

Completing the audit cycle for quality care in perinatal, newborn and child health



Anne-Marie Bergh, Robert Pattinson, Maria Belizán,
Carolé Cilliers, Debra Jackson, Kate Kerber, Hugh
Philpott, Anna Voce, for the Synergy Group

Completing the audit cycle for quality care in perinatal, newborn and child health

Anne-Marie Bergh, Robert Pattinson, Maria Belizán,
Carolé Cilliers, Debra Jackson, Kate Kerber, Hugh
Philpott, Anna Voce, for the Synergy Group

MRC Research Unit for Maternal and Infant Health Care Strategies
University of Pretoria

© MRC Research Unit for Maternal and Infant Health Care Strategies
University of Pretoria, Kalafong Hospital
Private Bag X323, Arcadia 0007, Pretoria, South Africa
First edition, 2012
ISBN: 978-0-620-52334-9
Tel/Fax: local (012) 373-0825; international (+27 12) 373-0825
E-mail: matinfu@up.ac.za

Table of contents

Foreword	i
Executive summary	ii
1. So what is the problem?	1
Audit, feedback and the audit cycle	1
PIIP and Child PIP	3
Reflection on results	4
From reflection to action	6
2. Stages of change	8
3. Initiating, implementing and sustaining an audit programme	11
Essential strategies and activities	12
Organisational culture	14
Communication and support systems	14
What is needed at different stages of change?	16
Pre-implementation phase	16
Implementation phase	17
Institutionalisation phase	18
Conditions for change	20
4. Using audit findings	22
Step 3: Analyse information	22
Step 4: Recommend solutions	27
Step 5: Implement recommendations	27
Step 6: Evaluate and refine	28
Why does the use of audit findings not necessarily lead to a reduction in mortality rates?	29
5. Action and transformation for quality care	31
Creating an enabling environment	32
Leaders in action for change	35
6. Completing the audit cycle	39
What can make a difference?	41
How do we get there?	42
Acknowledgements	44
References	44
Tables	
Table 1. Typology of professional values	33

List of figures

Figure 1. The audit cycle	2
Figure 2. The action-reflection phases in the audit cycle	3
Figure 3. Serial PPIP data and mortality rates	5
Figure 4. Serial Child PIP data and in-hospital case fatality rates	6
Figure 5. Implementing and sustaining change	9
Figure 6. The context of implementing and sustaining an audit program	12
Figure 7. Provincial networking and communication systems	15
Figure 8. Facilitators and barriers to implementing and sustaining audit	21
Figure 9. Activities required as part of step 3 of the audit cycle	23
Figure 10. Elements of an enabling environment	34
Figure 11. Accountants and advocates in the audit cycle	40
Figure 12. Leadership and supervision at the centre of the audit cycle	40
Figure 13. Leadership and supervision at every stage of change	41

Abbreviations

CDC	Center for Disease Control
CHC	Community health centre
Child PIP	Child Problem Identification Programme
COHSASA	Council for Health Service Accreditation of Southern Africa
DHIS	District Health Information System
DoH	Department of Health
FIO	Facility information officer
IT	Information technology
MACH 1	Mpumalanga Maternal and Child Health Integration programme
MaMMAS	Maternal Morbidity and Mortality Audit System
MCWH	Maternal, child and women's health
MOU	Midwife obstetric unit
MRC	Medical Research Council
NGO	Non-governmental organisation
O&G	Obstetrics and Gynaecology
PCI	Perinatal care index
PHC	Primary health care
PNMR	Perinatal mortality rate
PPIP	Perinatal Problem Identification Programme
QA	Quality assurance

Foreword

‘South Africa has wonderful policies, but the problem is they are never fully implemented’ is a complaint that is frequently heard in South Africa. This publication explores some of the reasons for the lack of implementation, but more importantly identifies areas that can be addressed directly so that implementation does take place. This publication analyses the experiences of a group of health care providers who have been able to implement an audit programme successfully over the years, although in many cases the successful implementation of an audit did not lead to any change in perinatal or infant mortality rates. Lessons are drawn from these experiences and the stumbling blocks identified. Possible strategies for overcoming these are suggested, again drawing on the experiences of the group. We hope that those reading the publication will benefit from its contents and over time the introductory statement will become ‘South Africa has wonderful policies, and their full implementation has resulted in a massive reduction in mortality.’

This publication is the outcome of a qualitative study. The fact that you as the reader will be able to identify with the findings presented in this document and will be able to transfer some of the issues to your own setting speaks for the validity of the knowledge presented. It is hoped that the publication will stimulate reflection on the ways in which we use our audit findings and how we implement or do not implement the recommendations emanating from the findings. Reflection in the form of audit and feedback is, however, not sufficient. There should be evidence of action taken to implement evidence-based practices that would lead to quality care.

Bob Pattinson

Director: MRC Research Unit for Maternal and Infant Health Care Strategies

Executive summary

Completing all the steps of the audit cycle is something that is very difficult to achieve. A workshop dubbed the 'Synergy Workshop' was therefore convened in September 2009 for representatives of sites that collect serial data by means of the Perinatal Problem Identification Programme (PPIP) and/or the Child Problem Identification Programme (Child PIP). The aims of the workshop were: firstly, to understand the implementation of an audit system up to the point where it is sustainable and, secondly, to understand how to complete the audit cycle successfully and why this is so difficult. This report is largely based on the findings emanating from the Synergy Workshop participants' perspectives and feedback from other key informants.

In Chapter 1 results of the analysis of serial data from audits conducted with PPIP and Child PIP are used to illustrate the problem. Although sites were able to provide serial data, only 11% of PPIP and 30% of Child PIP sites were able to demonstrate a significant reduction in perinatal mortality and in-hospital case fatalities respectively, with the majority of sites showing no change. The audit cycle (Chapter 1) and a stages-of-change model (Chapter 2) are used as analytical frameworks to present the findings. Audit is depicted as a six-step cyclical process: identify the problem; collect information; analyse information; recommend solutions; implement solutions; and evaluate and refine. The stages of change (either through implementing an audit programme or through improving on current clinical practice) comprise three phases, each consisting of two stages. The three phases are: pre-implementation (creating awareness and committing to implement); implementation (preparing to implement and implementing); and institutionalisation (integrating into routine practice and sustaining practices).

Chapter 3 presents the initiation, implementation and maintenance of an audit programme. Three main components that were present in the implementation of PPIP and Child PIP are identified: 1) essential activities that must be performed regularly (meetings, outreach, supervision); 2) an organisational culture facilitating audit (drivers, teamwork, ownership); and 3) communication and support. Requirements for achieving each of the six stages of change are summarised and a brief description is given of conditions for change (facilitators and barriers related to people issues, information technology and the health system).

Chapter 4 discusses how PPIP and Child PIP users utilise their audit findings, in ways

that range from transforming the raw data into information to creating new knowledge. This process relates to steps 3 to 6 of the audit cycle. The step that comprises the analysis of information is divided into three separate actions: analysis of data and preparation for presenting the findings; presentation of findings at monthly review meetings and further dissemination at appropriate forums; and interpretation of findings at two levels (understanding and explaining). This is followed by a discussion of the last three audit steps (recommend solutions, implement solutions, evaluate and refine), with practical examples of aspects covered in each of these steps. An overview is also given of possible reasons why the use of audit findings does not necessarily lead to a reduction in mortality rates.

Chapter 5 reports on what is needed to get to action for change, namely change in the sense of working towards quality care. Two main issues in behaviour change are discussed, namely creating an enabling environment and the presence of leaders who strive for change. Key to an enabling environment and behaviour change is a mindset change with regard to professional values, accompanied by a culture of accountability. A typology of professional value sets is presented, and the empowerment of people and aspects of an efficient system (e.g. policies, infrastructure and staffing) are also discussed. Leadership issues are explored with regard to aspects such as who should provide leadership, prerequisites for leadership (e.g. ability to work with people, intrinsic virtues, attitudes and relationships) and leadership strategies.

The final chapter sums up the findings of the other chapters and provides further suggestions on what would be needed to complete the audit cycle. A reconceptualised audit cycle and stages-of-change model that would take both agency and context into account are proposed. Leadership and supervision are placed at the centre of all audits and need to be visible in every step of the audit cycle and in every stage of change. It is concluded that effective leadership is essential to ensure the completion of the audit cycle and implement change; such leadership needs to be present at various levels – in the unit, at hospital management level, and in the subdistrict. A number of examples of ways to make a difference are given for issues related to the running of the facility, quality assurance and records, staff, clinical care, and outreach. The following four recommendations are made on how to complete the audit cycle: design a road map; adopt appropriate educational models; provide peer support; and nurture future leaders.

CHAPTER 1

SO WHAT IS THE PROBLEM?

Ninety-nine percent of the world's maternal deaths, stillbirths and neonatal deaths occur in low- and middle-income countries.¹ These deaths are mostly preventable given adequate resources, coverage and quality of care. So if we know how to prevent deaths, why are so many women and children still dying? The answer is complex and there is no single strategy that will solve the problem; rather, there are many strategies that have been shown to have an effect when applied at different levels to different people. If all these strategies were applied at the same time, the impact should result in a reduction in mortality rates.

Death review audits identify the causes of death, and identify the deaths that are due to pathophysiological reasons and those that are due to health system failures. Such audits are a good place to begin the process of reducing mortality, as once the problems have been identified solutions can be developed.

Audit, feedback and the audit cycle

Audit has been used in maternal and child health care as a process for improving the quality of care. It is important both in identifying deficiencies and in implementing actions to address the deficiencies.² Crombie *et al.* define audit as the 'systematic and critical analysis of the quality of medical care, including procedures used for diagnosis and treatment, the use of resources, and the resulting outcome and quality of life for the patient'.³ Audit is therefore associated with a systematic examination of, or an investigation into a particular situation or condition, with findings included in a detailed report.

