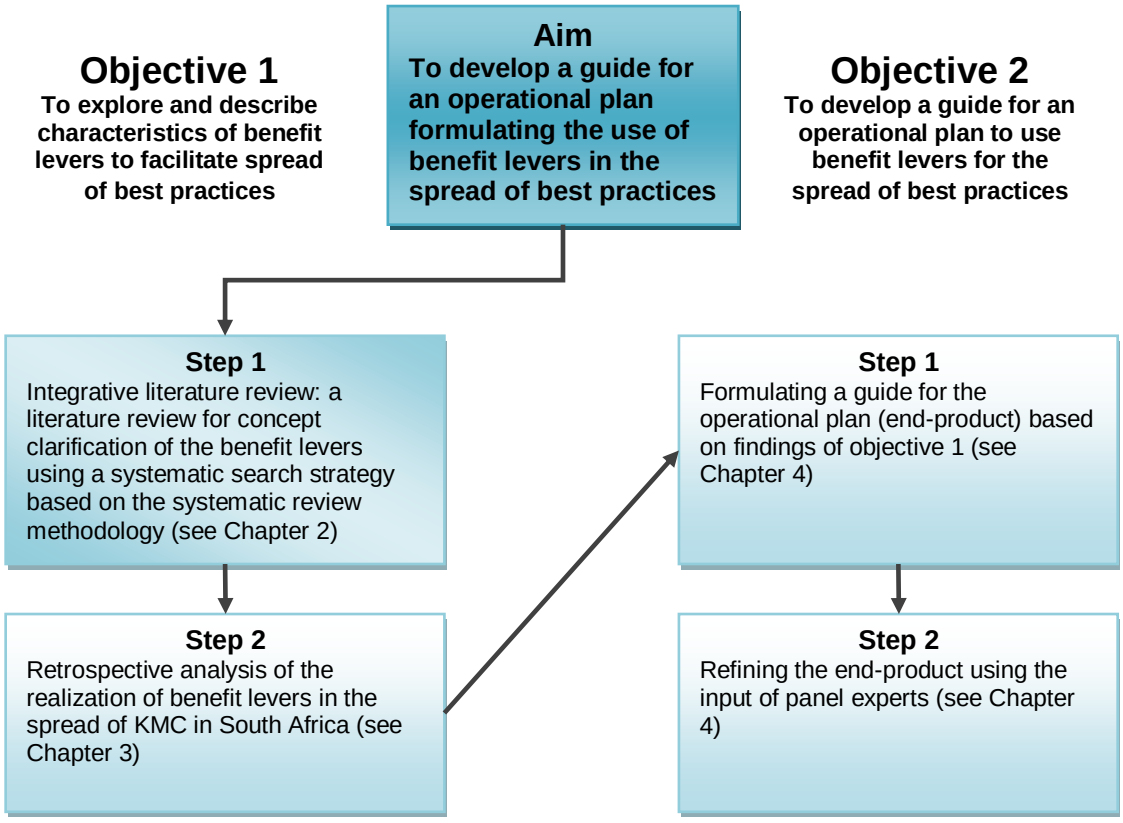


Figure 1.2: Research design of the study

The next Chapters will explain the realisation of the study in terms of the steps per objective in more detail.

To ensure that this study was done rigorously, measures to reduce bias were taken into consideration throughout this study, as outlined in the next paragraph.

1.7 Rigour

Rigour refers to *validity* (both *internal* and *external* validity) and *reliability*. Validity refers to the "measure of truth or accuracy of a claim" (Burns & Grove, 2005:215) and whether what is measured in the study is a true reflection of the construct being studied (Klopper & Knobloch, 2010:320). Internal validity refers to truth of reality (Burns & Grove, 2005:215), while the term external validity can be related to the ability to generalise and contextualise the findings of the study (Burns & Grove, 2005:218–219).

Reliability refers to the extent of consistency of the measure (Burns & Grove, 2005:749) which can be affected by four aspects: the researcher, the participant, the instrument and the context in which the research occurs (Mouton & Marais, 1996:79).

Further, according to Klopper and Knobloch (2010:323-325) in order to conduct valid scientific knowledge, universal standards based on epistemological standards must be adhered to, which include: *good definitions*, whereby the strategy involves both quantitative and qualitative theoretical validity; *truth value*, including the credibility strategy (qualitative) and internal validity strategy (quantitative); *applicability*, involving the transferability strategy (qualitative) and external validity strategy (quantitative); *consistency*, including the dependability strategy (qualitative) and reliability strategy (quantitative); *neutrality*, involving the confirmability strategy (qualitative) and objectivity strategy (quantitative); and *logic,* referring to the inferential validity strategy, which is both qualitative and quantitative.

Table 1.4 shows what types of rigour and which strategies were taken into consideration conducting this study.

Table 1.4: Strategies to increase rigour

Objective 1-Step 1: Integrative literature review	
Types of rigour	**Strategies to increase rigour**
Validity	• The problem and purpose were clearly stated (Badr, 2007:80); • To ensure content and theoretical validity terminology/concepts (benefit levers) used in the review were systematically defined (see Chapter 2) (Klopper & Knobloch, 2010:319); • The problem stated was supported by, and based on a theoretical framework (Bravata, McDonald, Shojania, *et al.,* 2005:1063); • The literature search was clearly described (O'Mathuna, Fineout-Overholt & Kent, 2008:104) and conducted as thoroughly as possible by identification of a complete set of relevant documents regarding the four benefit levers (Hopewell, Clarke, Lefebvre & Scherer, 2008:3); • Rules of justification were used while conducting the statement synthesis, which means that evidence which did not meet the criteria to be used as high-quality was excluded (Walker & Avant, 2011:122) (see Chapter 2).
Objective 1-Step 2: Semi structured Interviews	
Types of rigour	**Strategies to increase trustworthiness**
Credibility	• Participants were provided with evidence-informed information allowing them to review the draft case and provide the researcher with feedback; the so-called 'respondent validation' or 'respondent feedback' (King & Horrocks, 2010:163; Simons, 2009:131); • A check together with the participants if the reporting confirms the perspective and context of what has been said during the interview (when 'cleaning' the transcribed data) was conducted (King & Horrocks, 2010:148-149; Simons, 2009:132) as well as checking with experts in the method whether they find the findings credible and useful was done to increase external validity (Simons, 2009:132); • Independent coding (including critical thinking regarding the thematic structure, was done in two processes: code-defining and code-confirming (King & Horrocks, 2010:162); • Comparison of the findings from the interviews with concepts in the literature was done (Botma, Greeff, Mulaudzi & Wright, 2010:197); • Peer briefing was used as discussion with other researchers increasing insight (Krefting, 1991:217); • Referential adequacy was used where voice recording with field notes was used to provide a record of the data-collection (Babbie, Mouton, Vorster & Prozesky, 2005:277); • Validity was ensured by investigating the sources of bias (check) whereby the questions 'why' and 'what' were answered before validating the 'how' (validating) and verification of the method by means of theoretical conception (theorising) (Kvale, 2007:123-124).
Transferability	• Analytical generalisation was considered (e.g. whether findings of the study can be utilised to guide what might occur in another (similar) situation) (Kvale, 2007:127).
Transferability & Dependability	• Two content specialists reviewed the interview schedule to ensure it generated data needed to answer the research question (King & Horrocks, 2010:146-147).

Dependability	• A standardised interview schedule with defining constructs of the study, based on evidence found in the literature was used and pilot tested for clarity and practicability (King & Horrocks, 2010:146-147); • Thick description of the context (whereby there are two types of context: *immediate*: non-verbal and paralinguistic and *wider context:* including the level or formality, setting, social dynamics of the participants' lives) during the data collection by means of fieldnotes (King & Horrocks, 2010:146-147), as well as the research process in detail was done to enable the reader to decide if the findings were transferable to his/her own context (Krefting, 1991:217) and to understand how the researcher reached the conclusion from the available data (King & Horrocks, 2010:164)) was done.
Confirmability	• Stepwise replication was used when the researcher as coder and the co-coder discussed the data analysis to reach consensus of the findings (Krefting, 1991:217); • A detailed audit trail which could determine if the conclusions, interpretations and recommendations could be traced to the sources and supported by the inquiry was used (Krefting, 1991:217).
Reliability	• To avoid low-quality recording and ensuring a good quality transcript, the quality of the recording instrument was checked beforehand (King & Horrocks, 2010:144); • In presenting the data, the researcher stayed as close to the evidence as possible by demonstrating the way in which interpretations and findings was developed (Simons, 2009:133); • Dialogical inter-subjectivity (related to as agreement through a rational discourse and reciprocal criticism (Kvale, 2007:120-121)) was done to obtain reliable evidence which was unbiased.
Objective 2-Step 2: The Delphi method	
Confirmability	• To increase rigour in general the researcher kept an audit trail during the data collection (Skulmoski, Hartman & Krahn, 2007:11).
Transferability	• Rigour increased by obtaining response rates which were as high as possible. This was achieved by follow-up of non-respondents (Hasson, Keeney & McKenna, 2000:1012).
Credibility	• Credibility was enhanced when experts were used who were able to 'rise above' conflicts of interest (Linstone & Turoff, 2002:157);
Internal validity	• Content validity was ensured by selecting participants with sufficient knowledge and interest (experts) in the topic (King & Horrocks, 2010:163); • Concurrent validity was increased by the use of successive rounds by using consecutive questionnaires (Hasson *et al.*, 2000:1010,1013); • To assure validity of the results, heterogeneity of the participants was preserved by avoidance of domination in terms of quantity or by strength of personality ("bandwagon effect") (Linstone & Turoff, 2002:4).
The end-product and the study in general	
Confirmability	• To ensure transparency and repeatability in general (Nind, 2006:188), the entire study (including justification of all decisions made) was reported (CEBC, 2009:10) and presented as transparently as possible in order to prevent that relevant information was omitted (CRD, 2009:41).
Confirmability & Logic	• Finally, conclusions and recommendations were only derived from the evidence that was found in order to ensure that they were rigorous (Badr, 2007:80).

In general, whatever methodological approach used, the methodology should be congruent with the researcher's philosophical paradigm (Morse, Barret, Mayan, *et al.*, 2002:14) as discussed earlier on (see paragraph 1.5).

Besides rigour, other factors such as ethical issues were taken into consideration during the conduction of the study, which are outlined in the next paragraph.

1.8 Ethical considerations

Ethics is related to the viewpoint (e.g. the researcher's viewpoint) and is defined as "the accumulation of own understanding, feelings, positions and principles around specific issues" (King & Horrocks, 2010:104). Ethics is interwoven in the whole research process and starts when formulating the research question (King & Horrocks, 2010:105).

For this study the researcher acknowledged the ethical guidelines developed by the National Department of Health South Africa (NDoH), which contain the following: respect and dignity towards the participant; relevance of the research to contribute to national and individual health development; competence of the researcher; informed consent; privacy and confidentiality; obligation of the researcher to publish results; and conflict of interests to be taken into consideration by disclosure of sources (NDoH, 2004:3-6).

Further, the researcher is committed to ethical research according to the values of the North-West University, which entails *"human dignity, equality, freedom, integrity, tolerance, respect, commitment to excellence, scholarly engagement, academic freedom and justice"* (NWU, s.a.:1).
The researcher adhered to the codes of conduct and ethics (which are supported by the North-West University);

- "[As a student I will] maintain the highest standard of honesty and integrity in obtaining relevant study materials, doing assignments, writing tests and examinations and in presenting my academic and non-academic achievements to any other person(s) throughout my life" – Code of Conduct (Landman, Punt & Painter-Morland, 2002:33).
- "[We commit ourselves] to uphold human dignity in all our activities, undertaken to develop the full potential of others and of ourselves, requiring that we practise and promote accuracy, honesty, truthfulness, trustworthiness and loyalty towards the University and all its people" – Code of Ethics (BESA, s.a.:33).

Further, there are general ethical issues that were taken into consideration which will be outlined as follows:

Ethics taken into consideration

- The researcher's responsibility to carry out research of high quality whereby the researcher should be aware of how the research will be read, re-interpreted and used. High standards were maintained concerning planning, conducting and reporting the research. These aspects were conducted as carefully as possible in collaboration with the research committee and supervisors (King & Horrocks, 2010:105; Burns & Grove, 2009:80; Rossouw, 2005:40).
- The researcher should be competent and accurate and take auditability into consideration. The researcher was consistent in the decision making at every stage of the research process and transparency was ensured through detailed reporting of the decisions made in the selection and obtaining of relevant data (Beck, 1993:263).
- The researcher's responsibility to conduct research in an honest way (Rossouw, 2005:40). Honesty in this study was ensured by upholding integrity through stating both supporting and opposing points of view found in the data. Plagiarism was avoided by giving credit where it is due in the text and including bibliographic details in the list of references. The entire study was conducted as clearly as possible and is an honest reflection of the whole research process (Burns & Grove, 2009:212; Brink, 2006:30–43).
- The researcher should take ownership of data whereby the participant's language should be considered which might change due to the researchers jargon (King & Horrocks, 2010:121).
- It is the researcher's responsibility to share the research results (Brink, 2006:30–43; Cummings, 2007). The research results, which were obtained from concept clarification and empirical evidence (in the end-product of a strategy for an operational plan), should be shared with other scientists and the public in an understandable way (Olivier, 2003:17,19). Therefore, this study will be submitted for publication in peer-reviewed journals.

Ethics taken into consideration during Interviews (Objective 1 – Step 2) (adapted from King & Horrocks, 2010:115; Burns & Grove, 2009:194-197, 200-205; Alasuutari, Bickman & Brannen, 2008:99-100; Brink, 2006:31-42)

- *Informed consent*

Informed consent is a process which is related to negotiation whereby the researcher provides as much information as possible in order for the participant to make an informed decision regarding the extent of involvement (King & Horrocks, 2010:110).

Permission from each participant individually (before the interviews and surveys completed by the expert panels) was only sought after the Ethics approval from the North-West University was granted (see Appendix B). After the key informants were contacted, they were provided with information about the study (including the purpose of the study and any risks or benefits), before asking those if they would provide signed consent that they were willing to participate. The participant's consent was asked to record the interview. Participants were expected to participate in semi-structured individual interviews that lasted a maximum of 1,5 hours.

- *Voluntary participation*

Key informants were ensured that their participation was voluntary and that they could withdraw at any time without negative consequences for them.

- *Confidentiality and anonymously*

Participants were ensured that all their data were anonomised and kept confidential. Details of participants who were eligible and interested to participate in the individual interviews were kept in a separate document and used for research purposes only. Before interviews were conducted informed voluntary and written consent was obtained and reconfirmed at the start of each interview. During transcriptions of the interviews the participant's anonymity was ensured by replacing their names by codes (King & Horrocks, 2010:120). For the interviews, the consent forms were stored separately from the transcribed interviews to protect the identity of participants. During interviews pseudonyms of the participants' choice were used. No real names appeared in the transcriptions or report. Voice recordings, transcriptions and field notes were locked in a special data cupboard at the School of Nursing Science where it will be kept for a period of 5 years. For the Delphi technique, anonymous responses were collected. "Quasi-anonymity" applied as for a response rate to be rigorous 70% is needed, non-respondents have to be followed up, however the participants' opinions and judgements remained anonymous (Hasson *et al.,* 2000:1012).

For the Delphi technique, the opinions of the participants were made anonymous by an independent researcher before analysis was done.

- *Privacy*

Semi-structured individual interviews were conducted in a private and comfortable venue of the participants' choice, or telephonically.

- *Beneficence*

The key informants might not directly have benefited from the study; however, insight into their experiences with the spread of the KMC, and the use of benefit levers to spread best practices provided the researcher with data which guides the development of an operational plan which will be made accessible to improve health outcomes and provide better care.

Ethical considerations go beyond micro-ethics (e.g. protecting the participant) and also include macro-ethics (which entails the value of the developed evidence for wider (social) context (Kvale, 2007:31). Social sciences must serve both scientific and human interest (Kvale, 2007:23). This study served a higher context as the developed guide for an operational plan is expected to improve the implementation and spread of best practices and finally the health (care) outcomes.

1.9 Summary

This Chapter provided an overview which explained systematically how this study was conducted in order to finally answer the research question stated. Benefit levers (factors contributing to system-wide spread) might help to promote the spread of best practices. This study aimed therefore to guide the development of an operational plan through the use of benefit levers in the spread of best practices.

The research question for the research methods was provided. The paradigmatic perspective of the researcher was discussed, concept clarification was given, and the research approach and study design and what methods were used in this study were explained. Rigour and ethical considerations were mentioned.

Chapter 2 provides an overview of the background and operationalisation of step 1 of objective 1 of this study: concept clarification of the benefit levers for the spread of best practices by means of an integrative literature review.

CHAPTER 2

Concept clarification of the benefit levers for the spread of best practices

2.1 Introduction

Chapters 2 and 3 will discuss the research method, results and conclusions of the two steps that constitute the first objective. In this chapter, the first step of the study will be explained: the integrative literature review to clarify the benefit levers of which method and steps as well as the application thereof, are outlined (see paragraph 2.2). A summary of the findings (see paragraph 2.3) and a summary of the chapter are provided (see paragraph 2.4).

2.2 Integrative literature review

An integrative literature review was used to clarify concepts in the literature (the benefit levers: “alignment”; “permeation plans”; “leadership for change”; and “supporting and reinforcing structures” (Edwards *et al.*, 2011:15)). An integrative literature review was used as other documents, in addition to research studies which are usually not included in a systematic review, are included (Ellis, 1991:233). However, in order to search all available evidence regarding the benefit levers and to ensure no important information was missed, a systematic review search method was used, the steps of which (adapted from Academy of Nutrition and Dietetics, 2012:6–74; Magarey, 2001:377) and the application thereof for this study, are explained in the following paragraphs.

2.2.1 Step 1: Formulation of the review question

The review question should serve the purpose of the study, should be specific enough to focus on applicable literature during the search, but also be broad enough to “not overly limit the scope of the literature search” (Academy of Nutrition and Dietetics, 2012:17). A focused stated question is important to clarify the link between applicable research and the area in which evidence-informed knowledge is required for practice (Academy of Nutrition and Dietetics, 2012:6). A review question must be answerable and searchable (Academy of Nutrition and Dietetics, 2012:19, Melnyk & Fineout-Overholt, 2005:30). Furthermore, a clearly stated, focused, answerable and searchable question helps to ensure a rigorous review as

the question guides the search strategy and which data need to be extracted (Green, 2005:272; Briner & Denyer, s.a.:345).

To formulate the review question, a team of experts can be consulted (Briner & Denyer, s.a.:272). For this study the review question was formulated in consultation with experts, experienced in conducting reviews. Further, the intervention involved the benefit levers to facilitate the spread of best practices (outcome). The population was not included in the question; however, all documents/studies regarding the topic were searched. The review question was formulated as follows:
"What are the characteristics of the benefit levers Alignment, Permeation plans, Leadership for change and Supporting and reinforcing structures to facilitate the spread of best practices?"

2.2.2 Step 2: Gathering and classifying the evidence (sampling procedure)

Gathering the evidence should be comprehensive and sensitive to improve the credibility of the review, reduce bias and increase the repeatability of the search (CEBC, 2009:2–3; CRD, 2009:19). Step 2 involves the formulation of a search strategy. The inclusion and exclusion criteria, keywords, sources of evidence, role of the librarian, the documentation of the search and selection of the documents to be included, are explained as follows:

2.2.2.1 Inclusion and exclusion criteria

In order to select only the relevant documents from a large amount of literature obtained in the search, the researcher should state inclusion and exclusion criteria beforehand. These criteria are related to the elements of the research question, such as subject and outcome (Kitchenham, 2004:9). Inclusion criteria could concern the type of study design, because reliability of the results and validity overall are related to the study design (CRD, 2009:9). Further, language could be a criterion, to avoid the infiltration of language bias, which occurs when only one particular language is used and publications in other languages are excluded (CRD, 2009:12). Exclusion criteria could involve that the documents/studies did not answer the research question or address the hypothesis, the study design was not appropriate to the research question, the sample size was not large enough, or a lack of control existed within the study (Greenhalgh, 1997:243). The inclusion and exclusion criteria for this study were as follows:

Inclusion criteria

The sample included all documents/studies that met the following inclusion criteria*:*

- Documents/studies regarding the benefit levers for the spread/diffusion of best practice(s)/innovation(s).
- Documents/studies regarding the spread/diffusion of best practice(s)/innovation(s).
- Documents/studies concerning the spread/ diffusion of innovation(s)/ best practice(s) in the context of nursing/health care.
- All documents/studies published in Afrikaans, English or Dutch; as these are the languages the researcher is proficient in.
- Research reports;
- Non-research documents such as expert opinions, guides etc. (Non-research documents were only included when the following conditions were met: the author or organisation is an expert in the field based on the author's education, work, and university affiliations; the author has published extensively on the topic; others have cited the author's work; or the author is a recognised speaker in the relevant field (Newhouse, Dearholt, Poe, *et al.,* 2007:115)).

Exclusion criteria

All documents that met the following criteria were excluded:

- Documents/studies irrelevant to the research or review question.
- Documents/studies concerning the (benefit levers for the) spread/diffusion of best practice(s)/innovation(s) in the context other than nursing/health care.
- Non-research documents when classified as non-expert opinion.
- Duplicates.

The aim of the search was to include all documents relevant to the review question. Therefore, at first, a broad search was conducted to ensure that all possible documents were included (*sensitivity*). Thereafter, filtering was done to ensure that all documents included were relevant (*specificity*).

2.2.2.2 Keywords

A broad combination of keywords was used to search the literature on the topic. A scoping search was conducted in order to explore which keywords were most applicable and should be used. Keywords decided on had to be put in the right context as the model and the concepts were developed in the Canadian context and those concepts could be "coin terms" which could cause confusion in other settings unfamiliar with these concepts. Examples of

such concepts are “benefit levers”, “spread” and “best practices”. Further, a preliminary search to refine the (combination of) keywords found that “benefit levers” as a keyword did not yield any relevant results probably because this keyword is a coined term. Further, also “spread” used as a keyword did not yield results. Roll-out and scale-up were also searched; however, did not yield documents relevant to the use of benefit levers in the spread of best practices. “Best practices” used as a keyword was usually associated with implementation, adoption and dissemination of evidence. Therefore the keywords were rather based on “diffusion of innovations” instead of using “spread” or “benefit levers” as individual keywords. Further, “evidence-based practice” instead of “best practices” was used as evidence-based practice is a more commonly used concept.

In general the following keywords were used:
(“diffusion of innovation” or “change” or improve* or innovate*) **and** (“evidence-based practice” or “evidence-based practice”) **and** (“health system*” or “nurs*”).

However, some databases yielded a lack of (relevant) results when the full combination of keywords was used. Therefore, the researcher had to use only selected keywords in order to obtain sufficient and relevant results. A table was developed to indicate the specific combination of keywords used in each database (see Appendix C).

2.2.2.3 Sources of evidence

In identifying the sample, multiple sources should be used, such as electronic databases, catalogues and grey literature. These sources should be used to ensure that both published and unpublished documents are found (CEBC, 2009:6). Different searches could be combined (CRD, 2009:16; Kitchenham, 2004:8).

The search in the electronic databases is usually followed by manual searching, which involves scanning the journals that are not available electronically, reference lists from relevant studies and the content of journals, abstracts and other data that are relevant to the research topic in order to serve as a compensation for inaccurate databases (CRD, 2009:17–18). Grey literature, which contains unpublished papers, reports and conference abstracts (CRD, 2009:17–18), can be obtained by contacting the study authors to find out whether the study has been published somewhere else. Internet search engines such as Google and Google Scholar were used in order to ensure that all relevant documents had been identified (Eysenbach, Tuische & Diepgen, 2001:211).

The following sources (both electronically and manually) were used:

Electronic databases (international):

- Scopus (journal articles).
- ProQuest (theses and dissertations).
- EBSCOhost (journal articles) including: Academic Search Premier, Africa-Wide Information, CINAHL, CINAHL with Full Text, eBook Collection, ERIC, Health Source-Consumer Edition, Health Source: Nursing/Academic Edition, MasterFILE Premier, MEDLINE, PsychARTICLES, PsycINFO and SocINDEX (with Full Text).
- ScienceDirect (journal articles).
- Cochrane (systematic reviews of studies).

Electronic database (national):

- Nexus (National Research Foundation [NRF]).
- SAePublications, Sabinet, including: Current & Completed Research, FS Articlefirst, FS WorldCat, ISAP by the National Library of South Africa, Kovsidex, NDLTD (theses and dissertations), North-West University Catalogue, SA Media, SAePublications, SA Cat, SANB, Subsidie and UCTD.

Grey literature:

- Google Scholar (journal articles).
- Google (research and non-research documents).
- References of identified key studies and non-research documents (see Appendix D for a table with references).

A search in electronic databases did not always yield sufficient results; therefore most relevant papers were searched using references from references lists and seeking advice from experts. This experience is similar with what Greenhalgh, Robert, Bate, *et al.* (2004:7) experienced during the search in their systematic review regarding literature on diffusion, dissemination and sustainability of innovations in health service delivery and organisation.

2.2.2.4 Role of the librarian

Librarians can play a crucial role in many stages of the review. Their role involves applying their knowledge based on experience and training and their abilities to develop search strategies (McGowan & Sampson, 2005:75). A librarian should be involved to help with expanding the search (Kitchenham, 2004:7).

The librarian from the Ferdinand Postma Library at the North-West University (Potchefstroom Campus) was consulted regarding the search strategy, including the choice of keywords and databases. The search strategy, based on the librarian's consultation, was from specific to broad due to that the concepts had to be explored.

2.2.2.5 Documentation of the search

The process of searching must be well documented (Magarey, 2001:378) in order to obtain a comprehensive overview of the search and to ensure transparency and repeatability (CEBC, 2009:5). The record should include full details concerning the information of the databases, the dates of the search, the search strategy and the number of records obtained by every search (CEBC, 2009:5, 21–22).

2.2.2.6 Selection of documents to be included

A search could result in a large amount of initial records that might be included in the review (CRD, 2009:23). To ensure that only relevant and unbiased documents are included in the review, the study selection should be explicit and sensitive, which relates to the extent of precision of the search (Burns & Grove, 2005:357), or in other words how exact the search has been conducted (OED, 2009) and that it has been done in a way that would minimise the risk of errors. Concepts such as "validity", "comprehensiveness", "efficiency" and "relevance" can be taken into consideration during study selection (Scott, Moga, Barton, *et al.,* 2007:681).

To ensure sensitivity, the total number of documents that meet the inclusion criteria of the search strategy should be recorded, although some will be irrelevant. Only documents that clearly do not meet the inclusion criteria and which are duplicated in more than one database or journal should be removed (CEBC, 2009:2–3).

To ensure specificity, irrelevant documents are excluded in the next phase. The relevance of some documents can be determined from the title (and abstract if available) but in other cases the decision can only be made after the full text of the document has been studied, which refers to the "maybe" documents/studies (see Table 2.1).

For this study, the following steps for selection were followed:

1. Reading of titles and abstracts was done (whereby irrelevant documents were excluded according to the inclusion/exclusion criteria).
2. Reading of full text was done of all not clearly relevant documents and were excluded according to inclusion/exclusion criteria.
3. When no full text could be obtained to determine inclusion/exclusion, Inter-Library Loan (ILL) services was used and authors were contacted.

The entire search and selection were documented. Table 2.1 provides a summary of the included and excluded documents of the database and manual search.

Table 2.1: Summary of included/excluded documents (database and manual search)

Database	Included /maybe	Included	Reasons of exclusion n=197						Excluded	Total
			Irrelevant to spread/diffusion of best practice(s)/innovation(s)	*Irrelevant to benefit levers related to spread/ diffusion of best practice(s) /innovation(s)*	*Diffusion of innovation not in context of nursing/ health care*	*Duplicate*	*Non-expert opinion*	*ILL services*		
Scopus	Included	4	2	7	-	-	-	-	9	13
	Maybe	1	28	2	-	-	-	-	30	31
EBSCO host	Included	0	13	5	-	-	-	-	18	18
	Maybe	0	19	1	-	-	-	-	20	20
ProQuest	Included	1	5	2	1	-	-	1	9	10
	Maybe	2	15	19	4	-	-	-	38	40
Science Direct	Included	1	4	2	1	1	1	-	9	10
	Maybe	0	6	-	4	-	-	-	10	10
Cochrane	Included	0	-	-	-	-	-	-	0	0
	Maybe	0	3	-	-	-	-	-	3	3
NEXUS	Included	1	-	-	1	-	-	-	1	1
	Maybe	0	-	-	-	-	-	-	0	0
SAePubli-cations	Included	0	-	1	-	-	-	-	1	1
	Maybe	0	-	-	-	-	-	-	0	0
Sabinet	Included	2	1	1	-	-	-	2	4	6
	Maybe	0	-	-	-	-	-	-	0	0
Google Scholar	Included	3	1	3	6	1	-	-	11	14
Total database search		**14**	**97**	**43**	**17**	**2**	**1**	**3**	**163**	**177**
Manual Google search		6	2	2	-	-	1	-	5	13
References		16	11	10	3	2	1	2	29	45
Total manual search		**22**	**13**	**12**	**3**	**2**	**2**	**2**	**34**	**58**
Total database & manual		**36**	**110**	**55**	**20**	**4**	**3**	**5**	**197**	**235**

ILL services were used and authors were contacted to obtain full-text of possible relevant documents. However, some documents (n=5) remained unobtainable as two books (Wardlaw-Kelly, 2007; Gladwell, 2002) and a thesis (Knudsen, 2003) were too costly to obtain as they were not available in one of the libraries in South Africa. Authors of two articles (Gifford, Davies, Edwards, *et al.*, 2006:72-88; Denis, Hebert, Langley, *et al.*, 2002:60-73) were contacted but did not respond and ILL services were used but were unable to obtain the articles.

Further, some documents (n=3) were excluded because it was unclear whether the authors were experts (Coleman, Katz & Menzel, 1966; Titler, s.a.) or the authors were only cited a few times not related to the topic of this study (Cronje & Moch, 2010:23-28).

2.2.3 Step 3: Performing the critical appraisal

The next step is an in-depth appraisal of the relevant documents to exclude low-quality documents and strengthen the evidence by determining methodological quality and rigour for inclusion in the final sample (CEBC, 2009:4). Critical appraisal is thus the last step of sampling.

From an epistemological perspective, 'evidence' can be defined in different ways, which will be reflected by the hierarchy a researcher uses. A hierarchy of evidence provides appraisal of the level of evidence derived from different types of methods included in the review. The level of evidence was classified as follows:

- Level I refers to good evidence derived from studies that have a strong design and that answer the research question (such as Randomised Controlled Trials, meta-analyses of Randomised Controlled Trials and systematic reviews).
- Level II refers to medium evidence derived from studies containing a strong design. However, these studies contain inconsistency in results caused by bias, inadequate sample size, etc. (such as quasi-experimental studies).
- Level III is limited/poor evidence provided in studies that have a weak design and fail to answer the research question (such as non-experimental studies, qualitative studies, and meta-syntheses).
- Level IV evidence refers to evidence which in the conclusion merely contains the statements and the views of experts based on their clinical expertise (such as clinical practice guidelines).
- Level V evidence is not assignable, which means that evidence is not available to directly support or refute the conclusion (such as expert opinions, case studies and literature

reviews) (Academy of Nutrition and Dietetics, 2012:70; Minnie, 2007:191–192; Newhouse *et al.,* 2007:207, 211).

Non-research documents (such as analyses of literature, theory developing papers, discussion papers, white papers and guides) were classified as Level IV or V evidence as the level of evidence from these documents could not be graded as Level I-III evidence because this evidence was not primary research but secondary research or the sources were unclear.

2.2.3.1 Critical appraisal instruments

A variety of critical appraisal instruments could be used in this study. However, the disadvantage of critical appraisal instruments is that there is not one single tool that can be fully applied to all studies (CRD, 2009:44).

Table 2.2 outlines some of the critical appraisal instruments per type of study available which could be used within the critical appraisal process.

Table 2.2: Critical appraisal instruments per type of study

Type of studies	**Critical appraisal tool**	**Reliability/validity**
Quantitative research	Guidelines for Critical Review Form (Law, Stewart, Pollock, *et al.,* 1998)	Not confirmed, only mentioned that the guidelines were developed by the McMaster University's Occupational Therapy Evidence-Based Practice Research Group. They are written in straightforward terms that can be understood by researchers as well as clinicians and students interested in conducting critical reviews of the literature (Law *et al.,* 1998) The guidelines are used in a variety of reviews
	The evaluation tool for quantitative research studies (HCPRDU, 2005)	Developed and tested in Long, Godfrey, Randall, *et al.*'s feasibility study of systematic reviews in social care (Long *et al*., 2002)
Qualitative research	Critical appraisal instrument for qualitative research studies (CASP, 2006)	CASP instruments were validated through piloting in workshops, feedback and review of the materials (PHRU, 2007)
	Critical review form-Qualitative Studies (Version 2.0) (Letts, Wilkins, Law, *et al.,* 2007)	Not confirmed, however this review form was used in a variety of studies

(Systematic) literature reviews	A measurement tool for the 'assessment of multiple systematic reviews' (AMSTAR) (Shea, Grimshaw, Wells, *et al.,* 2007)	The tool consists of 11 items and has good face and content validity for measuring the methodological quality of systematic reviews (Shea *et al.,* 2007)
	Critical appraisal instrument for reviews (CASP, 2006)	CASP instruments were validated through piloting in workshops, feedback and review of materials (PHRU, 2007)
	Critical appraisal tool: Meta-analysis and systematic reviews (adapted from Centre for Evidence-Based Mental Health) (British Sociological Association Medical Sociology Group, 1996)	Not confirmed, produced by group of researchers from the Centre for Evidence-Based Mental Health (British Sociological Association Medical Sociology Group, 1996)
	PRISMA 2009 Checklist (PRISMA, 2009)	Not confirmed. The general concepts and topics covered by PRISMA are all relevant to several systematic reviews, not just those whose objective is to review the benefits and harms of a health care intervention. However, some amendments of the checklist items or flow diagram will be necessary in particular circumstances (Moher, Liberati, Tetzlaff, *et al.,* 2009).
	Standard Quality Assessment Criteria for Evaluating Primary Research Papers from a variety of fields (Kmet, Lee & Cook, 2004)	The tool has proven useful to appraise systematic reviews, however, as a standard operational definition of internal validity in the literature does not exist, as well as a "gold standard" to associate the tool with; it is unsure whether the tool precisely measures what it should measure (Kmet *et al.,* 2004:9)
AI types of research	The John Hopkins nursing evidence-based practice (JHNEBP) research evidence appraisal tool (Newhouse *et al.,* 2007:210)	Not confirmed, however, the appraisal tool was used in a variety of reviews
Non-research papers	The John Hopkins nursing evidence-based practice (JHNEBP) non-research evidence appraisal tool (Newhouse *et al.,* 2007:210)	Not confirmed, however, the appraisal tool was used in a variety of reviews

The researcher found it challenging to obtain information concerning the validity and reliability of most of the critical appraisal instruments. Therefore, the decision which critical appraisal instruments to use, was made based on the criterion that all instruments should fit to the type of study used, as this strengthened its internal validity (Akobeng, 2005:848). Furthermore, preferably instruments were used of which it was clear that the instruments contained a scientific construct and appraised and interpreted evidence in a valid and reliable way (Katrak, Bialocerkowski, Massy-Westropp, *et al.,* 2004:8). The following instruments were therefore used to critically appraise the following types of evidence:

Quantitative research studies

The evaluation tool for quantitative research studies from the Health Care Practice Research and Development Unit (HCPRDU) was chosen because it provides a complete overview of the following six sub-sections: (1) study evaluative overview; (2) study, setting and sample; (3) ethics; (4) data collection, analysis and potential researcher bias; (5) policy and practice implications; and (6) other comments (HCPRDU, 2005). Furthermore, the tool was

developed and tested in Long *et al.*'s feasibility study of undertaking systematic reviews in social care (Long *et al.,* 2002).

Qualitative research studies

The Critical Appraisal Skills Programme's (CASP) instrument for qualitative research studies was used as it fitted the research design of the samples and had been validated through piloting in workshops, feedback and review of materials (PHRU, 2007). The instrument contains items regarding applicability of the study that is critically appraised, precision and size of the result and validity in general (Mortaz Heijr, 2005) and also largely corresponds with other instruments available (Minnie, Van der Walt & Klopper, 2009:1830).

Systematic review studies

A measurement tool for the 'assessment of multiple systematic reviews' (AMSTAR) was used to appraise the systematic review studies. The tool consists of 11 items and has good face and content validity for measuring the methodological quality of systematic reviews (Shea *et al.*, 2007)

All types of research

For these types of studies the JHNEBP research evidence appraisal tool (Newhouse *et al.,* 2007:206) was used for studies where the design did not fit any of the critical appraisal tools used in this study. Studies in which the design was not clearly defined, such as mixed methods studies that were not clearly defined as quantitative and qualitative, were also appraised using this generic tool. The JHNEBP tool gauges the strength and quality of recommendations made on the basis of research evidence. The tool contains questions that guide the researcher in determining the level of strength of recommendations and the quality of the primary and secondary evidence included in the review (Newhouse *et al.,* 2007:99). The tool for research evidence can be used to appraise both quantitative (experimental, quasi-experimental and non-experimental) and qualitative designs.

Non-research

Non-research documents, including secondary types of evidence, such as literature reviews, discussion papers, expert opinion, guides/guidelines, books, etc. are viewed as part of evidence for practice (Newhouse *et al.*, 2007:4), as sometimes, scientific evidence is not present or lacks to inform nursing practice for the individual patient, population, or system. Evidence from non-research sources can include summaries of research evidence reports and expert opinion (Newhouse *et al.*, 2007:25). One type of non-research involves expert opinions. Expert opinions can be found in published case studies, narrative literature reviews

or written and spoken advice of a recognised expert with extensive clinical experience and expertise (including commentary articles, position statements, case reports, or letters to the editor) (Newhouse *et al.*, 2007:113-114). For non-research evidence the JHNEBP (non) research evidence appraisal tool (Newhouse *et al.,* 2007:206) was used (De Paoli, Manongi & Klepp, 2003).

For this study only 'best evidence' was included (in terms of documents conducted in a rigorous manner). To ensure including only 'best evidence' the (non) research documents were critically appraised and the researcher decided in consultation with experienced researchers that for studies to be called rigorous and thus be included for data extraction, they should obtain a score of at least 6 out of 10 (cut-off point) in case CASP was used as a critical appraisal tool during the critical appraisal process. When critical appraisal tools other than CASP were used, documents were excluded if more than half of the questions/statements could not be answered (positively) overall per document (and the rigour was thus defined as poor/limited). Furthermore, studies were graded according to grades I to V, regarding their strength of evidence (Academy of Nutrition and Dietetics, 2012:104, adapted from Greer, Mosser, Logan & Wagstrom Halaas, 2000:700–712).

2.2.3.2 Documentation of the critical appraisal

The quality appraisal of all the relevant documents should be documented. In addition, a record list should be compiled of documents that were excluded and the reasons for exclusion should also be documented (CRD, 2009:25).

Table 2.3 outlines the critical appraisal of this study.

Table 2.3 Critical appraisal

Critical appraisal (n=38)			
Quantitative method studies (n=4)			
Study 1/4 Dirksen, C.D., Ament, A.J.H. & Go, P.M.N. 1996. Diffusion of six surgical endoscopic procedures in the Netherlands. Stimulating and restraining factors. *Health Policy,* 37:91-104	**Type of study/design** Non-experimental, descriptive design using surveys **Setting** All Dutch surgical clinics conducting laparoscopic cholecystectomy in The Netherlands	**Research methods** *Sample:* 138 wide-ranging physicians from all Dutch surgical clinics practising laparoscopic cholecystectomy in The Netherlands *Data collection:* 131 questionnaires. The survey included the following questions: (1) Which of the six endoscopic procedures are done in your clinic? (2) Since when (month and year) are they done? A 7-point scale was used *Analysis:* statistical analysis. The non-parametric Mann-Whitney U test was utilised to analyse variances in issue valuation among adopters and non-adopters, variances in time of adoption among teaching and non-teaching hospitals and for alterations in the number of endoscopic events approved between these hospital types. A chi-square test was done to test for a link between adoption and hospital type. For all tests, a two-sided P-value below 0.05 was used to measure statistically significance	**Rigour** Instrument used: Evaluation tool for quantitative research studies (HCPRDU) The aim was clearly stated. The relationship of the study with the area of the review topic was clear. The sample selection (size) was clear. The analysis was clear. Group comparison was unclear. The validity of measurement was not clear. Policy and practice implications could not be provided. Overall, the study was fairly planned, executed and reported = medium rigour Level of evidence: Level III (non-experimental) **Relevant benefit lever(s)** Supporting and reinforcing structures Decision: included
Study 2/4 Hanberg, A. 2008. The diffusion of high fidelity simulation in nursing education: Barriers and recommendations for best practice. Greeley: University of Northern Colorado. (Thesis - Ph.D.). 220 p	**Type of study/design** Non-experimental correlational design **Setting** 228 Nursing educational institutions in USA	**Research methods** *Sample:* 228 nursing educational institutions in USA Inclusion criteria: -nursing faculties in USA -nursing faculties training in Associate and/or Baccalaureate nursing programs -nursing faculties which have any experience (from zero to widespread) with simulation Exclusion criteria:	**Rigour** Instrument used: Evaluation tool for quantitative research studies (HCPRDU) The aim was clearly stated. The relationship of the study with the area of the review topic was clear. The sample selection (size) was clear. The analysis was clear. The validity of measurement was clear. Ethical issues were considered. Policy and practice implications were

		-nursing faculties teaching exclusively in graduate and doctoral level nursing -nursing faculties with no knowledge of High Fidelity Simulation -nursing faculties reluctant to give informed consent Sampling methods: to do the psychometric analyses of the tool, stratified random sampling was done of 5000 recorded nurses. Power calculation was done. Then a non-probability sampling of nursing faculty members was done *Data collection:* the BARRIERS tool was used as a template as no tool was found. BARRIERS tool was tested for internal consistency using the Cronbach Alpha and test-retest reliability using Pearsons correlation. Also factor analysis was done. The BARRIERS tool includes 4 sub-scales: features of the adopter, the organisation, the innovation and communication, including 29 questions on a 5 point Likert Scale. The adapted BARRIERS tool was pilot tested. After adjustment the tool involved 29 questions *Analysis:* the analysis involved simple descriptive analysis whereby means, frequencies and where appropriate, standard nonconformities for all study variables were used. Further inferential analysis was used which included t-tests, analysis of variance (one-way ANOVA) correlations, factor analysis and furthermore the multiple linear regression. Correlations were calculated using the Pearson Product –Moment Correlation regression modeling	provided. Overall, the study was well planned, executed and reported =good rigour Level of evidence: Level III (non-experimental) **Relevant benefit lever(s)** Supporting and reinforcing structures Decision: included

Study 3/4 Kennedy-MacDonald, T. 2008. Adoption of a clinical innovation "Best Practices for Concurrent Mental Health and Substance Use Disorders" in Ontario, a one-year follow up. Toronto: University of Toronto (Thesis – M.Sc.). 135 p	**Type of study/design** Cross-sectional study using a voluntary quantitative self-administered mail-out survey **Setting** 260 mental health and addiction facilities in Ontario, Canada	**Research methods** *Sample:* 260 mental health and addiction facilities in Ontario *Data collection:* using a voluntary, self-administered quantitative mail-out survey *Analysis:* The analysis included simple descriptive outlines such as means, frequencies and where appropriate, standard deviations for all study variables. Further analysis included t-tests, analysis of variance (one-way ANOVA) correlations, factor analysis and multiple linear regression modeling	**Rigour** Instrument used: Evaluation tool for quantitative research studies (HCPRDU) The aim was clearly stated. The relationship of the study with the area of the review topic was clear. The sample selection (size) was clear. The analysis was clear. The validity of measurement was clear. Ethical issues were considered. Policy and practice implications were provided. The sample size was unclear and generalizability of populations and findings was unclear. Overall, the study was well planned, executed and reported =good rigour Level of evidence: Level III (non-experimental) **Relevant benefit lever(s)** Supporting and reinforcing structures Decision: included
Paper 4/4 Naleppa, M. 2009. Organizational readiness factors: are we ready to adopt and implement clinical best practices in hospitals? Maryland: Maryland University College. (Dissertation – Ph.D.) 134 p	**Type of study/design** Descriptive study using a variable-related quantitative questionnaire instrument and scales **Setting** Maryland hospitals, Maryland USA	**Research methods** *Sample:* employees of 26 Maryland hospitals (1st group) and 16 hospitals in 12 states (2nd group) with a total of 42 hospitals in 13 states *Data collection:* using a cross-sectional questionnaire, and included intellectual interviews to provide direct feedback for alterations to the survey instrument .The survey was web-based, self-administered and intended to examine the insights of the perinatal unit clinical members about the adoption and implementation of medical best practices *Analysis:* correlational analysis using Pearson's Correlation Coefficients Test	**Rigour** Instrument used: Evaluation tool for quantitative research studies (HCPRDU) The aim was clearly stated. The relationship of the study with the area of the review topic was clear. The sample selection (size) was clear. The analysis was clear. The validity of measurement was clear. Policy and practice implications were provided. It was unclear whether ethical issues were considered and generalizability of findings was unclear. Overall, the study was well planned, executed and reported =good rigour Level of evidence: Level III (non-

		(R^2) and a Significance Test (þvalue) was done and the Simple Linear Regression (r)	experimental) **Relevant benefit lever(s)** Supporting and reinforcing structures Decision: included
Qualitative method studies (n=7)			
Study 1/7 De Lusignan, S., Shaw, A., Wells, S. & Rowlands, G. 2005. Why do some practices innovate: A qualitative study of the views of primary care professionals. *Clinician in Management* ,13(3-4):135-143	**Type of study/design** Qualitative study approving of an iterative thematic method using individual semi-structured interviews **Setting** London, UK	**Research methods** *Sample:* 81 interviews, one with a practice nurse, practice manager and general practitioners of each organisation *Data collection:* semi-structured interviews were done with one practice nurse, practice manager and general practitioner from each organisation *Analysis* interview transcripts were analysed for developing themes using QSR N-VIVO software	**Rigour** Instrument used: CASP qualitative study The study had a clearly focused aim. An appropriate qualitative methodology was used. The recruitment strategy was appropriate to the aims of the research. The data were collected in a way that addressed the research issue. In general the research showed its value for further research and recommendations. It was unclear whether an appropriate research design was used to address the aims of the research and what the relationship between researcher and participants was. It was unclear whether ethical issues were taken into consideration, whether data analysis was sufficiently rigorous and if there was a clear statement of findings. Overall, the study was fairly planned, executed and reported = medium rigour (7/10) Level of evidence: Level III (qualitative) **Relevant benefit lever(s)** Leadership for change and Supporting and reinforcing structures Decision: included

