

**A critical performance evaluation of the South African
Health Facilities Infrastructure Management
Programme of 2011/12**

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Dissertation submitted in fulfilment of the requirements for the degree
M.Art et Scien (Urban and Regional Planning) at the Potchefstroom
campus of the North-West University

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June 2013

PREFACE

In the beginning God created the heavens and the earth, and all the living beings, including man. God blessed us and instructed us to take charge.

There are two sides to taking charge. One side places a responsibility on each one of us to do the things we have to do. The other side is to empower other people do to even more.

This research was part of the things I had to do. My hope is that it will also empower others to do even more.

I acknowledge my original design by my Creator. I acknowledge the impact of parents and mentors who opened my eyes to the critical alignment of my internal and external realities with the eternal reality.

I honour my wife and my children for their belief and encouragement.

May this study lead to a vision of the future that is brighter than the memory of the past.

SUMMARY AND KEY TERMS

The Health Facilities Infrastructure Management Programme in South Africa aims to ensure an appropriate and sustainable platform for the delivery of health services. Since 1994, the average number of hospital beds has decreased from 4.4 beds per 1 000 people to 2.4 beds per 1 000 people. During the same period, there was no significant reduction in the 1 372 clinic backlog.

The evaluation of the performance of the Health Facilities Infrastructure Management Programme was based on a systems approach. This performance evaluation was conducted across four dimensions, with 12 assessment instruments and within 134 assessment parameters. Several of these instruments were developed as part of this study.

Actual performance, per assessment parameter, was expressed in terms of a four level project management maturity scale. About one third of the parameters indicated a low level of project management maturity, one third indicating a medium-low level of maturity, with less than 10% judged to have reached maturity.

It was found that the Infrastructure Unit in the National Department of Health is solely responsible for addressing more than half of the performance areas described by the assessment parameters. The proposed prioritisation model indicated that 50% of the performance areas needed to be addressed as a matter of urgency.

The study concludes with 10 system transformation recommendations aimed at maturity growth in the Infrastructure Unit in the National Department of Health, as well as maturity growth in the Health Facilities Infrastructure Management Programme as a whole.

The following key terms are relevant:

- Health Facilities Infrastructure Management Programme
- Performance evaluation
- Infrastructure Unit
- National Department of Health of South Africa
- Project management maturity
- Assessment instruments
- Assessment parameters
- Prioritisation model

OPSOMMING EN SLEUTELTERME

Die Suid-Afrikaanse Program vir die voorsiening van Infrastruktuur vir Gesondheidsorg het ten doel om toepaslike en volhoubare fasiliteite daar te stel. In 1994 is beraam dat daar 'n gemiddeld van 4.4 hospitaalbeddens per 1 000 mense beskikbaar is in Suid-Afrika. Sedertdien het hierdie gemiddeld gedaal tot 2.4 hospitaalbeddens per 1 000 mense. In die ooreenstemmende periode, was daar geen noemenswaardige afname in die beraamde tekort van 1 372 klinieke nie.

Die prestasie van die Suid-Afrikaanse Program vir die voorsiening van Infrastruktuur vir Gesondheidsorg is getakseer aan die hand van 'n stelselbenadering. Die taksering is uitgevoer oor vier dimensies, deur gebruik te maak van 12 meetinstrumente en 134 parameters. Verskeie van die meetinstrumente is gedurende hierdie studie ontwikkel.

Prestasie is per parameter beskryf in terme van 'n vier-punt volwaardigheidskaal met betrekking tot projekbestuur. Daar is bevind dat ongeveer een derde van die parameters op 'n lae vlak van volwaardigheid is, met nog 'n derde op 'n medium-lae vlak van volwaardigheid. Minder as 10% van die parameters is as volwaardig ge-ag.

Daar is bevind dat die Hoof-direktoraat: Infrastruktuur in die Nasionale Departement van Gesondheid enkel aanspreeklik is om meer as die helfte van die prestasie-areas aan te spreek. Die voorgestelde prioriteringsmodel het uitgewys dat 50% van die prestasie areas dringende aandag vereis.

Die studie sluit af met 10 aanbevelings vir stelsel-herskepping wat daarop gemik is om die Hoof-direktoraat: Infrastruktuur in die Nasionale Departement van Gesondheid na hoër vlakke van volwaardigheid te lei.

Die volgende sleutelterm is toepaslik:

- Program vir die voorsiening van Infrastruktuur vir Gesondheidsorg
- Prestasie taksering
- Hoof-direktoraat: Infrastruktuur
- Nasionale Departement van Gesondheid
- Volwaardigheid met betrekking tot projekbestuur
- Meetinstrumente
- Prioriteringsmodel

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SECTION 1 : INTRODUCTION AND PROBLEM STATEMENT

1. Introduction

Section 27 of the Constitution of the Republic of South Africa (108 of 1996) states that everyone has the right to have access to health care services. The state must take reasonable legislative and other measures, within its available resources, to achieve the progressive realisation of this right.

Section 40 of the same act prescribes that government in the Republic of South Africa is constituted as national, provincial and local spheres of government which are distinctive, interdependent and interrelated. The Department of Public Service and Administration describes this as follows (The Machinery of Government: Structure and Functions of Government, 2003:15):

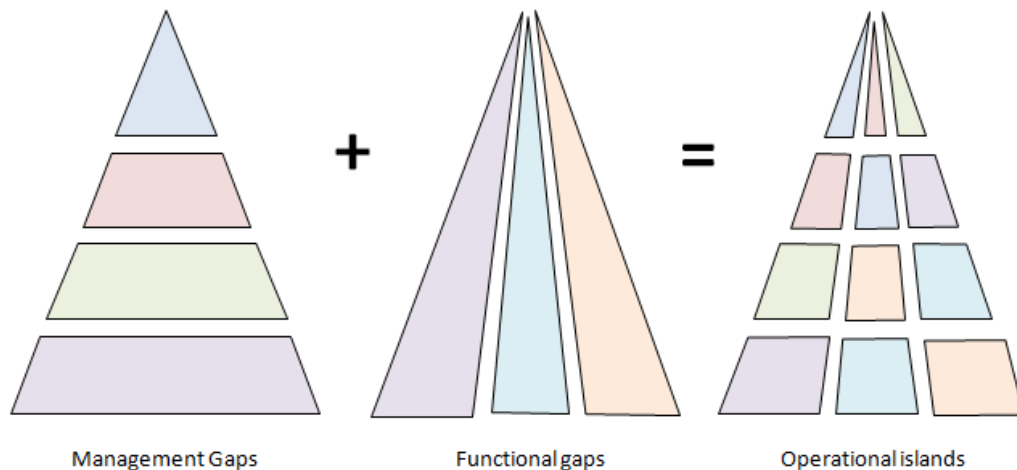
- Distinctive: Meaning that each sphere has its own unique area of operation.
- Interdependent: Meaning that the three spheres are required to operate and acknowledge each other's area of jurisdiction.
- Interrelated: Meaning that there should be a system of co-operative governance and intergovernmental relations among the three spheres.

Schedule 4 of the Constitution prescribes the provision of "Health Services" as a functional area of concurrent national and provincial legislative competence. Such concurrent arrangement adds to the complexity of the implementation of health facilities infrastructure projects.

Health facilities are, in general, the platforms where such health services are provided. Taking cognisance of the two spheres of government responsible for the provision of health services, with approximately two thousand projects per year, at several of the four thousand three hundred health facilities spread over nine provinces, it is easy to comprehend the complexity of the management task.

Kerzner (2009: 5) states that there are always management gaps between various levels of management. Similarly, there are functional gaps between different working units. A superposition of these gaps results in operational islands, as illustrated below:

Figure 1: Operational islands



Source: Kerzner, 2009:5

In the South African context, the “gaps” between the different spheres of government, superimposed on the “gaps” between the clinicians, the technocrats and the financiers of state infrastructure, set the scene for operational islands in the delivery of health facilities infrastructure programmes.

Albert Einstein is quoted as saying “Any intelligent fool can make things bigger, more complex, and more violent. It takes a touch of genius and a lot of courage to move in the opposite direction. Everything should be made as simple as possible, but not simpler. We can't solve problems by using the same kind of thinking we used when we created them.”

This study aims to cut through the clutter and to identify some of the critical issues determining the performance of the Health Facilities Infrastructure Management Programme in South Africa. This study also aims to initiate the formulation of principles which are on a different level of thinking than those which created the clutter.

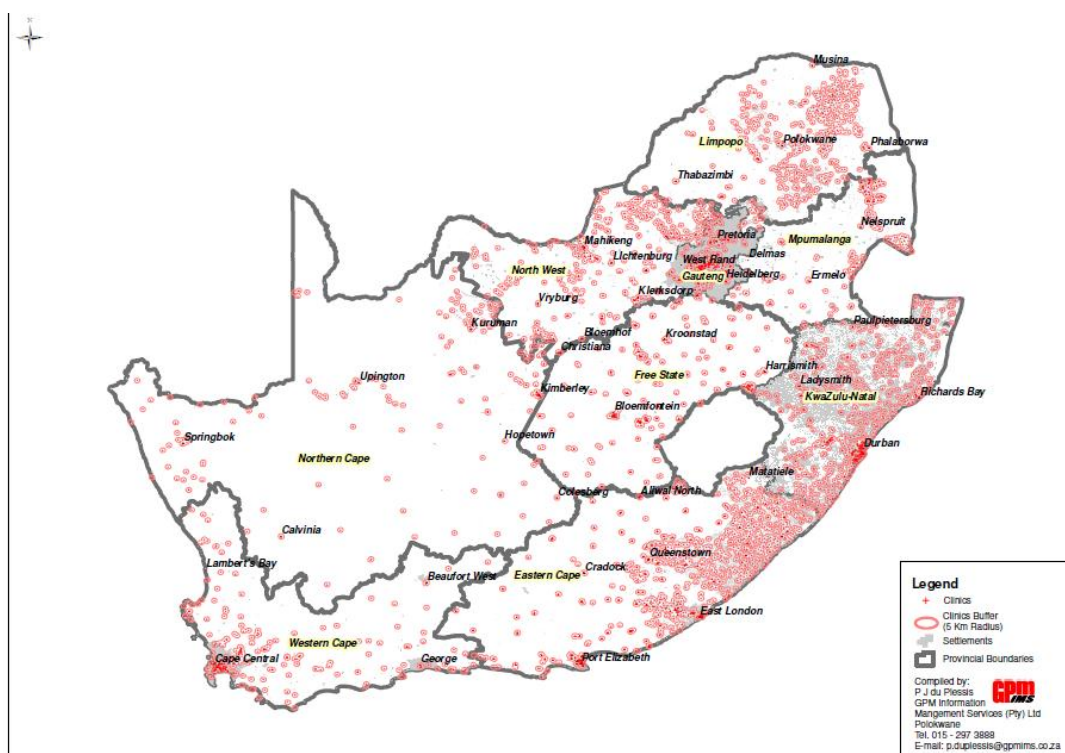
2. Problem statement

2.1. Demarcation of field of study

The provision of health facilities infrastructure is a prerequisite for the provision of several health services.

A distribution of clinics in South Africa is illustrated below, showing a possible 5km service radius. From this illustration, it is clear that a 5km service radius do not cover the entire country. The distribution of clinics seems to follow the distribution of people in the country. This may pose a challenge in the rolling out of the National Health Insurance programme that will depend on seamless referral from lower level facilities to higher level facilities.

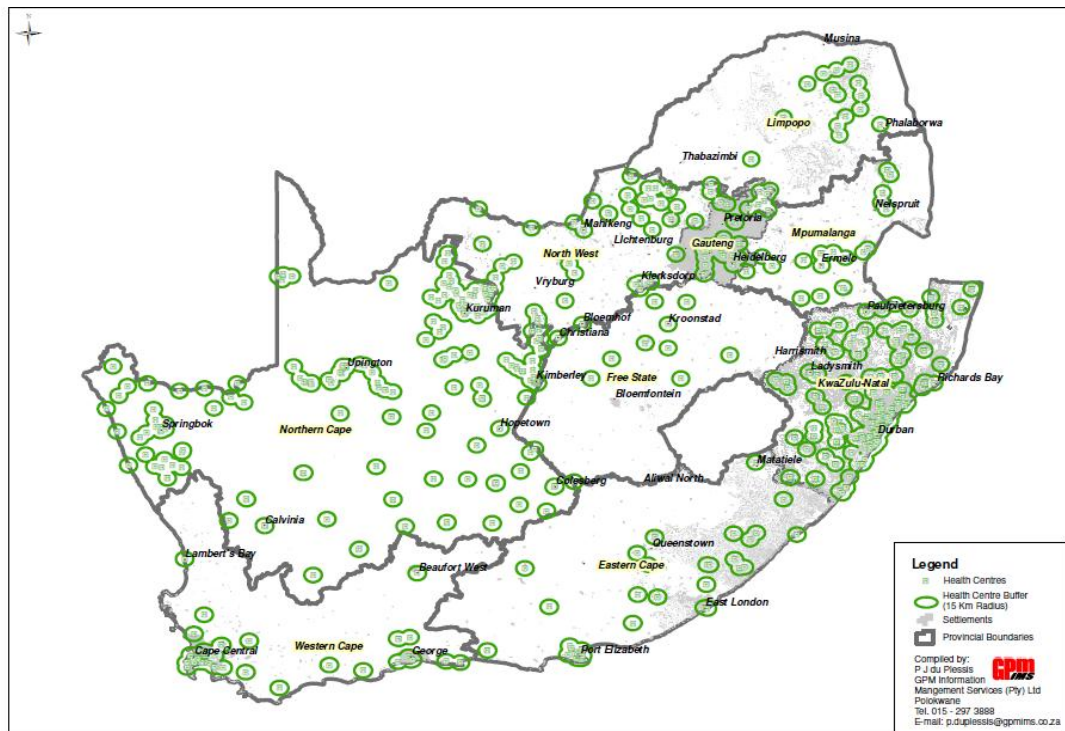
Figure 2: Clinics in South Africa (5km service radius)



Source: GPM Information Management Services, 2012

The distribution of community health centres is illustrated below, indicating a possible 15km service radius. Even in provinces with high population figures, the 15km service radius leaves substantial “un-served” areas.

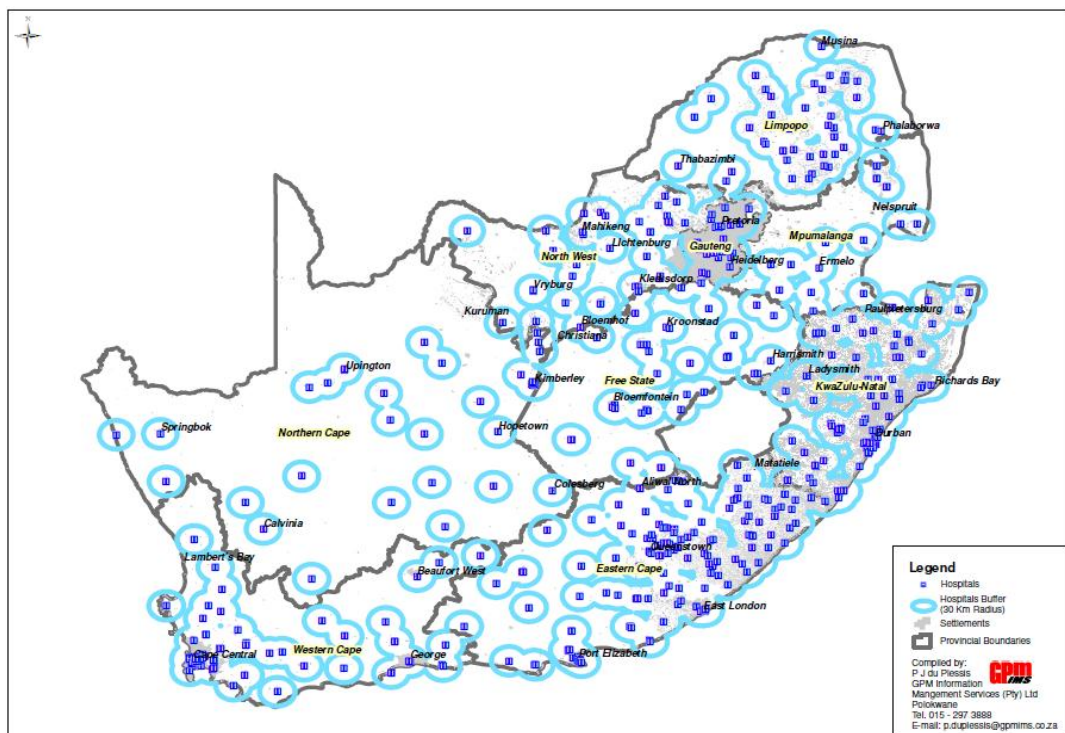
Figure 3: Community health centres in South Africa (15km service radius)



Source: GPM Information Management Services, 2012

The distribution of hospitals is illustrated below, indicating a possible 30km service radius.

Figure 4: Hospitals in South Africa (30km service radius)



Source: GPM Information Management Services, 2012

This study did not try to assess all aspects of health services provision, but focused only on the provision of health facilities infrastructure. There are several important aspects impacting on the efficiency and effectiveness of the Health Facilities Infrastructure Management Programme which fall outside the scope of this study, such as:

- The merit of three spheres of government.
- The total funds available for development in South Africa.
- The availability of human resources and the current application of such resources.
- The merit of a national health insurance initiative.
- The role of politics in development.

The mandates, as defined in South African law, and the conditions and responsibilities associated with South African conditional grants for health infrastructure were assumed as boundaries of this study. Project management processes, as defined by the Project Management Institute (PMI), were used as a basis for project management related evaluations. Similarly, the infrastructure delivery management processes, as defined by the Construction Industry Development Board (CIDB), were accepted as applicable best practice.

Several parameters of health facilities infrastructure performance were identified. Some of these parameters could only be meaningfully assessed in the context of a specific financial year. In such instances, the actual performance during the 2011/12 financial year was used as a basis for the performance evaluation.

As indicated before, the provision of health services is a concurrent function, involving both national and provincial spheres of government. While acknowledging the role of all other organs of state, this study focused on the contribution towards health facilities infrastructure delivery by the National Department of Health, and more specifically the Infrastructure Unit in this department.

2.2. Definition of terms

Table 1: Definition of terms

Key Term	Description
ANC	African National Congress
Asset	An asset is a physical component of a facility which has value, enables services to be provided and has an economic life of greater than twelve months
Asset Register	A record of asset information including inventory, historical, financial, condition and technical information
CIDB	Construction Industries Development Board
Contracting	A strategy that governs the nature of the relationship which the employer wishes to foster with the contractor, which in turn determines the risks and responsibilities between the parties to the contract and the methodology of contractor payment
Contractors	Parties engaged by the Implementing Agent to undertake the installation, erection, construction, refurbishment and or maintenance or repair of civil services infrastructure or building works
Custodian department	Department defined in GIAMA as the custodian of an immovable asset
Design and Construct	Contract in which a contractor designs a project based on a brief provided by the client and then constructs it
Design by Employer Contract	Contract under which a contractor undertakes only construction on the basis of full designs issued by the employer
Develop and Construct Contract	Contract based on a scheme design prepared by the client under which a contractor produces drawings and constructs it
DORA	Division of Revenue Act
ES	Equitable Share
Facility	A facility is a complex comprising many assets which represents a single management unit for financial, operational, maintenance or other purposes.
Health Technology	The application of organised knowledge and skills in the form of devices, procedures and systems developed to solve a health problem and to improve the quality of life
HIG	Health Infrastructure Grant
HOD	Head of Department
HRG	Hospital Revitalisation Grant
IDIP	Infrastructure Delivery Improvement Programme
IDMS	Infrastructure Delivery Management System
Immovable asset	Any immovable asset acquired or owned by government, excluding any right contemplated in the Mineral and Petroleum Resources Development Act [(no 28 of 2002)]
Implementing Agent	An agent appointed by a sponsoring department / SOE to implement an infrastructure / maintenance programme on behalf of the sponsor
Infrastructure	In the context of the IDMS Toolkit this means any building, construction or engineering works constructed for beneficial use and includes maintenance works when referring to an infrastructure programme.
Infrastructure assets	Infrastructure assets are stationary systems forming a network and serving whole communities, where the system as a whole is intended to be maintained indefinitely at a particular level of service potential by the continuing replacement and refurbishments of its components. The network may include normally recognised ordinary assets as components.
Intergovernmental Protocol Agreement	This is an agreement that has been concluded with certain provinces, as enabled in terms of Section 35 of the Intergovernmental Relations Act [No 13 of 2005], to facilitate accelerated infrastructure delivery by agreeing upon a revised allocation of project responsibilities.
IPIP	Infrastructure Programme Implementation Plan
IPMP	Infrastructure Programme Management Plan
IRM	Infrastructure Reporting Model [IRM]
Life –cycle costing	The total cost of an asset throughout its life including planning, design, construction, acquisition, operation, maintenance, rehabilitation, disposal and financing costs.
Maturity model	A “maturity model” is a framework that describes the characteristics of effective processes.
NC&SG	Nursing Colleges & Schools Grant
NDoH	National Department of Health
NHC	National Health Council [NHC]
Organisational process assets	Any or all process related assets that are or can be used to influence the project's success
PDoH	Provincial Department of Health
PIM	Project Implementation Manual
TAU	Technical Assistance Unit in National Treasury
User department	Department defined in GIAMA as the user of an immovable asset

Source: Own construction, 2012

2.3. Research approach

The first phase of research focused on the literature survey, aimed at defining a theoretical base for the empirical survey conducted in the second phase. The literature survey aimed to define ten ideals that will ensure effective and efficient health facilities infrastructure programmes. It drew on the theories of development, systems approach, decision making, strategic management, project management and maturity models to define the ideals related to performance evaluation. From the theories of infrastructure asset management and infrastructure delivery, the literature survey concluded with the ideals related to the delivery of health facilities infrastructure delivery.

During the empirical survey, a set of twelve performance evaluation instruments were identified. Some of these instruments were developed by others; some were adapted from existing evaluation tools and methodologies to suit the purpose of this research, while others were specifically developed during this research. The empirical survey assessed three aspects:

- The current project management maturity in terms of each performance evaluation instrument. For each performance evaluation instrument, a specific four-level project management maturity score was defined.
- The potential impact that the Infrastructure Unit in the National Department of Health can make in terms of improving the efficiency and effectiveness of the health facilities infrastructure programme.
- The urgency with which the National Department of Health should address the current deficiencies, as pointed out in the assessments, utilising the various performance evaluation instruments.

The findings and results of the empirical survey were documented per instrument and provided the assessed maturity level.

2.4. Structure of dissertation

This dissertation is structured as follows:

- Section 1: Introduction and problem statement:
 - 1. Introduction.
 - 2. Problem statement.
- Section 2: Literature overview:
 - 3. Introduction.
 - 4. Overview of performance evaluation theory.

- 5. Overview of infrastructure delivery theory.
- Section 3: Empirical survey:
 - 6. Introduction.
 - 7. Evaluation of goal accomplishment.
 - 8. Evaluation of resource acquisition.
 - 9. Evaluation of internal processes.
 - 10. Evaluation of strategic constituencies' satisfaction.
 - 11. Summary of empirical survey.
- Section 4: Findings and results:
 - 12. Introduction.
 - 13. Evaluation of goal accomplishment.
 - 14. Evaluation of resource acquisition.
 - 15. Evaluation of internal processes.
 - 16. Evaluation of strategic constituencies' satisfaction.
 - 17. Summary.
- Section 5: Conclusion:
 - 18. Observations.
 - 19. Recommended system transformation.
- Reference list.

2.5. Basic hypothesis

The performance of the Health Facilities Infrastructure Management Programme in South Africa is sub-optimal and the Infrastructure Unit in the National Department of Health can significantly contribute to the improvement of the performance.

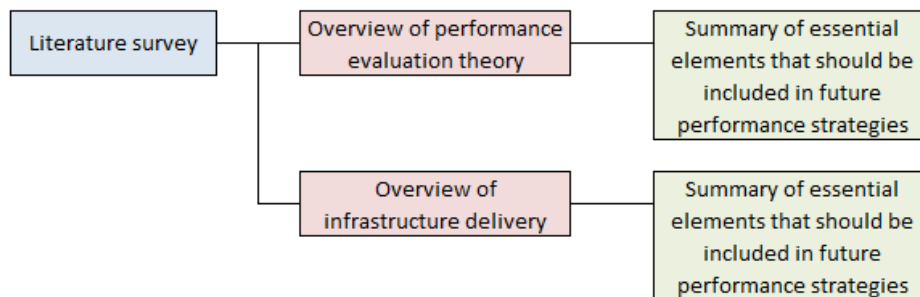
Put differently, a lack of contribution by the Infrastructure Unit in the National Department of Health has a detrimental effect on the performance of the Health Facilities Infrastructure Management Programme in South Africa.

SECTION 2 : LITERATURE OVERVIEW

3. Introduction

A literature survey was conducted across a variety of general management, strategic management and project management publications. The basic structure of this section is illustrated below:

Figure 5: Structure of literature overview



Source: Own construction, 2012

The overview of the performance evaluation theory starts with a definition of development and systems approach. A brief recap on the basic decision making theory leads to the application of decision making in strategic management and project management. From an understanding of what we want to achieve (development), how we want to achieve it (strategic management) and how we want to manage such a development process (project management), various models of measuring performance were explored.

This section ends with a set of ten ideals which should characterise the South African Health Facilities Infrastructure Programme.

4. Overview of performance evaluation theory

4.1. Development

Scheepers (2000: 1-8) defines development as a people-centred process of change. This process depends, for its ultimate success, on the capacity of people to manage the process through a variety of critical steps and phases. All of this happens within the limits of an institutional and value framework that will guarantee meaningful and lasting improvement of quality of life for all in a peaceful, stable and well-governed environment.

Scheepers describes this development process as follows:

- Phase 1 : Empowerment:
 - Step 1 – Awareness of a need and realisation of responsibility to make a difference.
 - Step 2 – Education and training to develop an understanding of the options and to make informed decisions.
 - Step 3 – Community involvement to pool skills and knowledge aimed at improving the chances of success.
 - Step 4 - Networking of stakeholders to establish functional systems and procedures that will support a community-based development process.
- Phase 2 : Leadership:
 - Step 5 – Leading the transformation of the hearts and minds of people aimed at the achievement of common goals, through relationships of trust.
 - Step 6 – Managing processes and procedures focussed on achieving the project or programme objectives.
- Phase 3 : Change:
 - Step 7 – Implementation of projects, programmes and transformation.
 - Step 8 – Growth in people through empowerment.
 - Step 9 – Distribution of resources to ensure sustainability.
 - Step 10 – Monitoring of progress and change in order to adapt to ever-changing needs and circumstances.

Scheepers argues that steps may be combined or modified depending on the nature of the projects or programmes. He warns that a development process will in all probability fail if any of the steps are omitted.

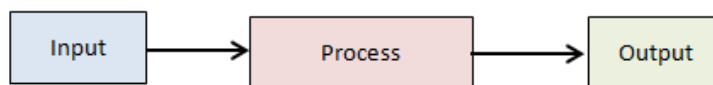
The recipients of health services are people. Health facilities are mere platforms for the delivery of health services to people. It is therefore critical that health facilities infrastructure

programmes are planned and implemented with people in mind. At least some of the measurable performance indicators should be defined in terms of the impact on people.

4.2. Introduction to a systems approach

Dorf and Bishop (2005: 2) define a control system as an interconnection of components forming a system configuration that will provide a desired system response. The linear system theory, assumes a cause-effect relationship for the components of the system. Therefore, a process to be controlled can be presented by a block as illustrated below:

Figure 6: Basic system



Source: Dorf and Bishop, 2005:2

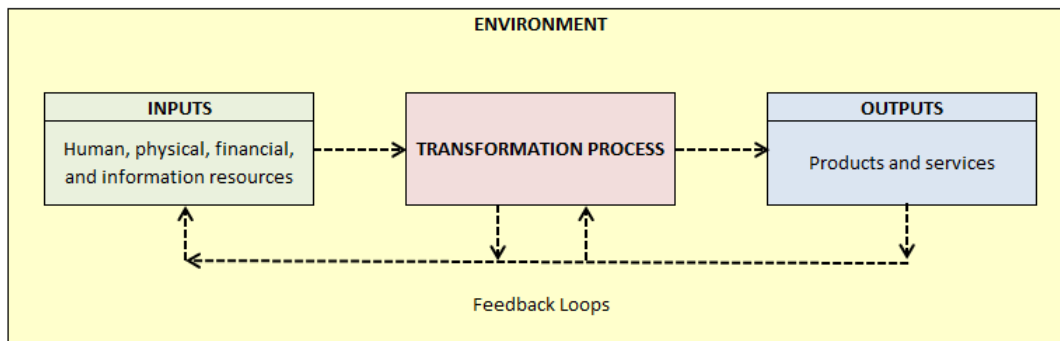
Hellriegel *et al* (2002: 58) differentiate between open systems and closed systems in the following manner:

- A closed system limits its interactions with its environment.
- An open system interacts with the external environment.

Cummings and Worley (2001: 85) argue that organisations are open systems, because they cannot completely control their own behaviour and are influenced in part by external forces.

Hellriegel *et al* (2002: 57-58) summarise the systems viewpoint of management as an approach to solving problems by diagnosing them within a framework of inputs, transformation processes and outputs. This interaction takes place in a specific environment and requires feedback loops between the elements of the system. This is illustrated in the figure below:

Figure 7: System feedback loops



Source: Hellriegel *et al*, 2002:58

The National Department of Health in South Africa, for instance, is affected by environmental conditions such as population growth, migration patterns, burden of disease, legislation and political priorities. Similarly, all provincial departments responsible for health facilities are affected by environmental factors.

The South African health facilities infrastructure programme can be classified as an open system. The need for health facilities infrastructure is an input and the delivered infrastructure is an output. All the planning, design and procurement are transformation processes within a political and economic environment. The satisfaction of strategic constituencies provides continuous feedback.

4.3. Models of decision making

Kreitner and Kinicki (2004: 372-382) propose two fundamental models of decision making:

- The rational model.
- The normative model.

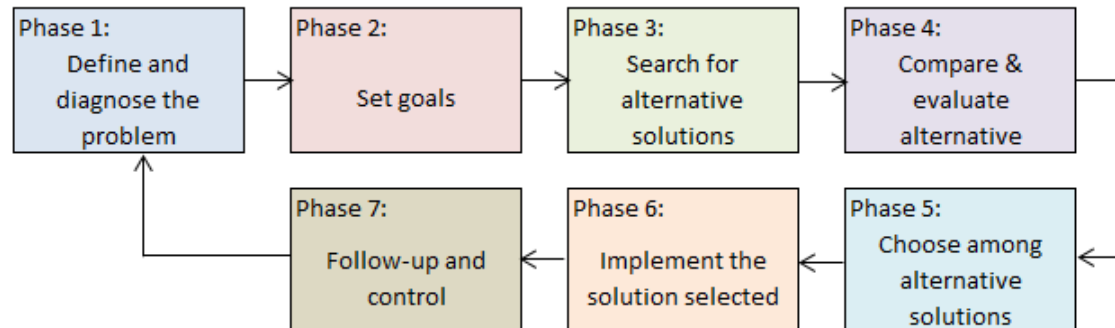
4.3.1. Rational model

The rational model analytically breaks down the decision making process into consecutive steps. Kreitner and Kinicki (2004: 372-382) describe a four-step sequence when making decisions:

- Step 1: Identifying the problem.
- Step 2: Generating alternative solutions.
- Step 3: Selecting a solution.
- Step 4: Implementing and evaluating the solution.

Hellriegel *et al* (2002: 228-231) describe rational decision making as a seven-phase process, illustrated as follows:

Figure 8: Rational decision making



Source: Hellriegel *et al*, 2002:229

The first step is to identify the problem, assuming that a problem exists when the actual situation differs from the desired situation. Kreitner and Kinicki (2004:372-382) refer to three methods to identify problems:

- Rely on past experience to predict the future. For example, the average population growth rate was 5% over the past ten years and is therefore expected to continue at that rate.
- Develop projections or scenarios to estimate what is expected to occur in the future. For example, if there is an increase in urbanisation in the future, the current focus on additional infrastructure in rural areas may need to change to a focus on additional infrastructure in urban areas.
- Perceptions of customers. For example, a referral model of health care (where a patient reports to the clinic first, and may get referred to a hospital if necessary) may be perceived as negative, because the hospital may be closer to the patient's home than the clinic.

The second step is to set goals. Hellriegel *et al* (2002: 230) define goals as results to be attained; the direction towards which decisions and actions should be aimed. General goals provide broad direction and are defined in qualitative terms. Operational goals state what is to be achieved in quantitative terms.

The third step is to search for alternative solutions. Kreitner and Kinicki, (2004: 390-393) propose brainstorming, nominal group techniques, the Delphi technique or computer-aided techniques to stimulate creativity.

The fourth step is to compare and evaluate alternative solutions. Kreitner and Kinicki, (2004: 374) describe this as maximising the expected utility of an outcome. Kerzner identifies three categories of such comparison and evaluation (Kerzner, 2009: 747):

- Decision making under certainty, assuming that the expected payoffs for each alternative is known. Mathematically, this can be shown with payoff matrixes.
- Decision making under risk, assuming that probabilities must be assigned to each possible outcome. If the probabilities are erroneously assigned, different expected values will result, giving a different perception of the best alternative.
- Decision making under uncertainty, requiring techniques such as maximax criterion (based on maximum profit for decision maker), the maximin criterion (based on how much the decision maker can afford to lose), or the minimax criterion (based on the minimum value of the maximum regret).

The fifth step is to choose among alternative solutions. Kreitner and Kinicki, (2004: 374) state that this is no easy task as people vary in their preferences for safety or risk. Taking cognisance of the subjective nature of decision making, he concludes that the ethics of the solution should be considered.

The sixth step is to implement the solution selected. Kreitner and Kinicki, (2004: 375) list three managerial tendencies that tend to undermine effective implementation:

- The tendency not to ensure that people understand what needs to be done.
- The tendency not to ensure the acceptance or motivation for what needs to be done.
- The tendency not to provide appropriate resources for what needs to be done.

The seventh step is the follow up and control. After a solution is implemented, the evaluation process assesses its effectiveness. An effective solution will reduce the gap between the actual and the desired states that created the problem (Kreitner and Kinicki, 2004: 374-375).

4.3.2. Normative model

Herbert Simon argued that the rational decision making model does not even remotely describe the processes that human beings use for making decisions in complex situations. Simon pointed out that a decision maker is bounded or restricted by a variety of constraints. As opposed to the rational model, Simon's normative model suggests that actual decision making is characterised by the following (Kreitner and Kinicki, 2004: 376-378):

- Limited information processing, referring to the tendency to limit the search for all available information. Individuals usually do not do an exhaustive search for possible

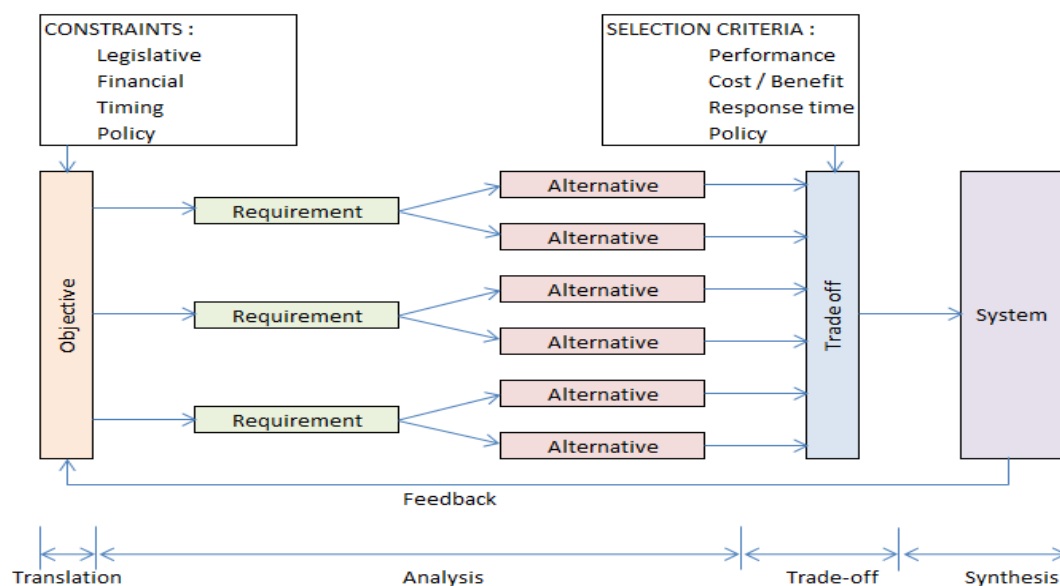
goals or alternative solutions. They consider options until they find one that seems adequate.

- Judgmental heuristics, referring to the tendency to base decisions on information readily available in memory, or to assess the likelihood of an event occurring based on impressions about similar occurrences.
- Satisficing, referring to the tendency to choose a solution that meets a minimum standard of acceptance, as opposed to a solution that is optimal.

4.3.3. A systems approach to decision making

Kerzner (2009: 84) is critical of the subjective thinking assumed under the normative decision making model. He argues that objective thinking is a fundamental characteristic of the systems approach and is exhibited by emphasis on the tendency to view events, phenomena and ideas as external and apart from self-consciousness. By applying a systems approach to decision making, he illustrates this as follows:

Figure 9: Systems approach to decision making



Source: Kerzner, 2009: 84

Ultimately, decisions are made on the basis of judgements. Analysis is only an aid to the judgement and intuition of the decision maker. Such a systems approach to problem solving has the following phases of development (Kerzner, 2009: 83-85):

- Translation, where terminology, problem objectives, constraints and selection criteria are defined and accepted by all participants. The objective refers to the function of the

system or the strategy that must be achieved, while a requirement refers to a partial need to satisfy the objective.

- Analysis, where alternative solutions are defined.
- Trade-off, where constraints and selection criteria are applied to evaluate alternatives.
- Synthesis, where the best solution in reaching the objective is selected and implemented.

The South African Health Facilities Infrastructure Management Programme should be approached in a rational manner, applying a systems approach to decision making. Clear objectives are required, translated into measurable requirements.

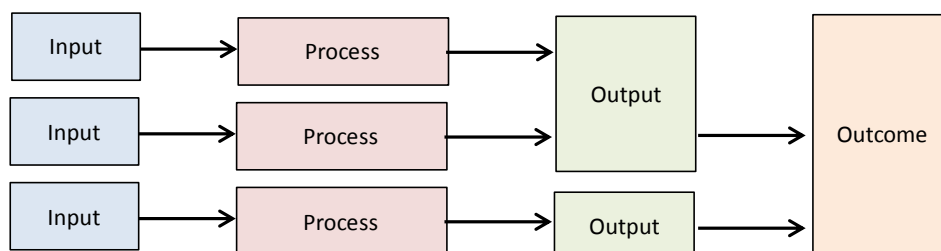
4.4. Strategic management

Thompson refers to Constable's (1980) definition of strategic management as “the management processes and decisions which determine the long-term structure and activities of the organisation”. This definition incorporates the following five key themes (Thompson, 1993: 6):

- Management processes.
- Management decisions.
- Time scales.
- Structure of the organisation.
- Activities of the organisation.

It is useful to differentiate between output and outcome. Activities produce outputs, whereas outcomes are the result of outputs. For example, a construction activity may produce a building of some 1 000m². Another procurement activity may deliver furniture and equipment to the building. Both of these are outputs from the various activities. The combination of these outputs may constitute a new clinic, which can be described as an outcome. This may be illustrated as follows:

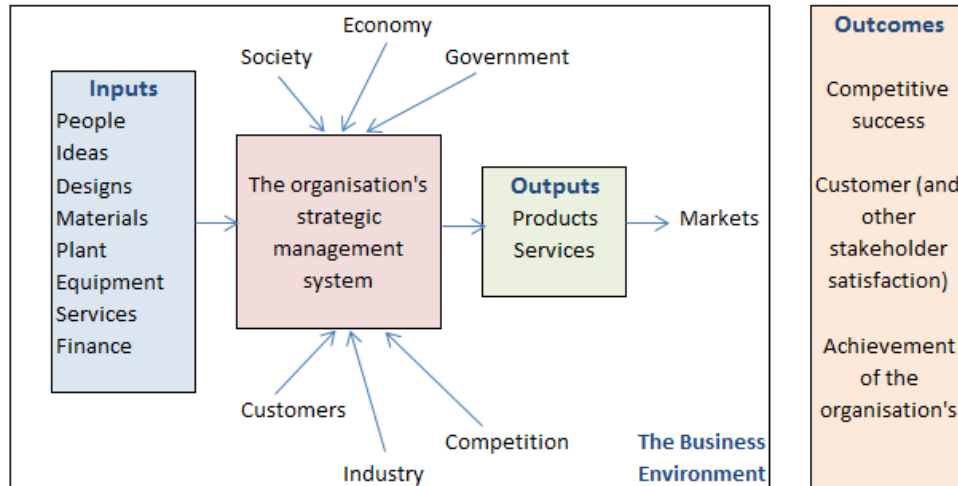
Figure 10: Input, process, output, outcome relationship



Source: Own construction, 2012

Thompson illustrates this interdependency between the organisation and its environment as follows (Thompson 1993: 9-10):

Figure 11: Interdependency between organisation and environment



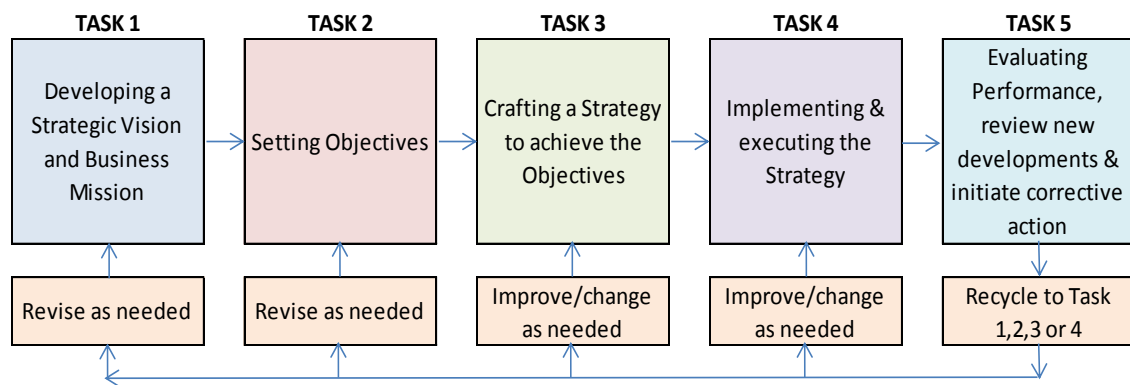
Source: Thomson, 1993: 10

Thompson and Strickland describe strategic management in terms of the following five tasks (Thompson and Strickland, 1996: 4, 22, 36, 240, 14):

- Task 1: A strategic vision provides a big picture perspective of “who we are, what we do, and where we are headed. A mission defines the essential purpose of the organisation, why it is in existence, the nature of business it is in, and the customers it seeks to serve.
- Task 2: Objectives convert the strategic visions into target outcomes and performance milestones. For performance objectives to have value as a management tool, they must be stated in quantifiable or measureable terms, they must contain a deadline for achievement. Holding managers accountable for assigned targets provides a benchmark for judging the organisation's performance.
- Task 3: The strategy is all about how to get the organisation from where it is to where it wants to be.
- Task 4: Every manager has an active role in the process of implementing strategy. Companies don't implement strategies, people do.
- Task 5: Constant monitoring of performance leads to improvements, changes and corrective action.

These five tasks of strategic management are illustrated below:

Figure 12: Five tasks of strategic management



Source: Thompson and Strickland, 1996:4

A clear definition of what needs to be achieved in health facilities infrastructure is required. This is similar to the strategic vision described by Thompson and Strickland (Figure 12), or the objective described by Kerzner (Figure 9). From there, measurable outputs and outcomes should be defined. This will be similar to the objectives described by Thompson and Strickland (Figure 12) and Kerzner's requirements (Figure 9). Crafting a strategy refers to the identification or development of transformation processes that will lead to the desired outputs and outcomes. This is an iterative loop, requiring constant feedback.

