



Research Proposal :

Assessing the Success of a Public Private Partnership in the South-African Public sector for Healthcare using the Balanced Scorecard .

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**ASSESSING THE SUCCESS OF A PUBLIC PRIVATE PARTNERSHIP FOR
HEALTHCARE IN THE SOUTH-AFRICAN PUBLIC SECTOR USING THE
BALANCED SCORECARD**

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by

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With my sincere thanks and appreciation.

I certify that, except as noted above, the report is my own work and all references used are accurately reported.

Signed

Lance Hilliard-Lomas

Date

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CHAPTER 1:

INTRODUCTION AND IDENTIFICATION OF THE RESEARCH PROBLEM

1.1 BACKGROUND AND INTRODUCTION TO RESEARCH PROBLEM

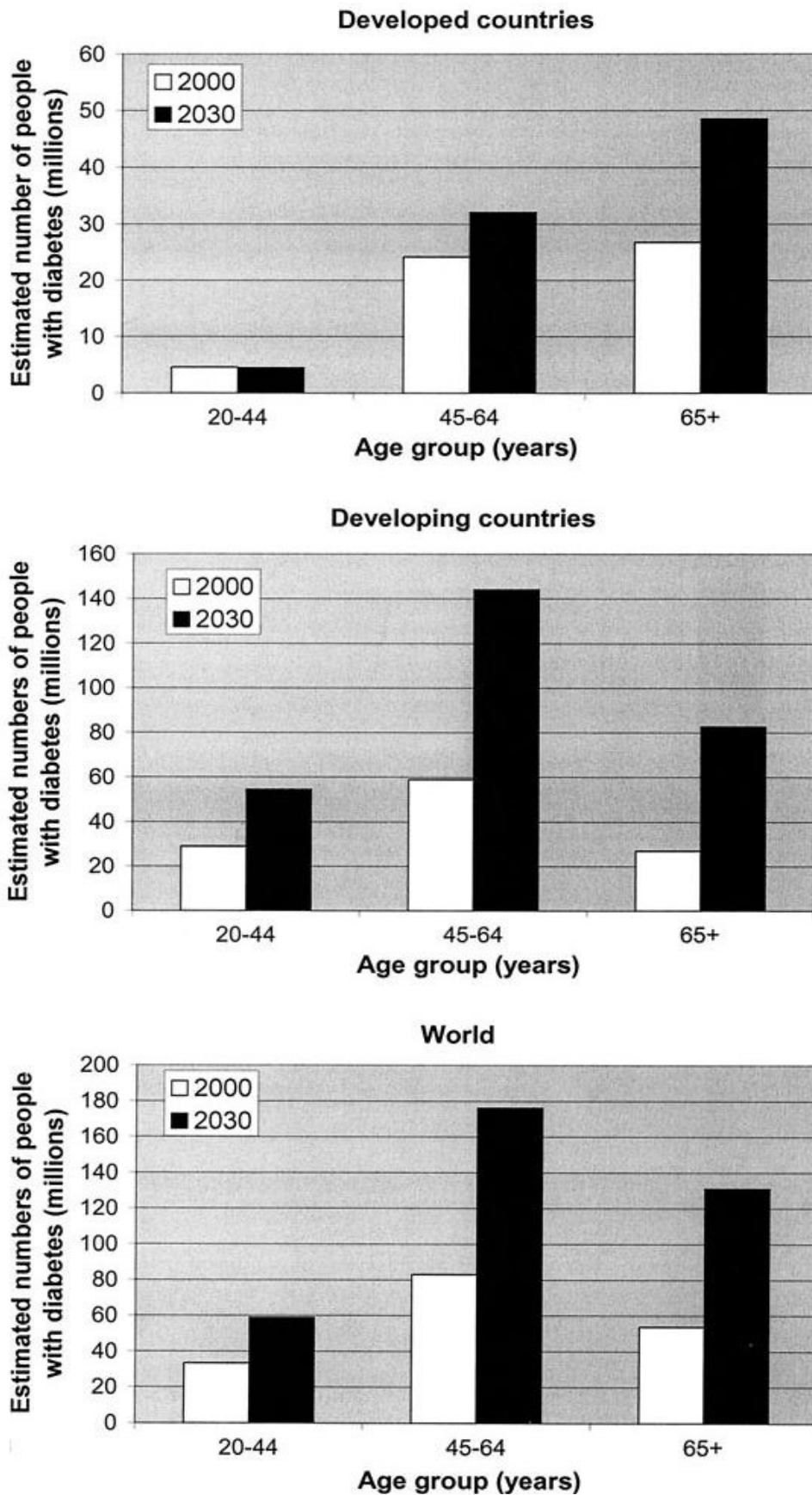
Diabetes is rapidly becoming a global epidemic and the low attention given to this debilitating disease in the past due to the global focus on more politicised diseases like HIV and Aids, has resulted in diabetes now gaining more attention. According to the Diabetes Atlas 2008 Executive Summary on the Burden of the Disease “Over the last 30 years, type 2 diabetes has changed from being seen as a relatively mild ailment associated with ageing and the elderly (‘just a touch of sugar’) to one of the major contemporary causes of premature mortality and morbidity in most countries.” In virtually every developed society, diabetes is ranked among the leading causes of blindness, renal failure and lower limb amputation. Through its effects on cardiovascular disease (70-80% of people with diabetes die of cardiovascular disease), it is also now one of the leading causes of death.

The changing perceptions of diabetes relate partly to a better appreciation of its devastating complications, but mainly to the rapid rise in its prevalence that has occurred in the latter part of the 20th century. The main relevance of diabetic complications in a public health perspective is the relationship to human suffering and disability, and the huge socio-economic costs through premature morbidity and mortality. According to the IDF Diabetes Atlas 2003; it is estimated that currently some 194 million people worldwide, or 5.1% in the adult population, have diabetes and that this will increase to 333 million, or 6.3%, by 2025.

The current prevalence rate in South Africa according to the International Diabetes Federation, at the last survey in 2003 shows approx 3.4% of the population where potentially up to 50% of those affected are not as yet diagnosed. The WHO) greatly underestimates the number and the last report in 2000 indicated that only 814000 are diabetic in South Africa and 7 million in Africa. This only represents 1.6% prevalence in South Africa. Diabetes and its complications impose significant

economic consequences on individuals, families, health systems and countries. WHO estimates that over the next 10 years (2006-2015), China will lose \$558 billion in foregone national income due to heart disease, stroke and diabetes alone. Below is a 2003 IDF comparison chart showing diabetes prevalence amongst the working populations in developed and developing countries where South Africa forms part of the latter.

Figure 1.2: Diabetes prevalence in developed and developing countries



The alarming differences are evident where the number increases from 25 million in developed countries to 60 million in developing countries in 2000 and in the same demographics in 2030, this more than doubles.

Differences that exist within healthcare management and delivery in the public sector compared to the private sector are often viewed as a result of an imbalance in a resource capital and skills issue with the resultant impact on performance. Often good or poor performance is solely linked to the resource and skills availability in certain metropolitan regions or the shortage thereof in the rural regions. Consideration needs to be given to the fact that 42 million from the 49 million inhabitants in South Africa have no private funding and if ill need to access the public healthcare institutions for medical treatment. Seven million South Africans are on a private medical program and have access to high level and superior medical treatment albeit it at a cost. The burden of the remaining 42 million inhabitants placed on the existing infrastructure has its toll on service delivery, quality of treatment and efficiencies within the public healthcare infrastructure. The overcrowding of public hospitals is evident when one visits these institutions, considers the high bed occupancy numbers and visualises the situation. The South African high AIDS statistics and resultant high level of hospitalisation due to AIDS and related co-morbid diseases on its own creates a situation of overcrowding of hospitals. This burden needs to be reduced and the many clinics that feed these hospitals need to be better managed, become operationally efficient and up skilled in order to offer better service and operate at more effective performance levels in order to cope and better manage the patients within their region. This will also reduce the burden on the tertiary hospitals. The fact that according to the WHO website (WHO, 2009) there is only 1 doctor per 4000-5000 people in South Africa highlights the importance that the public clinics and nurses play as a vital role in primary healthcare provision. Due to the limited resources, unsatisfactory treatment options and low level of expertises available, patients are referred to the hospitals when they could well be treated at the clinic by a primary healthcare worker if the clinic was performing to a higher level.

Majority of diabetes patients in South Africa are managed at public rural clinics in the area where they reside and when any problems or complications arise, they are then referred to public tertiary hospitals where a dedicated diabetes clinic or speciality treatment is either available or not. The many diabetic patients which have to access these rural and smaller urban clinics often have to travel far and frequently by foot or find the money for a taxi in order to return for their check ups, treatment and medication.

This alone has a negative impact on compliance of check ups and regular monitoring of the patients. We aim to include this as a measurable in our study.

When they arrive at the clinic long waits and often inadequate levels of service and treatment are given due to the low number of staff to high number of patients' ratio versus limited time available for treatment of all the pts at that day. Diabetes days as with other chronic conditions are usually once a week. Many clinics have a selected day for a specific chronic disease in a week where all the pts with that condition need to be seen to. In addition the level of expertise and disease management knowledge held by the nurses and healthcare workers regarding diabetes is inadequate.

The low level of literacy and very little if any basic education of the pts does not facilitate the pt challenging the clinic or healthcare workers for better service or treatments and are often reminded and made acutely aware of the privilege they have to be able to be treated. These clinics are one stop shops for all community health problems and have no specialisation in a particular medical field.

The study came about from Roche Products (Pty) Ltd Diabetes Care Division – provider of Blood Glucose Monitoring devices and diabetes solutions, being approached by an NGO in the Eastern Cape for a Public Private Partnership (PPP) type assistance pilot project for Rural Clinic Development in diabetes. The minutes of the meeting are attached which indicates the initial project sought and initial commitments from each player.