The audit process consists of a series of cyclical steps, as depicted in Figure 1.² Audit starts with a description, at a certain time, of the current situation. The intended outcomes of the service are measured, followed by an identification of priority problems at that time. In order to describe the current situation accurately, data must be collected, captured and analysed to produce relevant information. The

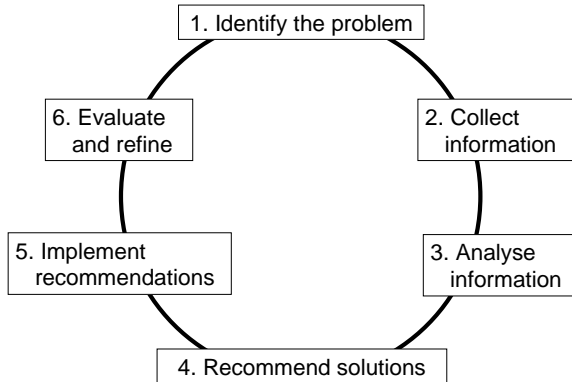


Figure 1. The audit cycle

information gathered should be used to recommend solutions necessary to resolve the identified problems. Implementation of these solutions must follow if any recommendations are to have an impact. Even so, the actions implemented will not necessarily contribute to improvements in the situation. Therefore, once an action has been implemented, its effect needs to be evaluated, and if necessary, the action needs to be refined. The cycle is completed by describing the situation at a later date, to determine whether there has been a change in the outcomes of the service. The cycle is repeatedly implemented to achieve incremental improvements in the quality of care.

Analysing the audit cycle, two distinct, but inextricably linked, phases may be observed (see Figure 2). Steps 1 to 4 may be broadly identified as steps dealing with the 'reflection' part of the cycle, that is 'audit' and 'feedback'. Steps 5 and 6 may be broadly identified as steps dealing with 'action' for quality care, that is procedures intended to change practices identified as a problem through audit and feedback. The audit cycle can only be considered complete when specific actions have been implemented, and the effect on the problems originally identified has been evaluated. The two phases mirror the action-reflection cycle characteristic of action research.⁴

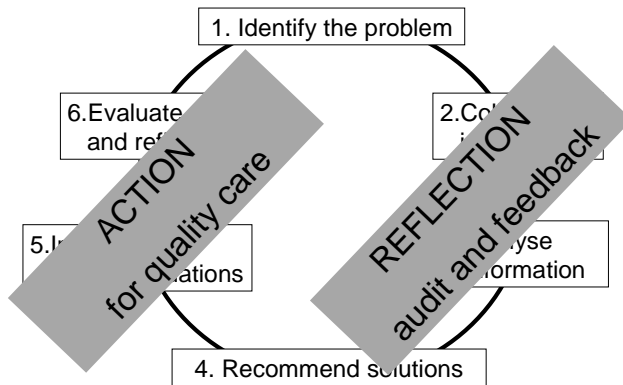


Figure 2. The action-reflection phases in the audit cycle

Audit and feedback is a longstanding clinical practice that is based on a number of assumptions. The first assumption is that substandard care is widespread and is present in the general care of patients and is not specific to a patient who has a poor outcome. Secondly, it is assumed that by examining a few specified cases, inadequacies found would identify the major problems within the service. Once these inadequacies have been identified, solutions could be found. Finally, it is assumed that implementation of these solutions would improve not only the quality of care of similar cases but also the care of other patients in the service. In other words, once inadequacies (avoidable/modifiable factors) have been identified and sufficiently publicised, an automatic self-correction and improvement in the quality of care should follow, with a consequent reduction in mortality.

PIIP and Child PIP

The MRC Unit for Maternal and Infant Health Care Strategies has been involved in the development and running of three audit programmes with various feedback mechanisms. The Perinatal Problem Identification Programme (PIIP) is an audit tool used nationally to audit perinatal deaths. It was field-tested in the Highveld region of Mpumalanga in 1995 and gradually introduced to other sites. The first national workshop was held in 2000 and included reports from 27 sites. Since 2005 PIIP has been actively promoted by the national Department of Health (DoH) as the method of choice for facility-based perinatal audit. In 2011, 52% of all births in South African

public health care facilities were recorded on the database. The Child Problem Identification Programme (Child PIP) is an audit tool that has been used nationally since 2005 to audit all deaths in childhood. By the time of this study it was estimated that 17% of deaths among children in health care facilities are recorded on its database. The third tool that is not under discussion in this publication is the Maternal Morbidity and Mortality Audit System (MaMMAS) used by the National Committee on Confidential Enquiries into Maternal Deaths to record all maternal deaths in South Africa. All three audit systems classify the medical condition causing the death as well as the contextual factors and health system inadequacies which led to the death. The primary point of these audit programmes is to improve the quality of care at the site where the audits are performed, the underlying assumption being that once the problems have been identified there will be an auto-correction and an improvement in care.

In 2008 there were 58 sites that had sustained their audits for a minimum of five years utilising PPIP and for three years utilising Child PIP. Thirty-five (35) PPIP sites had serial data for five years or more – six midwife obstetric units (MOUs), 24 district hospitals and five regional hospitals. Twenty-three (23) Child PIP sites had serial data for three years or more. An analysis of the serial data from the PPIP and Child PIP sites was done to assess how these health care facilities were faring over time and whether they were progressing towards quality care. Measures were taken to reduce perinatal mortality rates (PNMRs) and in-hospital case-fatality rates. The perinatal care index (PCI) was also used as a measure of the quality of the institutions, as it correlates significantly with other measures of the quality of care such as the accreditation scores of the Council for Health Service Accreditation of Southern Africa (COHSASA).⁵

Reflection on results

Results emanating from audit programmes are also intended to serve as audit results for feedback at on-site maternal, perinatal and child morbidity and mortality meetings, as well as at regional and national level. A systematic review by Jamtvedt *et al.* of all types of clinical audit and feedback in mainly high-income settings found only a small positive effect. These authors conclude: 'Audit and feedback can be effective in improving professional practice. When it is effective, the effects are generally small to moderate. The relative effectiveness of audit and feedback is likely

to be greater when baseline adherence to recommended practice is low and when feedback is delivered more intensively.⁶

It was considered that there might be more of an effect in developing countries like South Africa. A recent systematic review of the effect of mortality audit on perinatal mortality in middle- and low-income countries found a 30% reduction in perinatal mortality after the introduction of audit.² However, the analysis of the serial data from the PPIP programme over a period of five years and serial data for four and three years from Child PIP showed a decrease in perinatal mortality and in-hospital case-fatality rates for some hospitals and an increase for others.

Overall, there had been no change in perinatal deaths in the 35 sites with serial PPIP data (see Figure 3). There were three sites with a significant decrease and five sites with a significant increase. There was no significant trend in the perinatal care index either. The sites that showed a decrease did not appear to be different from the other sites. They did not have high PNMRs to start off with, nor did those that increased have low PNMRs to start with. The variation of the PNMR in the groups that remained unchanged is large, from PNMRs of 6/1000 births to 40/1000 births because of the different types of institution involved (MOUs to regional hospitals).

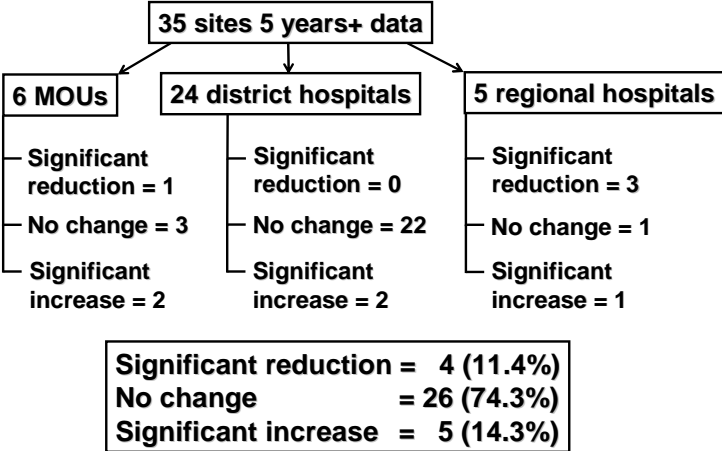


Figure 3. Serial PPIP data and mortality rates

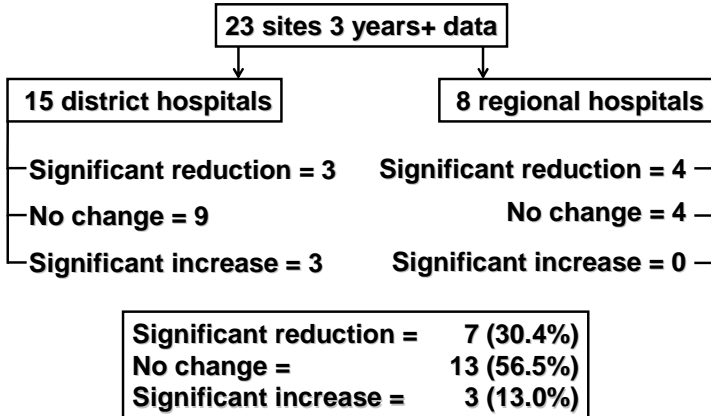


Figure 4. Serial Child PIP data and in-hospital case fatality rates

Across sites with both four and three years of serial Child PIP data there was a significant reduction in mortality overall, but change in individual sites was variable. Seven sites – four regional hospitals and three district hospitals – showed a significant decrease in in-hospital case-fatality rates. Three district hospitals showed a significant increase and the remaining 13 sites – four regional and nine district hospitals – showed no change in mortality rates. The sites with a significant decrease tended to start with a higher in-hospital mortality rate and those with a significant increase tended to start with a low in-hospital mortality rate. Figure 4 summarises these trends.

In the 58 sites that had managed to institute and sustain PPIP and/or Child PIP audits, only 11 (19%) were able to implement changes that resulted in a reduction in mortality. Mortality audit and feedback alone have not been associated with a reduction in perinatal mortality or a significant improvement in quality of care. Bringing the audit cycle to completion (by implementing actions for change) appears to be the essential factor needed to reduce mortality rates.

From reflection to action

Completing the audit cycle can be difficult to achieve. Factors involved in achieving successful initiation of audit and sustaining it to provide feedback, and factors in-

involved in completing the audit cycle, had to be identified and addressed. A workshop, dubbed the 'Synergy Workshop', was therefore convened in September 2009 with representatives of the PPIP and Child PIP sites with serial data. The workshop had two aims: firstly, to understand the implementation of an audit system; and secondly, to enable them to understand how to complete the audit cycle successfully and why this is so challenging. The two plenary sessions introduced the problem and in the end focused on the way forward. Four break-away sessions were held where participants shared their experiences with PPIP and Child PIP: (1) Implementing an audit system; (2) Sustaining an audit system; (3) Using audit findings; and (4) Implementing actions for quality care.

This report is largely based on the findings emanating from the workshop participants' perspectives and feedback from other key informants. Initially a grounded theory approach was followed to achieve understanding of the issues related to the initiation, implementation and maintenance of the PPIP and Child PIP audit programmes. The data were then interpreted with the aid of a stages-of-change analytical framework as discussed in Chapter 2. Chapters 3 to 5 are reflections on the main findings from the workshop and follow-up activities. Chapter 6 refers to action that would be needed to complete the audit cycle and would lead to a further reduction in mortality rates. Sections of this report are written in the present tense to indicate the more generic findings that may also be transferable to other settings.