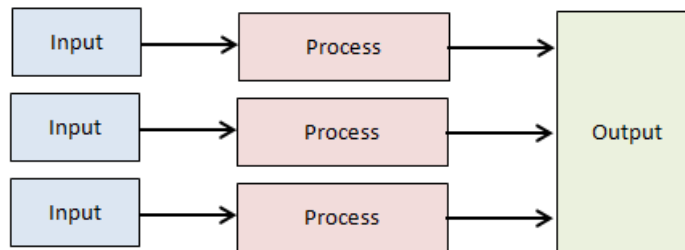
4.5. Project management

4.5.1. Introduction

Kerzner, (2009: 38) refers to work by Dr Ludwig von Bertalanffy in 1951, who described open systems through the use of anatomy nomenclature. The body's muscles, skeleton, circulatory system and so on, were all described as sub-systems of the total system, the human being. The importance of Dr von Bertalanffy's contribution was in recognising how specialists in each sub-system could be incorporated so as to get a better understanding of the interrelationships between the sub-systems. Kerzner (2009: 38) also refers to the contribution of Kenneth Boulding in 1956, who identified the communications problems that can occur during systems integration. Boulding argued that sub-system specialists tend to each speak their own language. He advocated that successful integration would be dependent on all sub-system specialists speaking the same language.

Kerzner (2009: 54) points out that a system is merely a collection of interacting sub-systems that, if properly organised, can provide a synergistic output. Such synergy is illustrated below:

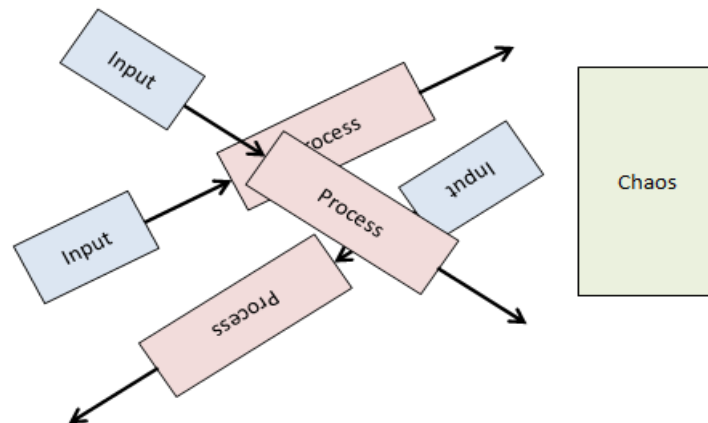
Figure 13: Aligned sub-systems



Source: Own construction, 2012

The synergistic output assumes alignment of sub-systems. A misaligned set of sub-systems will lead to chaos as illustrated below:

Figure 14: Misaligned sub-systems



Source: Own construction, 2012

According to Kerzner (2009: 38), general systems theory implies the creation of a management technique that is able to cut across many organisational disciplines while still carrying out the functions of management. This technique has come to be called systems management, project management or matrix management. These terms are used interchangeably. Kerzner (2009: 54) defines programmes as sub-systems. Projects are therefore sub-systems of programmes.

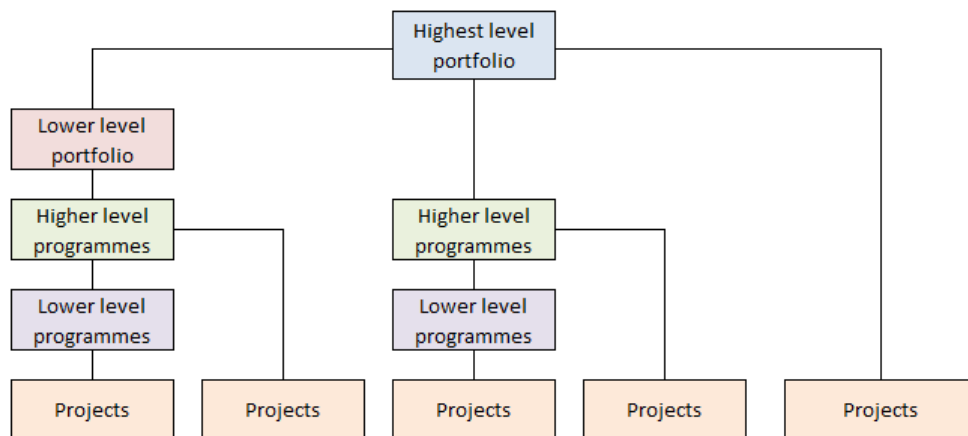
The Project Management Institute provides the following definitions (PMBOK 2008: 7-10):

- A project is a temporary endeavour undertaken to create a unique product, service or result.
- A programme is defined as a group of related projects managed in a coordinated way to obtain benefits and control not available from managing them individually.

- A portfolio refers to a collection of projects or programmes and other work that are grouped together to facilitate effective management of that work to meet strategic business objectives.

The relationship described above is illustrated as follows:

Figure 15: Relationship between projects, programmes and portfolios



Source: Project Management Institute PMBOK, 2008: 8

Project management is defined as the application of knowledge, skills, tools and techniques to project activities to meet project requirements. Project management is accomplished through the appropriate application and integration of the 42 logically grouped project management processes comprising five process groups. These process groups are initiating, planning, executing, monitoring and controlling, and closing.

In the context of health facilities infrastructure, there are typically around 2 000 projects per year. These projects are funded through four main sources, namely:

- Hospital revitalisation grant.
- Health infrastructure grant.
- Nursing colleges and schools grant.
- Equitable share.

Within a province, projects are grouped per funding source. This gives rise to lower level programmes. Examples are the hospital revitalisation programme in the Limpopo Province of South Africa, or the nursing colleges and schools programme in the Mpumalanga Province of South Africa.

The various lower level programmes (per funding source) in a province are grouped into a higher level programme per province. Such a higher level programme in Limpopo Province will therefore include the four lower level programmes that were constituted per funding source.

Similarly, the higher level provincial programmes are grouped together into a national portfolio for health facilities infrastructure. Such a national portfolio also includes other projects, not included in the provincial programmes. Examples of such other projects include:

- Development of norms and standards for infrastructure planning.
- Development of cost models for order of magnitude cost estimates of health facilities infrastructure projects.
- Assessment of the implementation status of capital projects.
- Establishment of a project management support unit in the National Department of Health.
- Development of a programme management information system for health facilities infrastructure projects.

4.5.2. Critical system inputs

Hellriegel *et al* (2002: 58) describe inputs as the physical, human, material, financial and information resources that enter a transformation process. Cummings and Worley (2001: 88-104) identify the following inputs:

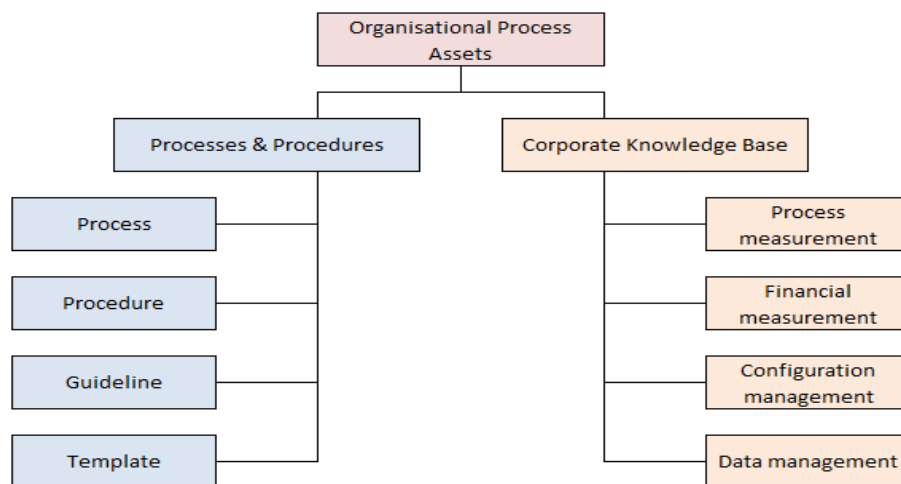
- On an organisational level:
 - General environment, for example the social, technological, economic and political forces.
 - Industry structure, for example the relationship between national and provincial departments responsible for health services.
- On a group level:
 - Organisation design, for example organisational structure, human resource systems, organisational culture and measurement systems.
- On an individual level:
 - Group design, for example group task structure, goal clarity, composition and performance norms.
 - Personal characteristics, for example education, experience, skills and abilities.

The Project Management Institute (PMI) defines input as any item, whether internal or external to the project that is required by a process before that process proceeds. Such an input may be an output from a predecessor process (PMBOK, 2008: 346).

4.5.2.1. Organisational Process Assets

The Project Management Institute (PMI) defines 42 project management processes, arranged in five process groups and across nine knowledge areas. Organisational process assets are indicated in 34 of these processes as an input (PMBOK, 2008: 46-65). The Project Management Institute groups organisational process assets into two categories, as illustrated below:

Figure 16: Organisational process assets



Source: Own construction, 2012

One category of organisational process assets is generally referred to as processes and procedures. This category includes the following (PMBOK, 2008: 32-33):

- Processes:
 - Organisational standard processes such as standards, policies (e.g. safety and health policy, ethics policy, and project management policy), standard product and project life cycles, and quality policies and procedures (e.g. process audits, improvement targets, checklists, and standardised process definitions for use in the organisation).
- Procedures:
 - Financial controls procedures (e.g. time reporting, required expenditure and disbursement reviews, accounting codes, and standard contract provisions).
 - Issue and defect management procedures defining issue and defect controls, issue and defect identification and resolution, and action item tracking.

- Change control procedures, including steps by which official company standards, policies, plans, and procedures (or any project documents) will be modified, and how any changes will be approved and validated.
- Procedures for prioritising, approving, and issuing work authorisations.
- Guidelines:
 - Standardised guidelines, work instructions, proposal evaluation criteria, and performance measurement criteria.
 - Guidelines and criteria for tailoring the organisation's set of standard processes to satisfy the specific needs of the project.
 - Project closure guidelines or requirements (e.g. final project audits, project evaluations, product validations, and acceptance criteria).
 - Organisation communication requirements (e.g. specific communication technology available, allowed communication media, record retention policies, and security requirements).
- Templates:
 - Templates (e.g. risk, work breakdown structures, project schedule network diagram, and contract templates).
 - Risk control measures, including risk categories, probability definition and impact, and probability and impact matrix.

A second category of organisational process assets is generally referred to a corporate knowledge base. This category includes the following (PMBOK, 2008: 32):

- Process measurement:
 - Process measurement databases are used to collect and make available measurement data on processes and products.
 - Issue and defect management databases containing issue and defect statuses, control information, issue and defect resolution, and action item results.
- Financial measurement :
 - Financial databases containing information such as labour hours, incurred costs, budgets and project cost overruns.
- Configuration management:
 - Configuration management knowledge bases containing the versions and baselines of all official company standards, policies, procedures, and any project documents.
- Data management:

- Project files (e.g. scope, cost, schedule, and performance measurement baselines, project calendars, project schedule network diagrams, risk registers, planned response actions, and defined risk impact).
- Historical information and lessons learned knowledge bases (e.g. project records and documents, all project closure information and documentation, information about both the results of previous project selection decisions and previous project performance information, and information from the risk management effort).

4.5.2.2. Enterprise Environmental Factors

The Project Management Institute defines enterprise environmental factors as internal and external factors that surround or influence a project's success. These factors may come from any or all of the enterprises involved in the project. Such factors may enhance or constrain project management options and may have a positive or negative influence on the outcome. In 18 of the 42 project management processes defined by the Project Management Institute, enterprise environmental factors are listed as an input. These factors include, but are not limited to the following (PMBOK, 2008: 14):

- Organisational culture and structure.
- Government of industry standards.
- Existing facilities.
- Existing human resources.
- Organisation work authorisation systems.
- Stakeholder risk tolerances.
- Political climate.
- Organisational communication channels.
- Project management information systems.

4.6. Performance evaluation

4.6.1. Evaluation models

Burgelman *et al* (2004: 150) point out that the conventional view of performance evaluation in the strategy literature is in terms of the outcomes. This approach, unfortunately, provides little insight in how exactly the outcomes came about. The performance evaluation of a swimmer is used as an example. To simply measure the time needed to swim a certain distance and to communicate that outcome to the swimmer, will not help the swimmer reach his/her highest possible performance. A detailed analysis of the swimmer's every movement is needed.

A key performance area is a managerial activity that is essential to the performance of the organisation. Schutte differentiates between “common” performance areas and “unique” performance areas. “Common” performance areas relate to a manager’s accountability and thus reflect his responsibility to see that subordinates are performing satisfactorily. “Unique” key performance areas are those for which the manager and he alone is responsible. Schutte (1993: 21-24) describes the following characteristics of “unique” key performance areas :

- It is unique to a position and can never be duplicated in the hierarchy.
- It is expressed in terms of end results to be achieved and not as inputs or activities.
- It must be measureable – preferably objectively.
- A managerial position normally has between three and five key performance areas.
- It is not necessarily the most time-consuming activity.
- It is aligned with, and supports, the key performance areas of other positions in the organisation.
- It reflects top management’s strategy on how the organisation is to be managed.

Hellriegel *et al* (2002: 360) argue that a performance appraisal, which necessarily reflects the past, is not an end to be achieved. It is rather a means for moving into a more productive future. Regular assessment of progress towards attaining goals keeps employees motivated. Regular feedback also encourages periodic re-examination of goals to determine whether they should be adjusted.

Performance appraisal therefore refers to the following:

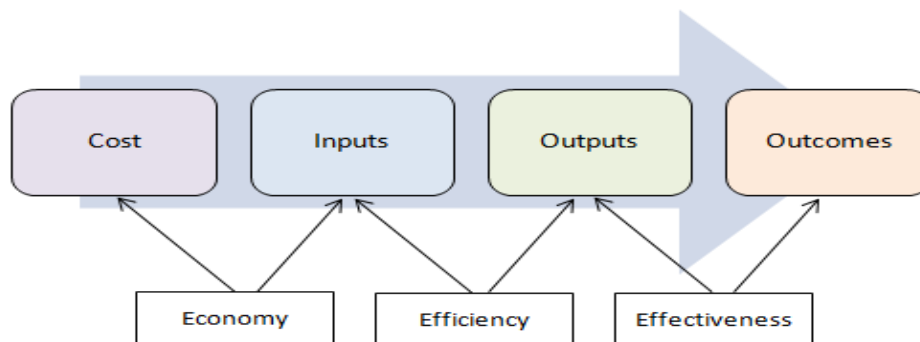
- Clear definition of envisaged outcome.
- Clear definition of specific outputs that will ensure such outcome.
- Clear definition of key performance areas (linked to outputs) for all staff.
- Evaluating the performance of staff in terms of their key performance areas.
- Agree on changes in behaviour of staff, where required.
- Agree on changes in goals, where required.

Performance appraisal is a feedback system that involves the direct evaluation of group performance (Cummings and Worley, 2001: 389).

Quality is defined as how well a product or service does what it is supposed to do. The godfather of the quality movement was W. Edwards Deming (1900-1993), who argued that poor quality is 85% a management problem and only 15% a worker problem. Deming used statistics to assess and improve quality. The quality control process generally measures inputs, transformation processes and outputs (Hellriegel *et al*, 2002: 62).

Three of the performance evaluation models discussed by Louis Kok (2008: 99-107) refer to this relationship between input, process, output and outcome. The “Three-E’s” model is illustrated as follows:

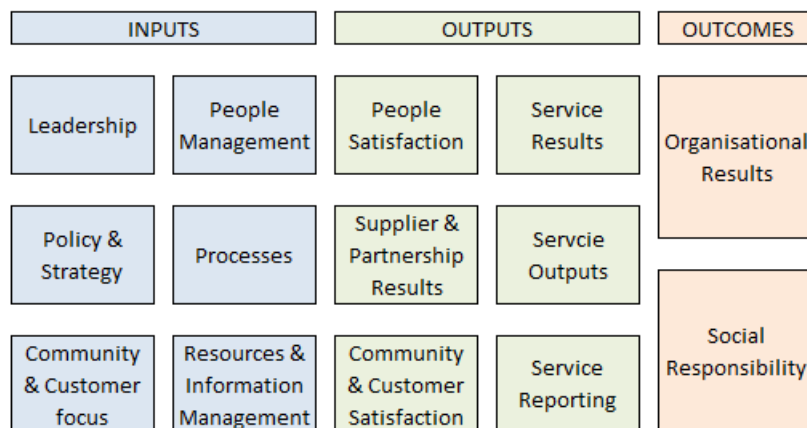
Figure 17: Three-"E"s model for performance evaluation



Source: Kok, 2008: 99

The “Excellence” model is based on the assumption that there is a need to manage the whole system and not only the results. A re-configured model is illustrated below:

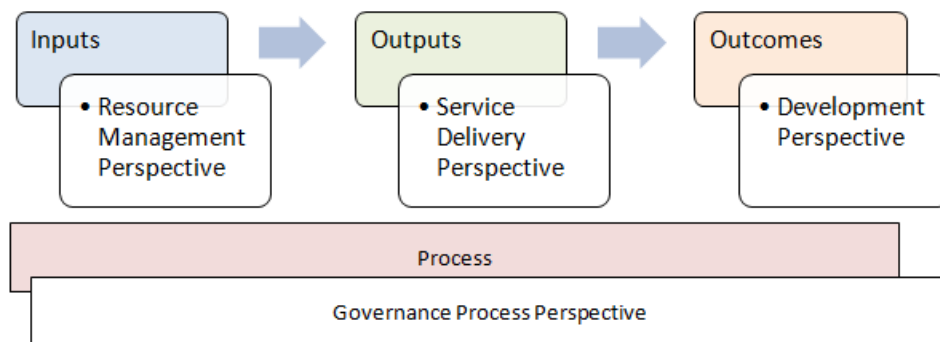
Figure 18: “Excellence” model for performance evaluation



Source: Kok, 2008: 106

The “Local Hybrid” model is more clearly aligned with the systems approach to management. Louis Kok illustrates this model as follows:

Figure 19: "Local hybrid" model for performance evaluation



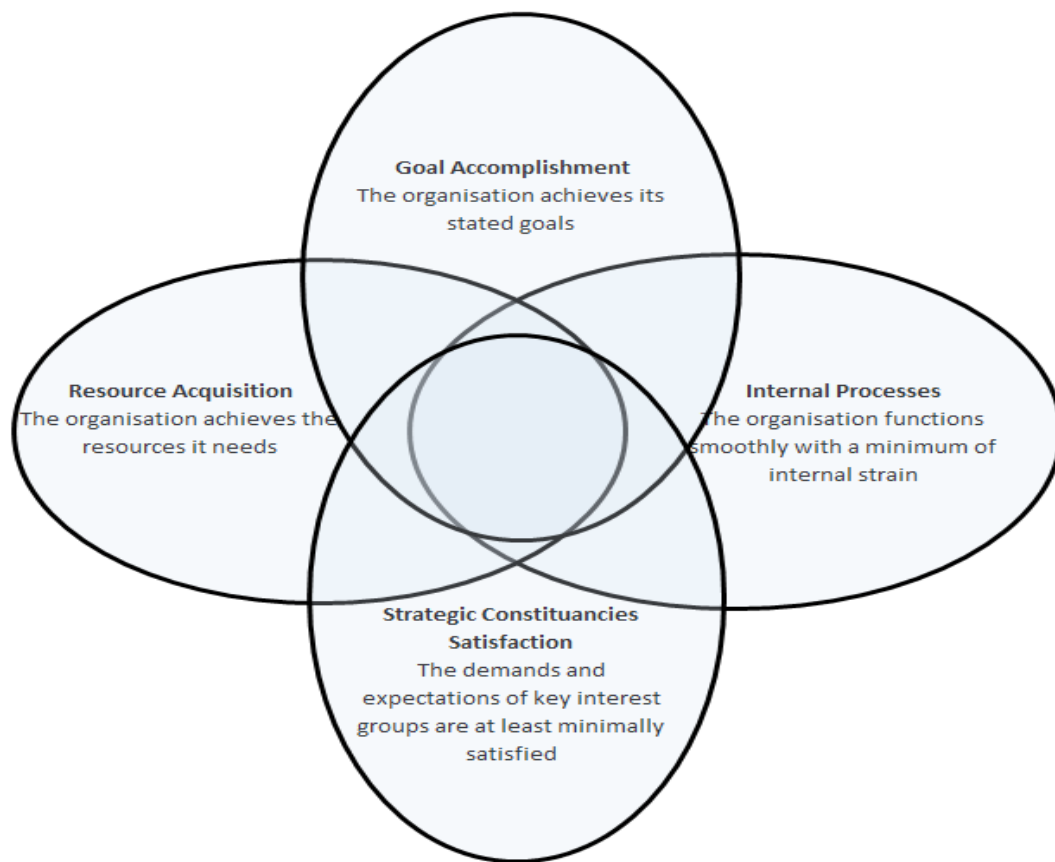
Source: Kok, 2008: 107

The preferred model is a multi-dimensional approach proposed by Kreitner and Kinicki (2004: 646-650). Their model offers the following guidelines towards the identification of an appropriate combination of effectiveness criteria:

- Goal accomplishment:
 - Key organisational results or outputs are compared with previously stated goals or objectives.
 - Deviations, either plus or minus, require corrective action.
- Resource acquisition:
 - An organisation is deemed effective in this regard if it acquires the necessary factors of production such as raw materials, labour, capital, managerial and technical expertise.
- Internal processes:
 - An organisation is said to be a healthy system if information flows smoothly and if employee loyalty, commitment, job satisfaction and trust prevail.
 - Goals may be set for any of these internal processes.
- Strategic constituencies' satisfaction:
 - A strategic constituency is any group of individuals who have some stake in the organisation.
 - Constituencies may have competing or conflicting interests.

This model is illustrated below:

Figure 20: "Multi-dimensional" model for performance evaluation



Source: Kreitner and Kinicki, 2004: 646

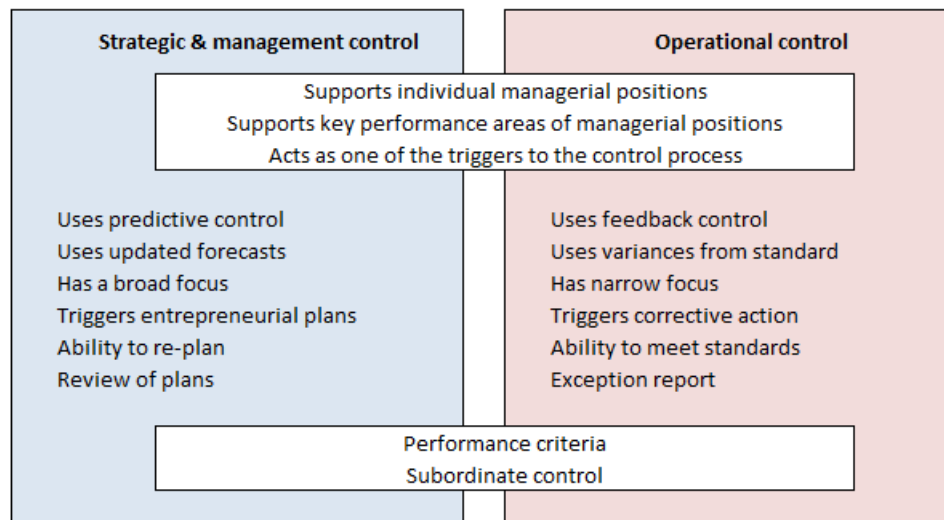
In line with this multi-dimensional model for performance evaluation, a total of twelve performance evaluation instruments were identified to cover the four dimensions indicated above. A detailed description of each instrument is covered in Section 3.

4.6.2. Performance measures

Managers are on the whole slaves of the systems within which they function. Schutte (1993: 106-112) argues that it is therefore vitally important that the structure of systems, and more importantly, control systems, direct attention to those issues which are important from the organisation's point of view.

Schutte differentiates between control systems for strategic planning and control systems for operational control. There is also some common and some unique characteristics of control. Such differentiation is illustrated below:

Figure 21: Strategic and operational control systems



Source: Schutte, 1993: 107

- Support individual managerial positions – Organisations do not control, only managers within organisations do. Each manager should receive sufficient information to control his own area of responsibility as well as those areas which he has delegated to his subordinates.
- Support key performance areas of managerial positions – In line with the application of Pareto's Law, key performance areas should represent the 20% of managerial activity which contributes 80% to organisational performance. If this principle is not applied, managers will receive an overabundance of irrelevant information.
- Acts as one of the triggers to the control process – Control systems are triggers for action and not intended to provide all the information required for decision making.
- Predictive and feedback control – Strategic and management control is predictive in the sense that the future environment is predicted and the most appropriate action in view of that prediction is initiated. Operational control is concerned with feedback on actual performance and, if unacceptable, corrective action.
- Forecasts and variations - Strategic and management control requires some form of forecast reflecting organisational results at some future date. Operational control requires variance in performance relative to acceptable tolerance limits.
- Level of focus - Strategic and management control has a broad focus, resulting in the consideration of a large number of alternative courses of action. Operational control has a narrow focus, and the nature of the problem often dictates a single solution.
- Type of action required - Strategic and management control is not merely aimed at correcting unfavourable variances or trends. It considers changes in strategic direction

and approach (entrepreneurial plans). Operational control is focused on input-process-output malfunctioning. The source of malfunction is identified and corrected.

- Performance criteria – Objectives are quantified in different ways:
 - At top management level as the purpose objectives of the organisation.
 - At middle management level as the agreed-upon operation objectives.
 - At lower management level as standards that have been established.
- Subordinate control – Control over subordinates involves control over the effective management of the key performance areas of those subordinates.

The “SMART” rule of thumb promotes performance measures that are (Association of Local Government Engineering NZ, 2006: 3.11):

- Specific, with clear reference to a specific input, process or output.
- Measureable, with clear targets and performance indicators.
- Achievable, based on realistic expectations, taking cognisance of current status and resource capacity.
- Relevant, with a focus on the outcome and impact.
- Time bound, with clear target dates for the achievement of objectives.

4.6.3. Maturity models

Performance evaluation seldom results in a simple “yes” or “no” response.

Organisations go through a maturity process. Maturity in project management is the development of systems and processes that are repetitive in nature and provide a high probability that each project will be a success. Such repetitive systems and processes do not guarantee success; they simply increase the probability of success. The typical life-cycle phases for project management maturity from “embryonic” to “maturity” are presented below (Kerzner, 2004: 34-35):

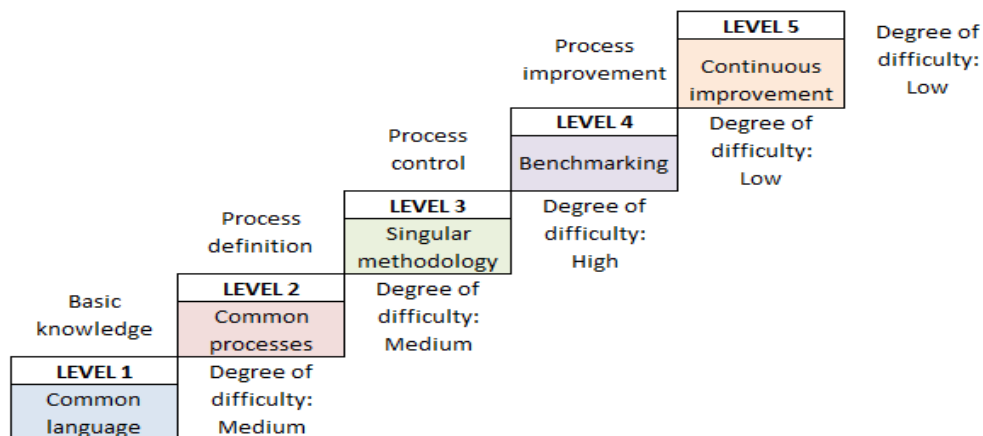
Table 2: Life-cycle phases for project management maturity in organisations

Embryonic	Executive management	Line management acceptance	Growth	Maturity
Recognise need	Get visible executive support	Get line management support	Recognise use of life cycle phases	Develop a management cost/schedule control system
Recognise benefits	Achieve executive understanding of project management	Achieve line management commitment	Develop a project management methodology	Integrate cost and schedule control
Recognise applications	Establish project sponsorship at executive levels	Provide line management education	Make a commitment to planning	Develop an educational programme to enhance project management skills
Recognise what must be done	Become willing to change way of doing business	Become willing to release employees for project management	Minimise creeping scope Select a project tracking system	

Source: Kerzner, 2004: 35.

Kerzner (2004: 193-197) proposes five levels of project management maturity:

Figure 22: "Kerzner" project management maturity



Source: Kerzner, 2004: 194, 197

- Level 1: The organisation recognises the importance of project management and the need for a good understanding of the basic knowledge, along with the accompanying language/terminology. This level poses a medium degree of difficulty.
- Level 2: The organisation recognises that common processes need to be identified and developed so that successes on one project can be repeated on other projects. This level poses a medium degree of difficulty.

- Level 3: The organisation recognises the synergistic effect of combining all corporate methodologies into a singular methodology. This level poses the highest risk and degree of difficulty.
- Level 4: The organisation defines benchmarks and measures performance against such benchmarks. This level poses a low degree of difficulty.
- Level 5: The organisation refines language, processes, singular methodology and benchmarks. This level poses a low degree of difficulty.

The Project Management Institute defines a “maturity model” as a framework that describes the characteristics of effective processes. The foundation of these models is that every process depends upon one or more capabilities or competencies that can be measured and assessed. The assessment can determine how mature each process is, with informal processes at the lower end of the maturity scale and formal processes at the upper end of the scale. This continuum represents a linear progression to mature practices. The following hierarchy of increasing maturity is proposed (OPM3, 2008: 9-10, 29-30):

- Level 4 – “Improve”:
 - Problems identified.
 - Improvements implemented.
 - Sustainable improvements.
- Level 3 – “Control”:
 - Control plan developed.
 - Control plan implemented.
 - Stability achieved.
- Level 2 – “Measure”:
 - Customer requirements incorporated in measurements.
 - Identified critical characteristics.
 - Measured critical characteristics.
 - Input related to results.
 - Measured critical inputs.
- Level 1 – “Standardise”:
 - Active process governing body.
 - Documented.
 - Communicated.
 - Consistently implemented and repeatable.

The Department of Performance Monitoring and Evaluation in the Presidency developed the Management Performance Assessment Tool (MPAT) in October 2011. Their maturity levels were defined as follows (Department of Performance Monitoring and Evaluation, 2011: 10):

- Level 4 Full compliance and doing things smartly.
- Level 3 Full compliance with legal/regulatory requirements.
- Level 2 Partial compliance with legal/regulatory requirements.
- Level 1 Non-compliance with legal/regulatory requirements.

The Infrastructure Development Improvement Programme (IDIP) team from National Treasury modified the MPAT definitions to the following (Technical Assistance Unit, 2012): Sheet 1-7):

- Level 4 Leading innovation and best practice using experience and reflection on application to develop guidelines.
- Level 3 Application of knowledge of practice.
- Level 2 Knowledge of practice but limited application.
- Level 1 Limited knowledge of the practice and no application.

For the purpose of this research, a four-level maturity model has been adopted. For each of the twelve performance evaluation instruments, a specific four-level scorecard was developed. The scorecard defined the following levels of maturity:

- Level 4 High level of maturity.
- Level 3 Medium-high level of maturity.
- Level 2 Medium-low level of maturity.
- Level 1 Low level of maturity.

4.7. Summary

Based on the literature survey described above, the following ideal scenario is defined:

4.7.1. Ideal 1 (People)

Development is about people. Therefore, the Infrastructure Unit of the National Department of Health must define their vision for health facilities infrastructure in terms of its effect on people. Similarly, the unit must measure the impact of health facilities infrastructure programmes in terms of the impact on people.

4.7.2. Ideal 2 (Sub-systems)

Rational decision making must lead the Infrastructure Unit of the National Department of Health to a clear definition of relevant sub-systems that make up the total delivery system. This study is confined to the following sub-systems:

- Legal mandate sub-system.
- Strategic planning sub-system.
- Infrastructure level of service sub-system.
- Human resource sub-system.
- Budget allocation sub-system.
- Budget utilisation sub-system.
- Portfolio management sub-system.
- Project management sub-system.
- Operation and maintenance sub-system.
- Audit sub-system.
- Management performance sub-system.
- Contract management sub-system.
- Team maturity sub-system.

Several other sub-systems such as political, local economic development and skills development fall outside the scope of this study.

4.7.3. Ideal 3 (Strategy)

The Infrastructure Unit of the National Department of Health must have a clear and logical link between the input, output, outcome and impact of the health facilities infrastructure programme. This will be based on the following:

- The current situation regarding health facilities infrastructure must be defined as a baseline.
- The desired situation regarding health facilities infrastructure must be defined in terms of performance objectives.
- A practical strategy is needed to ensure the achievement of the development objectives.

4.7.4. Ideal 4 (Project Management)

The Infrastructure Unit in the National Department of Health must plan and implement the selected health facilities infrastructure strategy as projects, programmes and portfolios. This

implies clear definitions of roles and responsibilities, as well as well-defined management and reporting arrangements.

4.7.5. Ideal 5 (Performance evaluation)

The Infrastructure Unit in the National Department of Health must measure the performance of the Health Facilities Infrastructure Programme across the following dimensions:

- Goal accomplishment.
- Resource acquisition.
- Internal processes.
- Strategic constituencies' satisfaction.

Such a performance evaluation of inputs, processes and outputs must be specific, measureable, achievable, relevant and time-bound. The actual performance must be expressed in terms of an organisational maturity on a four-level scale.

5. Overview of infrastructure delivery theory

5.1. Infrastructure asset management

Infrastructure assets are defined as stationary systems that serve defined communities where the system as a whole is intended to be maintained indefinitely to a specific level of service by the continuing replacement and refurbishment of its components. One of the most important features of infrastructure is the degree of inter-dependency. The failure of one component may undermine the ability of another component to perform (Association of Local Government Engineering NZ, 2006:1.3).

The Government Immovable Asset Management Act (19 of 2007) provides a uniform asset management framework for immovable state assets in South Africa. The Act differentiates between custodians of assets (e.g. Provincial Department of Public Works) and users of assets (e.g. Provincial Department of Health).

The accounting officer of the “user” department must prepare a User Asset Management Plan in relation to the immovable assets which that user uses or intends to use. Similarly, the accounting officer of the “custodian” department must prepare a Custodian Asset Management Plan in relation to all the immovable assets which are in its custody.

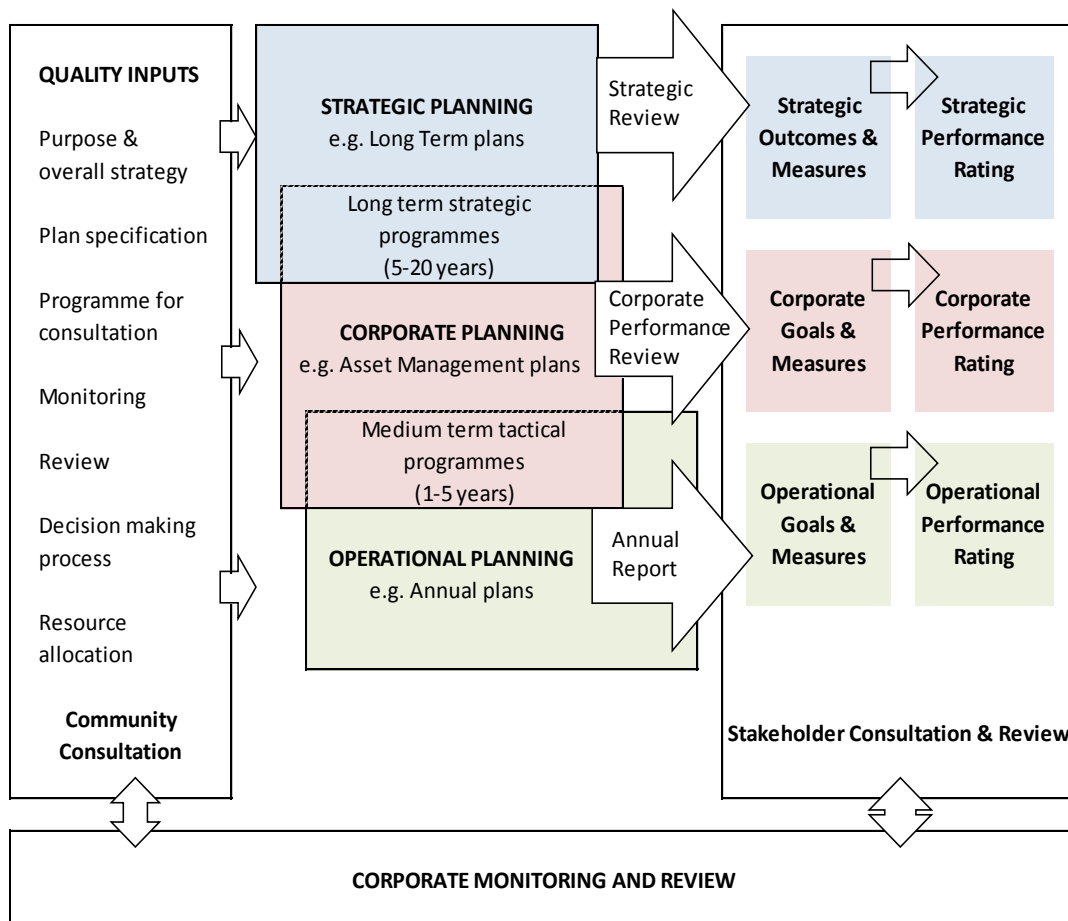
To ensure that asset management plans are effectively integrated with strategic plans, the following approach is proposed (Association of Local Government Engineering NZ, 2006:2.4-2.5):

- Formalise the desired community / customer outcomes.
- Identify in the strategic plan the adopted outcomes.
- Identify in the strategic plan the actions to achieve the adopted outcomes.
- Identify in the strategic plan the associated budgets that will support the actions.
- Develop a hierarchy of performance measures:
 - Higher level key performance measures focused on defining service expectations from a customer perspective.
 - Lower level technical standards to monitor performance at a tactical level.
 - Asset managers to link annual work programmes back to specific strategic plan outcomes via a business plan.
- Ensure changes in the asset management plans are advanced into the strategic plan.
- Review asset management plans to ensure that:
 - Asset management plans contribute to desired strategic outcomes.

- Asset management performance measures are linked to the business plans of asset managers.
- Ensure the accountability of decision makers.

The typical planning cycles and the measures used at each level are illustrated below:

Figure 23: Linking asset management plans to strategic plan outcomes



Source: Association of Local Government Engineering NZ, 2006:2.5

One of the objectives of asset management is to match the level of service provided by the asset with the expectations of customers. Before setting target levels of service it is important to assess the current levels of service. This will provide a base point and allows for the quantification of the gap between the current level of service and the desired level of service (Association of Local Government Engineering NZ, 2006:3.6).

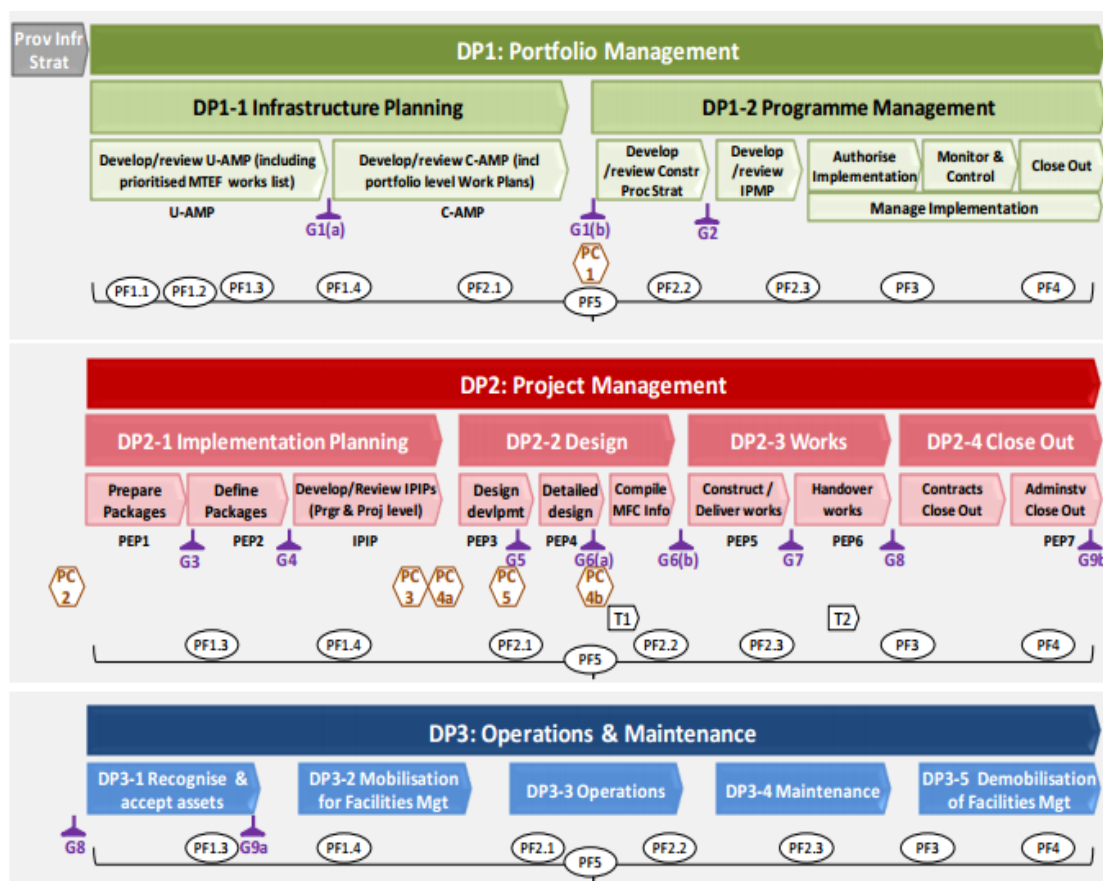
In the South African context, health facilities are immovable assets that are managed in terms of the Government Immovable Asset Management Act. At a provincial level, strategic planning culminates in Service Transformation Plans, spelling out health service priorities. Each

provincial Department of Health prepares annual User Asset Management Plans that include a prioritised list of projects planned for the medium-term expenditure framework (the following three financial years). The prioritised project list is then matched with the available budget allocated to each province to define the scope of work for the following financial year.

5.2. Infrastructure delivery

The Infrastructure Delivery Management System (IDMS) adopted by the South African cabinet describes the processes that make up public sector delivery and procurement management as it applies to the construction industry (Construction Industry Development Board, 2011:5-6). This methodology was developed by the Construction Industry Development Board (CIDB) in conjunction with National Treasury, Department of Public Works and the Development Bank of Southern Africa (DBSA). The third edition of the Infrastructure Delivery Management Toolkit (Toolkit) was issued in 2011. This model is presented below:

Figure 24: Infrastructure Delivery Management System



Source: Construction Industry Development Board, 2010: 6

The overall delivery process is summarised as follows (Construction Industry Development Board, 2010: 9-10, 13, 20-21, 31-60):

- Delivery Process (DP 1) Portfolio management:
 - The Provincial Department of Health considers its service delivery mandate and determines the infrastructure (construction work), the health technology, the organisational design and the quality assurance programmes required to deliver these mandated services. The key outputs from this process are the User Asset Management Plan (U-AMP) and the Custodian Asset Management Plan (C-AMP).
 - The Provincial Department of Health decides on a Construction Procurement Strategy, develops an Infrastructure Programme Management Plan and a Service Delivery Agreement with an Implementing Agent.
 - The Provincial Department of Health remains accountable for the achievement of agreed outputs (as opposed to activities). These programmes are reviewed at least annually by the Provincial Department of Health.
- Delivery Process (DP 2) Project Management:
 - The Implementing Agent should decide whether projects will be implemented as “stand-alone” projects or as a “group” of projects packaged for improved management and economic efficiency.
 - The Implementing Agent will then prepare an Infrastructure Programme Implementation Plan (Works List) in response to the Infrastructure Programme Management Plan (Work Plan).
 - The Implementing Agent then procures service providers for the Design phase and the Works phase.
 - The Implementing Agent remains accountable for the achievement of the agreed implementation activities (as opposed to outputs).
 - The completed project is handed over to the Provincial Department of Health.
- Delivery Process (DP 3) Operation and Maintenance:
 - The Provincial Department of Health accepts the movable assets into their Asset Register and accounting system.
 - The Provincial Department of Public Works accepts the immovable assets in their Asset Register and accounting system.
 - The Provincial Department of Health and the Provincial Department of Public Works mobilise staff to manage their respective assets.
 - The Provincial Department of Health and the Provincial Department of Public Works ensure that Facility Management contracts are in place and that Facility

Management Service Providers have mobilised to conduct Facility Management tasks.