In light of the above background and approach from the NGO, the researcher, an employee of Roche managing the public sector decided to use the opportunity to

conduct a mini-research/dissertation in testing if a PPP could increase the performance of a rural clinic. In this study we look at seeing if we can improve the performance of the clinic, the systems, efficiencies, learning's, up skilling/education, growth improvements, health outcomes measurement's and general operational management thereof. We choose the specific clinic as the diabetics within this clinic are the most poorly managed within the region. In addition this rural, public sector clinic resides within a cash strapped lower economic output region making access to healthcare by local inhabitants more difficult due to a large geographical area and lack of sufficient, affordable and reliable transport.

- This proposal paper aims its focus at the improvements in operating efficiency and the operational perspective of the rural public clinic's performance and the resultant impact on the patients accessing the clinic in terms of their healthcare.
- The key outcome sought is the benefits of the above in conjunction with the changes in a clinical, gold standard of diabetes management marker namely the patient's HBA1C levels.
- Albeit this is not a clinical study this is the important measure as ultimately by improving the performance, efficiency and chronic disease management of the clinic, we hope to see a beneficial clinical improvement experienced by the patients living with diabetes which are included in this study as a pilot.
- We aim to drive learning's and skills development to the healthcare staff in managing diabetes with education programs and shared learning's in driving enhanced patient self management.

Strong evidence over years shows that there is a direct link to debilitating diabetic complications, reduced QOL and increased mortality in patients with elevated HBA1c levels. According to Medline Plus an online publication "HbA1c is a test that measures the amount of glycated hemoglobin in your blood. Glycated hemoglobin is a substance in red blood cells formed when blood sugar (glucose) attaches to hemoglobin. You have more glycated hemoglobin if you have had high levels of glucose in your blood. In general, the higher your HbA1c, the higher the risk that you will develop problems such as:

- eye disease;
- heart disease;

- kidney disease;
- nerve damage; and
- stroke.

This is especially true if your HbA1c remains high for a long period of time. The closer your HbA1c is to normal, the less risk you have for these complications. An HbA1c of 6% or less is normal.”

The aim of this study is to obtain learning's and build up a successful diabetes managed and enhanced performance clinic model to present to the Department of Health in the Eastern Cape for the implementation in all other Eastern Cape regional clinics. Furthermore to serve as a model to the intermediaries on how to maximise and enhance the operational aspect of rural clinics without investment in buildings or other costly infrastructure and to work with what is available. This would then assist in reducing the burden on the tertiary hospitals within the diabetes field with clinics becoming more able to treat rural patients effectively and more efficiently.

The Eastern Cape province lacks closely knitted academic medical expertises and renowned specialities in teaching centres in the public sector that certain other provinces enjoy, in conjunction with a lack of adequate national health focus to this region in the past. It is for this reason that we propose a pilot project using a PPP that if successful in management of the patients with diabetes and can improve its performance, can serve as a motivator to progress with similar models in other chronic diseases.

We also hope following this study to identify linkages, different improvement methods and insights into closer workings with larger successful public sector hospital diabetes clinics and their rural counterparts once this information is known. We hope to instigate possible future collaborations with a PPP as a focus on the clinical management of the outlying clinic and the patients. Ultimately if this model is successful, proves beneficial and is then adopted, the management of diabetes in the public sector regional clinic setting stands to be holistically improved.

When looking for a recognised model for a measurement of success and improvements to the public clinic within the reality of the non-profit approach and with certain economic restrictions presiding, we found the balanced scorecard to present as a reliable and relevant management tool.

The balanced scorecard suggests that we view the organisation (or clinic) from four perspectives and to develop indicators, collect data and analyse them relative to each of these perspectives. These perspectives are as follows:

- The business process (internal systems and infrastructure perspective).
- The customer / client perspective.
- The financial perspective.
- The learning and growth perspective.

To see if a PPP can provide expertises, agreed to tools and certain resources, whilst identifying the requirements to close the gap between performance, quality of diabetes management, efficiencies, customer/patient satisfaction, development and up skilling of the specific clinic.

In this report we look at a direct comparison of the diabetes and operational management component of :

- The Openshaw Clinic which is within the public sector and in a rural setting, 60 km outside East London, in the Eastern Cape Province.
- This clinic is in a less prominent and financially lower income and funds allocated region of South Africa. We use selected operational and disease management interventions within a sector of their diabetic population compared to patients within the same clinic without the interventions.

We pilot a PPP at the rural public clinic consisting of the following players:

- Roche Products (Pty) Ltd , a leading Swiss and German Multinational, active in Pharmaceutical, Diabetes Monitoring and Diagnostics who have provided

pharmaceuticals, diabetes management tools, reagents and diagnostics to the public sector for many years.

- A local well established, recognised and experienced Eastern Cape NGO - the Small Projects Foundation, experienced in up skilling and working with many public projects including Healthcare ie HIV/AIDS in the Eastern Cape.
- The Eastern Cape Department of Health NCD Department.

We look at selected operational and clinical interventions within the framework of the balanced scorecard and what clinical benefits are seen on the diabetes patients in the Openshaw Clinic.

We look if the PPP can address the performance of the rural public clinic and that the end result is that the PPP clinic's shortfalls if any, are only driven by the lack of required resources and not performance issues.

The result sought is that the local DOH learns the following from the PPP:

- Enhanced service delivery and improved operational efficiencies with improvements directed to the customers – being the patients, in accessing an overall more efficient, higher performance clinic with clinically better managed diabetes patients.
- Further we seek disease learning's from a rural perspective, better equipped and motivated health care givers to want to make a difference to the way they deliver services and to translate the learning's in diabetes into other chronic disease areas.

1.2 STATEMENT OF THE PROBLEM

Rural clinics in South Africa have been criticised and often pointed to as culprits of poor performance with no efficiencies in healthcare provision. We look at this problem with diabetes as a focus point being a chronic condition, a part of the new focus NCD portfolio and a global issue and see if we can understand why the poor performance and lack of efficiencies is a reality. The researcher seeks to use

operational and to a lesser degree therapeutic disease specific interventions, at the chosen rural clinic as levers of intervention.

1.3 IDENTIFICATION OF SUB PROBLEMS

- **Sub Problem 1:** Do the different KPI's, interventions, processes, private expertises inputted and skills transfer demonstrate significant value enhancing differences in the performance and efficiency in the running of the PPP clinic?
- **Sub Problem 2:** Can the improvements implemented result in enhanced diabetes management- an example of a chronic disease, and an increase in the satisfaction index of the patients with diabetes and a better motivation of the healthcare staff after the pilot project?
- **Sub Problem 3:** Can we alter the learning culture of the clinic staff by creating a secondary impact through the improvements to ensure new learning's obtained by the Healthcare workers are shared and applied to other disease areas? Can these learning's contribute to sustainability in improved performance and diabetes management of the clinic?
- **Sub Problem 4:** Can the PPP show benefits in chronic disease management as a result of by demonstrating risk sharing by both partners - private and public players?

1.4 DELIMITATIONS

- The timelines of the study will not permit the patients on the intervention element to return in time to conduct post- test questionnaires.
- The study will not facilitate the control group patients to return on time in full for their post-test HBA1c.
- The private partner or NGO will not be able to facilitate funding for costly investments and assets upgrades to the existing buildings (the study looks at performance measures and operational aspects in the current infrastructure for improvements in disease management).
- Will not be able to provide funding to make physical changes within the clinic.

- We will not be able to see the result of sub-problem 3 and 4 due to the time constraints. This will have to be followed up after the study.

1.5 THE IMPORTANCE OF THE STUDY

Rural clinics are a very important element for the provision of healthcare to communities which are far - placed or located in geographically challenging areas. With identifying the areas of concern, offerings of expertise and solutions coupled to skills transfer to improve these problem areas, we should see an increase in performance of these clinics.

If we can get rural clinics to be more efficient and delivering better quality healthcare with sustainability, then this alone will be a milestone in public health service delivery in South Africa and for Africa.

We aim to see how we can understand the conditions and situations that healthcare workers operate within and the clinic cultures that develop, without necessarily agreeing to the validation of reasons given by them for why this is impacting on Healthcare delivery.

1.6 OUTLINE OF THE RESEARCH REPORT

This research report is broken into chapters that seek to ensure a flow and understanding of the study is maintained.

Chapter 1 covers the background to the study and ensures that the reader understands the global and developing countries problem with diabetes. We seek to ensure that the reader realises the importance of improving the performance and efficiencies of rural clinics in South Africa and the outcomes thereof. This chapter gives an overview of the study with the *what* and *how* we seek to achieve improved efficiencies, enhanced performance and quality of healthcare delivery in a rural clinic setting.

Chapter 2 is the literature search and this ensures that relevant literature relating to public private partnerships where possible specific to healthcare is documented. We aim to ensure that the reader sees the challenges in deciding on and implementing PPP's, the different opinions surrounding these new entities and the various methods by which PPP's are undertaken.

Chapter 3 identifies the research problem and sub-problems. We then create hypothesis that with interventions we can improve the quality of healthcare delivery specific to diabetes and patient self-management in line with the methodology of quantitative research. We also include the methodology and tools for the observations and interviews for the qualitative element.

Chapter 4 analyses the research results and provides interpretations and comments of the findings. We seek to gather the readers' assumptions at this point about the true problems and issues that prevent efficiency and improved performance and to convince scientifically of the true problems. Finally we conclude the findings that performance and efficiency can be improved within a clinic setting.

Chapter 5 provides recommendations to the clinic using the balanced scorecard as the tool to achieve the new vision and strategy of the clinic.

- We cover the financial perspective with regards efficiency and costs.
- We then cover the internal/operational perspective where we offer several solutions to improve the operational element of the clinic including a patient flow and management system and a drug and stock forecasting tool
- We continue to the learning's and growth perspective ensuring that a change in the culture of learning's and knowledge transfer is required. We recommend ideas around a regional cross-knowledge sharing platform.
- We conclude with the patient/customer perspective who is the ultimate recipient of all the efforts from this study. We present a way to perform education days in the clinic setting where we ensure that we facilitate learning's, education and understandings about the patient condition and conclude with self-management options in the community to ensure continuity of their learning's at home.