CHAPTER 2

STAGES OF CHANGE

The implementation of change can take many forms: it could be a programme or system, such as an audit programme like PPIP and Child PIP; or it could be a new clinical practice. The model we used for understanding the implementation of change was derived from an organisational change model initially developed for measuring progress in the implementation of kangaroo mother care as a new health care intervention⁷ (see Figure 5). Our model makes provision for understanding change that needs to take place within the context of a group or team working together to make change happen. It is also compatible with many of the theories encompassing stages of change and/or processes of change, behaviour change models and quality improvement cycle models.⁸⁻¹⁴

Change starts when there is a point where an individual or team becomes aware either of a problem or of a specific solution to their problem. For example, when one is required to provide data and cannot do so, one may become aware of the need to introduce an audit programme. Our model has three phases involved in the change of practice: a pre-implementation phase, an implementation phase and an institutionalisation phase. Each of these phases is divided into two stages or conditions that must be fulfilled. This is not a linear model that flows smoothly from one step to the next. There may be implementation dips on the way or even a relapse to a lower or less advanced stage of implementation.

In the pre-implementation phase there should be sufficient sensitisation as to what it is that has to be changed, based on available evidence of good or best practice. More staff need to be made aware of the problem or solution (stage 1) and it is also essential to get the senior management of an institution on board. This stage includes the introduction of new knowledge within an organisation.¹² An audit could yield results indicating that there are problems that need attention, such as a high number of perinatal deaths or in-hospital case-fatalities among children. The formal adoption of the concept, plan, programme or solution gives legitimacy to future actions (stage 2). This action is often taken at a meeting (for which minutes exist) or by means of a signed undertaking. This indicates commitment to implementation.



Figure 5. Implementing and sustaining change

In the implementation phase certain preparations are required before a programme, plan or practice can be fully implemented (stage 3). The preparations often take the form of securing the resources (human, physical or financial) to implement the programme, plan, practice or solution. This is also when people really take ownership of the process. Implementation starts when there is evidence of the new programme or practice (stage 4). In the case of implementing an audit system, this would mean the collection of the first data. In the case of a change in clinical practice it would mean the first evidence of this changed practice.

In the institutionalisation phase the programme or practice becomes part of institutional routine or routine practice and relevant activities are performed by everyone required to do so, for example, carrying out an audit or following a certain protocol (stage 5). The last stage involves reaching sustainable practice, where there is evidence over a longer period that the programme or practice is being applied routinely by all involved (stage 6). In the case of hospitals with serial data for PPIP and Child PIP, there was evidence of a sustained practice of audit and feedback. However, when it came to implementing the recommendations flowing from the audit and

feedback part of the audit cycle, there was less evidence of action for improving quality care.

The model described above could be used to explain the processes of implementing an audit system and the processes of addressing health system constraints, including constraints in clinical practice. Because it makes an overt process more explicit, facilitators could follow a more conscious process in using the model to guide the action process. This also enables people to see implementation not only as a short-term goal, but also as a long-term process. Every time a new audit cycle or a new quality improvement cycle starts or when a particular problem or action has been identified, following the six stages could assist the implementers to gauge their progress with any changes that have been recommended. When these stages are not followed, one often finds that failure to change practice, a relapse⁸ or an implementation dip⁷ could be explained by failure to follow some of the 'steps' well enough. For example, a health care facility that has difficulty getting to a sustainable data collection point in the audit cycle could be failing because of insufficient involvement by a multidisciplinary team in setting up the audit system or because of insufficient consultation with relevant managers to ensure the necessary human resource support for the process.

CHAPTER 3

INITIATING, IMPLEMENTING AND SUSTAINING AN AUDIT PROGRAMME*

‘Different places; different people; different plans’
(Synergy Workshop participant)

In order to understand how to complete the audit cycle it is important to have a thorough understanding of the processes involved in initiating and implementing an audit programme, as well as some knowledge of how some institutions have managed to sustain their audit and feedback practices longitudinally. This chapter provides an overview of the requirements and processes involved in the establishment and maintenance of PPIP and Child PIP at different institutions, how the different stages of change have been achieved and lastly what the facilitators and barriers are to implementing and sustaining audit. Some of the activities relate to the initial introduction of PPIP and Child PIP, whereas others are on-going as part of the audit system or are more generic in nature.

The requirements for implementing and sustaining an audit programme are summarised in Figure 6. Three main components are present in the implementation of PPIP and Child PIP. The first component relates to essential activities that have to be performed regularly to keep the ball rolling. The second component is the existence of an organisational culture that supports a culture of audit or that is conducive to establishing audit. The third component relates to a complex communication and support system that is located in the health system network. With regard to all three components, there are barriers and facilitators to implementing an audit programme. These, together with the three components, form the *context* in which audit takes place.

* Part of this chapter is based on the findings published in Belizán M, Bergh A-M, Cilliers C, Pattinson RC, Voce A, for the Synergy Group. Stages of change: A qualitative study on the implementation of a perinatal audit programme in South Africa. *BMC Health Services Research* 2011; 11: 243 (Published: 30 September 2011) (doi:10.1186/1472-6963-11-243).
This paper also includes an implementation tool based on the six stages of change.

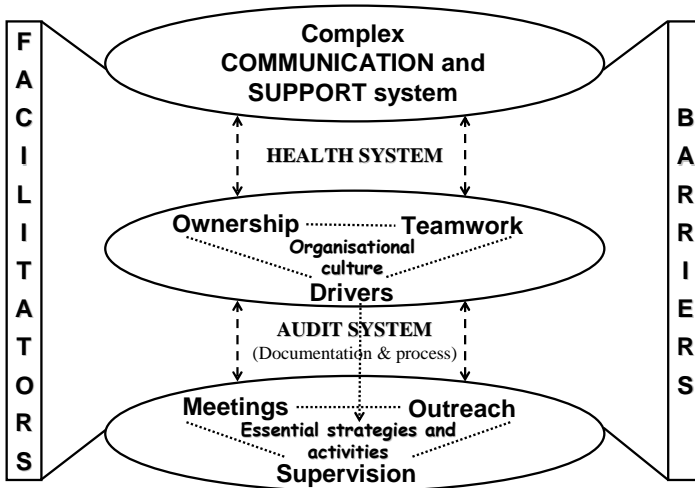


Figure 6. The context of implementing and sustaining an audit program

Essential strategies and activities

Essential strategies and activities for any audit and feedback process are the holding of regular meetings, along with outreach and supervision activities.

Outreach staff had an important role to play in introducing PPIP and Child PPIP to a hospital, assisting with the installation of software, training staff in the use of the programmes and overseeing the regular collection, capturing and analysis of data. They were also in a position to identify future in-hospital drivers to take the process forward. Formal outreach programmes were not available everywhere where PPIP and Child PIP were implemented. In some provinces the provincial or regional maternal, child and women’s health (MCWH) coordinator played an outreach role or a specific provincial official was appointed to undertake this support function. In other areas community paediatricians or obstetricians were involved and they included audit and the implementation of recommendations in their *supervision* programme.

Meetings took on different formats and took place at different levels in the health system. The team of doctors, nurses and midwives met daily or weekly to review any deaths. The monthly meetings at hospital level were normally a perinatal review

meeting to review PPIP data or a paediatric meeting to analyse and discuss Child PIP data and to suggest recommendations based on the findings. Demonstration of the use and validity of the audit tool was a facilitator to obtain 'buy-in' from the team and hospital managers, as for example when they saw how PPIP or Child PIP worked and saw deaths decline. Further training of staff also flowed from these mortality meetings. Annual meetings were held at regional, provincial or national level.

Institutional review and feedback meetings were a pivotal point throughout the implementation and maintenance process of audit programmes. Referral centres like community health centres and clinics were sometimes encouraged to participate in these meetings. Some institutions found that they benefited from having a fixed time slot for all meetings. In other busy institutions, there was a preference for alternating meeting times, for example, rotating between early morning and lunch-time meetings. Attendance registers at meetings were considered as essential. There was some variation between institutions regarding who should participate. Some institutions had the approach of 'It's everybody's business'. A number of people, like managers, were normally invited in their official capacity. However, the response from management to such invitations varied a lot, with some managers attending when they could and others showing less interest.

Using existing meetings to report on audit findings and to make recommendations was more efficient than creating separate structures. Some participants found it beneficial if a meeting schedule was drafted annually, with an indication of the frequency and times of meetings. With regard to the running of meetings, preparation had to take the form of making a detailed list of the points to be discussed and preparing the presentations. Basing meetings on a particular tool, such as the perinatal audit checklist, was found to be useful. These meetings had to have a positive tone in order to demonstrate the benefits of the audit programme. In order to minimise resistance it was considered important that health workers understood that audit was not a punitive system and that meetings were not meant to be naming-and-shaming opportunities, but rather learning opportunities. If corrective action was required, individuals had to be confronted in a confidential one-on-one situation before a meeting. Small incentives at meetings, such as providing refreshments or recognising good work, helped to boost motivation and morale in some facilities.

One of the outcomes of these meetings was a set of minutes, with decisions and actions clearly marked, and with dates or deadlines and names of people who would

follow up on the actions. Another outcome had to be the compilation of regular reports. Quarterly reports were recommended so that the data could be made available, even if a detailed analysis was not always possible. These reports then fed into the annual report in which PPIP and Child PIP data were neatly packaged.

Organisational culture

Drivers or *agents of change* were a key facilitating factor in the initiation and implementation of audit. They were variously described, for example as ‘an enthusiastic single person’ or ‘a responsible and motivated person’. However, completing the audit cycle required the work of a *team* that had enthusiastically bought into the process. Programme drivers and teams operated at different levels, ranging from the primary health care (PHC) level, through to the hospital, through to the district and the province.

In the implementation of PPIP and Child PIP the driver was identified either by the regional or provincial coordinator or by the hospital manager; alternatively a naturally interested person might have taken *ownership* of the programme. The driver in a hospital was either a manager or a clinician (a doctor, nurse or midwife) who took responsibility for introducing the programme and organising the data entry. They were also responsible for the organisation of meetings. Although the practice of having one person take permanent responsibility for the system is an important factor in making a programme sustainable, it could also put sustainability at risk. If there is no back-up person the programme is interrupted when the driver is absent or leaves suddenly. Further, having a single driver without the ownership and support of the team and the institution does not facilitate institutionalisation of the programme.