It is important to note that the Model provides a number of control points (gates) in the infrastructure life cycle, indicated as G1 to G9 in the diagram above. Initially, the National Department of Health will be responsible for the decision to “open” these gates (this replaces the “Peer Review” process used previously in projects funded under the Hospital Revitalisation Grant) and will be applicable to all projects, regardless of the funding source.

The Inter-governmental Relations Framework Act (13 of 2005) allows for Implementation Protocol agreements between the National Department of Health and the various Provincial Departments of Health. In terms of such agreements, the responsibility to “open” specific gates may be delegated to Provincial Departments responsible for Health.

The National Department of Health has adopted the Infrastructure Delivery Management Toolkit (Toolkit) as standard methodology for the initiation, planning, execution, operation and maintenance of infrastructure projects associated with health facilities. For the purpose of this study, health facilities infrastructure includes the following elements:

- Infrastructure (construction work) in this context refers to the elements of the health facility that will generally be designed by architects and civil, mechanical or electrical engineers and that will be constructed or repaired by building or engineering contractors. It is generally limited to immovable assets, with the exception of mobile clinics. The expected life span of such infrastructure is between 20-50 years. This infrastructure (construction work) provides the hard shell in (or on) which the health practitioners provide health services. It covers the entire project life cycle of such assets from inception to concept and viability, design development, documentation and procurement, construction, and close-out.
- The World Health Organisation defines health technology as inclusive of the devices and systems developed to solve a health problem and improve quality of lives. It therefore deals with both moveable and immovable assets. Health technology is generally designed by clinical engineers and procured through specialist suppliers. The expected life span of such devices and systems is between 2-8 years. Health technology includes the technological fittings and equipment used by health practitioners, as well as the supporting devices and systems. It covers the entire project life cycle through from needs analysis, solution definition, specification, procurement, installation, training, operation and maintenance.

- Organisational development and management refers to the health practitioners and supporting staff complete with all operational systems and processes.
- In order to provide quality health services on a sustainable basis, a comprehensive management system based on standards, audits and reports is required. This component aims to ensure that a quality management system is established and maintained for the life of the facility.

5.3. Summary

Based on the literature survey described above, the following ideal scenario is defined:

5.3.1. Ideal 6 (Infrastructure)

The Infrastructure Unit of the National Department of Health must define infrastructure and ensure that all stakeholders work with the same definition. This definition must include the following elements:

- Construction work.
- Health technology.
- Organisational development.
- Quality assurance.

5.3.2. Ideal 7 (Planning)

The Infrastructure Unit of the National Department of Health must ensure that strategic plans and asset management plans are aligned. Such alignment refers specifically to the following:

- Alignment of priorities.
- Alignment of life-cycle funding.
- Alignment of life-cycle responsibility and accountability.

5.3.3. Ideal 8 (Delivery)

The Infrastructure Unit in the National Department of Health must ensure that projects, programmes and portfolios are implemented in accordance with the agreed implementation process.

5.3.4. Ideal 9 (Control points)

The Infrastructure Unit in the National Department of Health must ensure effective and efficient implementation through the rigorous application of strategic decision points (gates) in the infrastructure delivery process.

5.3.5. Ideal 10 (Intervention)

The Infrastructure Unit in the National Department of Health must assist provincial departments in the planning and implementation of health facilities infrastructure programmes. Such assistance will include the following levels:

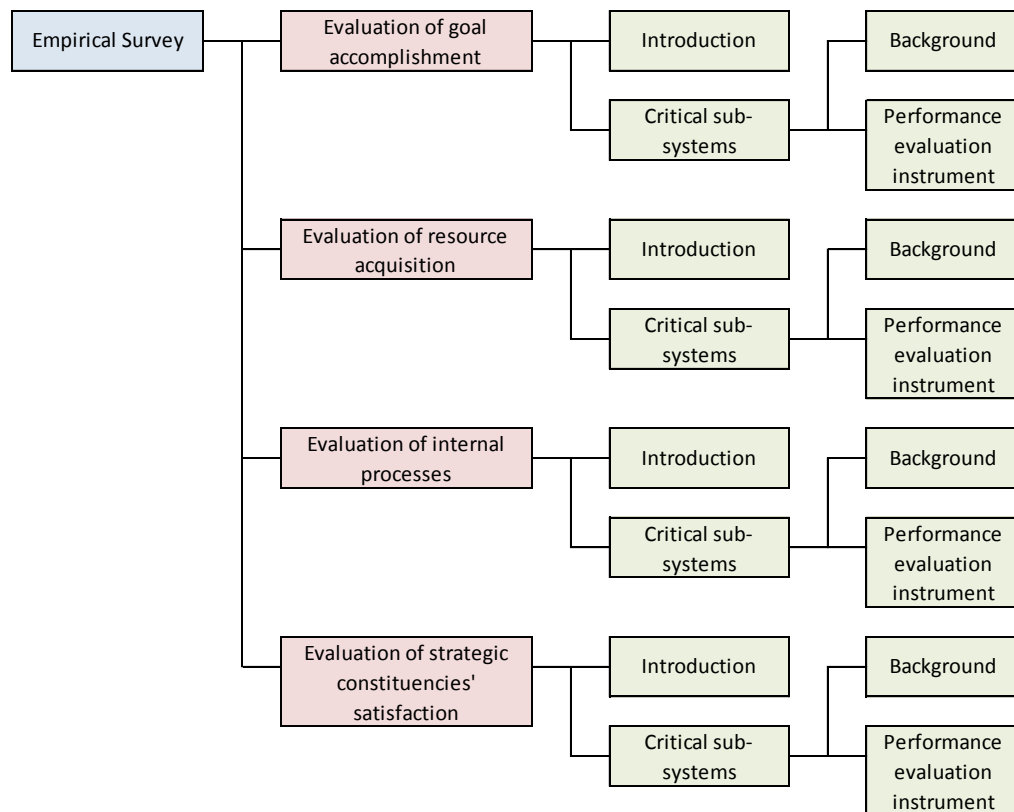
- Level 1: Provide strategic direction through national policy and objectives.
- Level 2: Provide organisational process assets that will form valuable inputs to the planning and implementation of projects, programmes and portfolios.
- Level 3: Provide adequately skilled resources to guide decisions during strategic decision points.
- Level 4: Provide adequately skilled resources during direct assistance in terms of implementation protocol agreements at the request of a provincial sphere of government.
- Level 5: Provide adequately skilled resources during interventions by the national executive.

SECTION 3 : EMPIRICAL SURVEY

6. Introduction

The empirical survey was based on the model proposed by Kreitner and Kinicki (2004: 646-650) as illustrated below:

Figure 25: Overview of empirical survey



Source: Own construction, 2012

The performance of the South African Health Facilities Infrastructure Management Programme was evaluated in terms of the four dimensions of goal accomplishment, resource acquisition, internal processes and strategic constituencies' satisfaction. For each dimension, a brief introduction is provided, followed by the identification of the critical sub-systems that need to be evaluated. Each sub-system in turn, is described briefly, leading to the identification of the performance evaluation instrument for such a sub-system.

7. Evaluation of goal accomplishment

7.1. Introduction

The evaluation of goal accomplishments focuses on outputs versus stated goals.

The National Planning Commission released their Diagnostic Report in June 2011, setting out South Africa's achievements and its shortcomings since 1994. In short, the report states that South Africa today looks very different from the South Africa of 1994. Yet for many poor South Africans, there is still much that looks the same, highlighting serious shortcomings in our development path (National Planning Commission, 2011:1-5). The report identified the following main challenges:

- Too few people work.
- The standard of education for most black learners is of poor quality.
- Infrastructure is poorly located, under-maintained and insufficient to foster high growth.
- Spatial patterns exclude the poor from the fruits of development.
- The economy is overly and unsustainably resource intensive.
- A widespread disease burden is compounded by a failing public health system.
- Public services are uneven and often of poor quality.
- Corruption is widespread.
- South Africa remains a divided society.

One of the main reasons given for the failure to meet key targets set in the Reconstruction and Development Programme in 1994 is government's overly optimistic view of the capacity of the state to deliver. The report refers to the reality as a failure of coordination within government, with different departments working at cross purposes. This uneven capability of the state resulted in a distorted development effort. The Commission observed that the state excelled at doing the things that are easier, such as paying grants, and faltered at doing the difficult things. The National Planning Commission recommends a shift from a paradigm of entitlement to a development paradigm that promotes the development of capabilities, the creation of opportunities and the participation of all citizens (National Planning Commission, 2011: 14-15).

The key proposals to grow the construction/infrastructure sector include (National Planning Commission, 2012: 128) the following:

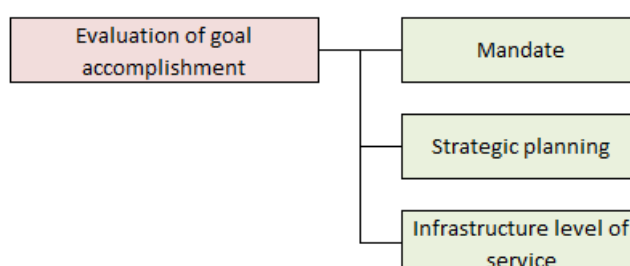
- Improve government's ability to spend its infrastructure budget with regard to project management capacity, long term planning and monitoring and evaluation of both expenditure patterns and construction work.

- Create conditions for a less cyclically volatile industry by emphasising numerous, smaller scale, regionally dispersed projects to address backlogs that are more accessible to smaller firms and new entrants.
- Promote a simultaneous focus on more energy-efficient buildings and building techniques to reduce demands on electricity supply in the longer term.

7.2. Critical sub-systems

The following critical sub-systems were assessed:

Figure 26: Sub-systems for goal accomplishment



Source: Own construction, 2012

The performance evaluation focused on the dimension of goal accomplishment was divided into three sub-systems. The first sub-system explored the mandate for health facilities infrastructure. It dealt with the questions of “what constitutes health facilities infrastructure and who is supposed to provide it?” The second sub-system incorporated all the strategic planning initiatives, from the millennium development goals to the annual performance plan of the National Department of Health. It dealt with the question of “what is the relationship between our strategic objectives and our measureable targets?” The third sub-system explored the progress in the actual level of service to the people from an infrastructure point of view. It dealt with the questions of “how many hospital beds and how many clinics do we have and how many hospital beds and how many clinics do we want?”

7.2.1. Legal Mandate

7.2.1.1. Background

The National Health Act (61 of 2003) provides a framework for a structured, uniform health system within the Republic, taking into account the obligations imposed by the Constitution and other laws on the national, provincial and local governments with regards to health services. The objectives of the act are to regulate national health and to provide uniformity across the

nation by protecting, respecting, promoting and fulfilling the rights of the people of South Africa to the progressive realisation of the constitutional right of access to health services.

Section 21 of the Act determines that the Director-General must ensure the implementation of the national health policy and issue guidelines for the implementation of the policy. Section 21 proceeds to determine that the Director-General must co-ordinate health services rendered by the national department with the health services rendered by provinces. For the purpose of this study, it was assumed that references to “the provision of health services” in such policy and guidelines includes health facilities infrastructure. The Director-General must prepare strategic, medium term health plans and human resources plans annually and must integrate the health plans of the national department and the provincial departments annually and submit the integrated health plans to the National Health Council. The Director-General must also identify national health goals and priorities and monitor the progress of their implementation.

Section 23 of the Act defines the functions of the National Health Council. This includes advice to the Minister on norms and standards for health establishments. It was assumed that “health establishments” include health facilities infrastructure. The Council must also advise the Minister on the implementation of the national health policy, as well as on the national and provincial integrated health plans. The Council may also create advisory committees and may consult with or receive representations from any person, organisation, institution or authority.

Section 81 of the Act allows for the appointment of health officers that must monitor and enforce compliance with the Act. Such appointment may be general or for a specific purpose. A health officer may inspect any premise and issue a compliance notice if a provision of this Act has not been complied with.

7.2.1.2. Performance evaluation: Instrument 1

The background provided above implies several organisational process assets and enterprise environmental factors that may be inputs to the delivery processes of health facilities infrastructure programmes. A maturity assessment will determine the current status and enable the Infrastructure Unit in the National Department of Health to identify areas where growth is required.

Instrument 1 was specifically developed for the purpose of this research. It provides ten statements concerning organisational process assets and enterprise environmental factors. A copy of Instrument 1 is attached in Annexure A.

7.2.2. Strategic planning

7.2.2.1. Millennium Development Goals

The United Nations describe the eight Millennium Development Goals as a blueprint agreed to by all the world's countries and all the world's leading development institutions (<http://www.un.org/millenniumgoals/bkgd.shtml>). These goals are summarised below:

- Goal 1: Eradicate extreme poverty and hunger.
- Goal 2: Achieve universal primary education.
- Goal 3: Promote gender equality and empower women.
- Goal 4: Reduce child mortality.
- Goal 5: Improve maternal health.
- Goal 6: Combat HIV/AIDS, malaria and other diseases.
- Goal 7: Ensure environmental stability.
- Goal 8: Develop a global partnership for development.

Of the above, it is only Goal 7 that refers to infrastructure, and specifically to the provision of water and sanitation, as well as indirectly to the provision of housing. Goal 4 and 5 aim to reduce the number of deaths of mothers and infants, without any direct reference to the availability of health facilities infrastructure.

7.2.2.2. Medium Term Strategic Framework

The Government of South Africa has adopted an outcomes-based approach to service delivery. This is articulated in the revised Medium Term Strategic Framework for 2009-2014 (Department of Health. 2011?, Annual Performance Plan 2012/13-2014/15: 36) as follows:

- Outcome 1: Improved quality of basic education.
- Outcome 2: A long and healthy life for all South Africans.
- Outcome 3: All people in South Africa are and feel safe.
- Outcome 4: Decent employment through inclusive economic growth.
- Outcome 5: A skilled and capable workforce to support an inclusive growth path.
- Outcome 6: An efficient, competitive and responsive economic network.
- Outcome 7: Vibrant, equitable and sustainable rural communities with food security for all.
- Outcome 8: Sustainable human settlements and improved quality of household life.
- Outcome 9: A responsive, accountable, effective and efficient local government system.
- Outcome 10: Environmental assets and natural resources that are well protected and continually enhanced.

- Outcome 11: Create a better South Africa and contribute to a better and safer Africa and World.
- Outcome 12: An efficient, effective and development oriented public service and an empowered, fair and inclusive citizenship.

Outcome 2 deals with the provision of health services. It can be assumed that this includes the provision of health facilities infrastructure. There is no clear link between the eight millennium development goals and the twelve strategic outcomes.

7.2.2.3. Health Sector 10 Point Plan

The health sector in South Africa developed a 10 Point Plan for 2009-2014, which consists of the following priorities (Department of Health. 2009?. Strategic Plan, 2010/11-2012/13: 20:20-27):

- Priority 1: Provision of strategic leadership and creation of a social compact for better health outcomes.
- Priority 2: Implementation of a National Health Insurance Plan (NHI).
- Priority 3: Improving quality of health services.
- Priority 4: Overhauling the health care system and improve its management.
- Priority 5: Improving human resources planning, development and management.
- Priority 6: Revitalisation of physical infrastructure.
- Priority 7: Accelerated implementation of HIV and AIDS and Sexually Transmitted Infections National Strategic Plan 2007-2011 and increase focus on TB and other communicable diseases.
- Priority 8: Mass mobilisation for better health for the population.
- Priority 9: Review of the Drug Policy.
- Priority 10: Strengthening research and development.

This 10 Point Plan is unpacked into key activities. The activities associated with Priority 6 (Revitalisation of health infrastructure) are the following (Department of Health 2001?. Annual Performance Plan 2012/13-2014/15: 19):

- Activity 1: Accelerating the delivery of health infrastructure through Public Private Partnerships.
- Activity 2: Revitalising primary level facilities.
- Activity 3: Accelerating the delivery of health technology and information communication technology infrastructure.

No specific performance targets are set for these activities.

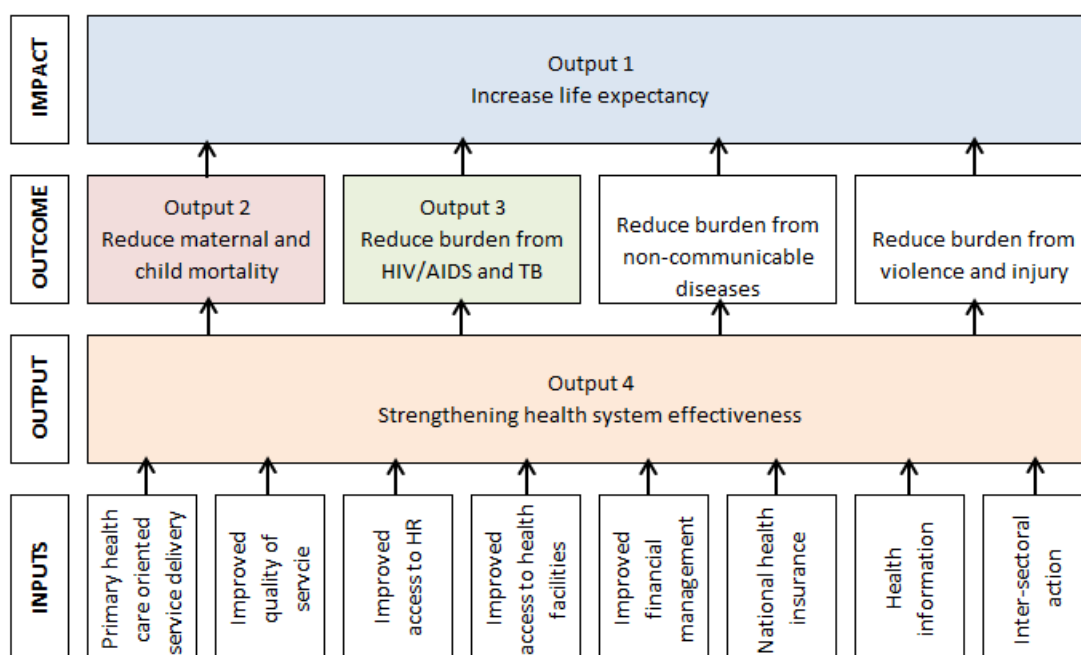
7.2.2.4. Negotiated Service Delivery Agreement

The Minister of Health, being responsible for the achievement of Outcome 2 of the Medium Term Strategic Framework, entered into a performance agreement with the President. Four outputs were agreed in the Negotiated Service Delivery Agreement for 2010-2014 (Department of Health, 2009?, Annual Performance Plan 2012/13-2014/15: 38-39):

- Output 1: Increasing life expectancy.
- Output 2: Reducing maternal and child mortality rates.
- Output 3: Combating HIV and AIDS and decreasing the burden of diseases from tuberculosis.
- Output 4: Strengthening health system effectiveness. This includes a sub-output aimed at accelerating health infrastructure delivery.

Again, no specific performance targets are set for these outputs. There is also no clear link between the ten priorities and the four outputs. These four outputs carry different weights and are stratified into four layers as illustrated below (Department of Health, 2010?, Annual Performance Plan 2011/12: 30-31):

Figure 27: National Department of Health (Strategic outputs)



Source: Department of Health Annual Performance Plan 2012/13-2014/15, 2011?: 40

The stratification of outputs published in the Annual Performance Plan is not aligned with the literature on strategic planning referred to in section 4.4.

7.2.2.5. Strategic Plan

The National Department of Health runs six budget programmes (Department of Health, 2010?, Annual Performance Plan 2011/12-2013/14: 42, 46, 52, 61, 69):

- Programme 1: Administration, consisting of the following sub-programmes:
 - Ministry.
 - Management.
 - Financial management.
 - Corporate services.
 - Office administration.
- Programme 2: Health Planning and Systems Enablement, consisting of the following sub-programmes:
 - Technical policy and planning.
 - Health information management and monitoring and evaluation.
 - Sector procurement and policy.
 - Financial planning and health economics.
 - National Health Insurance.
 - International relations.
- Programme 3: HIV / AIDS, TB and maternal, child and women's health, consisting of the following sub-programmes:
 - HIV and AIDS and TB.
 - Maternal, child and women's health.
- Programme 4: Primary health care services, consisting of the following sub-programmes:
 - District health services and environmental health.
 - Communicable diseases.
 - Non-communicable diseases.
 - Health promotion and nutrition.
- Programme 5: Hospitals, tertiary services and workforce development, consisting of the following sub-programmes:
 - Health facilities infrastructure management.
 - National tertiary services management.
 - Hospital management.
 - Human resources policy research and planning.
 - Sector labour relations and planning.

- Health human resources and workforce management and development.
- Programme 6: Health Regulation and compliance management, consisting of the following sub-programmes:
 - Food control and regulation.
 - Public entities management.
 - Office of standards compliance.
 - Compensation commissioner for occupation diseases.
 - Occupational health management.
 - Pharmaceutical trade and product regulation.

There is no clear link between the four outputs of the Negotiated Service Delivery Agreement and the six programmes of the strategic plan. Health facilities infrastructure is included in Programme 5. Again, there are no measurable targets.

7.2.2.6. Annual Performance Plan

The Annual Performance Plan 2012/13-2014/15 of the National Department of Health aimed to define key measurable objectives, indicators and three-year targets for the accelerated delivery of health infrastructure.

Under Programme 5, the first performance indicator linked to the strategic objective of the accelerated delivery of health infrastructure is the following (Department of Health, 2011?, Annual Performance Plan 2012/13-2014/15: 80):

Table 3: Performance indicator (National Infrastructure Plan)

Performance Indicator	Estimated performance 2011/12	Medium-term targets		
		2012/13	2013/14	2014/15
National infrastructure plan developed in cooperation with provincial infrastructure units.	All provinces submit user asset management plans. These plans include provincial project lists over medium term. A national infrastructure plan is drawn from this.	Updated national infrastructure plan.	Updated national infrastructure plan.	Updated national infrastructure plan.

Source: Department of Health Annual Performance Plan 2012/13-2014/15, 2011?: 80

The National Infrastructure Plan should provide a clear vision of the future state of health facilities infrastructure. It should spell out national priorities and provide a base from where a

provincial development plan can be developed. The current performance target is to wait for the nine, independent provincial plans and then draw a national plan from them. The sequence seems to be the wrong way round.

The second performance indicator linked to the strategic objective of accelerated delivery of health infrastructure is the following (Department of Health, 2011?, Annual Performance Plan 2012/13-2014/15: 80):

Table 4: Performance indicator (Revitalisation and maintenance of health facilities)

Performance Indicator	Estimated performance 2011/12	Medium-term targets		
		2012/13	2013/14	2014/15
Monitor revitalisation and maintenance of hospitals, community health centres and clinics.	Revitalisation and maintenance of hospitals, community health centres and clinics monitored.	Revitalisation and maintenance of hospitals, community health centres and clinics monitored.	Revitalisation and maintenance of hospitals, community health centres and clinics monitored.	Revitalisation and maintenance of hospitals, community health centres and clinics monitored.

Source: Department of Health Annual Performance Plan 2012/13-2014/15, 2011?: 80

This indicator provides no measureable targets. There is no indication of the current status or desired status. Similarly, there is no indication of timeframes in which such desired status should be reached.

The third performance indicator linked to the strategic objective of accelerated delivery of health infrastructure is the following (Department of Health, 2011?, Annual Performance Plan 2012/13-2014/15: 80):

Table 5: Performance indicator (Tertiary flagship projects)

Performance Indicator	Estimated performance 2011/12	Medium-term targets		
		2012/13	2013/14	2014/15
Implementation of five PPP tertiary flagship projects.	Transactional Advisors have been appointed for all five PPPs. Currently conducting needs analysis for the feasibility studies.	Complete Feasibility Studies for three projects and issue Request for Quotations and Request for Proposals.	Procure, sign agreements for at least two projects, begin construction. Complete Feasibility Studies, issue Request for Quotations and Request for Proposals.	Procure, sign agreements and begin construction for all outstanding projects. All projects under construction.

Source: Department of Health Annual Performance Plan 2012/13-2014/15, 2011?: 80

This indicator defines the desired status in terms of the stages of Public Private Partnership projects described by National Treasury. It however does not provide any indication of the benefit of these projects in terms of the provision of health facilities to the people of South Africa.

The fourth performance indicator linked to the strategic objective of accelerated delivery of health infrastructure is the following (Department of Health, 2011?, Annual Performance Plan 2012/13-2014/15: 81):

Table 6: Performance indicator (Nursing colleges and schools)

Performance Indicator	Estimated performance 2011/12	Medium-term targets		
		2012/13	2013/14	2014/15
Revitalisation of nursing colleges and schools.	A service provider to develop the Master Plan and Feasibility Study appointed.	Maintenance of existing colleges & schools through the new Nursing Colleges & Schools grant. Develop and conclude a Master Plan & Feasibility Study.	Implementation of Master Plan and Feasibility Study.	Continued implementation of Master Plan and Feasibility Study.

Source: Department of Health Annual Performance Plan 2012/13-2014/15, 2011?: 81

This indicator clearly defines the desired progress with regard to the development of the Master Plan and Feasibility Studies. It however does not provide any direction regarding the existing 122 nursing colleges and schools that are in desperate need of refurbishment.

The fifth performance indicator linked to the strategic objective of accelerated delivery of health infrastructure is the following (Department of Health, 2011?, Annual Performance Plan 2012/13-2014/15: 81):

Table 7: Performance indicator (Norms and standards)

Performance Indicator	Estimated performance 2011/12	Medium-term targets		
		2012/13	2013/14	2014/15
Sustainable set of universally adopted national norms and standards, guidelines and benchmarks for all levels of health care facilities.	The NDoH, through CSIR, has developed the first draft of infrastructure norms and standards. Costing model.	Health infrastructure norms and standards for all levels finalised and approved.	Monitor the implementation of health infrastructure norms and standards for all levels.	Monitor the implementation of health infrastructure norms and standards for all levels.

Source: Department of Health Annual Performance Plan 2012/13-2014/15, 2011?: 81

Substantial progress has been made in the development of national norms and standards for health infrastructure. Until such norms and standards are published and made compulsory, it is extremely difficult to control the quality of health infrastructure being designed.

The sixth performance indicator linked to the strategic objective of accelerated delivery of health infrastructure is the following (Department of Health, 2011?, Annual Performance Plan 2012/13-2014/15: 81):

Table 8: Performance indicator (Project management information system)

Performance Indicator	Estimated performance 2011/12	Medium-term targets		
		2012/13	2013/14	2014/15
Infrastructure Project Management Information System (PMIS) established.	Infrastructure PMIS designed, developed and piloted.	Implementation, configuration and maintenance of infrastructure PMIS.	Implementation, configuration and maintenance of infrastructure PMIS.	Implementation, configuration and maintenance of infrastructure PMIS.

Source: Department of Health Annual Performance Plan 2012/13-2014/15, 2011?: 81

A service provider has been appointed during the second half of 2011/12. During 2012/13, system configuration was progressing well, with planned implementation scheduled for 2013/14.

7.2.2.7. Performance evaluation: Instrument 2

The background provided above implies several organisational process assets and enterprise environmental factors that may be inputs to delivery processes of health facilities infrastructure programmes. A maturity assessment will determine the current status and enable the Infrastructure Unit in the National Department of Health to identify areas where growth is required.

Instrument 2 was specifically developed for the purpose of this research. It provides ten statements concerning organisational process assets and enterprise environmental factors. A copy of Instrument 2 is attached in Annexure A.

7.2.3. Infrastructure level of service

7.2.3.1. Background

Health facilities infrastructure is generally divided into clinics, community health centres, district hospitals, regional hospitals, tertiary hospitals and specialised hospitals. There are other health facilities that do not fall into any of these categories, such as forensic mortuaries, pathology laboratories or ambulance stations.

As development is about people, it is critical to measure the level of service in terms of people. There are several models aiming to quantify the most appropriate ratio between the number of people and the number of facilities. There is however not a uniform application of a selected model in South Africa. The purpose of this study was not to develop a planning model, but merely to analyse the improvement in the level of service. This assessment will focus on two parameters, namely the number of hospital beds per thousand people and the backlog in clinics.

In 1994, the African National Congress (ANC) published their National Health Plan for South Africa (African National Congress, 1994). With reference to health infrastructure, they defined two measurable parameters. Quoting 1988 data, the situation regarding the availability of hospital beds (public and private) was defined as follows:

- Estimated population (1988): 39.9 million
- Total number of hospital beds: 158 567
- Average number of beds per 1 000 people: 4.4

- Beds per 1 000 people in metropolitan areas: 7.1
- Beds per 1 000 people in non-metropolitan areas: 4.0
- Beds per 1 000 people in homelands: 2.7

Moving to the availability of clinics, reference was made to a World Health Organisation (WHO) service norm of 10 000 people per clinic. Based on the estimated 1988 population of 39.9 million, a total of 3 591 clinics were required. Similarly, the 1988 situation regarding public clinics was defined as follows:

- Number of clinics required as per WHO norm: 3 951
- Actual number of public clinics in South Africa: 2 218
- Estimated shortfall in public clinics: 1 373

7.2.3.2. Hospital beds per 1 000 people

The starting point of this assessment is the 1988 values quoted in 1994 by the African National Congress:

Table 9: Hospital beds per 1 000 people (1988)

Description	Value
Estimated population 1988	35.9 million
Total number of hospital beds 1988 (National Health Plan for South Africa 1994)	158 567
Average number of beds / 1 000 people (National Health Plan for South Africa 1994)	4.4

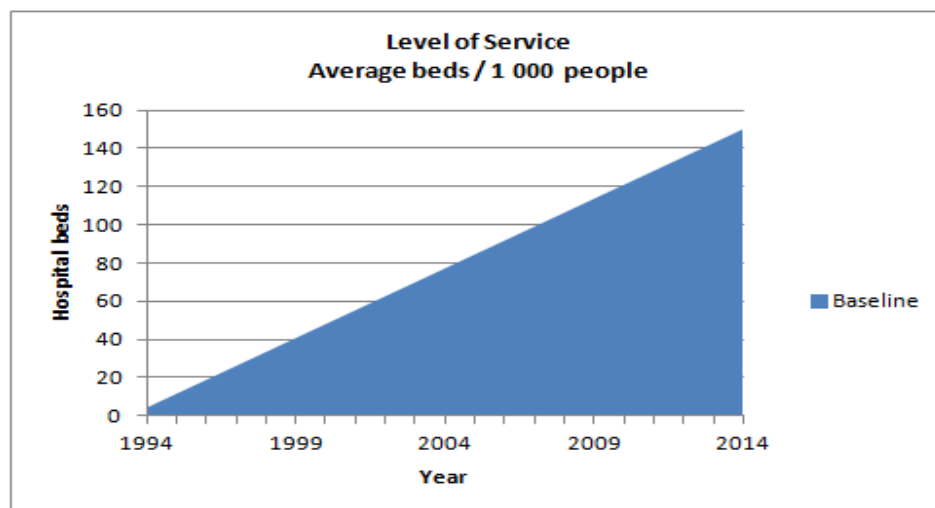
Source: Own construction, 2012

The National Department of Health published the following performance indicators (Department of Health, 2008: 76)

- Level 1 beds / 1 000 uninsured people: 90
- Level 2 beds / 1 000 uninsured people: 60

This equates to an average of 150 beds per 1 000 people. Assuming a transformation period of twenty years, the baseline for performance may be illustrated as follows:

Figure 28: Hospital beds per 1 000 people (Target 1)



Source: Own construction, 2012

The 150 beds per 1 000 people is not regarded as realistic in view of the actual levels of service worldwide. According to the World Health Organisation, the highest ratio is in Japan with 13.8 beds per 1 000 people (World Health Organisation, 2010, Table 6: 118-119). A small selection of reported levels of service is summarised below:

- South Africa: 2.8 beds per thousand people
- UK: 3.4 beds per thousand people
- USA: 3.1 beds per thousand people
- Malaysia: 1.8 beds per thousand people
- Brazil: 2.4 beds per thousand people
- India: 0.9 beds per thousand people
- China: 4.1 beds per thousand people

In 1996, the Health Systems Trust recommended that in the interest of equity, nationally adopted guidelines should be used to decide when it is desirable to provide a community with a new or upgraded facility and to prioritise new projects.

The following norm was proposed (Health Systems Trust, South African Health Review 1996: 67):

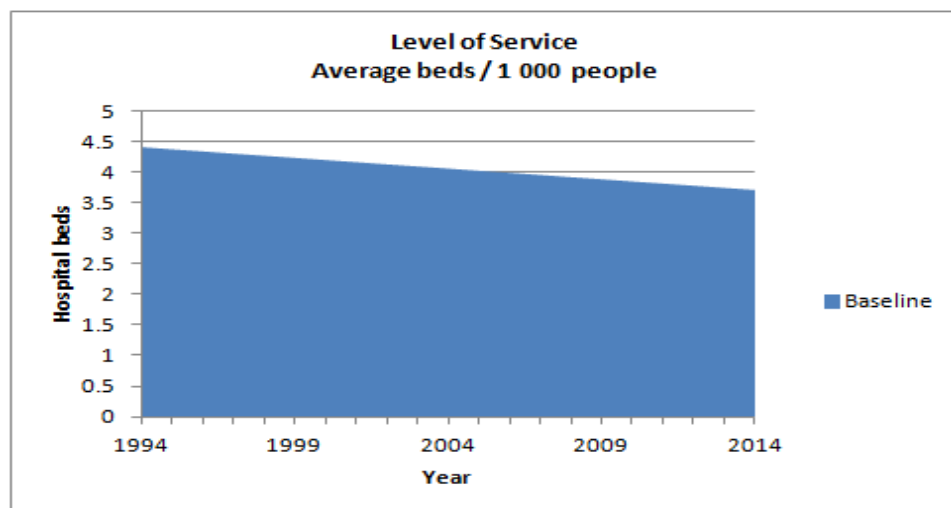
- Acute beds / 1 000 people: 2.8
- Chronic beds / 1 000 people: 0.7

This equates to an average of 3.5 beds per 1 000 people, which is similar to first world economies like the United Kingdom and the United States of America. In 1997, the Health Systems Trust refined their recommendations to the following (Health Systems Trust, South African Health Review 1997):

- Level 3 beds / 1 000 people: 0.3
- Level 2 beds / 1 000 people: 1.0
- Level 1 beds / 1 000 people: 2.0
- Chronic beds / 1 000 people: 0.4

This equates to an average of 3.7 beds per 1 000 people. This value will be used as the assumed performance target for the purpose of this study. Starting with the 4.4 beds per 1 000 people reported in 1994 and aiming to reach 3.7 beds per 1 000 over a twenty year transformation period, the performance baseline may be illustrated as follows:

Figure 29: Hospital beds per 1 000 people (Target 2)



Source: Own construction, 2012

The Health Systems Trust reported that the actual level of service was at 4 beds per 1 000 people in 1993 (Health Systems Trust, South African Health Review, 1995: 65).

The Health Systems Trust further reported the following actual level of service for the year 2003 (Health Systems Trust, South African Health Review 2003/4: 40):

- District hospital beds / 1 000 people: 1.0
- Regional hospital beds / 1 000 people: 0.8
- Central hospital beds / 1 000 people: 0.3

- Specialised hospital beds / 1 000 people: 0.7

This resulted in an average of 2.8 beds per 1 000 people, which corresponds to the value recorded by the World Health Organisation.

The records for the actual number of beds are incomplete. In some instances the number of beds in public hospitals is available but the number of beds in private hospitals is not available. In other, the numbers for private hospitals are recorded, but the numbers for public hospitals are not. Based on population figures and bed numbers published by the Health Systems Trust, comparable levels of service can however be calculated for the year 2002:

Table 10: Hospital beds per 1 000 people (2002)

Description	Value
Estimated population 2002 (South African Health Review, 2008:348)	45.6 million
Total number of hospital beds 2002 (South African Health Review, 2005:309)	143 755
Average number of beds / 1 000 people	3.15

Source: Own construction, 2012

Similar values can also be calculated for the year 2004:

Table 11: Hospital beds per 1 000 people (2004)

Description	Value
Estimated population 2004 (South African Health Review, 2008:348)	46.8 million
Total number of hospital beds 2004 (South African Health Review, 2006:446)	135 977
Average number of beds / 1 000 people	2.91

Source: Own construction, 2012

Abbott *et al* (2008: 11) describe the extent of the health facilities estate in 2007, based on the District Health Information System. The comparable values are summarised below:

Table 12: Hospital beds per 1 000 people (2008)

Description	Value
Estimated population 2007 (South African Health Review, 2008:348)	45.6 million
Total number of hospital beds 2007 (Draft Infrastructure Barometer, 2008:11)	116 704
Average number of beds / 1 000 people	2.4

Source: Own construction, 2012

The 2011 population of South Africa was estimated to be 50 586 757, based on the mid-year population estimates (StatsSA, 2011). There are currently an estimated total of 120 609 hospital beds in South Africa (Hospital and Nursing Yearbook, 2011:102). Comparable values for year 2011 are presented below:

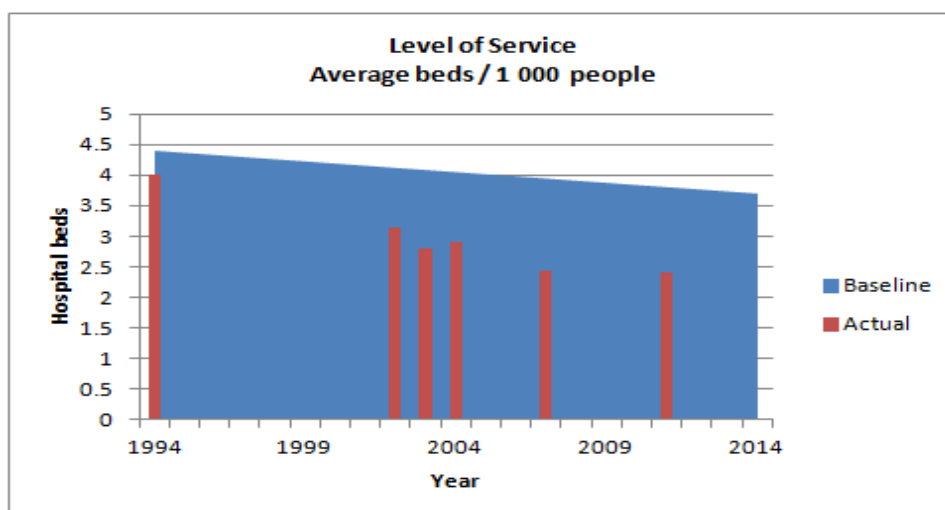
Table 13: Hospital beds per 1 000 people (2011)

Description	Value
Estimated population 2011 (Annual Performance Plan, 2012/13-2014/15:15)	50.6 million
Total number of hospital beds 2011 (Hospital and Nursing Yearbook, 2011:102)	120 609
Average number of beds / 1 000 people	2.4

Source: Own construction, 2012

A summary between the assumed baseline and the individual values of actual performance indicate significant underperformance. This is illustrated below:

Figure 30: Hospital beds per 1 000 people (Actual trend)



Source: Own construction, 2012

The latest comparable value of 2011 is only 65% of the desired target of 3.7 beds per 1 000 people.

7.2.3.3. Clinic backlog

The starting point of this assessment is the 1988 values quoted by the African National Congress (1994), combined with the World Health Organisation (WHO) norm of one clinic per 10 000 people:

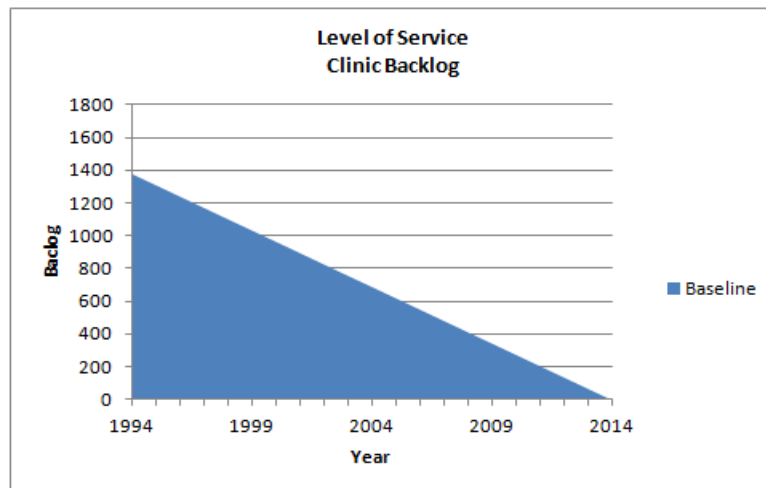
Table 14: Clinic backlog (1988)

Description	Value
Estimated population 1988 (National Health Plan, 1994)	35.9 million
Required number of clinics at 1 / 10 000 people	3 590
Actual number of clinics 1988 (National Health Plan, 1994)	2 218
Clinic backlog 1988	1 372

Source: Own construction, 2012

Assuming a transformation period of twenty years, the baseline for performance may be illustrated as follows:

Figure 31: Clinic backlog (Target)



Source: Own construction, 2012

Comparable values for the year 2005 are the following:

Table 15: Clinic backlog (2005)

Description	Value
Estimated population 2005 (South African Health Review, 2008:248)	47.3 million
Required number of clinics at 1 / 10 000 people	4 730
Actual number of clinics 2005 (South African Health Review, 2006:471)	2 996
Clinic backlog 2005	1 734

Source: Own construction, 2012

Comparable values for year 2007 are the following:

Table 16: Clinic backlog (2007)

Description	Value
Estimated population 2007 (South African Health Review, 2008:248)	48.3 million
Required number of clinics at 1 / 10 000 people	4 830
Actual number of clinics 2007 (South African Health Review, 2008:277)	3 077
Clinic backlog 2007	1 753

Source: Own construction, 2012

Comparable values for year the 2009 are the following:

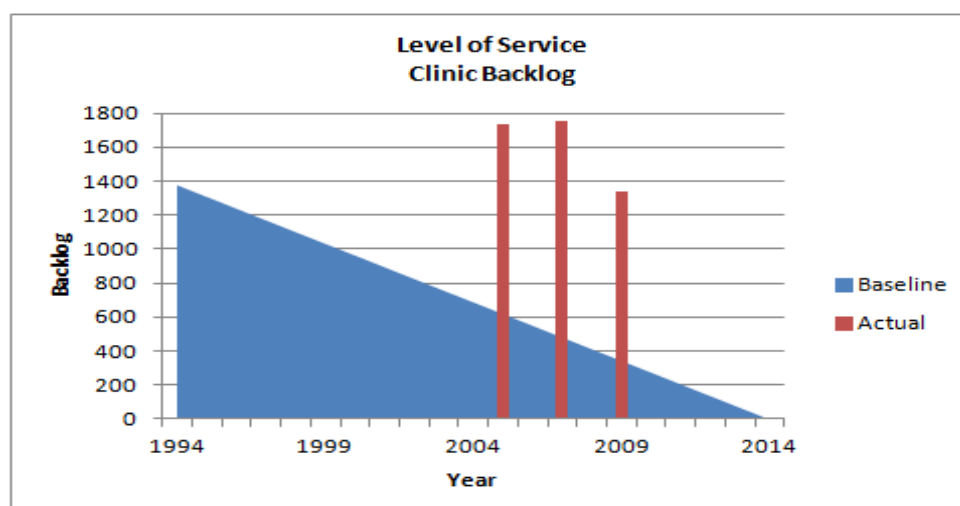
Table 17: Clinic backlog (2009)

Description	Value
Estimated population 2009 (National Department of Health Strategic Plan, 2010/11-2012/13:14)	49.3 million
Required number of clinics at 1 / 10 000 people	4 930
Actual number of clinics 2011 (National Department of Health Strategic Plan, 2010/11-2012/13:16)	3 595
Clinic backlog 2011	1 335

Source: Own construction, 2012

A summary between the assumed baseline and the individual values of actual performance indicate significant underperformance. This is illustrated below:

Figure 32: Clinic backlog (Actual trend)



Source: Own construction, 2012

The actual backlog in 2005 was almost three times higher than the targeted backlog in that year. Similarly, the actual backlogs in 2007 and 2009 were more than three times the targeted values for those years.