Study 2/7 Edwards, N., & Grinspun, D. 2011. Expanding spread within and across organizations **(study 3)** *in:* Edwards, N., & Grinspun, D. 2011. *Understanding whole systems change in healthcare: the case of emerging Evidence-informed Nursing service delivery models*. Ottawa: Canadian Health Services Research Foundation. 22 p.	**Type of study/design** *Phase 1:* Secondary analysis of data from a prior study on long-term sustainability *Phase 2:* Exploratory qualitative case study **Setting** Canada	**Research methods** **Phase 1:** *Sample:* key informants from sites *Data-collection:* interviews, site visits, and a document analysis *Analysis:* qualitative analysis using a scoring system **Phase 2:** *Sample:* participants from one hospital and one community home-care organisation *Data-collection:* focus groups *Analysis:* thematic analysis using NVIVO 8 qualitative software	**Rigour** Instrument used: CASP qualitative study The study had a clearly focused aim. An appropriate qualitative methodology was used. The recruitment strategy was appropriate to the aims of the research. The data were collected in a way that addressed the research issue. In general the research showed its value for further research and recommendations. It was unclear whether an appropriate research design was used to address the aims of the research and what the relationship between researcher and participants was. It was unclear whether ethical issues were taken into consideration, whether data analysis was sufficiently rigorous and if there was a clear statement of findings. Overall, the study was fairly planned, executed and reported = medium rigour (7/10) Level of evidence: Level III (qualitative) **Relevant benefit lever(s)** Supporting and reinforcing structures Decision: included
Study 3/7 Edwards, N., & Grinspun, D. 2011. Starting with Basics: Improving Communication to Improve Long-term Care **(study 2)** *in:* Edwards, N., & Grinspun, D. 2011. *Understanding whole systems change in healthcare: the case of emerging Evidence-informed Nursing service delivery models*. Ottawa: Canadian Health Services Research Foundation. 22 p.	**Type of study/design** Retrospective case study containing three innovations: early postpartum discharge, minimal limitations, and needle exchange **Setting** Canada	**Research methods** *Sample*: key informants: policy decision makers, care providers, researchers *Data collection:* interviews and document analysis *Analysis:* interviews were audiotaped, transcribed, coded and classified into main themes and sub-themes	**Rigour** Instrument used: CASP qualitative study The study had a clearly focused aim. An appropriate qualitative methodology was used. The recruitment strategy was appropriate to the aims of the research. The data were collected in a way that addressed the research issue. In general the research showed its value for further research and recommendations. It was unclear whether an appropriate research design was used to address the aims of the research and what the relationship

			between researcher and participants was. It was unclear whether ethical issues were taken into consideration, whether data analysis was sufficiently rigorous and if there was a clear statement of findings. Overall, the study was fairly planned, executed and reported = medium rigour (7/10) Level of evidence: Level III (qualitative) **Relevant benefit lever(s)** Alignment and leadership for change Decision: included
Study 4/7 Harvey, J. & Holley, C. 2011. A case study of the implementation of bedside reporting- A Capstone Project Presented to the Faculty of the School of Nursing. New Jersey: University of Medicine and Dentistry of New Jersey. (Ph.D. – Mini-dissertation). 118 p.	**Type of study/design** Case study using focus groups and observation of respondents **Setting** Ocean Medical Center (OMC) a 281-bed community hospital in Brick, New Jersey	**Research methods** *Sample:* purposeful sample of nurses on one of two nursing wards within the organisation. Recruitment: through advertisement and discussion during staff meetings *Data collection:* brief questionnaires, focus groups and observation of participants were used to obtain data on the innovation, its result and adoption *Analysis:* content analysis, thematic analysis and statistical analysis	**Rigour** Instrument used: CASP qualitative study The study had a clearly focused aim. An appropriate qualitative methodology was used. An appropriate research design was used to address the aims of the research. The recruitment strategy was appropriate to the aims of the research. The data were collected in a way that addressed the research issue. In general the research showed its value for further research and recommendations. It was unclear what the relationship between researcher and participants was and whether ethical issues were taken into consideration. It was unclear whether data analysis was sufficiently rigorous and whether findings were clearly stated. Overall, the study was well planned, executed and reported = good rigour (8/10) Level of evidence: Level III (qualitative) **Relevant benefit lever(s)** Leadership for change Decision: included

Study 5/7 Murrey, M.A., Smith Hichugi, K.A., Edwards, N., Greenough, M. & Hoogeveen, K. 2011. Practice Change in Long-Term Care Facilities in Ontario: Views of Managers and Staff. *Geriatric Nursing*, 32:418-428	**Type of study/design** Descriptive study with a participatory action approach using semi-structured individual interviews **Setting** 19 Ontario long-term care facilities	**Research methods** *Sample:* 126 staff and managers from 19 randomly designated Ontario long-term care organisations Recruitment: 158 LTC sites through mailed invites and telephone communication, sample size: 23 (14.5%) *Data collection:* semi-structured interviews *Analysis:* audiotapes were transcribed verbatim and then entered into the NVIVO software program Content analysis was done by 1) coding transcribed data, 2) identifying themes, and 3) searching for patterns and relationships amongst the conceptual groups	**Rigour** Instrument used: CASP qualitative study The study had a clearly focused aim. An appropriate qualitative methodology was used. An appropriate research design was used to address the aims of the research. The recruitment strategy was appropriate to the aims of the research. The data were collected in a way that addressed the research issue. Ethical issues were taken into consideration. In general the research showed its value for further research and recommendations. It was unclear what the relationship between researcher and participants was. It was unclear whether data analysis was sufficiently rigorous and whether findings were clearly stated. Overall, the study was well planned, executed and reported = good rigour (8/10) Level of evidence: Level III (qualitative) **Relevant benefit lever(s)** Leadership for change and Supporting and reinforcing structures Decision: included
Study 6/7 Ploeg, J., Skelly, J., Rowan, M., Edwards, N., Davies, B., Grinspun, D., Bajnok, I. & Downey, A. 2007. Factors influencing best practice guideline implementation. Lessons learned from administrators, nursing staff, and project leaders. *Worldviews on Evidence Based Nursing,* 4(4):210-219	**Type of study/design** Evaluative study, descriptive and comparative in nature using telephonic interviews **Setting** 22 agencies (including hospitals, long-term care agencies, and community care organisations) in the province of Ontario, Canada	**Research methods** *Sample:* 59 administrators, 58 staff and 8 project leaders *Data collection:* semi-structured telephone interviews post implementation *Analysis:* qualitative thematic analysis	**Rigour** Instrument used: CASP qualitative study The study had a clearly focused aim. An appropriate qualitative methodology was used. An appropriate research design was used to address the aims of the research. The recruitment strategy was appropriate to the aims of the research. The data were collected in a way that addressed the research issue. Ethical issues were taken into consideration. Data analysis was sufficiently rigorous and findings were clearly stated In general the research

			showed its value for further research and recommendations. It was unclear what the relationship between researcher and participants was. Overall, the study was well planned, executed and reported = good rigour (9/10) Level of evidence: Level III (qualitative) **Relevant benefit lever(s)** Leadership for change and Supporting and reinforcing structures Decision: included
Study 7/7 Waterman, H., Marshall, M., Noble, J., Davies, H., Walshe, K., Sheaff, R. & Elwyn, G. 2007. The Role of Action Research in the Investigation and Diffusion of Innovations in Health Care. The role of action research in the investigation and diffusion of innovations in health care: The PRIDE Project. *Quality Health Research,* 17(3):373-381	**Type of study/design** Qualitative research study using participatory action research design **Setting** Two Primary Care Trusts in the north of England and two Local Health Boards in South Wales	**Research methods** *Sample:* corporation with 103 members of the public, practice staff from 19 general practitioners (GPs), National Health Services (NHS) managers from 4 Primary Care Organisations (PCOs), and the research team *Data collection:* formal and informal interviews, focus groups, questionnaires, participant observation, and document review *Analysis:* not mentioned (qualitative analysis?)	**Rigour** Instrument used: CASP qualitative study The study had a clearly focused aim. An appropriate qualitative methodology was used. An appropriate research design was used to address the aims of the research. The relationship between researcher and participants was mentioned. In general findings were clearly stated. In general the research showed its value for further research and recommendations. It was unclear whether the recruitment strategy was appropriate to the aims of the research. It was unclear whether the data were collected in a way that addressed the research issue. It was unclear whether ethical issues were taken into consideration. It was unclear whether data analysis was sufficiently rigorous. Overall, the study was fairly planned, executed and reported = medium rigour (6/10) Level of evidence: Level III (qualitative) **Relevant benefit lever(s)** Alignment and Supporting and reinforcing structures

			Decision: included
Systematic reviews (n=1)			
Study 1/1 Greenhalgh, T., Robert, G., Bate, P., Kyriakidou, O., Macfarlane, F. & Peacock, R. 2004. How to Spread Good Ideas-A systematic review of the literature on diffusion, dissemination and sustainability of innovations in health service delivery and organization. London: National Coordinating Centre for NHS Service Delivery and Organisation R & D (NCCSDO). 424 p	**Type of study/design** Systematic review	**Research methods** *Search strategy:* *Sources:* a comprehensive search strategy including 11 separate electronic databases and hand searching 30 journals in the health care, health services research, organisation and management, and sociological works and references was used. *Inclusion criteria:* Studies were included which • had been conducted in the health service sector; • involved innovation in service delivery and organisation; • regarding spread or sustainability of the innovations; and • had met severe standards for methodological quality. The search strategy obtained 6 000 abstracts and 1 200 full-text documents and 100 book(s) (chapters) that were probably applicable, of which 450 were included. *Data extraction:* a standard data extraction form was utilised to summarise the research question, research design, validity and reliability of methods, sample size and power, strength of results, and validity of outcomes for each experiential study. *Data synthesis:* the results of primary studies were gathered under six wide-ranging themes: 1 the innovation 2 the adoption progression 3 communication and effect (including social networks, opinion	**Rigour** Instrument used: AMSTAR measurement tool to assess the methodological quality of systematic reviews The research question and inclusion criteria were established before the conduct of the review. A comprehensive literature search was performed. A list of studies (included and excluded) was provided. The characteristics of the included studies were provided. The scientific quality of the included studies was assessed and documented. The methods used to combine the findings of studies were appropriate. Conflict of interest was stated. Duplicate study selection and independent data extraction were unclear. The status of publication (i.e. grey literature) was not used as an inclusion criterion. It was unclear whether the scientific quality of the included studies was used appropriately in formulating conclusions. It was unclear whether the likelihood of publication bias was assessed. Overall, the study was fairly planned, executed and reported = medium rigour (7/11) Level of evidence: Level I (systematic review) **Relevant benefit lever(s)** Alignment, Leadership for change and Supporting and reinforcing structures Decision: included

		leadership, and change agents) 4 the inner (organisational) context 5 the outer (inter-organisational) context 6 the implementation/sustainability process. Within the themes, data was deducted from the primary studies into subtopics	
Mixed method studies (n=6)			
Study 1/6 Becker, M.H. 1970. Factors affecting diffusion of innovations among health professionals. *American Journal of Public Health,* 60(2):294-304	**Type of study/design** Mixed methods design whereby self-administered mailed questionnaires and a follow-up telephone interview were used **Setting** United States (Michigan, Illinois, and New York)	**Research methods** *Sample:* 95 local health officers *Data collection:* combination of self-administered mailed surveys and a follow-up telephone interview which took approximately an hour *Analysis:* quantitative analysis, using party correlation techniques	**Rigour** Instrument used: The John Hopkins nursing evidence-based practice (JHNEBP) -research evidence appraisal tool The study was clear concerning the recruitment of the sample (sample size was adequate). The conclusion was based on clearly presented results. Limitations were discussed. Findings were clearly stated. No adequate description of data-collection methods was provided. It was unclear whether study limitations were identified and discussed. Recommendations particularly for policy and practice were not clearly stated. Overall, the study was not well-planned, executed and reported = poor/limited rigour Level of evidence: Level III (non-experimental) **Relevant benefit lever(s)** Supporting and reinforcing structures Decision: excluded
Study 2/6 Edwards, N., & Grinspun, D. 2011. Starting with Basics: Improving Communication to Improve	**Type of study/design** Mixed method randomized controlled trial using participatory action research **Setting**	**Research methods** *Sample:* long-term care facilities controlled by the Ontario government *Data-collection:* multiple in-depth	**Rigour** Instrument used: The John Hopkins nursing evidence-based practice (JHNEBP) -research evidence appraisal tool

Long-term Care **(study 4)** *in:* Edwards, N., & Grinspun, D. 2011. *Understanding whole systems change in healthcare: the case of emerging Evidence-informed Nursing service delivery models*. Ottawa: Canadian Health Services Research Foundation. 22 p.	Canada	interviews with staff from facilities *Analysis:* quantitative analysis	The study was clear concerning the recruitment of the sample (sample size was adequate). An adequate description of data-collection methods was provided. The conclusion was based on clearly presented results. Limitations were identified and discussed. Findings and recommendations particularly were not clearly stated. Overall, the study was well planned, executed and reported = good rigour Level of evidence: Level I (RCT) and level III (qualitative) **Relevant benefit lever(s)** Supporting and reinforcing structures Decision: included
Study 3/6 Lau, F., Penn, A., Wilson, D., Noseworthy, T., Vincent, D. & Doze, S. 1998. The diffusion of an evidence-based disease guidance system for managing stroke. *International Journal of Medical Informatics,* 51:107–116	**Type of study/design** Descriptive study by participatory research using numerous data sources **Setting** Eight hospitals within two health regions in Alberta, Canada	**Research methods** *Sample:* 47 physicians as the proposed users *Data collection:* a combination of questionnaires, education sessions, design feedback, field observations, and usage logs *Analysis:* the analyses entailed occurrence tabulations and content analysis of written comments obtained by questionnaires and field observations	**Rigour** Instrument used: The John Hopkins nursing evidence-based practice (JHNEBP) -research evidence appraisal tool An adequate description of data-collection methods was provided. The conclusion was based on clearly presented results. Limitations were identified and discussed. Findings and recommendations particularly were stated. The study was not clear concerning the recruitment of the sample. Overall, the study was well planned, executed and reported = good rigour Level of evidence: Level III (non-experimental) **Relevant benefit lever(s)** Supporting and reinforcing structures Decision: included

Study 4/6 Pearson, M.L., Upenieks, V., Yee, T. & Needleman, J. 2008. Spreading Nursing Unit Innovation in Large Hospital Systems. *The Journal of Nursing Administration,* 38(3):146-152	**Type of study / design** Evaluative study using multiple-case design **Setting** Three contributing organisations involving the northern California region of Kaiser Permanente (KP), the Ascension Health System, and the University of Pittsburgh Medical Center (UPMC)	**Research methods** *Sample:* three contributing organisations including the northern California region of Kaiser Permanente (KP), the Ascension Health System, and the University of Pittsburgh Medical Center (UPMC) (19 hospitals) *Data collection:* hospital staff interviews, observations, and project documents *Analysis:* data were structured into fields resulting from the spread literature and the Transforming Care at the Bed-side (TCAB) framework. Thematic analysis was used. Triangulation of the evidence from numerous data sources was used	**Rigour** Instrument used: The John Hopkins nursing evidence-based practice (JHNEBP) -research evidence appraisal tool An adequate description of data-collection methods was provided. The recruitment of the sample was provided. The conclusion was based on clearly presented results. Findings and recommendations particularly were stated. It was not clear whether limitations were identified and discussed. Overall, the study was well planned, executed and reported = good rigour Level of evidence: Level III (non-experimental). **Relevant benefit lever(s)** Leadership for change and Supporting and reinforcing structures Decision: included
Study 5/6 Ploeg, J., Skelly, J., Rowan, M., Edwards, N., Davies, B., Grinspun, D., Bajnok, I. & Downey, A. 2010. The role of nursing best practice champions in diffusing practice guidelines: A mixed methods study. *Worldviews on Evidence-Based Nursing,* 238-251	**Type of study/design** Mixed method sequential triangulation design including two phases using interviews and questionnaires **Setting** Health care facilities in Canada	**Research methods** **Phase 1** *Sample:* champions (N = 191) administrators (N = 41) Sampling method: purposive sampling Precisely maximum variation sampling, to obtain different viewpoints of participants Group A and B: front-line nurses, educators, and administrators characterized various practice settings comprising acute, community, and long-term care Recruitment: e-mail to 54 possible participants (Group A) *Data collection*: semi-structured interview guide concerning 6 topics created from prior research and a literature review.	**Rigour** Instrument used: The John Hopkins nursing evidence-based practice (JHNEBP) -research evidence appraisal tool The recruitment of the sample was clear. An adequate description of data-collection methods was provided. The conclusion was based on clearly presented results. Limitations were identified and discussed. Findings and recommendations particularly were stated. Overall, the study was well planned, executed and reported = good rigour Level of evidence: Level III (non-experimental and qualitative)

		(1) Key informant interviews with 23 champions and (2) a survey of champions and administrators. Qualitative findings were used to develop surveys and understand quantitative information obtained in phase 2 *Data analysis:* audiotapes were transcribed literally, cleaning and coding were done and a framework developed	**Relevant benefit lever(s)** Leadership for change Decision: included
		Phase 2 *Sample:* Sampling method: purposive sample Recruitment: via a study info letter and consent form RNAO recruited participants (106 in Group B) *Data collection:* SurveyMonkey was used and sent to 885 participants *Analysis:* data was downloaded into Excel and SPPS was used. Champions were coded into 3 groups: administrators, educators/clinicians, and staff working in the wards	
Study 6/6 The World Bank. 2005. Review of experience of family medicine in Europe and Central Asia. (In five volumes) Volume I: Executive summary. World Bank Report No. 32354-ECA. Human Development Sector Unit, Europe and Central Asia Region. Washington, DC: The World Bank	**Type of study/design** Primary and secondary research: Primary research: included qualitative research conducting interviews and quantitative research using two cross-sectional questionnaires Secondary research: literature review **Setting** (Facilities in) Bosnia and Herzegovina, Moldova, and Armenia	**Research methods** **Qualitative part** *Sample:* 58 interviews, including nine clinicians, six policy makers, 18 managers, 11 family physicians, 5 nurses and 9 patients Sampling method: 2 phases: first phase: purposive sampling was used and the second phase contained a combination of purposive and snowball sampling **Quantitative part** *Sample:*199 physicians in 87 facilities Sampling method: purposive sampling **Qualitative part** *Data collection:* a semi-structured questionnaire was created for the study for 58 face-to-face in-depth interviews of key	**Rigour** Instrument used: The John Hopkins nursing evidence-based practice (JHNEBP) -research evidence appraisal tool The recruitment of the sample was clear. An adequate description of data-collection methods was provided. The conclusion was based on clearly presented results. Findings and recommendations particularly were stated. Limitations were not clearly identified and discussed. Overall, the study was well planned, executed and reported = good rigour Level of evidence: Level III (non-

		informants. The questionnaire was piloted and then advanced A fieldwork diary was kept to create a timeline and improvement record of the research, and field notes of the observations were taken from the visited locations **Quantitative part** *Data collection:* Primary Health Care (PHC) Provider Facility Survey and a Survey of Task Profiles of Family Physicians **Qualitative part** *Analysis:* analysis created the detailed case study by taking information on key structural and process changes, subjects connected to design and implementation of PHC reorganisations, the drivers and barriers to restructuring, the issues influencing the founding of a permitting situation for change, and the teachings learned. **Quantitative part** *Analysis:* PHC Provider Facility Survey and Survey: The instrument was coded and a computer program was written in Access@ for analysis. Statistical analysis (descriptive statistics and T-test) was used to test for experiential variances. Survey of Task Profiles of Family Physicians: The instrument was coded and a data obtained with a program developed in Microsoft Access. Data were shifted to SPSSO for statistical analysis	experimental and qualitative) **Relevant benefit lever(s)** Supporting and reinforcing structures Decision: included
Non-research papers-Analyses of literature (n=6)			
Paper 1/6 Bradley, E.H., Curry, L.A., Ramanadhan, S., Rowe, L., Nembhard, I.M., & Krumholz, H.M. 2009. Research in action: using positive deviance to improve quality of health	**Type of study/design** Synthesis of existing literature on positive deviance	**Method:** *Search strategy:* Not mentioned	**Rigour** Instrument used: The John Hopkins nursing evidence-based practice (JHNEBP) –non-research evidence appraisal tool Evidence was based on the opinion of

care. *Implementation Science,* 4:25			more than one individual. Authors were experts on the topic. The researchers' opinion was based on scientific evidence. The authors' opinion was clearly stated. Conclusions and recommendations were provided. Conclusions were based on the evidence presented. The results can be applied and are relevant to clinical practice. It is unclear whether potential biases were acknowledged. Overall, the paper was fairly planned, executed and reported = medium rigour Level of evidence: Level V (literature review) **Relevant benefit lever(s)** Alignment and Leadership for change Decision: included
Paper 2/6 Dearing, J.W. & Kreuter, M.W. 2010. Designing for diffusion: How can we increase uptake of cancer communication innovations? *Patient Education and Counseling,* 81S :S100–S110	**Type of study/design** Analysis of existing literature	**Research methods** *Search strategy:* Not mentioned	**Rigour** Instrument used: The John Hopkins nursing evidence-based practice (JHNEBP) –non-research evidence appraisal tool Evidence was based on the opinion of more than one individual. The individuals are experts on the topic. The authors' opinion was based on scientific evidence. The authors' opinion was clearly stated. Conclusions and recommendations were provided. Conclusions were based on the evidence presented. The results can be applied and are relevant to clinical practice. It is unclear whether potential biases were acknowledged. Overall, the paper was fairly planned, executed and reported = medium rigour Level of evidence: Level V (literature

			review) **Relevant benefit lever(s)** Supporting and reinforcing structures Decision: included
Paper 3/6 Edwards, N., Rowan, M., Marck, P. & Grinspun, D. 2011. Understanding Whole Systems Change in Health Care: The Case of Nurse Practitioners in Canada. *Policy Politics Nursing Practice*, 12(4):4-17 **(study 3)**	**Type of study/design** Analysis of existing literature	**Research methods** *Search strategy:* Not mentioned	**Rigour** Instrument used: The John Hopkins nursing evidence-based practice (JHNEBP) –non-research evidence appraisal tool Evidence was based on the opinion of more than one individual. The authors are experts on the topic. Potential biases were acknowledged. The authors' opinion was based on scientific evidence. The authors' opinion was clearly stated. Conclusions and recommendations were provided. Conclusions were based on the evidence presented. The results can be applied and are relevant to clinical practice. Overall, the paper was well planned, executed and reported = good rigour Level of evidence: Level V (literature review) **Relevant benefit lever(s)** Leadership for change Decision: included
Paper 4/6 Horvitz-Lennon, M., Donohue, J.M., Domino, M.E. & Normand, S.-L.T. 2009. Improving quality and diffusing best practices: The case of schizophrenia. *Health Affairs,* 28(3):701-712	**Type of study/design** Analysis of existing literature	**Research methods** *Search strategy:* Not mentioned	**Rigour** Instrument used: The John Hopkins nursing evidence-based practice (JHNEBP) –non-research evidence appraisal tool Evidence was based on the opinion of more than one individual. The authors are experts on the topic. The authors' opinion was based on scientific evidence. The authors' opinion was clearly stated.

			Conclusions and recommendations were provided. Conclusions were based on the evidence presented. The results can be applied and are relevant to clinical practice. It is unclear whether potential biases were acknowledged. Overall, the paper was fairly planned, executed and reported = medium rigour Level of evidence: Level V (literature review) **Relevant benefit lever(s)** Supporting and reinforcing structures Decision: included
Paper 5/6 Meyer, A.D., & Goes, J.B. 1988. Organizational Assimilation of Innovations: A Multilevel Contextual Analysis. *Academy of Management Journal*, 31(4):897-923	**Type of study/design** Multilevel contextual analysis	**Research methods** *Search strategy:* Not mentioned	**Rigour** Instrument used: The John Hopkins nursing evidence-based practice (JHNEBP) –non-research evidence appraisal tool Evidence was based on the opinion of more than one individual. The authors are experts on the topic. The authors' opinion was based on scientific evidence. The authors' opinion was clearly stated. Potential biases were acknowledged. Conclusions and recommendations were provided. Conclusions were based on the evidence presented. It is unclear whether the results can be applied and are relevant to clinical practice. Overall, the paper was fairly planned, executed and reported = medium rigour Level of evidence: Level V (literature review) **Relevant benefit lever(s)** Leadership for change

			Decision: included
Paper 6/6 Yuan, C.T., Nembhard, I.M., Stern, A.F., Brush, J.E., Krumholz, H.M. & Bradley, E.H. 2010. Blueprint for the Dissemination of Evidence-Based Practices in Health Care. *The Commonwealth Fund*, 1399(86):1-14	**Type of study/design** Literature review	**Research methods** *Search strategy:* Not mentioned	**Rigour** Instrument used: The John Hopkins nursing evidence-based practice (JHNEBP) –non-research evidence appraisal tool Evidence was based on the opinion of more than one individual. The authors are experts on the topic. Potential biases were acknowledged. The authors' opinion was based on scientific evidence. The authors' opinion was clearly stated. Conclusions and recommendations were provided. Conclusions were based on the evidence presented. The results can be applied and are relevant to clinical practice. Overall, the paper was well planned, executed and reported = good rigour Level of evidence: Level V (literature review) **Relevant benefit lever(s)** Alignment, Leadership for change and Supporting and reinforcing structures Decision: included
Non-research papers-Theory developing (n=1)			
Paper 1/1 Omachonu, V.K. & Einspruch, N.G.-2010. Innovation in Healthcare Delivery Systems: A Conceptual Framework. *The Innovation Journal: The Public Sector Innovation Journal*, 15(1):1-20	**Type of study/design** Theory development (conceptual framework)	**Research methods** N.A.	**Rigour** Instrument used: The John Hopkins nursing evidence-based practice (JHNEBP) –non-research evidence appraisal tool Evidence was based on the opinion of more than one individual. The authors are experts on the topic. The authors' opinion was based on scientific evidence. The authors' opinion was clearly stated. Conclusions and recommendations were

			provided. Conclusions were based on the evidence presented. It was not clear whether the results can be applied and are relevant to clinical practice. However, it was unclear whether potential biases were acknowledged. Overall, the paper was poorly planned, executed and reported = poor/limited rigour Level of evidence: Level V **Relevant benefit lever(s)** Leadership for change and Supporting and reinforcing structures Decision: excluded
Non-research papers-Discussion papers (n=10)			
Paper 1/10 Barker, K. 2004. Diffusion of Innovations: A World Tour. *Journal of Health Communication,* 9:131–137	**Type of study/design** Discussion paper Included for critical appraisal as it is cited extensively in other publications regarding diffusion	**Research methods** N.A.	**Rigour** Instrument used: The John Hopkins nursing evidence-based practice (JHNEBP) –non-research evidence appraisal tool The author's opinion was based on scientific evidence. The author's opinion was clearly stated. Conclusions and recommendations were provided. Conclusions were based on the evidence discussed. Evidence was only based on the opinion of one individual. It was unclear whether the author is an expert on the topic. It was unclear whether potential biases were acknowledged. It was unclear whether the results can be applied and are relevant to clinical practice. Overall, the paper was poorly planned, executed and reported = poor/limited rigour Level of evidence: Level V (expert opinion)

			Relevant benefit lever(s) Leadership for change and Supporting and reinforcing structures Decision: excluded
Paper 2/10 Berwick, D.M. 2003. Disseminating Innovations in Health Care. *Journal American Medical Association*, 289:1969-1975	**Type of study/design** Discussion paper Included for critical appraisal as it is cited extensively by other publications regarding diffusion	**Research methods** N.A.	**Rigour** Instrument used: The John Hopkins nursing evidence-based practice (JHNEBP) –non-research evidence appraisal tool Evidence was only based on the opinion of one individual. The author is an expert on the topic. The author's opinion was based on scientific evidence. The author's opinion was clearly stated. Conclusions and recommendations were provided. Conclusions were based on the evidence presented. It was unclear whether potential biases were acknowledged. It was unclear whether the results can be applied and are relevant to clinical practice. Overall, the paper was fairly planned, executed and reported = medium rigour Level of evidence: Level V (expert opinion) **Relevant benefit lever(s)** Supporting and reinforcing structures Decision: included
Paper 3/10 Bodenheimer, T. 2007. The science of spread: how innovations in care become the norm. Oakland, CA: California HealthCare Foundation. 25 p	**Type of study/design** Discussion paper/white paper Included for critical appraisal as it is cited extensively by other publications regarding innovation in health care	**Research methods** N.A.	**Rigour** Instrument used: The John Hopkins nursing evidence-based practice (JHNEBP) –non-research evidence appraisal tool Evidence was based on the opinion of more than one individual. The author is an expert on the topic. The author's opinion was based on scientific evidence. The author's opinion was clearly stated.

			Conclusions and recommendations were provided. Conclusions were based on the evidence presented. It was unclear whether potential biases were acknowledged. It was unclear whether the results can be applied and are relevant to clinical practice. Overall, the paper was fairly planned, executed and reported = medium rigour Level of evidence: Level V (expert opinion) **Relevant benefit lever(s)** Alignment and Leadership for change Decision: included
Paper 4/10 Collins, B.A., Hawks, J.W. & Davis, R. 2000. From Theory to Practice: Identifying Authentic Opinion Leaders to Improve Care. *Managed Care.* July	**Type of study/design** Discussion paper Included for critical appraisal as it is cited extensively by other(s) (publications) regarding diffusion/dissemination of innovation in health care	**Research methods** N.A	**Rigour** Instrument used: The John Hopkins nursing evidence-based practice (JHNEBP) –non-research evidence appraisal tool Evidence was based on the opinion of more than one individual. The authors are experts on the topic. The authors' opinion was based on scientific evidence. The authors' opinion was clearly stated. Conclusions and recommendations were provided. Conclusions were based on the evidence presented. The results can be applied and are relevant to clinical practice. It was unclear whether potential biases were acknowledged. Overall, the paper was fairly planned, executed and reported = medium rigour Level of evidence: Level V (expert opinion) **Relevant benefit lever(s)** Alignment, Leadership for change and Supporting and reinforcing structures

			Decision: included
Study 5/10 Fitzgerald, L., Ferlie, E., Wood, M. & Hawkins, M. 2002. Interlocking interactions, the diffusion of innovations in health care. *Human Relations,* 55(12):1429-1449	**Type of study/design** Report on 2 case studies Included for critical appraisal as it is cited extensively by other publications regarding diffusion/dissemination of innovation in health care	**Research methods** N.A.	**Rigour** Instrument used: The John Hopkins nursing evidence-based practice (JHNEBP) –non-research evidence appraisal tool Evidence was based on the opinion of more than one individual. The authors are experts on the topic. The authors' opinion was based on scientific evidence. The researchers' opinion was clearly stated. Conclusions and recommendations were provided. Conclusions were based on the evidence presented. It was unclear whether potential biases were acknowledged. It was unclear whether the results can be applied and are relevant to clinical practice. Overall, the paper was fairly planned, executed and reported = medium rigour Level of evidence: Level V (expert opinion) **Relevant benefit lever(s)** Leadership for change and Supporting and reinforcing structures Decision: included
Paper 6/10 Dixon-Woods, M., Amalberti, R., Goodman, S., Bergman, B. & Glasziou, P. 2011. Problems and promises of innovation: why healthcare needs to rethink its love/hate relationship with the new. *BMJ Quality Safety*, 20(Suppl 1):i47-i51	**Type of study/design** Discussion paper Included for critical appraisal as it is cited by other publications regarding diffusion/dissemination of innovation in health care and authors published more regarding EBP, systematic review and diffusion of innovations	**Research methods** N.A.	**Rigour** Instrument used: The John Hopkins nursing evidence-based practice (JHNEBP) –non-research evidence appraisal tool Evidence was based on the opinion of more than one individual. The authors are experts on the topic. The authors' opinion was based on scientific evidence. The authors' opinion was clearly stated. Conclusions and recommendations were provided. Conclusions were based on the

			evidence presented. The results can be applied and are relevant to clinical practice. It was unclear whether potential biases were acknowledged Overall, the paper was well planned, executed and reported = good rigour Level of evidence: Level V (expert opinion) **Relevant benefit lever(s)** Supporting and reinforcing structures Decision: included
Paper 7/10 Lehoux, P., Williams-Jones, B., Miller, F., Urbach, D. & Tailliez, S. 2008. What leads to better health care innovation? Arguments for an integrated policy-oriented research agenda. *Journal of Health Services Research and Policy,* 13(4):251-254	**Type of study/design** Discussion paper Included for critical appraisal as it is cited by other publications (19 times) regarding diffusion/dissemination of innovation and policy and authors published more regarding innovations	**Research methods** N.A.	**Rigour** Instrument used: The John Hopkins nursing evidence-based practice (JHNEBP) –non-research evidence appraisal tool Evidence was based on the opinion of more than one individual. The authors are experts on the topic. The authors' opinion was based on scientific evidence. The authors' opinion was clearly stated. Conclusions and recommendations were provided. Conclusions were based on the evidence presented. The results can be applied and are relevant to clinical practice. It was unclear whether potential biases were acknowledged Overall, the paper was well planned, executed and reported = good rigour Level of evidence: Level V (expert opinion) **Relevant benefit lever(s)** Supporting and reinforcing structures Decision: included

Paper 8/10 Massoud, M.R., Nielsen, G.A., Nolan, K., Nolan,T., Schall, M.W., & Sevin C. 2006. A framework for spread: from local improvements to system-wide change. IHI Innovation Series White paper. Cambridge: Institute for Healthcare Improvement.	**Type of study/design** Discussion paper/white paper Included for critical appraisal as this paper originates from a recognised international organisation: the Institute for Healthcare Improvement (IHI)	**Research methods** N.A.	**Rigour** Instrument used: The John Hopkins nursing evidence-based practice (JHNEBP) –non-research evidence appraisal tool Evidence was based on the opinion of more than one individual. The authors are experts on the topic. The authors' opinion was based on scientific evidence. The authors' opinion was clearly stated. Conclusions and recommendations were provided. Conclusions were based on the evidence presented. The results can be applied and are relevant to clinical practice. It was unclear whether potential biases were acknowledged. Overall, the paper was well planned, executed and reported = good rigour Level of evidence: Level IV (clinical practice guidelines) **Relevant benefit lever(s)** Permeation plans Decision: included
Paper 9/10 Plsek, P. 2003. Complexity and the Adoption of Innovation in Health Care. A conference held in Washington, D.C. January 27-28. National Institute for Health Care Management Foundation National Committee for Quality Health Care	**Type of study/design** Discussion paper Included for critical appraisal as it is cited by other publications (62 times) regarding diffusion/dissemination of innovation.	**Research methods** N.A.	**Rigour** Instrument used: The John Hopkins nursing evidence-based practice (JHNEBP) –non-research evidence appraisal tool The authors' opinion was based on scientific evidence. The authors are experts on the topic. The authors' opinion was clearly stated. Conclusions and recommendations were provided. Conclusions were based on the evidence presented. Evidence was based on the opinion of only one individual. It was unclear whether

			potential biases were acknowledged. It was unclear whether the results can be applied and are relevant to clinical practice. Overall, the paper was poorly planned, executed and reported = poor/limited rigour Level of evidence: Level V (expert opinion) **Relevant benefit lever(s)** Leadership for change and Supporting and reinforcing structures Decision: excluded
Paper 10/10 Valente, T.C. 1996. Social network thresholds in the diffusion of innovations. *Social Networks,* 18:60-89	**Type of study/design** Discussion paper Included for critical appraisal as it is cited by other publications (113 times) regarding diffusion and social networks	**Research methods** N.A.	**Rigour** Instrument used: The John Hopkins nursing evidence-based practice (JHNEBP) –non-research evidence appraisal tool The author's opinion was based on scientific evidence. The author is an expert on the topic. The author's opinion was clearly stated. Conclusions were provided. Conclusions were based on the evidence presented. Evidence was based on the opinion of only one individual. It was unclear whether potential biases were acknowledged. No recommendations were given. It was unclear whether the results can be applied and are relevant to clinical practice. Overall, the paper was poorly planned, executed and reported = poor/limited rigour Level of evidence: Level IV (expert opinion) **Relevant benefit lever(s)** Supporting and reinforcing structures

			Decision: excluded
Non-research papers-Guides (n=2)			
Paper 1/2 IHI. 2008. 5 Million Lives Campaign-Getting Started Kit: Rapid Response Teams. Cambridge, MA: Institute for Healthcare Improvement	**Type of study/design** Guide Included for critical appraisal as this paper is originated from a recognised international organisation: the Institute for Healthcare Improvement (IHI)	**Research methods** N.A.	**Rigour** Instrument used: The John Hopkins nursing evidence-based practice (JHNEBP) –non-research evidence appraisal tool The authors' opinion was based on scientific evidence. The authors' are experts on the topic. Evidence was based on the opinion of more than one individual. The authors' opinion was clearly stated. Conclusions were provided. Conclusions were based on the evidence presented. It was unclear whether potential biases were acknowledged. No recommendations were given. It was unclear whether the results can be applied and are relevant to clinical practice. Overall, the paper was fairly planned, executed and reported = medium rigour Level of evidence: Level IV (clinical practice guidelines) **Relevant benefit lever(s)** Permeation plans Decision: included
Paper 2/2 UNAIDS & WHO. 2007. A guide for fostering change to scale-up health effective services. Management Sciences for Health. 48 p	**Type of study / design** Guide Included for critical appraisal as this paper is originated from a recognised international organisation: the World Health Organisation (WHO)	**Research methods** N.A.	**Rigour** Instrument used: The John Hopkins nursing evidence-based practice (JHNEBP) –non-research evidence appraisal tool Evidence was based on the opinion of more than one individual. The authors are experts on the topic. The authors' opinion was clearly stated. Conclusions were provided. It was unclear whether the authors' opinion was based on scientific

			evidence. It was unclear whether potential biases were acknowledged. No recommendations were given. It was unclear whether conclusions were based on the evidence presented. It was unclear whether the results can be applied and are relevant to clinical practice. Overall, the paper was fairly planned, executed and reported = medium rigour Level of evidence: Level IV (clinical practice guidelines) **Relevant benefit lever(s)** Permeation plans, Leadership for change and Supporting and reinforcing structures Decision: included
Books (n=1)			
Book 1/1 Buchanan, D.A., Fitzgerald, L. & Ketley, D. 2007. *The sustainability and spread of organizational change – Modernizing healthcare*. London: Routledge: Taylor & Francklin Group	**Rigour** Instrument used: The John Hopkins nursing evidence-based practice (JHNEBP) –non-research evidence appraisal tool The authors' opinion was based on scientific evidence. The authors are experts on the topic. Evidence was based on the opinion of more than one individual. The authors' opinion was clearly stated. Conclusions were provided. The results can be applied and are relevant to clinical practice. Conclusions were based on the evidence presented. It was unclear whether potential biases were acknowledged. No recommendations were given. Overall, the paper was fairly planned, executed and reported = medium rigour Level of evidence: Level V (expert opinion) **Relevant benefit lever(s)** Alignment, Leadership for change and Supporting and reinforcing structures Decision: included		

Figure 2.1 outlines the realisation of the entire search strategy.

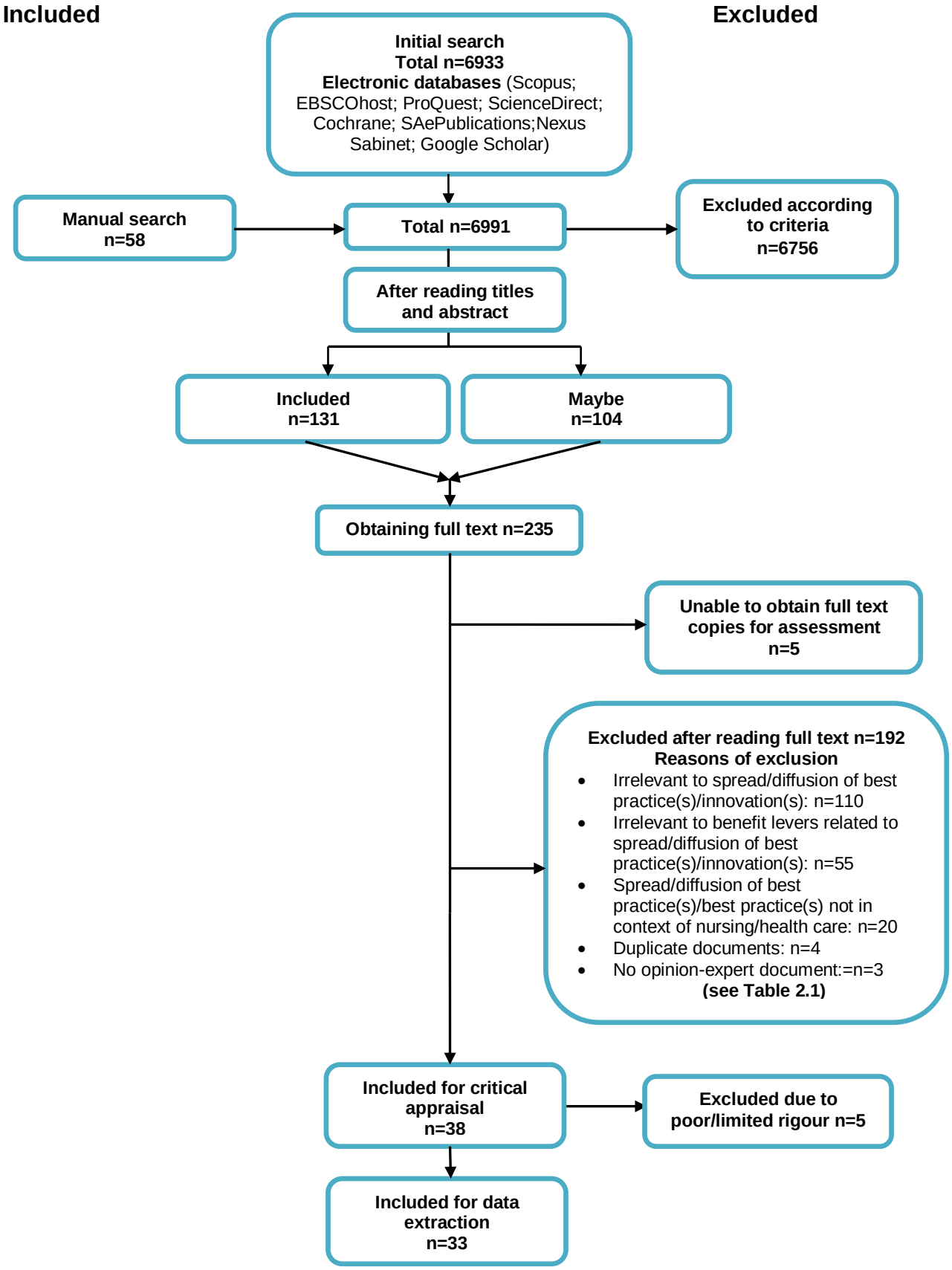


Figure 2.1: Realisation of the search strategy

2.2.4 Step 4: Summarising the evidence

Step 4 includes the data-extraction and data-synthesis which will be outlined as follows:

2.2.4.1 The data-extraction

According to the CRD (2009:28), data extraction can be defined as "the process by which researchers obtain the necessary information about study findings from the included studies". This means that the data collection for the integrative literature review is done by the extraction of the findings of the selected documents, obtained during the critical appraisal, relevant to the research question. Data extraction allows the researcher to decide which data will be most important in answering the review question.

The findings must be extracted and presented in carefully designed spread sheets (CEBC, 2009:12). Extraction elements are columns in the table to serve as a basis for analysis of study outcomes. These elements depend on the review question.

Data-extraction for this study was done by:

- The extraction of elements of relevant documents regarding the benefit levers from the sample in table format.
- Headings in the table included: the reference of the study or paper, aim/objective(s) and findings regarding benefit lever(s).

Table 2.4 outlines the data extraction.