Communication and support systems

Figure 7 illustrates the complex communication and support network that underpins the implementation and maintenance of any audit system. Networking and communication taking place between different levels in the health system, different role players and different sites have been an important facilitating factor in the establishment of PPIP and Child PIP. Ideally, at every point in the system there would be a driver(s) with a name(s) and responsibility for running the audit and reporting regularly should be built into their job descriptions. Other team members should also be recognised by providing time in their schedule to allow them to perform functions

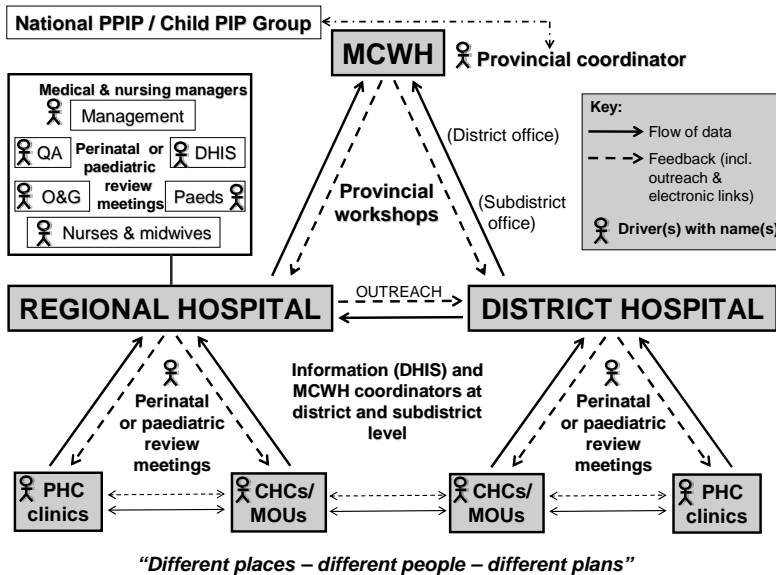


Figure 7. Provincial networking and communication systems

related to data collection, capturing and analysis. The motivation to continue with the audit and to complete the audit cycle by implementing recommendations comes from the institutional meetings that have been described above, combined with a well-defined pathway for the flow of data and findings from the PHC level up to the provincial or national level. At the various levels there is also a responsibility to give feedback to the lower levels of care or the appropriate levels of care in an institution.

At the PHC level, clinics and community health centres (CHCs) or MOUs are involved and they should feed data to the district hospitals, and in some cases to the regional hospital. These hospitals have a responsibility to give feedback to the primary levels, inter alia by including key role players from this sector in their regular perinatal or paediatric review meetings in order to address modifiable factors present at these levels. Similarly, the district hospital should be part of an outreach programme coordinated by the regional or provincial hospital and the district or subdistrict office. Audit data and findings should feed into the information system, with the MCWH coordinators and information officers of the District Health Information System

(DHIS) playing a key role in relaying the information to the provincial level. Involving the community is also an important factor in some instances.

Conducting audits is more complex at a regional hospital than at a district hospital. The departments of paediatrics and obstetrics and gynaecology (O&G) at regional hospitals should all be part of the regular reviews. At district hospitals and smaller health facilities the same medical officer may be responsible for coordinating both PPIP and Child PIP. Other key role players in the networking and communication system in all hospitals are the quality assurance (QA) officers and the facility information officers (FIOs) responsible for the management of the DHIS.

What is needed at different stages of change?

Implementing and sustaining audit programmes like PPIP and Child PIP could be described in terms of the model for implementing and sustaining change that was presented in Chapter 2. For each of the six stages certain activities have to take place. And in each of these stages factors are identified that could either facilitate or hamper the change process. These factors form the context in which the desired change (implementing an audit system) will take place. Without the agents of change – the drivers – change will not happen.

Pre-implementation phase

The pre-implementation phase refers to the ways in which hospital professionals come to realise the benefits of having audit programmes to monitor quality of care and to become aware of the existence of programmes such as PPIP and Child PIP.

Stage 1 – Create awareness

In the first stage of change an individual or team becomes aware of a problem, for example high perinatal or in-hospital child mortality rates. At this point some hospitals included in our study had already perceived the need to collect data on mortality rates and causes and some even had their own system of audit linked to their regular mortality meetings. Where no such system was in place, a growing need was felt to establish a programme that could address the need to improve the quality of care. This led to awareness of the existence of programmes like PPIP and Child PIP.

Hospitals and health professionals became acquainted with PPIP and Child PIP in different ways. The discovery of the programmes came from an outside source in some

cases, for example when a health professional attended a conference where the programme was demonstrated. One hospital had a research project that provided the stimulus for implementing Child PIP and the programme was continued after the completion of the research. In most cases PPIP and/or Child PIP was introduced to the hospitals in a region or province by an outreach person who identified drivers and promoted the programmes. This could also have taken place at other regular hospital meetings.

Stage 2 – Commit to implement

As more people (health practitioners, administrators, senior management) were converted to the idea of introducing an audit programme, the time was ripe for making a commitment to implement PPIP or Child PIP. Having a critical mass on site facilitated the commitment to implementing an audit programme, since the need for it had already been created and staff were receptive to the idea. Senior management, a clinician or a group of clinicians usually took the lead in adopting the idea and committing to implementing it at the hospital. This process was facilitated by the use of existing meetings and communication channels to get people on board.

Implementation phase

The implementation phase refers to the ways in which the programmes are implemented. It is about the conditions that have to be present and the activities that need to be executed in order to make the programmes work.

Stage 3 – Prepare to implement

In the implementation phase preparations are needed to get the audit programme operational. This entails securing human, physical or financial resources, acquiring and installing the necessary software and training designated people to collect the data. The availability of computers at this stage may either facilitate or hamper the ultimate implementation of the programme. At some facilities the drivers had difficulty convincing the information technology (IT) officials that PPIP or Child PIP was not a maverick programme, but integral to clinical work. The selection of the right data capturer(s) with a particular degree of computer literacy or data capturers who could be trained to handle the entry of data was important, as they needed to understand what they were doing. Getting the information officer on board to provide continuous support was a further step towards smoother implementation. The designated or self-appointed institutional driver was normally responsible for install-

ing the programme and organising the system of data entry and feedback. Where there was positive support and encouragement from management the process ran more smoothly. This stage is also the time when people really start taking ownership of the process, so it is sometimes called the 'taking ownership' stage.⁷

Stage 4 – Implement

Implementation starts when there is evidence of the new practice, in this case, the collection of the first data accompanied by the giving of feedback at meetings. At this point the outreach person and/or provincial coordinator proved to be a key support person at some hospitals starting with PIP or Child PIP. This person helped to advance the process of making the programme work and also ensuring thorough participation by senior managers so that they remained well-informed and supportive. Feedback and review meetings were considered an important bridge between the preparation stage and making the audit work. During this stage the process of buy-in and taking ownership continued as the teething problems were sorted out. The demonstration of the use and validity of the audit tool to various audiences and stakeholders was a facilitator at this stage.

Information technology featured strongly in the implementation phase. Implementation was further facilitated where the district required information and feedback, where there was a good communication system in place that would ensure regular feedback and where the sense of accountability was high. Continuing education and refresher sessions on the use of the software for data entry, making backups and analysing the data also supported the continuation of the process. Entering data immediately and not releasing files before data capturing had been done contributed to obtaining accurate data that could serve as the basis for high-quality analyses. User-friendliness of software helped to motivate people to enter data immediately. Failure to understand the importance of regularly backing up data may lead to the loss of crucial information. In most institutions one computer has multiple uses, and IT officials have been known to delete unknown programmes.

Institutionalisation phase

The implementation of audit programmes culminates in the institutionalisation phase, when the process of collecting, analysing and reporting on the data has been integrated into routine practice and this has been sustained for a period of time. The way in which this was achieved in the case of PPIP and Child PIP is described below.

Stage 5 - Integrate into routine practice

In the institutionalisation phase, the programme or practice becomes part of institutional routine or routine practice and relevant activities are performed by everyone required to do so. In the case of PIP and Child PIP, this was the point where the team started to get a clear sense of how they could use the audit findings. Outreach persons also played an important role in facilitating the interpretation of findings and suggesting improvements. Institutionalisation was facilitated where staff members involved in the audit process had their audit duties included in their job description and where they got time off for doing the work.

A very real challenge at this point is the non-completion of the audit cycle. Data may have been diligently collected and collated by the 'accountants', but recommendations are not necessarily implemented. Some hospitals were of the view that if the use of particular audit programmes such as PIP and Child PIP was to become national policy then the chances of institutionalisation would be greater. This institutionalisation could include some form of accreditation system. It could also include a system of recognising good practice.

Stage 6 - Sustain new practices

The last stage involves achieving sustainable practice, where a hospital has been able to provide serial data over a number of years and where there is clear evidence that the recommendations emanating from the feedback are implemented and show an impact on the trends in perinatal or in-hospital child mortality rates or other indicators identified to measure quality care. Multiple modalities were used to sustain audit. Each site had unique ideas and there were no 'recipes' or simple guidelines on how to sustain audit – 'different people, different places, different plans'. Regular institutional meetings were crucial in getting to this point. Annual provincial and/or national meetings also made a contribution because individual hospitals or provinces were required to present the data from their institution or province. Meetings such as these continued to demonstrate the benefits of the audit programme.

Other factors that enhanced the possibility of a sustainable audit programme and process were outreach visits and staff stability, with at least one person taking responsibility for the system in the health facility on a permanent basis. Staff turnover was a barrier that some hospitals had to face. On the other hand, having only one person could also be a threat to sustainability if the team was not involved

appropriately and no one was given the opportunity to serve as a back-up person. Succession planning was therefore important.

Conditions for change

In Figure 6 factors that act as facilitators or barriers to change are depicted as part of the contextual factors facilitating or hampering the implementation and maintenance of audit. Barriers and facilitators to change are two sides of the same coin. The same factor may be a facilitator in one health facility, but a barrier in another. Some of the factors are present in all six stages of change; some are only present in one or two. Factors that could have this effect are divided into four main themes: people (individuals and teams); information technology and software; the health system; and education and preparation. Figure 8 provides a graphic depiction of where these factors feature in the six stages of change. The dotted lines indicate that the factor may feature less strongly at that particular stage.