7.2.3.4. Performance evaluation: Instrument 3

The background provided above implies performance targets and actual performance related to the level of service of selected health facilities infrastructure. A maturity assessment will determine the current status and enable the Infrastructure Unit in the National Department of Health to identify areas where growth is required.

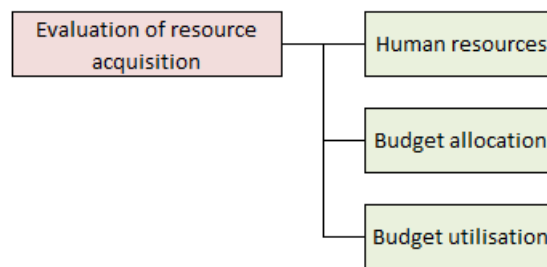
Instrument 3 was specifically developed for the purpose of this research. It provides two statements concerning performance measures. A copy of Instrument 3 is attached in Annexure A.

8. Evaluation of resource acquisition

8.1. Introduction

The following critical sub-systems were assessed:

Figure 33: Sub-systems for resource acquisition



Source: Own construction, 2012

The performance evaluation, focused on the dimension of resource acquisition, was divided into three sub-systems. The first sub-system explored the availability of human resources. It dealt with the questions of “do we have the right people in the right places?” The second sub-system evaluated the allocation of budgets to the health infrastructure programme. It dealt with the question of “did we allocate appropriate funds to the critical aspects of health facilities infrastructure?” The third sub-system explored the efficiency of the utilisation of the allocated budget. It dealt with the question of “did we use the available money?”

8.2. Critical sub-systems

8.2.1. Human resources

8.2.1.1. Background

Watermeyer and Pillay (2012: 46-55) summarised earlier works by Terblanche (1971) and Lawless (2005), indicating the change over time in the distribution of technologists and engineers in South Africa:

Table 18: Technologists and engineers in South Africa

Employer	1967	2005
State-owned enterprises	12%	6%
Government	27%	14%
Consultants	31%	51%
Industry or business	28%	23%
Academia	2%	6%

Source: Watermeyer and Pillay, 2012: 52

In 1967, 39% of all the technologists and engineers in South Africa were employed by state-owned enterprises and government. In 2005, only 20% of the technologists and engineers were employed by state-owned enterprises and government. It is clearly evident from the table above that there has been a major flow of technologists and engineers from the public sector to the consulting sector.

Benchmarking with other countries is offered for three different parameters:

Table 19: Population per engineer

Country	Population per Engineer	Population per Doctor	GDP per Engineer (USD million)
South Africa	3 166	1 493	16.4
USA	389	361	16.2
UK	311	492	11.6
Australia	455	414	15.8
China	130	593	0.2
Brazil	227	379	1.1

Source: Watermeyer and Pillay, 2012: 50

In developed countries (e.g. USA, UK, Australia), the population per doctor and population per engineer seems to be of the same order. In South Africa however, the population per doctor is half of the population per engineer. The GDP per engineer seems to be similar in South Africa as in developed countries.

The National Planning Commission concluded that the foundations for a capable state have been laid since 1994, but there are major concerns about how these structures function. The reasons for such sub-optimal functioning include the following (National Planning Commission, 2011: 364-399):

- Skills deficit.
- Erosion of accountability and authority.

- Poor organisational design.
- Inappropriate staffing.
- Too much political interference in selecting and managing senior staff.
- Too much focus on quick fix or policy fad.
- Too little focus on tackling the major obstacles to improving the performance of the public service.

The commission identified five key areas where targeted action is important:

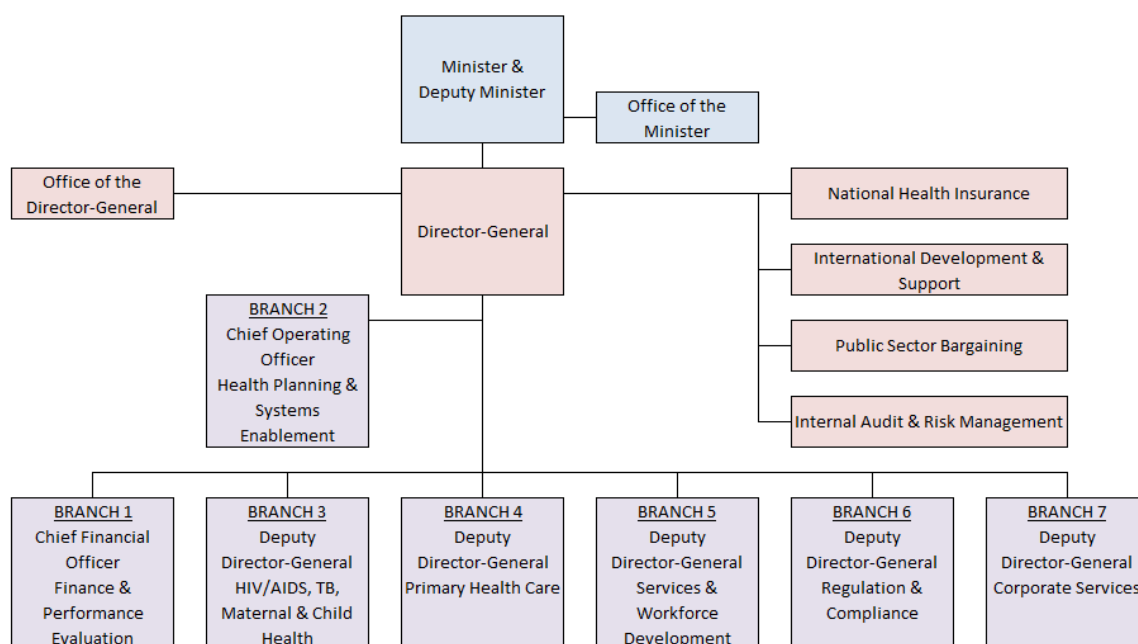
- Stabilise the political-administrative interface – The current emphasis on “political deployment” needs to be replaced by a focus on building a professional public service.
- Make the public service a career of choice – Management should be recruited based on experience and expertise, while building the necessary skills in junior staff.
- Develop technical and specialist professional skills - The state has a role in producing specialist technical skills.
- Improve relations between the three spheres of government – Resolve any confusion on how responsibilities are divided and intervene where capacity is limited.
- State-owned enterprises – These organisations need to be efficient, financially sound and well-governed.

The National Planning Commission reported that South Africa suffers from high-levels of corruption that undermine the rule of law and hinder the state’s ability to effect development. The recommendations include the following (National Planning Commission, 2011: 403):

- Strengthening the multi-agency anti-corruption system.
- Strengthening the protection of whistle-blowers.
- Centralising the awarding of large tenders or tenders with long duration.
- Giving greater teeth to the tender compliance monitoring office.

The organisational structure of the National Department of Health is under review. The proposed arrangement indicates seven branches under management of the Director-General (Department of Health, 2011?: 12):

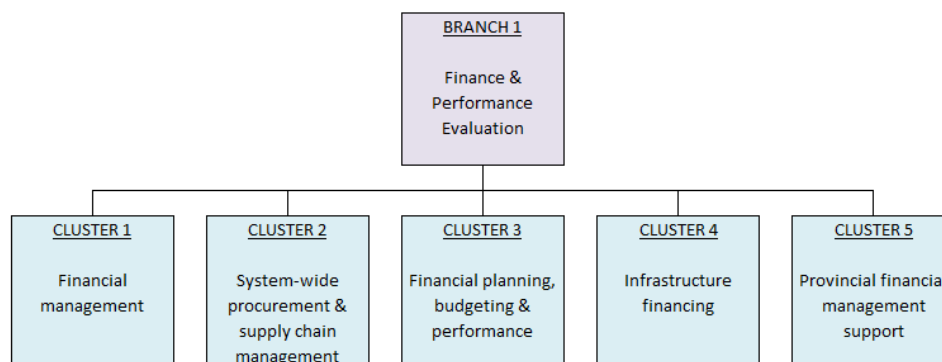
Figure 34: National Department of Health (Organisational structure)



Source: Department of Health, 2011?: 12

Each of these branches is arranged into several clusters. The composition of branch one is indicated below:

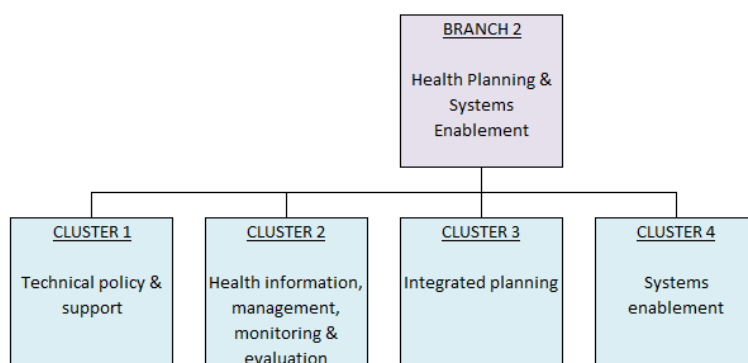
Figure 35: National Department of Health (Branch 1)



Source: Department of Health, 2011?: 17-18

Cluster three, under branch two, deals with integrated planning. One of the measureable performance indicators of the National Department of Health is the development of a national health infrastructure plan. It is not clear whether cluster three, under branch two, will assume this responsibility.

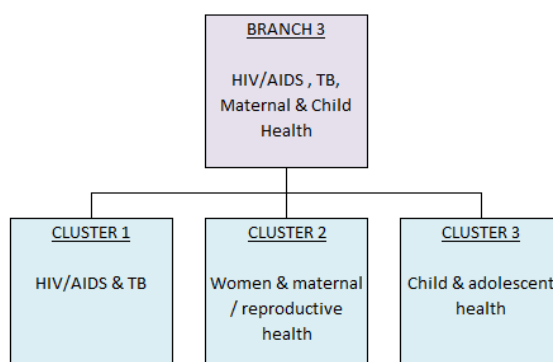
Figure 36: National Department of Health (Branch 2)



Source: Department of Health, 2011?: 19-20)

There is also no obvious overlap between the functions of the Infrastructure Unit and those of the clusters under branch three.

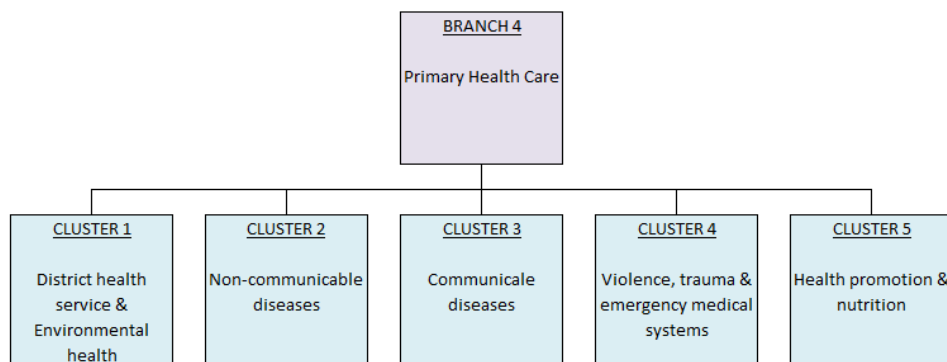
Figure 37: National Department of Health (Branch 3)



Source: Department of Health, 2011?: 21-24)

Similarly, there is no obvious overlap between the functions of the Infrastructure Unit and those of the clusters under branch four.

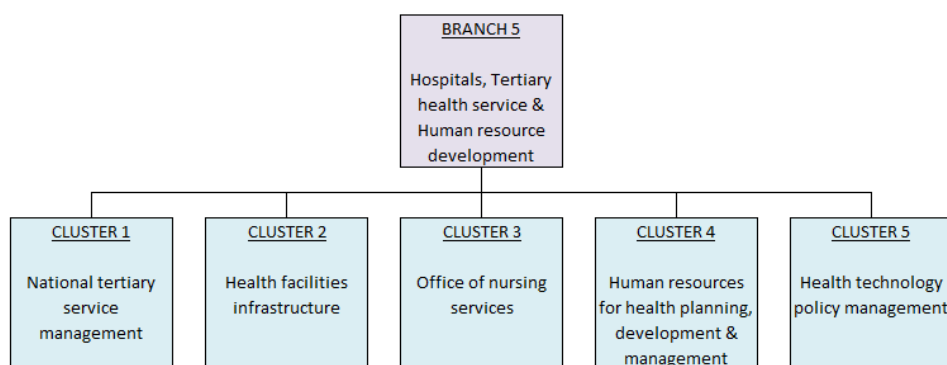
Figure 38: National Department of Health (Branch 4)



Source: Department of Health, 2011?: 25-27)

The second cluster under branch five seems to deal with all aspects of health facilities infrastructure, excluding the infrastructure financing indicated under branch one and the integrated planning indicated under branch two. Cluster four, under branch five, is responsible for human resources for health planning, development and management. Cluster five, under branch five, deals with health technology policy management. It is important to note that the health facilities infrastructure is defined to include the actual building work, the health technology, the organisational design as well as the quality assurance. The responsibility for these elements of a single definition is allocated to different clusters. In practise, the Infrastructure Unit in the National Department of Health deals with all these elements.

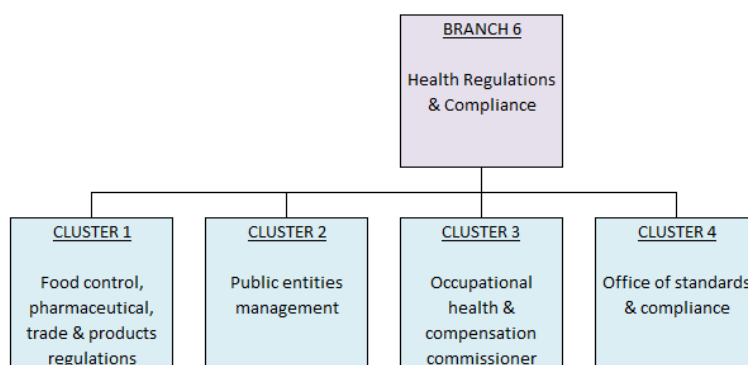
Figure 39: National Department of Health (Branch 5)



Source: Department of Health, 2011?: 28-29)

There is also no obvious overlap between the functions of the Infrastructure Unit and those of the clusters under branch six.

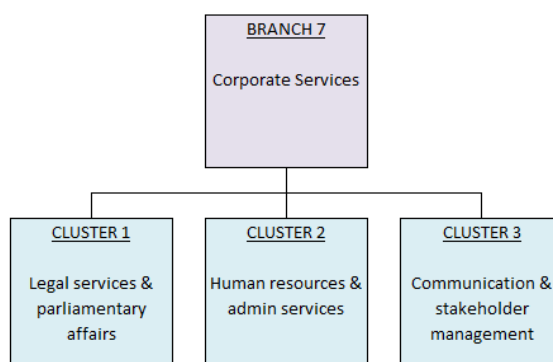
Figure 40: National Department of Health (Branch 6)



Source: Department of Health, 2011?: 36

Similarly, there is no obvious overlap between the functions of the Infrastructure Unit and those of the clusters under branch seven.

Figure 41: National Department of Health (Branch 7)



Source: Department of Health, 2011?: 36

It is important to note that there is no “Infrastructure Unit”; not at a branch level and not at a cluster level. The functions of the Infrastructure Unit in the National Department of Health are divided between the “cluster for infrastructure financing” under branch 1, the “cluster for integrated planning” under branch 2, the “clusters for health facilities infrastructure, human resource for health planning and development”, as well the “cluster for health technology policy management”, all under branch 5. Such a disjoint between the formal organisational structure and the actual function results in unnecessary confusion and tension.

A specialised task team addressing capacitation has been established under the auspices of the Technical Assistance Unit (TAU) in the National Treasury. This task team is assisting the

Infrastructure Unit with organisational design. Further discussion of the human resources thus falls outside the scope of this study.

Organisations like the National Department of Health go through a maturation process. Kreitner and Kinicki (2004: 414-417) describe Tuckman's five-stage theory of group development as follows:

- Stage 1: During the "Forming" stage, officials tend to be uncertain and anxious about their roles, who is in charge and the group's goals. Mutual trust is low and there is a good deal of holding back to see who takes charge and how.
- Stage 2: The "Storming" stage is a time of testing. Officials try to determine how they fit into the power structure. Subgroups take shape and subtle forms of rebellion, such as procrastination, occur.
- Stage 3: Organisations generally make it through Stage 2 because respected members, other than the leader, challenge the group to resolve its power struggles so something can be accomplished. This takes the group to the "Norming" stage where a feeling of team spirit is experienced because members believe they have found their proper roles.
- Stage 4: During the "Performing" stage, activity is focused on solving task problems. There is a climate of open communication, strong co-operation and lots of helping behaviour. Cohesiveness and personal commitment to group goals help the group to achieve more than could any one individual acting alone.
- Stage 5: "Adjourning" signals that the work is done and it is time to move on.

8.2.1.2. Performance evaluation : Instrument 4

Taking cognisance of the work currently being performed by the Technical Assistance Unit in the National Treasury, as well as the current initiatives around the restructuring of the National Department of Health, this study did not attempt to evaluate aspects of human resources that are bound to change in the near future.

Instrument 4 utilised the questionnaire developed by Krietner and Kinicki (2004: 439) to assess the maturity of the Infrastructure Unit in the National Department of Health. It provides twenty statements concerning group maturity with reference to the Tuckman model. A copy of Instrument 4 is attached in Annexure A.

8.2.2. Budget allocations

8.2.2.1. Background

Abbott *et al* indicated that the annual spending on the full health sector has in general grown above inflation since 2002/3. The financial figures below are according to Abbott *et al* (2008:19) and the inflation values are from <http://www.tradingeconomics.com/south-africa/inflation-cpi>:

Table 20: Budget allocation

Description	Year						
	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10
Actual and budget payments (R million)	R 37 939	R 41 610	R 48 146	R 54 798	R 60 586	R 66 340	R 72 656
Year on year increase		9.68%	15.71%	13.82%	10.56%	9.50%	9.52%
Inflation at April of each year	8.9%	0.3%	3.0%	3.4%	6.1%	10.6%	8.5%

Source: Own construction, 2012

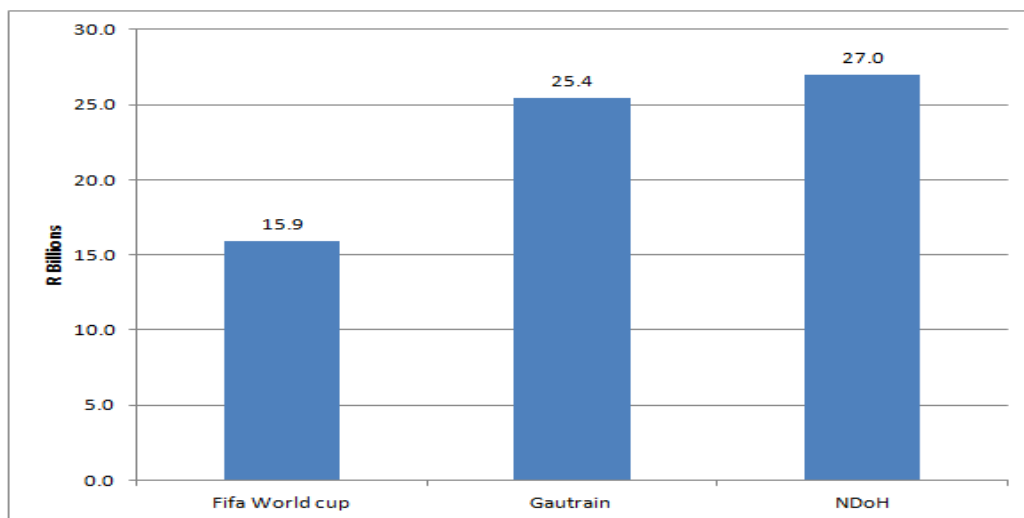
The annual budget allocation for health facilities infrastructure is in the order of R9 billion. Over the three years of the medium-term expenditure framework this will amount to R27 billion.

In order to understand the magnitude of the Health Facilities Infrastructure Management Programme, it is valuable to compare it to two other recent infrastructure programmes. The FIFA World Cup 2010 was hosted by South Africa. This responsibility required major infrastructure development, which included ten world class stadiums, all at a total cost of R15.9 billion.

A rapid-rail system, generally known as the Gautrain, has been constructed between Pretoria and Johannesburg in the Gauteng province of South Africa. The total cost of such infrastructure is valued at R25.4 billion.

A typical three year health facilities infrastructure programme in South Africa exceeds the investment in infrastructure of both the FIFA World Cup 2010 and that of the Gautrain. In order to manage such a programme, well-defined processes are required. A graphical comparison between the three major capital programmes is presented below:

Figure 42: Comparison between infrastructure programmes in South Africa



Source: Own construction, 2012

Abbott *et al* (2008:2) reported that the National Health Facilities Audit of 1996 provided the first consolidated assessment of the health estate. At the time, the health estate in South Africa comprised of some four thousand facilities with a combined gross area in excess of ten million square metres. The Modern Equivalent Replacement Cost (MERC) provides a uniform, comparable estimate of the cost to build all existing facilities regardless of age, location, size or complexity using today's construction costs and technology. At present, there is no suitable official valuation of the health facilities estate. There is also no formal replacement valuation of the medical equipment in South Africa as there is no consolidated equipment asset register. The value of such equipment was estimated to be 30% of the MERC for infrastructure. An estimate of the 2007 MERC is summarised below (Abbott *et al*, 2008:14):

Table 21: Modern equivalent replacement cost of health facilities infrastructure

Asset	MERC
Clinics	R13 542 000
Community Health Centres	R5 980 000
Hospitals	R104 587 000
Sub-total : Immovable assets	R124 108 000
Moveable assets @ 30%	R37 232 000
Total	R161 341 000

Source: Abbott *et al*, 2008: 14

The National Health Facilities Audit of 1995/96 found that the average condition of facilities was 3.77 on the scale presented below (Abbott *et al*, 2008:15):

Figure 43: Health facilities infrastructure (Condition assessment scale)

CONDITION RATING	Condition	Action Required	Description
5	Very Good	Preventative Maintenance	The fabric, element, installation or building is either new or has recently been maintained, does not exhibit any signs of deterioration
4	Good	Condition-based Maintenance	The Fabric, element, installation or building exhibits superficial wear and tear, minor defects, minor signs of deterioration to surface finishes and requires maintenance/servicing. It can be reinstated with routine scheduled or unscheduled maintenance/servicing.
3	Fair	Repairs Required	Significant sections or elements require repair, usually by a specialist. The fabric, element, installation or building has been subjected to abnormal use or abuse, and its poor state of repair is beginning to affect surrounding elements. Backlog maintenance work exists.
2	Bad	Rehabilitation Required	Substantial sections or elements have deteriorated badly, suffered structural damage or require renovations. There is a serious risk of imminent failure. The state of repair has a substantial impact on surrounding elements or creates a potential health or safety risk.
1	Very Bad	Replacement Required	The fabric, element, installation or building has failed, is not operational or deteriorated to the extent that does not justify repairs, but should rather be replaced. The condition of the element actively contributes to the degradation of surrounding elements or creates a safety, health or life risk.

Source: Abbott *et al*, 2008:29

Abbott *et al* (2008:3) argue that an investment in capital infrastructure implies a commitment to long term life-cycle funding of the service as well as towards operation and maintenance of the infrastructure. In this regard, information and information systems are key management tools. The lack of appropriate, nationally consistent and current information on the health estate and its performance is a major constraint to infrastructure delivery and management and, by extension, to health service delivery.

Backlog maintenance was assessed at 34% of the replacement value of the estate in 1997. The annual budget for maintenance should be a function of the current replacement value (MERC) of the estate. Abbott *et al* (2008:15, 28) propose an allocation of 4% for fixed hospital infrastructure plus 5% of the value of equipment. These levels of investment presuppose facilities in good or very good condition. The diagram below indicates the impact of infrastructure condition on the budgeting requirements:

Figure 44: Health facilities infrastructure (Maintenance requirements)

<i>Condition Rating</i>	<i>Condition</i>	<i>Action required</i>	<i>Maintenance type</i>	<i>Budget required as %MEC</i>	<i>Provision for unplanned maintenance if maintenance deferred</i>
5	Very good	Preventive maintenance	Normal maintenance	2 - 3%	0.75 - 1.25%
4	Good	Condition based maintenance		4 - 6%	1.5 - 2.5%
3	Fair	Repairs	Backlog maintenance (primarily capital)	20 - 30%	3 - 5%
2	Bad	Rehabilitation		50 - 60%	6 - 10%
1	Very bad	Replacement		100 - 100%	10 - 20%

Source: Abbott *et al*, 2008:29

A sample calculation model of the total annual budget requirement for each of the elements is presented below. The following assumptions were made:

- The MERC for infrastructure is R124,108 million.
- The MERC for medical equipment is 30 % of the MERC for infrastructure.
- The allocation for normal annual maintenance of infrastructure is 4% of the MERC for infrastructure.
- The allocation for normal maintenance of medical equipment is 5% of the MERC for medical equipment.
- The backlog maintenance of infrastructure amounts to 25% of the MERC for infrastructure and will be implemented over the next 20 years.
- The backlog maintenance for medical equipment amounts to 25% of the MERC for medical equipment and will be implemented over the next 20 years.
- The need for additional infrastructure amounts to 30% of the MERC for infrastructure and will be implemented over the next 20 years.
- The need for additional medical equipment amounts to 30% of the MERC for medical equipment and will be implemented over the next 20 years.

Table 22: Budget allocation model

Current infrastructure	
Estimated modern equivalent replacement value of current infrastructure	R 124 108 000
Current equipment	
Assumed ratio (current equipment) / (current infrastructure)	30%
Estimated modern equivalent replacement value of current equipment	R 37 232 400
a) Infrastructure normal annual maintenance	
Assumed ratio (annual maintenance)/(current infrastructure)	4%
Estimated annual budget requirement for current infrastructure maintenance	R 4 964 320
b) Equipment normal annual maintenance	
Assumed ratio (annual maintenance)/(current equipment)	5%
Estimated annual budget requirement for current equipment maintenance	R 1 861 620
c) Infrastructure backlog maintenance	
Assumed ratio (backlog maintenance) / (current infrastructure)	25%
Estimated value of backlog maintenance on infrastructure	R 31 027 000
Assumed refurbishment period (years)	20
Estimated annual budget requirement for upgrade & additional infrastructure	R 1 551 350
d) Equipment backlog maintenance	
Assumed ratio (upgrade & addition) / (current equipment)	25%
Estimated value of backlog maintenance for equipment	R 9 308 100
Assumed upgrade period (years)	20
Estimated annual budget requirement for upgrade & additional equipment	R 465 405
e) Infrastructure upgrade & addition allowance	
Assumed ratio (upgrade & addition) / (current infrastructure)	30%
Estimated modern equivalent replacement value of upgrade & additional infrastructure	R 37 232 400
Assumed upgrade period (years)	20
Estimated annual budget requirement for upgrade & additional infrastructure	R 1 861 620
f) Equipment upgrade & addition allowance	
Assumed ratio (upgrade & addition) / (current equipment)	30%
Estimated modern equivalent replacement value of upgrade & additional equipment	R 11 169 720
Assumed upgrade period (years)	20
Estimated annual budget requirement for upgrade & additional equipment	R 558 486

Source: Own construction, 2012

The total annual budget requirement for this scenario, based on the 1997 MERC values is summarised in the following table:

Table 23: Budget requirements

Budget element	Model amount	Model %
Estimated annual budget requirement for current infrastructure maintenance	R 4 964 320	44%
Estimated annual budget requirement for current equipment maintenance	R 1 861 620	17%
Estimated annual budget requirement for upgrade & additional infrastructure	R 1 551 350	14%
Estimated annual budget requirement for upgrade & additional equipment	R 465 405	4%
Estimated annual budget requirement for upgrade & additional infrastructure	R 1 861 620	17%
Estimated annual budget requirement for upgrade & additional equipment	R 558 486	5%
Total budget requirement	R 11 262 801	100%

Source: Own construction, 2012

8.2.2.2. Performance evaluation : Instrument 5

The background provided above identifies several budget focus areas that should be addressed during budget allocations. A maturity assessment will determine the current status and enable the Infrastructure Unit in the National Department of Health to identify areas where growth is required.

Instrument 5 was specifically developed for the purpose of this research. It provides six statements concerning budget allocation focus areas. A copy of Instrument 5 is attached in Annexure A.

8.2.3. Budget utilisation

8.2.3.1. Background

The objective of the Division of Revenue Act (5 of 2012) is to provide for the equitable division of revenue raised among the three spheres of government, to promote predictability of multi-year allocations and to promote transparency and accountability. The following provisions of the Division of Revenue Act (DORA) are critical:

- The Health Infrastructure Grant is a Schedule 4 grant, while the Hospital Revitalisation Grant and the Nursing Colleges and Schools Grant are Schedule 5 grants.

- The transferring National Officer is responsible for the monitoring of expenditure and non-financial performance information on programmes in accordance with the requirements of the National Treasury. This task is assigned to an official of the National Department of Health.
- Such transferring National Officer is further responsible for ensuring that all other arrangements or requirements as stipulated in the DORA, or in the relevant framework for the particular allocation necessary for the transfer of an allocation, have been complied with prior to the start of the financial year, and are complied with throughout the financial year.
- The Receiving Officer is responsible for complying with the framework for a Schedule 4 and Schedule 5 allocation. This responsibility is assigned to an official of the relevant provincial department responsible for health.
- Such receiving officer may only utilise an allocation for the purpose stipulated in the relevant grant framework.
- The transferring national officer may withhold the transfer of a grant allocation, for a period not exceeding 30 days, if:
 - The province does not comply with the provisions of DORA.
 - The province does not comply with the conditions in the grant framework.
 - The province does not spend roll-overs of conditional allocations approved by the National Treasury.
 - The provincial expenditure on previous transfers during the financial year reflects significant under-spending, for which no satisfactory explanation is given.
- The national treasury may, in its discretion or at the request of a transferring National Officer, or a Receiving Officer, stop the transfer of a Schedule 4 or 5 allocation on the following grounds:
 - Persistent and material non-compliance with DORA.
 - Persistent non-compliance with grant conditions.
 - If the national treasury anticipates that a province will substantially under-spend on that programme or allocation in the financial year.
 - If the Provincial Department of Health (PDoH) does not comply with best practise standards and guidelines contained in Practice Note 22 that was issued in terms of section 5 of the Construction Industry Development Board Act, 2000 (Act No. 38 of 2000).

Various sources of funding may be applied for the planning and implementation of health infrastructure projects. Among these, there are three conditional grants that are administered by the National Department of Health:

- Hospital Revitalisation Grant (HRG) - to provide funding to enable provinces to plan, manage, modernize, rationalize and transform health infrastructure (construction work), health technology, monitoring and evaluation of the health facilities in line with national policy objectives
- Health Infrastructure Grant (HIG) – to supplement provincial funding of health infrastructure (construction work) to accelerate the provision of health facilities, including medical equipment and to ensure proper maintenance of provincial health infrastructure
- Nursing Colleges and Schools Grant (NCSG) - to supplement provincial funding of health infrastructure (construction work) to accelerate the provision of health facilities, including office furniture and related equipment and to ensure proper maintenance of provincial health infrastructure for Nursing Colleges and Schools.

It is important to note that there are other sources of funding (not managed by the National Department of Health) that may also be applied to health infrastructure projects. Such sources include the Provincial Equitable Share, Forensic Pathology Service Grant, and several donor funds.

The actual utilisation of the various funding sources during 2011/12 was summarised in the progress report prepared by the Programme Management Support Unit (PMSU) in the National Department of Health.

A comparison between the budget allocated and the actual utilisation in 2011/12 is presented below (PMSU monthly progress report, April 2012:4, 7, RSA, RSA Progress, National), using the following abbreviations:

- EC Eastern Cape Province
- FS Free State Province
- GT Gauteng Province
- KZ KwaZulu-Natal Province
- LP Limpopo Province
- MP Mpumalanga Province
- NC Northern Cape Province
- NW North-West Province
- WC Western Cape Province
- RSA Republic of South Africa
- HRP Hospital Revitalisation Grant
- HIG Health Infrastructure Grant
- ES Equitable Share

- IYM In-year Reporting Model
- IRM Infrastructure Reporting Model

Table 24: Budget utilisation (Actual 2011/12)

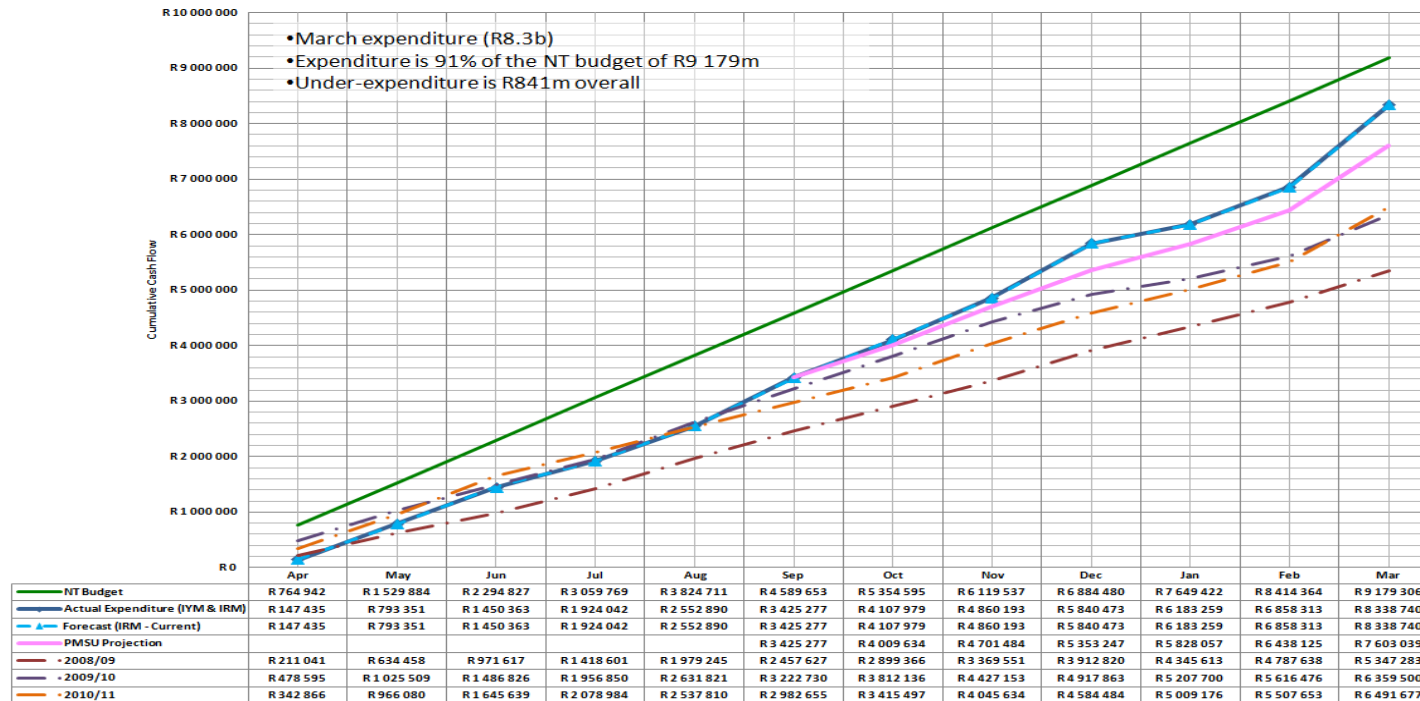
Province	Budget				Actual Expenditure			
	HRP	HIG	ES	Total	HRP (IYM)	HIG (IYM)	ES (IRM)	Total
	R'000	R'000	R'000	R'000	R'000	R'000	R'000	R'000
EC	R 633 304	R 376 764	R 433 557	R 1 443 625	R 556 585	R 328 912	R 360 068	R 1 245 565
FS	R 445 460	R 131 717	R 0	R 577 177	R 405 515	R 75 052	R 4 237	R 484 804
GT	R 931 640	R 142 694	R 756 215	R 1 830 549	R 793 312	R 136 957	R 443 544	R 1 373 813
KZ	R 547 698	R 358 471	R 719 096	R 1 625 265	R 613 406	R 364 758	R 919 976	R 1 898 140
LP	R 371 672	R 270 802	R 444 560	R 1 087 034	R 285 679	R 253 093	R 313 741	R 852 513
MP	R 356 557	R 146 368	R 235 555	R 738 480	R 295 843	R 129 152	R 206 684	R 631 679
NC	R 406 892	R 89 501	R 13 110	R 509 503	R 398 000	R 104 891	R 8 566	R 511 457
NW	R 370 074	R 145 466	R 44 904	R 560 444	R 364 423	R 136 695	R 40 301	R 541 419
WC	R 490 758	R 119 179	R 197 292	R 807 229	R 481 511	R 124 836	R 193 003	R 799 350
RSA	R 4 554 055	R 1 780 962	R 2 844 289	R 9 179 306	R 4 194 274	R 1 654 346	R 2 490 120	R 8 338 740
					92%	93%	88%	91%

Source: Department of Health PMSU progress report April 2012, 2012

The total expenditure of R8 338 740 amounts to 91% of the total allocated budget of R9 179 306. The cumulative cash flow during the entire 2011/12 financial year is illustrated below:

Figure 45: Budget utilisation (Total cumulative cash flow 2011/12)

RSA: TOTAL - March Actuals (R'000)



Note: Actual expenditure up to March except EC & FS (Projected), all Provinces subject to verification for March 2012.

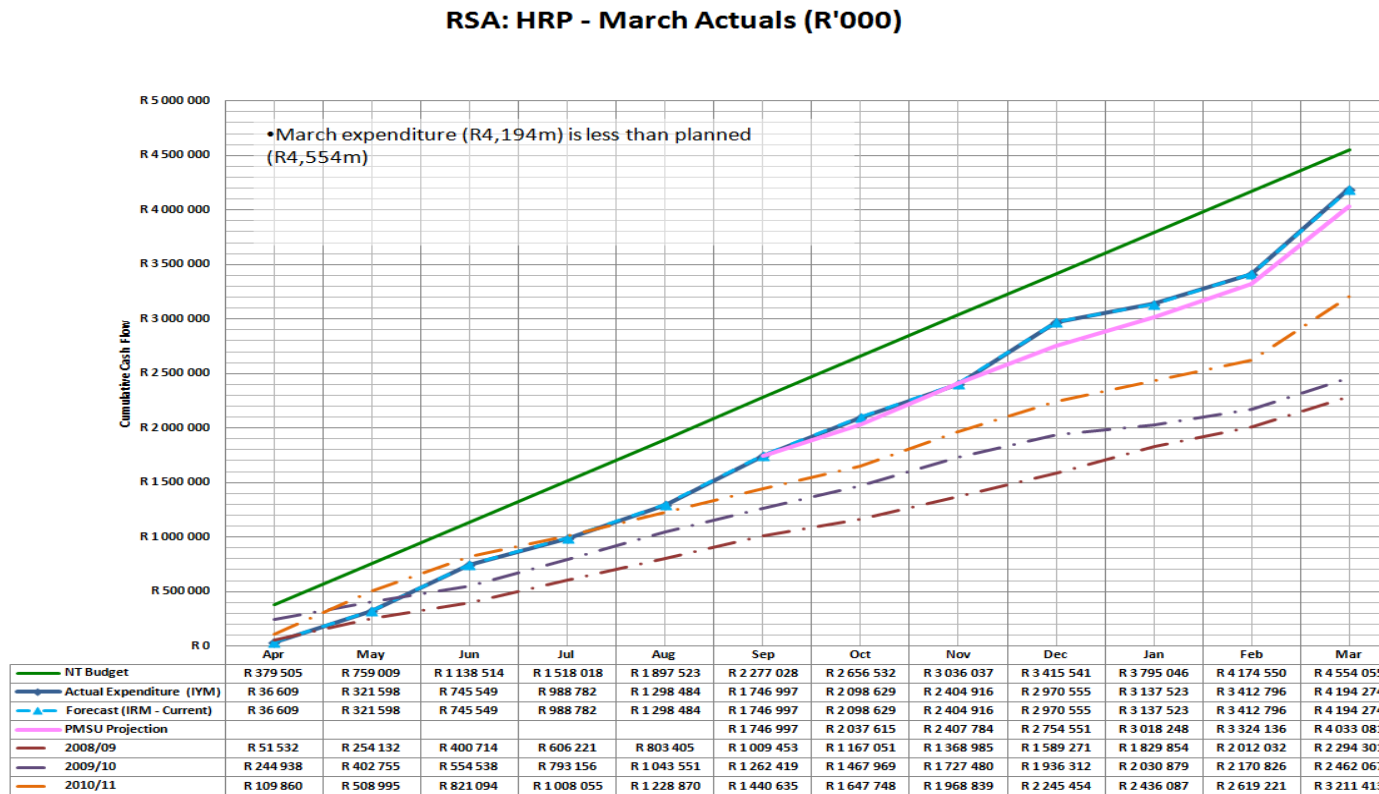
Note: Actual expenditure for March 2012 obtained from the IRM.

Source: Department of Health PMSU progress report April 2012, 2012

From the above it is clear that there has been a significant improvement in the financial performance of the programme compared to previous years, recording the highest expenditure since the start of the Hospital Revitalisation Programme.