Table 2.4 Data-extraction

Studies (n=33)	Benefit levers	
	Quantitative non-experimental studies (n=4)	
Study 1/4 Dirksen *et al.*, 1996:91-104. Diffusion of six surgical endoscopic procedures in the Netherlands. Stimulating and restraining factors	**Aim/objective(s)** To examine the diffusion of six surgical endoscopic procedures in the Netherlands	**Findings regarding the characteristics of the benefit lever(s)** Supporting and reinforcing structures Characteristics of supporting and reinforcing structures which were found to facilitate the diffusion of six surgical endoscopic procedures includes: communication, such as meetings and conferences whereby information about the innovation is given; innovation itself, such as the nature of the innovation, e.g. technology; extra benefits of the innovation, such as clinical effectiveness, cost effectiveness, etc.
Study 2/4 Hanberg, 2008:1-220. The diffusion of high fidelity simulation in nursing education: Barriers and recommendations for best practice	**Aim/objective(s)** 1) To assess the reliability of the BARRIERS to simulation utilization instrument used in the study; 2) To assess nursing faculty members' perceptions of barriers and facilitators to simulation integration	**Findings regarding the characteristics of the benefit lever(s)** Supporting and reinforcing structures Characteristics of supporting and reinforcing structures which were found to facilitate the spread of an innovation (simulation integration) include: resources, such as funding; individuals/innovators/adopters, such as the characteristics of innovators which can include (lack of) experience and degree; the innovation itself, such as the complexity of the innovation
Study 3/4 Kennedy-MacDonald, 2008:1-135. Adoption of a clinical innovation "Best Practices for Concurrent Mental Health and Substance Use Disorders" in Ontario, a one-year follow up	**Aim/objective(s)** To determine the level of adoption and which characteristics are mostly related to the adoption of a clinical innovation in Mental Health and Addiction Service organisations in Ontario, one year after dissemination	**Findings regarding the characteristics of the benefit lever(s)** Supporting and reinforcing structures Characteristics of supporting and reinforcing structures which were found to facilitate the adoption and spread of a clinical innovation include: individuals/innovators/adopters, such as individual features involving age, sex, level of education, values, beliefs, tenancy and cosmopolitism
Paper 4/4 Naleppa, 2009:1-134. Organizational readiness factors: are we ready to adopt and implement clinical best practices in hospitals?	**Aim/objectives(s)** 1) To determine whether there are different occurrences of clinically based practices implemented at sample organisations; 2) To regulate the extent to which any differences in the adoption and implementation of best practices were affected by the grade of certain organisational readiness factors; 3) To determine whether organizational readiness factors influence time to implement; 4) To determine whether certain organisational readiness factors impact an organisation's ability to sustain or maintain best practices	**Findings regarding the characteristics of the benefit lever(s)** Supporting and reinforcing structures Characteristics of supporting and reinforcing structures found to facilitate the adoption and implementation of best practices include: resources, such as planned resources which are part of organisational readiness; communication developments (as part of organisational readiness); organisational structure/culture, which involves organisational readiness factors: planning and organizational learning, simulated training, ongoing education, etc.; organisational structure, which ideals are to learn from faults, is supportive person and team development, giving ongoing education, adapts job descriptions to reproduce responsibility changes and inspires new ideas with significant effects on the adoption of innovative best practices; individuals/innovators/adopters, including the support role (described as a facilitator over time)

Qualitative method studies (n=7)		
Study 1/7 De Lusignan, *et al.,* 2005:135-143. Why do some practices innovate: A qualitative study of the views of primary care professionals.	**Aim/objective(s)** To determine from the primary care professionals in 33 second-wave Personal Medical Services (PMS) practices their views of the factors associated with positive results and slow progress	**Findings regarding the characteristics of the benefit lever(s)** <u>Leadership for change</u> Characteristics of leadership for change found to facilitate the diffusion of Personal Medical Services include: Effective leadership with a visionary leader <u>Supporting and reinforcing structures</u> Characteristics of supporting and reinforcing structures found to facilitate the spread of Personal Medical Services include: resources, including human resources such as the delivery of supplementary medical staff; organisational structure/culture, such as good management systems and a consistent team/effective team working
Study 2/7 Edwards & Grinspun, 2011:1-22. Expanding spread within and across organizations **(study 3)**	1) To study what factors set organisations apart in their capacity to apply or produce evidence-informed nursing service delivery innovations that are feasible beyond the limits of their establishing organisation or unit; 2) To study what gives some innovations higher latent to be spread across the system, and what factors diminish from that potential	**Findings regarding the characteristics of the benefit lever(s)** <u>Supporting and reinforcing structures</u> Characteristics of supporting and reinforcing structures found to facilitate the spread of best practices include: resources such as money; human resources, staff; policies
Study 3/7 Edwards & Grinspun, 2011: 1-22. Early Steps in Innovation: What takes a good idea further? **(study 2)**	To study about "naturally occurring diffusion" of guidelines — that is, how guidelines spread under ordinary, normal conditions, not under researchers' control	**Findings regarding the characteristics of the benefit lever(s)** <u>Alignment</u> Characteristics of alignment found to facilitate the spread of best practices include: agreement/consensus expectations, goals, opinions, values and aims among stakeholders <u>Leadership for change</u> Characteristics of leadership for change found to facilitate the spread of best practices include: champions and leaders who are: committed to introducing the innovation and supporting; open and amenable to research evidence; support change, and are effective at interpreting evidence into day-to-day practices; offer a strong vision and guidance for change and form networks
Study 4/7 Harvey & Holley, 2011:1-118. A case study of the implementation of bedside reporting	**Aim/objective(s)** To create a case study to study nurses' perceptions of bedside report (of the innovation) by comparing two nursing units who have had different degrees of innovation adoption	**Findings regarding the characteristics of the benefit lever(s)** <u>Leadership for change</u> Characteristics of leadership for change found to facilitate the spread of an innovation (bedside report) include: leaders who are listening to the voice of the bedside nurse

Study 5/7 Murrey, *et al.*, 2011:418-428. Practice Change in Long-Term Care Facilities in Ontario: Views of Managers and Staff	**Aim/objective(s)** To describe how the use of data and feedback influences change in long-term care	**Findings regarding the characteristics of the benefit lever(s)** Leadership for change Characteristics of leadership for change which were found to facilitate the spread of innovations include: leaders using leadership strategies Supporting and reinforcing structures Characteristics of supporting and reinforcing structures found to facilitate the spread of innovations include: communication, including communication strategies such as using feedback to enhance goal setting, affecting organisational structures, and enhance team work
Study 6/7 Ploeg *et al.*, 2007:210-219. Factors influencing best practice guideline implementation. Lessons learned from administrators, nursing staff, and project leaders	**Aim/objective(s)** To report the views of administrators, staff, and project leaders regarding factors influencing implementation of nursing best practice guidelines	**Findings regarding the characteristics of the benefit lever(s)** Leadership for change Characteristics of leadership for change found to facilitate the spread of best practices include: leadership support Supporting and reinforcing structures Characteristics of supporting and reinforcing structures found to facilitate the spread of best practices include: resources, such as human resources, for example professional support; education and development, such as learning about the innovation by group communication; networking and cooperation, such as inter-organisational collaboration and networks; organisational structure/culture, involving positive staff attitudes and beliefs, teamwork and collaboration
Study 7/7 Waterman *et al.*, 2007:373-381. The Role of Action Research in the Investigation and Diffusion of Innovations in Health Care: The PRIDE Project	**Aim/objective(s)** To develop an information foundation regarding practice services designed specifically for patients and associates of the public aiming to overcome the identified barriers to their commitment with the use of health presentation information	**Findings regarding the characteristics of the benefit lever(s)** Alignment Characteristics of alignment found to facilitate the diffusion of innovations include: alignment of the innovation with the government policy Supporting and reinforcing structures Characteristics of supporting and reinforcing structures which was found to facilitate the diffusion of innovations include: communication, such as creating media in which authority, viewpoints, and ethical matters are described and assessed to improve knowledge, understanding, and managing innovation development; organisational structure/culture, such as achieving the right environment for education and facilitating change within and between organisations; contextual structure, such as the arrangement the innovation will take in each situation differs from the setting; individuals/innovators/adopters with decent social skills and determination on behalf of the facilitator and incorporating diverse “voices” into the innovations
Systematic reviews (n=1)		
Study 1/1 Greenhalgh *et al.*, 2004:1-424. How to Spread Good Ideas-A systematic review of the literature on diffusion,	**Aim/objective(s)** To define a systematic review of the collected works on the spread and sustainability of innovations in health service distribution and organisation	**Findings regarding the characteristics of the benefit lever(s)** Alignment Characteristics of alignment found to facilitate the spread of innovations include: alignment of the innovation with prior goals in senior management and middle management

dissemination and sustainability of innovations in health service delivery and organization		Leadership for change Characteristics of leadership for change found to facilitate the spread of innovations include: Leadership, such as the leader's participation and recurrent consultancy; Champions, involving the preparedness of key individuals in their community networks to maintain the innovation; Champion roles, such as the organisational individualist, which allows innovators to establish inspired solutions to current problems; the transformational leader, who connects support from associates of the organisation; the organisational buffer, who generates a loose monitoring system to guarantee that innovators correctly use the organisation's resources while still permitting them to act creatively; and the network facilitator, who progresses cross-functional partnerships within the organization; Opinion leaders who are representative and credible; the Change agent who is positive, supportive, enables and facilitates networking and collaboration among organisations, has the capacity, committed, technical capable, has communication skills, and project management skills, are homophile, trained and supported to develop strong interpersonal relationships with potential users, encouraged to communicate the users' needs and perspective to the developers of the innovation, and empowers the users to make independent evaluative decisions about the innovation Supporting and reinforcing structures Characteristics of supporting and reinforcing structures found to facilitate the spread of innovations include: resources, such as dedicated and ongoing funds, human resources such as motivation, capacity, competence and involvement of staff at all levels; communication, such as effective communication across structural boundaries within the organisation, using inter-organisational networks when an innovation is more complex and communication structures such as clearly communicated goals, training for improving communication skills, and using team; feedback, involving accurate and timely information about the impact of the implementation process
Mixed method studies (n=5)		
Study 1/5 Edwards & Grinspun, 2011: 4-17. Starting with Basics: Improving Communication to Improve Long-term Care **(study 4)**	**Aim/objective(s)** To support change in long-term care	**Findings regarding the characteristics of the benefit lever(s)** Supporting and reinforcing structures Characteristics of supporting and reinforcing structures which were found to facilitate the spread of best practices include: organisational structure/culture (an innovation should be viewed as a normal part of structure of a facility); contextual structure, such as teamwork; and the innovation itself (the benefits of an innovation must be seen)
Study 2/5 Lau *et al.*, 1998:107-116. The diffusion of an evidence-based disease guidance system for	**Aim/objective(s)** To describe the diffusion of an evidence-based stroke guidance system (SGS) in a field setting through participatory research	**Findings regarding the characteristics of the benefit lever(s)** Supporting and reinforcing structures Characteristics of supporting and reinforcing structures which were found to smoothen the diffusion of an evidence-based stroke guidance system include:

managing stroke		time/timing of spreading best practices, such as time to learn and use innovations and a flexible/cooperative approach; education and development, such as opportunities for education; communication, including creating opportunities to communicate change; networking and cooperation (teamwork); contextual structure, including contextual barriers involving availability of computers, accessibility of relevant literature, the simplicity of use, time and task changes, facilitation, and 24/7support
Study 3/5 Pearson *et al.*, 2008:146-152. Spreading Nursing Unit Innovation in Large Hospital Systems	**Aim/objective(s)** To evaluate the spread of three innovations in three partaking facilities including the northern California region of Kaiser Permanente (KP), the Ascension Health System, and the University of Pittsburgh Medical Center (UPMC)	**Findings regarding the characteristics of the benefit lever(s)** <u>Leadership for change</u> Characteristics of leadership for change which were found to facilitate the spread of three innovations are senior leaders who: provide resource allocation; remove bureaucratic barriers; build enthusiasm and create expectations <u>Supporting and reinforcing structures</u> Characteristics of supporting and reinforcing structures which were found to facilitate the spread of three innovations are: time/timing, such as staff time to work on spread activities; education and development, such as off-site, multi-institutional meetings for sharing ideas, teaching and support; communication, such as on-going communications regarding enhancing efforts to develop awareness and various support for spread throughout all levels of the organisation, using communication materials including posters, guidebooks, a newsletter, conference calls and a list-serve; organisational structure/culture, by selecting units for spread which are stable units or units with histories of positive change efforts, focussing on addressing challenges by choosing wards categorized by great turnover or histories of struggling to change; individuals/innovators/adopters, such as spread coordinators who are persons tasked to oversee and support the spread effort, should be appointed to bring into line the services for change and overcoming any challenges that have developed
Study 4/5 Ploeg *et al.*, 2010:238-251. The role of nursing best practice champions in diffusing practice guidelines: A mixed methods study	**Aim/objective(s)** To determine how nursing best practice champions influence the spread of Best Practice Guideline recommendations	**Findings regarding the characteristics of the benefit lever(s)** <u>Leadership for change</u> Characteristics of leadership for change which were found to enable the spread of Best Practice Guidelines include: Champions or change agents including various roles, such as educator, facilitator, tutor, leader, policy developer, and assessor
Study 5/5 The World Bank, 2005. Review of experience of family medicine in Europe and Central Asia	**Aim/objective(s)** To review the experience of family medicine	**Findings regarding the characteristics of the benefit lever(s)** <u>Supporting and reinforcing structures</u> Characteristic(s) of supporting and reinforcing structures which were found to facilitate the diffusion of innovations include: networking/cooperation, involving effective partnership among worldwide agencies involved in the health improvement to improve, catalyze quick institutionalisation of policies, and improve the chances of sustainability of the innovation; networking and worldwide contact, which improved the experience of the contributing performers and improved the diffusion of innovations

Non-research papers-Analyses of literature (n=6)		
Paper 1/6 Bradley *et al.*, 2009. Research in action: using positive deviance to improve quality of health care	**Aim/objective(s)** 1) To synthesize current literature on positive deviance; 2) To describe main alternative methods; 3) To recommend benefits and limitations of a positive deviance method for research focused on enhancing quality of health care; 4) To describe an application of this method to improve hospital care for patients with acute myocardial infarction	**Findings regarding the characteristics of the benefit lever(s)** <u>Alignment</u> Characteristics of alignment found to facilitate the spread of positive deviance approach include: alignment with external setting, financial encouragements, guidelines and public broadcasting experts <u>Leadership for change</u> Characteristics of leadership for change found to facilitate the spread of positive deviance approach include: champions who serve as to adopt the innovation in organisations (internal champion); Opinion leaders, including expert and public systems
Paper 2/6 Dearing & Kreuter, 2010:S100–S110. Designing for diffusion: How can we increase uptake of cancer communication innovations?	**Aim/objective(s)** To describe design actions that can be applied and united to spread cancer communication innovations	**Findings regarding the characteristics of the benefit lever(s)** <u>Supporting and reinforcing structures</u> Characteristics of supporting and reinforcing structures found to facilitate the spread of effective cancer communication innovations include: timing; communication, such as how come an innovation works, rather than what the innovation entails or that it is effective; feedback regarding the assessment and testing of the innovation; organisational structure/culture, whereby organisational/system capacity is essential, which is realised by: organisational capacity building, training, practical support, procedure agenda-setting, enabling practice environments, the benefits of an innovation to an organised distribution system, its workers, and its consumers, linking the ideas of a social sector with that of its internal public structure, and environments for current delivery systems; individual/ innovators/adopters such as innovators should have listening skills and recognise the demands, for example, beliefs, standards of possible adopters; the innovation itself such as the confirmed effectively, trustworthiness and significance of the innovation
Paper 3/6 Edwards *et al.*, 2011:4-17. Understanding Whole Systems Change in Health Care: The Case of Nurse Practitioners in Canada	**Aim/objective(s)** To recognise fundamentals of whole systems change to analyse literature on the Nurse Practitioners (NP) drives in terms of influences, obstacles, and system dynamics	**Findings regarding the characteristics of the benefit lever(s)** <u>Leadership for change</u> Characteristics of leadership for change found to facilitate the spread of the NP movement include: Leadership, including multilevel and various sectorial arrangements of leadership; Change agents who are seeing possible influencing points and obstacles
Paper 4/6 Horvitz-Lennon *et al.*, 2009:701-712. Improving quality and diffusing best practices: The case of schizophrenia	**Aim/objective(s)** To review the context in which forms of diffusion have taken place, using the case of schizophrenia, and to recommend policy solutions	**Findings regarding the characteristics of the benefit lever(s)** <u>Supporting and reinforcing structures</u> Characteristics of supporting and reinforcing structures found to facilitate the diffusion of innovations include: resources, including financial policies and guidelines; organisational structure/culture, such as structural and cultural features of organisations adopting several practices

Paper 5/6 Meyer & Goes, 1988:897-923. Organizational Assimilation of Innovations: A Multilevel Contextual Analysis	**Aim/objective(s)** To study the integration of innovations into organisations, a process relating to a sequence of decisions to appraise, adopt, and implement innovative (medical) skills	**Findings regarding the characteristics of the benefit lever(s)** Leadership for change Characteristics of leadership for change which was found to facilitate the diffusion of innovations include: Leadership, such as champion the innovation by a Chief Executive Officer who uses considerable impact on its behalf
Paper 6/6 Yuan *et al.*, 2010:1-14. Blueprint for the Dissemination of Evidence-Based Practices in Health Care	**Aim/objective(s)** To raise a comprehensive acceptance of effective health care interventions, this study recommends a design for improving the dissemination of best practices by countrywide quality enhancement campaigns	**Findings regarding the characteristics of the benefit lever(s)** Alignment Characteristics of alignment found to facilitate the spread of best practices include: alignment of campaigns with planned aims of accepting organisations Leadership for change Characteristics of leadership for change found to facilitate the spread of best practices include: Opinion leaders, such as growing employment by incorporating opinion leaders into the innovation acceptance process Supporting and reinforcing structures Characteristics of supporting and reinforcing structures found to facilitate the spread of best practices include: cooperation and networking, such as emphasising the evidence base and comparative uncomplicatedness of recommended practices, creating a partnership of trustworthy sponsors, producing partaking organisations that maximise system connections, developing practical implementation tools and directors for key stakeholder groups, generating networks to raise learning occasions, and integrating monitoring and appraisal of landmarks and aims
Non-research papers-Discussion papers (n=7)		
Paper 1/7 Berwick, 2003:1969-1975. Disseminating Innovations in Health Care	**Aim/objective(s)** To study the theory and enquiries for the spreading of innovations and to recommend applications of that theory to health care	**Findings regarding the characteristics of the benefit lever(s)** Supporting and reinforcing structures Characteristics of supporting and reinforcing structures found to facilitate the diffusion of innovations include: contextual structure, such as the innovation aligning with the present requirements and beliefs; contextual factors that inspire and support, or disappoint and delay the processes of spread; individual characteristics related with the level of diffusion of innovations: age, sex, the level of education, standards, opinions, occupancy and cosmopolitism, venturesomeness, approval of risk, captivation with innovation, and readiness to "leave the village to learn"; the innovation itself, including the complexity of an innovation, the dynamics of diffusion (tipping point)
Paper 2/7 Bodenheimer, 2007:1-25. The science of spread : how innovations in care become the norm	**Aim/objective(s)** To summarise some of the thinking occuring within the developing science of spreading development and to offer case studies of health care organisations which efficiently changed	**Findings regarding the characteristics of the benefit lever(s)** Alignment Characteristics of alignment found to facilitate the spread of innovations include: the fitting of the innovation in the philosophy and standards of possible adopters Leadership for change Characteristics of leadership for change found to facilitate the spread of innovations include: Leadership, such as organisational leaders generating an institutional philosophy which is prepared to accept change, senior leadership

		with power and extensiveness of vision, and is educated; Champions who are passionate, do not have over-reliance of champions, and are not front-line staff (as they have no time); test and fine-tune an innovation. Champions are priceless in leadership education, distribute information regarding clinical practice guidelines, are convincing practice leaders at multi-disciplinary boards; and modify the guideline implementation strategies to the organisational setting
Paper 3/7 Collins *et al.*, 2000. From Theory to Practice: identifying authentic opinion leaders to improve care	**Aim/objective(s)** To define spread of Innovations and Opinion Leader philosophies which can be transformed into practical requests to enhance health care delivery and financial presentation by relating them to referral forms and decrease differences in care	**Findings regarding the characteristics of the benefit lever(s)** <u>Alignment</u> Characteristics of alignment found to facilitate the diffusion of innovations include: reaching consensus with key "technical instruction" leaders <u>Leadership for change</u> Characteristics of leadership for change found to facilitate the diffusion of innovations include: Opinion leaders, including belief and friendship to spread information quickly to network aristocrats, since the group respects and beliefs the leader <u>Supporting and reinforcing structures</u> Characteristics of supporting and reinforcing structures found to facilitate the diffusion of innovations include: networking and cooperation through "trust and friendship" linkages
Study 4/7 Fitzgerald *et al.*, 2002:1429-1448. Interlocking interactions, the diffusion of innovations in health care	**Aim/objective(s)** To offer a re-examination of the processes of diffusion of innovations into organisations based on new experiential data	**Findings regarding the characteristics of the benefit lever(s)** <u>Leadership for change</u> Characteristics of leadership for change found to facilitate the diffusion of innovations include: Opinion leaders, including expert opinion leaders, with local trustworthiness and a planned, 'political' opinion leader with joint management and political abilities <u>Supporting and reinforcing structures</u> Characteristics of supporting and reinforcing structures found to facilitate the diffusion of innovations include: resources, such as financial resources at different levels; networking and cooperation, including the nature, type and power of external linkages; organisational structure/culture, such as the capability of an organisation to innovate, influenced by the past, philosophy and the quality of connections and these will differ by setting; contextual structure, such as structural complexity with many levels and robust departmental borders, these borders are obstacles in the diffusion process and the features of the patient group mentioning their readiness to follow treatment and the burdens they apply on professionals

Paper 5/7 Dixon-Woods *et al.*, 2011:i47-i51. Problems and promises of innovation: why healthcare needs to rethink its love/hate relationship with the new	**Aim/objective(s)** To classify and debate three known paradoxes of innovation in healthcare: 1) Some innovations (of unproven value or limited value, or pose risks) diffuse speedily, while other innovations with possible benefits endure slow in achieving uptake.; 2) Participating, cooperative methods may be the best way of achieving sustainable, positive innovation, but may hamper positive innovation; 3) Advancement depends upon change, but change produces new challenges	**Findings regarding the characteristics of the benefit lever(s)** Supporting and reinforcing structures Characteristics of supporting and reinforcing structures found to facilitate the diffusion of innovations include: networking and cooperation, which includes the collaboration with the professional groups probably be involved in the implementation; feedback, including evaluation of the intervention rather than seeing the systemic belongings and unintentional concerns of interventions; organisational structure/culture, whereby multifaceted systemic procedures and institutional services are involved
Paper 6/7 Lehoux *et al.*, 2008:251-254. What leads to better health care innovation? Arguments for an integrated policy-oriented research agenda	**Aim/objective(s)** To define what improves health care innovation- and offers arguments for a combined policy-oriented research agenda by means of a paper	**Findings regarding the characteristics of the benefit lever(s)** Supporting and reinforcing structures Characteristics of supporting and reinforcing structures found to facilitate the diffusion of innovations include: feedback and the innovation itself, which includes "organisational fit" which means the innovation should be user-friendly, cost-effective, safe, effective, organisationally and socially and ethically sound, problem-solving and should have no side-effects
Paper 7/7 Massoud *et al.*, 2006. A framework for spread: from local improvements to system-wide change. IHI Innovation Series White paper	**Aim/objective(s)** First part: To define the main spread projects that IHI has maintained through early 2006, and to produce the lessons learned about the most effective ways to: • prepare for spread; • establish an aim for spread; and • develop, perform, and refine a spread plan	**Findings regarding the characteristics of the benefit lever(s)** Permeation plans Characteristics of permeation plans found to facilitate the diffusion of innovations include: permeation plans should include the following: preparing for spread, launching an aim for Spread (including the aim population, aims, type of enhancements, timeframe), creating an original Spread Plan, whereby addressing the following questions: 1.Can the organisation or public construction be used to enable spread? 2. How are choices about the adoption of enhancements made? 3. What infrastructure improvements will assist in realizing the spread aim? 4. What change matters need to be talked about? 5. How will the spread efforts be transformed to operational tasks?; and, performing and improving the Spread Plan
Non-research papers-Guides (n=2)		
Paper 1/2 IHI, 2008. 5 Million Lives Campaign- Getting Started Kit: Rapid Response Teams	**Aim/objective(s)** To classify well-tested tactics for following those aims: • **Sustainability**: Viewing the hospital's progress and constantly building on it; and • **Spread**: Actively spreading best practice and information regarding the involvement and implementing of interventions in all accessible care settings	**Findings regarding the characteristics of the benefit lever(s)** Permeation plans Characteristics of permeation plans found to facilitate the diffusion of innovations include: permeation plans should include the following: preparing for Spread, such as providing strong message, entitling an executive sponsor, assigning a day-to-day leader and creating a spread team and distributing outcomes of the successful pilots; Creating an original Plan for Spread*:* providing an aim whereby the following is considered: the intention of spread, the target level of an organisation, the target population, the timeframe?; Use the organisational structure as spread happens more quickly when pilot units connected to other units in the target population; Create a communication plan, Develop a

		measurement system); Refine the Plan
Paper 2/2 UNAIDS & WHO, 2007:1-48. A guide for fostering change to scale-up health effective services	**Aim/objective(s)** To raise change to reinforce health services (through a guide)	**Findings regarding the characteristics of the benefit lever(s)** Permeation plans Characteristics of permeation plans found to facilitate the diffusion of innovations include: permeation plans should include the following: Preliminary Phase: developing a change coordination team; Phase I: Identifying the need for spread; Phase II: Preparation for the spread (through presentation by the change agent); Phase III: Supporting the presentation (environment and change plan); Phase IV: Spreading with successful outcomes Leadership for change Characteristics of leadership for change found to facilitate the diffusion of innovations include: Leadership at all organisational levels; Change agents (including identifying a devoted change agent and a change team to recognise and analyse applicable effective practices from other locations). A change agent should be trustworthy and dedicated, and requires support and motivation to lead and generate a support system for the change agent Supporting and reinforcing structures Characteristics of supporting and reinforcing structures found to facilitate the diffusion of innovations include: the innovation itself, including the purpose, benefits, and expected outcomes of the change must be explained
Books (n=1)		
Book 1/1 Buchanan *et al.*, 2007. *The sustainability and spread of organizational change – Modernizing healthcare*	**Information regarding the characteristics of the benefit lever(s)** Alignment Characteristics of alignment found to facilitate the spread of innovations include: Organisational alignment, for example, the agenda is constant with other initiatives and connected with central business and significances Leadership Characteristics of leadership for change found to facilitate the spread of innovations include: Types of leadership, including the chief executive who has strategic guidance and has power in the organisation, the project manager which gives guidance to the innovation, provides support and information and impacts teams to take ownership, and the adviser which endorses change, provides durability, influences sceptical associates, and is reliable with other staff groups; leadership characteristics, such as willpower and persistence, determination for personal and organisational success, the desire to successively advance and robust when critiqued Supporting and reinforcing structures Characteristics of supporting and reinforcing structures found to facilitate the diffusion of innovations include: time, including time to focus and step of change as slow change causes less damage, time to learn, and time to insert; networking/cooperation, including formal and informal networks; organisational structure/culture, including organisational context; reality of powerful relationships; the organisational hierargies and borders (which can be a barrier to spread); organisational culture, including a trustworthy culture and eagerness for change, involvement of staff, senior management involvement, balancing insistences (no contrasting insistences), and a supportive organisational culture; the innovation itself, including innovations which are clearly investigative, compatible, understandable, perceptible, testable, flexible, helpful and quality-evidence which is reliable, which is derived from a decent source, and is non-threatening	

2.2.4.2 The data-synthesis

Data analysis or synthesis involves, among other things, uniting and summarising the outcomes from the individual documents that comprise the integrative literature review (CRD, 2009:45; Kitchenham, 2004:18). The aims of data synthesis are the combining of outcomes, contemplating the strength of outcomes, in terms of the level of evidence, investigating the consistency of effects within the documents and identifying studies with inconsistent findings. These aims provide reliable conclusions from the included documents (CRD, 2009:45).

After synthesing data, it is recommended that a summary of the evidence should be written (Academy of Nutrition and Dietetics, 2012:56).

In order to give a summary and interpretation of outcomes and characteristics of the included documents, the review usually provides both text and tables (CEBC, 2009:16; CRD, 2009:45,48).

For this study, the identified themes in studies were based on the benefit levers used in Edward and Grinspun's Evidence Informed Model of Care (Edwards & Grinspun, 2011:18) (see Appendix A), followed by a classification of findings (see Table 2.5) and a summary of findings under these thematic headings (Dixon-Woods, Bonas, Booth, *et al.,* 2006:15) (see paragraph 2.3). These findings were used to guide the development of themes for the empirical part of this study (see Chapter 3).

2.3 Summary of findings

The summary of the findings of this integrative literature review involves the type of studies, the level of evidence of the documents, the benefit levers addressed by the research and non-research documents, conclusions regarding the search and conclusions regarding the characteristics of the benefit levers which will be discussed.

2.3.1 Type of studies

In total 33 research and non-research documents were found, of which slightly less than half were non-research documents (n=16: analyses of literature (n=6); discussion papers (n=7); guides (n=2); and books (n=1)). The other half involved research studies (n=17: mixed method studies (n=5); quantitative method studies (n=4); qualitative method studies (n=7) and systematic reviews (n=1)).

2.3.2 Levels of evidence

The research and non-research documents were classified based on the levels of evidence outlined in paragraph 2.2.3. Only one systematic review was classified as Level I evidence (Greenhalgh *et al*., 2004).

One study with both Level I (RCT) and Level III (qualitative) evidence was identified (Edwards & Grinspun, 2011 (study 4)).

Thirteen studies with Level III (non-experimental: n=6: Naleppa, 2009; Hanberg, 2008; Kennedy-MacDonald, 2008; Pearson *et al.,* 2008; Lau *et al.,*1998; Dirksen *et al.,* 1996; qualitative: n=7: Edwards & Grinspun, 2011 (study 3); Edwards & Grinspun (study 2), 2011; Murrey *et al.*, 2011; Ploeg *et al.,* 2007; Waterman *et al.,* 2007; De Lusignan *et al.,* 2005; Harvey & Holley, 2011).

Two studies with Level III both non-experimental and qualitative evidence were identified (Ploeg *et al.*, 2010; The World Bank, 2005).

Three documents were identified with evidence derived from clinical experience (level IV evidence) (IHI, 2008; UNAIDS & WHO, 2007; Massoud *et al.,* 2006).

Research and non-research documents addressing benefit levers contained predominantly Level V-evidence (n=13) such as literature reviews (n=6: Edwards *et al.*, 2011; Dearing & Kreuter, 2010; Yuan *et al.,* 2010; Bradley *et al.*, 2009; Horvitz-Lennon *et al.,* 2009; Meyer & Goes, 1988) and expert opinions (n=7: Dixon-Woods *et al.,* 2011; Lehoux *et al.,* 2008; Bodenheimer, 2007; Buchanan *et al.,* 2007; Berwick, 2003; Fitzgerald *et al.,* 2002; Collins *et al.*, 2000).

2.3.3 Benefit levers

The majority of the research and non-research documents identified addressed the benefit lever “Supporting and reinforcing structures” (n=24) followed by the benefit lever “Leadership for change” (n=17) and “Alignment” (n=8). From all the benefit levers, “Permeation plans” was addressed the fewest times (n=3) (see Table 2.5).

Table 2.5: Classification of findings

Total (n=33)	Alignment (n=8)	Permeation plans (n=3)	Leadership for Change (n=17)	Supporting and reinforcing structures (n=23)
One benefit lever (n=19)				
Berwick (2003:1969-1975)				X
Dearing & Kreuter (2010:S100–S110)				X
Dirksen *et al.* (1996:91-104).				X
Dixon-Woods *et al.* (2011:i47-i51)				X
Edwards & Grinspun (2011:1-22) (study 4)				X
Edwards & Grinspun (2011:1-22) (study 3)				X
Edwards et al.(2011:4-17)			X	
Hanberg (2008:1-220)				X
Harvey & Holley (2011.:1-118)			X	
Horvitz-Lennon *et al.* (2009:701-712)				X
IHI (2008)		X		
Kennedy-MacDonald (2008:1-135)				X
Lau *et al.* (1998:107-116)				X
Lehoux *et al.* (2008:251-254)				X
Massoud *et al.* (2006)		X		
Meyer & Goes (1988:897-923)			X	
Naleppa (2009: 1-134)				X
Ploeg *et al.* (2010:238-251)			X	
The World Bank (2005)				X
Two benefit levers (n=9)				
Bodenheimer (2007:1-25)	X		X	
Bradley *et al.* (2009)	X		X	
De Lusignan *et al* (2005:135-143)			X	X
Edwards & Grinspun (2011:1-22) (study 2)	X		X	
Fitzgerald *et al.* (2002:1429-1449)			X	X
Murrey *et al.* (2011:418-428)			X	X
Pearson *et al.* (2008*:* 146-152*)*			X	X
Ploeg *et al.* (2007:210-219)			X	X
Waterman *et al.* (2007:373-381)	X			X
Three benefit levers (n=5)				
Buchanan *et al.* (2007)	X		X	X
Collins *et al.* (2000)	X		X	X
Greenhalgh *et al.* (2004:1-424)	X		X	X
Yuan *et al.* (2010:1-14)	X		X	X
UNAIDS & WHO (2007:1-48)		X	X	X

Most documents addressed only one benefit lever (n=19). However, some documents addressed two benefit levers (n=9) or even three benefit levers (n=5) (see Table 2.5).

Overall, research and non-research documents concerning “Alignment” included mostly literature reviews and expert opinions (level V evidence) (n=5) followed by Level III evidence (n=1) and level I evidence (n=1).
For “Permeation plans” only evidence derived from views and clinical experience (Level IV evidence) was found (n=3).
For “Leadership for change” mostly evidence from non-assignable sources such as expert opinions and literature reviews (Level V evidence) (n=8) and Level III evidence (n=7) were found, followed by evidence derived from studies with a strong design (Level I evidence) (n=1) and evidence derived from non-assignable sources (Level IV evidence) (n=1).
For “Supporting and reinforcing structures” mostly Level III evidence (n=9) such as non-experimental and qualitative studies and Level V evidence (n=11) such as expert opinions and literature reviews were found followed by Level I and III evidence (n=1), Level I evidence (n=1) and evidence derived from statements, views and experiences such as clinical guidelines (Level IV evidence) (n=1).

2.3.4 Conclusions regarding the search

Generally, concerning diffusion of innovation(s) a great amount of evidence was found. Evidence was found in contexts such as business, management, etc. as well as in the context of nursing/health care. In general, sufficient evidence regarding certain benefit levers (specifically leadership for change and supporting and reinforcing structures) was found; while evidence of other benefit levers (alignment and permeation plans) remained insufficient.

However, evidence regarding benefit levers in general and specifically alignment and permeation plans related to spread/diffusion of best practice(s)/ innovation(s) was found to be insufficient, specifically in the context of nursing/ health care. A contributing factor to the lack of evidence might be that the concepts of spread/ diffusion are often confused and/or interrelated with implementation and adoption. Some documents had to be excluded, as those documents were concerned with benefit levers regarding the implementation, adoption or dissemination of evidence and not spread after implementation. Furthermore, although benefit levers are defined, the word ‘spread’ or ‘spreading’, which is the active disseminating of best practice and knowledge about every intervention and implementing each intervention in every available care setting (adapted from IHI, 2008:3), was used confusingly. ‘Spread’ or ‘spreading’ was mentioned amongst ‘dissemination’, which includes planned, formal activities

to persuade target groups to adopt an innovation, and 'implementation', which is an active and planned effort to mainstream an innovation (Greenhalgh *et al.*, 2004:6, 27).

Furthermore, most evidence found relevant regarding benefit levers related to spread/diffusion of best practices/innovations in the context of nursing/health care was evidence derived from non-assignable sources such as expert opinions and literature reviews (Level V evidence) (n=17) and non-experimental and qualitative studies (Level III evidence) (n=15).

Therefore, more high-quality/rigorous studies, specifically Level I evidence, such as Randomised Controlled Trials and systematic reviews, and Level II evidence, such as quasi-experimental studies, concerning the benefit levers in general, and specifically regarding the benefit levers "Alignment" and "Permeation plans" related to spread/diffusion of best practice(s)/ innovation(s) in the context of nursing/health care are required as no sufficient rigorous evidence was found.

2.3.5 Conclusions regarding the characteristics of the benefit levers

Table 2.6 outlines the findings per benefit lever including the level of evidence.

Table 2.6: Findings per benefit lever

Benefit lever	Findings per benefit lever (within/between organisations) (characteristics of the benefit lever)
Alignment	Alignment at different levels: **PERSONAL** - Agreement/consensus of expectations, goals, opinions, values and aims among stakeholders - Alignment of plans and visions - Consensus between stakeholders regarding why/how change should happen/what drives change (philosophies) (Edwards & Grinspun, 2011 (study 2): Level III evidence) - The innovation should be aligned with the culture and values of possible adopters (Bodenheimer, 2007: Level IV evidence) - Agreement must be achieved with key "technical advice" leaders (Collins *et al.*, 2000: Level III evidence) **ORGANISATIONAL** - Innovation should be aligned with previous goals in top management and middle management to be routinized (Greenhalgh *et al.,* 2004: Level I evidence) - Key strategies to distribute evidence-based practices are to align operations with strategic aims of implementing organisations (Yuan *et al.,* 2010: Level V evidence) - Alignment of the innovation with government policies (Waterman *et al*., 2007: Level III evidence) - Innovations are in line with other initiatives and related to core business and priorities (Buchanan *et al*., 2007: Level V evidence) **CONTEXTUAL** - Alignment with external environment, financial incentives, guidelines and public broadcasting professional norms (Bradley *et al.*, 2009: Level IV evidence)

Permeation plans	**Spread Plan** *Preparing for Spread* *Developing an aim for spread* (including target population, aims, type of improvements, timeframe) *Creating an original Spread Plan* Considering the following questions: how the organisation's structure can be used to enable spread; how decisions are made regarding the spread; how the organisational infrastructure can help to achieve the spread aim, what transforming aspects must be considered, how the spread efforts will be translated to operational responsibilities *Performing and refining the Spread Plan* (Massoud *et al.*, 2006: Level IV evidence)	**Plan for Spread** *Preparing for Spread* Providing a strong message, entitling an executive sponsor, assigning a day-to-day leader and creating a spread team and distributing outcomes of the successful pilots. *Creating an original Plan for Spread:* providing an aim whereby the following is considered: the intention of spread, the target level of an organisation, the target population, and the timeframe. Use the organisational structure as spread happens more quickly when pilot units connected to other units in the target population. Create a communication plan. Develop a measurement system. *Refining the Plan* (IHI, 2008: Level IV evidence)	**Change Plan** *Preliminary Phase:* Forming the change coordination team *Phase I: Identify the need for change* Step 1: Identify the issue and analyse the causes, and rephrase the issue as a challenge. Step 2: Recognise and decide on the anticipated change, the purpose, the expected results, and the possible hindrances. *Phase II: Planning to present and spread* (by the change agent) Step 1. Appoint a devoted change agent and a change team. Step 2. Recognise and analyse applicable effective practices from other locations (by the change agent). Step 3. Select and adjust an established practice that is suitable for the service delivery context and the desirable change. Step 4. Develop a plan to implement and monitor the presentation of the anticipated change at pilot sites. Step 5. Enhance the implementation plan, make initial strategic choices for the spread of a successful change effort. *Phase III: Supporting the presentation* (environment and change plan) Step 1. Help to produce and maintain an environment that will inspire change by supporting the change agent, change team, and other staff throughout the change process at the pilot sites. Step 2. Utilise the change plan and pointers to continually measure, monitor, and adapt the change effort. *Phase IV: Spread with successful change efforts* Step 1. Assess, combine, and disseminate lessons learned from the presentation, and choose whether or not to spread the new practice(s). Step 2. If the presentation succeeded, select a spread approach that best fits the national or regional program setting. Consider what is needed, risks, and benefits of different types of spread (quantitative spread: repeating the new practice(s) in new environmental areas; functional spread: accumulate the scope of the actions; political spread: building relationships with public-sector decision-makers to develop a permitting environment, and supporting changes by including them in guidelines and laws. Step 3. Involve the obligation of a comprehensive group of stakeholders, and protect resources to support the particular spread strategy. Step 4. Implement the spread strategy, including the new practice(s) in current policies, systems, programs, budgets etc. Step 5. Quantity and communicate the outcomes of the spread practices (UNAIDS & WHO, 2007: Level IV evidence)

Leadership for change	**Leadership** Tasks Champions and leaders dedicated to presenting and supporting change. Leaders who are open and accessible to research evidence, support change, and are active at interpreting evidence into daily practices (Edwards & Grinspun, 2011(study 2): III evidence) Organisational leaders who generate organisational culture which is prepared to accept change. Only senior leadership has specialist and extensiveness of vision. (Bodenheimer, 2007: Level V evidence) Champions- leadership support and champions (Ploeg *et al.*, 2007: Level III evidence) Forms of leadership Various, multilevel (micro, meso, macro level), and multisectoral methods of leadership are vital to develop whole systems change (Edwards *et al.*, 2011: Level V evidence) Leaders must be involved and often consulted for an innovation to routinise (Greenhalgh *et al*,. 2004*:* Level I evidence) Senior leadership has power but require to be educated (Bodenheimer; 2007: Level V evidence) Top-leadership endorses adoption and receiving ideas (Bodenheimer, 2007: Level V evidence). Early, active and visible support from senior leaders (hospital leaders) to: provide resource allocation, remove bureaucratic barriers, build enthusiasm and set expectations (Pearson *et al*., 2008: Level III evidence) A chief executive who has strategic direction and has a high profile in the organisation; a project manager who supports the project, provides operational support and expertise, influences teams to take ownership; a consultant who endorses change, provides continuity, influences sceptical colleagues, and gives booking credibility with other staff groups (Buchanan *et al*., 2007: Level V evidence)	**Champions** Definition People who are dedicated to promote best practices and inspire others to make a obligation to evidence-based practice — are known to be effective (Edwards & Grinspun, 2011 (study 2): Level III evidence) "The engines of change" (Bodenheimer, 2007: Level V evidence) Type of champions Managers, educators, clinicians and front-line staff (Edwards & Grinspun, 2011 (study 2): III evidence Characteristics Champions should be excited. No front-line practitioners (due to their lack of time) must be chosen (Bodenheimer, 2007: Level V evidence) Role/tasks of champions Innovation is run by people who champion change, offer a clear vision and way for a change and clearness about fundamental problems Champions support and spread innovation by starting networks and inspire others to adopt best practices. Champions can be selected on every level: frontlines to the whole system. Champions and leaders dedicated to presenting and supporting change leaders who are open and amenable to research evidence, provide change, and are effective at interpreting evidence into daily practices (Edwards & Grinspun, 2011 (study 2) Level III evidence) The adoption of an innovation if key persons in their social systems are eager to support the innovation (Greenhalgh *et al.*, 2004: Level I evidence) Champions can be viewed as feature of accepting organisations (internal champion) (Bradley *et al.*, 2009: Level V evidence) Nurse champions and managers promote change, such as "unit leaders" in casual work locations (Pearson *et al*., 2008: Level III evidence) Champion roles (1) the organisational individualist, who provides innovators with independence from the organisation's guidelines,	**Opinion leaders** Role/tasks Expert opinion leaders apply impact through their power and status. Peer opinion leaders use impact through their representativeness and trustworthiness (for modest direct evidence) (Greenhalgh et al., 2004: Level I evidence) Professional and social systems (link to opinion leaders) (Bradley *et al.*, 2009: Level V evidence) Opinion leaders function at all levels of the system (Buchanan *et al.,* 2007: Level V evidence) Opinion leader strategies Key strategies to distribute evidence-based practices aim to: increase employment by incorporating opinion leaders into the staffing process (Yuan *et al.*, 2010: Level V evidence) Opinion leaders (as dissemination strategy) (communication channel) (Bradley *et al.*, 2009: Level V evidence) Requisitions for opinion leaders to work The trust and friendship opinion leaders can be employed to spread information quickly to network aristocrats as this group respects and trusts the leader (Collins *et al*., 2000: Level V evidence)	**Change agent** Role/tasks of change agents Change agents have to contemplate possible leverage points and obstructions to capitalize on and/or alleviate their interconnected potential to either hasten or slow down whole systems change at various points in time (Edwards *et al.*, 2011: Level V evidence) Change agents as part of the plan for change Appoint a devoted change agent and a change team and recognise and analyse applicable effective practices from other locations (UNAIDS & WHO, 2007: Level IV evidence) Role of change agency Human relationships must be positive and supportive. The two systems (assistance and organisation) should have the following in common: language, meaning, and value systems; resources; the change agent must ensure networking and relationship between organisations; and the outcomes of the innovation must be evaluated. The following capacities are a 'must': capacity, obligation, technical capability, communication skills, and project management skills (Greenhalgh *et al.*, 2004: Level I evidence)

	Leadership Characteristics of leadership An innovation will be adopted if it is championed by a CEO who uses considerable power (Meyer & Goes, 1988:Level V evidence) Leadership strategies enable change (Murrey *et al.*, 2011: Level III evidence) Change will be more successful when leadership at all organisational levels supports it and when it is presented into a setting where change is a continuing practice (UNAIDS & WHO, 2007: Level IV evidence) Effective leadership with an idealistic leader is a precondition for achievement of an innovation (De Lusignan *et al.*, 2005: Level III evidence) Leadership is connected to processes (in an organisation) (Edwards *et al.*, 2011: Level V evidence) Leadership happens in a nursing unit (organisation) culture and contains leadership prospects Leadership strengthens innovations and speeds adoption Leadership organises informal leaders to improve a (large) adoption "Leaders need to listen to the voice of the bedside nurse" (Harvey & Holley, 2011.: Level III evidence) Determination and perseverance, drive for personal and organisational success, wish to uninterruptedly progress, robust when critiqued Leadership is robust, effective and trustworthy leadership offers guidance, focus and drive Collective leadership needs extensive staff participation (Buchanan *et al.*, 2007: Level V evidence)	**Champions** procedures, and systems to create creative solutions to existing problems; (2) the transformational leader, who binds support from other associates of the organisation; (3) the organisational leader, who generates a monitoring system to guarantee that innovators correctly use the organisation's resources but also permitting them to act artistically; and (4) the network facilitator, who progresses cross-functional alliances within the organisation (Greenhalgh *et al*., 2004: Level I evidence) Champions pledge for change and spread (influenced by top-level leadership (Bodenheimer, 2007: Level V evidence) Role of champions Multidimensional roles, such as educator, facilitator, teacher, leader, policy developer, and assessor role (Ploeg *et al.,* 2010: Level III evidence). Champions are valuable in leadership learning/teaching and to test and modify innovation. (Bodenheimer; 2007: Level V evidence) Diffusion strategies of champions *Distribution of information regarding clinical practice guidelines:* Teaching and mindfulness: Acting as supply counsel nurses. *Champions as convincing practice leaders*: collaborating with committees and contributing in and leading multidisciplinary teams. *Modifying guideline implementation strategies to the organisational setting:* Discovering, checking, monitoring of best practices and policy and documentation changes to include best practice endorsements (Ploeg *et al.,* 2010: Level III evidence) Champions and diffusion of guidelines Champions impact the usage of Best Practice Guideline recommendations by: (1) dissemination of evidence regarding clinical practice guidelines, through teaching and mentoring; (2) being influential practice leaders at multi-disciplinary committees; and (3) modifying the guideline implementation strategies to the organisational setting. Strategies: several procedures of encouragement and financial incentives (Bodenheimer, 2007: Level V evidence)	**Opinion leaders** Effects Opinion leaders can have a negative or positive effect on the diffusion of innovations (Greenhalgh *et al.,* 2004: Level I evidence) Type of opinion leaders The technical advice opinion leaders offer technical advice on guidelines regarding a precise clinical topic and to help start the educational process (Collins *et al.*, 2000: Level V evidence) Two types of leaders: expert opinion leader, with local trustworthiness; and a strategic, 'political' opinion leader, with joint management and party-political skills (Fitzgerald *et al.*, 2002: Level V evidence)	**Change agent** External change agents Change agents appointed by external agencies are extra effective if they are (1) chosen for their homophily and trustworthiness with the possible users of the innovation; (2) skilled and reinforced to grow strong interpersonal relationships with possible users and to explore and understand the user's viewpoint; (3) stimulated to communicate the users' requirements and viewpoint to the designers of the innovation; and (4) able to allow the users to make autonomous evaluative choices regarding the innovation (Greenhalgh *et al.*, 2004: Level I evidence) A trustworthy, dedicated internal change agent is crucial for change in health care practices Supporting the internal change agent provides the agent with trustworthiness and self-confidence to lead (UNAIDS & WHO, 2007: Level IV evidence) Inspiring and supporting staff throughout the change process ensure to keep their commitment and generate a support system for the change agent (UNAIDS & WHO, 2007: Level IV evidence)

Supporting and reinforcing structures	Definition of supporting/reinforcing structures: System-wide benefits from controlling frameworks, policies and infrastructure that enable implementation, monitoring compliance, evaluate results and maintain the change in practice. Connecting all levels of an organisation, and spreading evidence-based innovations enables to usual norms, enhancing care and results (Edwards & Grinspun, 2011 (study 3 and 4): Level I and Iii evidence) **Characteristics:** **Resources** *Money/funding/budgetting* Devoted and ongoing funds make an innovation to be more possible to be implemented (Greenhalgh *et al.*, 2004: Level I evidence) Funding impacts spread of innovations (Hanberg, 2008: Level III evidence) Resources are required to support spread of best practices (money) (Edwards & Grinspun, 2011: (study 3) Level III evidence) Resources (as part of organisational readiness) are budgeted for (Naleppa, 2009: Level III evidence) Management activities which enhance change: Budgeted funds are required but might have less impact once an adoption decision is confirmed; the funding distribution for certain resources may lose its status as the adopters identify that these resources are compulsory for the adoption choice (Naleppa, 2009: Level III evidence) Resourcing is a factor, which affects all levels. The evidence demonstrates that financial thoughts will decide whether an innovation will be implemented or not (Fitzgerald *et al*., 2002: Level V evidence) *Human resources* Resources to support the spread of best practices include human resources, staff (Edwards & Grinspun, 2011 (study 3): Level III evidence) Providing of supplementary clinical staff (De Lusignan; Level III evidence) Successful routinisation which is influenced by incentives, capacity and capability. Early and extensive participation of staff at all levels improves the success of innovation (Greenhalgh et al.; Level I evidence) Professional association support (Ploeg *et al.,* 2007: Level III evidence) *Policies* Resources to support spread of best practices: policies (Edwards & Grinspun, 2011 (study 3): Level III evidence) The speed of the spread is influenced by: all features in which care happens: financial policies, guidelines (Horvitz-Lennon *et al.*, 2009: Level V evidence) **Time/timing of spreading best practices** Provide time to work on spread activities (Pearson *et al.*, 2008: Level III evidence) Time to study and practice innovations (Lau *et al.*, 1998: Level III evidence) Spread needs the right timing (Dearing & Kreuter, 2010: Level V evidence) Time to emphasis on the speed of change as slow pace causes less harm; time to learn, (no short term funds should be applied and drive of the innovation should be maintained) and time to embed (Buchanan *et al.*, 2007: Level V evidence) Timing/time includes a flexible supportive approach (Edwards & Grinspun, 2011 (study 3): Level III evidence) **Education & development** Education (Lau *et al.*, 1998: Level III evidence) Learning about the guideline (innovation) by group communication (Ploeg *et al.*, 2007: Level III evidence) Off-site, multi-hospital meetings for sharing of ideas, education and support (Pearson *et al.*, 2008: Level III evidence) Opportunities for education should be developed (Edwards & Grinspun, 2011 (study 3): Level III evidence) **Communication** Communication: effective communication crossways structural borders within the organisation improves the success of an implementation (whereby interorganisational networks are significant when the innovation is complex) (Greenhalgh *et al.*, 2004: Level I evidence) Communication (Lau *et al*., 1998: Level III evidence) Communication strategies (by means of feedback to enable goal setting, influencing organisational structures, and enhancing team work) (Murrey *et al.*, 2011: Level III evidence) Communication processes (as part of organisational willingness) (Naleppa, 2009: Level III evidence) Communication structures and their characteristics, such as clearly transferred goals, training for refining communication skills, and using team groups to interconnect and solve instant problems (Greenhalgh *et al.*, 2004: Level I evidence) Meetings and conferences to communicate information regarding the innovation (Dirksen *et al.*, 1996: Level III evidence) Generating opportunities in which influence, philosophies, and ethical issues are discussed to improve learning, understanding, and managing innovations (Waterman *et al.*, 2007: Level III evidence) Successful implementation to communicate why an innovation is effective (Dearing & Kreuter, 2010: Level V evidence) Ongoing communication regarding the enhancement efforts to create awareness and comprehensive support for spread at all levels. Communication materials include posters, guidebooks, a newsletter, conferences etc. (Pearson *et al*., 2008: Level III evidence) Create chances to talk about change (the so-called social exchange process) (Edwards & Grinspun, 2011 (study 3): Level III evidence)