People issues relate to the following: attitudes (commitment, motivation and passion or resistance and indifference to a problem); multidisciplinary teamwork; inter-personal communication; and computer literacy and skills. *Information technology* and software include computer use and accessibility, software problems and data entry. Factors within the *health system* that should be taken into account are: the presence or absence of a culture of audit and the ability to institutionalise audit; management support; intra- and interinstitutional and interlevel communication; human resources (sufficient and stable versus shortage and turnovers); the inclusion of audit duties in job descriptions; and the ability of key role players to attend mortality meetings. *Education and preparation* refer mainly to the exposure to audit during undergraduate education.

Conclusion

This chapter was about a change of practice, namely implementing and sustaining audit. Being able to provide serial data over a longer period of time led to sustaining the audit programme and covering the reflection part of the audit cycle. The chapter described how the first objective, namely understanding the implementation of an audit system, could be achieved. The next chapter describes how PPIP and Child PIP users used their audit findings to improve clinical practice and/or how audit findings should be used as a result of own lessons learned.

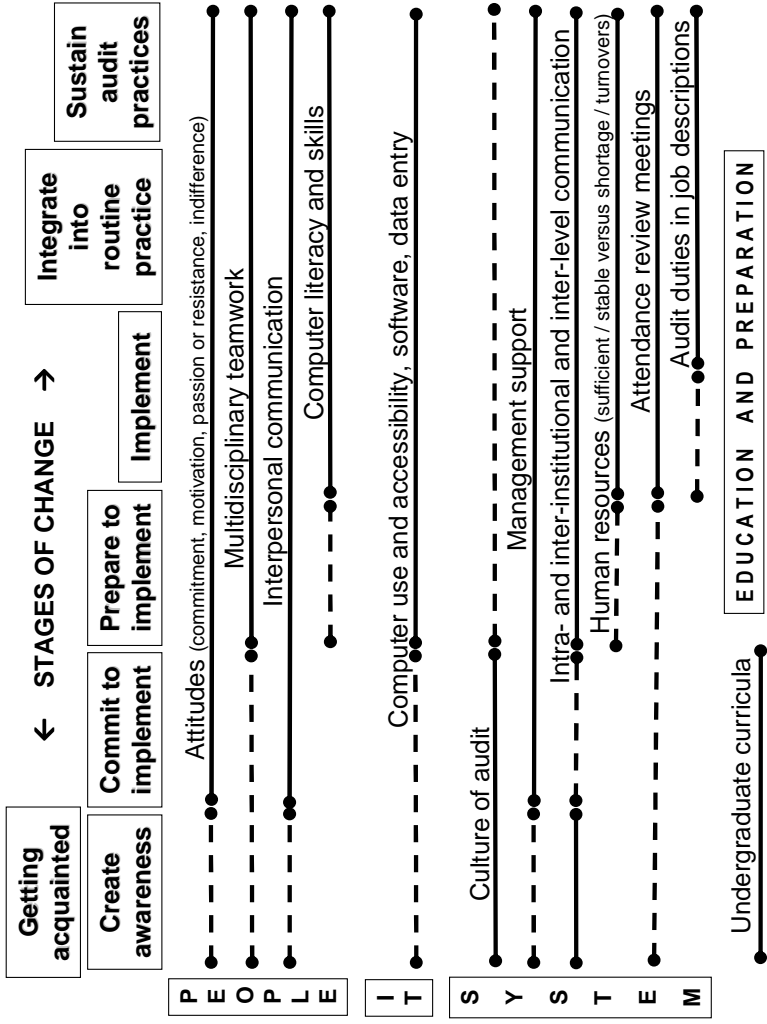


Figure 8. Facilitators and barriers to implementing and sustaining audit

CHAPTER 4

USING AUDIT FINDINGS

'It is time to pull up the socks'
(Synergy Workshop participant)

Once PPIP and Child PIP had been adopted and the software installed, users started to capture data (step 2 of the audit cycle) on the problem(s) or death(s) (step 1). In order to shed light on the problem(s) or death(s), the data had to be analysed (step 3) and the results or findings used in order to make recommendations or have a plan (step 4) to improve perinatal or child health care in the facility. Recommendations of solutions had to be operationalised (step 5) and progress in implementing the solutions had to be monitored to check if the desired changes had occurred (step 6). Additional deaths and further monthly data captured and analysed with the assistance of the PPIP and the Child PIP provided further feedback on whether the desired transformation had been achieved, as there should have been a change in patterns of modifiable factors and causes of death.

This chapter focuses on the last four steps of the audit cycle to get a better sense of what would be needed to complete the cycle.

Step 3: Analyse information

Once data have been collected they have to be analysed. This step of the audit cycle can be further broken down into three types of activity: analysis of the data, presentation and dissemination of the findings and interpretation of the findings with a view to understanding and explaining the issues identified (e.g. modifiable/avoidable factors, contextual issues, etc). (See Figure 9.)

Step 3a: Analyse data

The causes of every death are analysed at different points. Even before any data are entered on the computer, the death is discussed among the doctors and midwives in

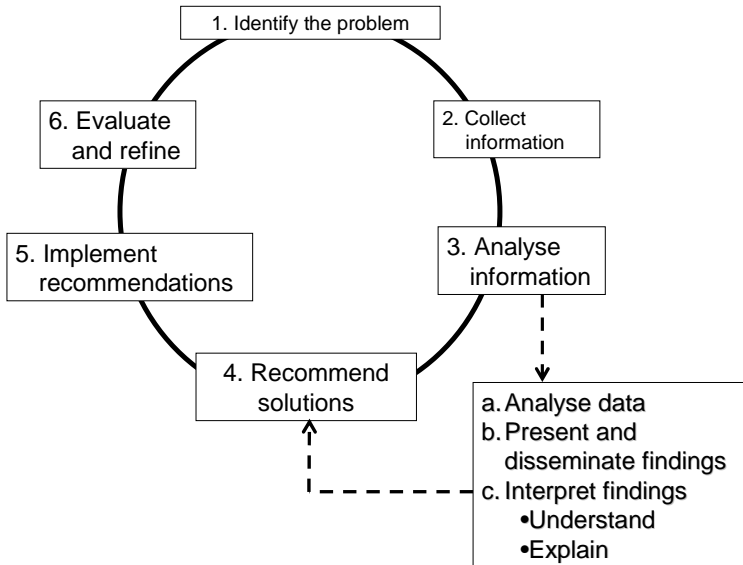


Figure 9. Activities required as part of step 3 of the audit cycle

the unit to try to determine the possible causes of death. Once the data have been entered, the software (PPIP or Child PIP) does an automatic analysis, providing a number of key results. There are results that summarise the causes of perinatal, neonatal and child deaths at the different levels of care, which could be a powerful means of informing strategies at the different levels. The analysis also provides results on patient profiles and the identification of high-risk groups. Avoidable or modifiable factors are identified with a view to correcting them as part of the recommendations. ‘Statistics’ can also be generated to identify variations in performance and trends (e.g. mortality rates, caesarean section rates). Variations in performance are sometimes used to identify possible reasons for the differences. The latter may require further analysis of the data. For example, a rising caesarean section rate would call for an analysis of the indications for caesarean sections. A lowering of mortality rates may call for an analysis of referrals to higher levels of care, as patients may be dying at the referral institution.

Prepare for presentation of findings

The computer-generated data are then exported and analysed repeatedly at the local level. Within a unit regular morning meetings and a weekly review meeting could be used as opportunities for doctors and midwives to review any deaths in the unit. Normally within a unit a small core group or team holds a preparatory meeting to discuss cases to be presented at the monthly review meeting. This group or team often consists of the principal medical officer or the doctor-in-charge and the nursing manager or midwife-in-charge. At this preparatory meeting, gaps in care are identified, as well as required actions directed at modifiable factors. This is the beginning of the transformation of the collected data into information that will be presented at the monthly meeting.

Step 3b: Present information at monthly review meetings

When instituting an audit system like PPIP and Child PIP, a platform must be created to present the findings of the audit process. The monthly perinatal or paediatric review meeting, based within the facility (usually the hospital), is considered the best platform for the presentation of findings emanating from PPIP and Child PIP and for the allocation of tasks that could lead to the implementation of recommendations. In some of the larger institutions, this review meeting is a mandatory interdepartmental meeting, as the causes of death often reveal similar trends and problems in the various departments.

Attendance at these meetings varies from one health facility to another. In theory, PPIP meetings are attended by all doctors and midwives, but night staff are excluded. Staff from other departments may also attend. The staff of clinics in the catchment area are supposed to attend, but challenges such as lack of transport or time and possible resistance from hospital management, for example, do not always make for the desired attendance. There is a need to encourage good attendance by staff at monthly meetings. In some units, attendance is compulsory, and if anyone is not able to be at a meeting, a written apology must be submitted.

In some facilities, the PPIP findings are summarised quarterly, in order to analyse trends and identify major deficiencies. This information is sometimes presented at the quarterly district-level perinatal review meetings. There is general agreement that trends should be studied more frequently. At some of the larger facilities,

quarterly research meetings are held. The research agenda is influenced by the data obtained through the audit process.

Process of presentation

The monthly meeting is disciplined and structured. Individual cases (deaths) that are selected for presentation should be reported anonymously, thus keeping the identity of the patient and the health professional(s) involved in the care confidential. The aggregated statistics for the month are always presented at these meetings, and the results for the current month are compared with those for previous months. The presentation includes full information. In the case of PPIP this would extend from the antenatal care period to the point of death. In some units, a review of babies born with low APGAR scores is included. Near misses may also be presented and at times, success stories. Some people feel that a narrative should accompany the presentation of death rates, for accurate interpretation of Child PIP results. The presentation of information (cases and statistics) is accompanied by discussion. The discussion may revolve around the causes of death and the avoidable factors and/or the total number of stillbirths in a particular month compared to the previous month. Individual cases could be related to statistics by using 'live' data during the discussion of a particular case or issue, for example by pulling out the statistics for diarrhoeal disease when a particular case is under discussion.

It appears that doctors take primary responsibility for presenting at meetings and there is a need to bring more midwives and nurses on board. Presentations should be as simple and as engaging as possible. In some facilities the presentation of information in poster format is considered useful. There are also facilities where the format of presentation needs to be reviewed and changed.

Step 3b: Disseminate findings

Feedback and dissemination of information from the audit are important and multilevel and interlevel feedback should be given, for example between levels 1, 2 and 3 institutions. Quarterly research meetings also provide an opportunity for the dissemination of findings. Where information is provided to interns it serves a training purpose. Feedback of relevant information to clinics is also considered important. This feedback can take various forms: through distribution of the minutes of the monthly meeting, during the doctor's visits to the clinics or by means of a newsletter.