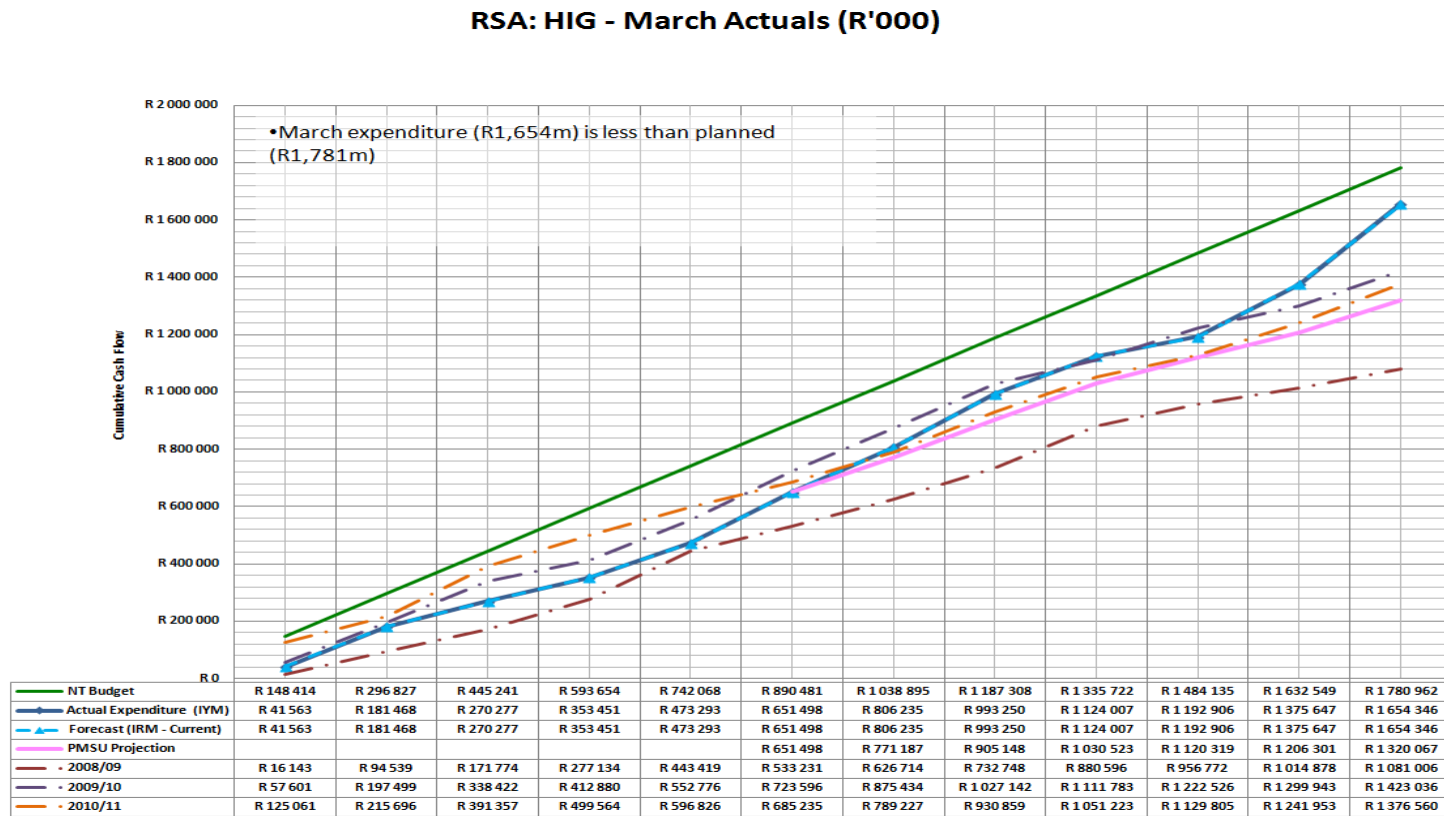
The cumulative expenditure for the three sources of project funding is presented as follows:

Figure 46: Budget utilisation (HRP cumulative cash flow 2011/12)



Source: Department of Health PMSU progress report April 2012, 2012

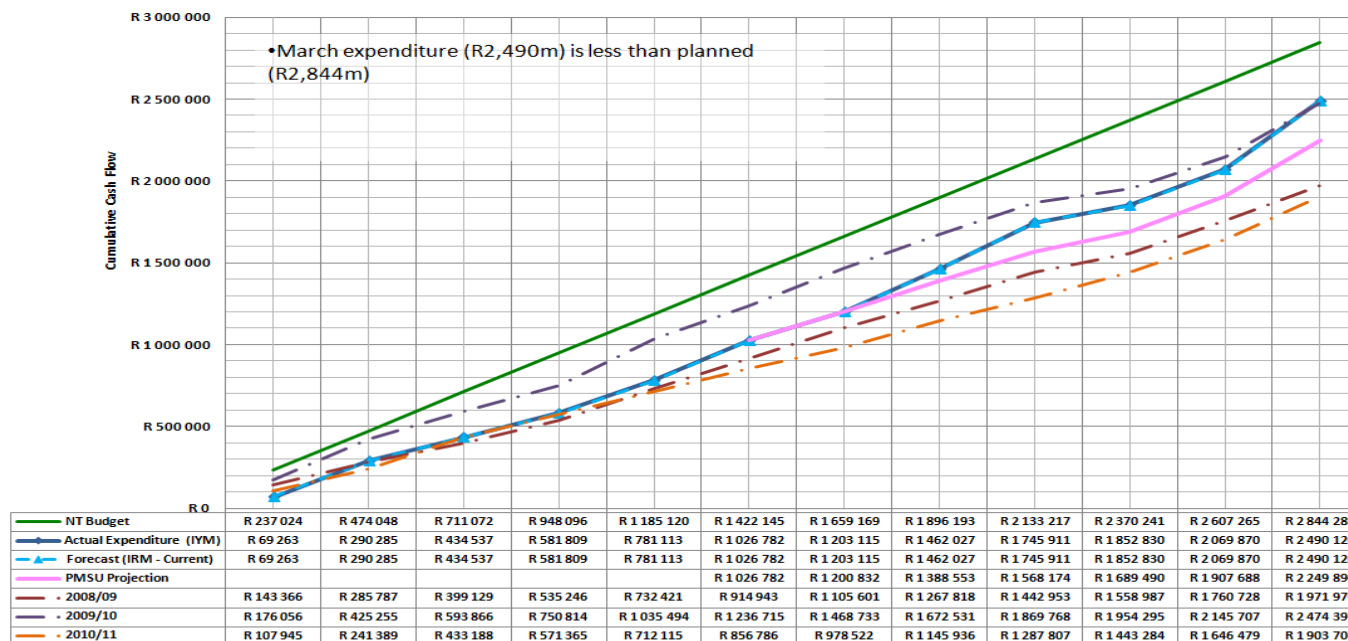
Figure 47: Budget utilisation (HIG cumulative cash flow 2011/12)



Source: Department of Health PMSU progress report April 2012, 2012

Figure 48: Budget utilisation (ES and Other cumulative cash flow 2011/12)

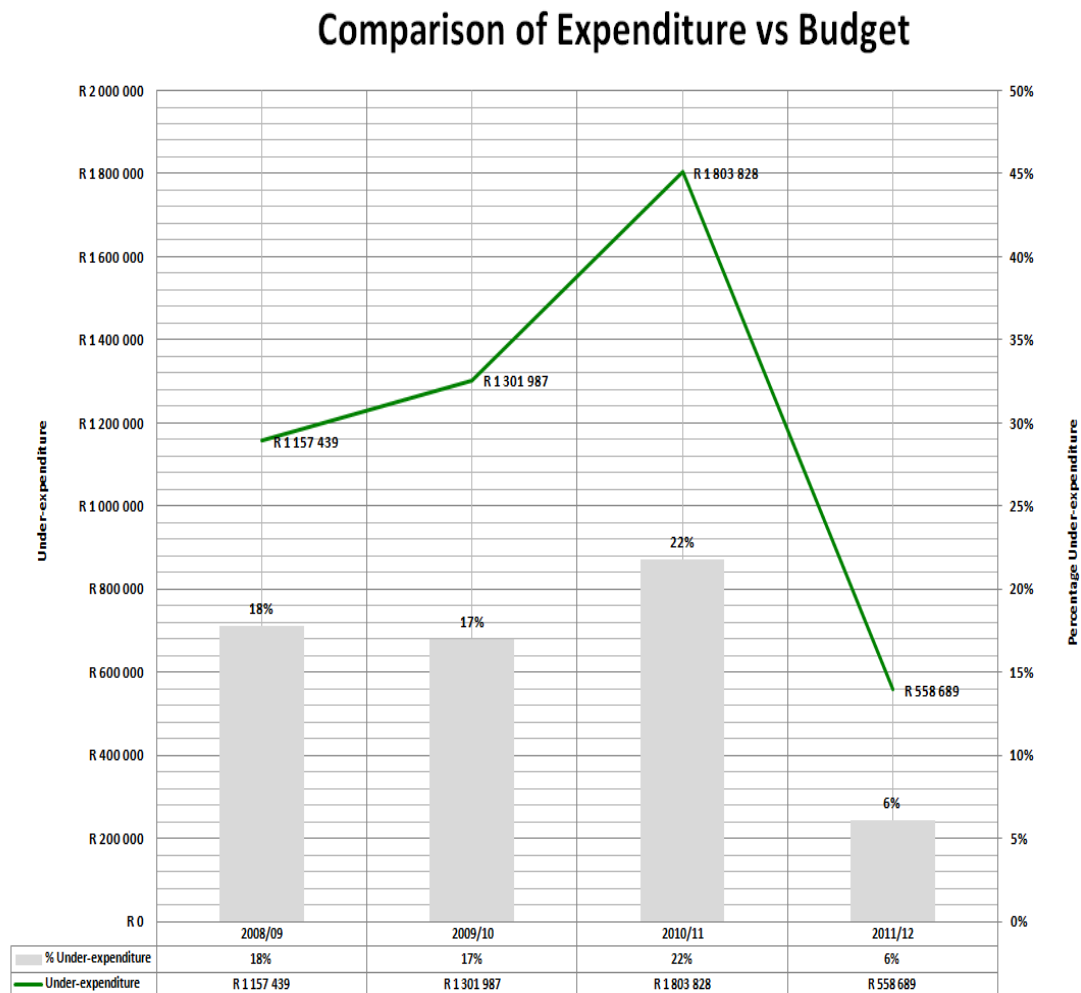
RSA: ES & OTHER - March Actuals (R'000)



Source: Department of Health PMSU progress report April 2012, 2012

A comparison between the financial performances in 2011/12 versus previous years is presented below:

Figure 49: Budget utilisation (Year-on-year comparison)



Note: Budget and Actual expenditure obtained from previous year's IRM.

Source: Department of Health PMSU progress report April 2012, 2012

8.2.3.2. Performance evaluation : Instrument 6

The background provided above records the actual budget allocations and the actual expenditure during the 2012/13 financial year. As the Infrastructure Unit is currently calibrating a first prototype cost model for clinics and district hospitals, it is premature to assess the value for money on such projects.

Instrument 6 was specifically developed for the purpose of this research. It provides five principle statements concerning budget utilisation. A copy of Instrument 6 is attached in Annexure A.

9. Evaluation of internal processes

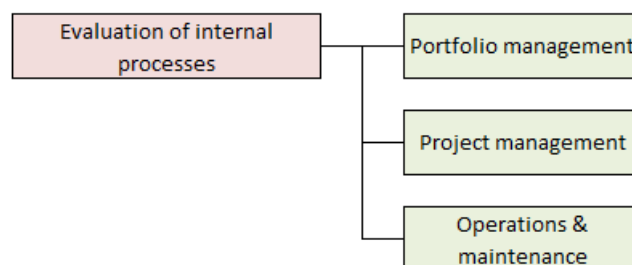
9.1. Introduction

The Infrastructure Delivery Management System (IDMS) applied in South Africa, defines specific processes, broadly based on the Project Management Body of Knowledge (PMBOK).

9.2. Critical sub-systems

The following critical sub-systems were assessed:

Figure 50: Evaluation of internal processes (Sub-systems)



Source: Own construction, 2012

The performance evaluation, focused on the dimension of internal processes, was divided into three sub-systems. The first sub-system focused on the level of portfolio management. It dealt with the questions of “what are the needs and how will we group projects to satisfy these needs?” The second sub-system focused on the level of project management. It dealt with the question of “how will we manage scope, time and cost per project?” The third sub-system focused on operation and maintenance of health facilities infrastructure. It dealt with the questions of “how do we ensure a sustainable platform for the provision of health services?”

The grant frameworks published in terms of the Division of Revenue Act defines funding conditions and grant management responsibilities. The applicable conditions and responsibilities were abstracted for each internal process described in the following sections.

9.2.1. Portfolio management

9.2.1.1. Background

Portfolio management aims to link the strategic service delivery plan of the Provincial Departments of Health with the infrastructure it will require to deliver those services in an efficient, effective and reliable manner (Construction Industry Development Board, 2010: 20).

With reference to the overall infrastructure delivery process illustrated in Figure 22, the specific processes are briefly described below.

9.2.1.1.1. User / Custodian Asset Management Plan

The Government Immovable Asset Management Act (GIAMA) determines that the Accounting Officer of the Provincial Department of Health must prepare User Asset Management Plans (U-AMPs) on an annual basis. These plans include a prioritised list of projects. Depending on the availability of funding, a number of the top priorities are then scheduled for implementation during the medium-term expenditure framework of three years.

The National Department of Health, in partnership with the CSIR, develop high level cost models for various types of health facilities. These cost modules may be used to prepare order of magnitude budget costs.

The grant frameworks define the following conditions and responsibilities relevant to this process:

Table 25: Grant conditions (User asset management plan)

Grant	Condition
All	PDoH must submit U-AMP, including the initial list of prioritised projects as captured in the Infrastructure Programme Management Plan (IPMP) and Infrastructure Programme Implementation Plan (IPIP) to NDoH. The transfer of grant instalments is dependent on receipt of this information.
HIG / NCSG	PDoH must adhere to the Infrastructure Alignment Model in terms of programme implementation

Source: Own construction, 2012

Table 26: Grant responsibilities (User asset management plan)

Grant	Responsibility
HIG / NCSG	NDoH to provide guidelines and monitor the development and approval of provincial U-AMPs including project list and procurement strategies
HIG / NCSG	PDoH to submit an approved list of projects in the required format to NDoH for approval
HIG / NCSG	NDoH to receive project lists from PDoH and publish the project list in a gazette within 28 days after the DORA comes into effect
All	PDoH to ensure that all health infrastructure projects are aligned and lead to best practice infrastructure planning and project implementation and effective management and sustainability of the province's health assets

Source: Own construction, 2012

9.2.1.1.2. Procurement Strategy

Provincial Departments of Health should formulate a procurement strategy for the projects listed in their user asset management plans. Such procurement strategy is developed by:

- Analysing the medium- term expenditure plan and identifying categories of projects.
- Formulating procurement objectives.
- Packaging the works.
- Deciding on suitable pricing strategies for each package.
- Establishing requirements for outsourced service providers and the manner in which such resources are to be contracted.
- Decide on procurement arrangements.

Typical packages may include the following:

- Packages with no design input (e. g. routine cleaning of sewers).
- Packages that require Management Contracts (e.g. if additional management capacity is required).
- Packages suitable for Design and Construct arrangements (e.g. detailed user requirement specifications used for mobile clinics).
- Packages suitable for Develop and Construct arrangements (e.g. using standard designs for nurses' accommodation).
- Packages suitable for Design by Employer arrangements (e.g. design by appointed professional service providers, leading to procurement of contractor).

A procurement strategy is the combination of the following:

- Delivery management strategy – (e.g. will needs be met through PPP, implementing agent, another organ of state's framework agreement, leasing, outsourcing, own resources).
- Contracting arrangements – (e.g. design by employer, develop and construct, design and construct, construction management, management contractor).
- Procurement arrangements – (e.g. prequalification, preferences, eligibility criteria, evaluation criteria).

The grant frameworks define the following conditions:

Table 27: Grant conditions (Procurement strategy)

Grant	Condition
All	Relevantly qualified representatives from the PDoH have to be involved with the procurement of Professional Service Providers and Contractors by its Implementing Agent, through representation on the Specification Committee, Evaluation Committee as well as Bid Adjudication Committee of the Implementing Agent. HODs of the PDoH must accept the final award or reject it with documented reasons. Any disputes arising from such actions should be mediated by the Provincial Treasury

Source: Own construction, 2012

9.2.1.1.3. Infrastructure Programme Management Plan

Provincial Departments of Health should prepare an Infrastructure Programme Management Plan (IPMP). This plan describes how the prioritised MTEF works list will be:

- Packaged.
- Managed.
- Controlled.

The Infrastructure Programme Management Plan (IPMP) includes the following component plans:

- Organisational support plan.
- Procurement plan.
- Time management plan.
- Cost management plan.
- Risk management plan.
- Quality management plan.
- Communications management plan.

The grant frameworks define the following conditions:

Table 28: Grant conditions (Infrastructure programme management plan)

Grant	Condition
HRG	NDoH to provide guidelines and monitor the development and approval of provincial infrastructure plans

Source: Own construction, 2012

9.2.1.1.4. Authorise Implementation

Provincial Departments of Health should formally approve all components of the Infrastructure Programme Management Plan. This will authorise the implementation. Should these Departments decide to use the services of others, formal Service Delivery Agreements will be required. The grant frameworks define the following conditions and responsibilities:

Table 29: Grant conditions (Authorise implementation)

Grant	Condition
All	To improve and strengthen infrastructure delivery the NDoH may enter into an intergovernmental protocol agreement with the PDoH where there is unsatisfactory progress on physical and financial performance, to allow for the acceleration of service delivery.
All	In instances where the capacity of the PDoW is deemed insufficient, PDoH should engage alternative Implementing Agents, provided that supply chain and contracting processes are followed and that the Implementing Agent is registered in terms of the CIDB.

Source: Own construction, 2012

Table 30: Grant responsibilities (Authorise implementation)

Grant	Responsibility
All	NDoH to initiate, sign and participate in implementation of project related Protocols
All	NDoH to provide PMSU (Programme Management Support Unit) support as contemplated in the IUSS Infrastructure Unit Support System) program
All	PDoH to create enabling environment for acceptance of PMSU interventions and signing and adherence to the implementation of implementation protocol conditions

Source: Own construction, 2012

9.2.1.1.5. Monitor and Control

The Provincial Department of Health remains accountable for programme management. Monitoring and controlling is therefore a key function of the Provincial Department of Health. The focus of reporting is on activities and more specifically the progress made against a baseline. The focus of monitoring is on the achievement of outputs. Once the PMIS is operational, it will be the primary source of reporting.

The grant frameworks define the following conditions and responsibilities:

Table 31: Grant conditions (Monitor and control)

Grant	Condition
HRG	PDoH must implement projects in line with the Project Implementation Plans, as guided by the Project Implementation Manual for 2012/13.
All	PDoH must put in place a Provincial Progress Review Committee for monitoring and oversight of the performance of all infrastructure grants.
All	PDoH must submit to NDoH monthly reports for all projects through the Infrastructure Reporting model (IRM). The Health Technology, Organisational Development and Quality Assurance reports should be submitted separately.
HIG / NCSG	PDoH must adhere to In-Year reporting.
HIG / NCSG	PDoH must report quarterly to the National Council of Provinces.
HRG	All the new projects should follow Peer Review stages as per prescribed formats incorporated in the Project Implementation Manual (PIM).
HRG	PDoH must strengthen grant management by appointing a complete Revitalisation Team as guided by NDoH and ensure the core infrastructure management structure approved by National Health Council (NHC) for such grants is in place.
All	The NDoH can in consultation with the affected PDoH adjust project budgetary allocations of poor performing projects (both physical and financial) in favour of other prioritised projects in the province.
All	PDoH can in consultation with the NDoH, provincial Treasury and national Treasury, motivate for a shift in budget between the HIG, NCSG and HRG in order to defray a potential over-spending or under-spending in the other grant.
HIG / NCSG	PDoH must submit separate costed motivation for capacity building plan to NDoH for approval in support of infrastructure delivery.

Source: Own construction, 2012

Table 32: Grant responsibilities (Monitor and control)

Grant	Responsibility
All	NDoH to perform on-site monitoring of the implementation of projects.
All	NDoH to support and oversee provincial progress review meetings.
All	NDoH to convene and chair quarterly National Progress Review meetings.
All	NDoH to submit quarterly performance reports to National Treasury and National Council of Provinces.
HIG / NCSG	NDoH to perform on-site monitoring of the approved adherence to the project list and procurement strategies.
HIG / NCSG	PDoH to ensure that the provincial Infrastructure Projects Progress Review Committee sit monthly to oversee, monitor and report on the progress of all projects and to ensure compliance with the Infrastructure Delivery Improvement Programme (IDIP) guidelines.
HRG	PDoH to report as per prescribed reporting format required within the Project Implementation Manual (PIM) and the Infrastructure Reporting Model (IRM).
HIG / NCSG	PDoH to submit monthly performance reports, drawn from the Infrastructure Reporting Model (IRM) to the NDoH.
HRG	PDoH must participate in the National Progress Review Committee meetings and report on project implementation of all health projects.
HRG	PDoH to submit monthly performance and financial reports to NDoH.
All	PDoH to submit quarterly performance reports to the National Treasury and the National Council of Provinces.
HRG	NDoH to approve all plans funded under the HRG before the first transfer.
HRG	NDoH to receive annual Project Implementation Plan signed off by HOD.
All	PDoH to appoint Resident Engineers to improve the delivery capacity of the provincial infrastructure unit.

Source: Own construction, 2012

9.2.1.2. Performance evaluation: Instrument 7

The background provided above implies several organisational process assets and enterprise environmental factors that may be inputs to delivery processes in the portfolio management of health facilities infrastructure. A maturity assessment will determine the current status and enable the Infrastructure Unit in the National Department of Health to identify areas where growth is required.

Instrument 7 was specifically developed for the purpose of this research. It provides fifteen statements concerning organisational process assets. A copy of Instrument 7 is attached in Annexure A.

9.2.2. Project management

9.2.2.1. Background

The planning and implementation of individual projects are managed in terms of the internal processes described in the following sections.

9.2.2.1.1. Implementation Planning

This phase consists of the following steps:

Table 33: Project management (Implementation planning)

Phase	Goal	Control Gate
Package Preparation	To develop a Strategic Brief (a user requirement specification) for each package.	Acceptance by the Client of the Strategic Brief.
Package Solution	To develop a Design Concept that will enable the client to establish the feasibility of satisfying the package requirements.	Acceptance by the Client of the Concept Report.
Works Planning	To develop Work Plan in response to the User Department's MTEF Works List.	Approval by the User Department of the Work Plans.

Source: Construction Industry Development Board, 2010: 40

The grant frameworks define the following conditions and responsibilities:

Table 34: Grant conditions (Implementation planning)

Grant	Condition
HRG	NDoH to provide guidelines and monitor the development and approval of Initial Project Implementation Plans.
HRG	With the exception of funding for costs incurred for planning, all new projects concerning construction must have Business Cases and Initial Project Implementation Plans approved before funds can be released for such projects.
HRG	NDoH to provide guidelines and monitor the development and approval of project business case and brief.

Source: Own construction, 2012

Table 35: Grant responsibilities (Implementation planning)

Grant	Responsibility
HRG	PDoH to submit their final PIPs including project based cash flow to NDoH covering all four components of the Hospital Revitalisation Grant.

Source: Own construction, 2012

9.2.2.1.2. Design

This phase consists of the following steps:

Table 36: Project management (Design)

Phase	Goal	Control Gate
Design Development	To develop the concept and to finalise the design criteria.	Acceptance of the Design Development Report.
Detail Design and Specification	To produce the final design and specification.	Acceptance of the Production Information.
Construction Information	To produce the construction information.	Acceptance of the Construction Information.

Source: Construction Industry Development Board, 2010: 40

The development of norms and standards for health facilities is a dynamic process. The National Department of Health, in partnership with the CSIR, is constantly enhancing best practice guidelines for the design of health facilities. The grant frameworks define the following conditions:

Table 37: Grant conditions (Design)

Grant	Condition
HRG	NDoH to provide guidelines and monitor the development and approval of project design.

Source: Own construction, 2012

9.2.2.1.3. Works

This phase consists of the following steps:

Table 38: Project management (Works)

Phase	Goal	Control Gate
Construction / Delivery	To construct/ deliver the works according to the working drawings and specification.	Acceptance by the Client of the completed works for occupation. Issue Practical Completion Certificates.
Hand over	To facilitate smooth transition of the completed works from the project team to the Operation and maintenance personnel.	Acceptance by the Client of the completed works. Issue Completion Certificates.

Source: Construction Industry Development Board, 2010: 40-41

9.2.2.1.4. Close Out

This phase consists of the following steps:

Table 39: Project management (Close-out)

Phase	Goal	Control Gate
Close out	To close out the project by verifying the scope of the work done by all PSPs and contractors. To effect final payments to all service providers. To archive all record information and statutory certificates.	Acceptance by the Client of record information and statutory certificates. Issue a Final Completion Certificates. Approval by the Client of the Completion Report.
Post Project Evaluation	To assess the actual project benefits against the expected benefits.	Submit evaluation report.

Source: Construction Industry Development Board, 2010: 41

The grant frameworks define the following conditions:

Table 40: Grant conditions (Close-out)

Grant	Condition
All	The Implementing Agent has, on completion of a project, to develop a building maintenance plan over the lifespan of the building and the PDoH has to ring-fence appropriate funds from equitable share for the maintenance of the facilities in line with the requirements as stated in the life-cycle maintenance plans.

Source: Own construction, 2012

9.2.2.2. Performance evaluation : Instrument 8

The background provided above implies several organisational process assets and enterprise environmental factors that may be inputs to delivery processes in the project management of health facilities infrastructure. A maturity assessment will determine the current status and enable the Infrastructure Unit in the National Department of Health to identify areas where growth is required.

Instrument 8 was specifically developed for the purpose of this research. It provides twenty five statements concerning organisational process assets. A copy of Instrument 8 is attached in Annexure A.

9.2.3. Operations and Maintenance

9.2.3.1. Background

From the time that a Works Completion Certificate has been issued, the facility is handed over to the User and Custodian Departments. The Custodian Department is responsible for the following:

- Compiling the C-AMP, with due regard to the U-AMP, that forms part of the strategic plan of that custodian.
- Submit the custodian's immovable asset management plan to the relevant treasury as part of its strategic plan.
- Advise the relevant treasury on the U-AMPs of users.
- Manage an immovable asset throughout its life cycle.
- Assess the performance of the immovable asset.
- Assess the condition of the immovable asset at least every fifth year.
- Identify the effect of the condition of an immovable asset on service delivery ability.
- Determine the maintenance required to return the immovable asset to the state in which it would provide the most effective service.

- Estimating the cost of the maintenance activities identified.
- Establish and execute a performance measurement system as prescribed.

The User Department is responsible for the following:

- Compiling a U-AMP that will form part of the strategic plan of that User.
- Jointly conducting the immovable asset strategic planning process with the relevant Custodian.
- Submitting its U-AMP to the relevant treasury.
- Submitting a copy of the U-AMP to the relevant Custodian.
- Establishing and executing a performance measurement system.

The following sub-processes are critical:

- Accept the physical asset at handover.
- Ensure that the relevant information is captured into the Asset Register.
- Recognise the asset into the Accounting System.
- Mobilise User and Custodian staff to manage asset.
- Ensure that facilities management services are in place and operational.
- Conduct facilities management.
- Conduct engineering infrastructure management.
- Conduct property management.
- Conduct condition assessment.
- Conduct remaining life-cycle costing.
- Conduct preventative maintenance.
- Conduct breakdown repairs.
- Demobilise facilities management.

9.2.3.2. Performance evaluation : Instrument 9

The background provided above implies several organisational process assets and enterprise environmental factors that may be inputs to delivery processes in the operation and maintenance of health facilities infrastructure. A maturity assessment will determine the current status and enable the Infrastructure Unit in the National Department of Health to identify areas where growth is required.

Instrument 9 was specifically developed for the purpose of this research. It provides seven statements concerning organisational process assets. A copy of Instrument 9 is attached in Annexure A.

10. Evaluation of strategic constituencies' satisfaction

10.1. Introduction

The World Economic Forum defines the following twelve pillars of competitiveness (Schwab. 2012: 4-8):

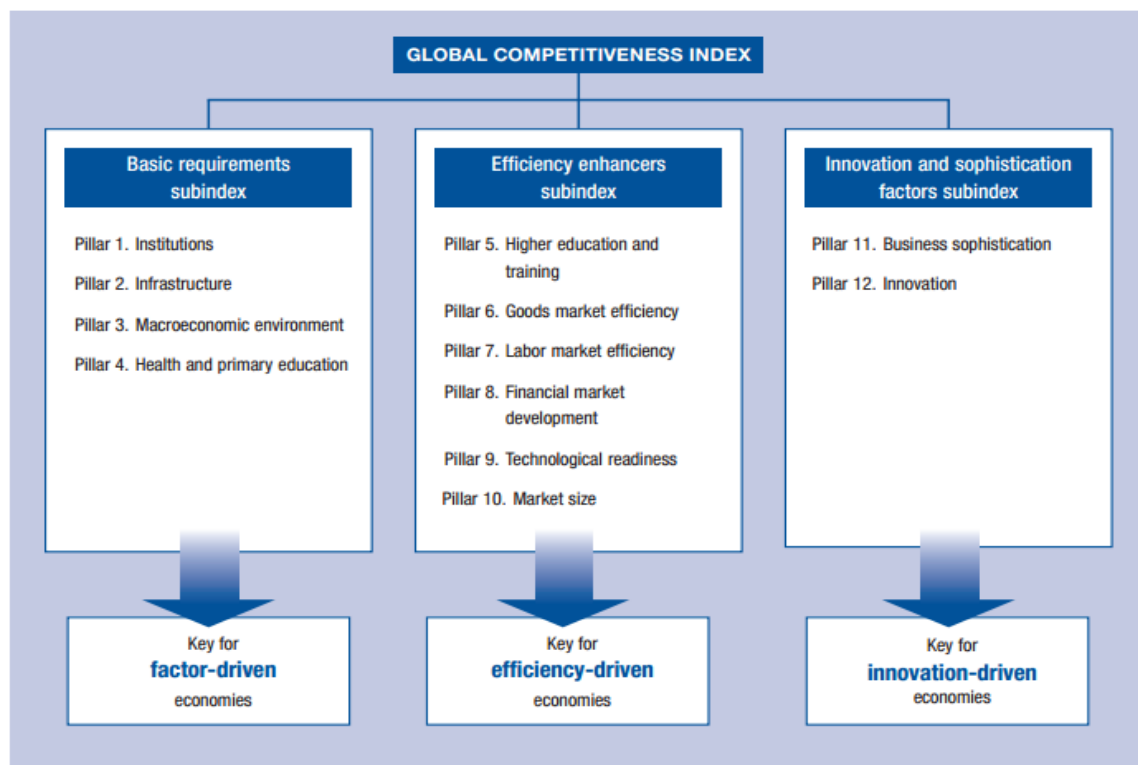
- First pillar: Institutions - The institutional environment is determined by the legal and administrative framework within which individuals, firms, and governments interact to generate wealth.
- Second pillar: Infrastructure - Extensive and efficient infrastructure is critical for ensuring the effective functioning of the economy, as it is an important factor in determining the location of economic activity and the kinds of activities or sectors that can develop in a particular instance.
- Third pillar: Macroeconomic environment - The stability of the macroeconomic environment is important for business and, therefore, is important for the overall competitiveness of a country.
- Fourth pillar: Health and primary education - A healthy workforce is vital to a country's competitiveness and productivity. Workers who are ill cannot function to their potential and will be less productive. Poor health leads to significant costs to business, as sick workers are often absent or operate at lower levels of efficiency. Investment in the provision of health services is thus critical for clear economic, as well as moral, considerations.
- Fifth pillar: Higher education and training - Quality higher education and training is particularly crucial for economies that want to move up the value chain beyond simple production processes and products.
- Sixth pillar: Goods market efficiency - Countries with efficient goods markets are well positioned to produce the right mix of products and services given their particular supply-and-demand conditions, as well as to ensure that these goods can be most effectively traded in the economy.
- Seventh pillar: Labour market efficiency - The efficiency and flexibility of the labour market are critical for ensuring that workers are allocated to their most effective use in the economy and provided with incentives to give their best effort in their jobs.
- Eighth pillar: Financial market development - The recent economic crisis has highlighted the central role of a sound and well-functioning financial sector for economic activities.
- Ninth pillar: Technological readiness - The technological readiness pillar measures the agility with which an economy adopts existing technologies to enhance the productivity of its industries, with specific emphasis on its capacity to fully leverage information and

communication technologies (ICT) in daily activities and production processes for increased efficiency and enabling innovation for competitiveness.

- Tenth pillar: Market size - The size of the market affects productivity since large markets allow firms to exploit economies of scale.
- Eleventh pillar: Business sophistication - Business sophistication concerns two elements that are intricately linked: the quality of a country's overall business networks and the quality of individual firms' operations and strategies.
- Twelfth pillar: Innovation - Although substantial gains can be obtained by improving institutions, building infrastructure, reducing macroeconomic instability, or improving human capital, all these factors eventually seem to run into diminishing returns. Technological breakthroughs have been at the basis of many of the productivity gains that our economies have historically experienced.

The inter-relation between these pillars is illustrated below:

Figure 51: Global competitiveness index

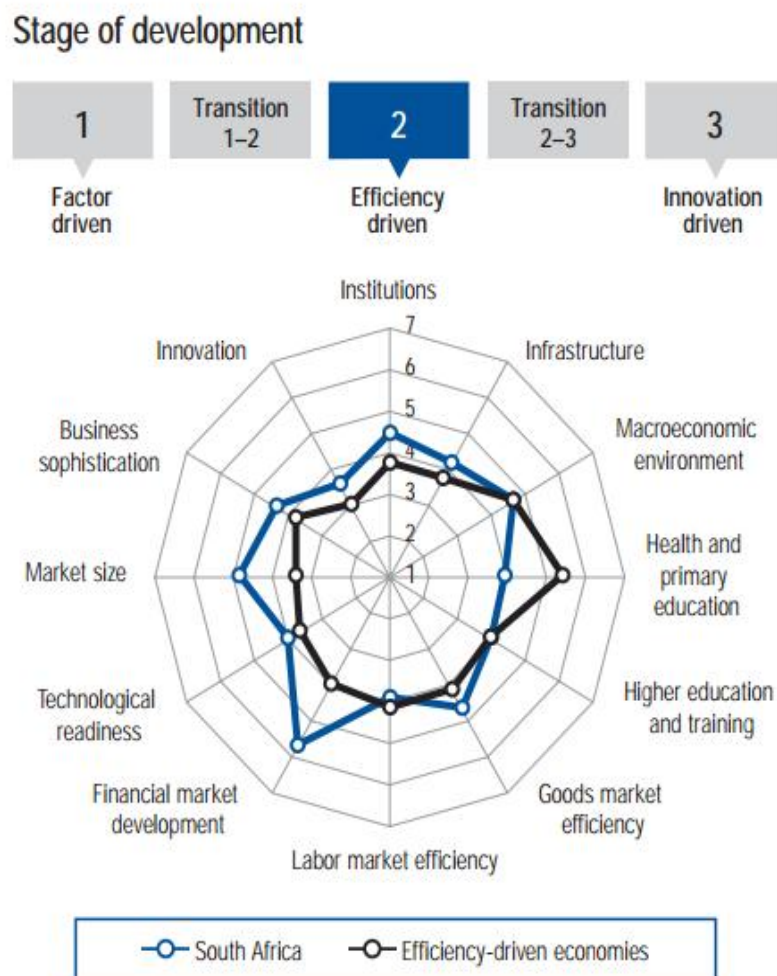


Source: Schwab, 2012: 8

The World Economic Forum rank South Africa in the 52nd place, out of the 144 economies assessed. This is the highest-ranked country in sub-Saharan Africa and the third-placed among the BRICS economies. South Africa is classified, together with thirty-two other countries, as an

“efficiency-driven” economy. The performance of South Africa, compared to the total group of “efficiency-driven” economies is illustrated below (Global Competitiveness Report, 2012:324-325). In general, South Africa leads the way in this group. The single parameter where South Africa scored lower than the average of the group is “Health and primary education”. On a global scale, South Africa ranked 132nd out of 144 economies with regard to “health of the workforce”, mainly due to high rates of communicable diseases and poor health indicators more generally. This phenomenon is illustrated below:

Figure 52: Stage of development

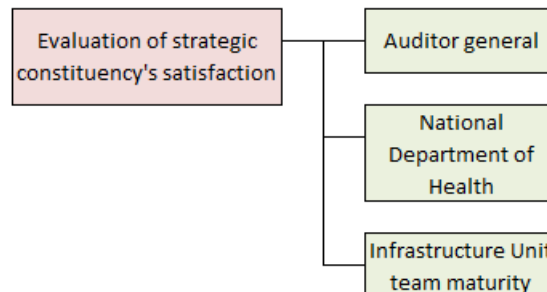


Source: Schwab, 2012: 324

10.2. Critical sub-systems

The following critical sub-systems were assessed:

Figure 53: Strategic constituencies' satisfaction (Sub-systems)



Source: Own construction, 2012

The most relevant strategic constituencies, with regards to health facilities infrastructure are the following:

- Auditor-General;
- National Department of Health;
- Provincial departments responsible for health.

This study focused only on the role of the National Department of Health, and specifically on its role in the provision of health facilities infrastructure. The following sub-systems will be assessed:

- Audited findings in the health sector, with regards to a health facilities infrastructure programme.
- Perceived general performance of the national department with regard to:
 - Strategic management;
 - Governance and accountability;
 - Human resources management and employee systems;
 - Financial management.
- Perceived performance of the Infrastructure Unit in the National Department of Health with regard to contract management.

10.2.1. Auditor General

10.2.1.1. Background

In June 2012, the Auditor-General documented his audit findings regarding the hospital revitalisation grant and the health infrastructure grant. The entire audit was based on the conditions and responsibilities defined in the grant frameworks.

With reference to the health infrastructure grant, the findings of the auditor-general included the following (Geldenhuys, 28 June 2012):

- The responsibilities of the National Department of Health include on-site monitoring of the implementation of projects and approved adherence to the project list and procurement strategy. On request of proof of on-site monitoring done from 1 April 2011 at the 500 running projects (funded through the health infrastructure grant) per the published project list to the value of R1, 701, 658, 000 dated 13 September 2011, none could be provided for audit purposes. It could therefore not be confirmed whether the amount transferred as at 30 September 2011 of R961, 786, 000 has been spent in accordance with the grant objectives set.
- Another responsibility of the National Department of Health is the publishing of the project list in a gazette within 28 days after the 2011 DoRA of 28 April 2011 came into effect. On review of the published project list per Government Gazette no 34603, it was found that the publishing thereof occurred on 13 September 2011, 109 days after the due date of 26 May 2011. Still R961 786 000 was transferred to the provinces during the period 1 April 2011 to 30 September 2011 resulting in possible irregular expenditure.
- The National Department of Health should submit quarterly performance reports to the National Treasury and the National Council of Provinces (NCOP) within 45 days after the end of each quarter. On request of proof of submission of the quarterly performance reports for quarters 2 to 4 to the National Treasury, none could be obtained for audit purposes.
- The National Department of Health should convene and chair quarterly national progress review meetings. On request of minutes of quarterly national progress review meetings held for the period 1 April 2011 to 31 March 2012, minutes received were found to relate only to quarters two and four, with none for quarters one and three.
- The National Department of Health should oversee the establishment and effective operation of provincial progress review meetings. On request. No minutes of meetings in KwaZulu-Natal, Eastern Cape, Northern Cape or Mpumalanga could be obtained. The

remainder of the provinces convened only one provincial progress review committee meeting during 2011/12.

- Unspent or saved funds may, after consultation with the national department of health be relocated towards the rehabilitation and upgrading of nursing colleges. Although the annual financial statements covering the period 1 April 2011 to 31 March 2012 indicated the unspent funds in five provinces, no funds were spent towards the rehabilitation and upgrading of the 175 earmarked nursing colleges for the year.
- Provincial departments of health must submit tabled User-Asset Management Plans (U-AMP's) for the 2011 Medium-Term Expenditure Framework (MTEF) by 14 April 2011 to the National Department of Health. On request, no such plans for Northern Cape, Western Cape or Limpopo were available. The plans for all other provinces were incomplete.

With reference to the health infrastructure grant, the findings of the Auditor-General included the following (Geldenhuys, 20 June 2012):

- The National Department of Health is responsible for the monitoring of provincial projects. On request of proof of such monitoring of provincial projects spent on to the amount of R20,290,962,000.00 over eleven years, no functional; updated; easy accessible and reliable project management information system could be found to facilitate the monitoring process.
- Defined outputs of the grant funding include the number of hospitals upgraded, re-built and fully commissioned. Over the eleven years of the grant, an amount of R20 290 962 000, had been spent at provincial level to date, while several projects have been on-going for up to nine years.
- The National Department of Health is responsible for publishing the project list in a gazette within 28 days after the 2011 DoRA of 28 April 2011 came into effect. On review it was found that the publishing thereof occurred 109 days after the due date. Still R 12 350 279 000 was transferred to the provinces during the period 1 April 2011 to 12 September 2011 resulting in possible irregular expenditure.
- The transferring National Officer of a conditional allocation must by 3 October 2011, submit to the National Treasury for approval the draft frameworks for the future allocation. On request of proof of having submitted a 2012-13 draft framework on this grant to the National Treasury by 3 October 2011, none could be provided.

10.2.1.2. Performance evaluation: Instrument 10

The background provided above refers to several responsibilities of the National Department of Health, as defined in the grant frameworks. The Auditor-General monitors the actual performance against these responsibilities. A maturity assessment will determine the current status and enable the Infrastructure Unit in the National Department of Health to identify areas where growth is required.

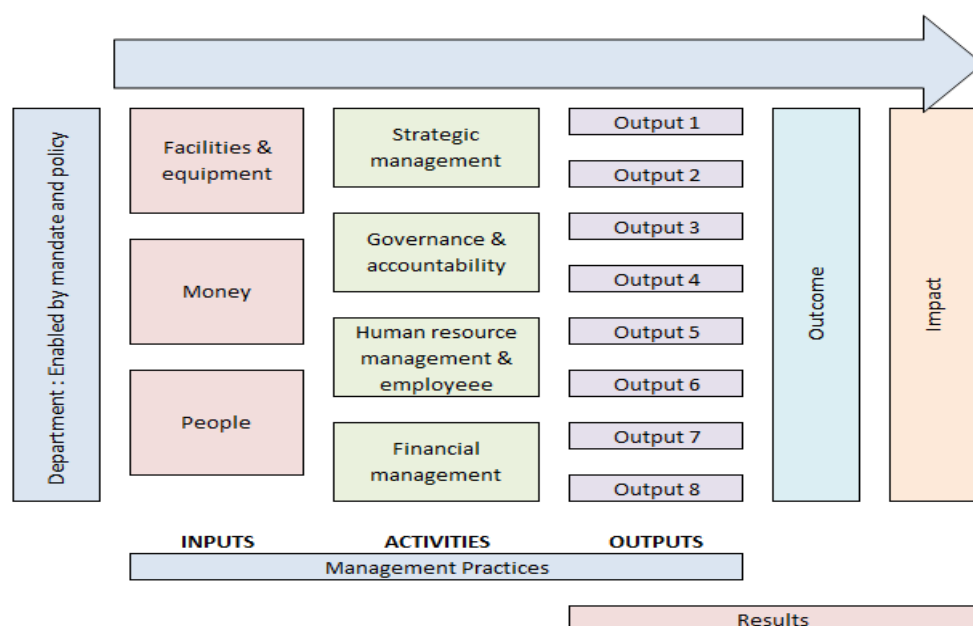
Instrument 10 was specifically developed for the purpose of this research. It provides fourteen statements concerning programme management responsibilities. A copy of Instrument 10 is attached in Annexure A.

10.2.2. National Department of Health: Management performance

10.2.2.1. Background

Government is committed to providing an efficient, effective and development orientated Public Service. The Department of Performance Monitoring and Evaluation developed Management Performance Assessment Frameworks and Tools to promote and institutionalise the monitoring and assessment of the public service. The diagram below illustrates how the Management Performance Assessment Tool fits into the systems and processes through which public services are provided in a department:

Figure 54: Management performance assessment tool (Logic)



Source: Department of Performance Monitoring and Evaluation, 2011: 4

The Management Performance Assessment Tool is (Department of Performance Monitoring and Evaluation, 2011:3):

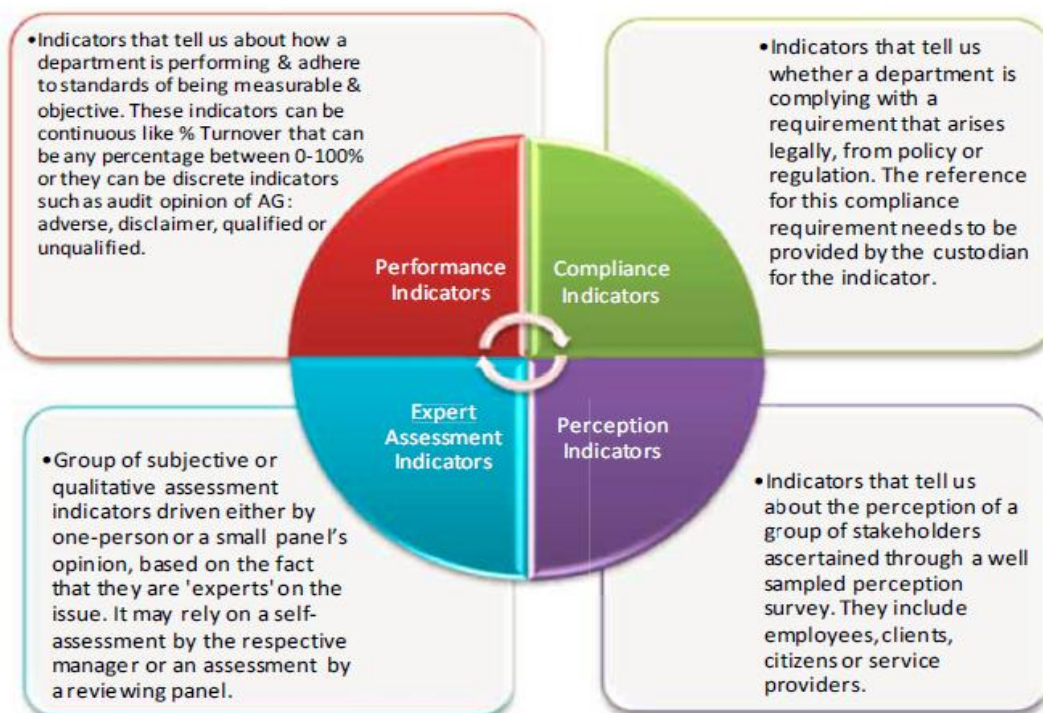
- A tool that collates existing management policy and guidelines into a framework of standards and indicators of good practice in order to promote a common understanding of good management practice.
- A basis for on-going learning about how management practice can improve public service so that we can collaboratively refine and develop the framework over time.
- A tool for senior managers to test their own practice against and identify management practice improvements that will enable improved service delivery.
- A tool to provide a snapshot of management practice in a range of key performance areas within departments and across the public service and identify what further support is needed from the relevant transversal departments.