Supporting and reinforcing structures	**Networking/corporation** Key strategies to distribute evidence-based practices aim to focus on the evidence base and straightforwardness of suggested practices; form networks of sponsors; generate contributing organisations; create applied implementation tools and guides for key stakeholder groups; develop networks to enhance learning opportunities; and include monitoring and evaluation of indicators and aims (Yuan *et al*., 2010: Level V evidence) Extensive adoption is realized through "trust and friendship" networks (Collins *et al.*, 2000: Level V evidence) Effective teamwork between international agencies involved in the health improvement ensures an extensive approach for improvement, institutionalisation of guidelines, and enlarges the sustainability of the innovation The role of the international agencies included the delivery of both technical and financial support Networking and international contacts augmented the experience of key stakeholders and improved the diffusion of innovations (The Worldbank, 2005: Level III evidence) Inter-organisational teamwork and networks are desirable (Ploeg *et al.*, 2007: Level III evidence) Networking and cooperation is the nature, kind and power of external networks depending on the professionalised locations (Fitzgerald *et al.*, 2002: Level V evidence) Cooperatively with the professional groups expected to partake in implementing might enhance the succes of the innovation (Dixon-Woods *et al.*, 2011: Level V evidence) Networking/coorporation- Formal and informal networks are required for (enhancing) spread (Buchanan *et al.*, 2007: Level V evidence) Teamwork is desirable for (enhanced) spread (Edwards & Grinspun, 2011 (study 4): Level I and III evidence) **Feedback** Feedback involves precise and timely evidence regarding the influence of the implementation process (Greenhalgh *et al.*, 2004: Level I evidence) Evaluation and testing of the innovation are required (Dearing & Kreuter, 2010: Level V evidence) Evaluation should be scarcely limited to the intervention (with direct focus of the evaluation) rather than seeing the systemic outcomes and accidental outcomes of interventions (Dixon-Woods *et al.*, 2011: Level V evidence) Improved innovations need feedback (Lehoux *et al.*, 2008: Level V evidence) **Organisational structure/culture** Innovation must be seen as normal part of an organisation (Edwards & Grinspun, 2011 (study 4): Level I and III evidence) Resources can be found in the organisational structure (Edwards & Grinspun, 2011 (study 4): Level I and III evidence) The speed of the spread depends on: all aspects: structural and cultural features of organisations adopting numerous practices (Horvitz-Lennon *et al.*, 2009: Level V evidence) Organisational readiness factors are preparation and organisational education (Naleppa, 2009: Level III evidence) Organisational readiness factors, and education features are: simulated training, on-going education and new ideas stimulated at staff meetings, positively impact an organization's capability to implement best practices successfully (Naleppa, 2009: Level III evidence) *An organizational structure* is desirable which: values learning from errors: is helpful of role models and team expansion: offers continuing learning: adapts job descriptions to reflect accountability changes and inspires new ideas, which impacts the adoption of innovative best practices (Naleppa, 2009: Level III evidence). The "right climate" for education and for enabling change has to be realised within and across organizations (Waterman *et al.*, 2007: Level III evidence) Good management systems must be in place which includes an interconnected, communicative team /effective team (De Lusignan *et al.*, 2005: Level III evidence) Positive staff approaches and principles and teamwork must be in place (Ploeg *et al.*, 2007: Level III evidence) The volume of an organisation to transform is influenced by its history, culture and the quality of interactions and these will differ by setting Structural complexity (for example when an organisation has many layers, strong departmental borders, these borders are obstacles in the diffusion process (Fitzgerald *et al.*, 2002: Level V evidence) Organisational/system capacity is compulsory: Organisational capacity building, teaching, and technical assistance, policy agenda-setting, constructive practice environments, the benefits of the innovation for the organisation and its members, pool the ideas of a social sector and internal social structure Realizing spread is influenced by three groups of factors: 1. knowledge: making information available and accessible (push), 2. practice (pull), and 3by a communication system. Conditions for current distribution systems should be made available, such as a professional association, or a network of productions or community health outreach organisations (Dearing & Kreuter, 2010: Level V evidence) Complex systemic processes and institutional services must be taken into consideration (Dixon-Woods *et al.*, 2011: Level V evidence) Unit(s) for spread should be designated which are unchanging units or units with histories of successful spread (Pearson *et al.*, 2008: Level III evidence) Organisational context involves the existence of influential relationships; in an organisation hierargies and boundaries can be a barrier to spread; the organisational culture must be a supportive culture and readiness for change should exist. Involvement of staff, senior management involvement, balancing priorities (no competing priorities) are all parts of a supportive organisational culture (Buchanan *et al.*, 2007: Level V evidence)

	Contextual structure The procedure the innovation will have in all locations varies, based on the context (Waterman *et al.*, 2007: Level III evidence) Contextual barriers are created by inaccessibility of computers, unavailability of applicable literature, and non-usefulness. Further, time and job changes , enablement, and 24/7 support might be facilitators or barriers towards spread (Lau *et al.*, 1998: Level III evidence) Contextual factors involve contextual and managerial issues within an organisation or social system that inspires and provides, or disappoints and obstructs the processes of spread (Berwick, 2003: Level V evidence) Another contextual factor is linked to the features of the patient group, their readiness to follow treatment and the burdens they apply on professionals. Innovations will be adopted if the targeted circumstances are serious and the treatment easy to follow (Fitzgerald *et al.*, 2002: Level V evidence) **Individuals/innovators/adopters** Features of innovators (for example (lack of) experience, degree) have an impact on innovations (Hanberg, 2008: Level III evidence) Good personal skills and willpower of the facilitator are crucial (Waterman *et al.*, 2007: Level III evidence) Diverse "voices" into the innovations should be combined (Waterman *et al.*, 2007: Level III evidence) Individual features related to the level of diffusion of innovations can include: age, sex, level of education, standards, beliefs, tenancy and cosmopolitism. In this study, tenancy and cosmopolitism were shown to be noteworthy issues related to the grade of adoption (Kennedy-MacDonald, 2008: Level III evidence). Further, the degree of 'cosmopolitism' (which distinguished from the rest of the population by its venturesomeness, clearance of risk, fascination with novelty, and willingness to leave the village to learn) (Berwick, 2003: Level V evidence) Clearly allocated and accepted accountability, such as the advocacy role had a significant impact in the adoption process; (however, less significant when compared to effective communication, administrative knowledge and planning) (Naleppa, 2009: Level III evidence) Innovators must have listening skills (to identify problems/challenges) The demands (including beliefs, norms) of what possible adopters want (pull) must be clear (Dearing & Kreuter, 2010: Level V evidence) A spread organiser, such as an individual to supervise and support the spread effort, must be appointed to align the services for change and overpowering any challenges. A main role for the unit manager was viewed as contributory in organising and enabling the change activities in both hospitals appealing in top-down innovations or bottom-up innovations (Pearson *et al.*, 2008: Level III evidence) **Innovation itself** Complexity of innovation has impact on innovations (Hanberg, 2008: Level III evidence; Berwick, 2003: Level V evidence) The nature of the innovation (e.g. technology) has impact on innovations (Dirksen *et al.*, 1996: Level III evidence) Clarity is required regarding the purpose, benefits, and expected outcomes of the change (UNAIDS & WHO, 2007: Level V evidence) The Dynamics of Diffusion (Tipping point) This dynamic suggests that successful diffusion is influenced by how an organisation or social system regards innovators or early adopters. And the boundary among early adopters and the early majority rather than other groups or phases (Berwick, 2003: Level V evidence) *'Rules': Rule 1*: Find Comprehensive Innovations; *Rule 2*: Discover and Support Innovators (leadership); *Rule 3*: Advance Early Adopters: *Rule 4*: Ensure that Early Adopter Activity is visible (social channels); *Rule 5*: Trust and Allow Reinvention; *Rule 6*: Develop a 'slack' for Change (Berwick, 2003; Level V evidence). The innovation must be proven effective (Evidence about effectiveness should exist); The innovation should be perceived as credible and relevant (Dearing & Kreuter, 2010: Level V evidence) Benefits of an innovation must be understood (Edwards & Grinspun, 2011 (study 4): Level I and III evidence) Extra benefits such as clinical effectiveness, cost effectiveness, etc. should be measured (Dirksen *et al.*, 1996: Level III evidence) The innovation should align with the present requirements and beliefs (Berwick, 2003:; Level V evidence) Innovations need "organisational fit", which includes accessible, cost-effective, safe, effective, organisationally, socially and ethically comprehensive, problem-solving and has no side-effects (Lehoux *et al*., 2008: Level V evidence) Innovations are more striking as they are clearly, well-matched, comprehensible, noticeable, testable and compliant; Benefits should be clear; The evidence used in the innovation must be quality- evidence, trustworthy, derived from a decent source, and non-threatening (Buchanan *et al.*, 2007: Level V evidence)

The findings outlined in Table 2.6 were used to answer the review question. The review question stated previously in this Chapter was the following: *"What are the characteristics of the benefit levers Alignment, Permeation plans, Leadership for change and Supporting and reinforcing structures to facilitate the spread of best practices?"*
The following paragraphs answer the review question by providing charactistics per benefit lever.

2.3.5.1 Alignment

Alignment can be characterised as: *Agreement/ consensus* of the innovation(s)/best practice(s)(strategy) with the expectations, priorities, values, goals/aims, visions/ philosophies, policies, cultures, aims and existing initiatives at *personal* (e.g. among stakeholders), *organisational* (e.g. top management and middle management, government) and *contextual level* (e.g. external environment, financial incentives, regulations and public reporting professional norms).

2.3.5.2 Permeation plans

A plan for spread including 'phases' such as:

- *Preparing/laying the foundation for spread* (preliminary phase) involving: funding/sponsorship, identification and agreement of aim and need for spread, choosing and adapting a proven communication of the innovation, sharing evidence regarding benefits of the innovation and appointing a leader/agent/team for change.
- *Developing the plan for spread* (with the leader/agent/team for change) whereby looking at: the innovation itself, utilization and/or enhancement of organisational or community structure (whereby creating and maintaining a receptive and supportive environment), the target population, the timeframe, transition issues and developing a communication plan.
- *Executing and refining the plan for spread*, involving the implementation, monitoring, communication, evaluation and modifying of (indicators of) the change.

Furthermore, the plan involves the actual spread (quantitative: replication in other settings; functional: increase scope of activities; political: building relations with decision makers to create receptive environment and change of policies/laws) involving: the selection of a spread strategy fitting the context, securing funding, stakeholder involvement, implementation of spread strategy in existing policies, systems, plans, budgets, etc., measure and communicate results.)

2.3.5.3 Leadership for change

Leaders, Champions, Opinion leaders, or Change agents have the following characteristics: committed to promoting/supporting best practices; open and receptive to research evidence; able to empower; are skilled such as communicative, project managemental, technically, politically; visionary; persistent; ambitious; credible; friendly; representative; enthusiastic; support change; provide transparency; are educated about change; enhance strong interpersonal relationships with users; create institutional culture ready for change by: considering facilitators, removing (bureaucratic) barriers, facilitating networking and corporation among organisations); effective at experimenting; translate and adjust evidence into daily practices at all levels of the system whereby involving all staff members (team).

Leaders, on their turn, should also receive support.

Types/examples of leaders are: managers/chief executives (who have strategic direction and have high profiles in the organisation); project managers (who support the project, provide operational support and expertise and influence teams to take ownership); consultants (who endorse change, provide continuity, influence sceptical colleagues, and give booking credibility with other staff groups), and educators (who provide technical support) and clinicians/facilitators.

2.3.5.4 Supporting and reinforcing structures

Supporting and reinforcing structures can be defined as follows: *"System-wide benefits from controlling frameworks, policies and infrastructure that enable implementation, monitoring compliance, evaluate results and maintain the change in practice"* which includes the following characteristics:

- Resources, such as: funding/budget; human resources/extra (clinical) staff; and policies should be available.
- Time to learn about the innovation, a slow page of innovation causes less harm, and timing the spread of best practices should be planned for.
- Education and development (through group interaction and meeting).
- Communication should be done through: inter-organisational meetings, forums using materials such as: posters, guidebooks, newsletters, conference-calls, etc. to provide feedback regarding the effectiveness/success of the innovation; goals; training for improving communication skills; power; philosophies and ethical issues.

- Networking/cooperation by: creating “trust and friendship” networks; inter-organisational/external/(in) formal networks; key stakeholder groups and international agencies.
- Feedback and evaluation (regarding the impact of innovation, confined to the intervention).
- Organisational structure and culture, including organisational readiness, a supportive culture, capacity (based on history, culture and quality of relationships of an organisation), continuous (intra- and inter-) organisational learning and education, selection of stable units and involvement of staff.
- Contextual structure, including contextual barriers such as the accessibility of computers; availability of relevant literature; the range of useful applications and ease of use; managerial factors; the characteristics of the patient group such as their willingness to conform to treatment and the pressures they exert on professionals.
- Individuals, including the innovators, the adopters, involving demands, experiences, and individual characteristics such as age, sex, level of education, etc., and interpersonal skills such as listening skills.
- The innovation itself, such as the complexity, benefits, nature, clarity, compatibility, testability, effectiveness, user-friendliness and cost effectiveness of the innovation, and whether the innovation is socially and ethically sound.

The clarification of characteristics and definitions of the benefit levers helped to get a better understanding of the concepts and was later used to identify themes during the analysis of the interviews (see Chapter 3).

2.4 Summary

This Chapter provided a discussion of the findings of the first step of objective 1: To explore and describe characteristics of benefit levers to facilitate spread of best practices of this study. Most of the documents found were opinion papers. A lack of evidence was found concerning the benefit levers in general. Specifically regarding the benefit levers “Alignment” and “Permeation plans”, little evidence was found. Characteristics and definitions of the four benefit levers were given and were used to identify themes during the analysis of the interviews (second step of objective 1) which is outlined in Chapter 3.

CHAPTER 3

The realisation of benefit levers in the spread of Kangaroo Mother Care in South Africa

3.1 Introduction

The previous chapter provided a discussion of the first step of the first objective: clarification of characteristics of the benefit levers for the spread of best practices by means of an integrative literature review. Chapter 3 describes the realisation of benefit levers according to key informants involved in the implementation and spread of a best practice: Kangaroo Mother Care (KMC) in South Africa.

In this chapter, firstly a background is provided of neonatal health care and KMC in South Africa. Further, the method used in this phase of the study is outlined, as well as the findings. Finally a summary of this chapter is provided.

3.2 Background of neonatal care and Kangaroo Mother Care in South Africa

This background outlines the following: the Millennium Development Goal (MDG) 4 regarding childcare. Further, achieving the MDG 4; the challenges globally and in South Africa are discussed. Interventions to improve child mortality in South Africa are provided. Further, discussions regarding KMC, as well as the implementation of KMC in South Africa are provided.

3.2.1 Millenium Development Goal 4 regarding childcare

Mother and child health, which is part of Primary Health Care (PHC), receives attention globally. The first time was in 1978 when the World Health Organization (WHO)/United Nations Children's Fund (UNICEF) conference on PHC was held, resulting in a declaration, referred to as the *Alma Ata Declaration on Primary Health Care* (WHO, 1978). Since this conference, several approaches and programmes to protect women and children's health and well-being has been developed, such as growth monitoring, oral dehydration, breastfeeding, the Safe Motherhood Initiative (SMI) (1987), and the 'World Summit Goals', which was based on the 'Rights of the Child' in 1990, followed (Mhlanga, s.a.:116-117). In 2000, eight Millennium Development Goals (MDGs) were developed and launched by the UN (WHO, 2011b). MDG 4

involves children's health which is based on baseline data from 1990 (Mhlanga, s.a.:116), aiming to reduce child mortality by two thirds by the year 2015 (WHO, 2011b). The following paragraph addresses the challenges in the achievement of MDG 4.

3.2.2 Achieving Millenium Development Goal 4: Challenges globally and in South Africa

Child mortality is a global issue needing attention as reflected in the results of a systematic analysis of global, regional, and national causes of child mortality in 2008 (Black, Cousens, Johnson, *et al.*, 2010). This study found that worldwide a total of 41% (3·575 million) of child mortality occurred in neonates.

Child mortality is especially high in low-resource countries, with the highest rate in sub-Saharan Africa countries (Rajaratnam, Marcus, Flaxman, *et al.,* 2010:1988). According to the National Department of Health (NDoH, 2012c:7,9) child mortality in South Africa, as one of the sub-Saharan countries, continues to be excessively high (40/1000 live births in 2009) and neonatal mortality remains relatively high (14/1000 live births in 2009). Furthermore, the following were found as the three commonest causes of under-five deaths in South Africa: AIDS related deaths including TB (40%); deaths during neonatal period (18%); and low birth weight (12%) (NDoH, 2012b:7). This causes South African's progress working towards MDG 4 by 2015 to be hampered, which is shown in Figure 3.1 (Chopra, Lawn, Sanders, *et al.*, 2009b:1024).

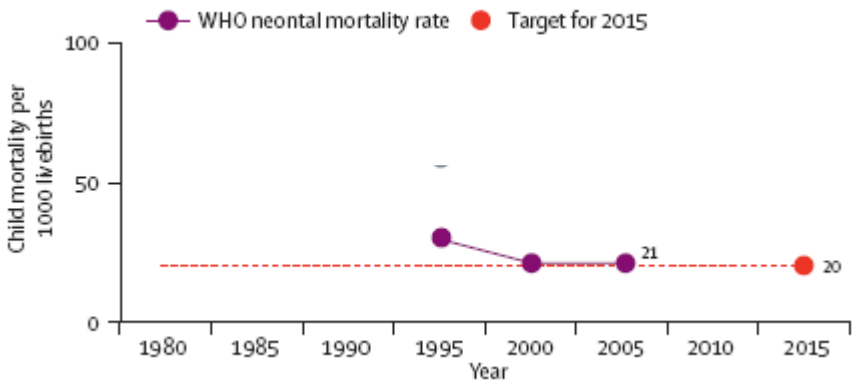


Figure 3.1: South Africa's progress towards achieving MDG 4 by 2015

According to Chopra, Daviaud, Pattinson, *et al.* (2009a:835), continuing poverty and the HIV/AIDS epidemic are important factors contributing to the remaining high child and neonatal mortality rate and the challenge to achieve MDG 4 in South Africa. Other factors which are

constraints are a combination of health-related issues, such as acute and chronic diseases at all age-groups, and socio-economic levels. These health-related issues are a burden on an already weak and an underdeveloped public health-care delivery system which is struggling to overcome deprived administrative management, low drive, lack of funding, and brain drain (Chopra *et al.*, 2009b:1023).

One strategy which has an immediate effect on the child mortality (and MDG 4) and which involves the South African National Department of Health's attempt to address the reduction of child mortality in its national strategic plan is KMC. Besides KMC, other strategies and interventions are developed to achieve MDG 4, which are outlined in the following paragraph.

3.2.3 Strategies and interventions to achieve Millenium Development Goal 4

To achieve MDG 4, the WHO has set specific strategies in the following areas:

- Reinforcing health systems and supporting interventions regarding effective and cost-effective policies and strategies;
- Observing and assessing the weight of maternal and new-born ill-health and its effect on (the socio-economic development of) communities and cultures;
- Developing collaborations to effectively utilise scarce resources and reduce repetition of efforts to enhance infant health;
- Supporting innovation in infant health by stressing social and economic profits (adapted from WHO, 2011a).

In 2005, recommendations were developed concerning the health system, specifically focusing on improvement of South Africa's health system. Recommendations include clarifying policy, norms, standards and guidance in certain areas, training as well as facilities and resources (NDOH, 2006:1). These recommendations should be included in the Department of Health's policies, guidelines and protocols and effective monitoring should be done on a quarterly and annual base (NDoH, 2006:1).

KMC will be outlined in the next paragraph.

3.2.4 Kangaroo Mother Care

KMC involves care placing of the neonate in the kangaroo position which includes: vertical position of the infant between the mothers' breasts, skin-to-skin contact (SSC), exclusive

breastfeeding and support to the mother-infant (Nyqvist, Anderson, Bergman, *et al.*, 2010:820,825). KMC was originally implemented in San Juan de Dios hospital in Bogota, Colombia by doctors Héctor Martínez Gómez and Edgar Rey Sanabria in 1979. KMC was originally developed to modify the care for the low birth weight infants (LBWI) (<2.5 kg) in contrast with normal birth weight infants (>2.5 kg) (Nyqvist *et al.*, 2010:820; Bergh & Pattinson, 2003: The KMC method aims to help mothers with pre-term babies/LBWI to gradually become skilled and responsible for their infant's physical and emotional needs (Nyqvist *et al.*, 2010:820).

Figure 3.2: A mother practising KMC (copyright from Little Steps®, 2012)

An important outcome from an un-blinded, randomised controlled clinical trial showed that the implied part of KMC increased skin-to-skin contact and resulted in improved physiological outcomes and stability compared to incubator care (Bergman, Linley & Fawcus, 2004:779). This outcome is specifically crucial for developing countries where incubators often are not available (Bergman *et al.,* 2004:784). Furthermore, KMC leads to the following benefits: improving the mother-infant bonding and attachment; decreasing maternal postpartum depression; improving parental compassion to infant signals; enhancing infant physiological stability and decreasing pain in the infant; prolonged duration of breastfeeding; positive effects on infant development

and infant-parent contact (Nyqvist *et al*., 2010:820); a significant decrease in neonatal mortality of preterm babies (birth weight <2000 g); and effective decreasing of severe morbidity, predominantly from infection (Lawn, Mwansa-Kambafwile, Horta, *et al.*, 2010:i144; Bergh, van Rooyen, Lawn, *et al.*, 2007:vii; Bergh, Arsalo, Malan, *et al.*, 2005:1102).

Further, KMC was adopted in countries such as Nigeria, Madagascar, Malawi, Ghana, Indonesia, etc. (Bergh, Rogers-Bloch, Pratomo, *et al.,* 2012; Bergh, Davy, van Rooyen, *et al.*, 2009; Bergh *et al.*, 2007:1). From 1999/2000 also an effort was made to implement KMC in South Africa. Currently, South Africa is taking a leading role in the implementation of KMC, with the development of an implementation package and testing various strategies to disseminate it (Bergh *et al.*, 2008:2). The following section will outline the implementation of KMC in South Africa.

3.2.5 The implementation of Kangaroo Mother Care in South Africa

Implementation of KMC in South Africa was guided by research and initiated by researchers. Figure 3.3 outlines the implementation of KMC in South Africa.

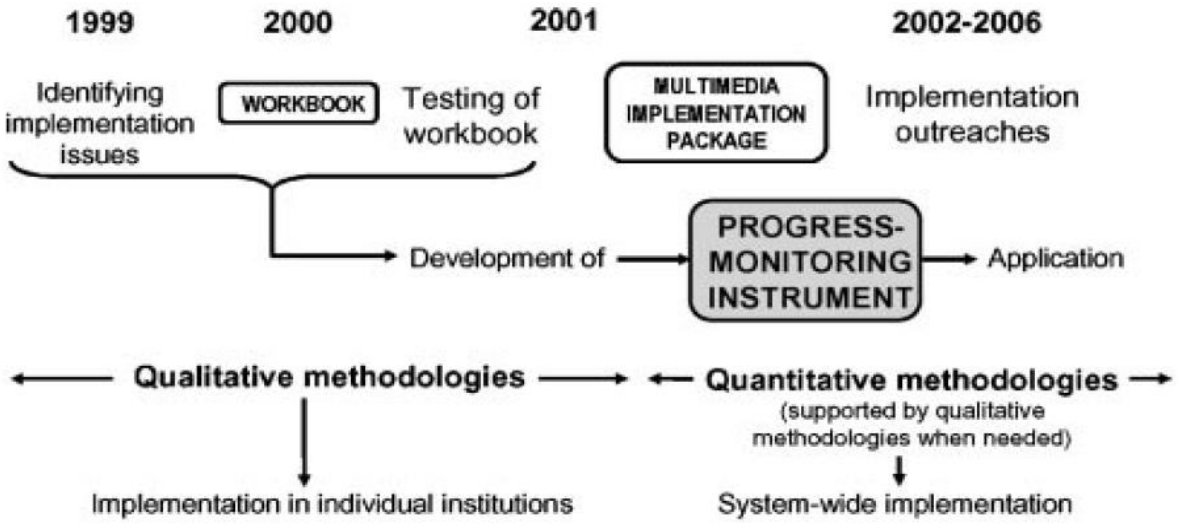


Figure 3.3: The implementation of KMC in South Africa (Bergh *et al.*, 2005:1103)

Internationally, an important element in supporting the implementation and spread process of KMC is the development of tools. A number of implementation tools were developed and made available such as: posters; the WHO's Essential Newborn Care (ENC) training course; and the Integrated Management of Childhood Illnesses algorithms (Bergh *et al.,* 2007:ix). For South Africa, another important implementation tool includes the workbook for implementation of KMC

which was developed aiming to provide guidelines in the form of questions to make the health professionals aware of issues which they should consider when implementing KMC in their health care facility (context) (Bergh, Bergman, Delport, *et al.*, s.a.:1). By creating awareness, the workbook facilitates a 'system' in which KMC can be implemented and improved (Bergh *et al.*, s.a.:4). The workbook was originally tested in four hospitals in South Africa (Bergh & Pattinson, 2003:712).

Besides the workbook, in order to introduce KMC in neonatal wards or nurseries and to assist healthcare workers and management in the implementation of KMC in South Africa, five conceptual tools were developed. In the development of the tools, observations and informal conversational interviews, as well as unstructured, in-depth interviews were conducted with senior managers, doctors and nurses at two large training hospitals in the north of South Africa (Bergh & Pattinson, 2003:709).

When developing the tools, certain issues must be taken into consideration during its establishment, which are outlined in Figure 3.4.

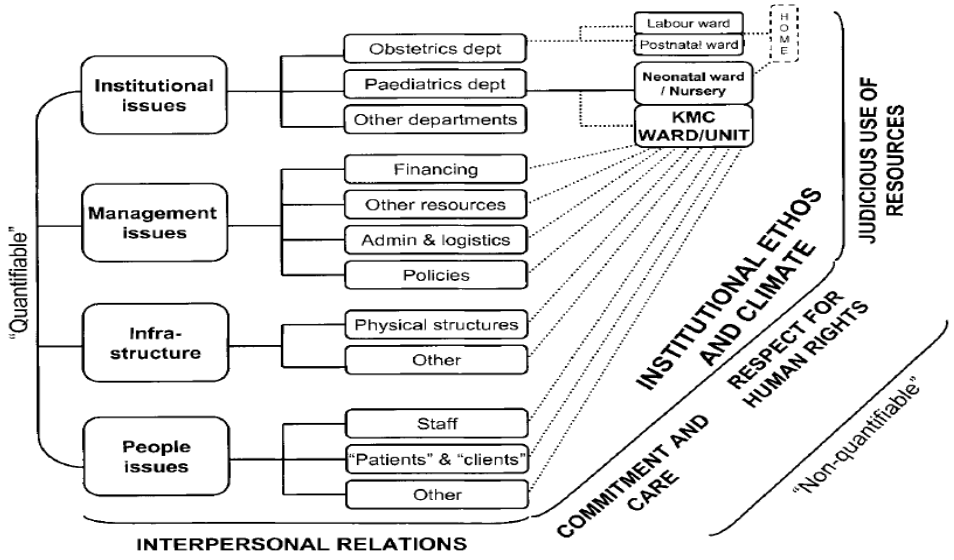


Figure 3.4: The issues of the establishment of KMC in South Africa (Bergh & Pattinson, 2003:710)

Further, to determine and evaluate the implementation progress of KMC in South Africa at both institutional and provincial level, a progress-monitoring model (Bergh *et al.,* 2005:1104) was used. This model helps to set standards for accreditation after some years of implementation (Bergh *et al.,* 2012:1). Figure 3.5 outlines the model.

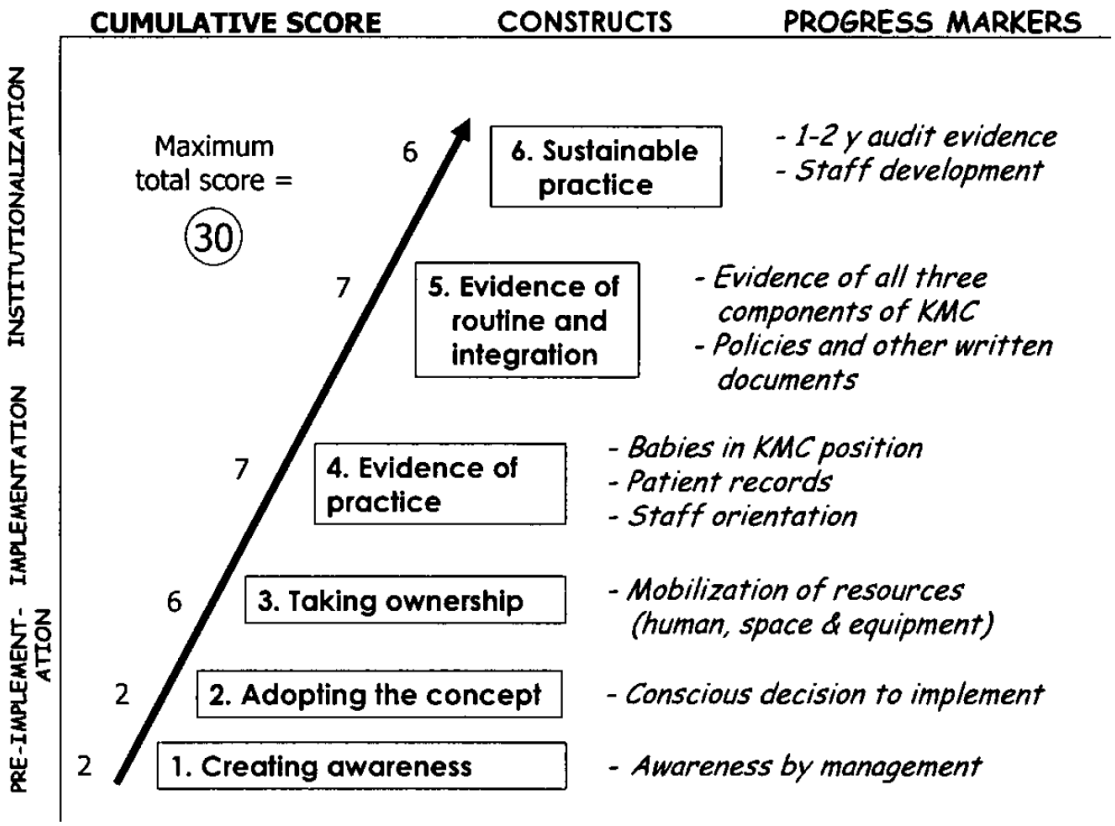


Figure 3.5: Progress monitoring model (Bergh *et al.*, 2005:1104)

The model exists of three phases (pre-implementation, implementation and institutionalisation) and six constructs, which show the development in implementation (awareness, adopting the concept, mobilisation of resources, evidence of practice, evidence of routine and integration, and sustainable practice). The aspects of the instrument developed are made measurable through a scoring-system. The maximum score a hospital can accomplish is 30 and it can be calculated during an on-site visit to the hospital (Bergh *et al.,* 2005:1104).

In order to implement and spread KMC system-wide, two approaches can be used: the “big bang” approach (which implies spreading to all facilities at the same time) or the “staggered” approach (involving scaling up in phases over a period of a few years). For KMC the “big bang” approach is preferred. A detailed three-year timeline for initial implementation is planned. This plan includes three to nine months for awareness and sensitisation (advocacy), three to six months for initial training of key role-players, six to nine months of multiple facilitation visits at the individual health care facilities which plan to implement KMC, six to nine months for

progress monitoring, three months for the summative evaluation, and a 12-month period of sustainability support (Bergh *et al.*, 2007:x).

KMC was spread in South Africa to hospitals in KwaZulu-Natal (Pattinson, Arsalo, Bergh, *et al.*, 2005:924-927), Gauteng and Mpumalanga province (Bergh *et al.*, 2005:1102). Implementation was best achieved when using a 'well-designed multimedia educational package (which consists of a workbook, a reader, two videos, a teaching poster, and some examples of records and policy documents), together with an onsite, face-to-face strategy, whereby the package was explained and follow-up was done (Pattinson *et al.,* 2005:925, 927).

Currently, South Africa's most recent strategic national plan (2012-2016) mentions in its strategy to strengthen delivery of maternal, newborn, child and women's health and nutrition services at district level, that KMC should be implemented and spread in all public hospitals and health facilities by 2015 (NDoH, 2012c:17-18, 39). Further, large-scale implementation research (e.g. for KMC) is mentioned as one of the innovative examples in health programming which has potential to substantially increase access to treatment and services in the community and primary health-care settings (Chopra *et al*., 2009b:1028). Effective implementation and spread of best practices is crucial as this might decrease the child mortality. Chopra *et al.* (2009a:835) confirms this by their finding that an estimated number of 11 500 infants' lives could be saved by effective implementation of basic neonatal care at 95% coverage.

However, the implementation and spread of KMC at a large scale is a long process which requires reinforcing practices before implementation can occur. Furthermore, this process requires a variety of facilitators such as resources and space, human skills and supervision, building of networks with healthcare authorities (locally, provincially and nationally), and support of management at different levels (Bergh *et al.*, 2012:3; Bergh *et al.,* 2009:90; Bergh *et al.*, 2007:vii). Therefore, in order to integrate KMC throughout the whole health system, KMC should not be viewed as a project on itself, but as the standard of practice in the institution. Further, KMC should not have a bottom-up approach (Bergh *et al.,* 2007:ix). However, KMC as best practice is only implemented on limited scale. Spread to the whole system seems to be problematic (Bergh *et al.*, 2008:1; Bergh *et al.,* 2007:vii). The next paragraph will outline a summary of the challenges and solutions to achieve MDG 4.

3.2.6 Summary of the challenges and solutions to achieve Millenium Development Goal 4

The report of the maternal child and women's health summit states that the issue is not the existence and development of recommendations and policies as such, but the implementation and spread thereof (NDoH, 2009:7). This statement is supported by the United States Agency for International Development (USAID) South Africa, which states that although high-quality maternal and child health policies and guidelines are in place, implementation and system-wide spread of these policies and guidelines are weak. In addition to this, the report of the maternal child and women's health summit outlines the following 'bottlenecks' regarding implementation: lack of coordination; lack of familiarity with policies and guidelines; poor supervision (due to lack of time and accountability), and lack of leadership and accountability (NDoH, 2009:8).

Although not achieving the MDG 4 and the problematic/suboptimal implementation of policies and guidelines are issues given attention to by the National Department of Health (NDoH, 2012b; NDoH, 2012c; NDoH, 2009:3), currently no improvement is seen. The question can be raised: what is needed for high-quality guidelines and policies to be effectively implemented and spread in order to improve neonatal health outcomes and reduce neonatal mortality? Certainly leadership and strong management which provide technical and financial support and human resources for South Africa's health system are needed at all levels. This is confirmed by Coovadia, Jewkes, Barron, *et al.* (2009:817) which state that although South Africa's health system has been transformed post-apartheid into an integrated, comprehensive national service, issues in leadership and frail management have led to insufficient implementation of what are frequently good policies. They further state that issues such as facets of primary health care which are lacking and the shortage of human resources should be addressed, as well as innovative approaches to health service delivery (such as KMC) in order to achieve the MDGs (Coovadia *et al.*, 2009:817).

Further, to support the implementation and spread of interventions, transformation of South Africa's health system is needed. Concurrently, the Department of Health must have an increased leadership and supportive role to transform the system by reorganisation of resources concerning primary health care, such as: the likely implementation of a national health insurance system; assignation of private practitioners in providing primary care; an enhancement of training institutes and programmes; inter-sectorial interventions and national policies that improve key social factors; and increased accountability of the whole system (Chopra *et al.*, 2009b:1029).

Finally, no study was found regarding the perceptions and experiences of the spread of best practices. Therefore semi-structured individual interviews obtaining exploration of the perceptions, thoughts and feelings of key informants involved in the spread of KMC in South Africa were needed in order to obtain a better understanding of what is required to facilitate spread of best evidence. Description and the application of the interviews in this study are outlined in the next paragraph.

3.3 Interviews

This paragraph outlines the theory of interviews and the application for this study.

3.3.1 Interviews as a research method

This study aimed to develop a guide for an operational plan utilising benefit levers in the spread of best practices in the South African context. To achieve this aim, characteristics of benefit levers to facilitate spread of best practices had to be described. As the guide for an operational plan was for the South African context, besides characteristics obtained from a global literature's perspective (see Chapter 2), empirical data was needed. Empirical data was required regarding the characteristics and use of benefit levers in the spread of best practices, specifically for the South African context and what was needed to spread best practices in future. Therefore, key informants of as many levels of the health system as possible (predominantly from the field of maternal and child health care) involved in implementation and spread of KMC as best practice were interviewed by means of semi-structured individual interviews. A semi structured interview is defined as "an interview with the purpose of obtaining descriptions of the real life world of the interviewee with respect to interpreting the meaning of the described phenomena" (Kvale, 2007:8). In this case the use of benefit levers for the spread of a specific best practice (KMC) in the South African context was described.

However, before the decision is made to use any type of data-collection method, the question should be answered whether this method is the most appropriate to answer the research question (Kvale & Brinkmann, 2009:115). Semi-structured individual interviews as data-collection technique was the most appropriate to achieve the objective as these type of interviews explored the perceptions and experiences of the key informants regarding the spread of KMC and what is required in terms of benefit levers for spread of KMC in a descriptive way.

Further, this method was chosen as the type of data collection is flexible and optimal communication (both verbal as well as non-verbal communication) is possible to gain more information concerning the topic (Alasuutari *et al.*, 2008:317).

The different aspects to be considered for an interview, such as the theoretical/philosophical underpinning, designing the interview, carrying out the interview and data analysis and writing up of interviews are discussed in the following paragraphs.

3.3.2 Theoretical/philosophical underpinning

Interviews in qualitative research often aim to obtain information and understanding regarding the interviewees' experience of a topic using their own words instead of numbers to give meaning to phenomena of the study (Kvale, 2007:11). The interview must therefore have a theoretical/philosophical underpinning. This underpinning can include a contextual or realist epistemological assumption. When a contextual assumption is used, context is integral to understand how people experience their lives, the evidence produced aims to add completeness and the researcher plays a role in data generation and analysis (King & Horrocks, 2010:20). In line with this, there are different epistemological conceptions of interview knowledge such as a phenomenological philosophy (whereby the focus is on the real-life world, precise descriptions and the use of bracketing), a hermeneutical philosophy (including the interpretation of the meaning of texts), a positivist epistemology (whereby truth is found through methods, knowledge is based on observable data and bias is reduced as much as possible); and the postmodern approach (whereby the interview is in line with the narrative, linguistic, contextual and inter-relational nature of knowledge) (Kvale, 2007:20-21).

For this study the philosophical underpinning in terms of epistemology of the interview included the postmodernist epistemology as the truth was found through a combination of literature, empirical data (observations and interviews) and expert review whereby bias was acknowledged and reduced as much as possible. Further, the emphasis was not on the lived experiences of the participants but rather on how benefit levers were used in the implementation and spread of the best practice (KMC). The knowledge production can be viewed as a traveller, as the benefit levers had to be discovered by asking each participant his/her experiences and thoughts regarding his/her involvement/role in the implementation and spread of KMC and experienced challenges, obtaining a variety of views instead of 'digging' deeper in their experiences.

3.3.3 Designing the interview

Before the interview is conducted, thorough preparation of the interviewer is required to ensure valid evidence (Kvale, 2007:8). Although no standard rules exist, certain choices in the different stages of the interview are made. For example: the why, what and how of the interview should be clarified beforehand, as well as the interviewees knowledge (Kvale, 2007:37, 39).

In general, designing the interview consists of the following aspects: framing the interview question; defining the sample and recruiting participants; and developing the interview guide which will be explained and applied for this study as follows:

3.3.3.1 Framing the interview question

In this study open questions were asked e.g. regarding the key informant's involvement in implementation and spread of KMC, the challenges experienced, etc. Further, probing was used. Questions were reviewed by experienced researchers and pilot-tested beforehand. Probing is a 'specific type of questioning' including three types: elaborative, clarificative and completive (King & Horrocks, 2010:53). The interviewer should be able to probe in order to obtain more in-dept information on the statement he/she made (Burns & Grove, 2009:405). In this study mainly elaborative and clarificative probing were used to obtain more and detailed information concerning the benefit levers.

3.3.3.2 Defining the sample and recruitment of participants

The following will outline how the sample was defined, the inclusion criteria, the recruitment strategy and the sample size of this study.

Defining the sample

A combination of snowball and network sampling was used to obtain the key informants. The aim of these sampling methods was to obtain participants from all different levels of healthcare and policy. The researchers' connection with a network of key informants in the field of maternal care was utilised. Although key informants were involved in implementation and spread of best practices in the area of maternal and child health care, this sample served as a case and results can be applied to a broader context: the whole health system in South Africa.

Inclusion criteria

An inclusion criterion was researchers and health care professionals who are involved in leading the implementation and spread process of KMC in South Africa at health institutions (front line nurses and doctors), provincial and research levels.

Recruitment strategy

The participants were either contacted telephonically or invited via e-mail (see Appendix E) to check whether they were interested and willing to participate. The ethical consent, granted by the Ethics Committee of the North-West University (see Appendix B) was also attached. When participants agreed to participate, an appointment was made at a time and venue of the participants' preference to ensure the setting would be non-threatening to the participants as applicable.

The consent form (see Appendix F) was sent electronically after the participant agreed per e-mail to participate. An attempt was made to include a variety of participants from as much levels and provinces as possible. However, despite attempts were made to recruit participants from the Eastern Cape and North-West province, nobody was willing to participate. Data saturation was, however reached as the recruited participants provided sufficient data whereby similar themes were repeatedly mentioned. The sampling framework for this study is outlined in Table 3.1.

Table 3.1: Sampling framework for this study

Level of health system	Province								
	KZN	**NW**	**GP**	**EC**	**WC**	**NC**	**LP**	**MP**	**FS**
Hospital KMC Ward/unit level (n=9)	n=1 (P3)		n=2 (P1 and P7)		n=3 (P4, P5, P11)	n=1 (P10)	n=1 (P6)	n=1 (P8)	
Management level									
Provincial level (n=3)			n=1 (P14)		n=1 (P12)				n=1 (P13)
National level (n=0)									
Researcher(s) level (n=2)			n=1 (P2)		n=1 (P9)				

It was not possible to recruit participants at all levels. In many provinces the implementation and spread of KMC was initiated at researcher and ground level (bottom-up approach). Chief Executive Officers were not always involved or had to be convinced. Only later in the process of spread, some of the provinces saw what hospitals were doing and then people from ground level would be included in task teams to develop provincial policies. From national level no

participant could be recruited, as support for KMC by the Department of Health was only provided later in the process of spread of KMC. Support included the National Department of Health's Campaign on Accelerated Reduction of Maternal and Child Mortality in Africa (CARMMA) (NDoH, 2012b) and their Strategic Plan for Maternal, Newborn, Child and Women's Health (MNCWH) and Nutrition in South Africa 2012 – 2016 (NdoH, 2012c) which includes KMC. Further, participants were invited from as many provinces and levels as possible but some did not reply to e-mails or phone calls.

Sample size

The sufficient sample size was obtained by contacting all potential participants to include as many *experienced* key informants as possible. However, the aim was to obtain a sample which could provide rich data regarding the topic rather than obtaining a big sample.

3.3.3.3 Developing the interview guide

An interview guide (also called interview schedule or protocol) should be developed to guide the interviewer through the question-answer process (Alasuutari *et al.,* 2008:317). The interview guide includes, besides the major topics and a more detailed classification of questions which are discussed during the interview, also instructions for the interviewer (Alasuutari *et al.,* 2008:317; Kvale, 2007:56-57).

The content of the interview guide is usually based on 'first-hand experience', stories and subjective information people share, literature on the topic or preliminary work in order to focus on the topic (King & Horrocks, 2010:35-36). The interviewer should consider the extensiveness of the aspects in the topic, as well as the types of questions. Types of questions may include questions regarding background/demographics, experience/behaviour, opinion/value, feeling, knowledge, etc. (King & Horrocks, 2010:37).

After developing the interview guide, the guide should be pilot-tested with participants which are similar than the participants used in the study. Pilot-testing will help to identify issues in the design and sequence of the questions and the method recording the responses, as well as it increases the rigour of the instrument (Burns & Grove, 2009:404).

For this study an interview schedule or protocol was used based on findings of the integrated literature review (see Appendix G) and pilot tested-through the first interview for clarity and

practicability. The interview schedule included pre-determined open-ended questions regarding the four benefit levers aiming to guide the interview. However, the pilot interview showed that starting with one general question which let the participant tell his/her story/experiences concerning involvement in the KMC implementation and spread was more applicable to discover the benefit levers from the story of the participant. Asking structured questions per benefit lever was not feasible as benefit levers itself were found too theoretical according to the participant and not always understood. Probing was used instead to obtain more information concerning a certain benefit lever.

The interview schedule involved, after fine-tuning, the following: after some introductory remarks whereby the purpose of the interview and rights of the participants were mentioned, the first, broad, non-directive question was asked: *"What was your involvement or role in the implementation and spread of KMC in South Africa?"* The question was followed by probing to encourage the participants to clarify, paraphrasing and expand responses, as postulated in De Vos (2002:318). Question two was regarding what was effective or worked according to the participant, while question three focused on what the participant would have done differently when looking back. Question four addressed whether the participant had recommendations for implementation and spread of best practices for the future, concerning the implementation and spread of best practices of KMC.

If one interview was not sufficient to obtain the data requested, a follow-up (telephonically or via e-mail) was done in agreement with the participant.

3.3.4 Carrying out the interview

When carrying out the interview the researcher should consider the role and skills of the interviewer, the setting in which the interview is conducted, briefing, recording, data collection and rigour.

3.3.4.1 The role and skills of the interviewer

This interview was started by introducing the researcher and the participant's rights were clarified. The participant was given the time to ask questions. After the introduction the interviewer started the questions with one non-threatening, broad question about what the participant's role was in the involvement and roll-out of KMC (King & Horrocks, 2010:55-56; Kvale, 2007:51). With this question, which served as an ice breaker, the participant was put at

ease and the interviewer got a better insight and understanding of the participant's role and tasks and familiarity and experience with the topic.