A major source of avoidable/modifiable factors in both PPIP and Child PIP are issues that originate at the community and/or household level. The concern is that in some instances there is no mechanism for providing feedback to members of the community about these specific factors as well as progress overall for improving quality of care. Feedback mechanisms that seem to be available to other health care institutions include the use of radio stations, local newspapers and non-governmental organisations (NGOs) to disseminate information to civil society. The utilisation of quality assurance officers as a link to the community could also be explored. From time to time feedback is provided to research and political communities. Child PIP data have been used to prepare a response to parliamentary questions, for example. Clinicians also take part in conferences and publish research findings based on the data provided by PPIP and Child PIP.

Step 3c: Interpret findings

The information presented at the monthly review meetings requires further interpretation. This is the process whereby the information is transformed into knowledge that could be used to make recommendations and implement solutions. There are two levels of interpretation of results. An initial interpretation entails *understanding* the information or findings, whereas a deeper interpretation looks for an *explanation* for the findings.

Understand the findings

When presenting at the monthly meeting, the presenter(s) would suggest an interpretation of the results. This is not always felt to be helpful, since it is often merely one person's interpretation and attendees may just agree without a first-hand look at the data. The question also arises whether everyone really understands numbers and rates sufficiently well to be able to contribute to the interpretation of the data. Further interpretation may therefore be required, with input from the wider group. Some facilities hold a research meeting every three months, where hospitals present data to a wider group of people. The probing questions and criticisms from such groups could well help to improve interpretation.

Furthermore, various comparisons are performed to aid understanding of the results. Individual rates are compared over time, from month to month, and a trend analysis is performed. Different rates are compared with each other to provide greater insight into the quality of care. In the case of Child PIP, rates are compared for different age

groups. This can be useful for identifying spikes in the data at particular ages. The skills gained from attempting to understand the data will continue to be valuable to meeting participants beyond the scope of the mortality audit process and therefore the analysis and interpretation tasks should be shared amongst team members as much as possible in order to build capacity as well as improve understanding.

Explain the findings

Interpretation at a deeper level looks for explanations of the findings and the new knowledge created in this way is then translated into recommendations. A root cause analysis, a systematic analysis of the underlying causes of the deaths, is performed to determine what has happened and what has influenced the results. Attendees at meetings all participate in brainstorming sessions to identify the root causes at different levels.

Step 4: Recommend solutions

Root cause analysis as part of the interpretation process gives rise to the recommendation of solutions to eliminate or improve on the causes of mortality. Solutions are also identified at the monthly meeting, where consensus is reached on the strategies for a specific action plan. It is necessary to incorporate findings into as many institutional activities as possible to create relevance. Further strategies may be needed if there has been no progress in the implementation of recommendations.

Step 5: Implement recommendations

Recommendations arising from the monthly meetings are disseminated and task-oriented minutes are distributed, with specific tasks being assigned to team members. In some instances the recommendations implemented are not directly linked to the local audit process, but are geared towards implementing a recommendation contained in the *Saving Mothers*, *Saving Babies* and *Saving Children* reports or other recommendations towards meeting the Millennium Development Goals.

Some conditions facilitate the implementation of recommendations and other conditions hinder implementation. Facilitating conditions include: good leadership, task-oriented minutes, staff stability, good communication with academic departments and with clinics, and the implementation of guidelines and protocols. Conditions hindering the implementation of recommendations include:

- Communication: recommendations disseminated, but not read
poor communication with community and patients
- Staffing issues : too frequent rotations
use of contract staff
staff shortages
- Management issues: management unresponsive to staffing issues
inadequate financial resources
- Professional issues: poor attendance of review meetings
'dangerous' doctors
absence of skilled supervisors

Step 6: Evaluate and refine

The advantage of PPIP and Child PIP is that data are immediately available for the purpose of monitoring and evaluation. Feedback, particularly feedback in which progress over a few years is measured against certain indicators, is considered very motivating. Positive results also provide feedback on where the quality of care is good.

As in the case of the analysis of information, data are reviewed with varying frequencies as part of a monitoring and evaluation process. Some institutions do this on a monthly basis at each review meeting. A slot is provided for reflection on recommendations of the previous meeting, and whether they have been implemented. Others do a quarterly review. There is also the view that evaluation and refinement are not attended to often enough.

Although task-oriented minutes assist with the monitoring, evaluation and refinement of plans, the quality of the minutes can vary, ranging from no minutes and action, to informal or formal ones. Where there are persistent problems previous minutes are sometimes consulted to verify the recommended solution and to review possible reasons why no action has been taken. Different viewpoints have been expressed on what to do when actions are not implemented. There is generally a strong feeling that meetings should not be used for 'naming and shaming' of individuals, but should rather be an opportunity to address the problem.

Why does the use of audit findings not necessarily lead to a reduction in mortality rates?

As was pointed out in Chapter 1, there has been no decrease in mortality rates at the majority of institutions that were able to provide serial data for PPIP and Child PIP, with some even showing an increase. One of the reasons advanced by proactive institutions for not being able to show a difference was that they had already had a type of audit mechanism in place before they started with PPIP and Child PIP and that the dramatic decrease expected after the introduction of PPIP or Child PIP had already taken place. This confirms Jamtvedt et al's conclusion that audit and feedback are more effective when baseline adherence to practice is low.⁶ In the case of Child PIP it was also pointed out that institutions revise their admission criteria from time to time and that in terms of the revised criteria only more severely ill children would be admitted, which makes a comparison of data over time problematic. With regard to PPIP, some midwives feel that they do not have the clout to effect the change needed in terms of the implementation of recommendations emanating from the audit findings.

Other reasons for a lack of improvement are the absence of report writing and the poor quality of staff (skills and attitudes). This implies that recommendations emanating from audit and feedback have either not included the improvement of skills or recommendations in this regard have not been implemented. Reasons for being unable to show a change in mortality rates over time that are more extrinsic to the running of the audit programme include nursing strikes, staff shortages and a dysfunctional health system.

Improvement or a lack of improvement in results may also be attributed to contextual factors. Factors that could influence the quality of care and outcomes include the socioeconomic context, violence, norms that have changed over the years (e.g. the ratio between health care providers and patients), and patient profiles (e.g. more critically ill children admitted to hospitals using Child PIP).

Conclusion

The use of audit findings could be described with reference to the stages-of-change model discussed in Chapter 2. The recommendation of solutions (step 4 in the audit cycle) corresponds to the first two stages in the pre-implementation phase. In other words, there is an awareness of what should be done to improve care and there is a

commitment to implementing the identified solution. The fifth step in the audit cycle, implementing recommendations, corresponds to the two stages in the implementation phase, namely making the necessary preparations (e.g. changing schedules, acquiring equipment, conducting a skills improvement session) (stage 3) to implementing the recommended solutions (stage 4). When the implementation is evaluated and further refined, the continuous evaluation along with the refinement of practice and the implementation of changed practice according to current best evidence and practice correspond to the phase of institutionalisation, with the solutions becoming routine practice (stage 5). When a quality improvement mindset underpins the solutions recommended on the basis of the audit findings, a practice can become sustainable (stage 6).

This chapter demonstrated how the findings emanating from the use of PPIP and Child PIP led to the recommendation of solutions and to a lesser extent the implementation, evaluation and refinement of these solutions. The action needed for the completion of the audit cycle was less evident. The next chapter focuses on requirements for translating recommendations into action for quality care, with a discussion of the centrality of leadership and supervision.

CHAPTER 5

ACTION AND TRANSFORMATION FOR QUALITY CARE

'The key challenge is how do we go about it? It is a difficult thing to instil. How to mobilise the passive majority? How do we motivate people to want to change? PPIP and Child PIP are fantastic tools in the hands of people who want to change things. But other people don't want to change things.'
(Synergy Workshop participant)

Change is effected by people doing the right thing. Action for quality care is taken by health care workers. The question is: How does one inspire people to make this happen, to do what they should be doing? In order to answer this question one needs to consider that change takes place in a context where there is a dynamic enabling and empowering environment where interventions are not left to proceed on their own, but where appropriate follow-up is built into the process to support change. Furthermore, agents of change are needed, with leaders leading teams and building relationships. The rest of this chapter is a reconstruction of the issues that workshop participants identified as important for the change process.

Change is underpinned by changes in the behaviour of individuals and groups. Behavioural change can take place in communities or in health systems at different levels. Changes in community behaviour include changes in perceptions of care, access to care and constructive participation and engagement in the provision of care. Educating and mobilising community members (patients) to be drivers of change could lead to a demand for better quality care. One means of doing this is to market the health service to the community through the media and public forums, inviting the community into health facilities, using community health workers and providing more interaction with NGOs.

Although behavioural change takes place throughout the health system, our focus is mainly on behavioural changes in health care institutions and through interaction between different levels of health care. These behavioural changes should firstly lead to implementing and sustaining an audit programme, and secondly to completing the

audit cycle through action on the recommendations emanating from these findings. Two important conditions for behavioural change are the identification of problems and willingness to change. In other words, evidence from the audit findings should point to a necessity for change and people should change because they are motivated by an intrinsic need and not by the hope that there is something in it for them. Any change process should be well planned, executed and followed up. There needs to be a vision, but also a road map that spells out the bigger picture.

Creating an enabling environment

The majority of health workers are amenable to change and action. If one can change people, one can also change or improve practice by taking action. The workers at any organisation range right across the spectrum, from those who are very dedicated to those who are perceived to be passive and even aggressive or lazy. In planning action for change the challenge is to reach the 'silent majority' that would be willing to embark on the necessary action. In this process it is important to have clarity about roles and responsibilities and to have role models at the coal face to lead the value change.

Changing behaviour is often related to a *mindset change* towards the original values that the health professions subscribe to. A major challenge facing any action for change is working with people with different core values, or people who do not always 'practise what they preach'. Then there is also a group of people whose behaviour depends on where they work and who would, for example, display different behaviour when working in the public sector as opposed to the private sector. Table 1 depicts a typology of professional values constructed from feedback from workshop participants. Most health professionals oscillate between an intrinsic value set and an extrinsic value set in their behaviour in practice.

Action for change also goes hand in hand with a *culture of accountability* at all levels. This culture should be nurtured by leaders. There are two complementary interpretations of accountability, namely that it should be associated with correcting behaviour, but that it should also include celebration, affirmation, encouragement and reward. People often refer to the 'carrot and stick'. Where there is no or little accountability people feel like 'cogs in a wheel', with no reward for quality work and no sanction for poor work. The message needs to be that people's actions or lack of actions matter and that these have consequences in that they are either rewarded or sanctioned.