The objectives of the Management Performance Assessment Tool are to:

- Establish benchmarks for performance.
- Establish the baseline performance of institutions.
- Provide managers with useful information to inform improvement.
- Catalyse improvements in management.
- For the worst performers, develop an agreed improvement plan and provide support where necessary.
- Track improvements against the baseline performance.

This tool assessed the management performance of the National Department of Health across the range of indicators as illustrated below:

Figure 55: Management performance assessment tool (Indicators)



Source: Department of Performance Monitoring and Evaluation, 2011: 9

10.2.2.2. Performance evaluation: Instrument 11

The Department of Performance Monitoring and Evaluation developed a management performance assessment tool. Instrument 11 provides eighteen statements concerning management performance. These statements are based on the statements used in the management performance assessment tool. A copy of Instrument 11 is attached in Annexure A.

10.2.3. Infrastructure Unit: Contract management

10.2.3.1. Background

Based on the principles of the Management Performance Assessment Tool described above, the Technical Assistance Unit of the National Treasury developed an application to assess the contract management maturity of the Infrastructure Unit in the National Department of Health.

10.2.3.2. Performance evaluation: Instrument 12

Instrument 12 provides fifteen statements concerning contract management in the Infrastructure Unit in the National Department of Health. These statements are based on the statements used

in the performance assessment tool developed by the Technical Assistance Unit in the National Treasury. A copy of Instrument 12 is attached in Annexure A.

11. Summary of empirical survey

The following review team were responsible for the bulk of the assessments conducted as part of this empirical survey. The only exception is the maturity assessment using Instrument 11 that was conducted by the Management Committee of the National Department of Health:

- Mr Richard Hussey: Director Facilities Planning in the National Department of Health, a Professional Architect with more than 25 years' experience in the planning and implementation of state infrastructure. Mr Hussey is one of the representatives from the National Department of Health on the Project Management Unit of the Infrastructure Delivery Improvement Programme managed by the Technical Assistance Unit of National Treasury.
- Mr Christie Engelbrecht: Director Project and Programme Management in the National Department of Health, a Project Management Professional with more than 20 years' experience in the management of government programmes and projects. Mr Engelbrecht is also a representative from the National Department of Health on the Project Management Unit of the Infrastructure Delivery Improvement Programme managed by the Technical Assistance Unit of National Treasury.
- Mr Mike Morkel: Technical Advisor to the Infrastructure Unit in the National Department of Health under the Infrastructure Delivery Improvement Programme managed by the Technical Assistance Unit of National Treasury. Mr Morkel holds a Master's degree in Town and Regional planning with more than 25 years' experience in research and management of government programmes.
- Mr David van der Westhuijzen: Technical Advisor to the Infrastructure Unit in the National Department of Health under the Infrastructure Delivery Improvement Programme managed by the Technical Assistance Unit of the National Treasury. Mr van der Westhuijzen is a Professional Engineer, Project Management Professional and Professional Construction Project Manager with more than 25 years' experience in infrastructure planning and design, as well as programme management of government infrastructure programmes.

SECTION 4 : FINDINGS AND RESULTS

12. Introduction

The maturity of each parameter was assessed in terms of four-level maturity scales. Such maturity scales are indicated per assessment instrument in the next chapter.

The perceived opportunity for the Infrastructure Unit in the National Department of Health to contribute to the improvement of the performance was assessed in terms of the four-level target indicated below. The role of the Infrastructure Unit ranges from “sole responsibility”, through to “major contribution” and “minor contribution” to “outside the influence”.

Table 41: Perceived role of the Infrastructure Unit

Influence	
Perceived role of the Infrastructure Unit	
Level of Influence	Descriptor
1	Infrastructure Unit in the National Department of Health is solely responsible
2	Infrastructure Unit in the National Department of Health can make a <u>major</u> contribution to the improvement of the performance of the Programme
3	Infrastructure Unit in the National Department of Health can make a <u>minor</u> contribution to improve the performance of the programme
4	This falls outside the influence of the Infrastructure Unit in the National Department of Health

Source: Own construction, 2012

The perceived urgency for the improvement of performance was assessed in terms of the three-level target indicated below. The most urgent matters must be addressed in the next year. Not so urgent matters should be addressed within the next two years with the balance to be addressed in the next three years.

Table 42: Perceived urgency

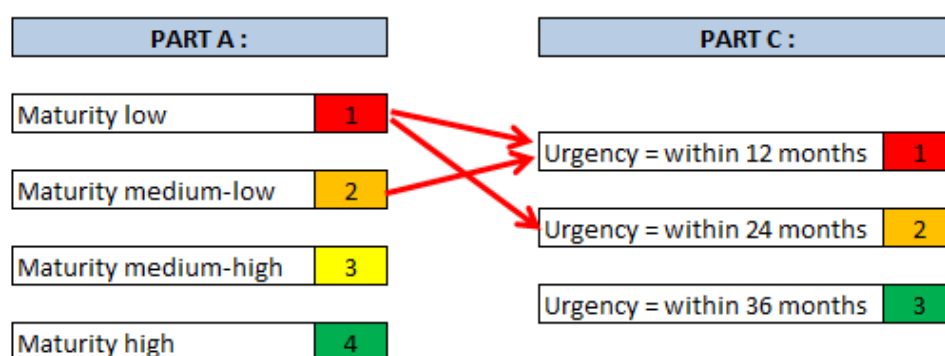
Urgency	
Perceived role urgency to improve performance	
Level of Influence	Descriptor
1	Within the next 12 months
2	Within the next 24 months
3	Within the next 36 months

Source: Own construction, 2012

In order to plan interventions, there is a need for a prioritisation model. For the purpose of this study, low, medium and high priorities were defined as follows:

- Some of the performance parameters were assessed to be at a low level of maturity. This, combined with an urgency to address the matter in the next two years, was classified as a “High priority”. Similarly, a medium-low maturity, combined with an urgency of one year, was regarded as a “High priority”. This interpretation is illustrated below:

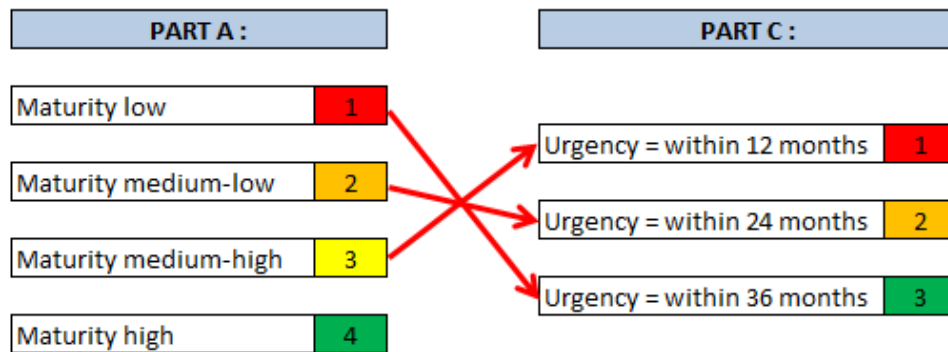
Figure 56: Perceived criticality (High priority)



Source: Own construction, 2012

- A “Medium priority” includes parameters judged as of too low maturity but that are not urgent. Similarly, urgent matters that have reached a medium-high maturity were regarded as a “Medium priority”. This interpretation is illustrated below:

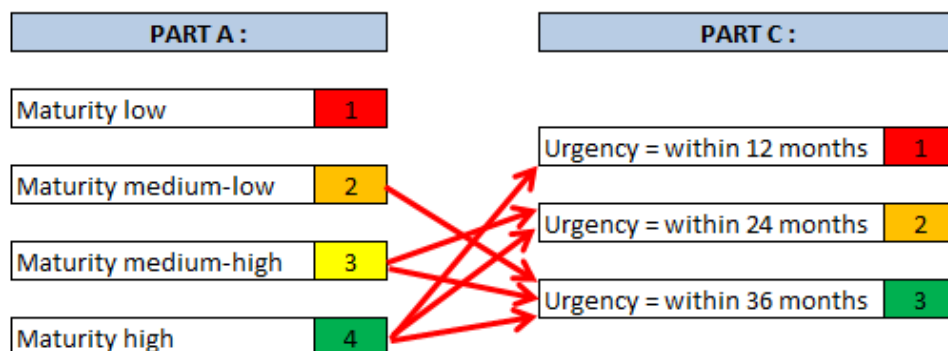
Figure 57: Perceived criticality (Medium priority)



Source: Own construction, 2012

- Any performance parameter that was judged to be mature was classified as a “Low priority”. Similarly, any parameter that was judged to have reached a medium-low or medium-high maturity, combined with a two to three year programme, was classified as “Low priority”. This interpretation is illustrated below:

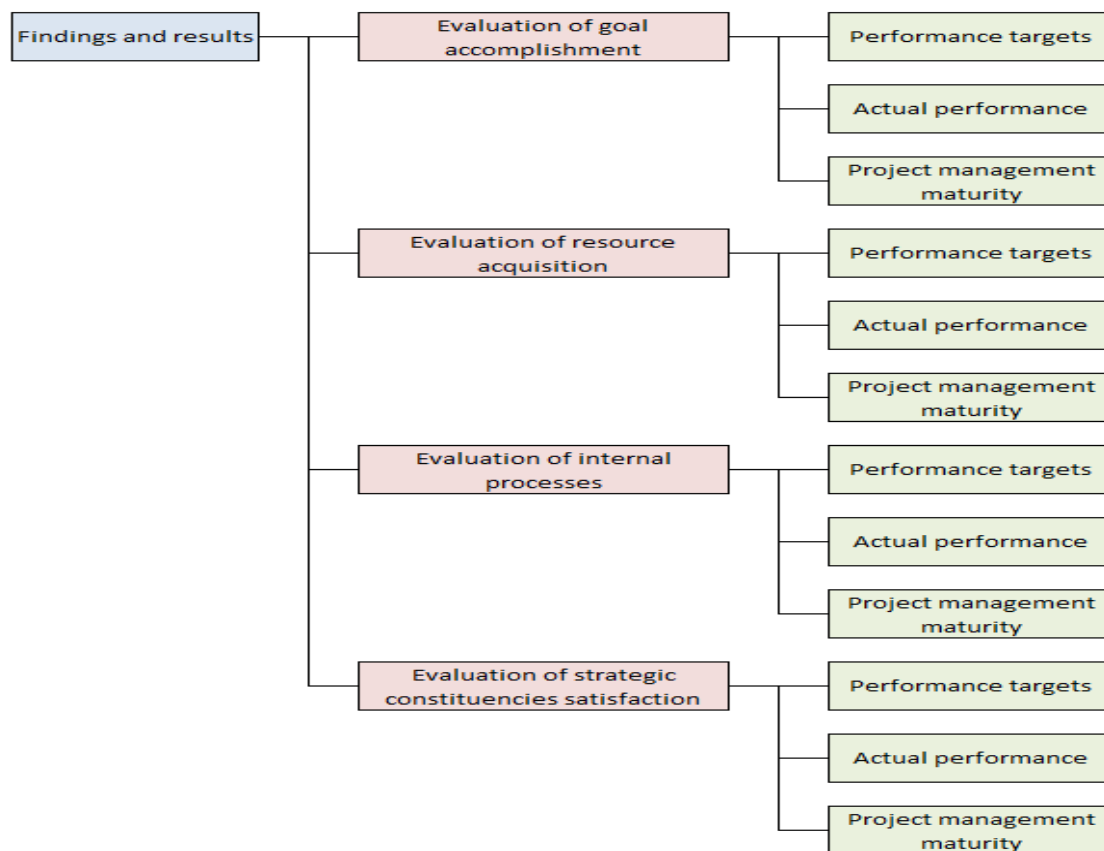
Figure 58: Perceived criticality (Low priority)



Source: Own construction, 2012

This presentation of findings and results is structured as follows:

Figure 59: Overview of findings and results



Source: Own construction, 2012

13. Evaluation of goal accomplishment

13.1. Instrument 1 : Mandate for health facilities infrastructure

13.1.1. Performance Targets

The actual performance of the Health Facilities Infrastructure Management Programme was expressed as project management maturity in terms of the following scale:

Table 43: Instrument 1 (Performance target)

Instrument 1	
Goal accomplishment (Legal mandate)	
Level of Maturity	Descriptor
Level 1	First drafts available with some pilot applications
Level 2	Standardised and used to measure infrastructure delivery progress
Level 3	Standardised and used for process control of infrastructure delivery process
Level 4	Leading innovation and best practice subject to minor improvements

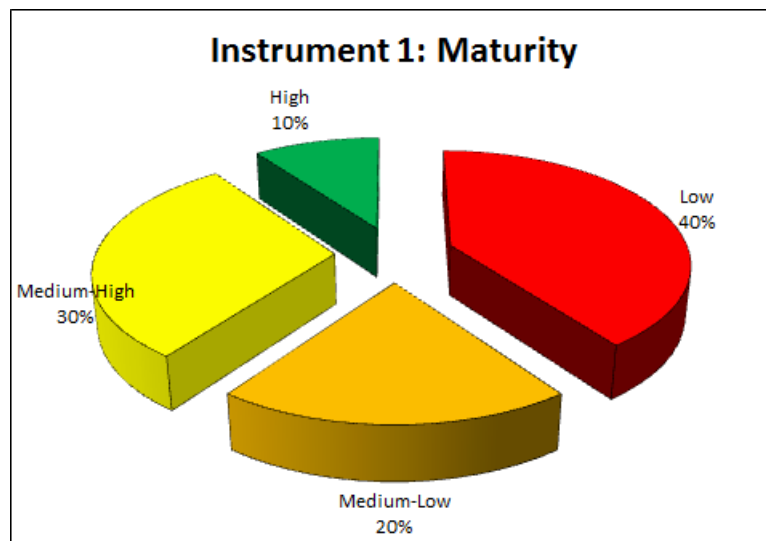
Source: Own construction, 2012

13.1.2. Actual performance

The evaluation of performance, in terms of Instrument 1, was conducted by the review group.

Not less than 40% of the performance evaluation parameters describing the mandate for the provision of health facilities infrastructure were judged to be at a low level of maturity, together with a further 20% of the parameters judged to have reached only a medium-low level of maturity. These findings are illustrated below:

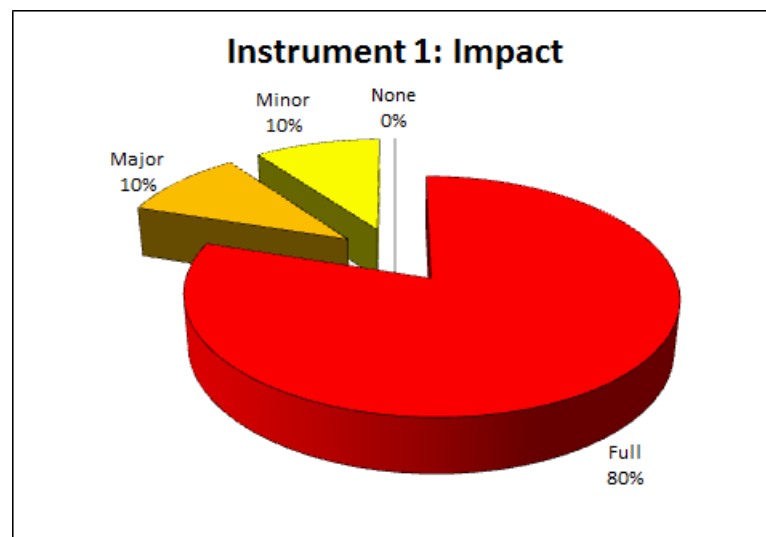
Figure 60: Instrument 1 (Maturity level: Summary of results)



Source: Own construction, 2012

It is important to note that the Infrastructure Unit in the National Department of Health has sole responsibility to address 80% of the matters described in the performance evaluation parameters. This finding is illustrated below:

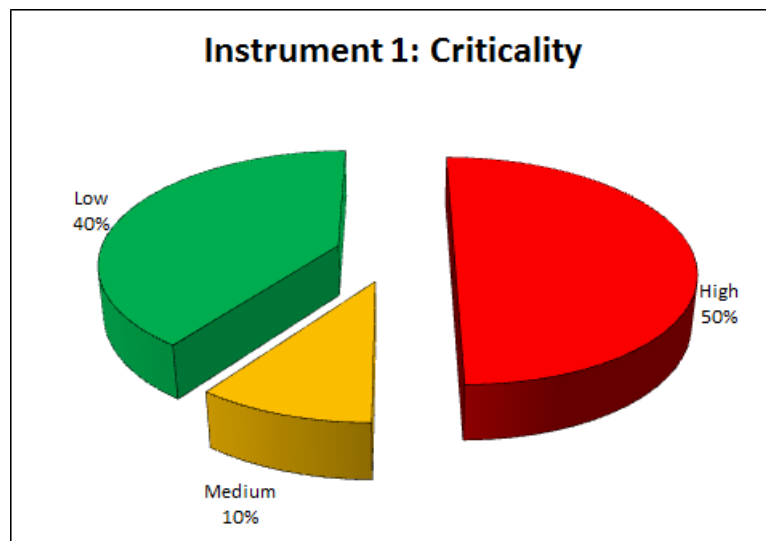
Figure 61: Instrument 1 (Infrastructure Unit impact: Summary of results)



Source: Own construction, 2012

Half (50%) of the matters described by the performance evaluation parameters were perceived to be a high priority, as indicated below:

Figure 62: Instrument 1 (Criticality: Summary of results)



Source: Own construction, 2012

13.2. Instrument 2 : Strategic planning

13.2.1. Performance target

The actual performance of the Health Facilities Infrastructure Management Programme was expressed as a project management maturity in terms of the following scale:

Table 44: Instrument 2 (Performance target)

Instrument 2	
Goal accomplishment (Strategic planning)	
Level of Maturity	Descriptor
Level 1	Limited knowledge of the practice and no application
Level 2	Knowledge of practice but limited application
Level 3	Application of knowledge of practice
Level 4	Leading innovation and best practice using experience and reflection on application to develop guidelines

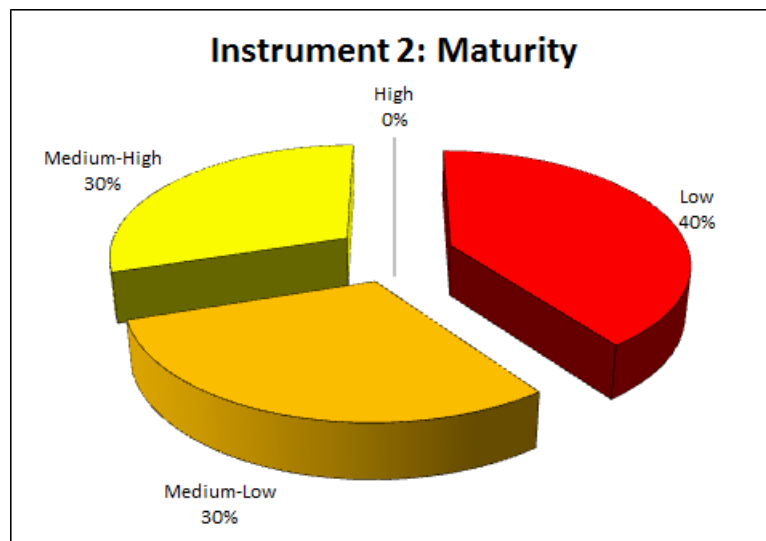
Source: Own construction, 2012

13.2.2. Actual performance

The evaluation of performance in terms of Instrument 2 was conducted by the review group.

Again, 40% of the performance evaluation parameters describing the approach to strategic planning for the provision of health facilities infrastructure were judged to be at a low level of maturity, together with a further 30% of the parameters judged to have reached only a medium-low level of maturity. These findings are illustrated below:

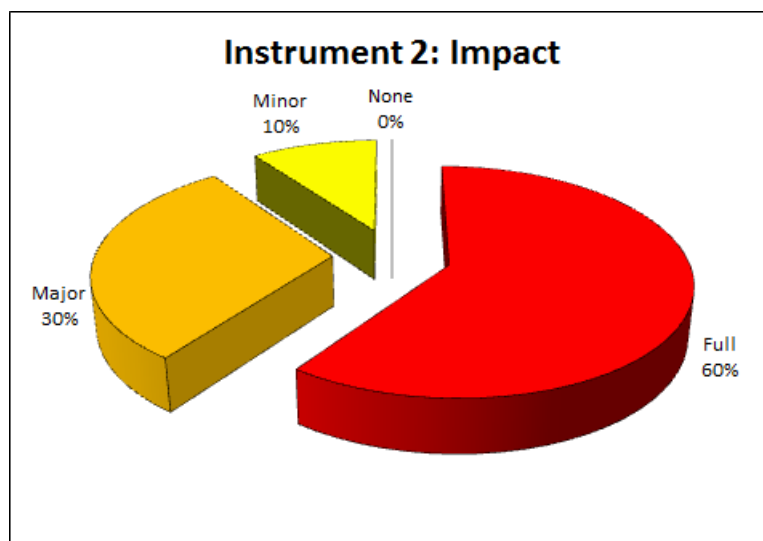
Figure 63: Instrument 2 (Maturity level: Summary of results)



Source: Own construction, 2012

The Infrastructure Unit in the National Department of Health is solely responsible to address 60% of the matters described in the performance evaluation parameters. This finding is illustrated below:

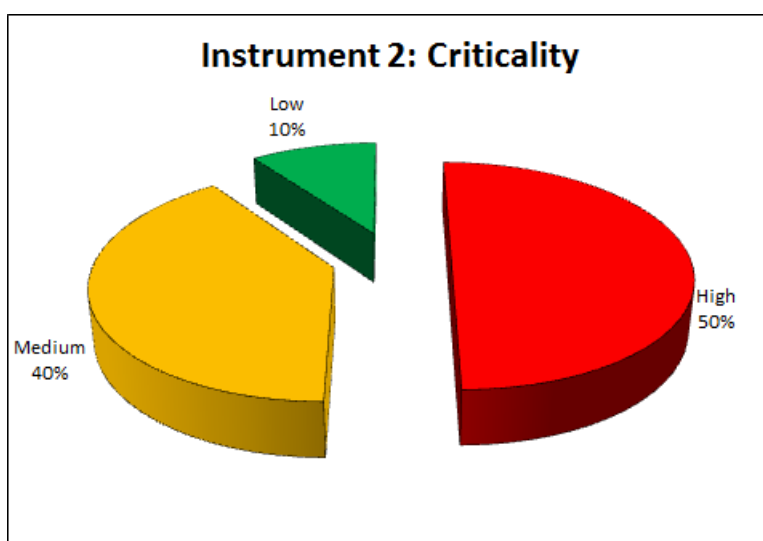
Figure 64: Instrument 2 (Infrastructure Unit impact: Summary of results)



Source: Own construction, 2012

Half (50%) of the matters described by the performance evaluation parameters were perceived to be a high priority, as indicated below:

Figure 65: Instrument 2 (Criticality: Summary of results)



Source: Own construction, 2012

13.3. Instrument 3 : Infrastructure levels of service

13.3.1. Performance target

The actual performance of the Health Facilities Infrastructure programme was expressed as a project management maturity in terms of the following scale:

Table 45: Instrument 3 (Performance target)

Instrument 3	
Goal accomplishment (Levels of service)	
Level of Maturity	Descriptor
Level 1	Actual performance is less than 50% of target performance
Level 2	Actual performance is 50%-80% of target performance
Level 3	Actual performance is 81%-99% of target performance
Level 4	Achieved or exceeded target

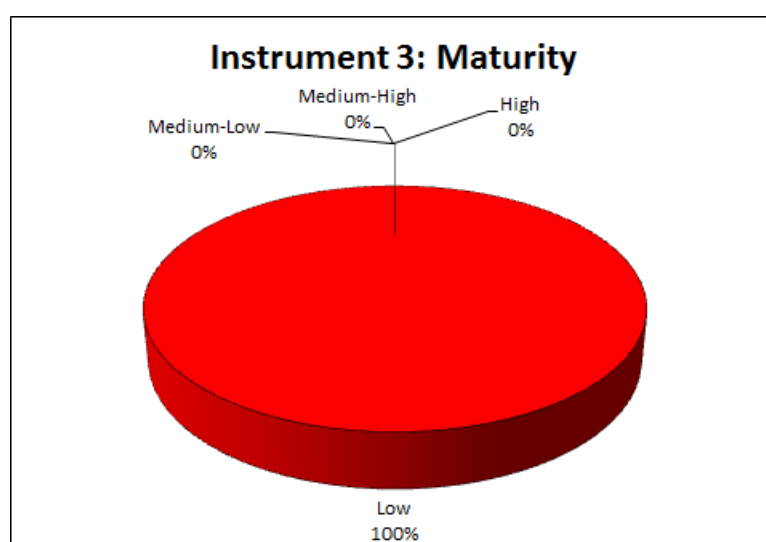
Source: Own construction, 2012

13.3.2. Actual performance

The evaluation of performance in terms of Instrument 3 was conducted by the review group.

All the performance evaluation parameters describing the health facilities infrastructure level of service were judged to be at a low level of maturity. This finding is illustrated below:

Figure 66: Instrument 3 (Maturity: Summary of results)

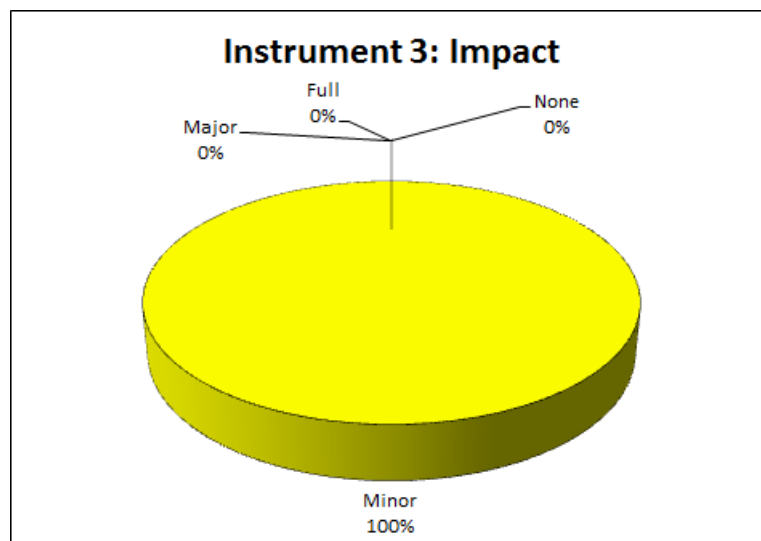


Source: Own construction, 2012

It is important to note that the actual planning and implementation of infrastructure projects are the responsibility of the Provincial Departments of Health. The Infrastructure Unit in the

National Department of Health can only play a minor role in improving the actual delivery of infrastructure. This finding is illustrated below:

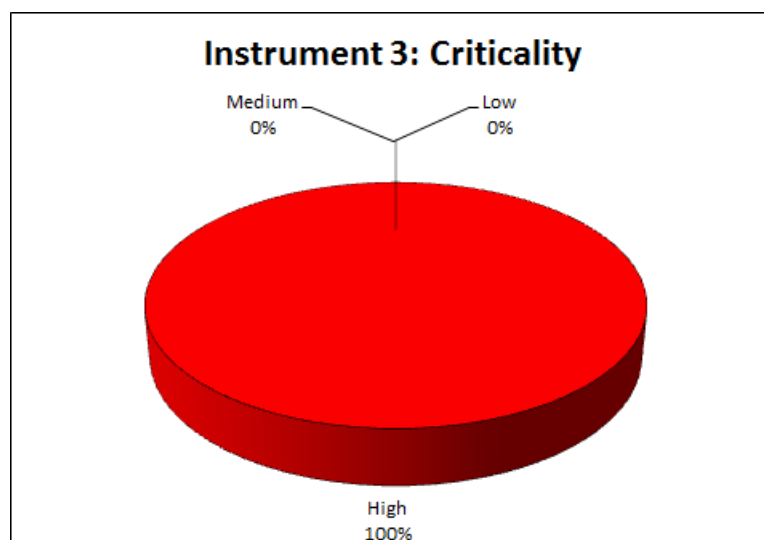
Figure 67: Instrument 3 (Infrastructure Unit impact: Summary of results)



Source: Own construction, 2012

All the matters described by the performance evaluation parameters were perceived to be a high priority, as indicated below:

Figure 68: Instrument 3 (Criticality: Summary of results)



Source: Own construction, 2012

14. Evaluation of resource acquisition

14.1. Instrument 4 : Human resources

14.1.1. Performance target

The actual performance of the Health Facilities Infrastructure Management Programme was expressed as a project management maturity in terms of the following scale:

Table 46: Instrument 4 (Performance target)

Instrument 4	
Resource aquisition (Team maturity)	
Level of Maturity	Descriptor
Level 1	"Forming" : Officials is uncertain and anxious about their roles, who is in charge and the group's goals
Level 2	"Storming" : Officials try to determine how they fit into the power structure. Subgroups take shape and subtle forms of rebellion, such as procrastination, occur.
Level 3	"Norming" : A feeling of team spirit is experienced because members believe they have found their proper roles.
Level 4	"Performing" : Cohesiveness and personal commitment to group goals help the group to achieve more than could any one individual acting alone

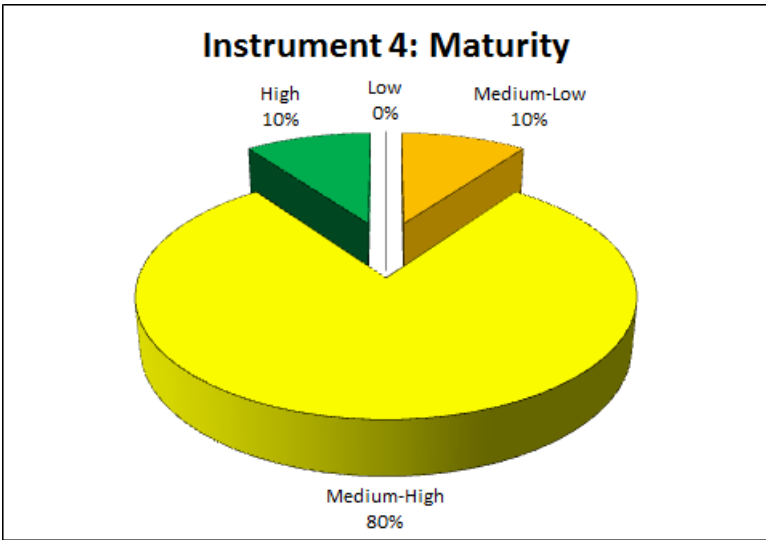
Source: Own construction, 2012

14.1.2. Actual performance

The evaluation of performance in terms of Instrument 4 was conducted by the review group.

None of the performance evaluation parameters describing the team maturity were judged to be at a low level of maturity. However, 80% were judged to be at a medium-high level of maturity, with only 10% cent perceived to have reached full maturity. These findings are illustrated below:

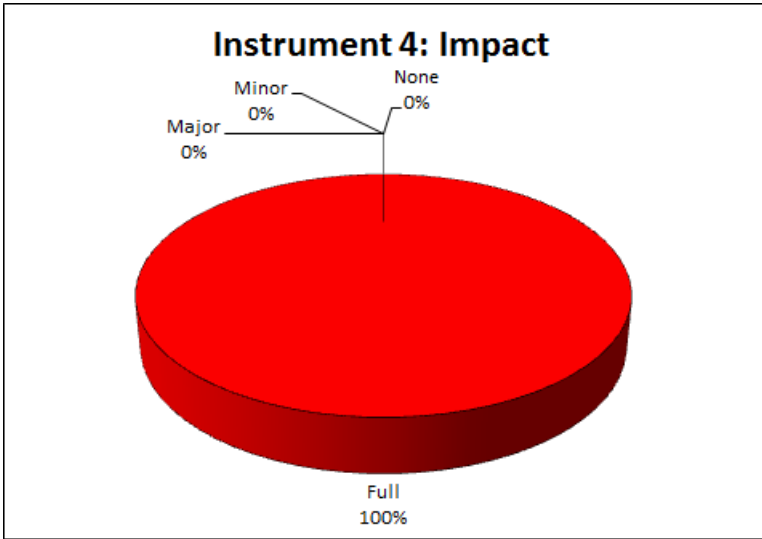
Figure 69: Instrument 4 (Maturity: Summary of results)



Source: Own construction, 2012

The Infrastructure Unit in the National Department of Health has sole responsibility to address all of the matters described in the performance evaluation parameters. This finding is illustrated below:

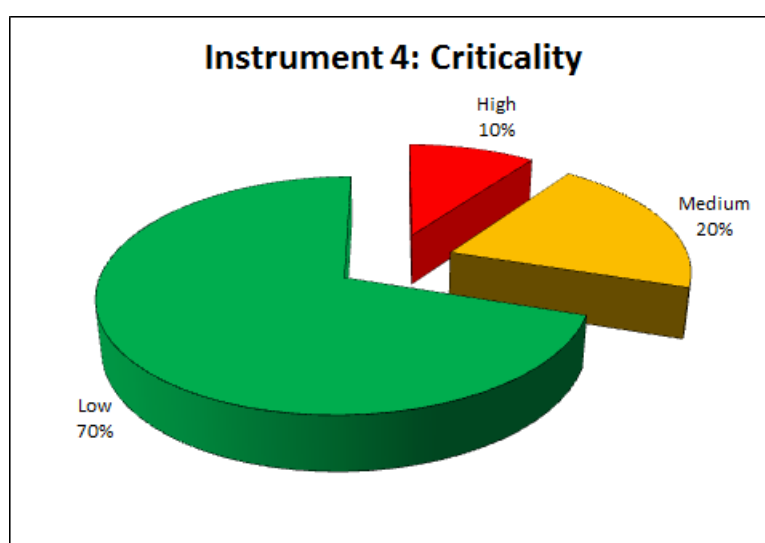
Figure 70: Instrument 4 (Infrastructure Unit impact: Summary of results)



Source: Own construction, 2012

At least 10% of the matters described by the performance evaluation parameters were perceived to be a high priority, as indicated below:

Figure 71: Instrument 4 (Criticality: Summary of results)



Source: Own construction, 2012

14.2. Instrument 5 : Budget allocation

14.2.1. Performance target

The actual performance of the Health Facilities Infrastructure Programme was expressed as a project management maturity in terms of the following scale:

Table 47: Instrument 5 (Performance target)

Instrument 5	
Resource aquisition (Budget allocation)	
Level of Maturity	Descriptor
Level 1	Limited knowledge of the practice and no application
Level 2	Knowledge of practice but limited application
Level 3	Application of knowledge of practice
Level 4	Leading innovation and best practice using experience and reflection on application to develop guidelines

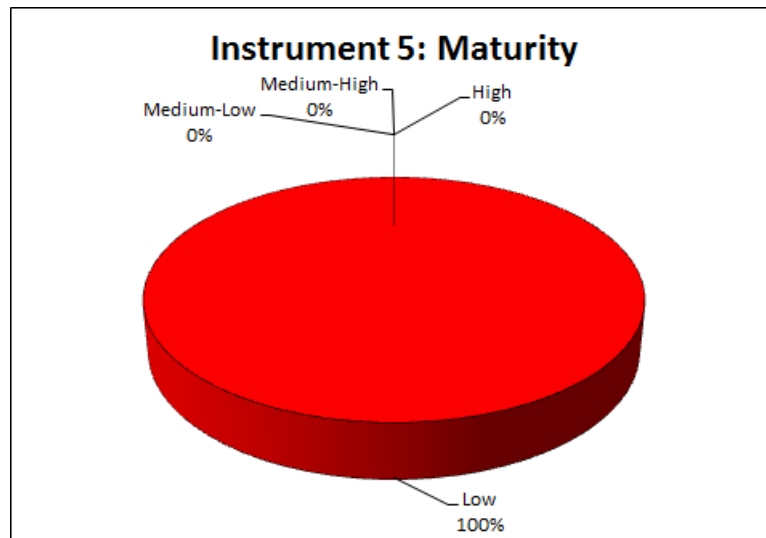
Source: Own construction, 2012

14.2.2. Actual performance

The evaluation of performance in terms of Instrument 5 was conducted by the review group.

All the performance evaluation parameters describing the allocation of budgets to the health facilities infrastructure programme were judged to be at a low level of maturity. This finding is illustrated below:

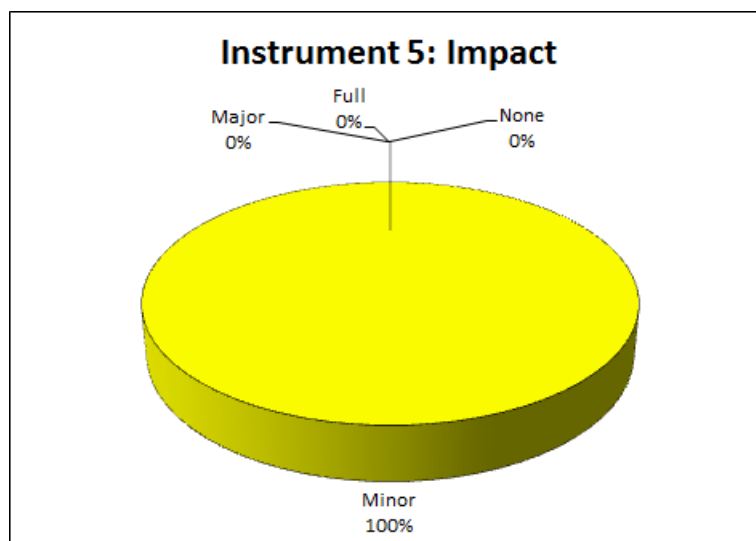
Figure 72: Instrument 5 (Maturity: Summary of results)



Source: Own construction, 2012

It is important to note that budgets are allocated to provinces by the National Treasury. The Infrastructure Unit in the National Department of Health can only play a minor role in influencing such allocations. This finding is illustrated below:

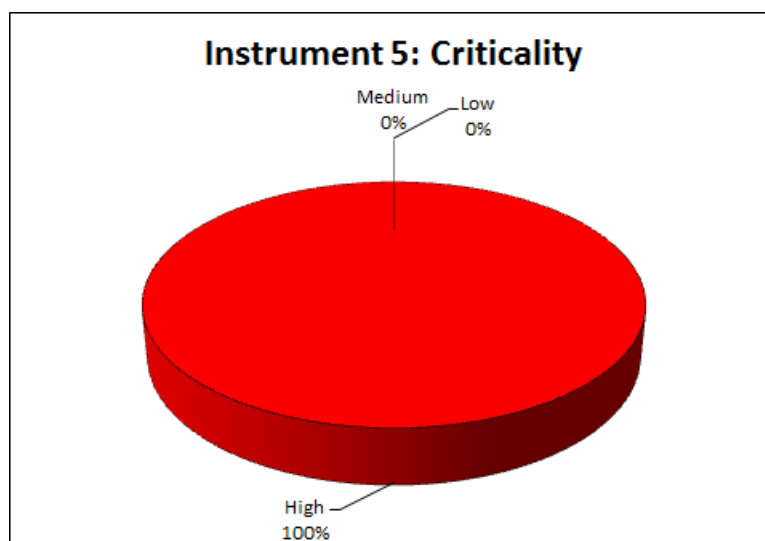
Figure 73: Instrument 5 (Infrastructure Unit impact: Summary of results)



Source: Own construction, 2012

As budgets are allocated on an annual basis through the division of revenue act, all the parameters were considered to be of high priority, as indicated below:

Figure 74: Instrument 5 (Criticality: Summary of results)



Source: Own construction, 2012

14.3. Instrument 6 : Budget utilisation

14.3.1. Performance target

The actual performance of the Health Facilities Infrastructure programme was expressed as a project management maturity in terms of the following scale:

Table 48: Instrument 6 (Performance target)

Instrument 6	
Resource acquisition (Budget utilisation)	
Level of Maturity	Descriptor
Level 1	Actual performance is less than 50% of target performance
Level 2	Actual performance is 50%-80% of target performance
Level 3	Actual performance is 81%-99% of target performance
Level 4	Achieved or exceeded target

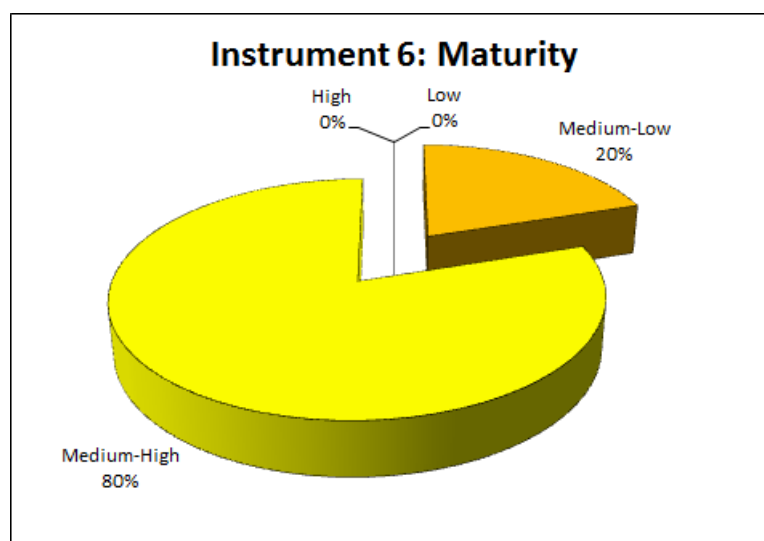
Source: Own construction, 2012

14.3.2. Actual performance

The evaluation of performance in terms of Instrument 6 was conducted by the review group.