CHAPTER 2

LITERATURE REVIEW

2.1 OVERVIEW OF HEALTHCARE STATISTICS AND PPP'S IN HEALTHCARE

According to SouthAfrica.info (2009) the below facts and report are relevant to the understanding of the rationale for looking at this proposal: South Africa's health system consists of a large public sector and a smaller but fast-growing private sector. Health care varies from the most basic primary health care, offered free by the state, to highly specialised hi-tech health services available in the private sector for those who can afford it.

The public sector is under-resourced and over-used, while the mushrooming private sector, run largely on commercial lines, caters to middle- and high-income earners who tend to be members of medical schemes (18% of the population), and to foreigners looking for top-quality surgical procedures at relatively affordable prices. The private sector also attracts most of the country's health professionals.

2.1.1 Public versus private spend

Although the state contributes about 40% of all expenditure on health, the public health sector is under pressure to deliver services to about 80% of the population. Despite this, most resources are concentrated in the private health sector, which sees to the health needs of the remaining 20% of the population.

Drug expenditure per person varies widely between the sectors. In 2000 about R8.25-billion was spent on drugs in South Africa, with the state spending only 24% of this. Thus, R59.36 was spent on drugs per person in the state sector as opposed to R800.29 on drugs per person in the private sector. Of all the country's pharmacists, 40% work in Gauteng in the private sector.

The number of private hospitals and clinics continues to grow. Four years ago there were 161 private hospitals, with 142 of these in urban areas. Now there are 200. The mining industry also provides its own hospitals, and has 60 hospitals and clinics around the country.

Most health professionals, except nurses, work in private hospitals. With the public sector's shift in emphasis from acute to primary health care in recent years, private hospitals have begun to take over many tertiary and specialist health services.

Public health consumes around 11% of the government's total budget, which is allocated and spent by the nine provinces. How these resources are allocated, and the standard of health care delivered, varies from province to province. With less resources and more poor people, cash-strapped provinces like the Eastern Cape face greater health challenges than wealthier provinces like Gauteng and the Western Cape.

2.1.2 South African Department of Health (DOH) 2010 Strategy

The DOH released its 2010 ten point strategic plan in October 2009. Adapted from the on line publication (DOH, 2009) we include excerpts relevant to this study and pertaining to elements we aim to study.

“The democratic government of South Africa has since 1994 committed itself to the delivery of accessible, high quality and caring health services. Significant milestones have been reached over the last 15 years in accelerating service delivery, yet key challenges remain, which must be addressed going forward. Over the five year period 2009-2014, the National Health System (NHS) must be revitalised at all levels, to strengthen its functioning and improve the health status of all South Africans. Constraints and shortcomings identified in various reviews of the health system must be overcome. For the 2009-2014 term of office, the National Health System (NHS) has adopted a set of 10 key priorities (which is also referred to as the 10 Point Plan), which are as follows:

- (i) Provision of strategic leadership and creation of a social compact for better health outcomes;
- (ii) Implementation of a National Health Insurance Plan;
- (iii) Improving quality of services;
- (iv) Overhauling the health care system and improving its management;
- (iv) Improving human resources;
- (v) Revitalisation of infrastructure;
- (vi) Accelerated implementation of HIV and AIDS plan and reduction of mortality due to TB and other communicable diseases;
- (vii) Mass mobilisation for better health for the population;
- (ix) Review of the drug policy; and
- (x) Strengthening research and development.”

The implementation of these priorities will commence during the 2009/10-2011/12 planning cycle.

2.1.2.1 Non-communicable diseases

A report on the National Burden of Disease (BoD) commissioned by the Department was completed in 2008/09. The objectives of this survey were to:

- describe the pattern and distribution of diseases, disabilities and injuries seen in the public and private health facilities using the ICD10 classification system, and
- to describe the pattern and distribution of risk factors recorded for diseases, disabilities and deaths.

The survey report provided further evidence of the increasing contribution of Non-Communicable Diseases (NCDs) to the BoD in South Africa. In summary, for both PHC clinic and hospital based patients, NCDs accounted for about 30% of broad patient diagnosis. During 2008/09, the Department implemented various measures to improve the management of NCDs. The Department collaborated with five Provinces, the Eastern Cape; Free State; Limpopo; North West and Western Cape,

to ensure that PHC facilities in these provinces adhered to national NCD management guidelines.

2.1.2.2 Overview of performance in 2008/09 and priorities for 2009/10-2010/11

Comprehensive and systematic reviews of performance are traditionally conducted by the department (and government broadly) as we approach the end of each government cycle. In 1999, Dr. Malcolm Segall an international public health expert attached to the National DoH, reviewed the performance of the health sector during the period 1994-1999, and concluded that the “glass is half full”, referring to the balance between our achievements and continuing challenges. The department also conducted a systematic internal review of its performance in 2004, which influenced the identification and adoption of the strategic priorities for the health sector for 2004-2009.

During 2008/09, which was the last financial year of the 3rd term of office of government the National DoH commissioned an external review of its performance over the last 15-years, which was conducted by an independent consultancy. At the same time, the Development Bank of South Africa (DBSA) also conducted a systematic review of the performance of the health sector. Both reviews identified key constraints that the national health system must address urgently if the country is to make any significant progress towards the Millennium Development Goals (MDGs) by 2015, and made a set of useful recommendations. The two reviews conducted in 2008/09 contributed significantly to the department’s tradition of assessing organisational performance. The reviews conducted have highlighted several areas of good performance, and many more shortcomings in the areas of health sector leadership, management, quality of services, human resources, infrastructure and service delivery outputs. Important recommendations for the turn-around of health service delivery have been made, which have influenced the content of this strategic plan to a large extent.

2.1.2.3 Department of Health - Strategic plan 2009/10-2011/1215

Moving into 2009/10, the department will continue to implement interventions to curb the impact of NCDs. Primary focus will be on diabetes and hypertension as proxy conditions, but effort will also be devoted to other chronic conditions. The diabetes strategy will be implemented jointly with other departments in the government social cluster. The goals of the strategy include preventing diabetes and related NCDs; ensuring early diagnosis; improving quality of life of people living with diabetes; reducing morbidity and premature mortality; and promoting research into NCDs. The department will also implement a Long-term Care Service Model to improve the management of NCDs in 35 districts in 2010/11. To improve cancer reporting and provision of services, cancer registration regulations will be promulgated in 2009/10. Mental health care services will also be improved, with a particular emphasis on the reduction of harmful use of alcohol abuse. The national strategy to reduce the harmful use of alcohol will be implemented incrementally, starting with three provinces in 2009/10, and covering all nine provinces by March 2011/12.

2.1.2.4 Improving access to safe and affordable medicines

The department continued with its efforts to improve access to safe and affordable drugs. The PHC Essential Drug List (EDL) and Standard Treatment Guidelines (STG) 2003 for were reviewed, to ensure their continued utility in PHC service delivery. The EDL book for quaternary services was also reviewed.

2.1.2.5 Improving quality of care

During 2008/09, the department developed and began implementing a quality assurance programme focusing on the functioning of individual health facilities. A policy framework for establishing National Core Standards for health facilities, and a system for ensuring compliance were developed. The Department published the National Core Standards in April 2008, which covered seven domains namely, patient safety; clinical care; governance and management; patient experience of care; access to care; infrastructure and environment, and public health. Appraisals of 27 priority hospitals were conducted by national teams between June and August

2008, and the results informed the development of health facility improvement plans for each hospital. By the end of September 2008, facility improvement plans had been developed for 25 hospitals. Supportive facilitation was provided to these facilities by the National and Provincial DoHs, as well as health districts. The nature of the support provided aimed at assisting facilities to focus on achieving results to turn around specific problems in the short term, thus building their capacity they improve quality in the long term. Many of public health sector institutions assessed during this process were found to be performing well. However, communication of their best practices was limited and needed expansion. Key constraints identified included patient waiting times, referral pathways and management, maintenance of facilities and utilities, communication of best practices, medical waste management, implementation of infection prevention and control policies, and lack of formal systems to measure and prevent adverse events.

2.2 DEFINITION OF PPP'S

According to Buse and Harmer (2004) the term 'public-private partnership' is a difficult one. Arriving at an agreed definition in the health sector has proven problematic. Here we use the term to describe relatively institutionalised initiatives, established to address global health problems, in which public and for-profit private sector organisations have a voice in collective decision-making. Such partnerships vary across a range of variables including their functional aims, the size of their secretariats and budgets, their governing arrangements, and their performance. Yet it is their innovative approach to joint decision-making among multiple partners from the public and private sectors which make them a unique unit of analysis which we call global health partnerships (GHPs) (Buse & Harmer, 2004).

When searching the literature specific to Healthcare a single definition of a PPP is difficult to extract. The definition varies according to the specific project and project scope being proposed. In this proposal we use the term to describe furthering an already existing supplier relationship of an element of diabetes management from Roche Products (Pty) Ltd a global leading, private Multi-National Pharmaceutical Company as the player making up the Private component of the PPP. The NGO - Small Projects Foundation as mentioned previously makes up the second player and

assumes the role of mediator between the private and public sector as a reasonable go-between and business consultant. The agreement to follow in order to formalise the PPP will be dealt with later in the proposal.

In essence it is the efforts of relatively institutionalised initiatives, established to address a localisation of a global health problem – diabetes from a service delivery enhancement perspective in which public, non profit and for-profit private sector organisations has a voice in collective decision-making and risk sharing.

So the question arises why are private healthcare players so keen to enter a PPP? According to a recent analysis of PPP's in India by KPMG on Expresshealthcare - Kanakia (2009), National Head of Markets KPMG India, "for a private player, a PPP is the easiest and the quickest way to enter any market." He also remarked, "It's a safe route. It also helps to take healthcare cheaper and faster to a much wider population." PPP's also serves as a smart strategy to expand in a lesser time. The private players have infrastructure constraints. "Through PPP's they would be able to address this challenge effectively by leveraging existing public assets," points Nair. He further elaborates that since manpower availability is a constraint across the healthcare sector, the private player can benefit by utilising public healthcare infrastructure, especially medical colleges, to train and generate ready to use manpower. It also helps the private players in strengthening their relationship with the government and seeks greater involvement in policy making.