The researcher conducted the interviews herself and was knowledgeable about the benefit levers, limiting bias (Kvale, 2007:81-82; Okun, 2002:33,81). The promoters had experience and expertise to guide the student in the data collection phase. The role of the researcher during data collection was the following: considering question wording and sensitive areas. The interview schedule was used to provide guidance during the interview. The researcher made herself familiar with the content of the interview protocol in order to be able to listen to the interviewee (Botma *et al.,* 2010:209-210).

The interview usually finished with a brief reflection moving away from self-disclosure and whether the participant would like to add something (King & Horrocks, 2010:55-56; Kvale, 2007:51). The interviewer ended the interview with a brief reflection of was mentioned in the interview whereby the participant was provided an opportunity to mention further comments and questions.

3.3.4.2 The setting

The setting which includes the physical environment, which should be comfortable both physical and psychological, selected by the participants to ensure privacy, should be considered (King & Horrocks, 2010:43; Burns & Grove, 2009:404; Kvale, 2007:55).

Most interviews (interviews 2 to 13) were conducted telephonically due to distance and the interviewer could influence the environment by choosing a quiet venue. Interview 1 was conducted at the hospital/ward where KMC was practiced. Participant 13 preferred to answer a questionnaire sent by e-mail due to the participant's busy schedule, whereby the venue was not applicable.

3.3.4.3 Briefing

The interviewer provided briefing to the interviewees before the interview which includes defining the situation and explaining the purpose of the interview and the tape-recording, etc.

(Kvale, 2007:55). For this study, briefing consisted of providing the interviewee with the aim of the interview and the participant's rights before starting the interview.

3.3.4.4 Recording

To record the interview, audio or video during the interview or remembering or keeping a manual record afterwards could be used (King & Horrocks, 2010:44; Burns & Grove, 2009:405; Kvale, 2007:93). Requirements for recording interviews are to make sure that the interview is in fact recorded and that the recorded interview is audible to be transcribed (Kvale, 2007:93-94).

With both telephonic, as well as face-to-face interviews, the interview was audio recorded. Two recorders were used (one recorder served as a back-up). Most interviews recorded, took between 30 and 40 minutes and the longest interview took 1.5 hours. The one personal meeting was audio-recorded, observations were done and notes of these observations were taken in the form of field notes. When a telephonic interview was done, data was recorded and transcribed as soon as possible after the interview had taken place.

3.3.4.5 Data collection

A variety of sources (Darke, Shanks & Broadbent, 1998:275) were used to obtain a wide view on the topic (LoBiondo-Wood & Haber, 2002:132-133). In total twelve face-to-face interviews were held with 13 participants. One participant preferred a questionnaire, which was sent via e-mail. The questionnaire included open-ended questions regarding the following: 1) What the participant's role or involvement in the spread of KMC in South Africa was; 2) What *challenges* the participant experienced or is currently experiencing concerning the spread of Kangaroo Mother Care, and how did the participant deal with those challenges; 3) What *worked well* in the spread of KMC; 4) What supporting structures can be offered at *provincial level* to hospitals spreading KMC; 5) What can be done at a *national level* to support provincial level/department of health to spread KMC, and; 6) How the participant sees the spread of KMC in future and what is still needed to spread KMC in South Africa.

With both the face-to-face meeting, as well as the telephonic interviews, the following types of field notes were recorded after each interview: observational notes (including information about the situation without interpretation), personal notes (concerning information regarding the

interviewer's own reactions with reflection on his own thoughts and feelings) and methodological notes (involving notes on the data-collection) were obtained.

An example of field notes is outlined in Figure 3.6.

Date:
Interviewee:
Place:

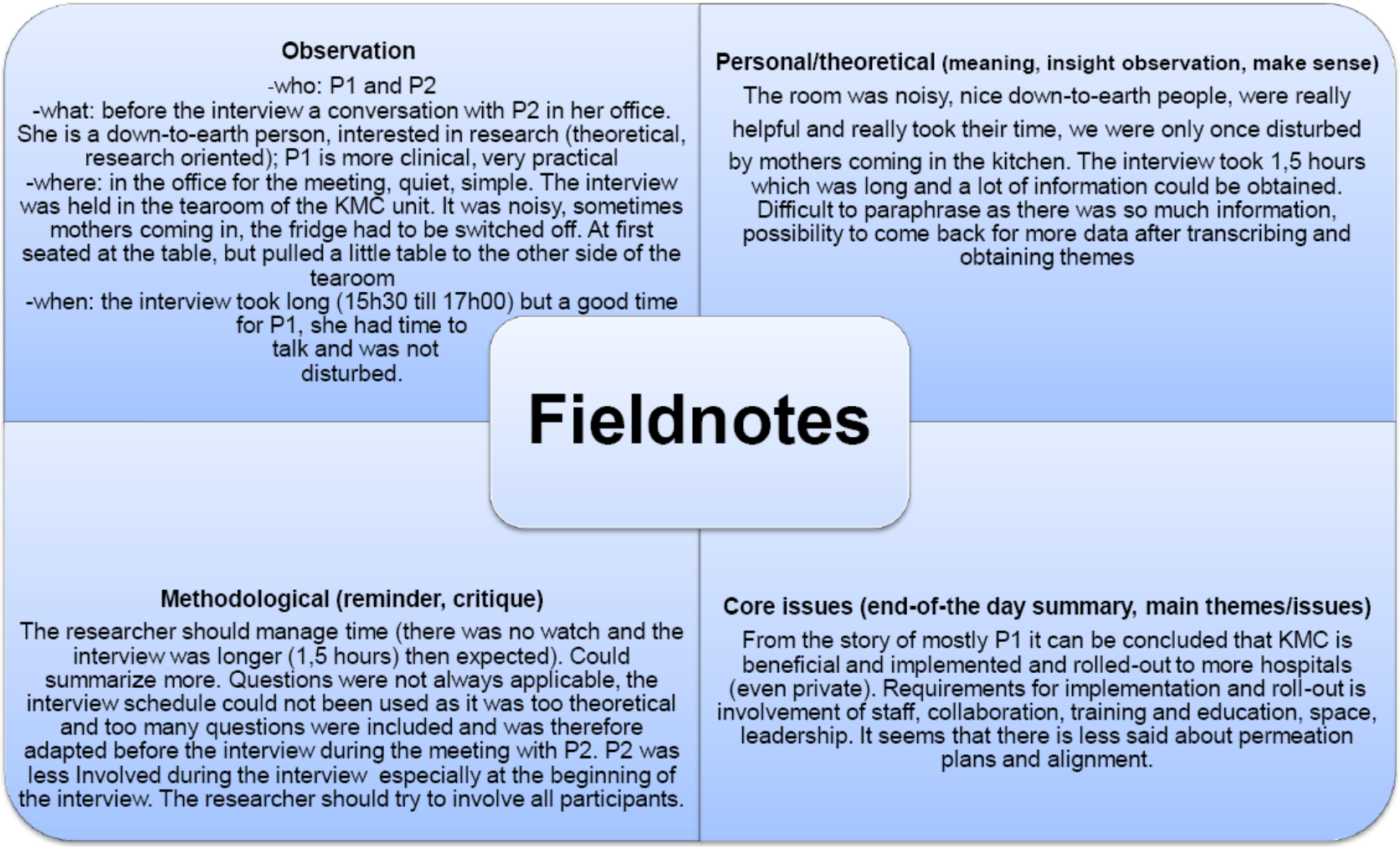


Figure 3.6: Example of field notes

Besides field notes, which were recorded after the interview, interview notes were taken during the interview regarding the content of the interview in terms of what the participant said. Notes were used to get the line and essence of the story clear during transcribing and were found to be especially helpful when phrases were unclear due to e.g. a bad connection/line.

The participants were asked if they were willing to be contacted for an eventual follow-up interview after transcribing if more information was required.

3.3.4.6 Rigour

The introduction of the project is important to obtain consent, and self-presentation and trust are essential. Reporting should be in a way that it shows a relationship of trust with the participants (King & Horrocks, 2010:48-49). Trust was obtained by sending the participants the transcribed version of the interview to provide them with the opportunity to give feedback/adjust information (see paragraph 1.7).

3.3.5 Data analysis and writing up

In this paragraph transcribing, types of analysis, coding and writing up will be explained.

3.3.5.1 Transcribing

Transcribing of interviews is when a conversation narrative (oral discourse) is 'translated' in written discourse (Kvale, 2007:93).

For this study the audio-taped interviews were verbatim transcribed by the researcher as soon as possible after the interview had been conducted. After transcribing, the transcribed documents were sent via e-mail for member checking, while the document was protected with a password. This password was sent to the participant either per e-mail or text message. After member checking was done, the documents were anonymised, line numbering was inserted and the document was analysed. When participants made comments or adjustments, these were included in the anonymised document for analysis.

3.3.5.2 Analysis

Different modes of interview analysis exist and can focus on meaning, language or a mixture of analyses modes (Kvale, 2007:104-118).

For this study, data (such as the observational notes, tape recorded data, as well as the completed questionnaire) obtained from interviews with the key informants and the field notes, were analysed using qualitative content analysis which was combined with thematic analysis to develop themes. Content analysis aims to make sense of the whole which data will be ordered, explained and interpreted by the researcher (Darke *et al.*, 1998:277).

The findings from the integrative literature review were used as an analytical framework to identify themes within the story and experiences the participant shared. The phrases in the transcribed text were colour coded according to the benefit levers. For example, alignment was coded blue, permeation plans yellow, leadership green and supporting and reinforcing structures red (see Appendix H). After colour-coding, a table was developed with the phrases under each benefit lever, and discovered aspects per benefit lever as subheading during coding served as columns. Phrases were referred to by the number of the participant and the line number it was found in.

Levels

Benefit levers and their aspects were found at a variety of levels. The following levels were identified:

- Researcher(s) level: Researchers from health research institutions and universities in South Africa.
- Individual level: Staff operating at the health institution (hospitals, clinics) such as doctors, nurses and other (non-health) allies.
- Management level: The senior management at the health institution such as the CEO, Nursing Manager, and other management staff.
- Provincial level: Provincial coordinator and other staff at the Provincial Departments of Health.
- National level: Ministry/Minister of Health, National Department of Health, other government allies.

For example, participants sometimes mentioned characteristics of leadership at different levels such as on an individual level (e.g. in the ward/unit) and at management level. Aspects of each benefit lever were divided in these levels, where applicable.

Rigour

To ensure confirmability, an experienced co-coder was used to independently analyse the transcriptions of the interview. The researcher and the co-coder each independently identified the repetitive themes, and discussed the findings to come to consensus (Krefting, 1991:217). The co-coder was appointed, based on experience and knowledge and understanding of the benefit levers.

3.3.5.3 Writing up

During writing up the following were considered: a readable style when writing the interview quotes; quotes were as close as possible to the language the interviewee used (Kvale, 2007:132); and overarching themes were described using direct quotes (King & Horrocks, 2010:165).

The quotes were related to the text, contextualised, interpreted, balanced (between quotes and text), short and of high-quality (only the best quote was used) (Kvale & Brinkmann, 2009:279-281).

The next sections will explain the findings of the study.

3.4 Findings

Findings will be discussed per benefit lever as main themes. Subthemes were marked with + if the subtheme was experienced as a facilitator and with a – if the sub-theme was perceived as barrier. Subthemes with benefits, as well as disadvantages, were marked as +/-. Findings were verified with outcomes from the literature in Chapter 2 (see Table 2.6). Chapter 2 stated a lack of literature, specifically regarding alignment and permeation plans. It is therefore expected that limited literature may be found to support certain findings obtained from the interviews. These findings were specific to their context and therefore indicated as such. The next paragraphs outline the findings per benefit lever. Findings were supported with quotes, in brackets, referring to the participant and the line numbers, for example: participant 13 line number twelve was indicated as (13-12).

3.4.1 Alignment

It is crucial for the spread of best practices that alignment such as buy-in/agreement of all the stakeholders, alignment of structures and activities supporting the best practice, etc. should take place.

Themes related to alignment were found in the following levels: individual level, management level, provincial level and national level. Further, under the themes three types of alignment were identified: personal (e.g. agreement between persons), organisational (e.g. protocol alignment) and contextual (e.g. general agreement) alignment. Figure 3.7 shows the themes and subthemes per level.

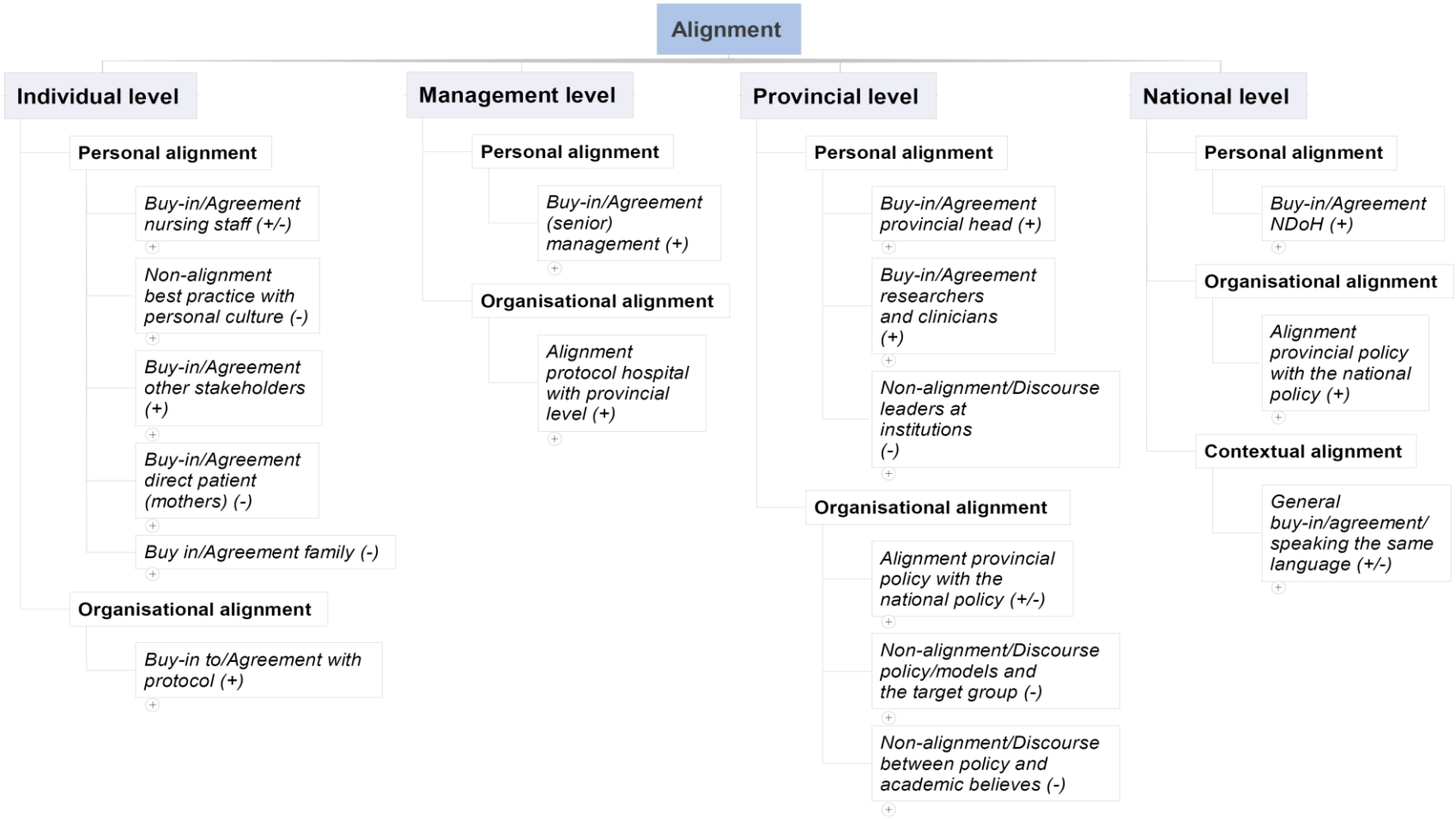


Figure 3.7: Themes and sub-themes of alignment[1]

[1] Subthemes are marked with + if the subtheme was experienced as a facilitator and with a – if the sub-theme was perceived as barrier. Subthemes with benefits, as well as disadvantages, are marked as +/-.

Themes per level will be discussed in the following sections.

3.4.1.1 Individual level

Under individual level, two forms of alignment were identified: personal alignment and organisational alignment. Under personal alignment, challenges were experienced to get the following four groups on board:

1. The nursing staff:

> "*It wasn't something that, we had bought-in to. We just had, you must do it and we're coming to assess you"* (3-183,184).
>
> *"The challenge was getting all the nursing staff on board. Also the consultant in charge originally"* (5-102,104)

One of the reasons why the nursing staff would not buy in was that the innovation was not in line with the staff's personal culture, which resulted in not reading the guideline, which guided the best practice:

> *"even though you have the printed guidelines they did not necessarily read it"* (1-107,108), *"that's another problem that I found, reading is not their culture"* (1-110,111).

However, in some situations, nursing staff were the ones who came on board:

> *"I think the other thing was sort of everybody was aware of the head loses heat, putting hats on to the babies uhm, and just make everybody buy in to that. And people bought in"* (5-298,299,301).

2. The other stakeholders:

The other stakeholders in general either bought in or did not buy in to the spread of the best practice which depended on the types of agreement and certain reasons they had:

> *"general agreement amongst stakeholders is, you know, who find and don't want to implement because they found it a lot of work"* (2-613,614) (interview 4).

3. The direct patients (mothers):

"The mothers wouldn't come in and the mothers would be stressed and they wouldn't in come and stay" (5-334,335).

However, this was overcome when the first mothers would stay, and saw the effectiveness of the innovation:

"And then you had one or two staying and then they realized: ag, it worked" (5-252,253,255,256).

4. Family/relatives:

"You need role models, because if the grandmother does not agree with you, KMC is not going to go on at home" (10-99-101).

It is important for the spread of best practices to get buy-in from all stakeholders at all levels. This is supported by an intervention study done by Feifer and Ornstein which mentioned the buy-in of stakeholders as one of the key points found for their strategies to enhance adherence to clinical guidelines and enhancing patient outcomes in small primary care settings (Feifer & Ornstein, 2004:440).

3.4.1.2 Management level

Under management level, two types of alignment were identified: personal alignment and organisational alignment. Perceived facilitators under personal alignment involved the buy-in/agreement of (senior) management:

''Staff was there, from the senior management down they said: "yes, we are going to do it" (6-156,157);

"The CEO has to sign a commitment that they have done, uhm, they must take part in the project" (2-642,643) (Interview 1).

Buy-in specifically from senior management is crucial to spread best practices. This finding is confirmed by an evaluation study using surveys and qualitative interviews regarding the Diabetes Health Disparities Collaborative initiative aiming to decrease health inequalities and advance the quality of diabetes care in community health centers. One of the findings of this

study stated that more senior support was requested with authority to ensure adherence to the initiative (Chin, Cook, Drum, *et al.,* 2004:2,5).

Finally, under organisational alignment, the protocol of the hospital, aligned with protocols at provincial level was seen as a facilitating factor:

> *"It's not a separate (provincial) protocol. It's just part of the neonatal management protocol"* (10-120,121).

This finding was supported by Waterman *et al*.'s study regarding an investigation in the diffusion of innovations in health care using formal and informal interviews, focus groups, surveys, participant observation, and document review. This study found that for efficient diffusion of innovations protocols from different levels should be aligned but might be challenging (Waterman *et al.,* 2007:378).

3.4.1.3 Provincial level

At provincial level, two forms of alignment were identified: personal and organisational alignment. Under personal alignment buy-in/agreement from provincial level and especially the provincial head was seen as crucial:

> *"And provincial head, every time we spoke he said: "yes, KMC must be done"* (6-264,265).

This finding was confirmed by a multiple case study regarding the use of linking systems to create capacity and improve dissemination in heart health promotion in Canada which found that buy-in through a linkage–partnership of provincial level with the initiators of the programme was crucial to achieve changes in health promotion capacity and programme implementation (Robinson, Elliott, Driedger, *et al*., 2005:499,504).

The involvement of the clinicians and other parties (researchers) on provincial level was also viewed as important:

> *"I got a Medical Research Council: dr. XXX and XXX are coming to get these guys on board with KMC and I really hope that in the new year we will see the benefits and everybody will come on board".* (13-144 - 146);

> *"I worked on that task team in the provincial policy also and that guidelines tell hospitals and districts how to implement and what we need and what we do with Kangaroo Mother Care."* (4-322 - 324).

This finding was supported also by Robinson *et al.*'s multiple-case study which found that involvement and buy-in of other parties through networking and partnerships enhanced the dissemination of the heart health promotion innovation (Robinson *et al*., 2005:499).

However, non-alignment was found as there were differences in spread activities between leaders and institutions:

> *"the maternal child and woman's health (…) They weren't doing the same stuff"* (2-254 – 256) (interview 4).

No literature could be found to support this finding and this finding can be considered as a unique finding.

At organisational level a perceived facilitator was the alignment of the provincial policy with the national policy:

> *"they will use the (province)'s provincial policy as a basis, the national policy that are all in place. I hope by next year it will come out"* (4-361 - 363).

This finding was confirmed by Waterman *et al*. who stated that for successful diffusion of innovations protocols from hospital level could be aligned with government policies but however, might cause challenges (Waterman *et al.,* 2007:378).

However, non-alignment was found at organisational level regarding the agreement of stakeholders concerning the best practice and policy/models and among policies and academic believes:

> "*the alignment, the general agreement amongst stakeholder involvement in the embracing of why and how to KMC, whether the change is given by a logic or philosophical reason, regulations, policies, I mean models and policies with the target group. Now that is where it was different in different provinces"* (2-219 - 223) (interview 4);

> *"the academics tend to regard themselves as the real owners of the scientific truth. So there's a bit of discourse between this policy that we should do this and the academic believes that this is in science space"* (9-261 - 263).

These findings were context-specific for this study.

3.4.1.4 National level

At national level the following three types of alignment were identified: personal, organisational and contextual alignment. Under personal alignment the buy-in of stakeholders at national level, specifically the National Department of Health, was found as a facilitator to spread and was seen as the driver of a best practice:

> *"For provincial level we have to buy in if it comes from national level, so the ones who drive it must be the National Department of Health"* (13-136,137)

Alignment involves the alignment of the provincial policy with the national policy and was perceived as a facilitator, which was also found previously at provincial level. Finally, contextual alignment involves the general agreement/ speaking the same language:

> *"and that we all speak the same language in the whole country"* (4-435);

> "*Because that's when it gonna succeed as when everybody is practicing and preaching the good standard of KMC"* (5-403,404).

This finding is a context-specific finding for this study.

3.4.1.5 Conclusions regarding alignment

The following conclusions can be drawn from the study's findings:

For successful spread of best practices it is crucial to have buy-in/agreement of the stakeholders at all levels and specifically buy-in from management level and provincial level. At national level buy-in of officials is critical as the spread of the best practice should actually be driven from officials from national level (top-down approach) and not bottom-up (starting from researchers and spread to organisations) and all the stakeholders from all different levels buy-in/agree. Further, structures at all levels which support and reinforce the spread of the best practice (such as policies/guidelines, plans (see Figure 3.8) should be aligned with the best practice. For the best practice must be included in the national policy and the policies from the

other levels (provincial, institutional). This will ensure that the best practice will be the (national) standard of care, institutionalised and everybody practises the same care in all institutions.

The second benefit lever: permeation plans will be outlined in the next section.

3.4.2 Permeation plans

To ensure that spread of best practices is successfully done at every institution, it is crucial that there is a permeation plan. This is supported by a case-study of patient access in the veterans health administration which indicates the need for a plan to spread best practices or innovations prior to the actual spread (Nolan, Schall, Erb & Nolan, 2005:339). Permeation plans were found at researcher level and individual (hospital) level, which will be outlined as follows:

3.4.2.1 Researcher(s) level

At researcher level the plan for spread was according to a certain timeline. Some institutions were involved in some of the aspects of the spread driven from researcher level (Bergh, 2011) while individual hospitals executed spread following their own approach.

The timeline of implementation and spread of KMC, including certain aspects was outlined previously (see Figure 3.2).

However, spread was done differently at individual hospitals in different provinces, which is outlined as follows:

3.4.2.2 Individual level

Some hospitals in certain provinces however, spread KMC individually (which was not according to the timeline of the cycle of research):

There were hospitals which spread already *before* the researchers implemented and spread KMC, started in the period from 1990 to 1998:

> *"Back in nineteen-ninety I think it was, one maybe* (5-15) *so he spoke to us and uhm and we uhm, started doing it at (hospital)"* (5-25) *"And then in nineteen-ninety-two I was back at (hospital) and we tried to do it haphazardly then sort of times of the beginnings of KMC in (place)"* (5-28,29);
>
> *"And during that time, which would have been ninety-four, ninety-six we started the Kangaroo Mother Care in uhm all aspects."* (5-33,34).

However, when asked whether there was a specific plan for the implementation and spread of KMC, one of the participants answered:

> *"No, no I think logical things and common sense, as I said, one has to explain to the management, to the nurse and the doctors, everybody, and then just gradually start and build on"* (11-267 – 269).

3.4.2.3 Conclusions regarding permeation plans

To ensure a successful spread of best practices in all facilities, a well-structured intentional plan for spread, such as an operational plan is required. However, there was discrepancy found between what is supposed to happen at researcher level (according to the implementation time line) and what actually happened at the individual hospitals in the provinces. There was not an actual plan for spread (both for individual institutions, on provincial and on national level), but rather 'common sense' was used to implement and spread KMC. This resulted in implementation and spread happening in different hospitals and provinces across the country differently as one participant said:

> *"So in terms of the broader implementation, it has been done very differently; it was different in (province), it was different in (province). What they were doing at (hospital) wasn't the same as what they were doing at (hospital). In South Africa at the moment Kangaroo Mother Care is practiced widely but not universally at all. And all in very different bits and pieces and ways according to which person took it up at various levels (…). So the end-result is that there is very patchy implementation of Kangaroo Mother Care across the country"* (9-83,84,87,90 – 94).

Therefore, to prevent a 'patchy' spread of the best practice, which might not be similar but quality of practice is ensured, it is crucial that there is a general plan for spread of the best practice (preferably driven by national level and aligned with and supported by all the levels). Further, findings of the literature from Chapter 2 show the aspects which should be included in the plan (see paragraph 2.3.4.2).

3.4.3 Leadership for change

Leadership at all levels and the understanding of the role/tasks of the leader in order to make the spread of a best practice a success is essential but, however, not always present. Leadership for change in this study was identified at three levels: individual, management and provincial level which is outlined in Figure 3.8.

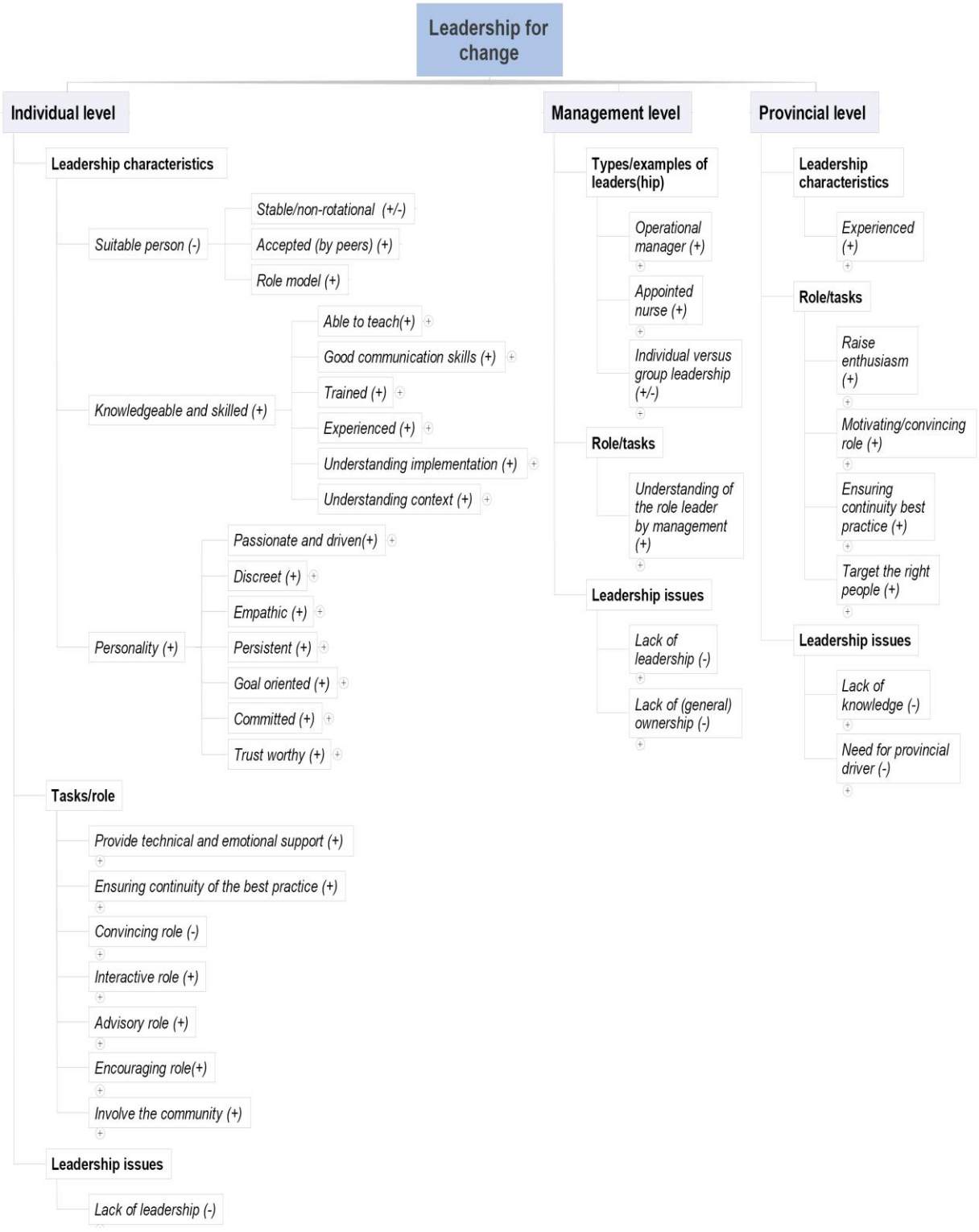


Figure 3.8: Themes and sub-themes of leadership for change[2]

[2] Subthemes are marked with + if the subtheme was experienced as a facilitator and with a – if the sub-theme was perceived as barrier. Subthemes with benefits, as well as disadvantages, are marked as +/-.

The themes and subthemes regarding leadership per level will be discussed as follows:

3.4.3.1 Individual level

Firstly, participants mentioned as one of the leadership characteristics the importance of selecting a suitable person for leadership at individual level:

> *"they don't always think the thing through to as which is the best candidate"* (1-422,423);
>
> *"because she's not heard because she's not the right person in the right position"* (2-671,672 (interview 1)).

It is important to have a suitable leader. This finding was confirmed by a qualitative study regarding gender differences and the perception of leadership, which found that it was important to have a suitable leader, however the leader's perception of suitability might differ (Bosak & Sczesny, 2008:286).

Further, when participants were asked to describe what characterised a suitable person, the following was mentioned:

- Stable/non-rotational:

  "*the champion being there all the time*" (2-667) (Interview 1);

  "*You need somebody that is actually there the whole time"* (10-82).

- Accepted

  "*they must be accepted by their peers as a leaders. Because if they don't do that, they probably don't accept what they say*" (10-108,109), and;

- Be a role model

  "*they must be able to set an example"* (10-110).

Further, leaders should be knowledgeable and skilled:

> "*somebody who remains in the ward that has the knowledge and skills and the experience to be able to, to support it*" (3-450; 3-452; 3-454; 3-456-3-457; 3-459);

"*Someone obviously needs to know what they are doing, you can't be a leader without knowing what you're doing*" (6-214; 6-216). Knowledgeability and skill involve the following identified aspects:

- Able to teach:

  "*in KMC it's both the person having the knowledge what it is, and then able to teach others, in other words teach the mothers and students who are also there to explain what it is"* (11-159 – 161);

- Good communication skills:

  "*good communication skills"* (12-134);

  "*She's a good communicator, or he, a good communicator so that they can preach Kangaroo Mother Care*" (3-142 – 144);

  "and that they can communicate that well to the mums and babies and also to a colleague" (5-150,151);

  "*Definitely willing to listen to people"* (4-457).

- Trained:

  "*It helps if you are trained*" (12-135);

- Experienced:

  "*you've got a really experienced, a sister which has been in the ward for ages. There's no reason that she can't be a champion"* (3-423 – 426);

- Understanding implementation:

  "*I think it's somebody leads in KMC. That they know that it works. And understand how to implement"* (3-450 - 452);

- Understanding the context:

  "*and have insight into difficulties faced in rural settings"* (12-135,136).

Further, certain personality aspects were identified:

- Passionate and driven:

  "you need somebody that's passionate about it and that's willing to walk that mile to get it implemented" (4-453,455;

  "She herself must be passionate about mothers and babies. And she must be convinced and passionate about breastfeeding and Kangaroo Mother Care because you can't separate the two" (13-164 – 166);

  ''I would like to see somebody who, very passionate neonatal care and care of the mother that she makes mum also feel that you got her interest at heart" (5-141,142);

- Discreet:

  "*It is at the same time as to refer when something is wrong, it's wrong*". "*and that's confidentially, not in front of everybody*" (6 – 230,223, 224);

- Empathic:

  "*certainly somebody who has a great deal of empathy with the mothers"* (11-161);

- Persistent:

  "*and definitely you must have that perseverance*" (4-461 - 463);

  "*she must have a strong personality to be able to overcome the barriers of resistance and to continue driving this thing, even if nobody else will come on board at first"* (13-166 – 168);

- Goal-oriented:

  "you need to know where you're going" (6-216, 217);

  "and a clear direction of where one wants to be" (12-134);

- Committed:

  "I think a matron that is totally committed, I think it is, somebody in your management who is complete, so the system becomes part of more practice in the hospital, and we do it this way" (6-207,208,210,211);

- Trustworthy:

  "*There needs to be sufficient trust in that individual or the individuals that they will lead the way in a right manner"* (8-168,169).

A variety of studies confirmed the leadership characteristics required such as the ability to teach (Ploeg *et al.*, 2010:249), good communication skills (Boyle & Kochinda, 2004:60), trained (Browne-Ferrigno, 2007:21), passionate/driven (Edwards & Grinspun, 2011:18), persistent (Eriksen, 2006:428), goal-oriented (Sosik, Godshalk & Yammarino, 2004:241), committed (Edwards & Grinspun, 2011:18; De Lusignan *et al.*, 2005:135), trustworthy (Neubert, Carlson, Kacmar, *et al.,* 2009:165), etc.

Specific leadership tasks and roles on individual level identified are: providing technical and emotional support; ensuring the continuity of the best practice; a convincing role, an interactive role; and an advisory role and involvement in the community. The encouraging role seems to stand out:

> *"there's a positive side if you encourage people when they've done the right"* (6-218,219);
>
> *"encouragement and energy is so important. And that's what the activist helps, because they got energy"* (5-431,432).

The importance of the motivating, convincing and advisory role was mentioned elsewhere (Edwards & Grinspun, 2011:18; Pearson *et al.*, 2008:150). The encouraging role was also mentioned as important in Jung and Sosik's study measuring leadership roles in work-groups using surveys (Jung & Sosik, 2002:321).

However, the biggest leadership issue at individual level was lack of leadership:

> "*I'm still actually looking for a leader amongst them. Because I think if I could find one or two sisters that sort of take it as part of their job KMC it would be even a better success*" (10-83 – 85);
>
> "*So the ones who are working here they learn a lot and they say that they should, it's a pity that not everybody here takes lead*" (1-564,565);
>
> ''*if you don't have strong leadership on the ground they not happen very well"* (2-185,186) (interview 4).

A lack of leadership was also found an issue in West *et al.*'s study measuring the relationships between leadership clarity, team processes and innovation by means of surveys (West, Borrilla, Dawsona, *et al.*, 2003:409).

The following section will address themes and subthemes under the management level.

3.4.3.2 Management level

Participants mentioned some examples of leadership at management level: operational manager or an appointed (lead) nurse:

> "*we had somebody who worked in the Kangaroo Mother ward all the time and she would interrelate and interact with the mothers and talks and keep a record*" (11-33 – 35);
>
> "*they* (management) *appointed a nurse, she was only an ENA* (Enrolled Nurse Assistant)*, and once she took ownership of KMC, it was a success, in hospitals where they did not appoint a nurse with the sole responsibility of KMC, KMC was not well practiced*" (12-223 – 226).

A nurse as leader was also found in Ploeg *et al.*'s study regarding the role of nursing best practice champions in diffusing practice guidelines (Ploeg *et al.*, 2010:238).

Further, a participant mentioned that specifically in smaller institutions everybody should be trained which might be more effective as it was difficult to appoint a leader for each unit:

> *"You are going to find it unlikely to get individual drivers at the hospitals. I think all the staff need to be educated, all your maternal and neonatal staff need to be properly trained* (…) *not every unit is going to be able to have a formally appointed unit manager. I don't think in the smaller hospitals the maternity unit manager. They must be sure that there is proper supervision in the senior way of the KMC ward. So it's donating care that has been given to like nursing assistants"* (3-395 – 397,398,400 – 404).

This finding was a context-specific finding.

Another participant indicated the importance of the management to understand the leader's role:

> *"there needs to be a designated understanding by management of that person's role"* (8-167,168).

Similar findings were found in Bauer and Green's longitudinal study measuring leadership roles and followers. One of the findings emphasised the importance of understanding the role of the leader by non-leaders (Bauer & Green, 1996:1563).

However, at management level there were also problems such as a lack of leadership and ownership:

> *"they had to create awareness. And then often they don't have the leadership mission for example to be able to do much about implementation"* (2-551 – 552) (interview 4);
>
> *"there wasn't a nurse leader for KMC particularly"* (8-135);
>
> *"Often there is a sort of enthusiastic individual, then she leaves, there's, there's no general ownership*" (2-628,629) (interview 1).

A lack of leadership at management level was found in Grol and Grimshaw's case study as a barrier for following the guidelines for best hand hygiene (Grol & Grimshaw, 2003:1226).

3.4.3.3 Provincial level

At provincial level the following was identified regarding the leader's characteristics: The leader should be experienced according to one participant:

> *"I do think it helps that the person has had experience in KMC"* (3-505).

An experienced leader was also found important in a study using a postal questionnaire concerning leadership learning (Cardno & Fitzgerald, 2005:228).

Further, roles a leader has to fulfill at provincial level are the following:

- To raise enthusiasm and taking a motivating/convincing role:

"my role was really to take a leadership role: to inspire, to motivate, to expose people to the concept, and to push for that change" (8-68 – 70);

- Ensuring the continuity of the best practice:

"*and it was taken up again. It was the own limits for the period of not getting anywhere, there was a period of nothing and then there was a period of reconciliation to finish the project*. *That whole process is one of the leadership issues"* (2-292 – 294,296) (interview 4);

- And lastly: the leader should target the right people:

"In provincial structures it is important to follow process or the correct channels and if you don't you run into a lot of problems. And you need to enter at the right level, you need to target the right people. Because if the wrong people are listening you can talk forever and it won't get anywhere. So at the end of the day you've got to talk to people who actually can do something" (12-136 - 140).

These findings were context-specific to this study; however, the motivating role of the leader was discussed and supported by literature previously (see paragraph 3.4.3.1).

However, leadership issues identified at provincial level, which is a context-specific finding, is the lack of knowledge regarding teaching:

> *"they're not actually driving it at the moment and not, they're not living it, they're still unknowledgeable in teaching it"* (3-471,473,474).

Further, context-specific findings included: the specific need for provincial leadership was indicated, as well as specific roles. A lack of knowledge to educate the best practice was also mentioned.

Although nothing was mentioned about leadership at national level, there should be someone to drive the spread of the best practice.

3.4.3.4 Conclusions regarding leadership for change

Leadership is needed at all levels to spread best practices (Edwards & Grinspun, 2011:6). However, leadership requires certain characteristics, supported by literature such as the ability to teach, having good communication skills, being trained, being passionate/driven, being persistent, being goal-oriented, being committed and trustworthy. Further, the following leadership roles and tasks were mentioned and supported by literature: encouraging, motivating, convincing and advisory role.

Further, the understanding of the role/tasks of the leader in order to make the spread of a best practice possible is crucial and found needed as one of the participants said:

> "*it was happening where there was a leader"* (6-200).

Context-specific findings included: at provincial level, the leader should target the right people, the specific need for provincial leadership was indicated, as well as specific roles. Further, a participant mentioned that specifically in smaller institutions everybody should be trained which might be more effective as it was difficult to appoint a leader for each unit. The lack of knowledge regarding teaching at provincial level, was also mentioned and a context-specific finding for this study.

However, leadership and ownership are not always sufficient and a lack of leadership was found an issue at all the levels and could be a barrier towards the spread of the best practice.

3.4.4 Supporting and reinforcing structures

Supporting and reinforcing structures at all levels are crucial for spread of best practices. Each level has specific supporting structures and some levels have similar supporting structures. Supporting structures identified in five levels were: individual, management; provincial; national and; researcher(s) level which are outlined in Figure 3.9.

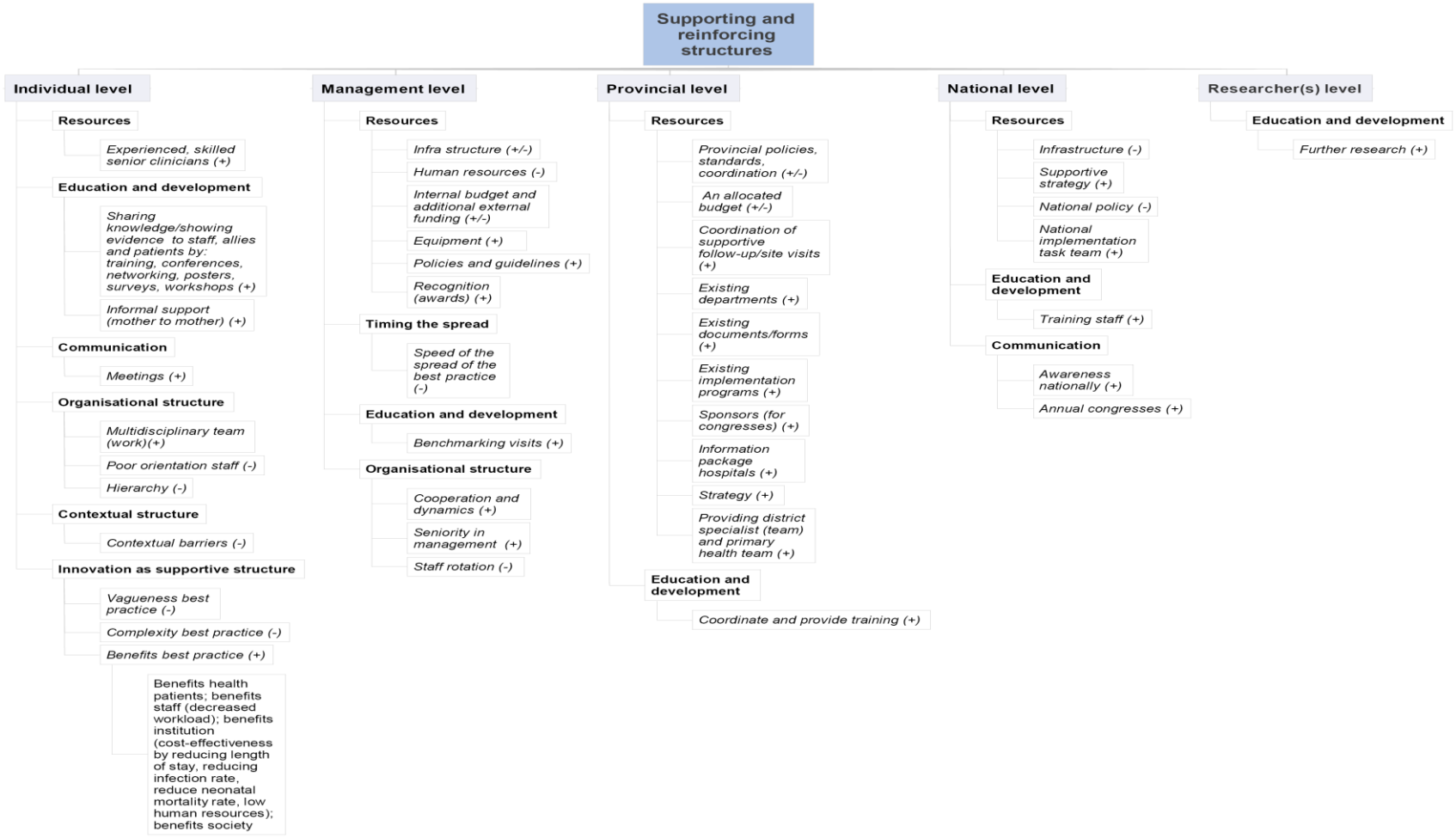


Figure 3.9: Themes and sub-themes for supporting and reinforcing structures[3]

[3] Subthemes are marked with + if the subtheme was experienced as a facilitator and with a – if the sub-theme was perceived as barrier. Subthemes with benefits, as well as disadvantages, are marked as +/-.

The levels regarding supporting and reinforcing structures will be explained as follows:

3.4.4.1 Individual level

At individual level the subthemes were structured under the following identified themes: Resources, Education and development, Communication, Organisational structure, Contextual structure, and the Innovation as supportive structure, which will be explained in more detail in the following paragraphs.

Resources

Experienced/senior clinicians as part of human resources were viewed as facilitators:

> "*junior people working you need structure. If it's a senior person then you know you got the knowledge and the experience"* (1-154,155).

Senior people, which were usually appointed as leaders due to their authority were also mentioned in Pearson *et al*'s study which evaluated the spread of three innovations in three partaking facilities (Pearson *et al*., 2008:146). Senior people could therefore be appointed as leaders in the spread process.

Education and development

Facilitating factors were experienced by the participants towards spread in terms of sharing knowledge/showing evidence to staff, allies and patients by: training, conferences, networking, posters, surveys, workshops, etc.:

> *"there's coaching. There is on the job training. There is a workshop, an extensive workshop, to invite other experts*. *In-services is very, very important. And then you show that there is an evidence, evidence that we should believe by, by an evidence"* (7-144,145,148,149);
>
> *"It is the knowledge of it that needs to be sharing to people, it's the training, it's conferences that is telling people about it, it is networking between international hospitals"* (4-395 - 397);
>
> "*that's were having facts and figures from, not from South Africa but from other places helps to convince people that this is a worthwhile effort to do KMC"* (11-139,140).

These strategies were used to educate and convince the stakeholders at ground level as resistance towards the best practice was present:

> *"It's just because it's a completely new thing. And they were sore that: "We've just bought five new incubators", what are we going to do with them? (…) resistance is from labour ward to postnatal"* (13-91 – 93).

Sharing knowledge and best practices in general was found important in a study regarding key success factors for knowledge management using questionnaires and interviews (Mathi, 2004:4).

Communication

Regarding communication, meetings to evaluate the spread of the best practice were mentioned as an important facilitator*:*

> *"quality circle meetings this is definitely very important, that people can ask the questions and share their fears and the hiccups that you get, that you share that with each other"* (4-77 – 79).

Communicating the best practice through meetings was supported by literature as Pearson *et al.*'s multiple–case study regarding the spread of a nursing unit innovation in large hospital systems, as it was found that regular meetings where the stakeholders were involved was one of the key factors increasing the successful spread of the innovation (Pearson *et al.,* 2008:149).