The 2011/12 financial year marked an exceptional good performance in terms of expenditure. Based on the actual results, 80% of the performance evaluation parameters describing the utilisation of budgets were judged to have reached a medium-high level of maturity, combined with only 20% still at a medium-low level. These findings are illustrated below:

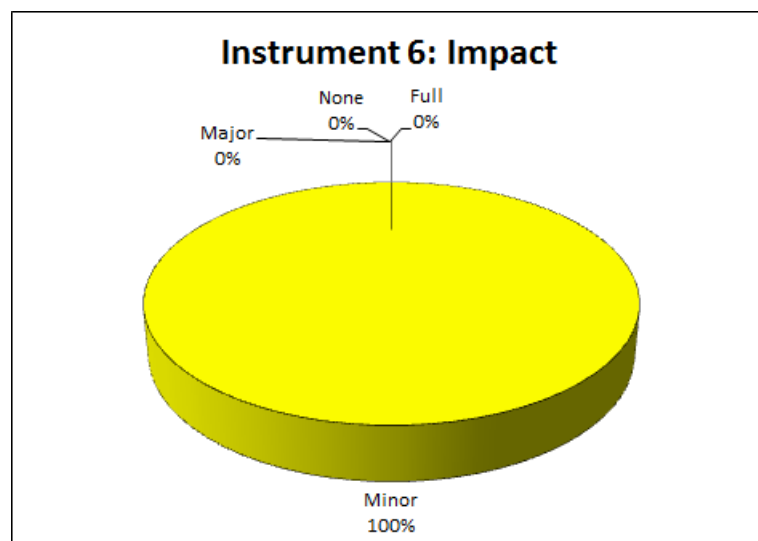
Figure 75: Instrument 6 (Maturity: Summary of results)



Source: Own construction, 2012

The Provincial Departments of Health are responsible for the planning and implementation of health facilities infrastructure projects. The Infrastructure Unit in the National Department of Health can (under normal circumstances) only assist. A special case will be where a province is placed under administration in terms of the constitution. In such cases (such as in the Limpopo province during the 2012/13 financial year) the Infrastructure Unit in the National Department of Health can more directly influence the actual implementation of projects. The perceived impact during the 2012/13 financial year is illustrated below:

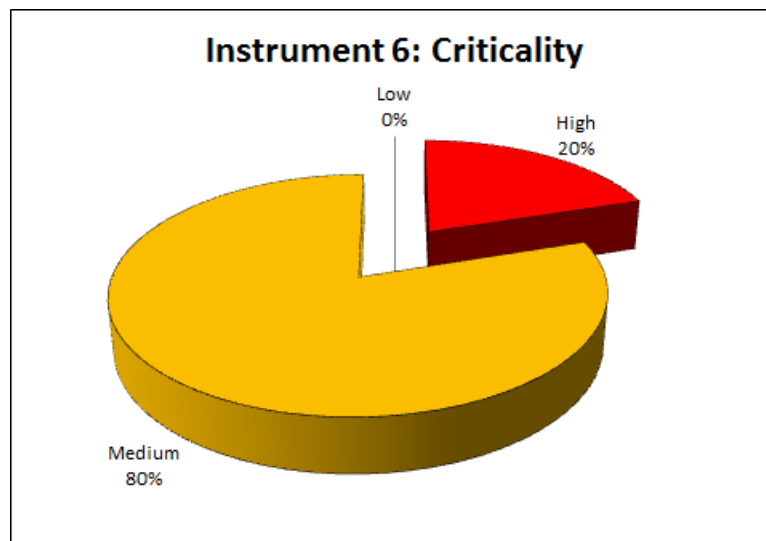
Figure 76: Instrument 6 (Infrastructure Unit impact: Summary of results)



Source: Own construction, 2012

As budgets are allocated annually, the effective utilisation is an annual challenge. Poor performance in one year may even result in budget cuts in following years. Not less than 20% of the performance evaluation parameters were perceived to be a high priority, with the balance being a medium priority as indicated below:

Figure 77: Instrument 6 (Criticality: Summary of results)



Source: Own construction, 2012

15. Evaluation of internal processes

15.1. Instrument 7 : Portfolio management

15.1.1. Performance target

The actual performance of the Health Facilities Infrastructure Management Programme was expressed as a project management maturity in terms of the following scale:

Table 49: Instrument 7 (Performance target)

Instrument 7	
Internal processes (Portfolio management)	
Level of Maturity	Descriptor
Level 1	First drafts available with some pilot applications
Level 2	Standardised and used to measure infrastructure delivery progress
Level 3	Standardised and used for process control of infrastructure delivery process
Level 4	Leading innovation and best practice subject to minor improvements

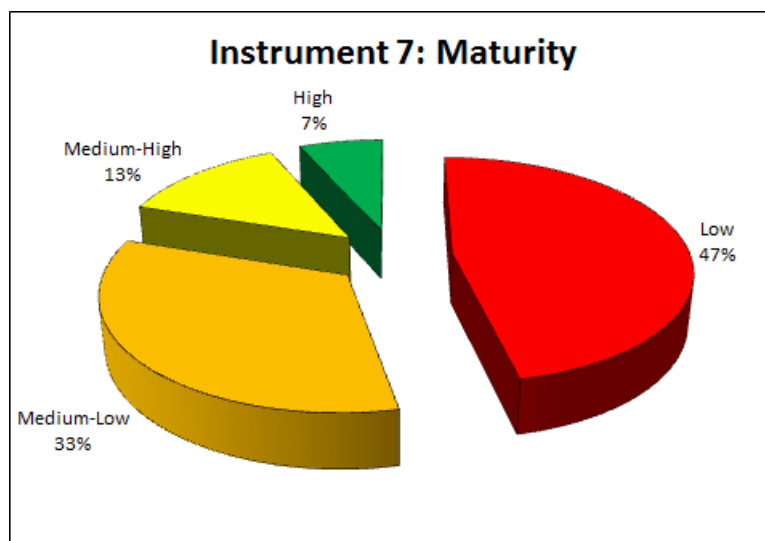
Source: Own construction, 2012

15.1.2. Actual performance

The evaluation of performance in terms of instrument 7 was conducted by the review group.

A total of 47% of the performance evaluation parameters describing the portfolio management processes for the provision of health facilities infrastructure were judged to be at a low level of maturity, together with a further 33% of the parameters judged to have reached only a medium-low level of maturity. These findings are illustrated below:

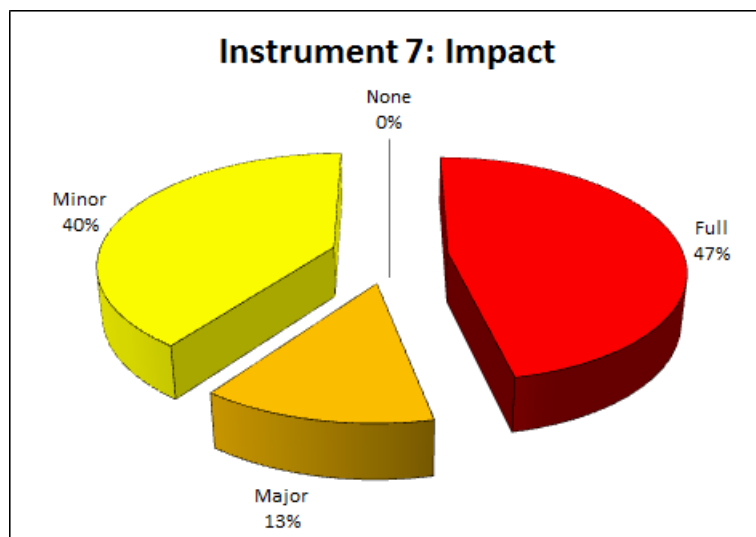
Figure 78: Instrument 7 (Maturity: Summary of results)



Source: Own construction, 2012

The Infrastructure Unit in the National Department of Health has sole responsibility to address 47% of the matters described in the performance evaluation parameters. This finding is illustrated below:

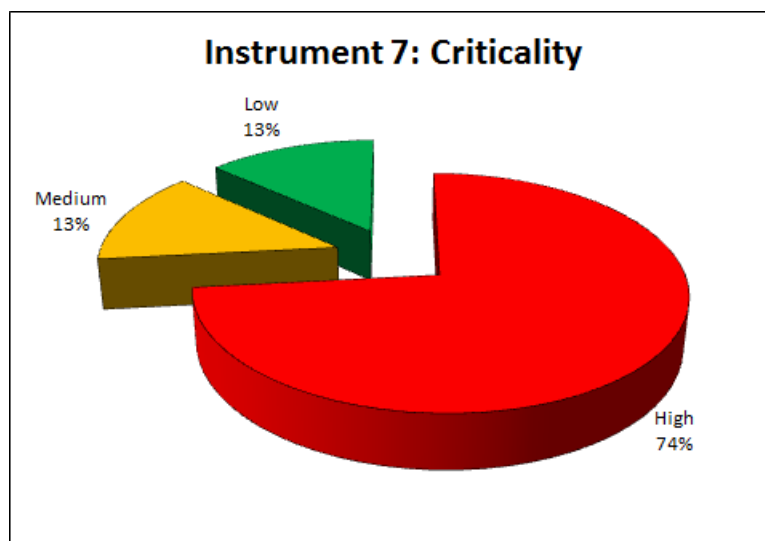
Figure 79: Instrument 7 (Infrastructure Unit impact: Summary of results)



Source: Own construction, 2012

The vast majority (74%) of the matters described by the performance evaluation parameters were perceived to be a high priority, as indicated below:

Figure 80: Instrument 7 (Criticality: Summary of results)



Source: Own construction, 2012

15.2. Instrument 8 : Project management

15.2.1. Performance target

The actual performance of the Health Facilities Infrastructure Management Programme was expressed as a project management maturity in terms of the following scale:

Table 50: Instrument 8 (Performance target)

Instrument 8	
Internal processes (Project management)	
Level of Maturity	Descriptor
Level 1	First drafts available with some pilot applications
Level 2	Standardised and used to measure infrastructure delivery progress
Level 3	Standardised and used for process control of infrastructure delivery process
Level 4	Leading innovation and best practice subject to minor improvements

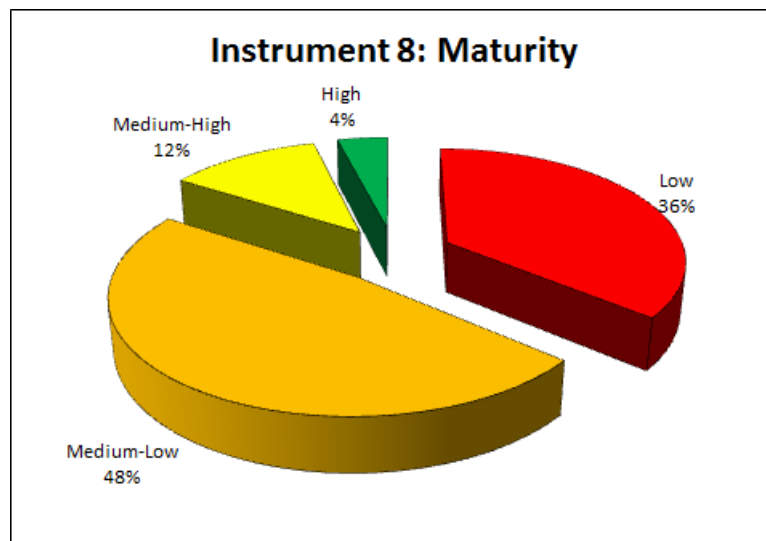
Source: Own construction, 2012

15.2.2. Actual performance

The evaluation of performance in terms of Instrument 8 was conducted by the review group.

About a third (36%) of the performance evaluation parameters describing the project management processes for the provision of health facilities infrastructure were judged to be at a low level of maturity, together with a further 48% of the parameters judged to have reached only a medium-low level of maturity. These findings are illustrated below:

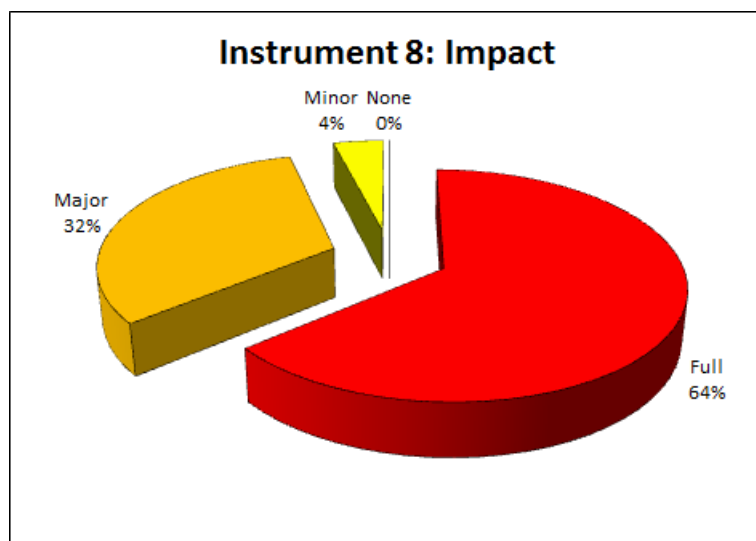
Figure 81: Instrument 8 (Maturity: Summary of results)



Source: Own construction, 2012

The Infrastructure Unit in the National Department of Health has sole responsibility to address 64% of the matters described in the performance evaluation parameters. This finding is illustrated below:

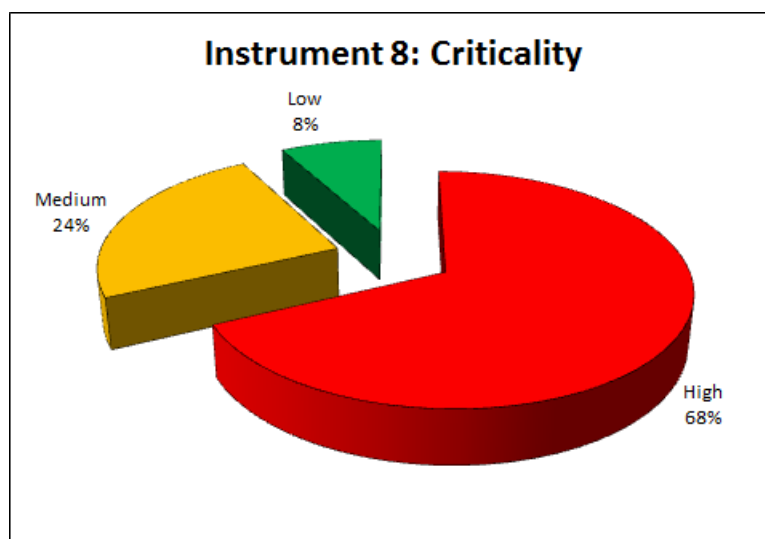
Figure 82: Instrument 8 (Infrastructure Unit impact: Summary of results)



Source: Own construction, 2012

More than half (68 %) of the matters described by the performance evaluation parameters were perceived to be a high priority, as indicated below:

Figure 83: Instrument 8 (Criticality: Summary of results)



Source: Own construction, 2012

15.3. Instrument 9 : Operations and maintenance

15.3.1. Performance target

The actual performance of the Health Facilities Infrastructure Management Programme was expressed as a project management maturity in terms of the following scale:

Table 51: Instrument 9 (Performance target)

Instrument 9	
Internal processes (Operation & management)	
Level of Maturity	Descriptor
Level 1	First drafts available with some pilot applications
Level 2	Standardised and used to measure infrastructure delivery progress
Level 3	Standardised and used for process control of infrastructure delivery process
Level 4	Leading innovation and best practice subject to minor improvements

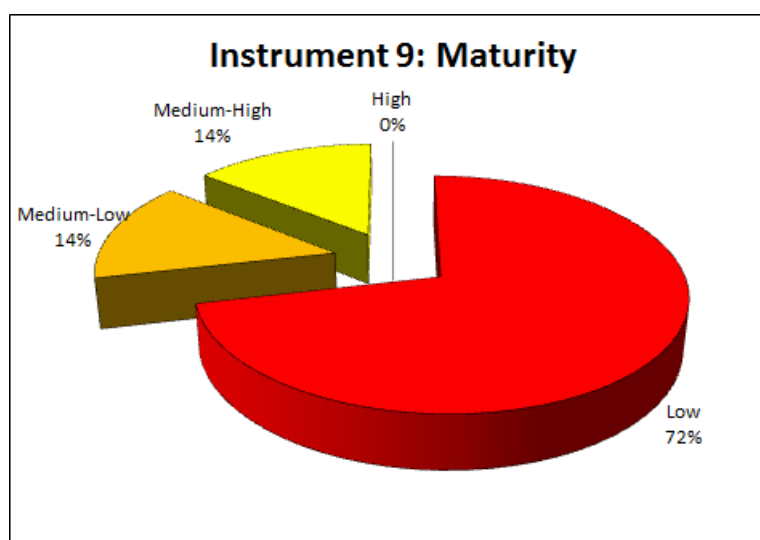
Source: Own construction, 2012

15.3.2. Actual performance

The evaluation of performance in terms of instrument 9 was conducted by the review group.

Again, the majority (72%) of the performance evaluation parameters describing the operation and maintenance processes related to health facilities infrastructure were judged to be at a low level of maturity, together with a further 14% of the parameters judged to have reached only a medium-low level of maturity. These findings are illustrated below:

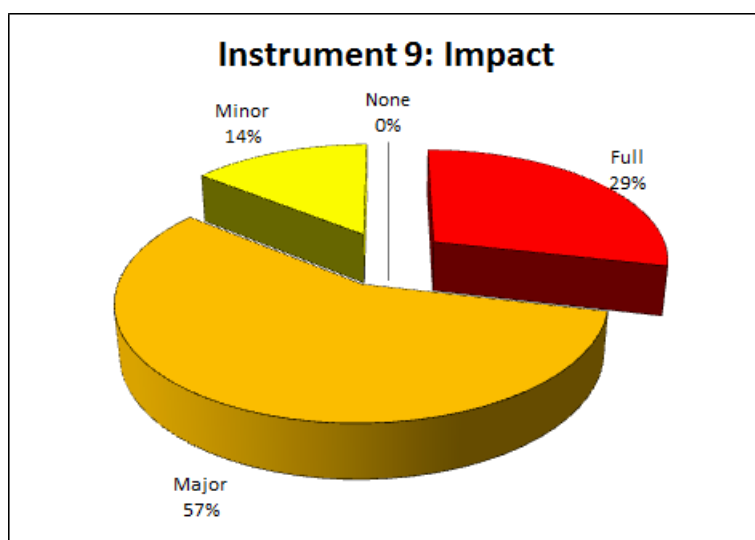
Figure 84: Instrument 9 (Maturity: Summary of results)



Source: Own construction, 2012

Only 29% of the performance evaluation parameters fall in the sole responsibility of the Infrastructure Unit in the National Department of Health. This unit can however have a major impact on another 57% of the parameters. This finding is illustrated below:

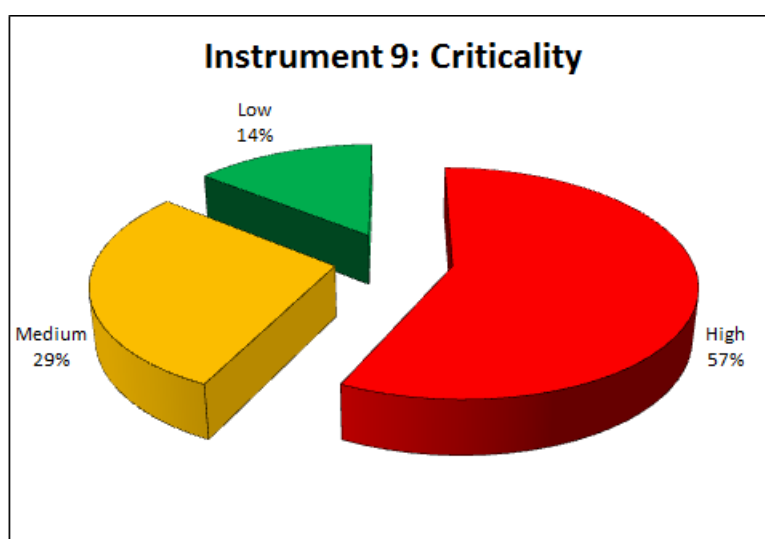
Figure 85: Instrument 9 (Infrastructure Unit impact: Summary of results)



Source: Own construction, 2012

More than half (57%) of the matters described by the performance evaluation parameters were perceived to be a high priority, as indicated below:

Figure 86: Instrument 9 (Criticality: Summary of results)



Source: Own construction, 2012

16. Evaluation of strategic constituencies' satisfaction

16.1. Instrument 10 : Auditor General

16.1.1. Performance target

The actual performance of the Health Facilities Infrastructure Management Programme was expressed as a project management maturity in terms of the following scale:

Table 52: Instrument 10 (Performance target)

Instrument 10	
Strategic constituencies satisfaction (Auditor General)	
Level of Maturity	Descriptor
Level 1	Limited knowledge of the practice and no application
Level 2	Knowledge of practice but limited application
Level 3	Application of knowledge of practice
Level 4	Leading innovation and best practice using experience and reflection on application to develop guidelines

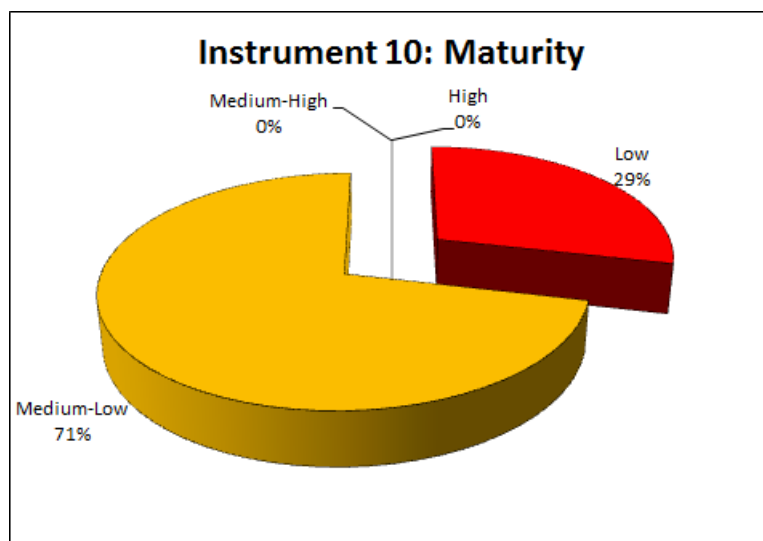
Source: Own construction, 2012

16.1.2. Actual performance

The evaluation of performance in terms of Instrument 10 was conducted by the review group.

About a quarter (29%) of the performance evaluation parameters describing the Auditor-General's view of the Health Facilities Infrastructure Management Programme were judged to be at a low level of maturity, with the balance of 71% of the parameters judged to have reached only a medium-low level of maturity. None of the parameters reached either a medium-high or high maturity grading. These findings are illustrated below:

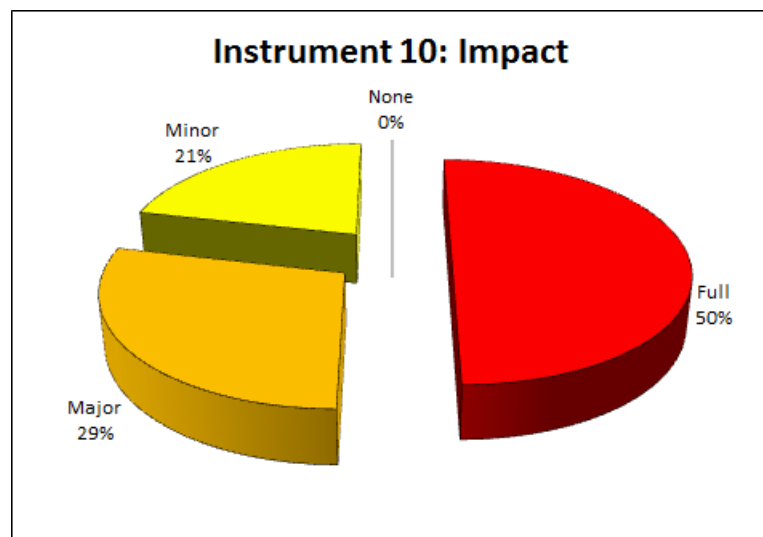
Figure 87: Instrument 10 (Maturity: Summary of results)



Source: Own construction, 2012

It is important to note that the Infrastructure Unit in the National Department of Health has sole responsibility to address 50% of the matters described in the performance evaluation parameters. This finding is illustrated below:

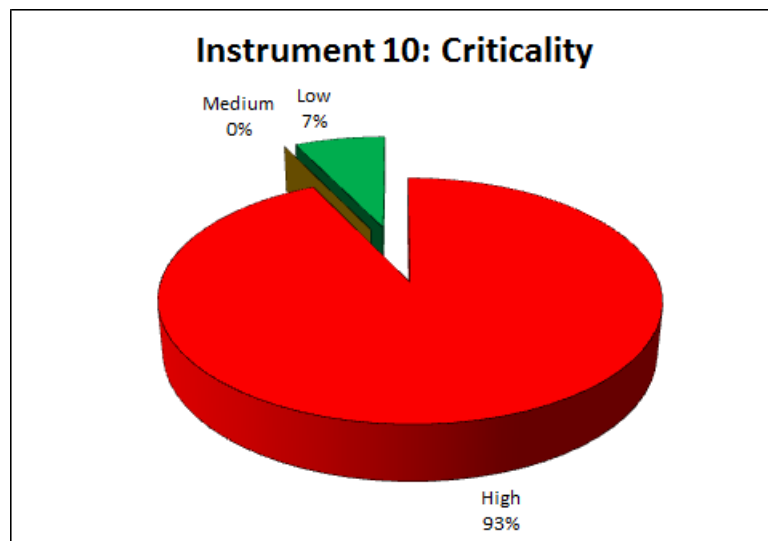
Figure 88: Instrument 10 (Infrastructure Unit impact: Summary of results)



Source: Own construction, 2012

As all the audit comments made by the Auditor-General need to be addressed immediately, not less than 93% of the matters described by the performance evaluation parameters were perceived to be a high priority, as indicated below:

Figure 89: Instrument 10 (Criticality: Summary of results)



Source: Own construction, 2012

16.2. Instrument 11 : Management performance

16.2.1. Performance target

The actual performance of the Health Facilities Infrastructure Management Programme was expressed as a project management maturity in terms of the following scale:

Table 53: Instrument 11 (Performance target)

Instrument 11	
Strategic constituencies satisfaction (Management performance)	
Level of Maturity	Descriptor
Level 1	Limited knowledge of the practice and no application
Level 2	Knowledge of practice but limited application
Level 3	Application of knowledge of practice
Level 4	Leading innovation and best practice using experience and reflection on application to develop guidelines

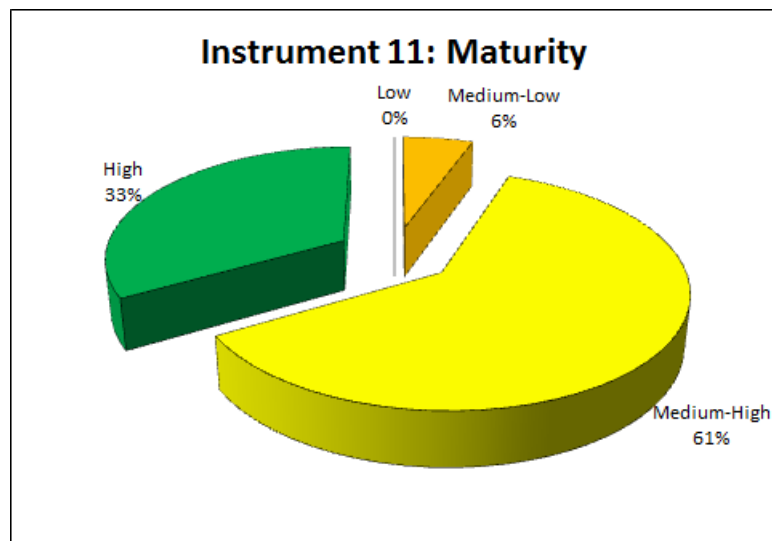
Source: Own construction, 2012

16.2.2. Actual performance

The performance assessment on this instrument was performed by the Management Committee of the National Department of Health.

None of the parameters describing the performance of the management of the National Department of Health were judged to be at a low level of maturity, with only 6% judged to be at a medium-low level. These findings are illustrated below:

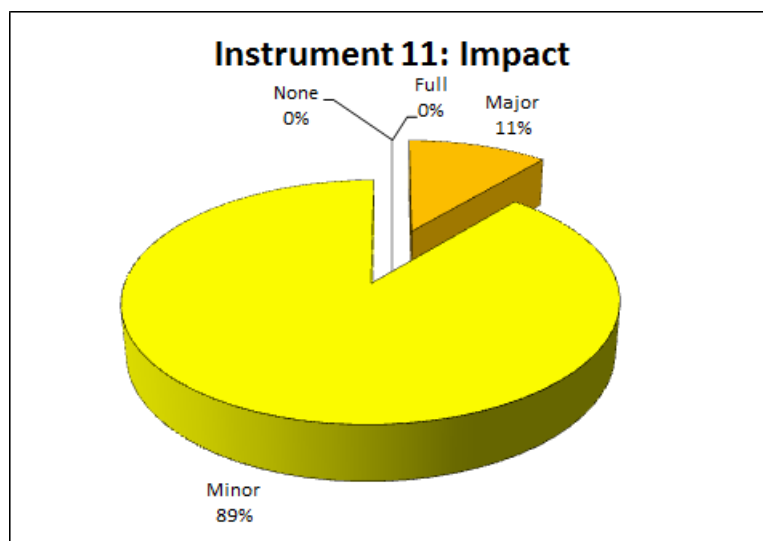
Figure 90: Instrument 11 (Maturity: Summary of results)



Source: Own construction, 2012

As this instrument assessed the management performance of the entire National Department of Health, the Infrastructure Unit in the National Department of Health can play a major role in only 11% of the parameters. For the balance, the infrastructure unit can play only a minor role. This finding is illustrated below:

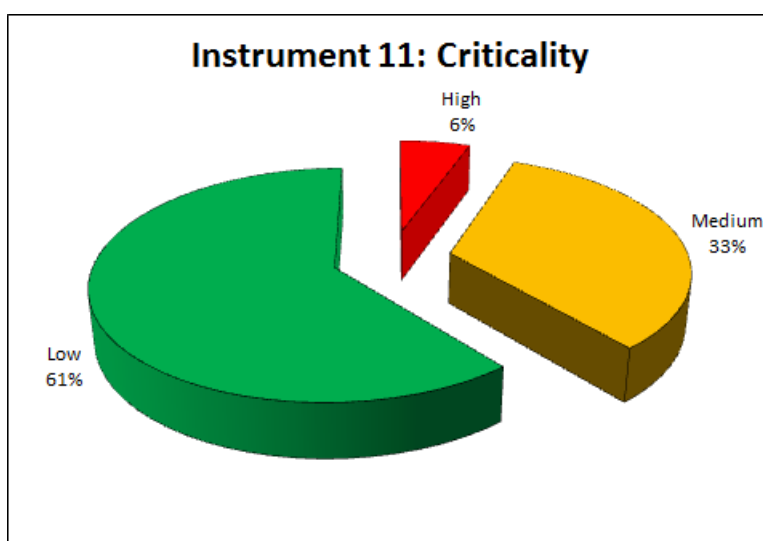
Figure 91: Instrument 11 (Infrastructure Unit impact: Summary of results)



Source: Own construction, 2012

Only one parameter (6%) was judged to be a high priority. The medium-high level of maturity generally resulted in medium to low priorities, as indicated below:

Figure 92: Instrument 11 (Criticality: Summary of results)



Source: Own construction, 2012

16.3. Instrument 12 : Contract management

16.3.1. Performance target

The actual performance of the Health Facilities Infrastructure Management Programme was expressed as a project management maturity in terms of the following scale:

Table 54: Instrument 12 (Performance target)

Instrument 12	
Strategic constituencies satisfaction (Contract management)	
Level of Maturity	Descriptor
Level 1	Limited knowledge of the practice and no application
Level 2	Knowledge of practice but limited application
Level 3	Application of knowledge of practice
Level 4	Leading innovation and best practice using experience and reflection on application to develop guidelines

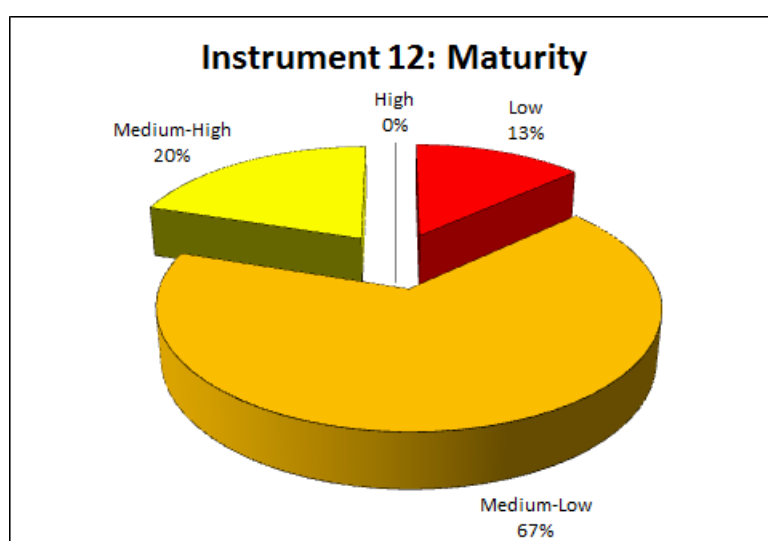
Source: Own construction, 2012

16.3.2. Actual performance

The evaluation of performance in terms of Instrument 12 was conducted by the review group.

Only 13% of the performance evaluation parameters describing the contract management capacity of the infrastructure unit in the national department of health were judged to be at a low level of maturity. There was however 67% of the parameters judged to have reached only a medium-low level of maturity. These findings are illustrated below:

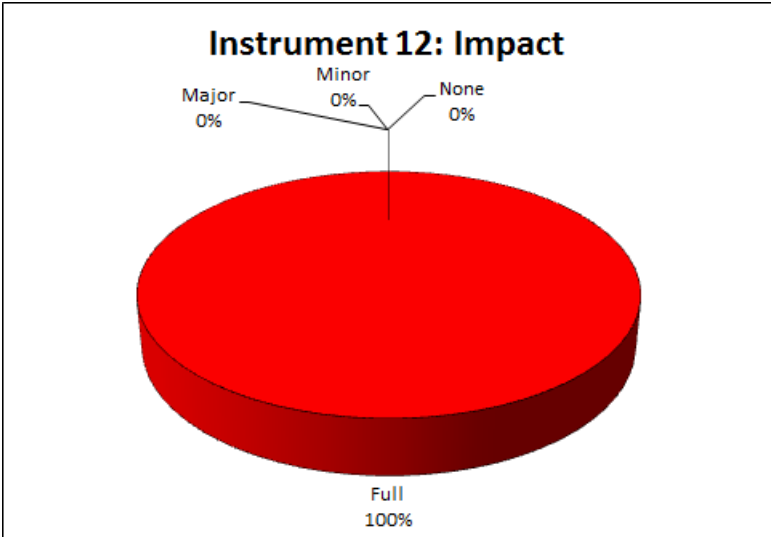
Figure 93: Instrument 12 (Maturity: Summary of results)



Source: Own construction, 2012

All the parameters describe elements that fall under the direct jurisdiction of the Infrastructure Unit in the National Department of Health. This finding is illustrated below:

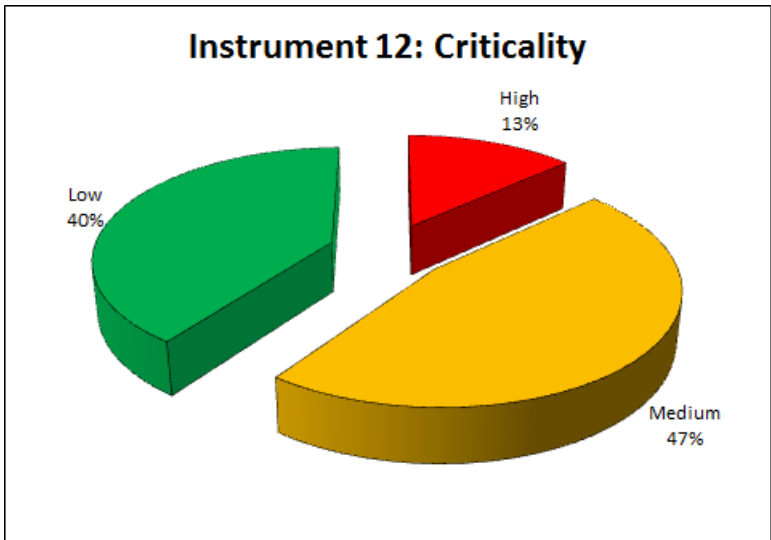
Figure 94: Instrument 12 (Infrastructure Unit impact: Summary of results)



Source: Own construction, 2012

Only 13% of the matters described by the performance evaluation parameters were perceived to be a high priority, as indicated below:

Figure 95: Instrument 12 (Criticality: Summary of results)

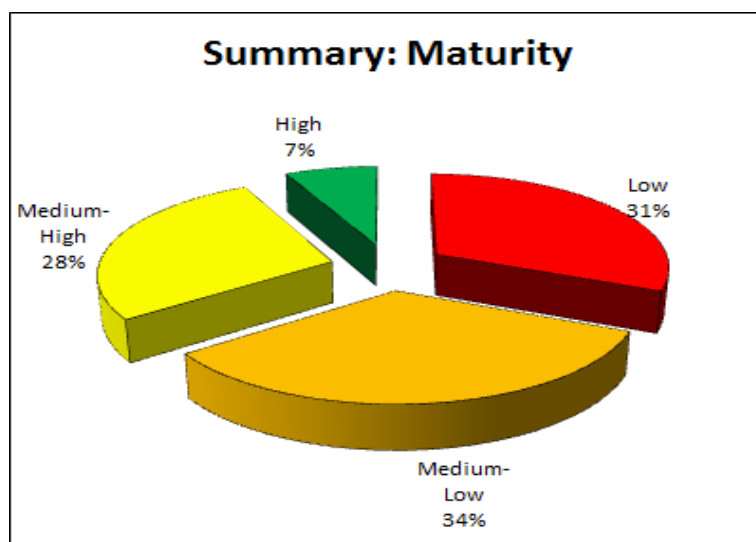


Source: Own construction, 2012

17. Summary

The 12 assessment instruments represent 137 parameters. The empirical survey confirmed that 43 of these (31%) are at a low level of maturity, together with a further 46 (34%) at a medium-low level. Only 10 parameters were judged to indicate a mature level of performance. This result confirms the hypothesis that the Health Facilities Infrastructure Management Programme is performing below optimal level. These findings are illustrated below:

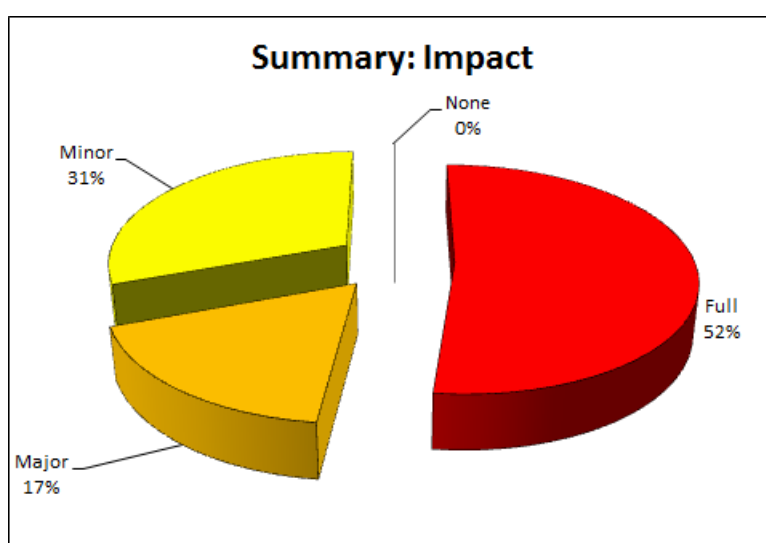
Figure 96: Summary of all Instruments (Maturity: Summary of results)



Source: Own construction, 2012

Improvement on 71 (52%) performance assessment parameters is the sole responsibility of the Infrastructure Unit in the National Department of Health. A further 24 (18%) was judged to be of a nature where the Infrastructure Unit can make a major contribution to improvements in maturity. This result confirms the hypothesis that the focus for improvement should not be limited to an external focus on Provincial Departments of Health, but more on an internal focus on the contribution of the Infrastructure Unit in the National Department of Health.

Figure 97: Summary of all Instruments (Infrastructure Unit impact: Summary of results)



Source: Own construction, 2012

There were 25 parameters, judged to be at a low level of maturity, which can only be addressed by the Infrastructure Unit in the National Department of Health. Such parameters were spread over 7 of the instruments. It was only instruments 3, 4, 5, 6 and 11 that did not include parameters with low levels of maturity, combined with sole responsibility for improvement vested in the Infrastructure Unit in the National Department of Health. These parameters, where no other entity can contribute to the improvement of the level of maturity are indicated below per relevant assessment instrument:

Figure 98: Instrument 1 (Infrastructure Unit impact to improve low maturity)

Instrument 1											
Goal accomplishment (Legal mandate)											
Performance Evaluation Parameters		PART A : Performance Evaluation					PART B : Infrastructure Unit Impact				
		Score	1	2	3	4	Score	1	2	3	4
A	There are clear health facility infrastructure targets for progressive realisation of people's access to health services	1					1				
B	There is a well-defined health facility infrastructure policy as part of the overall national health policy	1					1				
C	There are clear guidelines for the implementation of the infrastructure module of the national health policy	1					1				
G	There are published norms and standards for health facilities infrastructure	1					1				

Source: Own construction, 2012

Figure 99: Instrument 2 (Infrastructure Unit impact to improve low maturity)

Instrument 2										
Goal accomplishment (Strategic planning)										
Performance Evaluation Parameters						PART A : Performance Evaluation				
						Score	1	2	3	4
A	The Infrastructure Unit defines its vision and measures progress for health facilities infrastructure programmes in terms of its effect on people					1				
C	The Infrastructure Unit have a clear and logical link between the input, output, outcome and impact of the health facilities infrastructure programme					1				
E	The Infrastructure Unit measures the performance of the health facilities infrastructure in terms of goal accomplishment, resource acquisition, internal processes and strategic constituency satisfaction					1				

Source: Own construction, 2012

Figure 100: Instrument 7 (Infrastructure Unit impact to improve low maturity)

Instrument 7										
Internal processes (Portfolio management)										
Performance Evaluation Parameters						PART A : Performance Evaluation				
						Score	1	2	3	4
B	The Infrastructure Unit in the National Department of Health has a well-defined administrative process to record the receipt, review and acceptance of User Asset Management Plans					1				
D	The Infrastructure Unit in the National Department of Health has a well-defined administrative process to record the receipt, review and acceptance of Prioritised Project Lists					1				
I	The Infrastructure Unit in the National Department of Health has a well-defined administrative process to record the receipt, review and acceptance of Procurement Strategies					1				
K	There are clear guidelines on the best practice infrastructure planning and implementation, complete with a compliance checklist					1				

Source: Own construction, 2012

Figure 101: Instrument 8 (Infrastructure Unit impact to improve low maturity)

Instrument 8

Internal processes
(Project management)

Performance Evaluation Parameters		PART A : Performance Evaluation					PART B : Infrastructure Unit Impact				
		Score	1	2	3	4	Score	1	2	3	4
C	The Infrastructure Unit in the National Department of Health has a well-defined administrative process to record the receipt, review and acceptance of Infrastructure Programme Management Plans	1					1				
E	The Infrastructure Unit in the National Department of Health has a well-defined administrative process to record the receipt, review and acceptance of Infrastructure Programme Implementation Plans	1					1				
Q	There are clear guidelines on the establishment of a National Progress Review Committees, complete with pro-forma terms of reference and key performance indicators	1					1				
T	There are clear guidelines for the development of a Design Concept and Design Development, complete with a compliance checklist	1					1				
V	The Infrastructure Unit in the National Department of Health has a well-defined administrative process to record the receipt, review and acceptance of Business Case, Strategic Brief, Initial Project Implementation Plan, Design	1					1				
W	There are clear guidelines for the preparation of Detail Designs & Specifications, complete with compliance checklists	1					1				
X	There are clear guidelines for the preparation of Manufacture, Fabrication & Construction Information documents, complete with a compliance checklist	1					1				

Source: Own construction, 2012

Figure 102: Instrument 9 (Infrastructure Unit impact to improve low maturity)

Instrument 9											
Internal processes (Operation & management)											
Performance Evaluation Parameters		PART A : Performance Evaluation					PART B : Infrastructure Unit Impact				
		Score	1	2	3	4	Score	1	2	3	4
B	There are clear guidelines for the preparation of Building Maintenance Plans, complete with a template and compliance checklist for ring-fencing of equitable share funds for maintenance	1					1				
C	There are clear guidelines on the estimating of Life-cycle Costing, complete with templates and compliance checklists	1					1				

Source: Own construction, 2012

Figure 103: Instrument 10 (Infrastructure Unit impact to improve low maturity)

Instrument 10											
Strategic constituencies satisfaction (Auditor General)											
Performance Evaluation Parameters		PART A : Performance Evaluation					PART B : Infrastructure Unit Impact				
		Score	1	2	3	4	Score	1	2	3	4
D	National progress review meetings are convened on a quarterly basis	1					1				
H	Draft grant frameworks for the following year is submitted in the first week of October	1					1				
L	The National Department of Health performs on-site monitoring of the implementation of projects and approved adherence to the project list and procurement strategy	1					1				

Source: Own construction, 2012

Figure 104: Instrument 12 (Infrastructure Unit impact to improve low maturity)

Instrument 12											
Strategic constituencies satisfaction (Contract management)											
Performance Evaluation Parameters		PART A : Performance Evaluation					PART B : Infrastructure Unit Impact				
		Score	1	2	3	4	Score	1	2	3	4
A	The Infrastructure Unit is able to systematically assess if it needs to bring in consultants	1					1				
H	The Infrastructure Unit is able to monitor the performance of consultants and ensure reporting	1					1				

Source: Own construction, 2012

SECTION 5 : CONCLUSION

18. Observations

The delivery of health facilities infrastructure in South Africa is an open system. The evaluation of the performance of such a Health Facilities Infrastructure Programme cannot be limited to an evaluation of the system output, outcome or impact. The evaluation of the performance must be balanced over the entire system and include an evaluation of inputs and processes.