2.3 DETERMINING FACTORS FOR SUCCESS

Kanakia (2009) elaborates that a successful PPP model is one which has a clear definition of the 'beneficiary,' clarity of the respective roles of public player and private player, transparent and equitable tariff determination, key success factors for evaluating the performance of the private player, road map for scalability, identification of key risks and mitigation plans, dispute resolution mechanism and exit options for private player, without causing hardship to intended beneficiaries. Thus, a successful PPP has to address the priorities of service provider, patient and government. In November 2002, The World Health Organization (WHO) Centre for Health Development in Kobe, Japan, convened the Global Symposium on Health

and welfare Systems Development. Participants concurred that strategies to improve the availability of health and welfare services in developing countries should include an increased emphasis on "... partnerships among communities, civil societies, the private sector and government."

The report from this symposium recommended that WHO member states explore ways of adopting the public-private partnership model for the delivery of health and welfare services. At the same time, though, the conference report acknowledged that there is a lack of scientific evidence regarding the effectiveness of these partnerships. In 2003, the WHO centre for Health Development asked researchers at Stanford University to assist in the development of a research protocol to evaluate the effectiveness of the public-private partnership model. From the development of this protocol it became evident that there is tremendous enthusiasm internationally for use of the public-private partnership model to improve health care, but no common understanding about what precisely constitutes a public-private partnership. In addition, there is a lack of firm evidence of the circumstances under which a public-private partnership approach is preferable to more traditional models measuring the effectiveness of the public-private partnership. A crucial aspect of public private partnership research is the ability to identify and quantify outcomes and to establish the changes in these measures that coincide with public private partnership efforts were actually the result of public private partnership activities. Addressing questions such as the following should use both qualitative and quantitative methods of analysis, as appropriate to the situation:

1. What were the intended outcomes of the public-private partnership effort?
2. Did the effort target specific aspects of health and wellbeing for improvement?
3. Did the effort identify specific, measurable indicators of the intended outcomes?
4. Did the effort identify specific target levels to be attained for these indicators?
5. Are the methods used to measure the outcome indicators reliable & consistent over time?
6. Did the indicators change during the period of the effort under study? If so, in the desired direction? Did they attain the target levels?

7. Are there sufficient longitudinal or comparison data to support the conclusion that identified changes in the indicators were the result of the programs and activities under study?
8. Were there any outcomes from the effort (either beneficial or detrimental) that were not expected to occur?

During the 1990s, public private partnerships evolved into a very popular means of addressing a number of serious diseases in the developing world. Although there has been substantial success in using the public-private partnership approach, the record of success for public-private partnerships is still mixed. There has been recent enthusiasm within the WHO and elsewhere for extending the public-private partnership model to the delivery of health and welfare services for a wider range of health problems.

There are few available data about the success or problems of using a public-private partnership approach to improve the delivery of health and welfare services, because few published case studies of successful public-private partnerships of this type are available. Further research on the effectiveness of public-private partnerships using standardised research protocols, is needed before substantial resources are invested in the expansion of public-private partnership efforts.

2.4 EFFICIENCY AS A MEASUREMENT

Measuring efficiency in a public clinic poses many questions as to what is important to measure and how do we do this? In South Africa we need to be cognisant of the various challenges faced at rural clinics operationally and with respect to the high number of patients with multiple health issues to be dealt with, when looking for ways to improve efficiency. According to the Agency for Healthcare research: measurement of health care efficiency has lagged behind the measurement of health care quality. Providers, payers, purchasers, consumers, and regulators all could benefit from more information on value for money in health care. Purchasers, particularly large employers, have been demanding that health plans incorporate economic profiling into their products and information packages. Despite the importance, there has not been a systematic and rigorous process in place to

develop and improve efficiency measurement as there has been for other domains of performance. We look below at the typology from the Agency of Healthcare Research and Quality, which is behind the understandings of efficiency in the healthcare sector.

2.4.1 Typology

Because it was found that many stakeholders attach different meanings to the word 'efficiency', the model first developed a definition of efficiency. It was believed that being explicit about how the term was being used was helpful in advancing the dialogue among stakeholders. In this report, a definition was sought for efficiency as an attribute of performance that was measured by examining the relationship between a specific product of the health care system (also called an output) and the resources used to create that product (also called inputs). Under this definition, a provider in the health care system (e.g., hospital, physician, Nurse in rural or urban clinic) would be efficient if it was able to maximize output for a given set of inputs or to minimise inputs used to produce a given output. Building on this definition, a typology of efficiency measures was created. The purpose of the typology was to make explicit the content and use of a measure of efficiency.

The typology had three levels:

- **Perspective:** who is evaluating the efficiency of what entity and what is their objective?
- **Outputs:** what type of product is being evaluated?
- **Inputs:** what resources are used to produce the output?

The first tier in the typology, perspective, required an explicit identification of the entity that was evaluating efficiency, the entity that was being evaluated, and the objective or rationale for the assessment. They distinguished between four different types of entities:

- Health care providers (e.g., physicians, hospitals, nursing homes) that deliver health care services.

- Intermediaries (e.g., health plans, employers) who act on behalf of collections of either providers or individuals (and, potentially, their own behalf) but do not directly deliver health care services.
- Consumers/patients who use health care services.
- Society, which encompasses the first three.

Each of these types of entities had different objectives for considering efficiency, had control over a particular set of resources or inputs, and sought to deliver or purchase a different set of products. Efficiency for society as a whole, or ‘social efficiency’, refers to the allocation of available resources; social efficiency is achieved when it is not possible to make a person or group in society better off without making another person or group worse off. The perspective from which efficiency is measured has strong implications for the measurement approach, because what looks efficient from one perspective may look inefficient from another. For example, a physician may produce CT scans efficiently in her office, but the physician may not appear efficient to a health plan if a less expensive diagnostic test could have been substituted in some cases. The intended application of an efficiency measure (e.g., pay-for-performance, quality improvement) offers another way of assessing perspective.

The second tier of the typology identified the outputs of interest and how those will be measured. They distinguished between two types of outputs: health services (e.g., visits, drugs, admissions) and health outcomes (e.g., preventable deaths, functional status, clinical outcomes such as blood pressure or blood sugar control).

This typology addresses the role of quality (or effectiveness) metrics in the assessment of efficiency. A key issue that arises in external evaluations of efficiency is whether the outputs are comparable. Threats to comparability arise when there is (perceived or real) heterogeneity in the content of a single service, the mix of services in a bundle, and the mix of patients seeking or receiving services. Pairing quality measures with efficiency measures is one approach that has been suggested by AQA and others to assess comparability directly.

In this typology, they did not require that the health service outputs be constructed as quality/effectiveness metrics. For example, an efficiency measure could consider the

relative cost of a procedure without evaluating whether the use of the procedure was appropriate. Similarly, an efficiency measure could evaluate the relative cost of a hospital stay for a condition without considering whether the admission was preventable or appropriate. However, the typology allowed for health service outputs to be defined with reference to quality criteria. That is, the typology was broad enough to include either definition of health services. They deliberately constructed the typology in this way to facilitate dialogue among stakeholders with different perspectives on this issue.

The third tier of the typology identifies the inputs that are used to produce the output of interest. Inputs can be measured as counts by type (e.g., nursing hours, bed days, days supply of drugs) or they can be monetized (real or standardised Rands assigned to each unit). They refer to these, respectively, as physical inputs or financial inputs. The way in which inputs are measured may influence the way the results are used. Efficiency measures that count the amounts of different inputs used to produce an output (physical inputs) help to answer questions about whether the output could be produced faster, with fewer people, less time from people, or fewer supplies. In economic terms, the focus is on whether the output is produced with the minimum amount of each input and is called technical efficiency.

Efficiency measures that monetise the inputs (financial inputs) help to answer questions about whether the output could be produced less expensively - whether the total cost of labour, supplies, and other capital could be reduced. A focus on cost minimisation corresponds to the economic concept of productive efficiency, which incorporates considerations related to the optimal mix of inputs (e.g., could we substitute nursing labour for physician labour without changing the amount and quality of the output?) and the total cost of inputs.

This typology provides a framework within which stakeholders can have an explicit discussion about the intended use of measures, the choice and measurement of outputs, and the choice and measurement of inputs. Requesting that groups use a standard format, such as that suggested by the typology, allows stakeholders to systematically examine what are being measured and whether the measure (and available data) is appropriate for the purpose.

We have considered this typology of efficiency measurement a good take off point to include certain variables and elements of the typologies adapted for the Openshaw Clinic's setting and the outcomes sought.

KPMG in India prepared a report on PPP's based on a specific project undertaken by the Govt. In overview regarding the measures for success, researches believed that the memorandum of association lacked the definition of free- what all will be free to the patients. Also, there was no clear definition of 'poor'. There are no performance indicators, no rights of patients, any (clarity on) risks and responsibilities. Also, there is a lack of key performance indicators. While it is important to have a robust model for the PPP initiatives, it is equally important to develop an execution framework. In most of the cases where the PPP models have failed the reason for the failure has not been the model but it was more to do with the execution. In the Indian context for a healthcare initiative to succeed some of the following aspects need to be in place:

- **Private sector participation in the PPP governing body.** The governing body in the Health Ministry with a mandate to oversee PPP's currently does not include private sector participation. For ensuring equitable representation of both private and public sector interests, it is necessary that the governing body includes members nominated from the private sector also. With this reference the suggested PPP for the Openshaw Clinic needs equal representation from all parties involved and decision- able personnel.
- **Identify priority sectors and regions.** Government should study the breadth of the healthcare landscape and benchmark the standards with other developing and developed countries and identify critical areas and gaps. These need to be done keeping in mind the regional disparity that exists. The government can then look at involving private participation for addressing some of these gaps. We feel that the small scope and size of the PPP we intend forming can serve as a take-off point for government to consider the above when formalizing larger PPP's for Healthcare delivery.

- **Identify level of participation.** The PPP governing body needs to evaluate the PPP model recommendations and identify the right level of participation on areas like funding and equity stakes. There needs to be clarity on what each party would bring in and what controls each can exercise. We use the Openshaw Project as a small pilot program in order to identify operational changes and less costly investments and inputs which can bring the biggest changes for achievement of success outcomes.