Organisational structure

In an organisation, the team, the skills and knowledge of the members and the relationship members of the team have are essential for the effectiveness of the spread of the best practice. The following were identified in the organisational structure: Multidisciplinary team (work), poor orientation and hierarchy which are outlined as follows:

The multidisciplinary team work was viewed by participants as a facilitating factor:

> *"I couldn't do it on my own, I was, most of the work it was with a midwife"* (6-29,30);
>
> *"what was very good at (hospital) was the fact that we had a very good team. We had a wonderful nursing team probably say ninety per cent into the success of what we achieved was the team, the cameradi and the sort of very close working relationship between myself, my colleagues as well as the medical side as the nursing in maternity"* (8-48 – 50,56 – 58);

> *"definitely I think good relationship with your doctors, your multidisciplinary team you must work as a team to get, to get this uhm well-implemented"* (4-118 – 4-119; 4-121).

However, poor orientation and hierarchy amongst staff was mentioned as barriers:

> *"One problem that I picked up with new staff, that they are orientated, their orientation is not very well. According to them orientation is that they work here for one day and then after that they are orientated"* (1-97 – 99).

> "*Be even a bigger hierarchy in private between doctors and nurses because of the political history. And we found that it doesn't help for a nurse to go and talk to a doctor. It should be a doctor talking to a doctor. So it was easier for me to convince people because I am in the same level or the same work. And (…) they would look up, and, maybe then, you know, uhm, be convinced compared to it's a nurse been talking to them. "Power struggles"* (1-513,520,676 – 679,744).

The importance of teams being used to spread best practices, which is mentioned elsewhere (Edwards & Grinspun, 2011:3). Further poor orientation and hierarcy were context-specific findings as no studies could be found to support the findings.

However, a suitable person should be appointed who has authority to lead the spread of the best practice, encourages teamwork and lessens the hierarchy among team members.

Contextual structures

Contextual structure, such as a small unit made it more difficult to spread and practice the best practice*:*

> *"For smaller units it's a problem, you know, to target them, the sustainability in the smaller hospitals there also there's a staff problem, so often there is a medic, there are junior doctors working there and they change each year. Then they, they don't work in KMC for the whole year, they can't even implement for three months"* (1-590,591,597 – 599).

Context and specific contextual issues should therefore be taken into consideration when spreading a best practice. Lau *et al*.'s participatory research study regarding the diffusion of an evidence-based stroke guidance system also found the contextual structure to be a barrier towards the spread of their best practice (evidence-based stroke guidance system) (Lau *et al.*, 1998:379-380).

Innovation as supportive structure

Vagueness of the best practice was viewed as a barrier:

> *"the great difficulty is: what is it that you are defining as implementing (…) you need to be very clear about, well that strategy on one hand, but then this is in fact a health system's issue, and not so much implementing on the side"* (9-204,205,235,236).

Another barrier was the complexity of the best practice:

> *"over-analysis and over-administration, there were so many assessment tools that we had to mark how often, and that made me actually reluctant to implement it, because it made it an overly complicated process"* (3-87,88).

Benefits of the best practice were viewed as facilitators and different types of benefits were present:

> *"there are so many benefits and lots of research what has come out now* (1-559) *are benefits for both sides"* (1-916);

and specifically for the patient:

> *"KMC because the wards those special benefits and that had set with those mature in time for the babies to grow and to establish feeding. And I think it allows the mothers to have so much skills and confidence for preterm babies"* (11-200 – -203);

as well as cost-effectiveness in terms of low-tech/low (human) resources:

> *"and if you've got nothing, you can still take care of a small baby* (1-893) *KMC is not fancy, not high-tech. It's this whole thing"* (1-948,949);

> *"You don't need a highly specialised person to help the mothers and the babies, so we had one of the assistant nurses who, who was, you know, acting as a person to deal with the mothers, babies and so on. And the doctors came to see the babies; she would be there to know what to do*" (11-147 - 150).

For a best practice to be spread, it is crucial that the concept is clear, as simple as possible and should improve and benefit the current practice. The benefits (such as cost effectiveness) of the best practice are important to be clear and understood which was found in Edwards and Grinspun's study regarding a new approach for analysing the costs and benefits of spreading nursing innovations system-wide (Edwards & Grinspun, 2011:14). Further, the innovation should be as simple as possible which was found in Hanberg's non-

experimental correlational design study regarding the diffusion of high-fidelity simulation in nursing (Hanberg, 2008:30). The best practice's simplicity and benefits should be clear and can be presented to convince stakeholders to buy-in to the spread of the best practice.

3.4.4.2 Management level

At management level the following themes were identified: Resources, Timing the spread, Education and development and Organisational structure, which will be explained as follows:

Resources

For successful spread of best practices it is important that the management provides the following support in terms of resources: infrastructure, human resources, equipment, internal budget and additional external funding, policies, and emotional support such as recognition (awards). However, these resources are not always provided/existing, which is outlined as follows:

Infrastructure, human resources, internal budget and additional external funding were experienced as not always provided or addressed by management:

> *they're not really, uhm, supportive of, be it for finding space, for allocating staff*, *for putting budget towards developing twenty-four hour KMC units"* (3-101,102,104);
> "*the other challenges, we had to work through the whole thing of uhm getting the hospital to pay for food for the lodging mothers*" (5-230,531);
> *"space is our constraint*" (10-167);
> *"Because unfortunately, money-wise there is no budget to build KMC units, we have to do with what we have*" (13-57,58,60).

However, sometimes management did provide resources concerning infrastructure:

> *"this would not have happened as the CEO didn't give us the ward"* (1-303,304);

as well as human resources:

> *"Because staffing norms or staffing issues is for the management"* (7-182);

and internal budget and additional external funding:

> "*there were other additional uhm systems later on came from partners like XXX Foundation funded a whole lot of uhm initiatives. In the time that we were trying to gable with our limited space we won the, uhm funding ground for uhm their project for that year"* (8-85 – 88).

However, resources which were provided by the management or existed were the following:

- Equipment:
  "Every year when it comes to equipment, we don't buy the sophisticated incubators" (7-182 – 184);
- Policies and guidelines:
  "There should be a protocol on this has been shown to be the best way" (5-398,399);
  "You've got to obey the provincial health policy. I think not primary policies on the agenda earlier on, only when there is resistance" (6-270,271);
- Recognition (awards):
  "The management to support us back is to give us compliments, sometimes you get the awards, certificates" (7-196 – 197).

Resources, such as a budget, staff, policies, etc. are mentioned as crucial for change in Edwards and Grinspun's study regarding understanding whole systems change in healthcare (Edwards & Grinspun, 2011:1).

Timing the spread

Timing the spread of a best practice should be considered, as well as the speed of implementation and spread as a too speedy spread might be a barrier which is outlined in the next quote:

> *"the transfer went very quickly because now they didn't had to do much, the mothers had to do it, and I think sometimes the mothers are kind of put in the situation where they are not always properly supported"* (1-132 – 135).

Timing the spread of best practices was confirmed whereby a flexible approach was preferred which was found by Edwards and Grinspun's study regarding their study of understanding the whole system's theory (Edwards & Grinspun, 2011:1).

Education and development

Benchmarking visits can be used as a valuable education strategy for both management and staff at individual level:

> *"help to make things work uhm was benchmarking. Actually going to a place where it was working. Talking to the staff and talking to the patients, so from other hospitals, the staff from other hospitals realised, we can also. I think that so, was the critical thing"* (6-178;181 – 183).

Benchmarking as education strategy was a context-specific finding and can be used as a possible strategy for the spread of best practices in future.

Organisational structure

Cooperation and dynamics, seniority in management and staff rotation are crucial factors in an organisation regarding implementation and spread of best practices, but are, however not always present, which is outlined as follows:

Facilitators included cooperation and dynamics:

> *"the dynamics in terms of the people working together between the leaders and so on, some managed to get something with nothing"* (2-774 – 776 (interview 1);

and seniority in management:

> *"I was given reasonable consideration, we were listened to, it wasn't always easy or quick but we, we had a seniority in the organisation that we could push for change"* (8-125,128).

Staff rotation was mentioned as a barrier:

> "*they don't have a lot of information with regards to Kangaroo Mother Care and all the guidelines as to taking care of the baby and this method of them. So I found lots of problems with that because we did have staff rotating"* (1-101 – 104);
>
> *"our problem at the moment that we've got such a huge amount of rotation of staff. It's very difficult to build up a person to gain that experience and that knowledge and the discipline because if you are constantly every six months getting new staff in that you have to re-train and re-train. Re-train about KMC you're never going to get it the same at all*" (3-423,425,426,436,438,440).

Management can therefore have a role in supporting individual level by decreasing staff rotation.

Teamwork is important for successful spread of best practices, outlined in Edwards and Grinspun's study regarding the improving of communication to advance long-term care (Edwards & Grinspun, 2011:10), and seniority of staff members was mentioned, and supported by literature elsewhere (3.4.4.1). However, staff-rotation was context-, and organisation-specific.

3.4.4.3 Provincial level

At provincial level Resources and Education and development were identified, which will be explained in more detail.

Resources

At provincial level, it is essential that the following are provided to support the management and individual level: provincial policies and approval of budget for infrastructure. It may also be helpful when support structures already exist (such as existing departments, documents, forms, implementation programmes, sponsors (for congresses) and an information package for the hospitals etc.). Further, provincial departments can provide specific support structures such as a district specialist (team), which is outlined as follows:

Support in provincial policies differed per province. Some provinces such as KwaZulu-Natal province and Northern Cape province did not have policies or standards:

> *"no standards that has been set, there's no requirement that has been laid down. And it stipulates the management this is a requirement how they should be doing, and what kind of resources need to be put towards it. So it's all a very vague thing"* (3-109,110,112,113);
>
> *I'm actually not aware if there is a provincial protocol. I just know that we got it approved that there should be KMC beds at all district hospitals"* (10-136 – 137).

while one other province such as the Western Cape province had policies in place:

> *we've got the provincial neonatal task team. The province drew up also the first provincial Kangaroo Mother Care policy"* (4-313 - 315).

Providing an allocated budget was another supporting structure which was a challenge:

> "*there are always challenges, because you need to find a budget to print the booklets. So there's no allocated budget and things run over and it's just process"* (12-122 – 124);

as well as a facilitator:

> *"Well they approved my request that I suppose is support. And all the district managers uhm, sort of agreed to that, so that helped"* (10-143 – 144).

Resources in terms of budget, policies, etc. were mentioned earlier on and confirmed by Edwards and Grinspun's study (Edward & Grinspun, 2011:1).

Coordination of supportive on-site/follow-up visits was mentioned as crucial as evaluation strategy and to ensure sustainability of the best practice:

> *"Coordination of on-site visits. Support visits when needed"* (14-43 - 44),

whereby the aim of these visits was to:

> *"look at the facility with them and discussed what was needed and why"* (6-495,496).

The following existing support structures were identified:

Existing departments (such as Maternal Child Health (MHC) Department) (P = participant); existing documents/forms (P4); existing implementation programmes (P4); and sponsors and congresses (P7 and P2 (interview 4)); and information package for hospitals (P11 and P12).

The following specific supporting structures were identified to be provided by provincial level: specialist teams: district specialist (team) and primary health team:

> *"Fortunately the government has now put money down in two aspects. So one aspect is the district specialist team, with a paediatrician in the specialist team who needs to ensure that KMC happens. And the second thing government has also budgeted for a primary health care team which includes community health workers, the primary health care nurse and a school nurse. These are the ground workers for the follow-up. And that's important, so that's the way forward. Because all the plans are there, all the packages are there. Somebody's got to oversee it. And the people in the area are the best to oversee it. There's no point of the provincial person oversees it because their function is to do the planning not implementation which is the district specialist"* (12-284 – 289,291 – 293,296).

Coordination of support visits regarding spread of best practices and existing supporting structures were context-specific findings.

Education and development

Providing training and coordination of training (for staff at individual and management level) were viewed as a crucial provincial supportive task:

> *"maybe more training, to train people on KMC. Ja, that's probably the most important"* (10-176 – 10-177)

> *"Coordination of training. Intensive KMC training including financial implications of KMC vs. conventional Neonatal care for the District and Hospital managers"* (14-43,57,58).

Edwards and Grinspun mentioned opportunities for education and training also as a facilitating structure for the spread of best practices (Edwards & Grinspun, 2011:3).

3.4.4.4 National level

At national level Resources, Education and development and Innovation itself were identified, which are outlined as follows:

Resources

The following supporting structures were identified in terms of resources which should be provided at a national level to support individual, management and provincial level:

- Infrastructure:
  "*And that need to be driven from a national level. Uhm, that hospitals, new hospitals must be designed to care for low birth weight babies in KMC. Because your, your, opportunities needs when you need more hospitals. And they still feel that when they build new hospitals there's not a lot, there's not enough emphasis on KMC beds, so, uhm and I think that should be driven from a national level"* (10-197 – 199,201 - 204);
- Supportive strategy:
  "*continuous supporting, it's actually in the Tshwane Declaration it's already now there and our new Minister of Health it's very much supporting it*" (4-419 – 421);
- National policy:
  "it's not a national policy, it should be a policy" (6-298);
  "*Develop a clear policy, with basic equipment and staffing norms for the institutions*" (14-47), and;
- A national implementation task team:
  "*one of the people that was on the task team here Dr. XXX she is sitting on the national task team also* "(4-354 - 356).

Resources, such as policies, infrastructure, etc. could be found in the literature as supporting structures for the spread of best practices (Edwards & Grinspun, 2011:1). However, a national implementation task team was context-specific.

Education and development

Training staff (at individual level) in future by including the best practice in the curriculum:

> *"Hospital levels, all, as long as it's a health facility. Kangaroo Mother Care must be implemented and should be part of uhm all the learning curriculums, of all health providers, nurses and doctors"* (7-268 – 270).

Edwards and Grinspun mentioned opportunities for education and training for the staff as facilitating factor for the spread of best practices (Edwards & Grinspun, 2011:3), which, for this study, could be applied to ensure that the best practice is inlcuded in the learning curriculums of all health providers to ensure that the best practice is the standard of care in all facilities.

Communication

For the spread of a best practice it is crucial that the best practice is communicated. Two responsibilities of national level in communicating the best practice were identified: Create awareness nationally:

> *"we have to start with mass mobilisation, media awareness uhm radio, adverts, newspaper articles or schools have to be uhm taught the importance of Kangaroo Mother Care"* (13-69 – 73);

and annual congresses:

> *"And every year, we do have a, priority where we do our presentations, our research, our surveys.(…) Just to make, just to make knowledge about Kangaroo Mother Care. Any changes, any improvement, you know, that is how they give us support"* (7-221 – -224).

Sharing information regarding the best practice (communication of the best practice) and raising awareness were also found as the most effective strategies to implement and spread best practices. These findings were obtained from Edward and Grinspun's mixed methods study regarding the use of champions to promote the utilisation of best practice guidelines (Edwards & Grinspun, 2011:6).

3.4.4.5 Researcher(s) level

One theme was identified: Education and development.

Education and development

Regarding education and development a participant mentioned that further research was needed regarding health systems research:

> *"at this stage it needs some thorough health systems research to pursue the academics, because that's where these kind of things are driven"* (9-397 – 398);

and cost-effectiveness of the best practice:

> *"Financial implications of KMC specifically cost saving clearly researched and documented"* (14-61 – 62).

Although the benefits (such as cost effectiveness) of a best practice are important to be clear and understood (Edwards & Grinspun, 2011:14), these findings regarding further research were specifically mentioned with regard to KMC.

3.4.4.6 Conclusions regarding supporting and reinforcing structures

Although the success of the spread of the best practice differed from institution to institution as some hospitals spread best practices with support while others spread best practices with almost no support, as a participant said:

> "*some managed to get something with nothing"* (2-774,776 (interview 1)),

However:

> "*sometimes you've got like one place in one of the hospitals in (province) where nothing was improved"* (2-619 – 620 (interview 4)).

A variety of supporting factors were found needed at all levels for the spread and sustainability of the best practice. Supporting structures were found at a variety of levels and included resources, such as budget, human resources, policies and guidelines. Further, sharing knowledge about the best practice, communication through meetings and the timing of spread was also found as a supportive structure. The innovation as supporting structure such as the clarity of the best practice, complexity of the best practice and the benefits of the best practice was also mentioned.

The researcher found it challenging to find research to support the findings with evidence as insufficient research was found regarding the facilitators and barriers in terms of benefit

levers for the spread of best practices in the context of healthcare or nursing. Further, literature which was found, included mostly non-research documents. Therefore this study has a number of context-specific findings, which could not directly be found in the literature, such as poor orientation, hierarchy and staff rotation, which participants perceived as barriers towards the spread of best practices. Further, benchmarking as educational strategy, existing support structures (such as existing departments, implementation programs, etc.) and a national implementation task team were also context- and organisation-specific findings.

Finally, preferable, overall findings suggest that support and coordination are given from authority levels, such as officials at provincial level, where officials at national level are involved, down to management of organisations and individual staff. Officials at provincial level must then on its turn provide support to management of organisations and individual staff. Management of organisations can support individual level. For example: officials at national level can provide the policy and support for the spread of the best practice, while officials at provincial will ensure that the policy is known, provide the budget, drive the change and appoint leaders. This approach prevents a down-up approach which is not desirable (Bergh *et al.,* 2007:ix).

The next paragraph will outline the summary of this chapter.

3.5 Summary

This chapter provided an overview of maternal healthcare and systems and the implementation of KMC in South Africa, as well as step two of the first objective of this study. Key informants involved in the spread of a specific best practice (Kangaroo Mother Care) could see the value of benefit levers used for the spread of best practices in the South African health system. Findings showed that benefit levers at all levels were perceived as important for the spread of best practices. Benefit levers should exist at all levels of the health system, however were not always found. Further, findings (specifically regarding supporting and reinforcing structures) could not always be supported with evidence as the majority of findings were context-specific. In general, not much research studies were found regarding the facilitators and barriers in terms of benefit levers for the spread of best practices in the context of healthcare or nursing. The outcomes of the interviews were used to develop a guide for an operational plan which is outlined in Chapter 4.

CHAPTER 4

A guide for an operational plan for the spread of best practices in South Africa

4.1 Introduction

The previous chapters (Chapter 2 and 3) outlined the first objective of this study. This chapter outlines the second objective of this study: the development (step 1) and refining (step 2) of the "end-product" of this study: a guide for an operational plan for the use of benefit levers in the spread of best practices in South Africa. Firstly, the development of the guide for an operational plan using the logic model format (step 1) is outlined. The method (Delphi method) used to refine the guide for an operational plan and its application for this study (step 2), the findings, as well as a refined guide for an operational plan are outlined. Finally a summary of this chapter is provided.

4.2 Development of the guide using the logic model format

A guide for an operational plan was developed as an operational plan itself is organisation-specific and could therefore not be developed by the researcher but rather by the organisation. However, the guide can be used to develop an operational plan for or within a department or organisation. An organisation or department can consider how and which activities will be carried out to ensure the spread of the best practice.

The logic model was used as the format of the guide. A logic model is a systematic and visual way to present and share an understanding of the relationships among the resources to operate the programme, the activities planned, and the changes or results expected to achieve (adapted from W.K. Kellogg Foundation, 2004:1). A logic model provides stakeholders with a 'road map' concerning the interrelated events which link the need for the planned programme and the desired outcomes. The logic model further helps to visualise and create insight into how human and financial investments may contribute to achieve the programme's intended goals (W.K. Kellogg Foundation, 2004:3). Logic models can be used for the following purposes:

- Programme planning and design (e.g. in the early stages of the planning process: the logic model helps to think through the programme, strategy supply for preliminary visioning, and priority setting trainings, etc..

- Programme management: the model links resources, activities and outcomes.

- Communication: to show stakeholders what the programme is doing (activities) and achieving (outcomes).

- Fundraising: the model shows to the funders what will be done, the achievements, etc.

- Consensus building: to create a shared understanding and buy-in of stakeholders.

- Programme implementation and evaluation: logic models can be used to validate draft aims and objectives or to measure the 'fit' among programme objectives and intended strategies; to evaluate the programme's readiness for evaluation, or create a visual diagram outlining the programme to enhance communication and involve stakeholders to participate in the evaluation (W.K. Kellogg Foundation, 2004:6; THCU, 2001:1-2; Innovation Network, s.a.:5).

Logic models can vary in lay-out and different aspects can be included. Three examples of how the process which is followed in a logic model might look graphically is outlined in Figures 4.1, 4.2 and 4.3.

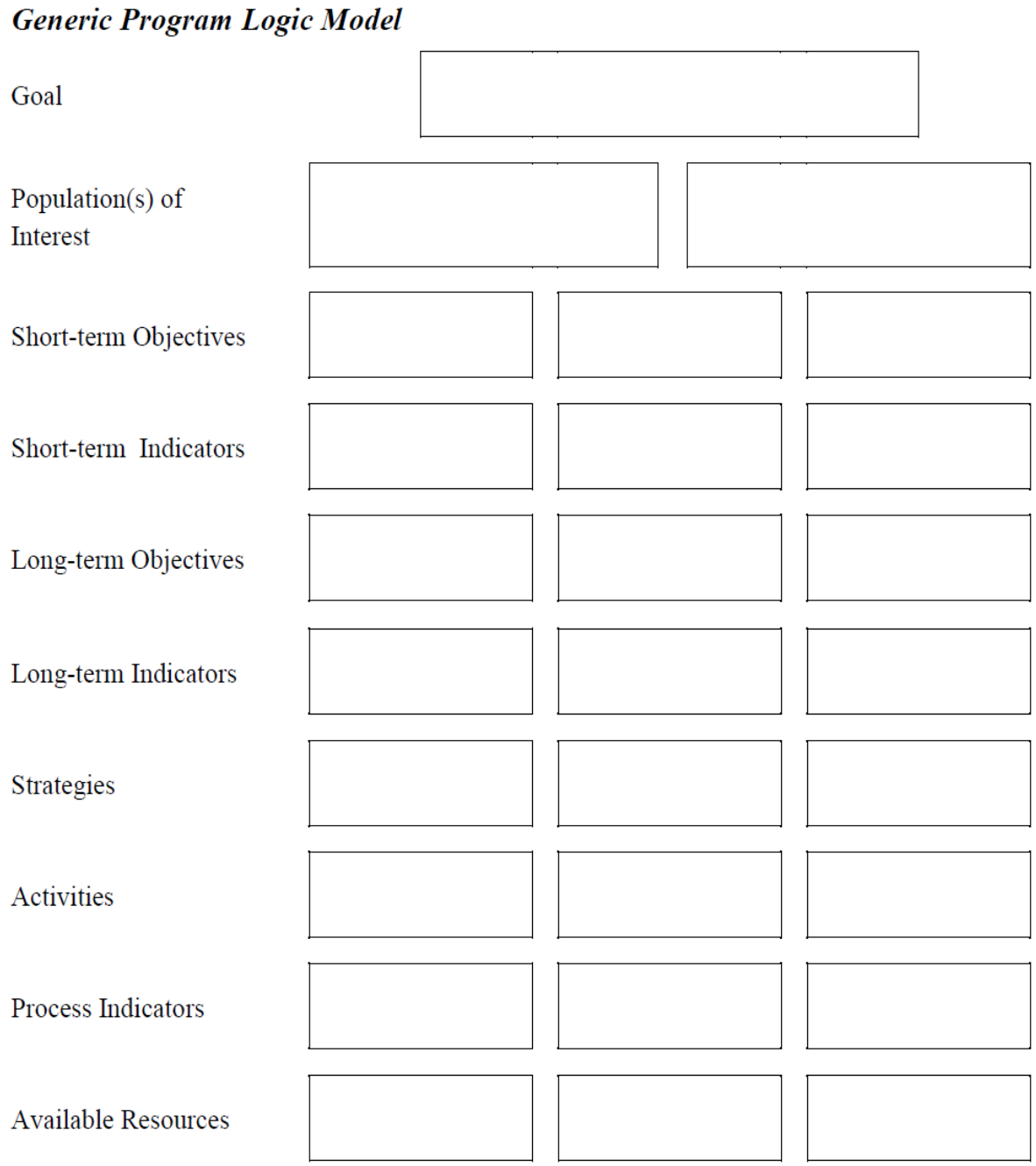


Figure 4.1: Logic model 1(THCU, 2001:4)

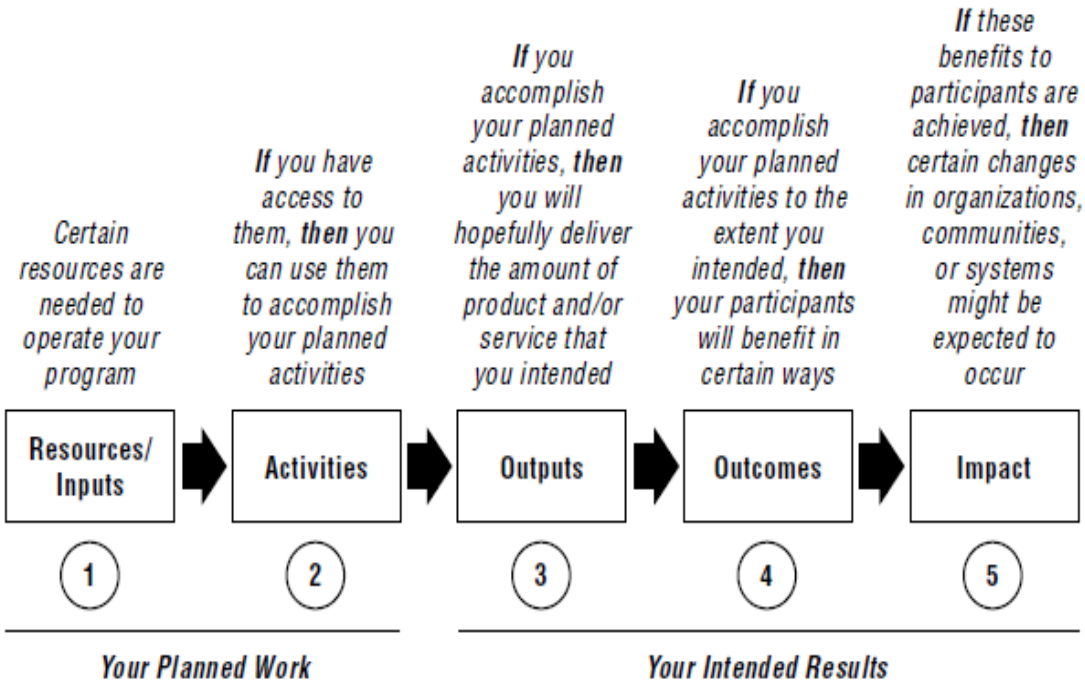


Figure 4.2: Logic model 2 (W.K. Kellogg Foundation, 2004:3)

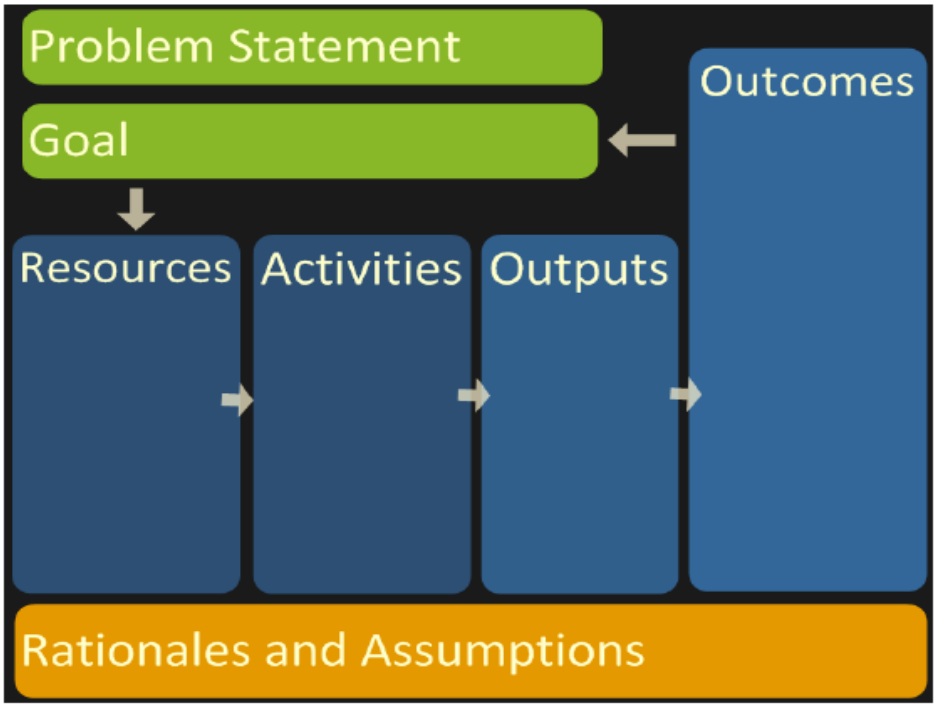


Figure 4.3: Logic model 3 (Innovation Network, s.a.:5)

In this study, the logic model served the purpose of programme planning and design as it was used as a format to create a guide. This guide can be used to develop an operational plan for the use of benefit levers in the spread of best practices.

According to the Health Communication Unit (THCU, 2001) the development of a logic model consists of four steps: step 1: preparation for the development of the logic model; step 2: development and assembling information; step 3: create the logic model, and step 4: reviewing and revising the logic model. These steps and the description of each step are outlined in more detail in the following paragraphs.

4.2.1 Step 1: Preparation for the development of the logic model

In the preparation for the development of the model the following should be considered: the type of stakeholders which should be involved (such as programme staff, board members, funders, etc.); decision making (and who has decision making power); resources; and the scope of the programme/logic model (THCU, 2001:6; Innovation Network, s.a.:3).

In this study, the development of the guide was based on the findings of the perceptions of key informants (see Chapter 3). The findings gave guidance to the stakeholders involved per level, the type of stakeholders with authority, such as stakeholders per level, and the resources needed, such as staff, equipment, space, etc. The scope was clear and linked with the aim of the study: developing a guide which can help to create an operational plan for the use of benefit levers in the spread of best practices in the South African context.

4.2.2 Step 2: Development and assembling information

During the assembling and developing information the following should be considered: the clarity of the problem statement; the goal (including the intended results and target population); rationale; assumptions (the underlying theory of the model); resources, such as human resources, space, equipment, etc.; activities, such as developing products, providing services, etc.; outputs, such as numbers of participants served, hours of service delivered, etc.; outcomes, such as changes which occurred (e.g.: new knowledge, increased skills, etc.) which should be measurable. Outcomes can involve individual, community, systematic, organisational, and short-term, mid-term, and long-term outcomes (THCU, 2001:9; Innovation Network, s.a.:6-16).

The aim and objectives (see paragraph 1.4) and theoretical assumptions (see paragraph 1.5) were discussed. Further, the following aspects were included as recommended by the W.K. Kellogg Foundation (2004): resources/inputs; activities (pre-, during, and post spread);

outputs; outcomes and impacts. What made the guide unique was that the findings identified per benefit lever were included, as well as the levels responsible for carrying out the activities. The guide gives the reader direction what to consider in the spread of a best practice, who is responsible, etc. For example how to identify the aim: e.g. to spread an intervention as best practice, then also to identify resources, etc.

4.2.3 Step 3: Creation of the logic model

The determination of the scope of logic model: how much the model covers; what should be included and (to what extent they are) described (such as goal, population of interest, long and short-term outcomes, resources, etc.); the amount of text (e.g. detailed, less text) and layout (THCU, 2001:16-19). Although there is no standard format for the plan, the chart form is usually used whereby the components of the plan are connected through arrows and lines (THCU, 2001:3).

For this study, the findings of the interviews in terms of specific levels and activities determined the scope and content of the guide. From the findings of the empirical data (Chapter 3) a framework was developed with benefit levers and identified levels (see Appendix I). The framework guided the development of the guide and ensured that all important and relevant findings were included.

The levels identified from the interviews were included and per level the responsible person/group was identified. Some levels had dual activities/responsibilities. The activities or responsibilities were clustered under the benefit levers per aspect of the guide, however, in order of relevance rather than the order outlined in Edward and Grinspun's evidence informed model of care.

The draft guide for an operational plan was outlined in a two-pager Word-document where the aspects and application of the guide were put in rectangles and were connected through arrows (see Appendix J). The researcher decided to provide much detail for the operational plan to be able to be evaluated by the expert panel.

4.2.4 Step 4: Reviewing and revising the logic model

The logic model should be reviewed regarding: whether all relevant aspects such as short and long-term outcomes, objectives, etc. are included; whether the model is logic, and; whether layout is appropriate. Revision of the model should be done according to the comments (THCU, 2001:20-21).

In this study, the guide was reviewed and evaluated by stakeholders, whereby the Delphi technique was used, which is outlined in the next paragraph.

4.3 Refinement of the guide using the Delphi method

To refine the developed guide for an operational plan, the Delphi method was used as part of step 2 in phase two. Delphi is a commonly and acknowledged method which can be used for collecting data from participants within their area of expertise (Hsu & Sandford, 2007:1), and is a suitable method when there is insufficient knowledge regarding a certain issue, especially when issues require understanding, with opportunities, and when creating solutions and forecasts (Burns & Grove, 2009:414; Skulmoski *et al.*, 2007:1).

Delphi can be defined as: “a method for structuring a group communication process so that the process is effective in allowing a group of individuals, as a whole, to deal with a complex problem” (Linstone & Turoff, 2002:3).

The Delphi was originally a monastery where knowledge was gathered, structured and preserved to improve the world. Consultations were done through this monastery which served also as a court to solve private matters (Cuhls, s.a.:93). The name Delphi is lent from Greek wherein Delphi is a Greek god Apollo, who could forecast the future (Powell Kennedy, 2004:505; Goodman, 1987:729).

Delphi as a research method had its initiation in America where Delphi was first used in the early 1950’s in an Air Force-sponsored Rand Corporation study, whereby expert opinion was used (Skulmoski *et al.*, 2007:2; Linstone & Turoff, 2002:10,11). Later, Delphi spread to West and East Europe, and the East (Linstone & Turoff, 2002:11). The Delphi method is based on structural surveys and uses the spontaneous accessible information of the participants, who are mainly experts (Cuhls, s.a.:96). In order to structure communication the following are needed: feedback of the individuals, appraisal of the group judgment or view, chances to modify opinions and a certain degree of anonymity (Linstone & Turoff, 2002:3). The Delphi method measures the judgements of a group of experts for the purpose of decision making and to provide feedback without actual meeting (Burns & Grove, 2009:414,415). The Delphi technique is often referred to as a consensus method as it provides consensus and a few rounds may be necessary (Hsu & Sandford, 2007:1; Skulmoski *et al.*, 2007:11; Hasson *et al.*, 2000:1008).

For this study, feedback was requested to reach consensus from an expert panel regarding the guide's appropriateness in terms of design and layout.

The following sections will outline the purposes of Delphi, advantages and disadvantages of Delphi, types of Delphi methods, philosophical underpinnings, reality construct and knowledge creation, the role of the researcher, the role of the Delphi panel members, and the phases and research process of Delphi, as well as the application of these aspects for this study.

4.3.1 Purposes of Delphi

Delphi can be used for a number of purposes. Purposes might be to: plan programmes; obtain current and historical data which is unknown or unavailable; investigate historical events; investigate needs; evaluate possible budget allocations; explore urban and regional planning options, etc.; investigate the pro's and cons related to potential policy options etc. The Delphi method is firstly used in a variety of fields such as aerospace and electronics technologies (technological forecasting), "classical" management science and operations research (Hsu & Sandford, 2007:4; Powell-Kennedy, 2004:511; Linstone & Turoff, 2002:4,11). Delphi was later also used in the field of health sciences (Du Plessis & Human, 2007:14).

For this study the Delphi was used to refine a guide for an operational plan. This guide can be used in the field of health specifically for the South African context.

4.3.2 Advantages and disadvantages of Delphi

Delphi has some advantages as it seems to be a 'simple' and flexible method which can include a number of forms and can benefit from subjective judgments on a cooperative basis (Skulmoski *et al.*, 2007:1; Linstone & Turoff, 2002:4; Hasson *et al.*, 2000:1011); however, some problems should also be considered when using Delphi. For example, no history of sufficient communication is known concerning the participants, the administration of the Delphi might be time-consuming, bias might occur when data is obtained from the panel members which is not related to the purpose of the study, more participants are required than for a face-to-face communication, no consensus might be achieved due to major disagreements whereby the communication process must be refereed and/or anonymity ensured, perceived or real pressure might be experienced by the participants due to submission to certain social norms, cultures, etc. resulting in conformed opinions, preconceived views may not allow the involvement of other perspectives associated with the issue, the assumption may arise that Delphi can be a replacement for direct communication

such as face-to-face communication, summarising might be poorly done, disagreements may be ignored, misunderstandings may arise, especially when using participants from multi-cultural backgrounds, etc. (Hsu & Sandford, 2007:2,4; Linstone & Turoff, 2002:4,6). Other issues which should be considered are how to choose a suitable respondent group, as well as an appropriate design/method (a chosen design might not always be efficient when it is applied) (Linstone & Turoff, 2002:6). Possible issues regarding this method should therefore be considered and the researcher should be able to know how to anticipate on such issues.

The Delphi technique was used as most appropriative method for this step in this phase of the study. This method was most appropriative due to the fact that time and cost made frequent group meetings infeasible (Linstone & Turoff, 2002:4) as the geographic area from which the panel members were operating covered different provinces in South Africa.

4.3.3. Types of Delphi methods

There are different types of Delphi methods: the paper-and-pencil method referred to as "Delphi Exercise" whereby a team develops a questionnaire which is sent to a larger respondent group. When the questionnaire is obtained, the team summarises the results and creates a new questionnaire for the respondent group based on the previous results (Linstone & Turoff, 2002:5). Besides the "Delphi Exercise" another form exists which is referred to as the "Delphi Conference", whereby a computer is used to summarise the group results (Linstone & Turoff, 2002:5).

Although the computer/e-mail was used to communicate with the participants, the Delphi Exercise was used as questionnaires were utilised to obtain information and the creation of a new questionnaire and refinement of the guide was achieved through the responses from the expert panel.

4.3.4 Philosophical underpinnings

The Delphi technique can use a number of different types of philosophies. Table 4.1 outlines the different types of philosophies which could serve as a foundation for Delphi methods.

Table 4.1 Different types of philosophies (adapted from Linstone & Turoff, 2002:20-33)

Philosophies	Description		
	Type of systems	**View of 'truth'**	**Suitable**
Leibnizian philosophy	Formal, symbolic systems	Truth is *analytic*, for example, the truth content of a system is completely associated with its formal content. A model of a system is a formal model and the truth of the model is measured in terms of its ability to give a theoretical explanation of a wide range of general phenomena and in terms of *our* ability as model creators to state clearly the formal conditions under which the model holds.	When working on clearly definable (for example well-structured) problems for which there exists an analytic formulation, as well as a solution.
Lockean philosophy	Experimental, consensual systems	Truth is *experiential,* for example, the truth content of a system, (or communication) is associated *entirely* with its empirical content. A model of a system is an *empirical model* and the truth of the model is measured in terms of our ability (a) to reduce every complex proposition down to its simple empirical referents (i.e., simple observations) (b) to ensure the validity of each of the simple referents by means of the widespread, freely obtained *agreement* between different human observers.	When working on well-structured problem situations for which there is a *strong consensual* position on "the nature of the problem situation".
Kantian philosophy	Multimodel, synthetic systems	Truth is *synthetic*, for example, the truth content of a system is not located in either its theoretical or its empirical components, but in *both. A* model of a system is a synthetic model in the sense that the truth of the model is measured in terms of the model's ability (a) to associate every theoretical term of the model with some empirical referent and (b) to show that (how) underlying the collection of every empirical observation related to the phenomenon under investigation there is an associated theoretical referent.	Kantian inquiry is best suited to problems which are inherently ill-structured, for example, the kinds of problems which are inherently difficult to formulate in pure Leibnizian or Lockean terms because the nature of the problem does not admit of a clear consensus or a simple analytic approach.
Hegelian (Dialectical) philosophy	Conflictual, synthetic systems	Truth is *conflictual*, for example, the truth content of a system is the result of a highly complicated process which depends on the existence of a plan and a *diametrically opposed counterplan.*	For studying "wickedly" ill-structured problems.
Singerian philosophy	Synthetic multimodel, interdisciplinary systems	Truth is *pragmatic,* for example, the truth content of a system is relative to the overall goals and objectives of the inquiry. A model of a system *is teleological, or* explicitly goal-oriented, in the sense that the "truth" of the model is measured with respect to its ability to define (articulate) certain systems objectives, to propose (create) several alternate means for securing these objectives, and finally, at the "end" of the inquiry, to specify new goals (discovered only as a result of the inquiry) that remain to be accomplished by some future inquiry.	Singerian inquiry can be used for a variety of problems, however, this method should be chosen when it is best-suited to study.

However, often the issue is not the name of the philosophy or method, but whether the philosophy or method is appropriate (Linstone & Turoff, 2002:17).

There is no one single method or philosophy which can be used in Delphi to completely ensure understanding of the content of data. No single mode of understanding contains all the desired characteristics that one would prefer to be contained (Linstone & Turoff, 2002:18). Further, with respect to methodologies such as the Delphi methodology, insufficient structure has been given to determine which of many possible foundations supply the "best" underpinnings (Linstone & Turoff, 2002:15).

This study used the post modernistic approach (see paragraph 1.5). The philosophy is used which comes closest to the postmodernism and was most suitable: the Singerian philosophy. The Singerian philosophy was used as the aspects of guide (design and content) were discussed, as well as new or alternative versions of the guide were developed, and at the "end" of the inquiry, new aspects were specified for improving the guide so that it could serve the development of an operational plan by an organisation or department wishing to spread best practices.

4.3.5 Reality construct and knowledge creation

To describe the raw data which contain characteristics of the "real world," conceptualization must be done (Linstone & Turoff, 2002:20). According to Linstone and Turoff (2002:38), conceptualisation of a situation and the influence this has on the various constructions of reality according to the Delphi panelists create the most considerable outcomes from any Delphi (Linstone & Turoff, 2002:38).

In Delphi, different ‘reality constructs’ can create discrepancy among statements which seem to be definite. However, when the researcher focuses on these differences in reality constructs, more defined characteristics of the contexts can be obtained, which may lead to an estimation of the possibilities and options which might influence the circumstances (Linstone & Turoff, 2002:40).

However, more, unknown or unexplained data cannot simply be associated with a higher level of complexity, but a greater effort must be made to obtain data which can ‘shape’ reality. Because Delphi tends to persuade consensus of data, the monitor of a Delphi should purposely introduce uncertainties, even interruptions in data (Linstone & Turoff, 2002:41).

For this study, the focus was on the different opinions obtained from experts to refine the guide. The aim was to reach consensus between the different ‘realities’ (or opinions) from the different stakeholders to obtain a ‘final’ version of the guide.

4.3.6 The role of the researcher

The coordinative role of the researcher in Delphi is crucial as he/she has to manage an identical 'flow of information' amongst the participants. The role requires: skills in data-collection and analysis, reducing eventual psychological effects, remaining objective, reducing time which is demanded of the participants, be able to look for the central themes and extreme propositions, be able to manage large groups, and be capable of structuring the communication using communication skills (Burns & Grove, 2009:414; Grisham, 2009:114; Linstone & Turoff, 2002:7-8; Hasson *et al.,* 2000:1012). Administrative skills of the researcher are also important (Hasson *et al.*, 2000:1012).

During the Delphi the researcher had a coordinative role as she managed the information from the key informants. The researcher is computer literate and used her administrative skills to collect and analyse the data.

4.3.7 The Delphi panel members

The Delphi method requires knowledgeable and expert providers which independently respond to questions, submitting the results to a central coordinator (Grisham, 2009:114). The Delphi method gives the participants the chance to communicate their views and expertise in an anonymous way concerning a multifaceted issue, to discover whether and how their assessment of the issue aligns with other panel members, and to adapt their judgment, if preferred, after reviewing the findings of the group's work (Powell-Kennedy, 2004:504).

However, panel members, besides their knowledge on the topic, do not necessarily have commonalities, which may result in the panel members being focused on defining the reality rather than creating richer realities for the domain of the topic (Linstone & Turoff, 2002:54). Each Delphi interaction constructs a shared reality, initially created by the panellists from their expectations and adjusted by further interactions, agreeing on the new reality. In the interaction process panel members deal with personal esteem, group self-concept, relevant paradigmatic perspectives and substantive ideas, forecasts and estimates. In order to obtain more useful, impactful data, styles of interactions may be fostered, delayed, or even altered. The dimension and form of the reality 'within things come to be viewed', are more significant than the specific functional descriptions created by the panel members. The believability and meaning to the user of the results of the Delphi depend on the member's perception of the clarity, compellingness, and fit of the reality and is differentiated by the outcomes and the perceived quality of the data (Linstone & Turoff, 2002:57,61).

Delphi panel members who view themselves as an affiliate group, tend to have two-step responses: Firstly, they make narrow and direct responses to the items in the questionnaire. Secondly, they have supplementary reflections. Usually the panel members are requested whether they agree to add these supplementary items (Linstone & Turoff, 2002:58).

Linstone and Turoff (2002:65) mention three kinds of panel members which can be included to obtain a variety of participants to obtain a broad spectrum of opinions on the topic: 1) stakeholders which will be directly affected, 2) experts, which have a relevant area of expertise or relevant experience, and facilitators who have skills in clarifying, organising, synthesizing, stimulating, etc. and, if suitable, 3) individuals who can provide alternative worldviews of cultures and societies (Linstone & Turoff, 2002:65). However, for experts regarding some issues no clear definition of experts exists, which might make identification of these experts difficult (Burns & Grove, 2009:414; Du Plessis & Human, 2007:15).

The Delphi members for this study were chosen based on their expertise in the implementation and spread of best practices in the South African context. A broad spectrum of opinions was obtained as the Delphi members operated from a variety of levels (individual level, provincial level) and provinces in South Africa. Panel members were provided with space for both narrow as well as, broad, supplementary responses.

4.3.8 Phases and the research process of Delphi

According to Linstone and Turoff (2002:5-6), Delphi consists of four phases:

- Phase 1: Exploration of the topic through discussion;
- Phase 2: Reaching consensus regarding the group view of the topic, for example in terms of significance, attractiveness, or feasibility;
- Phase 3: If significant disagreements, exploration of the disagreement, as well as fundamental reasons for the differences and evaluation of them;
- Phase 4: A final evaluation when all previously collected data has been firstly analysed and evaluations made, panel members have received feedback for consideration (Linstone & Turoff, 2002:5-6).

Du Plessis and Human (2007:17) outline the process which can be following using Delphi, which is outlined in Figure 4.4.