Table 1. Typology of professional values

	Intrinsic value set	Extrinsic value set
Institutional values	Service	Appearance
Individual values	Work ethic Passion	What’s in it for me?
Rewards	<ul style="list-style-type: none"> • Acknowledgement • Positive feedback • Working with a good team • Giving good patient care • Good patient outcomes 	<ul style="list-style-type: none"> • Profession is a job • Monetary bonus for good performance
	↓	↓
	Job satisfaction	Job security

Good work is rewarded and misconduct calls for accountability. Holding people accountable does not mean humiliating someone in front of others in a meeting, but appropriate institutionalised opportunities should be available where people have to answer for their actions.

Supportive accountability is intricately linked with proper clinical supervision and entails supporting health workers who may lack the skills, knowledge, awareness or confidence to do something in the right manner. Some behaviours or failure to take action stem from insecurity and fear of doing the wrong thing. Sometimes people know what to do, but are insecure about the next step and do not know whom to report to. At other times they may lack the skills, for example to intubate. Demonstrating these skills, even simple ones like taking a temperature or pulse properly, could be reassuring and comforting and could build confidence. However, one would also want people to learn that taking these actions involves more than just doing a job. They also have to learn the *meaning* of the job.

Punitive accountability is at stake where there is a lack of discipline and negative staff attitudes such as arrogance, aggression, resistance, indifference, distance, laziness and racism. The poor attitudes of a few could permeate the institutional ethos and culture and drag the rest of the staff down. For people who know what current best practice is, but do not follow job descriptions, protocols or standard operating

procedures and, for example, neglect to complete the partogram properly, there must be consequences for their actions. Here one could use the metaphor of ‘stick’ or ‘whip’.

The *conditions, barriers and facilitators* for implementing and sustaining audit and using audit findings that have already been discussed obviously also feature in any action for change. Many contextual factors contribute to the ability to change over time. Two factors of particular importance to planning action for change are the need for an efficient system and the empowerment of people. Figure 10 is a diagrammatic representation of an enabling environment.

Aspects of an *efficient system* include policies, infrastructure and staffing (job descriptions, placements and levels, rotations). System inefficiencies could render a supervisor ineffective and disempowered, as problems remain unidentified and are therefore not addressed with prompt action. With regard to clinical care and patient-held records and checklists, everyone needs to be familiar with the system, and records should be available for scrutiny at all times.

Empowerment of people includes sufficient time for clinical work and mentoring, with limits being imposed on the amount of administrative work required of clinicians.

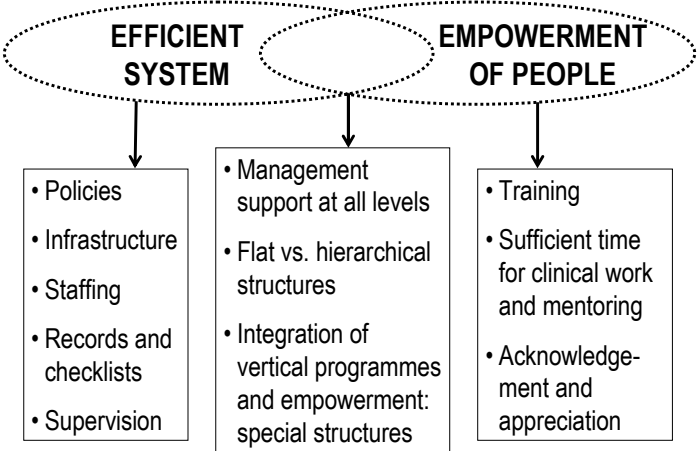


Figure 10. Elements of an enabling environment

Health workers feel that they are not appreciated by the Department of Health (DoH), that they do not always receive challenging tasks appropriate to their skills and that they do not receive encouragement. It seems as if the 'bad apples' always get attention, sidelining those who do good work. In the process, opportunities for building relationships are lost. Although building relationships is not a difficult task, it does require sustained effort. Small rewards of appreciation that do not require a big financial layout are used in some hospitals and include reorganising duty rosters, celebrating social events like birthday or tea parties, giving cards of congratulation to staff members, and having cake at meetings. It should be remembered that training could also be a vehicle to empowerment, but the question could be raised whether the lack of specific types of training is a barrier to action for changing practice or an excuse for not changing behaviour.

Flat versus hierarchical structures can make a difference at the interface between empowerment of people and system efficiency. Other enabling conditions at this interface are management support at all levels and the promotion of the integration of vertical programmes and empowerment through the creation of special structures, such as the integration teams that are part of the Mpumalanga Integration of Maternal and Child Health programme (MACH 1). People want to change things but they do not necessarily have the power. Although action requires government buy-in and support, individuals and teams could be proactive in many of their actions without having to wait for the DoH or the institutional managers to become involved.

Leaders in action for change

Leadership and supervision are important for the effective utilisation of data and information arising from the audit process. Effective leadership needs to be present at various levels: in the unit, at hospital management level, in the subdistrict.

One of the key questions regarding leadership is *who provides or who should provide leadership?* There are many definitions of a leader and they tend to fall into two broad categories. The term 'leader' is often used to refer to people appointed to (senior) management positions. However, there are also leaders who do not fall into this category and who could be described as dedicated, passionate and positive drivers or instigators who demonstrate a vision of action for change and who act as role models or 'moral compasses', demonstrating certain virtues and values. A manager is therefore not necessarily a leader and a leader does not necessarily have a management or a high-ranking clinical or supervisory position. Managers tend to fol-

low directives from the DoH and are often involved in 'policing' and disciplinary actions. Leaders, on the other hand, implement evidence-based practices that will improve patient care, regardless of directives. They create an environment that is conducive to overcoming barriers, encouraging positive change in institutional culture (race, cultural and language relationships), and promoting individual, group and team accountability. In the case of a hospital the leader could be the doctor in charge, the outreach consultant or a team that spans different levels of responsibility. Sometimes an outsider could also be called in to act as an external catalyst for getting action for change off the ground.

In order to be a leader the person should have experience and be competent and credible. This means a leader should accept the role of leader but also needs to be accepted by others for this role. Leadership skills can be acquired. Leaders are expected to be 'hands-on', accountable and credible in the execution of their duties. Being credible means being trusted by colleagues and having authority. Unfortunately, persons without a medical background are not always trusted or listened to by their peers. Gender, age, race and the category of health profession a person belongs to (being a nurse and not a doctor) are potential obstacles to becoming a credible leader.

Leaders are expected to be visionary, not waiting for instructions, but taking things forward and motivating people in ways that could lead to attitude changes. They are also expected to develop strategy, establish communication, provide structure and discipline for implementing and maintaining the audit system, hold people accountable for the quality of the data they collect through audit, and build up an audit team to take the process forward. Leaders, especially outreach leaders, should be able to facilitate change and innovation, even in extremely remote rural areas where there are no supervisors and staff lack critical essential skills. Other leadership tasks include: giving regular feedback on audit results; facilitating and teaching (for example in the ward, through e-mail and presentations); and providing regular supervision and outreach support in a sustainable manner.

Clinical leaders are at the *interface with hospital managers*, some of whom do not have a medical background and find it difficult to understand the meaning of audit findings on matters like perinatal mortality rates. Where managers do not attend review meetings, clinicians are responsible for appropriate liaison with regard to actions needed for the improvement of care. This may mean putting pressure on

management to respond swiftly and act appropriately. Encouragement, motivation and providing ongoing input and energy, as well as a sense of permanence and continuity, are prerequisites if an audit system is not to fall apart or shut down. This entails the necessary IT support and stability in the human resources needed to maintain the audit system, including a driver or drivers of the audit process who are likely to remain at a site.

Another prerequisite for a leadership role is the *ability to work with people*. A leader acts as mentor and motivator, paying attention to the minor details of staff needs and rewarding small successes. In determining major deficiencies a leader must be approachable and not punitive, building trust in the process. This goes with the ability to get people together and create an environment conducive to team work. Leadership should not be a 'lonely job'; it entails the building of relationships and the promotion of ownership among all role players. One demonstration of leadership behaviour is the insistence that no review meeting may take place unless the nurses attend as well.

Other (intrinsic) *virtues* of a leader are willingness to change, humility, integrity, dedication and commitment, discipline, perseverance and patience. A dedicated leader motivates a dedicated team and dedication leads to accountability. The absent 'leader' attending to his or her private practice instead of being on duty is not acting as a role model.

With regard to *attitudes* and the establishment of relations, appropriate behaviours include transcending culture, demonstrating empathy, and being positive, interested, energetic and motivated.

Effective *leadership strategies* include participation by everyone in the different steps of the audit cycle, sharing responsibility, for example at monthly meetings, and having some form of succession planning, so that a hospital is not left without a leader when the driver of the audit process leaves.

Conclusion

This chapter provided an illustration of aspects to consider in the quest to complete the audit cycle. In this process a reflection on where an institution is with regard to the stages of change in terms of persevering with the implementation of recommendations is a valuable starting point.

The key leadership tasks, styles and characteristics described above are essential in ensuring the completion of the audit cycle and taking action to improve care. But how do we develop our future leaders in maternal, newborn and child health to continue making progress in the reduction of morbidity and mortality? We need a better understanding of what would be needed to nurture our leaders-in-the-making. This is explored in the final chapter.

CHAPTER 6

COMPLETING THE AUDIT CYCLE

'Put effort into people'
(Synergy Workshop participant)

The findings from the analysis of the serial data discussed in Chapter 1 indicate that institutions can be fairly good at putting audit and feedback into practice. This implies carrying out the first four steps of audit, namely identifying the problem, collecting data, analysing the data and recommending solutions based on the avoidable or modifiable factors identified. Institutions have less success in following through on the last two steps of the audit cycle, namely implementing recommendations and evaluating and refining implementation. Health professionals appear to be good *administrators and accountants* in sustaining the PPIP and Child PIP systems (see Figure 11). However, there is a need for more health professionals to become *leaders and advocates*.

Following the discussions in the previous chapter, a new way of looking at the audit cycle is proposed. Following the steps in the cycle may not in itself lead to substantial change or a reduction in mortality rates. Agency and context need to be built into the understanding of the cycle and what is needed to complete it. Leadership and supervision are placed at the centre of all audits and need to be visible in every step of the audit cycle and in every stage of change (see Figures 12 and 13).