- **Run pilot campaigns.** Pilot projects can be implemented to test the viability of the model before a full- scale implementation. While this will enable to address any gaps in the model, it will also help in translating the benefits of PPP in a tangible form. As described in the introduction we intend to pilot this project and this could be utilised across the Eastern Cape region as a model.

- **Adopt measures for scalability.** The models also need to be evaluated on the scalability dimension. To ensure scalability the following aspects can be looked at:
 - Standardisation of process should be achieved maybe through some form of accreditation mechanism.
 - The regulatory and government bottlenecks which exist in expanding across states needs to be addressed.
 - Provide for long term funding through options like creating a special reserve, project financing etc.
 - Run national campaigns to educate the public and internal staff on the merits of PPP.

These provide measures that the DOH could well include as steps and inclusions when regionalising the model we intend to produce.

- **Advocacy.** Transparency and information flow on PPP's assume even more critical importance in India because of concerns about political patronage and

favouritism, in addition to the general public's fear about political patronage and favouritism, in addition to the general public's fear about PPPs being a façade for privatisation. The central and state Governments must reassure the public about the PPP process.

Information on subsidised inputs, the process and criteria of choosing partners, monitoring standards and consumer rights must be there in the public domain. This will not only secure the trust of the public, but also establish a fair competing ground for private providers wanting to partner with public sector. National Head of Markets KPMG India, Pradip Khankia said that "PPP's will survive only if the interests of all stakeholders are taken into account." This was followed by Vishal Bali, CEO of the government hospitals comments "We need a central approach to execution of PPP projects to create some level of standardisation". The partner of Business Advisory services KPMG Murli Nair commented "One size cannot fit all. The scale and magnitude of PPPs are different at each level"

According to the Widdus (2001) "the global burden of disease, especially the part attributable to infectious diseases, disproportionately affects populations in developing countries." Inadequate access to pharmaceuticals plays a role in perpetuating this disparity. Drugs and vaccines may not be accessible because of weak distribution infrastructures or because development of the desired products has been neglected. This situation can be tackled with push interventions to lower the costs and risks of product development for industry, with pull interventions providing economic and market incentives, and with the creation of infrastructures allowing products to be put into use. If appropriately motivated, pharmaceutical companies can bring to partnerships expertise in product development, production process development, manufacturing, marketing, and distribution - all of which are lacking in the public sector. A large variety of public-private partnerships, combining the skills and resources of a wide range of collaborators, have arisen for product development, disease control through product donation and distribution, or the general strengthening or coordination of health services. Administratively, such partnerships may either involve affiliation with international organisations, i.e. they are essentially public-sector programmes with private-sector participation, or they

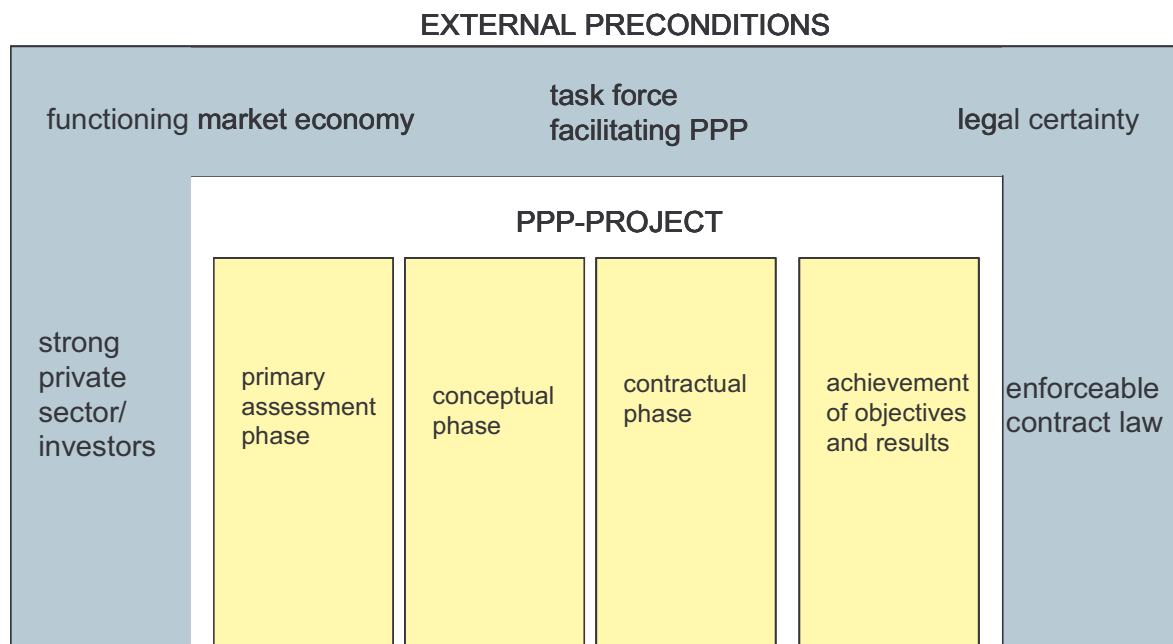
may be legally independent not-for-profit bodies. These partnerships should be regarded as social experiments; they show promise but are not a panacea. New ventures should be built on need, appropriateness, and lessons on good practice learnt from experience. Suggestions are made for public, private, and joint activities that could help to improve the access of poor populations to the pharmaceuticals and health services they need.

What is important to the DOH is that in conjunction to the outcomes of the Diabetes specific project undertaken the future seems to be pointing to PPP's in order to improve healthcare delivery, quality and access.

We present outlines and ideas of what the research is showing us on how to move forward when formalising PPP's. To ensure the success of PPP in the healthcare system, a variety of external preconditions as well as internal conditions need to prevail. Co-operations between the public and private sector can only be successful if there is a fair partnership between a strong public and a competitive private sector.

As indicators for these external preconditions we identify legal certainty, enforceable contractual law, a functioning market economy, a strong private sector/investors and a specialised task force which facilitates PPP projects. If these external preconditions prevail, the second step, namely the evaluations of specific projects can be undertaken. As indicated in the graph below, we identify four phases. We propose to split the decisions pro or contra realising a PPP project in two steps. A primary assessment evaluates the suitability of the project for PPP. All positively assessed projects will be analysed in more detail in the conceptual phase, where the final decision pro or contra PPP has to be made. As PPP is a co-operation which will last for an extended period of time, it is crucial for success to define the rights and duties of each partner. This will be done in the contractual phase. Finally, it is also necessary to evaluate the results of a PPP project and compare it with the expectations to ensure that PPPs will cause additional benefit.

Figure 2.1: Four phases of PPP project



In the South African context, there is a strong private sector which is competitive and with a focus on private healthcare market entry. We do not see the same in the public sector which is not seen as a strong, well enforced and effectively managed sector.

According to Espigares and Torres (2009) we refer public service provision does not imply that government also has to be the producer of the services.

Most government services are provided with assets that governments procure from the private sector or through contracts where private companies build the assets, usually according to government specifications. These assets may include buildings, computers, dams, roads, hospital equipment or military equipment. Governments may also contract private companies to supply certain services such as maintenance or advisory services. However, none of these arrangements may necessarily qualify as a public-private partnership. They could all still be categorised as traditional public procurement.

There is currently no clear definition of what constitutes a public-private partnership; the literature offers several possibilities of which only the relevant ones to this project are outlined below:

1. The OECD (2008) defines a public-private partnership as an agreement between the government and one or more private partners (which may include the operators and the financiers) according to which the private partners deliver the service in such a manner that the service delivery objectives of the government are aligned with the profit objectives of the private partners and where the effectiveness of the alignment depends on a sufficient transfer of risk to the private partners.
2. According to the International Monetary Fund (IMF, 2006) public-private partnerships (PPPs) refer to arrangements where the private sector supplies infrastructure assets and services that traditionally have been provided by the government. In addition to private execution and financing of public investment, PPPs have two other important characteristics: there is an emphasis on service provision, as well as investment, by the private sector; and significant risk is transferred from the government to the private sector.

PPPs are involved in a wide range of social and economic infrastructure projects, but they are mainly used to build and operate hospitals, schools, prisons, roads, bridges and tunnels, light rail networks, air traffic control systems, and water and sanitation plants.

3. For the European Commission (EC, 2004) the term “public-private partnership” is not defined at the Community level. In general, the term refers to forms of cooperation between public authorities and the world of business which aim to ensure the funding, construction, renovation, management and maintenance of an infrastructure for the provision of a service. The following elements normally characterise PPPs:

- The relatively long duration of the relationship, involving cooperation between the public partner and the private partner on different aspects of a planned project.
- The method of funding the project, in part from the private sector, sometimes by means of complex arrangements between the various players. Within this mix, public funds - in some cases rather substantial - may be added to the private funds.
- The important role of the economic operator, who participates at different stages in the project (design, completion, implementation, funding). The public partner concentrates primarily on defining the objectives to be attained in terms of public interest, quality of services provided and pricing policy, and takes responsibility for monitoring compliance with these objectives.
- The distribution of risks between the public partner and the private partner, to whom the risks generally borne by the public sector are transferred. However, a PPP does not necessarily mean that the private partner assumes all the risks, or even the major share of the risks linked to the project. The precise distribution of risk is determined case by case, according to the respective ability of the parties concerned to assess, control and cope with the particular risk.
- Standard and Poor's definition of a PPP is any medium- to long-term relationship between the public and private sectors, involving the sharing of risks and rewards of multi-sector skills, plus expertise and finance to deliver desired policy outcomes (Standard and Poor's, 2005).

For the European Investment Bank (EIB, 2004) "public-private partnership" is a generic term for the relationships formed between the private sector and public bodies often with the aim of introducing private sector resources and/or expertise in order to help provide and deliver public sector assets and services.