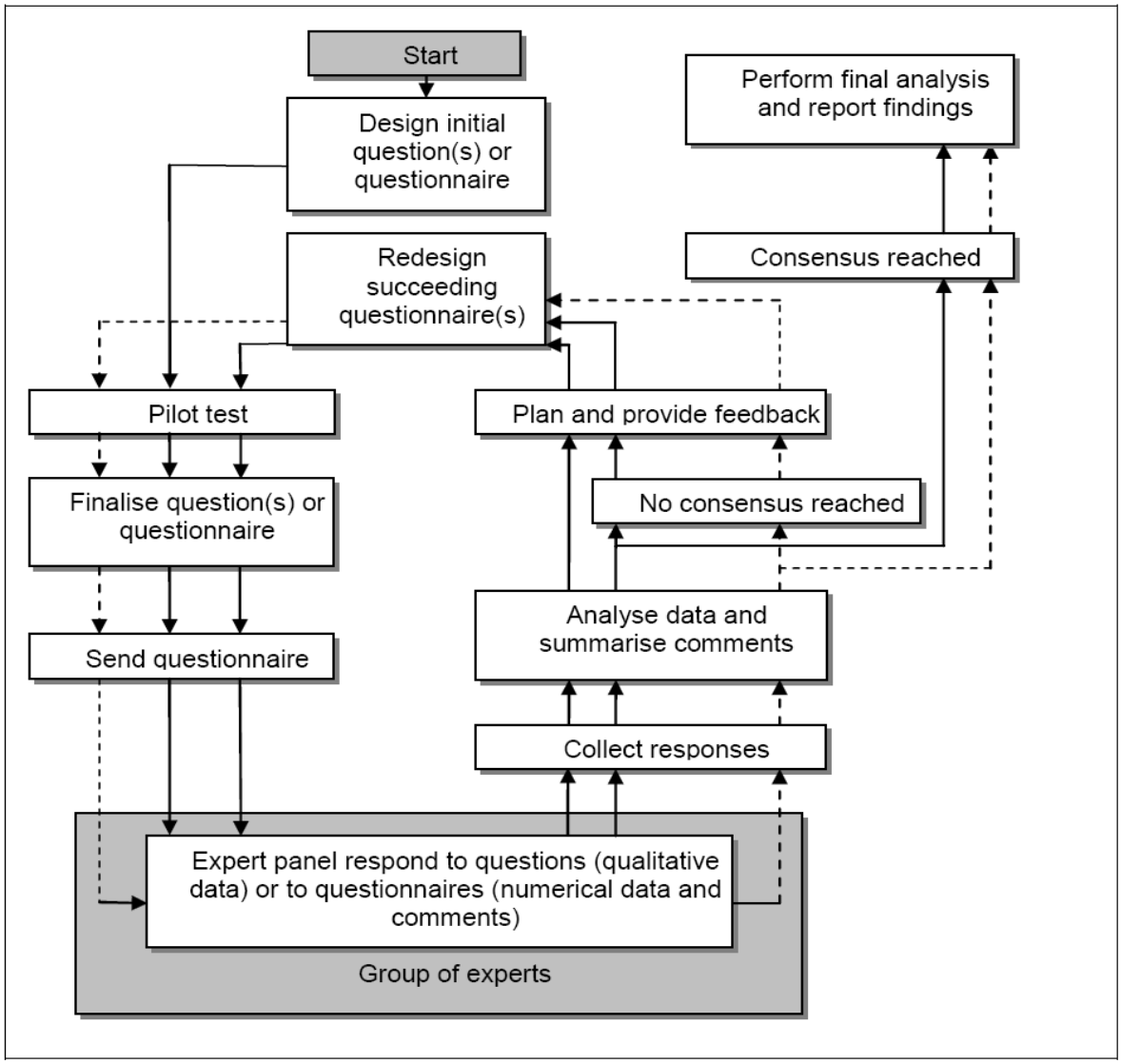


Figure 4.4: Process which can be followed using a Delphi method (Du Plessis & Human, 2007:17)

The research process in the Delphi method includes identification of the research problem, sampling, sample size, data-collection, analysis and report writing which will be outlined and applied to this study in the following sections.

4.3.8.1 Identification of the research problem

Identification of a research topic or issue is usually done by the researchers. Factors must be considered such as available resources and the researcher skills (Skulmoski *et al.*, 2007:3; Hasson *et al.*, 2000:1009). The researcher should decide on the type of questions. A question might be broad or narrow depending on the aim of the study, e.g. a question can be broader when the aim is to obtain more varied data (Skulmoski *et al.*, 2007:10).

The method was aimed at objective 2 of this study: to develop a guide for an operational plan to use benefit levers for the spread of best practices (see paragraphs 1.4 and 1.6). The questions were related to the following aspects: design (layout and wording) and content (feasibility and relevance) of the guide. Open and closed questions were used to address the aspects.

4.3.8.2 Sampling

The arrangement of the sample depends on the aim of the research. For example: a more homogeneous sample should be used when the aim of the study is focused on forecasting (Du Plessis & Human, 2007:16). The sampling technique used is usually non-probability sampling such as purposive and convenience sampling based on the participants' expertise and views on the topic (Du Plessis & Human, 2007:17). The experts are usually chosen based on their expertise in a particular field relevant to the study purpose (Hsu & Sandford, 2007:3). As the sample of a Delphi is usually small, Delphi's aim is not to create statistically significant outcomes. Therefore, the outcomes given by any panel cannot be generalised to a larger population or even a different Delphi panel, but characterise the opinion of that particular group (Gordon, s.a.:4). However, the selection of the participants is crucial as the success of the Delphi depends on the participants (Gordon, s.a.:7). In selecting the sample, the participant's skills, such as computer literacy and writing skills, should be considered (Skulmoski *et al.,* 2007:10; Hasson *et al.*, 2000:1011). The characteristics of the sample should be described in detail (Hasson *et al.*, 2000:1009).

Recruitment should be done considering the preferences of the participants as this might influence the response rate. Therefore, the sample should be informed into detail regarding expectations and how the evidence will be used (Hasson *et al.*, 2000:1011).

For this study experts in the field of Knowledge Translation, such as the implementation and spread of best practices, were selected to provide their opinion/judgements/views regarding the design and content of the developed guide. The experts were sampled using purposive sampling. Inclusion criteria were as follows:

- Key informants must be experts in the field of Knowledge Translation;
- Have experience or are/were involved in the implementation and spread of (a) best practice(s) in the South African context;
- Should be fluent in English, and

- Must be computer literate as e-mail is used to collect the data.

The sample was partly a sub-sample from the participants from the individual interviews based on their knowledge about implementation and spread of best practices in South African context (such as KMC). The sample was supplemented with potential key informants who had experience in research and specifically Knowledge Translation in the South African context.

Participants (in this study referred to as P) were recruited by email messages. In total 10 e-mails were sent to invite experts from various institutions, levels (provincial, hospital level) and provinces in South Africa to participate three weeks prior to sending the questionnaire and guide (see Appendix K). Slightly half of the participants responded and gave their consent to participate (n=5). Five participants were recruited as a sub-sample from the key informants from the interviews (P2; P4; P6; P13; P14). One (n=1) participant was additional to the existing sample (P15). One participant withdrew in the process due to illness (P4).
Table 4.2 outlines the sampling framework for this study.

Table 4.2: Sampling framework for this study

Level of health system	Province								
	KZN	**NW**	**GP**	**EC**	**WC**	**NC**	**LP**	**MP**	**FS**
Hospital KMC Ward/unit level (n=2)					n=1 (P15)		n=1 (P6)		
Management level									
Provincial level (n=2)			n=1 (P14)						n=1 (P13)
National level (n=0)									
Researcher(s) level (n=1)			n=1 (P2)						

4.3.8.3 Sample size

When the Delphi method is used, representativeness of the sample is more important than statistical representativeness (Du Plessis & Human, 2007:18). However, sample size is crucial in terms of obtaining a representative assembling of views on the issue. A sample which is not sufficiently large does not represent a pooled judgment on the topic, while a sample which is too large may result in a low response rate and the requirement of great time blocks by the participants and the researcher(s) (Hsu & Sandford, 2007:4). However, a smaller sample size is chosen when the study is a follow-up study (Skulmoski *et al.*, 2007:10).

The sample size in this study was relatively small (n=5) as the aim was to rather involve views of few members which are *experts* in the field than a great number of views from non-experts (big sample size).

4.3.8.4 Data collection

Hasson *et al.* (2000:1011) identify two stages in the data-collection process: the discovery of opinions and the process of determining the most important issues.
Firstly, discovery of opinions involves the question of how many rounds are required to come to consensus. The number of rounds depends on the time available, the depth of the research question and the level of fatigue of the panel members.
Secondly, determining the most important issues starts in the first round. The first rounds of questions must be thoroughly thought on beforehand. Usually open-ended, semi-structured or structured questionnaires are used which are anonymised (Burns & Grove, 2009:414; Du Plessis & Human, 2007:19; Hsu & Sandford, 2007:2; Hasson *et al.*, 2000:1010).

The questionnaires can focus on difficulties, chances, resolutions, or prognoses of a certain topic or problem (Skulmoski *et al.*, 2007:2). According to Cuhls (s.a.:102), when developing the questionnaire, the researcher should consider how and to what extent feedback is provided during the second round right from the start of the Delphi. Usually feedback of the data is provided through graphics and percentages. Sometimes, the questionnaire is pilot-tested to test and adjust the survey, to enhance understanding, and solve any technical issues (Skulmoski *et al.*, 2007:3).

Often the first round is explorative and less structured. Evidence from the previous round serves as a basis for the next rounds, when the questionnaire is adapted or a new one developed accordingly to the feedback from the panel members (Du Plessis & Human, 2007:19-20). Usually Delphi consists of two or more rounds (Cuhls, s.a.:96). Sometimes four rounds are needed depending on the aim of the research, e.g. four rounds might be necessary when the aim of the study is to reach consensus (Burns & Grove, 2009:415; Hsu & Sandford, 2007:3; Skulmoski *et al.*, 2007:11).

Finally, resources needed for a successful Delphi should be considered on beforehand (Hasson *et al.,* 2000:1012).

For this study the Delphi cycle of review was conducted using e-mail correspondence. The data-collection consisted out of two rounds.

In the first round, the guide, with a brief explanation of the logic model and how this model was applied to develop the guide and a questionnaire (see Appendix L) were sent to the five panel members. Before sending, the guide and questionnaire were reviewed by experienced researchers. The questionnaire contained both closed and open-ended questions. Items of the questionnaire included questions regarding four aspects: layout and formulation (the design) and the feasibility and relevance (the content) of the guide. In total four questions (of which each question existed of a part A and B) were asked. Part A consisted of a closed question using a 5-point Likert scale regarding e.g. how feasible the plan was according to the participant. Part B of the question involved what the key informant would like to change to e.g. improve the feasibility of the guide. Each participant was expected to complete the questionnaire that took them approximately 20 minutes of their time per cycle. After completing the questionnaire, the participant was asked to send it back via e-mail. A specific timeframe was given to complete and return the questionnaire.

The second round consisted of providing a summary of the feedback and the refined guide to the five experts to come to final consensus regarding the design and content of the guide. No questionnaire was provided. Experts were asked to provide final feedback regarding the guide, and again a specific timeframe was given. The opinions of members who took part in the Delphi technique remained anonymous throughout.

4.3.8.5 Data analysis

The data collection and analysis is an ongoing process and information analysed consists of both qualitative and quantitative data which should be 'managed' (Hsu & Sandford, 2007:4; Hasson *et al.*, 2000:1012; Cuhls, s.a.:105). Cuhls (s.a.:99-101) mentioned the process how to formulate the themes and topics to be formulated (from the already existing themes). Brainstorming can be used as a filter to obtain the topics relevant to the objectives. Often, topics have to be reduced as panel members add topics.

Criteria have to be developed such as time of realisation of the activities. However, as analysis methods are not defined (Burns & Grove, 2009:414), the appropriate analysis technique must be used for the type of questions (Skulmoski *et al.*, 2007:5). The data from round one is usually analysed in a qualitative way, e.g. when open-ended questions are used. After the analysis, member checking is done. The next rounds are analysed quantitatively whereby simple ranking of statistical data through central tendencies (means, medians and mode) and levels of dispersion (standard deviation and the inter-quartile range)

can be used (Hsu & Sandford, 2007:4; Hasson *et al.*, 2000:1012; Du Plessis & Human, 2007, Cuhls, s.a.:105).

The method of data analysis is linked to the purpose. For this study the content validity index was not to be calculated by testing the operational plan but the focus was rather on the *development* of the operational plan in terms of *design* (layout and formulation) and *content* (feasibility and contextual relevance). After the first round, when questionnaires were completed and returned to the researcher, the information was analysed using content analysis by grouping similar items together (Hasson *et al.*, 2000:1011). The second round was analysed using descriptive analysis. Findings will be described in the next paragraph.

4.4 Findings

Findings will be discussed according to the two rounds.

4.4.1 Findings round one

In the first round, five experts provided feedback regarding the design (layout and wording) and content (feasibility and relevance) of the guide. Two panel members provided feedback within the time frame, after a reminder was sent; the remaining three experts sent their feedback.

Two of the key informants did not complete the Likert Scale (part A of the questions) but answered the open question (part B) by providing feedback in terms of text. Therefore only the feedback of part B of the questions could be analysed. The feedback of the first round and the application for the guide are outlined in Table 4.3.

Table 4.3: Feedback of the first round and application for the guide

Question	Feedback per participant (P)	Feedback applied in the guide
Question 1: Layout *(Design)*	***a) The layout of the guide***	
	"Average" (P13; P14); "*Very good"* (P6)	n.a.
	b) Suggestions to improve the layout of the guide	
	Condenseness: "Too dense/condensed" (P2; P13); use bullets and lines for each point instead of a continuous text format (P2; P6 and P13)	Bullets were included and lines were used for every new activity/point
	Grouping of boxes: Use rather one page per box with an arrow on the right to indicate the continuity of the guide (P2)	One page per box was used where applicable. When boxes were smaller, several boxes were placed on one page. An arrow per box was placed on the right side of the boxes
	Graphic design: Attach a logic model graph/diagram with the guide which aims to clarify the aspects in the guide (P2)	A graph was attached with the aspects of the guide
	Categorisation of activities: Complete the activities per	Activities could not be structured in

	level rather than mentioning them under the benefit levers (P14)	that way as that aim of the study was regarding the use of benefit levers for the spread of best practices. (The use of) benefit levers had to be shown in the guide
Question 2: Formulation *(Design)*	***a) The formulation of the levels and activities of the guide***	
	"Good" (P6; P13 and P14)	n.a.
	b) Suggestions to improve the formulation of the guide	
	Language: • Language editing should be done as the guide has some syntax and semantic inconsistencies (P2; P14); • Use higher level constructs (P2)	The guide was language edited Higher level constructs were used where applicable
	Flow: brackets were used which restricted the flow (P13)	Brackets were removed where applicable
	Terminology: terminology must be in line with what is used in South Africa, such as roll-out (instead of spread) (P2)	Although the guide is context specific, spread was chosen as this is in line with Edward and Grinspun's model used
	The levels: • The drive is provincial although national level should be involved (P6); • Include district level as an extra level in the guide (P6); • More detail should be provided regarding departments (P14)	Rephrased: national is involved but the drive is from provincial level District level was included with similar responsibilities as provincial level An organisation or department can use the guide to provide more detail (a such as practical examples) regarding the departments and their activities
	Specific: first identify what is the best practice (P6)	Identification what the best practice is Included under the 'input' box (first box)
Question 3: Feasibility *(Content)*	***a) Feasibility of the guide***	
	"Feasible" (P6; P13); *"Average"* (P14)	n.a.
	b) Suggestions to improve the feasibility of the guide	
	Detail/applicability: • The plan says what should be done, but not how (P2); • Contextual differences may necessitate different strategies (P2)	A guide was chosen instead of plan as an operational plan is too organisational specific. An organisation or department can use the guide to develop an operational plan which is detailed and context specific
	Levels: Consider some kind of differentiation between functions and activities at different levels (P2)	Difference in functions and levels was considered where applicable
	Alignment: • Don't necessarily expect buy-in, especially initially. It may take time. The process is greatly assisted by the communication skills and attitude of the facilitators – at all levels of care (P6); • Need of 'dedicated' staff (P15)	Communication and skills of staff and management by (coordination of) training was included as a responsibility of district/provincial level Appointment of dedicated and skilled people was included as a responsibility at management level. Further, a suitable (dedicated) leader should be appointed which encourages staff
	Approach: It seems the guide is looking at a National down approach. Often (but not always) it seems that there can be a "low level" start permeating upwards, or sometimes not permeating at all, but changing practice where implemented (P6)	Rephrased: national is involved but the drive is from provincial level. Drive can be from top (national level) or from bottom-up

	Practicability: Give more practical examples to operationalise the plan (P14)	A guide was chosen instead of plan. An organisation or department can use the guide to develop an operational plan which can include practical examples
	Testability and implementation: • Include the testability of the plan (P14) • Concerns about the practical implementation of the guide (P15)	District/provincial level should evaluate the plan for spread and, if necessary modify (the activities/responsibilities) of the plan. The guide should be tested/implemented in settings in South Africa which are included in the recommendations of this study
Question 4: Relevance *(Content)*	***a) Relevance of the guide***	
	"Very relevant" (P6; P13); *"Relevant"* (P14)	n.a.
	Involvement: In the operational plan there should be reference to the responsibilities of hospital managers, time lines and outputs (P14)	The responsibilities are outlined broadly, but should be outlined in the operational plan in more detail
	Specific: • Policy making was formulated nationally and this was sent out as a directive to be implemented. Generally this works for this condition (P6); • You need political support (P13)	Policy making was included as a responsibility of management, district/provincial and national level Under alignment it is mentioned that all levels have to be involved. Also national level was given certain responsibilities in the guide

4.4.2 Findings round two

In the second round only three experts provided some additional feedback to the guide and the attached logic model through track changes and a summary in text, of which a summary is outlined in Table 4.4.

Table 4.4: Feedback of the second round and application for the guide and logic model attached

Aspect	Feedback per participant (P)	Feedback applied in the guide/logic model attached
Layout *(Design)*	**The guide**	
	Layout: • Benefit levers suggested in bold (P2); • Format of arrows was suggested to be changed from a curved left arrow to a right arrow (P2)	Benefit levers changed to bold Format of the arrows accepted
	The logic model	
	Layout of the logic model: • Use different colours of the lines from the arrows to ensure difference between the two (P2); • The word 'impact" is not placed centrally (P13)	Blue was used for the lines The word was placed centrally
	Format of the logic model: *Non-complexity:* the logic model should actually show a cyclic or spiral process to continuously ensure the "best practice" is in place (e.g. new "inputs") which ensures together with other activities to improve implementation or take it further (P2)	An arrow was added showing the cyclic process
Formulation	**The guide**	
	Spelling and grammar: some spelling and grammar changes recommended (P2)	Spelling and grammar corrected (accepted via track changes)

	Wording: • Impact was suggested instead of impacts (P2); • Under leadership for change motivating staff was added (P2); • Under permeation plans (activities) "opportunities for sharing progress with implementation of the best practice (e.g. departmental meetings, congresses)" was added (P2); • Under outcomes, "Evidence of health systems strengthening" was suggested instead of "Improved health system outcomes"(P2); • Under Resources / input: Supporting and reinforcing structures another bullet should be added: "Identify what resources are still needed" (P6); • Under Activities, Pre-spread of best practices another bullet should be added: "Set measurable targets" (P6); • Under Post-spread of best practices, another bullet should be added: "Meeting the targets" (P6); • Under Outcomes another bullet should be added: "Targets met" and set something which has to be accounted for (P6)	The suggested changes were accepted via track changes Reformulation: Instead of analyse: identify and analyse The suggestions were added in the guide under supporting and reinforcing structures The suggestions were added in the guide
	Use of capitals: the examples provided by the levels (such a Provincial head, etc.) was suggested to be without a capital letter (P2)	The suggested changes were accepted via track changes besides National Department of Health; the capital of "National" was kept
	Levels: • National needs to be included, even though they may not always be there in the beginning (P6); • Facilities and community should be added as another level. In most programmes these levels need to be involved at some stage, and therefore it is probably best to consider them, and to what extent they must be involved, right from the beginning (P6)	National level is included where applicable Community level was added in the guide. Facilities are similar to 'management level'
	The logic model	
	Wording logic model: the title was suggested to be changed from "logic model of the guide" to "the operational guide according to the logic model" (P2)	The title was changed to: 'a guide for an operational plan according to the logic model" as this is in line with the second objective
	Specific: Under Resources / inputs (Pre-spread of best practices) the following could be added: "Equipment", and "Support services" (P6)	Equipment was added to the guide (under "Resources") while support services are already part of supporting structures

After step 1 and 2 of objective 2 were addressed, the refined guide was developed which is outlined in paragraph 4.5.

4.5 The end-product: a guide for an operational plan

Figure 4.5 outlines the logic model as a graphic representation of the process with main issues to address in the plan, while Figure 4.6 outlines a guide for an operational plan showing how to populate the logic model. Although activities/responsibilities per levels are provided, depending on the organisation or department, levels can be applied differently as relevant to the specific organisation. Finally, a template is provided (see Figure 4.7), which is derived from the guide and can be used together with the guide by the organisation/department planning to spread a best practice.

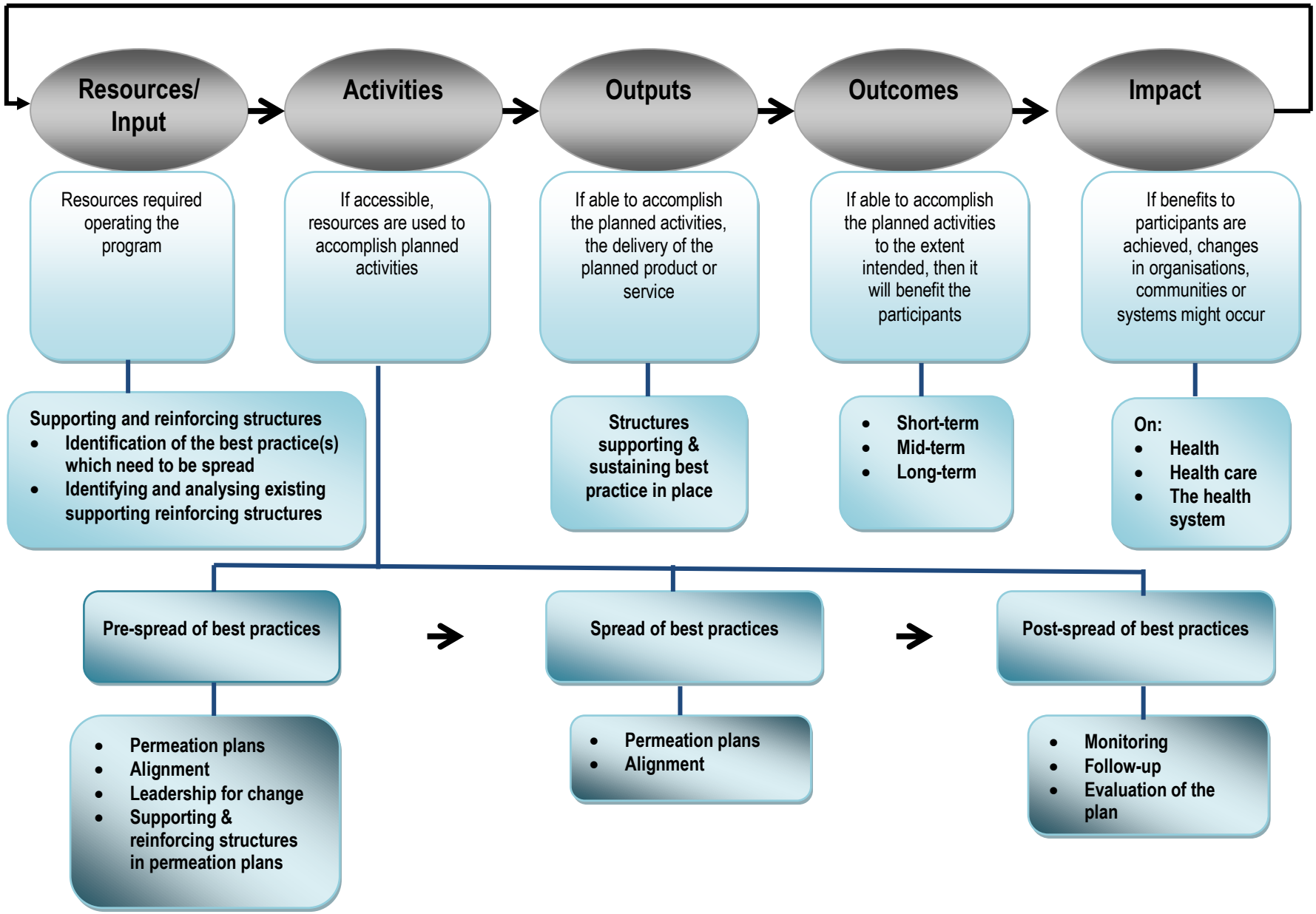


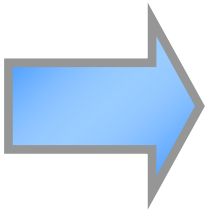
Figure 4.5: A guide for an operational plan according to the logic model

Resources/inputs (Pre-spread of best practices)

Supporting and reinforcing structures

Provincial/district level

- Should *identify of* what is/are *the best practice(s)* which need/s to be spread;
- Provincial and district level should:
  - *Identify and analyse existing resources and structures* supporting the spread of the best practice:
    - internal budget
    - external funding/sponsorship
    - equipment
    - human resources
    - infrastructure
    - departments
    - strategies
    - implementation programmes
    - policies
    - guidelines
    - audit and monitoring systems (statistics / informatics)
    - other documents, etc.



Activities (Pre-spread of best practices)

Permeation plans

National level

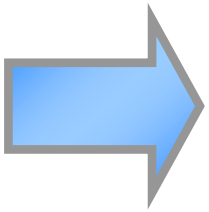
- Gives order to provincial/district level to develop a plan for spread.

Provincial/district level

- Should develop a plan for spread.
- The plan should include at least the following phases:
  - *Preparing/laying the foundation for spread* (preliminary phase) involving:
    - funding/sponsorship;
    - identification and agreement of aim and need for spread;
    - choosing and adapting a proven communication of the innovation;
    - sharing evidence regarding benefits of the innovation; and
    - appointing a leader/agent/team for change.
  - *Developing the plan for spread*, with the leader/agent/team for change, whereby looking at:
    - the innovation itself;
    - utilization and/or enhancement of organisational or community structure, whereby creating and maintaining a receptive and supportive environment;
    - the target population;
    - the timeframe;
    - transition issues;
    - developing a communication plan; and
    - if needed, develop tools, systems, etc. to measure / evaluate the outcomes and impacts of the plan.
  - *Executing and refining the plan for spread*, involving:
    - the implementation;
    - monitoring;
    - communication;
    - evaluation; and
    - modifying of the indicators of the change.

Alignment

- Get buy-in from leaders of all levels with the development of the plan:
  - *Individual level*: nursing staff, other stakeholders (e.g. doctors and other allies);
  - *Management level*: senior management, such as the CEO;
  - *Community level*; such as Primary Health clinics;
  - *District level:* relevant district manager(s);
  - *Provincial level:* such as the provincial head;
  - *National level:* the National Department of Health, Minister of Health*;*
  - *Researcher level:* such as academics at universities, researchers at national (health) research institutions.



Continued

Leadership for change

Individual and management level

- The suitable person appointed, such as an operational manager or appointed (lead) nurse or a group (especially in smaller institutions) who drive(s) the implementing and spreads the best practice at each level: individual, management, district, provincial and national level;
  - *The person should be:*
    - stable/non-rotational;
    - encouraging/motivating staff
    - committed;
    - accepted by their peers;
    - be a role model;
    - knowledgeable and skilled: able to teach, listening skills, be up-to-date with the latest evidence, trained, experienced, understanding implementation, understanding the context, and
    - in terms of personality: passionate and driven, accountable, discreet, empathic, persistent, goal oriented, committed, honest, flexible, and trustworthy.
  - *What the person should do:*
    - provide technical and mental support;
    - ensure the continuity of the best practice;
    - have a motivating/convincing role;
    - raise enthusiasm;
    - have an interactive role;
    - have an advisory role;
    - target the right people; and
    - be involved in the community.
- The role of the leader should be understood by all stakeholders.

Supporting and reinforcing structures in the permeation plan

- The plan should point out the responsibilities and actions/activities per level:
  - *Individual level*
    - share knowledge/showing evidence to staff, allies and patients by: training, conferences, networking, posters, surveys, workshops, etc.;
    - convene meetings to evaluate the implementation of the best practice;
    - provide a multidisciplinary team (work);
    - good orientation of new staff members regarding the best practice;
    - avoid hierarchy;
    - appoint someone who has authority to lead the implementation and spread of the best practice, encourage teamwork and lessen the hierarchy among team members;
    - consider the contextual structure such as a small unit which makes it more difficult to implement, spread and practice the best practice;
    - have experienced/senior clinicians;
    - consider human aspects of the implementation and spread of the best practice; and
    - ensure the best practice's is clearly defined, in-complex and its benefits are clear and can be presented to convince stakeholders to buy-in to the implementation and spread of the best practice.
  - *Management level*

  Should provide the following:
    - infrastructure;
    - human resources (appointing dedicated and skilled staff);
    - equipment;
    - internal budget and additional external funding;
    - policies; and,
    - mental support such as recognition (awards).

Continued

Should consider the following:

- timing of the spread of a best practice as well as the speed of spread;
- the use of benchmarking as a valuable education strategy;
- cooperation and organisational dynamics;
- seniority in management, and
- staff rotation.

➢ *District/provincial level*

Should provide the following:

- provincial policies/guidelines;
- approval of budget for infrastructure;
- support by existing departments;
- existing documents/forms, existing implementation programs, sponsorships (for training and congresses), information package for hospitals, district clinical specialist team and primary health team;
- coordination of training to enhance communication and skills among staff and management;
- coordination of supportive on-site/follow-up visits; and
- set measurable targets.

➢ *National level*

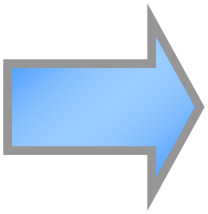
Should provide the following:

- infrastructure;
- supportive strategies;
- a national policy/guidelines;
- a national implementation task team;
- create awareness nationally;
- opportunities for sharing the best practice and getting buy-in such as departmental meetings and congresses; and
- ensuring anchoring of the best practice in the health (system) structures.

➢ *Researcher level*

Should provide the following:

- further research regarding health systems research, cost-effectiveness of the best practice, and improvement in health and health care.



Activities (Spread of best practices)

Permeation plans

- *National level*
  - Establish policies and insist on reporting of progress in the spread and the relevant health outcomes; and
  - Create opportunities for sharing progress of the spread of the best practice, such as departmental meetings and congresses.
- *Provincial/district level*
  - Ensure the plan for spread is carried out to the other levels.
- *All levels*
  - Carry out the responsibilities/activities per level (see previous activities at pre-spread: Supporting and reinforcing structures in the permeation plan).

Alignment

- *All levels*
  - Align the plan and all the existing and developed structures supporting the best practice such as policies and acts with all the levels; and
  - Get buy-in/agreement of all stakeholders of all levels when carrying out the plan.

Activities (Post-spread of best practices)

- *Provincial/district level*
  - Should *monitor and follow-up* the spread of the best practice through:
    - impact audits;
    - follow-up/on-site visits, etc.
  - Should evaluate the plan for spread and, if necessary modify the plan or the aspects of the plan; and
  - Ensure the targets are met.

Output(s)

All the (developed) structures supporting and sustaining the best practice and the spread process, such as policies, acts, resources, are in place at all the levels.

Outcomes

Provincial/district

- The following outcomes will be measured by the developed/existing tools and systems:
  - *Short-term outcomes:*
    - improved skills;
    - understanding;
    - knowledge;
    - intentions in the target group towards the take up, implementation and spread of the best practice.
  - *Mid-term outcomes:*
    - improved behaviour and attitude towards the take up, implementation and spread of the best practice.
  - *Long-term outcomes:*
    - enhanced uptake, implementation and spread of best practices;
    - more patients receive high-quality care;
    - outcomes are evaluated and the operational plan and its activities are updated regularly.
- Evaluate whether the targets are met; and
- Reports of the outcomes will be presented to national level at intervals as agreed.

Impact

The following impacts/changes can be expected:

- Improved health outcomes for individual clients;
- Improved quality of health care; and
- Evidence of health systems strengthening.

Figure 4.6: A guide for an operational plan to use benefit levers spreading best practices in South Africa

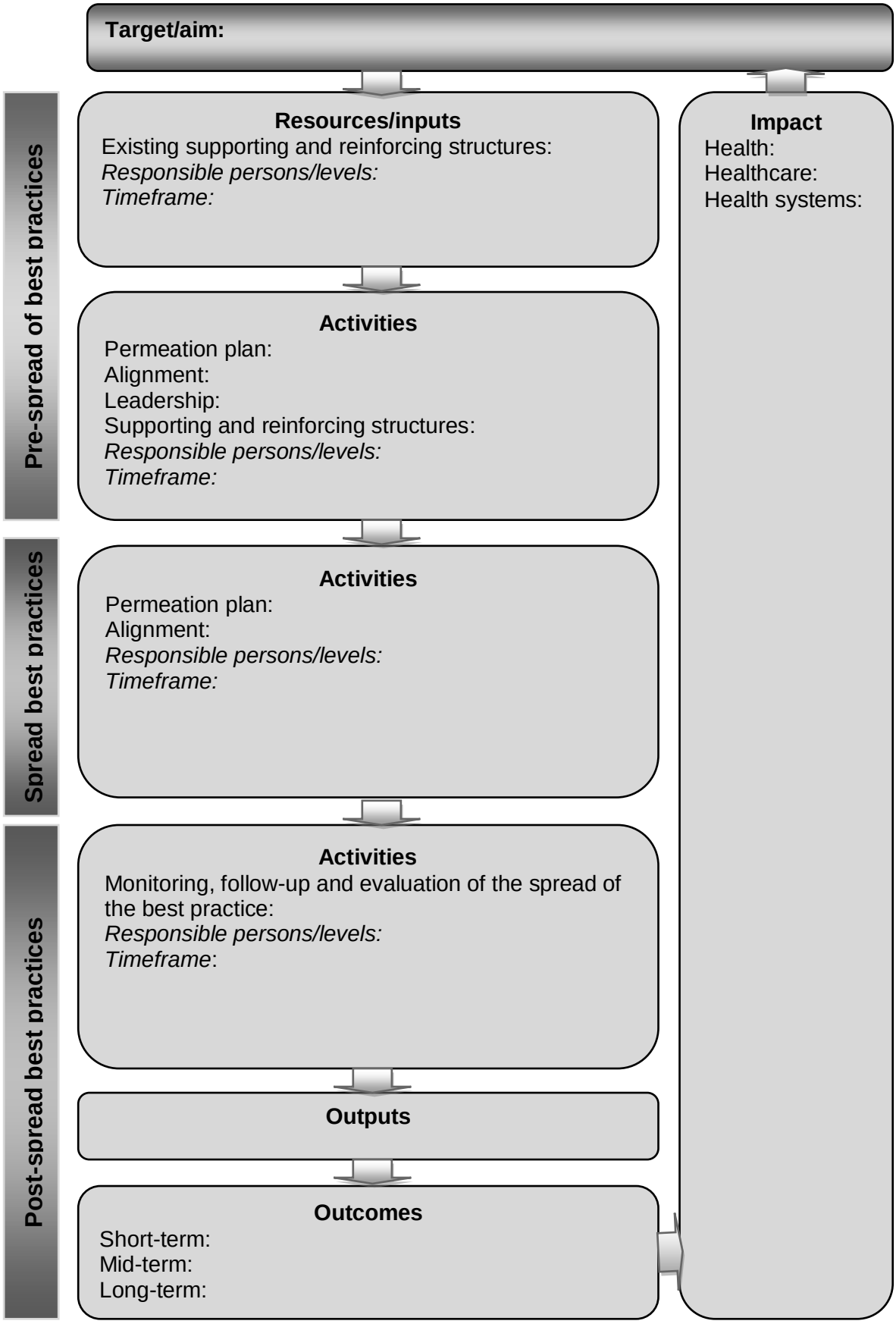


Figure 4.7: Template for the use of benefit levers in the spread of best practices

4.6 Summary

This chapter outlined the format used for the development (logic model) and refinement (Delphi method) of the "end-product" of this study: a guide to develop an operational plan for the use of benefit levers for spread of best practices in South African health systems. The findings of Chapter 3 were used to develop a draft guide for an operational plan. The draft was refined through a Delphi technique with experts in the spread of best practices and Knowledge Translation in the South African context. Two rounds were used to refine/develop the following: A logic model which provides a graphic overview of the guide, the refined guide which can be used by an organisation or department wanting to spread a best practice. Further a template was developed from the guide which can be used together with the guide and is directly useable. The conclusions, limitations and recommendations are outlined in Chapter 5.

CHAPTER 5

Conclusions, limitations and recommendations

5.1 Introduction

In this final chapter conclusions in terms of the evaluation of the study's achievement of objectives/aims, rigour and its significance, limitations and recommendations for further research, nursing education and nursing practice will be discussed. Finally, a summary of this chapter will be provided.

5.2 Conclusions

In Chapter 1 the question asked was:
"How can benefit levers be used to promote spread of best practices in the health system in South Africa?"

Overall, conclusions include the following:

- Literature/studies about leadership for change and supporting and reinforcing structures was found, but regarding alignment and permeation plans, limited rigorous literature was found (Objective 1 – Step 1).
- Key informants involved in the spread of a specific best practice (Kangaroo Mother Care) could see the value of benefit levers used for the spread of best practices in the South African health system (Objective 1 – Step 2).
- Benefit levers were found useful for development of a guide for an operational plan to spread best practices. This guide will be made accessible to be used by healthcare organisations and departments in South Africa (Objective 2 – Steps 1 and 2).

The next paragraph shows how this study was able to provide an answer to this question.

5.2.1 Evaluation of achievement of objectives/aims

Chapter 1 provided an overview of the study. This chapter included the background and statement of the problem, the study's aim and the objectives stated to achieve the aim, which was derived from the problem statement. The objectives were followed by the researcher's

meta-theoretic, theoretic and methodological assumptions. The research design was discussed, as well as the methods to ensure rigour and ethical considerations.

The overall aim of this study was to develop a guide for an operational plan, formulating the use of benefit levers in the spread of best practices.
To realise this aim, the achievements of two objectives will be discussed in the following paragraphs.

5.2.1.1 Evaluation of achievement of objective one
The first objective was:

1. To explore and describe characteristics of benefit levers to promote spread of best practices

Characteristics of benefit levers were described both through literature (step 1) (Chapter 2) and empirically (step 2) (Chapter 3).

In Chapter 2 research evidence was explored by means of an integrative literature review. A systematic search strategy was used which included the following steps:
Step 1: Formulation of the review question
Step 2: Gathering and classifying the evidence (sampling procedure)
Step 3: Performing the critical appraisal (final step of sampling to come to the sample)
Step 4: Summarising the evidence (which includes data extraction (collection) and data analysis/synthesis)

A total of 38 documents regarding benefit levers for the spread/ diffusion of best practice(s)/innovation(s) in the context of nursing/ health care were reviewed and critically appraised. Data of 33 documents was then extracted and analysed.

Definitions (including characteristics) for each benefit lever were developed. The characteristics in the definitions were used to develop themes for the data-analysis of the next step.

Chapter 3 involved the empirical part of the study, whereby semi-structured individual interviews were held with 12 participants and, one participant, asked to complete a questionnaire containing open questions. Audio taped interviews were transcribed verbatim and analysed using content analysis. The findings regarding the characteristics of the benefit levers from the integrative literature review were used as an analytical framework to obtain themes within the story and experiences the participant shared. Themes were identified

according to benefit levers at the following levels: Researcher(s) level; Individual level; Management of the institution; Provincial level; and National level.

The findings regarding the characteristics of the benefit levers were as follows:

- Alignment: For implementation and spread of best practices it is crucial to have buy-in/agreement of the stakeholders at all levels to the best practice. Further, structures at all levels which support the implementation and spread of the best practice (such as policies/guidelines) should be aligned with the best practice.
- Permeation plans: It is crucial that there is a general plan for implementation and spread of the best practice (preferably driven by national level and aligned with and supported by all the levels) as there was discrepancy found between what was supposed to happen at researcher level (according to the research cycle) and what actually happened at the individual hospitals in the provinces.
- Leadership for change: Leadership at all levels and the understanding of the role/tasks of the leader are crucial and found to be a requirement for the spread of best practices. However, leadership and ownership were not always found sufficient at all the levels.
- Supporting and reinforcing structures: Supporting structures are needed at all levels to ensure successful implementation, spread and sustainability of the best practice. Preferable, support is given from national level down to provincial, management and individual level. Provincial level must then on its turn provide support to management and individual level. Management can support individual level.

5.2.1.2 Evaluation of achievement of objective two

The second objective was the following:

2. To develop a guide for an operational plan to use benefit levers for the spread of best practices

Chapter 4 addressed the development and refinement of a guide for an operational plan. A guide for an operational plan was developed from the findings of the interviews. The format of a logic model was used, including the following aspects: (according to the logic model of W.K. Kellogg Foundation, 2004): resources/inputs; activities (pre-, during, and post implementation and spread); outputs; outcomes and impacts. What made the guide unique was that the findings identified per study, as well as the interviews, regarding the characteristics of the benefit levers were included, and the levels at which activities per benefit lever should be carried out were included in the guide. The findings provide guidance how benefit levers can be used.

The guide was refined using the Delphi technique. Experts were chosen based on their experience and knowledge of spread of best practices, such as KMC, in the South African context, and their experience in research and specifically Knowledge Translation. Five experts provided consent and responded. The Delphi consisted of two rounds. The first round included the guide, with a brief explanation of the logic model and how this model was applied to develop the guide and a questionnaire. The questionnaire contained both closed and open-ended questions. Items of the questionnaire included questions regarding four aspects: the design (layout and formulation) and the content (feasibility and relevance) of the guide. After the feedback had been analysed and the guide adapted, an anonymised summary of the feedback and how the feedback was applied to refine the guide, as well as the refined guide were sent for final feedback.

Finally, Chapter 4 included the end-product which consists of a refined guide which could be used by an organisation or department to develop an operational plan for the use of benefit levers in the spread of best practices in the South African health systems.

Both objectives were therefore achieved. In the following section the study is evaluated with regard to rigour.

5.2.2 Evaluation of rigour

Lincoln and Guba's criteria for trustworthiness apply for research conducted in a natural setting (Lincoln & Guba, 1985:289-311) and the researcher choose to use these criteria for the self-evaluation of this study, and which are outlined as follows:

Credibility / Truth value

According to Smith and Hodkinson (2005:917) a totally objective point of view on a topic is not possible. However, they also mention that different points of view from different perspectives can be achieved. This study was explored from different perspectives towards the development of a guide which could be used for an operational plan for the use of benefit levers in the implementation and spread of best practices in South Africa. The first step of objective one included the exploration of benefit levers from a literature's perspective to clarify the concepts. An emic perspective was included in the second step when key informants from a variety of levels and institutions were interviewed regarding their involvement in the implementation and spread of KMC in South Africa. These interviews were held to gain in-depth insight whether and how benefit levers were and could be used in the spread of best practices. A guide which could be used by an organisation or department

in South Africa to develop an operational plan whereby considering the use of benefit levers in the spread of best practices. This guide was evaluated in terms of design (layout and formulation) and content (feasibility and relevance) by panel members from a variety of levels and institutions in South Africa. Lincoln and Guba (1985:295) mention that credibility in research involves carrying out the research in a manner which finds the probability of the outcomes credible.

This study used a variety of techniques to increase the probability of credible findings. Different methods such as: an integrative literature review, semi-structured interviews and the Delphi technique were utilised. Triangulation during data analysis of the qualitative data from the interviews was applied as a co-coder was used. Further, credibility was enhanced during the Delphi method as only experts were used who did not have conflict of interest (Linstone & Turoff, 2002:157). Finally, the study's credibility was strengthened through structural coherence. The researcher attempted to avoid the existence of any inexplicable inconsistencies between the data and the analysis. This was ensured by clearly reporting the researcher's thinking process when conclusions were made and how these findings were used to develop the guide for the operational plan. However, the non-response of key-infornmants as potential bias could be a thread to the validity of this study.

The findings of this study can therefore be considered as credible.

Transferability / Applicability

To ensure applicability the researcher should indicate to which extend the study would be relevant to other contexts or participants (Lincoln & Guba.1985:290). The study conducted is unique as it was done by a particular researcher, who interrelated with particular key informants, in a particular manner, in a particular context. To allow the reader to make a decision whether findings are transferable to their known context, the researcher should explain the theoretic foundation, context and method of the study as clearly and detailed as possible (Lincoln & Guba, 1985:298). This study explained and discussed these issues in detail. Conditions were put in place to ensure applicability of the study.

Dependability / Consistency

Consistency according to Lincoln and Guba (1985:290) is obtained when the same or similar study findings are obtained when the study is repeated, with the same respondents in the same (or similar) context. However, Lincoln and Guba (1985:299) mention that this is impossible to obtain, as it is not possible to 'cross the same stream twice' when a study is done in a natural setting, as the 'stream' might alter. Results of this study, when repeated, might differ. However, consistency was considered by ensuring auditability of the research

process. Auditability enables other researchers to track the argument that the researcher used. Further, dependability was ensured by means of suitable data collection techniques to obtain data from various sources. The sources involved field notes and keeping all data (in terms of documents and tape recordings). It can be stated that consistency in this study was ensured.

Confirmability / Neutrality

Neutrality is ensured by creating the possibility to which extent findings are determined by the key informants and circumstances, versus the researcher's biases, incentives, interests or viewpoints (Lincoln & Guba, 1985:290).

The researcher enhanced conformability by providing a detailed description of this study's theoretical foundation, context, methods, findings, analyses, recommendations. The reader may determine whether and how the researcher's personal viewpoints and beliefs may have prejudiced the findings. According to the researcher's judgment, this study achieved its aim and objectives in a rigorous manner.

5.2.3 Evaluation of the significance of the study

This study explored and described the benefit levers for spread of best practices which are part of Edwards and Grinspun's Evidenced informed model of care (Edwards & Grinspun, 2011). This model has been developed in the Canadian context and neither the model nor parts of the model have been tested in other contexts such as South Africa. In general, limited evidence was found regarding spread of best practices. Further, no study was found developing a guide for an operational plan using the benefit levers for the spread of best practices for a specific context. Therefore this study can be considered as a unique contribution to existing knowledge. Further, the study was done independently by the researcher with supervision of experienced researchers. Finally, the developed and refined guide will be made accessible to be used by healthcare organisations and departments in South Africa and internationally through publishing this study in peer-reviewed international journals.

5.3 Limitations

In this study, the following limitations were identified during the following steps:

Integrative literature review (objective 1 – step 1):

- Scale-up or roll-out was not used as key words after consulting the librarian and relevant documents may have been missed out. However a separate search was conducted to ensure no documents were missed out.

- Only the electronically databases subscribed to by North-West University were used. This is a limitation (as for instance other universities might have more/different databases) as relevant data may have been missed. However, this was overcome by using multiple sources to obtain both published studies, such as electronic databases, papers and catalogues, and unpublished studies (grey literature). A manual search and contacting the authors ensured that no relevant data was missed;

- Although the search strategy was conducted as broadly and rigorously as possible, using different sources, it was not always possible to obtain abstracts (or hard copies where applicable) of the articles. However, those studies that could not be obtained (including reasons) were recorded.

- Although expert opinion papers were included, some papers might have been missed as papers are not always published. However authors of potential relevant papers were contacted.

- In this study, blinding was not used during the search or critical appraisal steps which could be a limitation with regard to validity of appraisal. There was no conflict of interest as the critical appraisal was conducted by the researcher who did not know the experts involved in the field.

- Critical appraisal was done by a single researcher as the review was part of a thesis. This might have limited the validity of the critical appraisal. However, the critical appraisal process was reviewed by researchers experienced in reviews.

Individual semi-structured interviews (objective 1 – step 2):

- Participants from more provinces/contexts might have been included. An attempt was made to obtain a large sample by recruiting as many key informants from as much levels and provinces as possible. However, it was not possible to recruit key informants at all levels and provinces due to the bottom-up approach of KMC where it was initiated at researcher and individual (ground) level and lack of support at higher levels such as national and certain provinces was experienced. Further, obtaining a representative sample was limited as differences in the spread of KMC per institution and province were found and the fact that KMC was not spread in all provinces. Finally, recruited potential key informants from a variety of levels and provinces did not all reply to e-mails or phone calls and some e-mail addresses or telephone numbers provided were incorrect. Follow-up was done to increase respondence.