In the previous chapter it was stated that effective leadership is essential in improving the completion of the audit cycle and implementing change. Such leadership must be present at various levels – in the unit, at hospital management level, and in the subdistrict. Important aspects of leadership are related to questions like the following:

- Who provides the leadership? (e.g. a team, a doctor-in-charge, or an outreach consultant)
- What are effective leadership styles? (e.g. participative leadership where responsibility is shared, with succession planning)

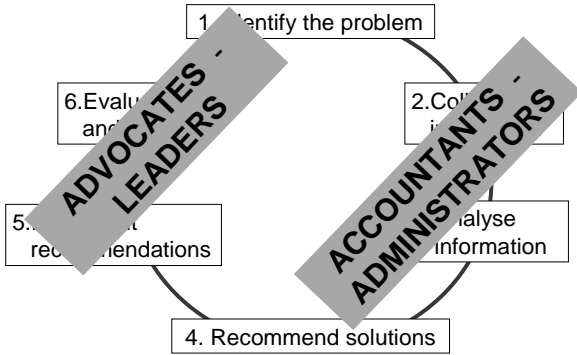


Figure 11. Accountants and advocates in the audit cycle

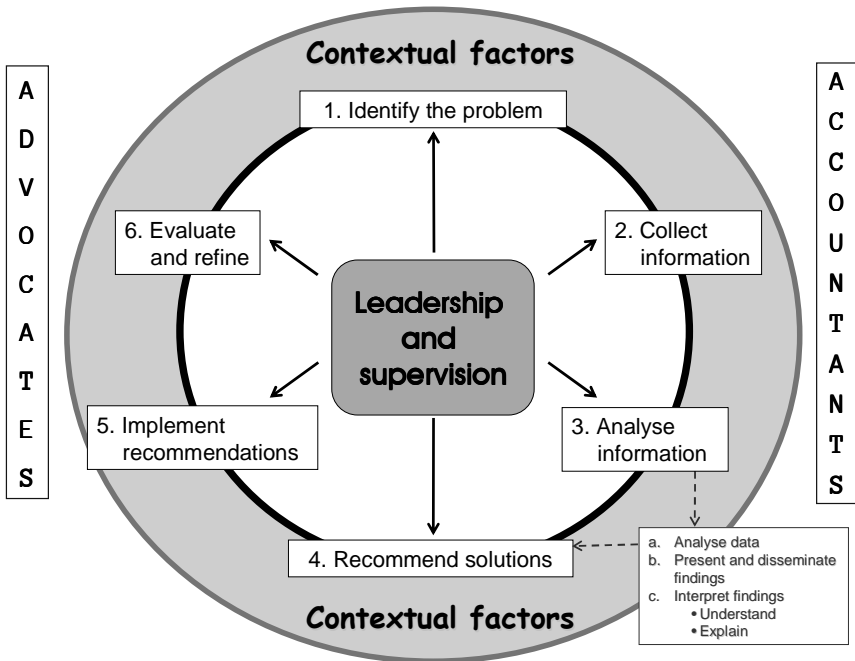


Figure 12. Leadership and supervision at the centre of the audit cycle

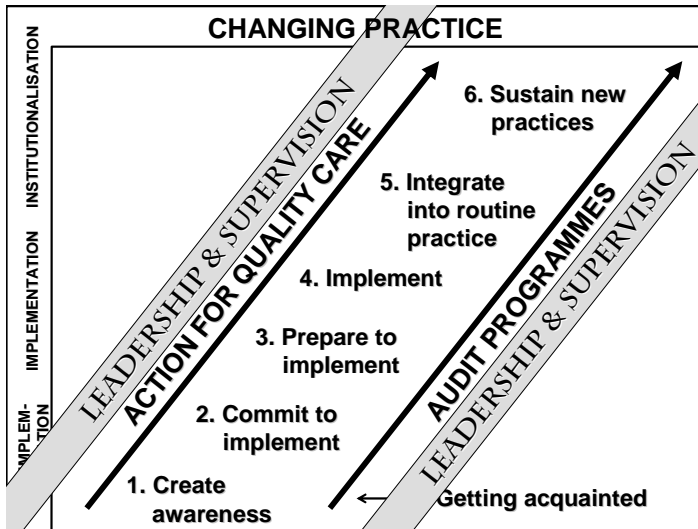


Figure 13. Leadership and supervision at every stage of change

- What are the characteristics of effective leaders? (e.g. competent, provide permanency and continuity, are energetic and motivated, approachable and not punitive)
- What are important leadership tasks? (e.g. developing a strategy, facilitating change and innovation, building the team, improving communication, providing teaching, offering encouragement and motivation, providing structure and discipline, holding people accountable, liaising with hospital management, and providing outreach support)

Leadership and supervision always take place in a particular context and contextual factors that can act as facilitators and/or barriers to complete the audit cycle should also be taken into account.

What can make a difference?

In each individual setting the leaders and audit teams need to reflect on where they are, where the breakdowns in the audit process and cycle are, and how they should act to effect change. There is no one-size-fits-all recipe. Lessons can, however, be learned from institutions that have been able to make a significant difference in the

reduction of their mortality rates. Here are some of the tasks that one hospital complex, which believed in a multi-pronged approach, found beneficial:

Running the facility:

- Ensure good management (human, financial and other)
- Restructure wards and redefine function
- Pay more attention to details
- Ensure adequate resources are available

Quality assurance and records:

- Standardised record-keeping system
- Improvement of data sources without ‘reinventing the wheel’ – ‘strengthening existing systems’
- Have quality assurance programmes in place, measure progress continuously and solve problems creatively

Staff:

- Strive for continuity in the recruitment and retention of staff
- Have a systematic, comprehensive orientation and training programme in place
- Clarify roles and responsibilities
- Nurture enthusiastic individuals
- Consider and accommodate professional and personal needs of staff members

Clinical care:

- Develop standard clinical case guidelines to suit local needs
- Adopt new methods (e.g. kangaroo mother care, nasal CPAP, processes of the Basic Antenatal Care [BANC] programme)

Outreach:

- Develop a quality outreach service to district hospitals
- Scale up efforts to follow guidelines

How do we get there?

In some health care institutions the breakdowns may be so many that major deficiencies need to be remedied before an audit system can be implemented. However, there are many health care facilities with enthusiastic staff who need more support

either in getting PPIP and Child PIP implemented or in improving their working methods to address the changes suggested through the feedback part of the audit cycle. The following are a few essentials for consideration by institutions and health departments:

- Design a road map to high-quality service delivery, in which outreach and supportive supervision are integrated, for various levels of the health system. Such a business plan should provide for the improvement of clinical skills, but also for the improvement of data collection, management and interpretation skills and for supporting supervisors in developing their supervision skills.
- Adopt appropriate educational models to accompany the development of educational programmes to support the improvement of the various skills identified. Such models should allow for recognition of prior learning, participative interaction, immersion in practice, and the development of critical thinking and reflection skills.
- Enable peer support between successful institutions partnering with struggling PPIP and Child PIP sites.
- ‘Invest in people’. Headhunt for potential leaders and supervisors and grow potential.

Conclusion

This report summarised the feedback from the Synergy Workshop participants and other key informants and illustrated how challenging the completion of the audit cycle in perinatal, newborn and child health can be. In the planning of change, conceptual frameworks such as the audit cycle and the stages-of-change model could become useful tools in the construction of a roadmap to map out change processes. Health professionals are encouraged to take on a leadership role in starting further change processes that can go a long way towards implementing and refining solutions based on current best evidence and practice that we know will work.

Acknowledgements

The input of the Synergy Workshop participants and other individuals who gave feedback on the implementation of PPIP and Child PIP is acknowledged with appreciation. Some of the terminology in the stages-of-change model was suggested by Kathleen Norr.

The Synergy Workshop was funded through the Center for Disease Control (CDC) grant U2G/PS001053-03, Activity 6b, to the MRC Unit for Maternal and Infant Health Care Strategies. The content of this publication does not necessarily reflect the views of CDC.

References

1. UNICEF, WHO, World Bank, UNDP. Levels and trends in child mortality: Report 2011. Estimates developed by the UN inter-agency group for child mortality estimation. New York: UNICEF; 2011. (URL: www.unicef.org/media/files/Child_Mortality_Report_2011_Final.pdf)
2. Pattinson R, Kerber K, Waiswa P, *et al.* Perinatal mortality audit: Counting accountability, and overcoming challenges in scaling up in low- and middle-income countries. *Int J Gynecol Obst* 2009; 107: S113-S122.
3. Ronsmans C. What is the evidence of the role of audits to improve the quality of obstetric care? *Stud Health Serv Organ Policy* 2001; 17: 207-28.
4. Birkitt M. Is audit action research? *Physiotherapy* 1995; 81(4): 190-4.
5. Pattinson R, Whittaker S. Validation of Perinatal Care Indices. Proceedings of the 28th Priorities in Perinatal Care Conference, Champagne Castle Sports Resort, Drakensberg, 10-13 March; 2009; pp 245-7.
6. Jamtvedt G, Young JM, Kristoffersen DT, *et al.* Audit and feedback: effects on professional practice and health care outcomes. *Cochrane Database Syst Rev* 2006, Issue 2 Art. No.: CD000295.pub2. DOI:10.1002/14651858.CD 000259.pub2.
7. Bergh A-M, Arsalo I, Malan AF, *et al.* Measuring implementation progress in kangaroo mother care. *Acta Paediatr* 2005; 94: 1102-8.
8. Prochaska JO, DiClemente CC, Norcross JC. In search of how people change: applications to addictive behaviors. *Am Psychol* 1992; 47(9): 1102-14.
9. Prochaska JO, Velicer WF. The transtheoretical model of health behavior change. *Am J Health Promot* 1997; 12: 38-48.
10. Trice HM, Beyer JM, Hunt RE. Evaluating implementation of a job-based alcoholism policy. *J Stud Alcohol* 1978; 39: 448-65.

11. Glasgow RE, Bull SS, Gillette C, *et al.* Behavior change intervention research in healthcare settings. *Am J Prev Med* 2002; 23: 62-9.
12. Belizan M, Meier A, Althabe F, *et al.* Facilitators and barriers to adoption of evidence-based perinatal care in Latin American hospitals: a qualitative study. *Health Educ Res* 2007; 22(6): 839-53.
13. Campbell H, Duke T, Weber M, *et al.* Global initiatives for improving hospital care for children: state of the art and future prospects. *Pediatr* 2008, 121(4): e984-e992.
14. Varkey P, Reller MK, Resar RK. Basics of quality improvement in health care. *Mayo Clin Proc* 2007; 82: 735-9.



UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA
Faculty of Health Sciences