The term PPP is thus used to describe a wide variety of working arrangements from loose, informal and strategic partnerships, to design-build-finance-and-operate (DBFO) type service contracts and formal joint venture companies. Given that public-private partnerships occupy a middle ground between traditional public

procurement and privatisation, it is necessary to distinguish them clearly from those two. It is also necessary to distinguish PPP from concessions (though they are closely related). To define PPPs and to distinguish them from all other forms of public and private sector interaction, it is necessary to first understand the main reason for implementing public-private partnerships. The main reason is to improve service delivery - that is, to create better value for money in comparison with a government delivering the service (i.e. the case of traditional public procurement). Thus, even if delivery through traditional procurement is effective, the service may neither be of high quality nor delivered efficiently (i.e. at least cost). Thus governments may decide to conclude PPP contracts and draw on the capacity of the private sector to efficiently deliver quantity and quality.

However, although private sector participation in PPP frequently contributes to higher levels of **efficiency**, the mere participation of the private sector in the delivery of the service is not sufficient to guarantee improvement in service delivery and efficiency. Such improvements depend crucially on a sufficient transfer of risk from the public sector to the private partner. In the absence of a sufficient transfer of risk, service delivery could still be viewed as public procurement even if a private company is involved. Therefore, the distinguishing feature that determines whether a project is defined as traditional public procurement or as a public-private partnership should be whether or not a sufficient amount of **risk** has been transferred. If a PPP contract implies that the private partner will maximise its profit by delivering a service efficiently and effectively, then the contract constitutes a partnership, in view of the fact that both parties - the government and the private partner - will achieve their objectives. This broader definition of the term "partnership" helps to distinguish PPP from privatisation. Privatisation involves no strict alignment of objectives since it usually means that the government is not involved in the output specification of the privatised entity.

PPPs are situated between traditional public procurement and full private provision. Usually the government sets the quality and quantity requirements, and allows the private partner to design and build the asset and service aspects (Corner, 2006). In contrast to traditional procurement, the government does not buy the capital asset directly from the private partner. Rather, it buys the stream of services that the

private partner generates with the asset. To the government, value for money represents an optimal combination of quality, features and price, calculated over the whole of the project's life. The United Kingdom government (HM Treasury, 2006) defines it as: "... the optimum combination of whole-life cost and quality (or fitness for purpose) to meet the user's requirement".

There is one remaining question: What distinguishes PPPs from concessions? The OECD (2006b) sets out the defining features of a concession:

- A concession grants the right to a private firm to operate a defined infrastructure service and to receive revenues from it.
- The concessionaire usually pays the concession-granting authority a fee to obtain this right.
- The concessionaire carries the bulk of the risk.
- The asset involved in the delivery of the service remains the legal property of the government, though the private firm has the right to operate it and use it to generate income. The private firm is also typically responsible for the maintenance of the asset.
- According to the *strictu sensu* definition of concessions, the asset must be transferred to the government at the end of the contract term. The two distinguishing characteristics concern risk and payment:
- The level of risk transferred, especially that of demand risk, might in general be higher in the case of a concession. The distinction between supply and demand risks is important since the presence of externalities and the public good nature of some goods create demand risk due to the "free rider" problem. The extent of demand risk might be such that a private operator is unwilling to deliver unless the government (and not the direct recipient) remunerates it for its services.
- Concessions usually depend on user charges for the majority of their income, and many do not receive any payment from the government. In fact, instead of the government paying the private operator for services delivered, in the case of a concession the private operator pays the government for the right to operate the asset.

Having made this distinction, it should also be mentioned that much of the literature does not draw a clear line between PPP and concessions regarding affordability and value for money. In reading and relevance to the above the key difference between the proposed plan of a PPP and the South African current private involvement in Healthcare is that government currently partakes in traditional public procurement in the form of tenders. When the national tender bid is in excess of 5 million Rands the award is based on a 90/10 split with price favouring the 90% and BEE and local industry status coupled to previously disadvantaged ownership (HDI) making up the 10%.

We are in the belief that this model entered into a contractual period of either every 12 months or 24 months purely provides a profit only source for private companies with no bearing or risk transfer for the improvement of the disease area being borne by the private institution.

With the government entering into a formalised PPP with specific chronic Disease areas where there is a clear risk element being borne by the private player, not only will this decrease the amount of opportunistic, purely profit seeking market entrants but will facilitate a long term partnership with private partners willing to be in the game for a long period of time or as long as it takes to see a significant and positive impact on managing the disease in question.

When looking for the ideal tool to measure and manage the identified KPI's for the Openshaw Clinic in light of creating a win-win for all aspects of the clinic, we found that the balanced scorecard presented a good system in order to achieve this.

2.5 BALANCED SCORECARD AS MEASURE OF VISION AND STRATEGY ACHIEVEMENT

The balanced scorecard was developed by Drs Robert Kaplan and David Norton and according to the Harvard Business School Review article by Kaplan and Norton (2005) "Executives know that a company's measurement systems strongly affect employee behaviour. But the traditional financial performance measures that worked for the industrial era are out of sync with the skills organisations are trying to master."

Frustrated by these inadequacies, some managers have abandoned financial measures like return on equity and earnings per share. "Make operational improvements, and the numbers will follow," the argument goes. But managers want a balanced presentation of measures that allow them to view the company from several perspectives at once. In this classic article from January 1992, authors Robert Kaplan and David Norton propose an innovative solution.

During a year-long research project with 12 companies at the leading edge of performance management, the authors developed a "balanced scorecard," a new performance measurement system that gives top managers a fast but comprehensive view of their business. The balanced scorecard includes financial measures that tell the results of actions already taken and it complements those financial measures with three sets of operational measures related to customer satisfaction, internal processes, and the organisation's ability to learn and improve - the activities that drive future financial performance. The balanced scorecard helps managers look at their businesses from four essential perspectives and answer some important questions: How do customers see us? What must we excel at? Can we continue to improve and create value? How do we appear to shareholders? By looking at all of these parameters, managers can determine whether improvements in one area have come at the expense of another. Armed with that knowledge, the authors say, executives can glean a complete picture of where the company stands - and where it's headed.

The balanced scorecard is a management system (not only a measurement system) that enables organisations to clarify their vision and strategy and translate them into action. It provides feedback around both internal processes and external outcomes in order to continuously improve strategic performance and results.

The balanced scorecard suggests that we view the clinic we are attempting to improve in performance from four perspectives and to develop indicators, collect data and analyse it relative to each of these perspectives. These perspectives are as follows:

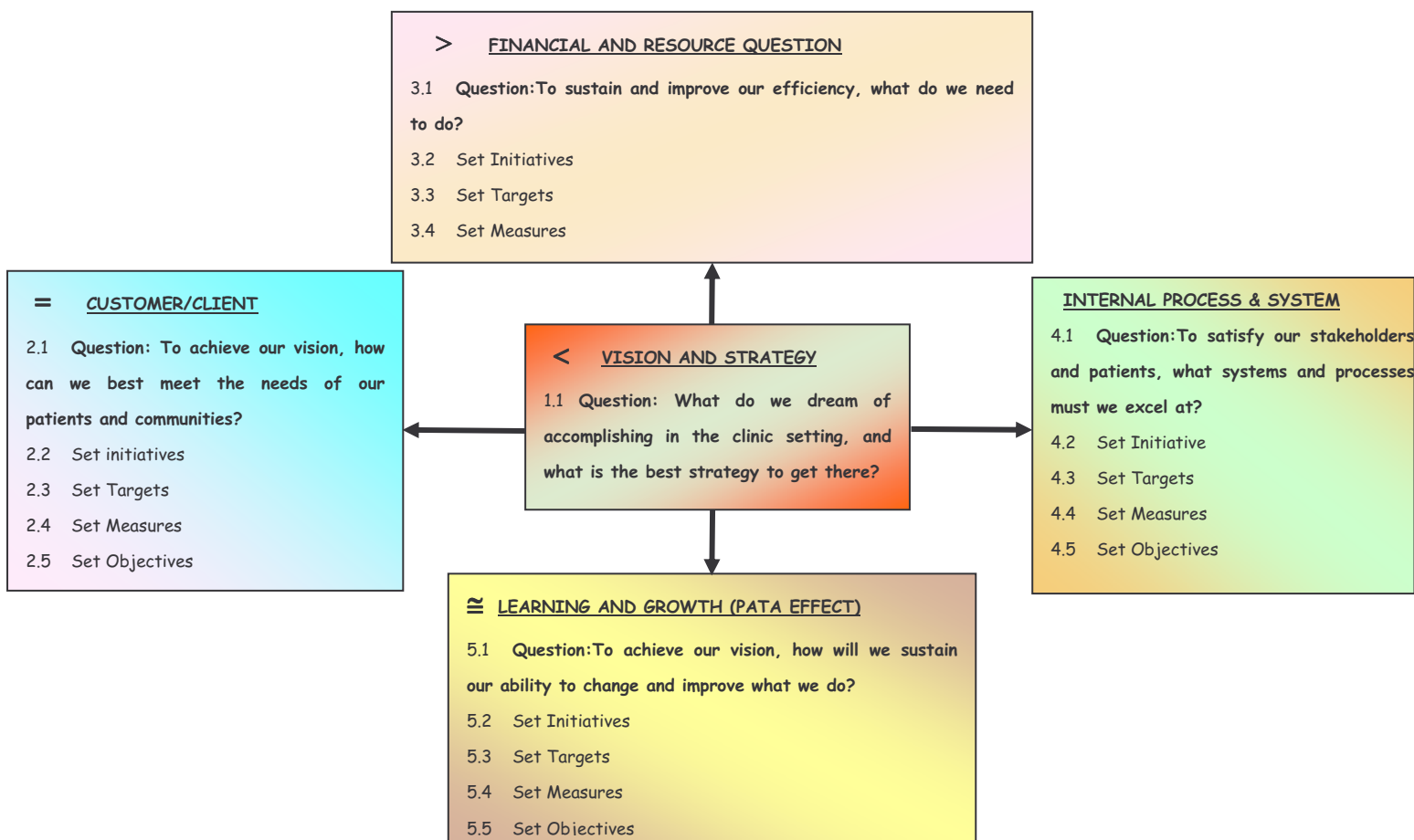
1. The business process (internal systems and infrastructure perspective).