- Interviews were conducted in English only, which was not the first language of most participants, and some key informants might have experienced challenges to express themselves. However, key informants were educated and most of them used English daily in their professions.

- Findings from the interviews in terms of the benefit levers could not always be confirmed by available studies. However, the benefit levers are derived from the Evidence Informed Model of care which was only developed in 2010 and has not been tested in other contexts than the Canadian setting (Edwards & Grinspun, 2011:19).

The guide for an operational plan (objective 2 – step 1):

- The guide for an operational plan was developed by the researcher and not a team. Although the guide was evaluated, if more individuals participated during the development, additional insights might have been produced.

- The guide can be considered as a draft as it has not yet been validated and tested in a pilot site. Adjustments may be required after validation and piloting.

Delphi-method (objective 2 – step 2):

- A bigger sample size could be used so that more opinions could be obtained to refine the guide for an operational plan. However, additional key informants did not respond even when an attempt was made to include them through reminders which were sent via e-mail and telephone.

5.4 Recommendations

Based on the conclusion statements derived from the findings of the methods used in the phases, recommendations for further research, education and nursing practice can be made, which is outlined in the following paragraphs.

5.4.1 Recommendations for further research

The following recommendations for further research can be made:

- More high-quality/rigorous studies, specifically Level I evidence, such as Randomised Controlled Trials and systematic reviews, and Level II evidence, such as quasi-experimental studies, concerning the benefit levers in general and specifically regarding the benefit levers “Alignment” and “Permeation plans” related to spread/diffusion of best practice(s)/innovation(s) in the context of nursing/health care are required as no sufficient evidence was found that met the study’s rigour and inclusion criteria.

- A more in-depth exploration of each benefit lever by means of qualitative research needs to be done.

- The costs and cost-effectiveness of best practices in general must be evaluated by outcomes research and clearly documented to help convincing the management to implement and spread the best practice.

- Comparing the implementation and spread of KMC with other best practices to understand what is needed (in terms of benefit levers) for spread of best practices should be done by means of comparison research.

- Further research regarding the complex health system of South Africa is required to create a better understanding of the influence of a system for the spread of best practices, and what is needed in the system to enhance the spread of best practices in this context.

- The guide for an operational plan should be pilot-tested and validated to determine its value as to how it can be used for the implementation and spread of best practices in different settings in South Africa by intervention/outcomes research.

- Finally, other aspects of Edwards and Grinspun’s evidence informed model of care (such as organisational dynamic capability, intra-inter organisational change

processes and system change mechanisms) should be examined and tested further in other settings in South Africa or other contexts.

5.4.2 Recommendations for nursing education

The following recommendations can be made for nursing education:

- The concept and practice of best practice (e.g. KMC) should be included in the curriculum of nursing and all health professions involved in the practice of the best practice to increase a common knowledge, understanding and practice of the best practice.

- Formal training regarding the best practice should be provided on individual level to improve buy-in and correct implementation and spread of the best practice.

- Training must be provided at all levels of the health system and regarding the use of benefit levers in the spread of practice, such as mentor leadership, the development of a plan for spread, etc.

- In general, the importance of evidence-based care, the implementation and spread of best practices to ensure high-quality care and health outcomes should be given great attention and must be standardly included in the nursing curriculum.

5.4.3 Recommendations for nursing practice

The following recommendations can be made for nursing practice:

- Best practices should be spread nationally (whereby the guide can be used to develop operational plans to spread the best practices) in every institution to ensure that more patients obtain high-quality care. Officials at national level should be involved with the spread of best practices and provide support, but people at provincial and district level must drive the spread and ensure sustainability of the best practice.

- Evaluation of spread of best practices should be done by officials of provincial and district level on a regular base to maintain high compliance and performance of the best practice. Measurable indicators of outcomes must be used (where the guide can be used) and feedback must be given to individuals and management of healthcare institutions, as well as provincial and national level.

5.5 Summary

In this final chapter the conclusions were stated. The aim: to guide the development of an operational plan to use benefit levers in the spread of best practices was achieved.

The evidence from the steps of the two objectives provided a variety of views on the use of benefit levers for the spread of best practices. The findings of the integrative literature review and evidence from semi-structured interviews were used to develop the guide for an operational plan for the use of benefit levers in the spread of best practices in the South African context. The guide was then refined using a Delphi. All the objectives were achieved, as described in the previous chapters. Self-assessment, done according to the criteria of Lincoln and Guba (1985), found the study to have been conducted rigorously.

Finally, the study's limitations were stated and recommendations were formulated for research, practice and education.

Benefit levers were found useful for development of a guide of a plan to spread best practices. This guide will be made accessible to be used by healthcare organisations and departments in South Africa.

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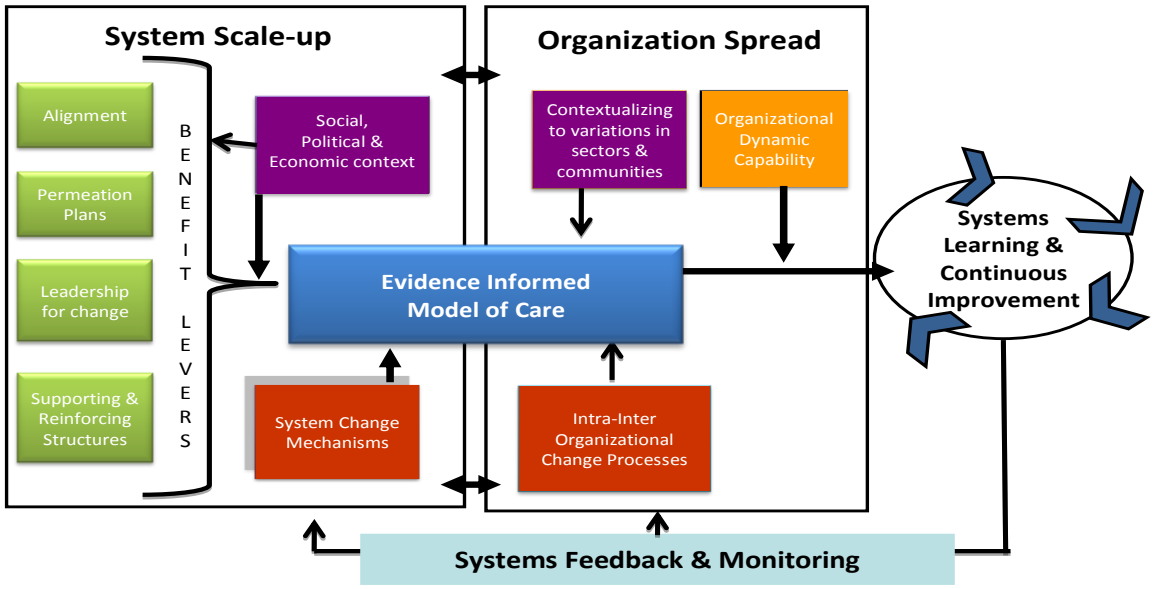
APPENDICES

Appendix A

The Evidence Informed Model of Care (Edwards & Grinspun, 2011:18)

Model: Spread and Scale-up of Evidence Informed Models of Care: A Whole Systems Perspective



Appendix B

Ethical consent letter NWU

NORTH-WEST UNIVERSITY
YUNIBESITI YA BOKONE-BOPHIRIMA
NOORDWES-UNIVERSITEIT

Private Bag X6001, Potchefstroom
South Africa 2520

Tel: (018) 299-4900
Faks: (018) 299-4910
Web: http://www.nwu.ac.za

Ethics Committee
Tel +27 18 299 4850
Fax +27 18 293 5329
Email Ethics@nwu.ac.za
2012/05/29

ETHICS APPROVAL OF PROJECT

This is to certify that the next project was approved by the NWU Ethics Committee:

Project title : " Knowledge translation in Health Care "
Project leader: Dr. CS Minnie

Student : W ten Ham

Using benefit levers to develop an operational plan for spread of best practices in health systems

Ethics number: **NWU-00005-12-A1**

Status: S = Submission; R = Re-Submission; P = Provisional Authorisation; A = Authorisation

Expiry date: 2017/03/27

The Ethics Committee would like to remain at your service as scientist and researcher, and wishes you well with your project. Please do not hesitate to contact the Ethics Committee for any further enquiries or requests for assistance.

The formal Ethics approval certificate will be sent to you as soon as possible.

Yours sincerely

Me.Marietjie Halgryn
NWU Ethics Secretariate

Appendix C

Justification for keywords used per database

Database	Keywords	Reason
Scopus	TITLE-ABS-KEY("diffusion of innovation" OR change OR innovat*) AND TITLE-ABS-KEY (best practice* OR evidence based practice) AND ABS (health system*)	A specific search had to be conducted to yield the most relevant results. The search was too broad when "health system*" was not included in the keywords, but too narrow when the keywords "best practice* OR evidence-based practice" and "health system" were searched in abstract only
EBSCOhost	diffusion of innovation*" or change or improv* (subject terms) innovat*or "spread of innovation*" AND "health system*" (subject terms)	A specific search had to be conducted (using subject terms) as keywords when searched in title, abstract, and keywords yielded a great variety of sources which majority were not relevant to the topic
ProQuest	ab("diffusion of innovation" OR change OR innovat*) AND ab((best practice)) AND (evidence based practice)	When "best practice" or "evidence-based practice" was not included, the search yielded a great variety of irrelevant results (e.g. not related to health care or nursing practice). When "health system" or "health care system" was included, the search was too narrow and relevant data might have been missed out. By including "evidence-based practice" automatically results were yielded related to health care or nursing practice)
ScienceDirect	TITLE-ABSTR-KEY("diffusion of innovation" or change or innovat*) and TITLE-	When "health system" or "health care system" was included, the search was too narrow and relevant data might have been missed out. By including "evidence-based practice" automatically results were yielded related to health care or nursing practice)
Cochrane (Cochrane Reviews; other reviews; clinical trails; technology assessments; economic evaluations)	TITLE-ABSTR-KEY("diffusion of innovation" or change or innovat*) and TITLE-ABSTR-KEY(best practice* or evidence based practice)	When only searched for "diffusion of innovation" or "change or innovate*, the search yielded a great number of irrelevant sources, while when health system was included, relevant data could have been missed out. Best practice* or evidence based practice had to be included to yield sufficient and relevant results
NEXUS	titles, subjects abstracts ("diffusion of innovation" or change or innovat*)	When "best practice* or evidence-based practice" or "health system*" was added as search terms, no results were yielded
SAePublications	Diffusion of innovation or change or improv innovat or spread of innovation (all fields EXCEPT FULL TEXT)	When best practice* or evidence-based practice" or "health system*" was added as search terms, no results were yielded
Sabinet Online (FS ArticleFirst:**;** ·Cement and	Diffusion of innovation or change or improv innovat or spread of innovation	When best practice* or evidence-based practice" or "health system*" was added as search terms limited results were yielded

Concrete; SA ePublications :·North West University Catalogue: ·ISAP by the National Library of South Africa : ·Kovsidex: ·Current & Completed Research : ·SA Media: ·SANB: ·SACat :·Subsidie:·UCTD:·FS WorldCat : ·NDLTD (Theses and Dissertations)	(All)	
Google Scholar Search only in: medicine, pharmacology and Veterany Science AND Social Sciences, Arts, and Humanities	**with at least one of the words:** spread OR diffusion of innovations OR scale-up practices OR leadership OR change OR alignment OR reinforcing OR structures OR change OR plan OR change OR plan OR innovation OR spread OR implementation OR dissemination	A broad combination of keywords was used in order to obtain all relevant articles which might have been left out in the other electronic searches
Manual search Google (2 searches)	diffusion of innovation*" or change or improv*+best practice or evidence-based practice+health system	In order to obtain all documents regarding benefit levers related to diffusion of innovations in general
	Plan for spread, spread plan, diffusion plan, implementation plan, dissemination plan	In order to obtain all documents regarding plan for spread, as a previous search found only non-research papers regarding the benefit lever plan for spread. As plan for spread might be a coined term, other terms then 'plan for spread' such as dissemination plan etc. was searched

Appendix D

Documents from reference search of key studies and non-research documents (n=45)

Reference	Decision/included/excluded
1. Abrahamson, E. 1991. Managerial Fads and Fashions: The Diffusion and.*The Academy of Management Review,* 16(3):586-612.	**Excluded: irrelevant to benefit levers related to diffusion of innovations**
2. Atun, R.A., Kyratsis, I., Jelic, G. Rados-Malicbegovic, D. & Gurol-Urganci, I. 2007. Diffusion of complex health innovations—implementation of primary health care reforms in Bosnia and Herzegovina. *Health Policy and Planning,* 22:28–39.	**Included**
3. Becker, M.H. 1970. Factors affecting diffusion of innovations among health professionals. innovations among health. *Professionals*, 60(2):294-304.	**Included**
4. Berwick, D.M. 2003. Disseminating Innovations in Health Care. *Journal American Medical Association,* 289:1969-1975.	**Included**
5. Caldwell, R. 2003. Models of change agency. *British Journal of Management,* 14:131-142.	**Excluded: irrelevant to diffusion of innovation**
6. Chan, K.K. & and Shekhar Misra 1990. Characteristics of the Opinion Leader: A New Dimension *Journal of Advertising*, 19(3):53-60.	**Excluded: diffusion of innovation not in context of healthcare/nursing**
7. Coleman, J. S., Katz, E. & Menzel, H. 1966. Medical Innovation: A Diffusion Study. Indianapolis, The Bobbs-Merril Company, Inc.	**Excluded: non-expert paper**
8. Collins, B.A., Hawks, J.W. & Davis, R. 2000. From Theory to Practice: Identifying Authentic Opinion Leaders to Improve Care. *Managed Care.* July.	**Included**
9. Damanpour, F. 1991. Organizational Innovation: A Meta-Analysis of Effects of Determinants and Moderators. *The Academy of Management Journal,* 34(3):555-590.	**Excluded: irrelevant to diffusion of innovation**
10. Denis, J.L., Hebert, Y., Langley, A., Lozeau, D. & Trottier, L.H. 2002 Explaining diffusion patterns for complex health care innovations. *Health Care Management Review, 27*:60-73.	**Excluded: contacted author (30 Jan 2012) request sent (ILL 3675996) (not available via ILL or free via Google)**
11. Dirksen, C.D., Ament, A.J.H. & Go, P.M.N. 1996. Diffusion of six surgical endoscopic procedures in the Netherlands. Stimulating and restraining factors. *Health Policy,* 37:91-104.	**Included**
12. Edwards, N., Davies, B., Ploeg, J., Virani, T., Skelly, J. 2007. Implementing nursing best practice guidelines: Impact on patient referrals. *BMC Nursing*. 6(4):1-9.	**Excluded: irrelevant to diffusion of innovations**
13. Edwards, N. & Grinspun, D. 2010. Evidence-Informed Models of Nursing Service: Spreading Best Practices in Nursing-Final Report for CHSRF REISS program #RC2-1266-06. Canadian Health Services Research Foundation: Ontario (Ottowa). 71 p. (Document in possession of the author).	**Duplicate**
14. Edwards, N., Rowan, M., Marck, P. & Grinspun, D. 2011. Understanding Whole Systems Change in Health Care: The Case of Nurse Practitioners in Canada. *Policy Politics Nursing Practice*, 12(1):4-17.	**Included**
15. Fitzgerald, L., Ferlie, E., Wood, M. & Hawkins, M. 2002. Interlocking interactions, the diffusion of innovations in health care. *Human Relations,* 55(12):1429-1449.	**Included**
16. Gifford, W.A., Davies, B., Edwards, N. & Graham, I.D. 2006. Leadership strategies to influence the use of clinical practice guidelines. *Canadian Journal Nursing Leadership*, 19:72–88.	**Excluded: contacted author 30 Jan 2012 (not available via ILL or free via Google)**
17. Green, P.L. & Plsek ,P.E. 2002. Coaching and leadership for the diffusion of innovation in health care: a different type of multi-organization improvement collaborative *Journal of Community Journal Qualitative of Improvement.*;28(2):55-71.	**Excluded: irrelevant to benefit levers related to diffusion of innovations**
18. Greer, A.L. 1988. The state of the art versus the state of the science. The diffusion of new medical technologies into practice. *International*	**Excluded: irrelevant to benefit levers related to diffusion of**

Journal of Technological Assessment in Health Care, 4(1):5-26.	**innovations**
19. Green, L.W., 2001. From Research to "Best Practices" in Other Settings and Populations. *American Journal of Health Behavior,* 25(3):165-178.	**Excluded: irrelevant to diffusion of innovation**
20. Greve, H.R. & Taylor, A. 2000. Reviewed Innovations as Catalysts for Organizational Change: *Shifts in Organizational Cognition and Administrative Science Quarterly*, 45(1):54-80.	**Excluded: diffusion of innovation not in context of healthcare/nursing**
21. Goes, J.B. and Park, S.H. 1997. Interorganizational Links and Innovation: The Case of Hospital Services. *The Academy of Management Journal,* 40(3):673-696.	**Excluded: irrelevant to benefit levers related to diffusion of innovations**
22. Greenhalgh, T., Robert, G., Bate, P., MacFarlane, F. & Kyriakidou, O. 2005. *Diffusion of Innovations in health service organizations: A systematic literature review.* Malden, MA: Blackwell.	**Excluded: duplicate**
23. Kimberly, .J.R. & Evaniskon, M.J. 1981. Organizational Innovation: The Influence of Individual, Organizational, and Contextual Factors on Hospital Adoption of Technological and Administrative Innovations. *The Academy of Management Journal*, 24(4):689-713.	**Excluded: Irrelevant to diffusion of innovation**
24. Lococka, L., Dopsonb, S., Chambersc, D. & Gabbay, J. 2001. Understanding the role of opinion leaders in improving clinical effectiveness. *Social Science & Medicine,* 53:745–757	**Excluded: irrelevant to benefit levers related to diffusion of innovations**
25. Markham, S.K. 1998. A longitudinal examination of how champions influence others to support their projects. *Journal of Producing Innovation Management,* 15:490-504.	**Excluded: irrelevant to benefit levers related to diffusion of innovations**
26. Massoud, M.R., Nielsen, G.A., Nolan, K., Nolan, T., Schall, M.W. & Sevin C. 2006 . A framework for spread: from local improvements to system-wide change. IHI Innovation Series White paper. Cambridge, MA: Institute for Healthcare Improvement (available at www.IHI.org).	**Included**
27. Meyer, M., Johnson, J. & Ethington, C. 1997. Contrasting Attributes of Preventive Health Innovations. *Journal of Communication,* 47(2):112-131.	**Excluded: irrelevant to diffusion of innovation**
28. Meyer, A.D., & Goes, J.B. 1988. Organizational Assimilation of Innovations: A Multilevel Contextual Analysis. *Academy of Management Journal*, 31(4), 897-923.	**Included**
29. Murrey, M.A., Smith Higuchi, K.A., Edwards, N., Greenough, M. & Hoogeveen, K. 2011. Practice Change in Long-Term Care Facilities in Ontario: Views of Managers and Staff. *Geriatric Nursing,* 32:418-428.	**Included**
30. Mustonen-Ollila, E.& Lyytinen, K. 2003. Why organizations adopt information system process innovations: a longitudinal study using Diffusion of Innovation theory. *Info Systems Journal,* 13*:*275–297.	**Excluded: diffusion of innovation not in context of healthcare/nursing**
31. Pearson, M.L., Upenieks, V., Yee, T. & Needleman, J. s.a. Spreading Innovations in Health Care: Approaches for Disseminating *Transforming Care at the Bedside. Robert Wood Johnson Foundation & Institute for Healthcare Improvement.* 3 p.	**Included**
32. Ploeg, J., Davies, B., Edwards, N., Gifford, W. & Miller, P.E. 2007. Factors influencing best practice guideline implementation. Lessons learned from administrators, nursing staff, and project leaders. *Worldviews on Evidence Based Nursing,* 4(4):210-219.	**Included**
33. Plsek, P. 2003. Complexity and the Adoption of Innovation in Health Care. A conference held in Washington, D.C. January 27-28. National Institute for Health Care Management Foundation National Committee for Quality Health Care.	**Included**
34. Shane, S. 1995. Uncertainty Avoidance and the Preference for Innovation Championing Roles *Journal of International Business Studies,* 26(1):47-68.	**Excluded: irrelevant to benefit levers related to diffusion of innovations**
35. Shane, S., Venkataraman, S. & MacMillan, I. 1995. Cultural Differences in Innovation Championing Strategies *Journal of Management* 21(5):931-952.	**Excluded: irrelevant to benefit levers related to diffusion of innovations**
36. The World Bank. 2005. Review of experience of family medicine in Europe and Central Asia. (In five volumes) Volume I: Executive summary. World Bank Report No. 32354-ECA. Human Development Sector Unit, Europe and Central Asia Region. Washington, DC: The World Bank.	**Included**
37. Tushman. M.L. 1986. Organising for innovation. *California*	**Excluded: diffusion of innovation**

Management Review, 27(10):558-561.	**not in context of healthcare/nursing**
38. Tushman, M.L. 1977. Special Boundary Roles in the Innovation Process. *Administrative Science Quarterly*, 22(4):587-605.	**Excluded: diffusion of innovation not in context of healthcare/nursing**
39. Valente, T.C. 1996. Social network thresholds in the diffusion of innovations *Social Networks,* 18:60-89.	**Included**
40. Valente, T.M. & Rogers, E.M. 1995. The Origins and Development of the Diffusion of Innovations Paradigm as an Example of Scientific Growth. *Science Communication*,16(3) .	**Excluded: diffusion of innovation not in context of healthcare/nursing**
41. 12.5 Million Lives Campaign. Getting Started Kit: *Rapid Response Teams*. Cambridge, MA: Institute for Healthcare Improvement; 2008. (Available at www.ihi.org).	**Included**
42. Walton, R.E. s.a. The diffusion of new work structures. *Harvard Bussiness Review,* 3-22.	**Excluded: diffusion of innovation not in context of healthcare/nursing**
43. Wejnert, B. 2002. Integrating Models of Diffusion of Innovations: A Conceptual Framework. *Annual Review of Sociology,* 28:297-326.	**Excluded: diffusion of innovation not in context of healthcare/nursing**
44. Young, H.P. 2000 The Diffusion of Innovations in Social Networks. Department of Economics Johns Hopkins University 1-20.	**Excluded: irrelevant to benefit levers related to diffusion of innovations**
45. Zahre, S.A. & George, G. 2002. Absorbtive capacity: a review, reconceptualization, and extention. *Academy of Management Review,* 27(2):185-203.	**Excluded: irrelevant to diffusion of innovation**

Appendix E

Invitation letter to participate in interviews

NORTH-WEST UNIVERSITY
YUNIBESITI YA BOKONE-BOPHIRIMA
NOORDWES-UNIVERSITEIT
POTCHEFSTROOM CAMPUS

Private Bag X6001, Potchefstroom
South Africa 2520

Tel: (018) 299-1111/2222
Web: http://www.nwu.ac.za

Nursing Science
Tel: XXXXXXXX

E-Mail :XXXXXXXX@nwu.ac.za

Re: Invitation letter to participants

XX XXXX 2012

Dear …..

You are invited to participate in a research study conducted by Wilma ten Ham, a Ph.D. student from the School of Nursing Science, North-West University, Potchefstroom Campus. You were selected as a participant in this study because of your involvement in the implementation and spread/roll-out of Kangaroo Mother Care in South Africa.

This study wants to get a better understanding of the spread process of Kangaroo Mother Care in South Africa and what lessons we can learn regarding what is needed to spread a program such as KMC and how can similar programs be spread effectively in future. The information will be used to develop a plan how to use requirements for spread of best practices so that more patients can receive high-quality care.
I would like to have a face-to-face or telephonic meeting with you to discuss the above-mentioned. The interview will take a maximum of 30 minutes of your time.

Approval for this study was sought from the North-West University. Please find attached the ethical approval certificate.

Is it possible to make an appointment for a face-to-face or telephonic interview ……..?

Thank you so much in advance. May you have any enquiries, please do not hesitate to contact me.
Best regards,

Wilma ten Ham

Appendix F

Consent Form to participate in interviews

Consent Form

Using benefit levers to develop a guide for an operational plan for spread of best practices in health systems

W.H. ten Ham- Ph.D. study

You are invited to participate in a research study conducted by Wilma ten Ham, a Ph.D. student from the School of Nursing Science, North-West University. You were selected as a possible participant in this study because of your involvement in the spread of best practices (the implementation and spread of KMC in South Africa).

The purpose of the research

This study wants to understand what is needed to spread best practices, such as Kangaroo Mother Care in South Africa

Approval to do the research

Approval was sought from the North-West University, Potchefstroom Campus, Potchefstroom.

Risk or discomfort involved

If you decide to participate, you will be asked to share your ideas and perceptions of what is in place in an interview. The interview will take about a maximum of 30 minutes. The interview will be audio taped.

Possible benefits of this research

I cannot guarantee that you personally will receive any benefits from this research, however, by participating; spread of best practices in South Africa can be improved in future in order for more patients to get access to best care possible.

Confidentiality

Any information that is obtained in connection with this study and that can be identified with you will remain confidential and will be disclosed only with your permission or as required by law .Your identity will be kept anonymous as your name in transcription of this interview will

be left out. The audiotape of this interview will be kept locked on the premises of the North-West University where-after the tape will be destroyed.

Right to withdraw

Your participation is voluntary. If you decide to participate, you are free to withdraw your consent and discontinue participation at any time without penalty.

Information/contact

If you have any questions about the study, please feel free to contact (one of) the following person(s):

Ms Wilma ten Ham (student)
Tel: XXXXXXXXX
E-mail: XXXXXXX@nwu.ac.za
Or:
Dr C.S. Minnie (Promotor)
Tel: XXXXXXXX
E-mail: XXXXXXX@nwu.ac.za

Your signature indicates that you have read and understood the information provided above, that you willingly agree to participate, that you may withdraw your consent at any time and discontinue participation without penalty, that you will receive a copy of this form, and that you are not waiving any legal claims.

Signed by the participant: **Signed by the researcher:**

Date: Date:

Place:……Place:……

Appendix G

Interview schedule

An interview schedule or protocol was used, including pre-determined open-ended questions aiming to guide the interview. The interview schedule was reviewed by the researchers (who are experts in the field) and a few participants before the data-collection took place (Botma *et al*., 2010:209).

The interview schedule may exist of the opening (wherein the objectives and contents of the interview will be indicated); the body (the topics or questions which will be addressed during the interview); and the closing part (wherein a summary of the discussion points of the interview will be provided, the next actions to be taken and the participant will be thanked for partaking in the interview) (King & Horrocks, 2010:38-39).

As this interview was semi-structured, the probing questions were left out in order to allow the researcher to adapt the questions from the conversation as it unfolded.

Interview schedule

For key informants involved in the spread of best practices

I Opening

A. (Establish Rapport) My name is Wilma ten Ham. I am a PhD student at the School of Nursing Science, North-West University, Potchefstroom.
B. (Purpose) As part of my study, I need to gather information from key informants regarding what is required for the effective spread of innovations or best practices in South Africa. You were chosen as one of the key stakeholders due to your experience and involvement in the spread of KMC in South Africa.
C. (Motivation) I hope to use this information to help to get a better understanding of the spread process of KMC in South Africa and what lessons we can learn regarding requirements to spread a programme such as KMC. The information will be used to develop a guide for an operational plan of how to use requirements for spread of best practices so that more patients can receive high-quality care.
D. (Participant rights and timeline) As a participant you have the following rights: Your identity remains anonymous as the transcription of the interview will not mention your name. Information from this interview will be kept confidential and will only be shared with your approval. You may withdraw at any time. The interview will be audio taped for transcription

and analysis purposes. The interview should take about 30 minutes. Do you have any questions at this moment?

II Body

A. (Topic: Introductory question)
What was your involvement/role in the spread of KMC in South Africa?

(Probe, briefly summarise and transition to the next question)

B. What according to you worked/was effective for the spread of KMC in South Africa?

(Probe, briefly summarise and transition to the next question)

C. What could have been done better? Could you give any recommendations for improvement for the spread of similar programmes for future?

(Probe, briefly summarise and transition to the next question)

D. How do you see spread of KMC in the future?

(Summary and Transition: It has been a pleasure finding out more information about you. Let me briefly summarise the information that I have recorded during our interview. Is there anything you would like to add?)

III Closing

A. (Maintain Rapport) I appreciate the time you took for this interview. Is there anything else you think would be helpful for me to know?
B. (Action to be taken) I should have all the information I need. Would it be allright with you to contact you if I have any more questions? Thanks again, I really appreciate the time you took to answer my questions.

Appendix H

An example of colour coded transcribed text

Transcription Interview 1[4]

I: The 5th of July, an interview with Participant 1 and Participant 2. Uhm, my name is Interviewer. I am a PHD student and I need to get information about the role the implementation of KMC in South Africa, uhm to get a better understanding what is needed in terms of uhm the benefit levers required for the spread/roll-out KMC or a similar uh program. Uhm, as you as a participant you have the following rights: uhm you, your identity remains anonymous, as the transcription of the interview will not mention your names, the information of this interview will be kept confidentiality, uhm confidential and only be shared with your approval, you can withdruw, withdraw anytime. It will be audiotaped, and for transcription and analysis purposes. And the interview should take about 30 minutes. Do you have any questions at the moment?

P1: No

P2: No (softly)

I: Uhm, my first question uhm for P1 is what was your involvement in the spread of KMC?

P1: Well my involvement started because I realised people didn't know anything about Kangaroo Mother Care when I started my first unit here. And I am, then I see a kind of vacuum of knowledge and then I decided that the nurses needed training, and I thought it uhm had to do workshops. So that was how we started. Because it was something completely new, nobody really knew about it.

I: Mmm

P1: And uhm, uhm, and they never had it in their training and so on and for any other hospitals to implement it, they had to be trained and this is how it started before we could do it. So I started with workshops uhm but you know having a workshop makes awareness but it does it does not really help to implement. We looked at, uhm, what happened after this and this is how many of the uhm nursing staff did attend and from different hospitals and there were few hospitals that implemented in the end just by coming to the workshop, because in the workshop implementation was also addressed, of how to do it. Uhm, and I think that may have helped. But it was a one-day workshop.

I: Mmm

P1: A very short. Uhm, and in spite of that were they really wanted to do a course, they did implement, but most of the hospitals, you know did not manage to implement by coming to this awareness day but at least they knew about it. You wanted…?

P2: No I wanted to know: how did you start KMC in your unit and what were the issues that you had specifically in her unit? That's the one aspect, and the other aspect in spreading the message further like what worked so well for all the hospitals. Ja.

[4] Colour coding: words/concepts/phrases regarding: Alignment; Permeation plans; Leadership for change; Supporting and reinforcing structures

I: Yes I would like to know your story from the beginning to the end. You did tell me all uh about that you started with nurses and how did you then get to start to do and how did it...?

P1: Well, the unit was then already there.

I: Mmm

P1: Uhm, I heard about Kangaroo Mother Care at a, at a, a talk that was given here by Professor XXX from (place name) in the department of Pediatrics and then Professor XXX said, you know, who would be interested in uhm, establishing a unit like uhm, they have at (hospital name). And then I said I would be interested and then he uh made arrangements that a group of us nurses, uhm, dieticians, myself and some staff from (place name), go down to the (place name) to see how they were practicing KMC. So we kind of had two days there were they described the process of how they were doing it. Then I went and, we read up about all the literature we could get and uhm on Kangaroo Mother Care because there was nothing written in textbooks by that time. And uhm, we then in January, that was in November, then in January we had a uhm also a kind of presentation of Kangaroo Mother Care to the, to the department but also to hospital staff. The CEO, the secretary you know, the administrative people you know, they were also invited because we wanted to start a unit here, and we, after we gave the presentation of what it is and what the benefits are and so on, we were given the go-ahead to start a unit here and they said we could use this ward because it was available.

I: Ok

P1: And then it was, uh it was a problem because it was just before the end of the financial year, so they had only a little bit of money to uhm paint a little bit pink in the wards, we needed showers for the mothers because we can't have one bath for uhm a place where you have 20 mothers

I: Ja

P1: So they build shower cubicles and then we got uhm a person to paint the wall. And then on the, 6th 7th of July. 6th of July 1999

P2: 1999 (at the same time as P1)

P1: Uhm, the unit was opened, the first children moved in. Before that, however, the one person that went with was the manager of this ward. However, I found a big problem with regards to the nursing staff. Whatever information I gave her, she kept for herself. And she did not spread it to the rest of the staff.

I: Yes

P1: So she kept it, whenever I gave her new information it stayed with her, it wasn't given to the rest so that they could be able to take note.

I: Yeah

P1: It's a big problem that I found with many nurses. So I had to tell every nurse by himself. Uhm, then we, then I said to her she must start having uhm talks in the ward where, we had talks in a in a small uhm lecturer room, the nurses didn't come. We had to make uhm then

already an habituating on the process on how to do, to practice KMC, so then we came into the h.. ward so that they could not run away whilst they were working, they were called and then we showed them a slide, like a PowerPoint slide so. And she did that as well with them, as well as the mothers. So through that we managed to uhm, educate and inform those other staff, you know the ones that were on night duty and on holiday and whatever. So most of the staff knew what it was about before we implemented.

I: Ok

P1: So that they had uhm a, a good knowledge. There was resistance but we had a nurse uhm nursing assistant that was working in the ward, she was working at that time. And she said, she can't think why she didn't want to do it now to thing back in fact but they were resistant because change, they think it's more work, uhm, but the nursing manager was you know kind of for it to implement it and so on and that is why it also happened. But uhm, the spreading of knowledge to the other nursing and the communication with them was a big problem and that may be another problem that is in South Africa as well. I am not sure whether it is everywhere but I think it is a problem we picked up in many places. But uhm, then we also sat and we drew up guidelines. I did most of the work but at least we did it in consultation with them so we have a nurses guideline, I have a doctors' guideline that I did together with some junior doctors who worked with me, looking at factors with them and then together with the nursing staff we also drew up a guideline for the mothers.

I: Mmm

P1: So that, uhm, there are guidelines that they could refer to that, uhm, if there's a new staff member you've got it printed. Uhm, one problem that I picked up with new staff, that they are with uhm, orientated, their orientation is not very well. According to them orientation is that they work here for one day and then after that they are orientated.

I: Ok

P1: But not in my knowledge, because they don't have, you know, they don't have uhm, a lot of information with regards to Kangaroo Mother Care and all the, the guidelines as to taking care of the baby and this method of them. So I found lots of problems with that because we did have staff rotating

I: Mmmm

P1: And that also caused, caused problems and I was, I was the factor that made sure that the nurses would continue with the correct method, because even though you have the printed guidelines they did not necessarily read it.

I: Ok.

P1: So that, that's another problem that I found, I think amongst the black people reading is not their culture, its more uhm, what's that, uh verbal uhm culture, were they talk to one another.

Appendix I

Framework for the development of the guide

Alignment	**Individual level**	**Management level**	**Provincial level**	**National level**
Buy-in/agreement	-Nursing staff -Other stakeholders (e.g. doctors and other allies) -Direct patients and family	-(senior) management (e.g. CEO)	-Provincial head -Other stakeholders (e.g. researchers, clinicians and academic leaders	-National Department of Health, minister(y) of Health -general (everybody speaks the same language)
With	-best practice -protocol which supports the spread of the best practice -among all stakeholders	-hospital policy with provincial policy	-Provincial policy with national policy -Policy and academics and other stakeholders	-Provincial policy with national policy -(best practice should be included in national policy) -Plan for spread also aligned and supported throughout the levels
				Researcher level
				- academics at universities, researchers at national (health) research institutions).
Permeation plans	**Individual level**	**Management level**	**Provincial level**	**National level**
				-driven from national:level-national plan
Content of the plan	The plan should include at least the following phases: *Preparing/laying the foundation for spread* (preliminary phase) involving: funding/sponsorship, identification and agreement of aim and need for spread, choosing and adapting a proven communication of the innovation, sharing evidence regarding benefits of the innovation and appointing a leader/agent/team for change; *Developing the plan for spread* (with the leader/agent/team for change) whereby looking at: the innovation itself, utilisation and/or enhancement of organisational or community structure (whereby creating and maintaining a receptive and supportive environment), the target population, the time frame, transition issues and developing a communication plan, and; *Executing and refining the plan for spread* (involving the implementation, monitoring, communication, evaluation and modifying of (indicators of) the change) (Chapter 2).			

Leadership for change	**Individual level**	**Management level**	**Provincial level**	**National level**
Example	A suitable person for leadership	Operational manager or an appointed (lead) nurse "Group" leadership (especially in smaller institutions)		
Characteristics	-stable/non-rotational; -committed; -accepted (by their peers); -be a role model, and; -knowledgeable and skilled (able to teach, listening skills, be up-to-date with the latest evidence, trained, experienced, understanding implementation, understanding the context), personality (passionate and driven, accountable, discreet, empathic, persistent, goal-oriented, committed, honest, flexible, and trustworthy)		Be experienced	
Task/roles	-Providing technical and emotional support; -Ensuring the continuity of the best practice; -A convincing role; -An interactive role; -An advisory role, and; -Involvement in the community	Management should understand the leader's role	-Raise enthusiasm and a motivating/convincing role -Target the right people	

Supporting and reinforcing structures	**Individual level**	**Management level**	**Provincial level**	**National level**
Resources		management should provide the following support in terms of resources: infrastructure, human resources, equipment, internal budget and additional external funding, policies, and mental support such as recognition (awards).	-provincial policies -approval of budget (for infrastructure) -Existing departments -existing documents/forms - existing implementation programmes -sponsors (for congresses) -information package hospitals -district specialist (team) -primary health team	-Infrastructure; -Supportive strategy; -National policy; -National implementation task team;
Time		Timing of the implementation and spread of a best practice should be considered, as well as the speed of implementation and spread		
Education and developement	sharing knowledge/showing evidence to staff, allies and patients by: training, conferences, networking, posters, surveys, workshops, etc	Benchmarking can be used as a valuable education strategy	-Providing training -coordination of training	Training staff (at individual level) in future by including the best practice in the curriculum- **Researcher level** further research was needed regarding health systems research cost-effectiveness of the best practice
Communication	meetings to evaluate the implementation of the best practice were mentioned as a crucial facilitator			-Create awareness nationally Annual congresses
Feedback and evaluation			(Coordination of) supportive on-site/follow-up visits	

Organisational structure	Multidisciplinary team (work),good orientation new staff members regarding the best practice and less hierarchy Someone appointed who has authority to lead the implementation and spread of the best practice, encourages teamwork and lessens the hierarchy among team members.	Cooperation and dynamics, seniority in management and staff rotation		
Contextual structure	Take Contextual structure in consideration, such as a small unit made it more difficult to implement, spread and practice the best practice			
Individuals	Experienced/senior clinicians Consider human aspects implementation and spread of the best practice			
Innovation itself	The best practice's clarity, incomplexity and benefits should be clear and can be presented to convince stakeholders to buy-in to the implementation and spread of the best practice			The best practice should be anchored in the (health (system)) structures

Appendix J

The draft guide for an operational plan before refinement

Resources/inputs (Pre-spread of best practices)

Supporting and reinforcing structures

- *Analysis* of *existing resources and structures* supporting (the spread of) the best practice (such as: (internal) budget, (external) funding/sponsorship, human resources, infrastructure, departments, strategies, implementation programs, policies and guidelines, other documents, etc.).

Activities (Pre-spread of best practices)

Permeation plans

- National level: develop a plan for spread;
- The plan should include at least the following phases: *Preparing/laying the foundation for spread* (preliminary phase) involving: funding/sponsorship, identification and agreement of aim and need for spread, choosing and adapting a proven communication of the innovation, sharing evidence regarding benefits of the innovation and appointing a leader/agent/team for change; *Developing the plan for spread* (with the leader/agent/team for change) whereby looking at: the innovation itself, utilization and/or enhancement of organisational or community structure (whereby creating and maintaining a receptive and supportive environment), the target population, the time frame, transition issues and developing a communication plan, and; *Executing and refining the plan for spread* (involving the implementation, monitoring, communication, evaluation and modifying of (indicators of) the change).

Alignment

- Get buy-in from leaders of all levels with the development of the plan: *Individual level* (nursing staff; other stakeholders (e.g. doctors and other allies)); *Management level* ((senior) management (e.g. CEO)); *Provincial level* (Provincial head); *National level* (National Department of Health, minister(y) of Health general)*; Researcher level* (e.g. academics at universities, researchers at national (health) research institutions).

Leadership for change

- The suitable person appointed (such as an operational manager or appointed (lead) nurse) or a group (especially in smaller institutions) who drive(s) the implementing and spreading the best practice at each level (individual, management, provincial and national level);
- The person should be: stable/non-rotational; committed; accepted (by their peers); be a role model, and; knowledgeable and skilled (able to teach, listening skills, be up-to-date with the latest evidence, trained, experienced, understanding implementation, understanding the context), personality (passionate and driven, accountable, discreet, empathic, persistent, goal-oriented, committed, honest, flexible, and trustworthy);
- The person should: provide technical and emotional support; ensure the continuity of the best practice; has a motivating/convincing role; raise enthusiasm; an interactive role; an advisory role, target the right people and; be involved in the community;
- The role of the leader should be understood by all stakeholders.

Supporting and reinforcing structures in the permeation plan

- The plan should point out the responsibilities and actions/activities per level:
  Individual level: sharing knowledge/showing evidence to staff, allies and patients by: training, conferences, networking, posters, surveys, workshops, etc.; meetings to evaluate the spread of the best practice; have a multidisciplinary team (work), good orientation new staff members regarding the best practice and avoid hierarchy; appoint someone who has authority to lead the spread of the best practice, encourages teamwork and lessens the hierarchy among team members; consider the contextual structure, (such as a small unit makes it more difficult to implement, spread and practice the best practice); have experienced/senior clinicians; consider human aspects of the spread of the best practice; the best practice's clarity, non-complexity and benefits should be clear and can be presented to convince stakeholders to buy-in to the spread of the best practice.

Continued

Management level: management should provide the following support in terms of resources: infrastructure, human resources, equipment, internal budget and additional external funding, policies, and mental support such as recognition (awards)); timing of the spread of a best practice should be considered, as well as the speed of spread; use benchmarking as a valuable education strategy; cooperation and dynamics, seniority in management and staff rotation should be considered.
Provincial level: provincial level should provide: provincial policies, (approval of) budget (for infrastructure), existing departments, existing documents/forms, existing implementation programs, sponsors (for congresses), information package hospitals, district specialist (team) and primary health team; (coordination of) training; (coordination of) supportive on-site/follow-up visits.
National level: national should provide: infrastructure, supportive strategies, include the best practice in law/acts, provide a national policy, a national implementation task team, maternal waiting homes; create awareness nationally, annual congresses; ensure anchoring the best practice in the (health (system)) structures.
Researcher level: provide further research regarding health systems research and cost-effectiveness of the best practice.

Activities (Spread of best practices)
Permeation plans
- From national level: carry out the plan for spread/roll the plan out to the other levels;
- The responsibilities/activities per level (see previous activities-pre-Spread-Supporting and reinforcing structures in the permeation plan) are carried out;

Alignment

- Align the plan and all the (developed) structures supporting the best practice (e.g. policies, acts) with all the levels;
- Get buy-in/agreement of all stakeholders of all levels (when carrying out the plan) *Individual level* (nursing staff; other stakeholders (e.g. doctors and other allies); direct patients and family); *Management level* ((senior) management (e.g. CEO)); *Provincial level* (provincial head; other stakeholders e.g. clinicians); *National level* (National Department of Health, Minister(y) of Health general)*; Researcher level* (e.g. academics at universities, researchers at national (health) research institutions).

Activities (Post-spread of best practices)
- *Monitoring and follow-up* of the spread of the best practice through impact audits, follow-up/on-site visits, etc., which is driven from national level and carried out by provincial level.

Output(s)
- All the (developed) structures supporting and sustaining (the spread of) the best practice (e.g. policies, acts, resources etc.) are in place at all the levels.

Outcomes
- *Short-term outcomes:* improved skills, understanding, knowledge, intentions in the target group towards the take up, implement and spread of the best practice;
- *Mid-term outcomes:* improved behaviour and attitude towards the take up, implement and spread the best practice;
- *Long-term outcomes:* enhanced uptake, implementation and spread of best practices; more patients receive high-quality care;
- Outcomes are evaluated and the operational plan (and activities) should be updated.

Impacts

- Improved national health (system) and health care outcomes.

Appendix K

Invitation to participate in the Delphi

Dear ….,

I hope you are well. I would like to invite you to evaluate the guide for an operational plan. I finished collecting data and I am currently analyzing the data from the interviews which I am using for the development of an operational plan concerning the implementation and spread of best practices in South Africa. The operational plan will probably be finished by the end of September.

Is it possible to send you the document via e-mail to provide me with feedback regarding its design (layout and formulation) and content (feasibility and relevance (for the South African context)) by means of a short questionnaire?

Thank you so much in advance.
Best regards,
XXX

Appendix L

Questionnaire to evaluate the guide for an operational plan

NORTH-WEST UNIVERSITY
YUNIBESITI YA BOKONE-BOPHIRIMA
NOORDWES-UNIVERSITEIT
POTCHEFSTROOM CAMPUS

Private Bag X6001, Potchefstroom
South Africa 2520

Tel: XXXXXXXXX
Web: http://www.nwu.ac.za

Nursing Science
Tel: XXXXXXXXX
Cell: XXXXXXXXX
Fax: XXXXXXXXX

E-Mail :XXXXXXXX

Re: Participation to evaluate the guide for an operational plan for the spread of best practices in South Africa

Dear…

.. October 2012

Thank you so much for your willingness to participate to evaluate the guide for an operational plan for the spread of best practices in South Africa. This guide is developed from data of individual interviews conducted with stakeholders involved in the implementation and spread of a best practice: Kangaroo Mother Care. The operational plan however may help to improve spread of best practices (including Kangaroo Mother Care) in South Africa *in general*. Your input is crucial as it will help to improve the guide.

Please find attached the explanation of the guide, the guide itself and the questionnaire. The questionnaire includes four aspects: Lay-out, Formulation, Feasibility and Relevance.

Is it possible to complete the questionnaire and email me your reply before ... September/October 2012.

May you have any enquiries, please feel free to contact me directly either via e-mail or telephonically.

Best regards,

Wilma ten Ham

QUESTION 1

The design of the guide

- **Lay-out**

a) ***How is the lay-out of the guide?*** *(Please tag the answer applicable)*

Design	**Very bad**	**Bad**	**Average**	**Good**	**Very good**
Lay-out					

b) Please provide suggestions to improve the lay-out of the guide.

QUESTION 2

The design of the guide

- **Formulation**

a) ***How is the formulation of the levels and activities*** (e.g. in terms of spelling, wording, etc.) *(Please tag the answer applicable)*

Design	**Very bad**	**Bad**	**Average**	**Good**	**Very good**
Formulation					

b) Please provide suggestions to improve the formulation of the guide.

QUESTION 3

The content of the guide

- **Feasibility**

a) ***How feasible is the guide?*** *(Please tag the answer applicable)*

Content	**Not feasible**	**Less feasible**	**Average**	**Feasible**	**Very feasible**
Feasibility					

b) Please provide suggestions to improve the feasibility of the guide.

QUESTION 4

The content of the operational plan

- **Relevance**

a) ***How relevant is the guide to the South African context?*** *(Please tag the answer applicable)*

Content	**Not relevant**	**Less relevant**	**Average**	**Relevant**	**Very relevant**
Relevance					

b) Please provide suggestions to improve the relevance of the guide.

General comments *(Please provide general comments, if needed)*