As a concurrent function, as defined in the Constitution of South Africa, the provision of health services is a complex responsibility involving several role-players. Structured co-operation between these role-players is the only alternative for chaotic blame shifting.

Whereas the primary responsibility for the planning, development, operation and maintenance of health facilities infrastructure rests with the Provincial Department responsible for health, the National Department of Health is the only entity that can create an equitable environment that is conducive for appropriate, effective and efficient health facilities infrastructure.

A lack of clear targets resulted in a misdirected programme. The entire strategic planning and performance management approach in the National Department of Health lacks logic in the area of health facilities infrastructure.

Many non-critical matters are prioritised while several critical matters are either ignored or handled in a laissez-faire manner. The health facilities infrastructure input into the National Health Policy and the National Infrastructure Plan can provide direction for the entire Health Facilities Infrastructure Management Programme. Similarly, the responsibilities associated with health facilities infrastructure should be ring-fenced, grouped together and accommodated in the organisational structure of the National Department of Health.

This research confirmed that there is substantial evidence that the Health Facilities Infrastructure Programme in South Africa has no clear goals and vague allocation of responsibility and accountability. Budget allocations are based on a formula which is not related to the value of either the current infrastructure or the required infrastructure. A lack of structured monitoring and evaluation resulted in several audit queries. In general, the programme was judged to be at a low to medium-low level of maturity.

The research also confirmed that the Infrastructure Unit in the National Department of Health should play a pivotal role in raising the level of maturity on the Health Facilities Infrastructure Management Programme in South Africa.

19. Recommended systems transformation

19.1. Introduction

Kerzner defined the following 16 points to project management maturity (Kerzner, 2009: Preface):

- Adopt a project management methodology and use it consistently.
- Implement a philosophy that drives the company (Infrastructure Unit in the National Department of Health) toward project management maturity and communicate it to everyone.
- Commit to developing effective plans at the beginning of each project.
- Minimise scope changes by committing to realistic objectives.
- Recognise that cost and schedule management are inseparable.
- Select the right person as the project manager.
- Provide executives with project sponsor information, not project management information.
- Strengthen involvement and support of line management.
- Focus on deliverables rather than resources.
- Cultivate effective communication, co-operation, and trust to achieve rapid project management maturity.
- Share recognition for project success with the entire project team and line management.
- Eliminate non-productive meetings.
- Focus on identifying and solving problems early, quickly, and cost effectively.
- Measure progress periodically.
- Use project management software as a tool – not as a substitute for effective planning or interpersonal skills.
- Institute an all-employee training programme with periodic updates based upon documented lessons learned.

All of the above are generally applicable to the Health Facilities Infrastructure Management Programme in South Africa, and directly applicable to the Infrastructure Unit in the National Department of Health.

19.2. Recommendations

The following recommendations are made towards further work on systems transformation:

19.2.1. Recommendation 1 (People)

Define clear strategic goals in terms of service to people. Examples may include:

- Number of district hospital beds per 1 000 people.
- Number of regional hospital beds per 1 000 people.
- Number of specialist hospital beds per 1 000 people.
- Number of people per clinic.
- Number of people per community health centre.
- Maximum walking distance to nearest clinic.

Measure actual performance related to clear performance targets.

19.2.2. Recommendation 2 (Sub-systems)

Define the relevant sub-systems that make up the total health facilities infrastructure system. Examples may include:

- Legal mandate sub-system.
- Strategic planning sub-system.
- Infrastructure level of service sub-system.
- Human resource sub-system.
- Budget allocation sub-system.
- Budget utilisation sub-system.
- Portfolio management sub-system.
- Project management sub-system.
- Operation and maintenance sub-system.
- Audit sub-system.
- Management performance sub-system.
- Contract management sub-system.

Identify the inter-dependencies between these sub-systems. Conduct planning of projects, programmes and portfolios, taking cognisance of these inter-dependencies.

19.2.3. Recommendation 3 (Strategy)

Develop a clear strategic planning model. Apply this model (and terminology) consistently. Develop a medium-term strategic plan for health facilities infrastructure, combined with related

annual performance plans. Monitor and evaluate progress in a systematic and transparent manner.

19.2.4. Recommendation 4 (Project management)

Clearly differentiate between projects, programmes and portfolios. Adopt a project management methodology and terminology and use it consistently. Develop project charters and project management plans per project. Manage change in a transparent and responsible manner. Enforce accountability of the project manager.

19.2.5. Recommendation 5 (Performance evaluation)

Measure the performance of the health facilities infrastructure programme in the following specific focus areas:

- Goal accomplishment.
- Resource acquisition.
- Internal processes.
- Strategic constituencies' satisfaction.

Adopt (or develop) a set of performance evaluation instruments and use it consistently. Assess project management maturity at least on an annual basis. Use the outcome of performance evaluation to inform capacity development and performance improvement initiatives.

19.2.6. Recommendation 6 (Infrastructure)

Define health facilities infrastructure and use the term consistently. This term may include the following elements:

- Construction work.
- Health technology.
- Organisational development.
- Quality assurance.

19.2.7. Recommendation 7 (Planning)

Plan the entire life-cycle of each project as well as the entire life-cycle of each health facility. Determine funding requirements for acquisition, operation, maintenance and disposal of health facilities infrastructure. Differentiate between the life-cycle responsibilities of the user and those of the custodian of the assets.

Consider a central planning unit dealing with national and provincial strategy and prioritisation.

19.2.8. Recommendation 8 (Delivery)

Implement a single, comprehensive programme management information system and use it consistently. Generate all progress reports, as well as management reports, from this system. Allocate clear responsibilities for updating of data in the system. Ensure that rewards of role-players are dependent on their performance.

Consider a central infrastructure delivery unit dealing with the implementation of programmes.

19.2.9. Recommendation 9 (Control points)

Adopt a clear set of strategic decision control points and apply it consistently. Allocate clear responsibilities for strategic decisions. Monitor workflow through such strategic decision points and report accountability for delays in a transparent manner.

19.2.10. Recommendation 10 (Intervention)

Establish implementation protocols between the National Department of Health and all provinces. Develop guidelines and policies directing intervention in non-performing projects, programmes or portfolios. Establish capacity (internal or external) to ensure effective and efficient intervention.

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ANNEXURES

Annexure A – Performance evaluation instruments

Instrument 1

Goal accomplishment (Legal mandate)
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Ref	Performance evaluation parameter
A	There are clear health facility infrastructure targets for progressive realisation of people's access to health services
B	There is a well-defined health facility infrastructure policy as part of the overall National Health Policy
C	There are clear guidelines for the implementation of the infrastructure module of the National Health Policy
D	There is a clear split in responsibilities of the Infrastructure Unit in the National Department of Health and responsibilities of the Infrastructure Units in provincial departments
E	There is a strategic, medium term health plan, that includes health facilities infrastructure, that is prepared annually and that is integrated with the provincial plans submitted to the National Health Council
F	There is well-defined process to monitor progress of the Health Facilities Infrastructure Management Programme
G	There are published norms and standards for health facilities infrastructure
H	The Infrastructure Unit in the National Department of Health reports on the status of norms and standards for health facilities infrastructure, as well as on the progress made in the delivery of the Health Facilities Infrastructure Management Programme
I	The Infrastructure Unit in the National Department of Health is represented on the advisory committees on health facilities infrastructure of the National Health Council
J	There is an Infrastructure Unit in the National Department of Health with capacity to provide distinctive functions, as well as capacity to intervene in provinces when required by the national executive

Source: Own construction, 2012

Instrument 2

Goal accomplishment (Strategic planning)

Ref	Performance evaluation parameter
A	The Infrastructure Unit defines its vision and measures progress for Health Facilities Infrastructure Management Programmes in terms of its effect on people
B	Rational decision making leads the Infrastructure Unit to a clear definition of relevant sub-systems that make up the total delivery system
C	The Infrastructure Unit have a clear and logical link between the input, output, outcome and impact of the Health Facilities Infrastructure Management Programme
D	The Infrastructure Unit plans and implements the selected health facilities infrastructure strategy as projects, programmes and portfolios.
E	The Infrastructure Unit measures the performance of the Health Facilities Infrastructure Management Programme in terms of goal accomplishment, resource acquisition, internal processes and strategic constituency satisfaction
F	The Infrastructure Unit of the National Department of Health defines infrastructure and ensure that all stakeholders work with the same definition
G	The Infrastructure Unit of the National Department of Health ensures that strategic plans and asset management plans are aligned with regard to priorities, funding, responsibility and accountability
H	The Infrastructure Unit in the National Department of Health ensures that projects, programmes and portfolios are implemented in accordance with the agreed implementation process
I	The Infrastructure Unit in the National Department of Health ensures effective and efficient implementation through the rigorous application of strategic decision points (gates) in the infrastructure delivery process
J	The Infrastructure Unit in the National Department of Health assists provincial departments in the planning and implementation of Health Facilities Infrastructure Management Programmes

Source: Own construction, 2012

Instrument 3

Goal accomplishment (Levels of service)

Ref	Performance evaluation parameter
A	The actual number of hospital beds per 1 000 people is equal to the planned number of hospital beds per 1 000 people
B	The actual backlog in the number of clinics is equal to the planned backlog in the number of clinics

Source: Own construction, 2012

Instrument 4

Resource acquisition (Team maturity)

Ref	Performance evaluation parameter
A	The members of the Infrastructure Unit are clear about the goals of the Unit
B	The members of the Infrastructure Unit agree with the goals of the Unit
C	The members of the Infrastructure Unit are clear about their individual roles in achieving the Unit goals
D	The members of the Infrastructure Unit accept thier roles in achieving the Unit goals
E	The roles of each member of the Infrastructure Unit matches the ability of such member
F	The leadership style in the Infrastructure Unit matches the Unit's developmental level
G	The Infrastructure Unit has an open communication structure in which all members participate
H	The members gets, gives and uses feedback about their effectiveness and productivity
I	The Infrastructure Unit spends time planning how it will solve problems and make decisions
J	The members of the Infrastructure Unit conform voluntarily to approaches on the Unit

Source: Own construction, 2012

Instrument 4 continue

Resource acquisition (Team maturity)

Ref	Performance evaluation parameter
K	The norms of the Infrastructure Unit encourage high performance and quality
L	The Infrastructure Unit expects to be successful
M	The Infrastructure Unit pays attention to the detail of its work
N	It is accepted that there are sub-groups and coalitions in the Infrastructure Unit
O	All sub-groups and coalitions are integrated into the Infrastructure Unit as a whole
P	The Infrastructure Unit is highly cohesive
Q	The inter-personal attraction between members of the Infrastructure Unit is high
R	The members of the Infrastructure Unit are co-operative
S	Periods of conflict are frequent but brief
T	The Infrastructure Unit has effective conflict management strategies

Source: Own construction, 2012

Instrument 5

Resource acquisition (Budget allocation)

Ref	Performance evaluation parameter
A	The modern equivalent replacement value of the existing health facilities infrastructure informs the budget allocated for normal annual maintenance of infrastructure
B	The modern equivalent replacement value of the existing health technology informs the budget allocated for normal annual maintenance of health technology
C	The estimated infrastructure backlog maintenance informs the budget allocated for refurbishment of health facilities infrastructure
D	The estimated health technology backlog maintenance informs the budget allocated for refurbishment of health technology
E	The estimated shortfall in health facilities infrastructure informs the budget allocated for infrastructure additions and upgrades
F	The estimated shortfall in health technology informs the budget allocated for health technology additions and upgrades

Source: Own construction, 2012

Instrument 6

Resource acquisition (Budget utilisation)

Ref	Performance evaluation parameter
A	The value of the planned expenditure on the prioritised projects matches the allocated budget for the financial year
B	The cashflow of the planned expenditure on projects matches the total allocated budget for the financial year
C	The cashflow of the planned expenditure on projects matches the cashflow of the transfer of grants to provinces
D	The actual cashflow on projects matches the baseline cashflow
E	The actual expenditure for the financial year matches the total budget allocated

Source: Own construction, 2012

Instrument 7

Internal processes (Portfolio management)

Ref	Organisational Process Assets
A	There are clear guidelines for the preparation of User Asset Management Plans, complete with a template and a compliance checklist
B	The Infrastructure Unit in the National Department of Health has a well-defined administrative process to record the receipt, review and acceptance of User Asset Management Plans
C	There are clear guidelines for the preparation of Prioritised Project Lists, complete with a template and a compliance checklist
D	The Infrastructure Unit in the National Department of Health has a well-defined administrative process to record the receipt, review and acceptance of Prioritised Project Lists
E	The Infrastructure Unit in the National Department of Health has a well-defined administrative process to Gazette the Prioritised Project Lists
F	The Infrastructure Unit in the National Department of Health has a well-defined administrative process to the Transfer of Conditional Grants to provinces
G	There are clear guidelines on the Infrastructure Alignment Model, complete with a checklist for compliance
H	There are clear guidelines for the preparation of Procurement Strategies, complete with a template and compliance checklist

Source: Own construction, 2012

Instrument 7 continue

Internal processes (Portfolio management)

Ref	Organisational Process Assets
I	The Infrastructure Unit in the National Department of Health has a well-defined administrative process to record the receipt, review and acceptance of Procurement Strategies
J	There are clear guidelines on the alignment of health infrastructure projects, complete with a compliance checklist
K	There are clear guidelines on the best practice infrastructure planning and implementation, complete with a compliance checklist
L	There are clear guidelines for the support to provinces by the Infrastructure Unit in the National Department of Health, including support through the Programme Management Support Unit as well as intervention in terms of section 100 of the Constitution
M	The Infrastructure Unit in the National Department of Health has a well-defined Project Implementation Manual, complete with references to relevant guidelines, templates and compliance checklists
N	There are clear guidelines for the preparation of Custodian Asset Management Plans, complete with a template and compliance checklist
O	There are clear guidelines on the process for adjustment of budgetary allocations between projects or between grants in a province, complete with a detailed administrative process and compliance checklists

Source: Own construction, 2012

Instrument 8

Internal processes (Project management)

Ref	Organisational Process Assets
A	There are clear guidelines for the procurement of Professional Service Providers and Contractors, complete with compliance checklists
B	There are clear guidelines for the preparation of Infrastructure Programme Management Plans, complete with a template and compliance checklist
C	The Infrastructure Unit in the National Department of Health has a well-defined administrative process to record the receipt, review and acceptance of Infrastructure Programme Management Plans
D	There are clear guidelines for the preparation of Infrastructure Programme Implementation Plans, complete with a template and compliance checklist
E	The Infrastructure Unit in the National Department of Health has a well-defined administrative process to record the receipt, review and acceptance of Infrastructure Programme Implementation Plans
F	There are clear guidelines on the preparation of Intergovernmental Protocol Agreements, complete with a template and compliance checklist
G	There are clear guidelines on the reporting of physical and financial progress, complete with key performance indicators and minimum levels of acceptable performance
H	There are clear guidelines on the Procurement of Implementing Agents, complete with capacity assessment tools and key performance indicators

Source: Own construction, 2012

Instrument 8 continue

Internal processes (Project management)

Ref	Organisational Process Assets
I	There are clear guidelines for the preparation of Project Implementation Plans, complete with a template and compliance checklist
J	There are clear guidelines on the establishment of Provincial Progress Review Committees, complete with pro-forma terms of reference, KPIs, as well as a definition of the oversight & on-site monitoring role of the Infrastructure Unit in the NDoH
K	There are clear guidelines on the Infrastructure Reporting Model and In-year Reporting, complete with a template and compliance checklist
L	There are clear guidelines on the reporting requirements for Health Technology, Organisational Development and Quality Assurance, complete with templates and compliance checklists
M	There are clear guidelines on the reporting requirements to the National Council of Provinces, the National Health Council and the National Treasury, complete with templates and compliance checklists
N	There are clear guidelines on the Peer Review process, complete with timeframes, terms of reference for review panels and delegations of acceptance authority
O	The Infrastructure Unit in the National Department of Health has a well-defined administrative process to record the receipt, review and acceptance of projects during the Peer Review process
P	There are clear guidelines on the establishment of a Core Infrastructure Management Structure, provincial Revitalisation Teams and Resident Engineers, complete with terms of reference and compliance checklists

Source: Own construction, 2012

Instrument 8 continue

Internal processes (Project management)

Ref	Organisational Process Assets
Q	There are clear guidelines on the establishment of a National Progress Review Committees, complete with pro-forma terms of reference and key performance indicators
R	There are clear guidelines for the preparation of annual Project Implementation Plans, complete with a template and compliance checklist
S	There are clear guidelines for the preparation of a Business Case and Strategic Brief, complete with a template and compliance checklist
T	There are clear guidelines for the development of a Design Concept and Design Development, complete with a compliance checklist
U	There are clear guidelines for the development of an Initial Project Implementation Plan, complete with a template and compliance checklist
V	The Infrastructure Unit in the National Department of Health has a well-defined administrative process to record the receipt, review and acceptance of Business Case, Strategic Brief, Initial Project Implementation Plan, Design Concept, Design
W	There are clear guidelines for the preparation of Detail Designs & Specifications, complete with compliance checklists
X	There are clear guidelines for the preparation of Manufacture, Fabrication & Construction Information documents, complete with a compliance checklist
Y	There are clear guidelines for acceptance of completed construction projects, complete with templates and compliance checklists for Practical Completion Certificates, Completion Certificates, Final Completion Certificates and Final Accounts

Source: Own construction, 2012

Instrument 9

Internal processes (Operation & management)

Ref	Organisational Process Assets
A	There are clear guidelines for Post Project Evaluation, complete with a template and compliance checklist
B	There are clear guidelines for the preparation of Building Maintenance Plans, complete with a template and compliance checklist for ring-fencing of Equitable Share funds for maintenance
C	There are clear guidelines on the estimating of Life-cycle Costing, complete with templates and compliance checklists
D	There are clear guidelines on the budget allocation to new work, refurbishment work and maintenance work, complete with templates and compliance checklists
E	There are clear guidelines for the preparation of an Asset Register, complete with templates and compliance checklists
F	There are clear guidelines on the effective management and sustainability of health assets, complete with compliance checklists
G	There are clear guidelines on the preparation of Capacity Building Plans, complete with a template and compliance checklist

Source: Own construction, 2012

Instrument 10

Strategic constituencies satisfaction (Auditor General)

Ref	Performance evaluation parameter
A	There is a functional project management information system
B	The achieved output is in line with the desired grant output as defined in the Grant Framework
C	The project lists are published within 28 days after the relevant Division of Revenue Act came into effect
D	National progress review meetings are convened on a quarterly basis
E	Provincial progress review meetings are convened on a monthly basis
F	Quarterly performance reports are submitted to National Treasury and National Council of Provinces within 45 days after the end of each quarter
G	Monthly financial reports are submitted to National Department of Health within 15 days after the end of each month

Source: Own construction, 2012

Instrument 11

Strategic constituencies satisfaction (Management performance)

Ref	Performance evaluation parameter
A	The strategic plan is based on analysis, is aligned with MTSF and/or PGDS, Delivery Agreements, and informs Annual Performance Plan, and includes risk mitigation.
B	The contents of the Annual Performance Plan complies with Treasury guidelines and implementation is reported and monitored effectively.
C	Delivery programmes (eg. Maternal Health Programme, Early Childhood Development Programme) are logical and programme performance information is used internally.
D	The department uses monitoring and evaluation information.
E	The department has an approved service delivery charter, standards and service delivery improvement plans and adheres to these to improve services
F	Management structures function well in the department.
G	The department complies with reporting requirements
H	The department has the main accountability mechanisms (Audit Committee) in place and such committees function well
I	The department has systems and policies in place to promote ethical behaviour and discourage unethical behaviour and corruption

Source: Own construction, 2012

Instrument 11 continue

Strategic constituencies satisfaction (Management performance)

Ref	Performance evaluation parameter
J	The department meets fraud prevention requirements
K	The department's internal audit unit functions well
L	The department has basic risk management elements in place and such elements function well
M	The EA has implemented the delegations framework set out in PSR and directed by the Minister for Public Service and Administration
N	The department has financial delegations in place in format prescribed by the PFMA and such delegations are audited
O	The needs assessment and specifications of goods and services required by the department are linked to the departmental budget
P	The department has effective and efficient management structures and processes for the entire acquisitions process
Q	The entire process of logistics, from setting inventory levels, to receiving, managing and issuing goods is effectively managed
R	The disposal strategy and policy to optimise use of assets, minimise losses and ensure correct execution of disposal process are in place and managed

Source: Own construction, 2012

Instrument 12

Strategic constituencies satisfaction (Contract management)

Ref	Performance evaluation parameter
A	The Infrastructure Unit is able to systematically assess if it needs to bring in consultants
B	The Infrastructure Unit is able to align its procurement of consultants to the Infrastructure Unit procurement plan
C	The Infrastructure Unit is able to develop a ToR
D	The Infrastructure Unit is able to conduct tendering processes
E	The Infrastructure Unit is able to conduct tender evaluation processes to select suitable consultants
F	The Infrastructure Unit is able to contract consultants
G	The Infrastructure Unit is able to undertake activities around the inception phases of projects
H	The Infrastructure Unit is able to monitor the performance of consultants and ensure reporting

Source: Own construction, 2012

Instrument 12 continue

Strategic constituencies satisfaction (Contract management)

Ref	Performance evaluation parameter
I	The Infrastructure Unit is able to manage risk on contracts with the consultant
J	The Infrastructure Unit is able to evaluate the impact of projects by consultants on the needs of the Infrastructure Unit
K	The Infrastructure Unit is able to terminate a contract that is not performing before the end of the project.
L	The Infrastructure Unit is able to conduct a closeout meeting
M	The Infrastructure Unit is able to verify deliverables submitted by consultants
N	The Infrastructure Unit is able to closeout contracts with consultants
O	The Infrastructure Unit is able to conduct administrative contract closure processes

Source: Own construction, 2012

Annexure B – Performance evaluation scores

Instrument 1

Goal accomplishment (Legal mandate)

Performance Evaluation Parameters		PART A : Performance Evaluation					PART B : Infrastructure Unit Impact					PART C : Urgency				Criticality Rating A+C
		Score	1	2	3	4	Score	1	2	3	4	Score	1	2	3	
A	There are clear health facility infrastructure targets for progressive realisation of people's access to health services	1					1					1				2
B	There is a well-defined health facility infrastructure policy as part of the overall National Health Policy	1					1					1				2
C	There are clear guidelines for the implementation of the infrastructure module of the National Health Policy	1					1					1				2
D	There is a clear split in responsibilities of the Infrastructure Unit in the National Department of Health and responsibilities of the Infrastructure Units in provincial departments	3					3					2				5
E	There is a strategic, medium term health plan, that includes health facilities infrastructure, that is prepared annually and that is integrated with the provincial plans submitted to the National Health Council	2					2					2				4
F	There is well-defined process to monitor progress of the Health Facilities Infrastructure Management Programme	2					1					1				3
G	There are published norms and standards for health facilities infrastructure	1					1					1				2
H	The Infrastructure Unit in the National Department of Health reports on the status of norms and standards for health facilities infrastructure, as well as on the progress made in the delivery of the Health Facilities Infrastructure	3					1					2				5
I	The Infrastructure Unit in the National Department of Health is represented on the advisory committees on health facilities infrastructure of the National Health Council	4					1					3				7
J	There is an Infrastructure Unit in the National Department of Health with capacity to provide distinctive functions, as well as capacity to intervene in provinces when required by the national executive	3					1					2				5

Source: Own construction, 2012

Instrument 2

Goal accomplishment (Strategic planning)

Performance Evaluation Parameters		PART A : Performance Evaluation					PART B : Infrastructure Unit Impact					PART C : Urgency				Criticality Rating A+C
		Score	1	2	3	4	Score	1	2	3	4	Score	1	2	3	
A	The Infrastructure Unit defines its vision and measures progress for Health Facilities Infrastructure Management Programmes in terms of its effect on people	1					1					2				3
B	Rational decision making leads the Infrastructure Unit to a clear definition of relevant sub-systems that make up the total delivery system	2					1					2				4
C	The Infrastructure Unit have a clear and logical link between the input, output, outcome and impact of the Health Facilities Infrastructure Management Programme	1					1					1				2
D	The Infrastructure Unit plans and implements the selected health facilities infrastructure strategy as projects, programmes and portfolios.	2					1					2				4
E	The Infrastructure Unit measures the performance of the Health Facilities Infrastructure Management Programme in terms of goal accomplishment, resource acquisition, internal processes and strategic constituency satisfaction	1					1					1				2
F	The Infrastructure Unit of the National Department of Health defines infrastructure and ensure that all stakeholders work with the same definition	3					1					1				4
G	The Infrastructure Unit of the National Department of Health ensures that strategic plans and asset management plans are aligned with regard to priorities, funding, responsibility and accountability	1					2					2				3
H	The Infrastructure Unit in the National Department of Health ensures that projects, programmes and portfolios are implemented in accordance with the agreed implementation process	3					2					1				4
I	The Infrastructure Unit in the National Department of Health ensures effective and efficient implementation through the rigorous application of strategic decision points (gates) in the infrastructure delivery process	2					2					1				3
J	The Infrastructure Unit in the National Department of Health assists provincial departments in the planning and implementation of Health Facilities Infrastructure Management Programmes	3					3					2				5

Source: Own construction, 2012

Instrument 3

Goal accomplishment (Levels of service)

Performance Evaluation Parameters		PART A : Performance Evaluation					PART B : Infrastructure Unit Impact					PART C : Urgency				Criticality Rating A+C
		Score	1	2	3	4	Score	1	2	3	4	Score	1	2	3	
A	The actual number of hospital beds per 1 000 people is equal to the planned number of hospital beds per 1 000 people	1					3					2				3
B	The actual backlog in the number of clinics is equal to the planned backlog in the number of clinics	1					3					2				3

Source: Own construction, 2012

Instrument 4

Resource aquisition (Team maturity)

Performance Evaluation Parameters		PART A : Performance Evaluation					PART B : Infrastructure Unit Impact					PART C : Urgency				Criticality Rating A+C
		Score	1	2	3	4	Score	1	2	3	4	Score	1	2	3	
A	The members of the Infrastructure Unit are clear about the goals of the Unit	3					1					1				4
B	The members of the Infrastructure Unit agree with the goals of the Unit	2					1					1				3
C	The members of the Infrastructure Unit are clear about their individual roles in achieving the Unit goals	3					1					1				4
D	The members of the Infrastructure Unit accept thier roles in achieving the Unit goals	3					1					2				5
E	The roles of each member of the Infrastructure Unit matches the ability of such member	3					1					2				5
F	The leadership style in the Infrastructure Unit matches the Unit's developmental level	3					1					2				5
G	The Infrastructure Unit has an open communication structure in which all members participate	3					1					2				5
H	The members gets, gives and uses feedback about their effectiveness and productivity	3					1					2				5
I	The Infrastructure Unit spends time planning how it will solve problems and make decisions	3					1					2				5
J	The members of the Infrastructure Unit conform voluntarily to approaches on the Unit	4					1					2				6

Source: Own construction, 2012

Instrument 5

Resource acquisition (Budget allocation)

Performance Evaluation Parameters		PART A : Performance Evaluation					PART B : Infrastructure Unit Impact					PART C : Urgency				Criticality Rating A+C
		Score	1	2	3	4	Score	1	2	3	4	Score	1	2	3	
A	The modern equivalent replacement value of the existing health facilities infrastructure informs the budget allocated for normal annual maintenance of infrastructure	1					3					1				2
B	The modern equivalent replacement value of the existing health technology informs the budget allocated for normal annual maintenance of health technology	1					3					1				2
C	The estimated infrastructure backlog maintenance informs the budget allocated for refurbishment of health facilities infrastructure	1					3					1				2
D	The estimated health technology backlog maintenance informs the budget allocated for refurbishment of health technology	1					3					1				2
E	The estimated shortfall in health facilities infrastructure informs the budget allocated for infrastructure additions and upgrades	1					3					1				2
F	The estimated shortfall in health technology informs the budget allocated for health technology additions and upgrades	1					3					1				2

Source: Own construction, 2012

Instrument 6

Resource aquisition (Budget utilisation)

Performance Evaluation Parameters		PART A : Performance Evaluation					PART B : Infrastructure Unit Impact					PART C : Urgency				Criticality Rating A+C
		Score	1	2	3	4	Score	1	2	3	4	Score	1	2	3	
A	The value of the planned expenditure on the prioritised projects matches the allocated budget for the financial year	3					3					1				4
B	The cashflow of the planned expenditure on projects matches the total allocated budget for the financial year	3					3					1				4
C	The cashflow of the planned expenditure on projects matches the cashflow of the transfer of grants to provinces	3					3					1				4
D	The actual cashflow on projects matches the baseline cashflow	2					3					1				3
E	The actual expenditure for the financial year matches the total budget allocated	3					3					1				4

Source: Own construction, 2012

Instrument 7

Internal processes (Portfolio management)

Performance Evaluation Parameters		PART A : Performance Evaluation					PART B : Infrastructure Unit Impact					PART C : Urgency				Criticality Rating A+C
		Score	1	2	3	4	Score	1	2	3	4	Score	1	2	3	
A	There are clear guidelines for the preparation of User Asset Management Plans, complete with a template and a compliance checklist	4					3					1				5
B	The Infrastructure Unit in the National Department of Health has a well-defined administrative process to record the receipt, review and acceptance of User Asset Management Plans	1					1					1				2
C	There are clear guidelines for the preparation of Prioritised Project Lists, complete with a template and a compliance checklist	2					2					1				3
D	The Infrastructure Unit in the National Department of Health has a well-defined administrative process to record the receipt, review and acceptance of Prioritised Project Lists	1					1					1				2
E	The Infrastructure Unit in the National Department of Health has a well-defined administrative process to Gazette the Prioritised Project Lists	2					1					1				3
F	The Infrastructure Unit in the National Department of Health has a well-defined administrative process to the Transfer of Conditional Grants to provinces	3					1					1				4
G	There are clear guidelines on the Infrastructure Alignment Model, complete with a checklist for compliance	2					2					1				3
H	There are clear guidelines for the preparation of Procurement Strategies, complete with a template and compliance checklist	2					3					2				4

Source: Own construction, 2012

Instrument 7 continue

Internal processes (Portfolio management)

Performance Evaluation Parameters		PART A : Performance Evaluation					PART B : Infrastructure Unit Impact					PART C : Urgency				Criticality Rating A+C
		Score	1	2	3	4	Score	1	2	3	4	Score	1	2	3	
I	The Infrastructure Unit in the National Department of Health has a well-defined administrative process to record the receipt, review and acceptance of Procurement Strategies	1					1					1				2
J	There are clear guidelines on the alignment of health infrastructure projects, complete with a compliance checklist	1					3					2				3
K	There are clear guidelines on the best practice infrastructure planning and implementation, complete with a compliance checklist	1					1					1				2
L	There are clear guidelines for the support to provinces by the Infrastructure Unit in the National Department of Health, including support through the Programme Management Support Unit as well as intervention in terms of	1					3					2				3
M	The Infrastructure Unit in the National Department of Health has a well-defined Project Implementation Manual, complete with references to relevant guidelines, templates and compliance checklists	2					1					1				3
N	There are clear guidelines for the preparation of Custodian Asset Management Plans, complete with a template and compliance checklist	3					3					2				5
O	There are clear guidelines on the process for adjustment of budgetary allocations between projects or between grants in a province, complete with a detailed administrative process and compliance checklists	1					3					1				2

Source: Own construction, 2012

Instrument 8

Internal processes (Project management)

Performance Evaluation Parameters		PART A : Performance Evaluation					PART B : Infrastructure Unit Impact					PART C : Urgency				Criticality Rating A+C
		Score	1	2	3	4	Score	1	2	3	4	Score	1	2	3	
A	There are clear guidelines for the procurement of Professional Service Providers and Contractors, complete with compliance checklists	2					2					1				3
B	There are clear guidelines for the preparation of Infrastructure Programme Management Plans, complete with a template and compliance checklist	3					2					2				5
C	The Infrastructure Unit in the National Department of Health has a well-defined administrative process to record the receipt, review and acceptance of Infrastructure Programme Management Plans	1					1					1				2
D	There are clear guidelines for the preparation of Infrastructure Programme Implementation Plans, complete with a template and compliance checklist	3					2					1				4
E	The Infrastructure Unit in the National Department of Health has a well-defined administrative process to record the receipt, review and acceptance of Infrastructure Programme Implementation Plans	1					1					1				2
F	There are clear guidelines on the preparation of Intergovernmental Protocol Agreements, complete with a template and compliance checklist	2					2					2				4
G	There are clear guidelines on the reporting of physical and financial progress, complete with key performance indicators and minimum levels of acceptable performance	2					1					1				3
H	There are clear guidelines on the Procurement of Implementing Agents, complete with capacity assessment tools and key performance indicators	1					2					1				2

Source: Own construction, 2012

Instrument 8 continue

Internal processes (Project management)

Performance Evaluation Parameters		PART A : Performance Evaluation					PART B : Infrastructure Unit Impact					PART C : Urgency				Criticality Rating A+C
		Score	1	2	3	4	Score	1	2	3	4	Score	1	2	3	
I	There are clear guidelines for the preparation of Project Implementation Plans, complete with a template and compliance checklist	3					1					1				4
J	There are clear guidelines on the establishment of Provincial Progress Review Committees, complete with pro-forma terms of reference, KPIs, as well as a definition of the oversight & on-site monitoring role of the Infrastructure Unit	1					2					2				3
K	There are clear guidelines on the Infrastructure Reporting Model and In-year Reporting, complete with a template and compliance checklist	4					3					2				6
L	There are clear guidelines on the reporting requirements for Health Technology, Organisational Development and Quality Assurance, complete with templates and compliance checklists	2					1					1				3
M	There are clear guidelines on the reporting requirements to the National Council of Provinces, the National Health Council and the National Treasury, complete with templates and compliance checklists	2					1					1				3
N	There are clear guidelines on the Peer Review process, complete with timeframes, terms of reference for review panels and delegations of acceptance authority	2					1					1				3
O	The Infrastructure Unit in the National Department of Health has a well-defined administrative process to record the receipt, review and acceptance of projects during the Peer Review process	2					1					1				3
P	There are clear guidelines on the establishment of a Core Infrastructure Management Structure, provincial Revitalisation Teams and Resident Engineers, complete with terms of reference and compliance checklists	2					1					1				3

Source: Own construction, 2012

Instrument 8 continue

Internal processes (Project management)

Performance Evaluation Parameters		PART A : Performance Evaluation					PART B : Infrastructure Unit Impact					PART C : Urgency				Criticality Rating A+C
		Score	1	2	3	4	Score	1	2	3	4	Score	1	2	3	
Q	There are clear guidelines on the establishment of a National Progress Review Committees, complete with pro-forma terms of reference and key performance indicators	1					1					1				2
R	There are clear guidelines for the preparation of annual Project Implementation Plans, complete with a template and compliance checklist	2					1					2				4
S	There are clear guidelines for the preparation of a Business Case and Strategic Brief, complete with a template and compliance checklist	2					2					1				3
T	There are clear guidelines for the development of a Design Concept and Design Development, complete with a compliance checklist	1					1					2				3
U	There are clear guidelines for the development of an Initial Project Implementation Plan, complete with a template and compliance checklist	2					1					2				4
V	The Infrastructure Unit in the National Department of Health has a well-defined administrative process to record the receipt, review and acceptance of Business Case, Strategic Brief, Initial Project Implementation Plan, Design	1					1					1				2
W	There are clear guidelines for the preparation of Detail Designs & Specifications, complete with compliance checklists	1					1					2				3
X	There are clear guidelines for the preparation of Manufacture, Fabrication & Construction Information documents, complete with a compliance checklist	1					1					2				3
Y	There are clear guidelines for acceptance of completed construction projects, complete with templates and compliance checklists for Practical Completion Certificates, Completion Certificates, Final Completion Certificates and Final	2					2					2				4

Source: Own construction, 2012

Instrument 9

Internal processes (Operation & management)

Performance Evaluation Parameters		PART A : Performance Evaluation					PART B : Infrastructure Unit Impact					PART C : Urgency				Criticality Rating A+C
		Score	1	2	3	4	Score	1	2	3	4	Score	1	2	3	
A	There are clear guidelines for Post Project Evaluation, complete with a template and compliance checklist	1					2					2				3
B	There are clear guidelines for the preparation of Building Maintenance Plans, complete with a template and compliance checklist for ring-fencing of Equitable Share funds for maintenance	1					1					1				2
C	There are clear guidelines on the estimating of Life-cycle Costing, complete with templates and compliance checklists	1					1					1				2
D	There are clear guidelines on the budget allocation to new work, refurbishment work and maintenance work, complete with templates and compliance checklists	2					2					2				4
E	There are clear guidelines for the preparation of an Asset Register, complete with templates and compliance checklists	3					3					3				6
F	There are clear guidelines on the effective management and sustainability of health assets, complete with compliance checklists	1					2					3				4
G	There are clear guidelines on the preparation of Capacity Building Plans, complete with a template and compliance checklist	1					2					1				2

Source: Own construction, 2012

Instrument 10

Strategic constituencies satisfaction (Auditor General)

Performance Evaluation Parameters		PART A : Performance Evaluation					PART B : Infrastructure Unit Impact					PART C : Urgency				Criticality Rating A+C
		Score	1	2	3	4	Score	1	2	3	4	Score	1	2	3	
A	There is a functional project management information system	2					1					1				3
B	The achieved output is in line with the desired grant output as defined in the Grant Framework	2					2					1				3
C	The project lists are published within 28 days after the relevant Division of Revenue Act came into effect	2					1					1				3
D	National progress review meetings are convened on a quarterly basis	1					1					1				2
E	Provincial progress review meetings are convened on a monthly basis	2					3					1				3
F	Quarterly performance reports are submitted to National Treasury and National Council of Provinces within 45 days after the end of each quarter	2					1					1				3
G	Monthly financial reports are submitted to National Department of Health within 15 days after the end of each month	2					3					1				3

Source: Own construction, 2012

Instrument 10 continue

Strategic constituencies satisfaction (Auditor General)

Performance Evaluation Parameters		PART A : Performance Evaluation					PART B : Infrastructure Unit Impact					PART C : Urgency				Criticality Rating A+C
		Score	1	2	3	4	Score	1	2	3	4	Score	1	2	3	
H	Draft grant frameworks for the following year is submitted in the first week of October	1					1					1				2
I	All projects commencing construction in a specific financial year must have business cases and initial Project Implementation Plans approved before funds can be released for such projects	1					2					1				2
J	Revised cash flows over the MTEF period, including the remainder of the specific year, is due on or before 30 June of each year	2					2					1				3
K	Provinces submit quarterly performance reports to the National Department of Health within 30 days after the end of each quarter	2					3					1				3
L	The National Department of Health performs on-site monitoring of the implementation of projects and approved adherence to the project list and procurement strategy	1					1					1				2
M	Unspent or saved funds may, after consultation with the National Department of Health, be relocated towards the rehabilitation and upgrading of nursing colleges.	2					2					1				3
N	The National Department of Health monitors the development and approval of provincial User Asset Management Plans	2					1					3				5

Source: Own construction, 2012

Instrument 11

Strategic constituencies satisfaction (Management performance)

Performance Evaluation Parameters		PART A : Performance Evaluation					PART B : Infrastructure Unit Impact					PART C : Urgency				Criticality Rating A+C
		Score	1	2	3	4	Score	1	2	3	4	Score	1	2	3	
A	The strategic plan is based on analysis, is aligned with MTSF and/or PGDS, Delivery Agreements, and informs Annual Performance Plan, and includes risk mitigation.	3					3					1				4
B	The contents of the Annual Performance Plan complies with Treasury guidelines and implementation is reported and monitored effectively.	3					3					1				4
C	Delivery programmes (eg. Maternal Health Programme, Early Childhood Development Programme) are logical and programme performance information is used internally.	3					3					1				4
D	The department uses monitoring and evaluation information.	4					2					1				5
E	The department has an approved service delivery charter, standards and service delivery improvement plans and adheres to these to improve services	2					3					1				3
F	Management structures function well in the department.	4					3					1				5
G	The department complies with reporting requirements	3					3					1				4
H	The department has the main accountability mechanisms (Audit Committee) in place and such committees function well	4					3					1				5
I	The department has systems and policies in place to promote ethical behaviour and discourage unethical behaviour and corruption	4					3					1				5

Source: Own construction, 2012

Instrument 11 continue

Strategic constituencies satisfaction (Management performance)

Performance Evaluation Parameters		PART A : Performance Evaluation					PART B : Infrastructure Unit Impact					PART C : Urgency				Criticality Rating A+C
		Score	1	2	3	4	Score	1	2	3	4	Score	1	2	3	
J	The department meets fraud prevention requirements	3					3					2				5
K	The department's internal audit unit functions well	3					3					2				5
L	The department has basic risk management elements in place and such elements function well	3					3					1				4
M	The EA has implemented the delegations framework set out in PSR and directed by the Minister for Public Service and Administration	3					3					1				4
N	The department has financial delegations in place in format prescribed by the PFMA and such delegations are audited	3					2					2				5
O	The needs assessment and specifications of goods and services required by the department are linked to the departmental budget	4					3					2				6
P	The department has effective and efficient management structures and processes for the entire acquisitions process	4					3					2				6
Q	The entire process of logistics, from setting inventory levels, to receiving, managing and issuing goods is effectively managed	3					3					2				5
R	The disposal strategy and policy to optimise use of assets, minimise losses and ensure correct execution of disposal process are in place and managed	3					3					2				5

Source: Own construction 2012

Instrument 12

Strategic constituencies satisfaction (Contract management)

Performance Evaluation Parameters		PART A : Performance Evaluation					PART B : Infrastructure Unit Impact					PART C : Urgency				Criticality Rating A+C
		Score	1	2	3	4	Score	1	2	3	4	Score	1	2	3	
A	The Infrastructure Unit is able to systematically assess if it needs to bring in consultants	1					1					2				3
B	The Infrastructure Unit is able to align its procurement of consultants to the Infrastructure Unit procurement plan	2					1					2				4
C	The Infrastructure Unit is able to develop a ToR	2					1					3				5
D	The Infrastructure Unit is able to conduct tendering processes	3					1					3				6
E	The Infrastructure Unit is able to conduct tender evaluation processes to select suitable consultants	2					1					3				5
F	The Infrastructure Unit is able to contract consultants	3					1					3				6
G	The Infrastructure Unit is able to undertake activities around the inception phases of projects	3					1					3				6
H	The Infrastructure Unit is able to monitor the performance of consultants and ensure reporting	1					1					3				4

Source: Own construction, 2012

Instrument 12 continue

Strategic constituencies satisfaction (Contract management)

Performance Evaluation Parameters		PART A : Performance Evaluation					PART B : Infrastructure Unit Impact					PART C : Urgency				Criticality Rating A+C
		Score	1	2	3	4	Score	1	2	3	4	Score	1	2	3	
I	The Infrastructure Unit is able to manage risk on contracts with the consultant	2					1					3				5
J	The Infrastructure Unit is able to evaluate the impact of projects by consultants on the needs of the Infrastructure Unit	2					1					2				4
K	The Infrastructure Unit is able to terminate a contract that is not performing before the end of the project.	2					1					2				4
L	The Infrastructure Unit is able to conduct a closeout meeting	2					1					2				4
M	The Infrastructure Unit is able to verify deliverables submitted by consultants	2					1					1				3
N	The Infrastructure Unit is able to closeout contracts with consultants	2					1					2				4
O	The Infrastructure Unit is able to conduct administrative contract closure processes	2					1					2				4

Source: Own construction, 2012

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