2. The customer / client perspective.
3. The financial perspective.
4. The learning and growth perspective.

A key aspect to improving work and learning is that if we set too many objectives and targets and try to measure them, we get lost in an administrative mess. The most effective measures/indicators are those that are chosen by the organisation or team on the basis of these being the most important measures of achievement of strategic objectives.

The way the balanced scorecard is used is as follows: The CEO or country manager gets together with the head of various departments (Finance, Operations, Marketing, Human Resources for example) in a workshop session and sets the following:

Figure 2.2: Balanced scorecard



Once the vision has been agreed to, the strategy to achieve the vision is created. The four perspectives are then looked at to see what needs to be done in that particular perspective in order to achieve the strategy.

The grouping of performance measures in general categories (perspectives) is seen to aid in the gathering and selection of the appropriate performance measures for the enterprise. Four general perspectives have been proposed by the balanced scorecard:

- financial perspective;
- customer perspective;
- internal process perspective; and
- innovation and learning perspective.

2.5.1 Financial perspective

The financial perspective examines if the company's implementation and execution of its strategy are contributing to the bottom-line improvement of the company. It represents the long-term strategic objectives of the organisation and thus it incorporates the tangible outcomes of the strategy in traditional financial terms. The three possible stages as described by Kaplan and Norton (1996) are rapid growth, sustain, and harvest. Financial objectives and measures for the growth stage would stem from the development and growth of the organisation which will lead to increased sales volumes, acquisition of new customers, growth in revenues etc.

The sustain stage on the other hand would be characterised by measures that evaluate the effectiveness of the organisation to manage its operations and costs, by calculating the return on investment, the return on capital employed, etc. Finally, the harvest stage would be based on cash flow analysis with measures such as payback periods and revenue volume. Some of the most common financial measures that are incorporated in the financial perspective are EVA, revenue growth, costs, profit margins, cash flow, net operating income etc.

Within the setting of a public clinic environment we would not be looking at growth in revenues we do look at how they manage their costs in respect to no of patients seen per healthcare worker and aim to improve this as well as the management of the patients. The government clinics are a service and cost centre and not a profit centre. We would rather look at improving operating efficiencies within the clinic which result in a financial benefit for the investments made into a clinic.

2.5.2 Customer perspective

The customer perspective defines the value proposition that the organisation will apply to satisfy customers or at least in this usage, the patients utilising the clinic satisfaction levels. The measures that are selected for the customer perspective should measure both the value that is delivered to the customer (value proposition) which may involve time, quality, performance and service, and cost, and the outcomes that come as a result of this value proposition (e.g., customer satisfaction, market share). The value proposition can be centred on one of the three: operational excellence, customer intimacy or product leadership, while maintaining threshold levels at the other two. With the clinic we look at improving the quality of healthcare given to the patients and the satisfaction levels of the patients.

2.5.3 Internal process perspective

The internal process perspective is concerned with the processes that create and deliver the customer value proposition. It focuses on all the activities and key processes required in order for the company to excel at providing the value expected by the customers both productively and efficiently. These can include both short-term and long-term objectives as well as incorporating innovative process development in order to stimulate improvement. In order to identify the measures that correspond to the internal process perspective, Kaplan and Norton (1996) propose using certain clusters that group similar value creating processes in an organisation. The clusters for the internal process perspective are operations management (by improving asset utilisation, supply chain management, etc), customer management (by expanding and deepening relations), innovation (by new products and services) and regulatory and social (by establishing good relations with

the external stakeholders). Specific to the clinic environment we look at improving certain operational aspects of the running of the clinic and an intervention specific to diabetes for the patients.

2.5.4. Innovation and learning perspective

The innovation and learning perspective is the foundation of any strategy and focuses on the intangible assets of an organisation, mainly on the internal skills and capabilities that are required to support the value-creating internal processes. The innovation and learning perspective is concerned with the jobs (human capital), the systems (information capital), and the climate (organisation capital) of the enterprise. These three factors relate to what Kaplan and Norton (1996) claim is the infrastructure that is needed in order to enable ambitious objectives in the other three perspectives to be achieved. This of course will be in the long term, since an improvement in the learning and growth perspective will require certain expenditures that may decrease short-term financial results, whilst contributing to long-term success. Here we look at how we are able to create learning's for the healthcare workers in the disease area, the patients' empowerment and higher motivation levels from the healthcare workers as a result of the improvements in the clinic and patients. We hope to create a lever in the patients expectations on their treatment in other disease areas in increasing the level of service and self management learning's in the patients in diabetes.

2.6 SUMMARY AND CONCLUSION OF PROPOSED INVESTIGATIONS

We aim to investigate the following in line with the literature findings:

1. Can we achieve the strategy and vision of the Eastern Cape Clinical Services for rural clinics of “ensuring a high quality of healthcare delivery through increased clinic performance and operationally efficient clinics?”
2. We want to increase the efficiency of the clinic by increasing the number of patients seen per healthcare worker and the quality of the healthcare given, thereby reducing the total cost per patient based on the fixed costs of the clinic.

This could well result in deployment of HR to another clinic in order to improve this ratio.

Can we improve the operational performance of the rural clinic as measured by:

1. Improving the drug procurement and management process in order to ensure less out of stocks of important drugs ,
2. Increased quality of healthcare delivery as measured by reduced waiting times/patient and quality of disease management and counselling – a clinical intervention for diabetes patients by supplying them with free glucometers, test strips, product training, education and training to self manage their condition.
3. Instituting measures of a sound work ethic and ensure that the healthcare workers are at work for the time they are supposed to be.
4. Increase the patient satisfaction levels by access to enhanced quality of healthcare - reduced waiting times for the patients, enhanced clinical levels of disease control in this study specific to diabetes healthcare, Increase in self – management of the condition.
5. Enhance the learning's of both the patients and nursing staff due to the secondary improvements in disease management by the healthcare workers, heightening awareness of the interventions and creating expectations from the patients to the level of care they require.
6. Can we create a Hawthorne effect in other segments of the clinic to perform better in other disease areas?
7. create a culture of increased performance, enhanced learning's and knowledge sharing within the disease area amongst staff

CHAPTER 3: THE RESEARCH PROBLEM

3.1 INTRODUCTION

The intention of specifying the research problem is to ensure that following the background and literature review, we seek to identify and spell out the exact problem that we seek to answer in this study. We further break down the research problem into additional sub questions and explain for relevance to the study. We formulate hypothesis to test in order to look deeper into what surrounds the research problem and what key factors impact on the problem.

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3.2 IDENTIFICATION OF THE RESEARCH PROBLEM

Public sector clinics in South Africa specifically rural clinics are known for their poor operational performance, lack of efficiencies and their offering of only basic healthcare delivery. The most recent acknowledgement of this appears in the Star Newspaper 25th November 2009 front page by the new Minister of Health saying that hospitals and clinics must “shape up or shut down”. The acknowledgement that clinics and hospitals are operating at a poor performance level by the ministry of Health seeks us to ask why is it that public sector healthcare delivery in general is of such a poor standard. Why do rural clinics have poor performance operationally and with quality of healthcare delivery? Can we improve the performance of the clinic in healthcare delivery and operational running thereof?

We do not want to increase performance through increased resources but specifically by increasing the overall efficiency of the clinic in costs, enhanced operations, better quality of patient treatment i.e. enhanced management of chronic diseases, decreased patient waiting times, and specific to this dissertation, diabetes management.

The researcher seeks to use operational and to a lesser degree therapeutic disease specific interventions, at the chosen rural clinic as levers of intervention.

We seek to use interventions that we can measure with the balanced scorecard as a measurement and management tool to validate the improvement of the overall performance of the clinic with resultant improved management of the diabetic patients. We then compare these outcomes to the baseline of the same clinic to seek statistically significant changes in performance due to the interventions post quantitatively and qualitatively. We aim to use a qualitative and quantitative approach in assessing if we can understand the problems leading to the poor performance.

3.2.1 Identification of sub problems

Sub-problems identified in the analysis of the research problem are as follows:

- **Sub problem 1:** Do the different interventions, processes and private expertises inputted demonstrate significant value enhancing differences in the performance and efficiency in the running of the PPP clinic, post test?
- **Sub problem 2:** Can the improvements implemented result in enhanced diabetes management - an example of a chronic disease, increased satisfaction index of the patients with diabetes and better motivation of the healthcare staff after the pilot project?
- **Sub problem 3 :** Can we alter the learning culture of the clinic staff by creating a secondary impact through the improvements to ensure new learning's obtained by the healthcare workers are shared and applied to other disease areas and

able to contribute to sustainability in improved performance and diabetes management of the clinic?

- **Sub problem 4:** Can the PPP show benefits in chronic disease management as a result of risk sharing by both partners - private and public players?

3.3 HYPOTHESIS

The hypothesis has been developed in line with the constructs in the literature review. The hypothesis further supports the methodology of research and the analysis of the data to be gathered. The data gathered will determine if the hypothesis is true or false.

Hypothesis 1: A PPP in healthcare delivery can increase the performance of a Public clinic in chronic disease management through interventions.

Hypothesis 2: Better patient self –management and enhanced disease management by rural clinics can create better clinical control in diabetes patients.

3.4 DELIMITATIONS

In order to identify the parameters of the research the following delimitations are identified:

- The timelines of the study will not permit the patients on the intervention element to return in time to conduct post- test questionnaires to see statistical differences in their opinions, understandings, motivation levels to self manage and control their condition; however this will be followed up after the study. Their clinical pre and post test results will however be able to be completed as this is 3 months later.
- The study will not be able to facilitate costly investments and assets upgrades to the existing buildings (the study looks at performance measures and operational aspects in the current infrastructure for improvements in disease management).

- The study looks at the clinical outcome in improvement of the patients as a separate measure yet serves as an important indicator in increased quality of healthcare and improvements in the management of the patients by the healthcare workers (this is looked at to ensure that the patient is still the ultimate beneficiary of the improvements and that increasing the performance of the clinic in one disease area serves as a motivator and benchmark to do the same for other disease areas increasing overall clinic performance).
- The short timelines of the study period creates the potential of not seeing a measurable operational improvement in the clinic however the recommendations and processes put into place should be followed up after the study to see if there has been a noticeable effect.
- Similarly a significant improvement in the satisfaction index of the patients followed could be missed due to the small time frame allowed for the completion of the implementation of the KPI's and success measurements (of the outputs could potentially limit visibility of the true long term benefits of the improvements).
- The high level of illiteracy of the sample will require assistance with understanding and filling in the questionnaire which could lead to bias.
- The fear of repercussion by the clinic staff might well result in a false high satisfaction level of the patients being recorded for the baseline measurements and lead to bias.
- The motivation of the staff to be willing to see more patients and perform better management on the patients might seem high due to the expectation of increased numeration.
- There is a difference in the management of chronic diseases specific to diabetes between the successful urban clinics and the rural urban clinics due to the high level of expertise and clinical specialists from the tertiary sector available in the urban areas.

3.5 ASSUMPTIONS

Pursuant the expeditious completion of the research as contemplated herein, the following assumptions are made:

1. Different standards are applied to disease management in a clinic within a public tertiary teaching hospital compared to an individual, non hospital linked, public clinic, largely due to the lack of medical and specialist resources being available.
2. The diabetes patients used in the study at the Openshaw Clinic are representative of the indigenous population in South Africa accessing and using public sector clinics for health management.
3. All rural clinics in the Eastern Cape are operating under similar conditions and resource similarities and have similar educated staff performing the day-to-day duties.
4. We can only come out with a full pre and post-test result for all measured segments if we have sufficient time and are able to get all the patients studied back for follow up at the stipulated intervals. This facilitates being able to measure the changes in clinic performance and patient clinical benefits.

3.6 METHODOLOGY

According to Leedy and Ormod (2005) data and methodology are inextricably interdependent. The correct methodology chosen to be used for a particular research problem must always take into account the nature of the data that will be collected in the resolution of the problem. We need to quantitatively and qualitatively test the interventions chosen by the private partner with the approval of the clinic management and staff to validate if implemented according to the measurements of the balanced scorecard, we can find a significant improvement in the operational aspect of the clinic and in the patients' diabetes condition.

3.7 RESEARCH APPROACH

The methodology proposed for this research is based on a mixed methodology approach. We use quantitative aspects with the use of structured questionnaires and Likert scale ratings to test the perceptions, knowledge and changes in patient's (as the customer) perceptions and improvement in conditions. We then use quantitative statistical tests to look if there is a statistical significance in the patients' clinical improvement or not. We also use qualitative aspects using observations and interviews with- semi-structured questionnaires for the nurses to understand the happenings, changes in the clinic and attitudes. We then look for themes in their opinions and answers expressed in respect to the operational performance and patient management.

3.8 SAMPLING

The clinic only has a diabetic population on register of 65 diabetics. This makes the selection process of the sample of the study unable to be a random selection as a number of patients from the group were unwilling to receive a glucometer and other interventions (tools for intervention). Once these patients are excluded we are not left with enough patients to enable a statistical experiment. We then had to ensure we selected 30 patients from the remaining 63 registered diabetics who were willing to partake in the study and receive interventions. The inclusion requirements are:

- Confirmed and on treatment clinic registered diabetics.
- Signed consent forms from patients, nurses and doctors.
- Must have their own specific files or record books.
- A Study specific folder to be opened for each patient.
- Patients must have had HBA1c levels done at baseline.
- Patients with similar demographics: ages (30-70), equal gender spread (+- 50% male and +- 50% female) similar education levels and level of income.
- Some degree of literacy or must have a reliable, literate assistant.
- Willingness to learn and ability to operate the blood glucose machinery.
- On oral medication and or on insulin as a combination.

- On insulin alone.
- Regular known patient to clinic.

We believe this sample population will allow us to draw inference to the diabetic community within the rural outskirts of cities attending rural clinics.

We also select 30 people with diabetes from the same clinic with similar demographics but without any intervention who we use as the control group. We ask them to complete the questionnaire pre and post test. We do not introduce any interventions to the patients in this control group. We also perform baseline blood glucose control tests and 6 months later we aim to perform the tests again to seek any changes in the control. We ensure that this group has no intervention. We introduce a control group to rule out the Hawthorne effect.

We further ensure that the Openshaw nurses complete a pre-test and post-test questionnaire designed for them, under the supervision of an independent Xhosa speaking admin clerk to ensure no bias is introduced. The questionnaire is based on identifying the understandings of the clinic culture and sentiment of the clinics staff and morale towards improvement and enhanced healthcare delivery pre-intervention and post intervention.

3.8.1 Measuring instruments

The specific instruments we use for the quantitative element are:

1. Pre-test and post-test questionnaires for patients
2. Pre-test and post-test questionnaires for nurses
3. Pre-test and post test blood glucose controls – HBA1c's baselines of the patients included in intervention arm and control arm.
4. We use the T-Test, Annova test, descriptive percent stats, and correlations for the above statistical tests as measurement.

Instruments for the qualitative element are: methodological triangulation: observations, interviews and documents

3.8.2 Data analysis

1. The quantitative element sees us using: Pre-test and post-test questionnaires for patients and pre-test and post-test questionnaires for nurses. We use these tools because according to a Likert rating scale we are hopefully able to get a good statistical comparison to how the patients feel about the clinic and nurses and their level of care given as well as the comparison of what the nurses think of the clinic and the patients' healthcare needs.

Using the statistical tests of T-Test, Anova test, correlations and descriptive percent stats, we can draw inferences about the diabetes population and find reason and explanations about why we see what we see.

2. For the qualitative element we use methodological triangulation: which involves using more than one method to gather data, such as nurse interviews with the aid of semi-structured questionnaires, observations and documents. Triangulation "gives a more detailed and balanced picture of the situation in the clinic." The interview with the semi structures questionnaire assists us in understanding the real situation. This is how we perform this test:

- Investigator and interviewee are alone in a quiet room.
- Investigator explains the questions asked and the intent sought.
- They fill in their answers themselves in front of the investigator and a discussion regarding the questions is undertaken if required for clarity.
- The investigator then identifies key themes coming from the interviews
- Read the answers a second time in order to take down what they are saying about those issues or themes emerging.
- We then look at the frequency of the issues coming up and we tabulate this, analyse the issues and comment thereon.

3. Observations and interviews: We conduct ongoing interviews with the Head of Programs Sr Buchan regarding the operational and clinical elements of the clinic. We also conduct observations on three separate occasions of the clinic. Relevant Documents and documented procedures are perused and taken into consideration. Interviews are conducted in a semi structured questionnaire format as indicated above.
4. We seek to utilise the balanced scorecard for the business measurement tool in order to test the improvements from the interventions according to the strategy for the clinic.

The balanced scorecard ensures that we look at the financial, internal processes, customers and learning's when measuring performance.

3.9 THE BALANCED SCORECARD

3.9.1 The financial measurement

We seek to increase the efficiency of the running of the clinic with respect to reducing indirect costs by increasing the number of patients seen by nurse ratio. If we are able to increase the ratio for the same fixed costs then we increase efficiency. We also seek to lower the waiting – time for patients in the clinic and to maximise this time they spend waiting by education exposure. This is looked at in the Internal / Operational perspective yet has an impact on the clinic efficiency.. If we can reduce the waiting time this will also reduce costs due to increased no of pts treated in the same time. All this should result in dropping the cost per patient treated.

For this we look at the following specific parameters:

- Current no of patients seen/treated per nurse per day compared to the required ratio amount of 35/1 per day.

- Measure of overall waiting time for the patient to be seen and complete the visit. We compare this to the number of pts actually seen per day versus the required amount and apply recommendations on the results.
- We compare the total running costs of the Openshaw clinic to the number of patients seen per month and per year to achieve a total cost per patient for a year.
- We seek to make recommendations for an increase in the value extracted from the healthcare worker for the same salary with better quality diabetes patient management and number of patients seen.

We use observations and designed sheets where we follow 30 of the 74 patients and measure in the following order:

1. A baseline for the average time taken per patient to be seen from arrival, to the admin element, to seeing the doctor if there on the day and the nurse to obtaining the medication, excluding the time to fill in the questionnaire
2. We make recommendations to drive efficiency in the process.

3.9.2 The customer

We seek to see an improvement in the customers' satisfaction index compared to baseline. This is for both the patients and the healthcare workers providing the service. We measure this as a pre and post measurement:

- Questionnaires for the patients measuring on a rating score from 1-5 about their perceptions of the efficiency, overall service, satisfaction and diabetes management when visiting the clinic. Happier patients = healthier patients and healthier patients = happier patients.
- This will include the wish list the patient wishes to experience in their diabetes management and their willingness to self-manage their condition i.e. the perceptions of their willingness to use the blood testing machines that will be donated to them and the education they will receive on the disease.

- It will also measure their understanding of the condition as a baseline compared to the same measure three months post the interventions.
- We then provide a new blood glucose meter for all 30-40 of the 80 patients for self testing of blood sugar and test strips to facilitate daily testing of blood sugars. Roche donates the meters and first box of strips as part of the PPP risk sharing pilot project. The clinic provides the balance of the strips thereafter as their contribution.
- We utilise the Roche Smartpix device to download the patients' results periodically in order to see changes to control and to visually engage the patients towards problem areas and solutions. Three examples of this is provided in Appendix 2 clearly showing the impact. We also show the sheet that is shown to patients with the ticked patients whose HBA1c levels have reduced.
- We then provide education to the pts on self management of diabetes and how to test their blood and what to do with the result. We exclude this time spent as part of the baseline measurements.
- We obtain baseline HBA1c levels of all the 60 patients.
- We then aim – time provided, to test all the patients on their knowledge of their condition and their learning's after three months. We obtain their HBA1c readings at this time to evaluate improvements.

3.9.3 The internal processes

We look at the current internal operational processes and seek to see where and what we can recommend to improve as interventions. We then attempt to put these in place to see if the changes and interventions lead to the improvements we seek or if this does create a significant difference in the performance, effectiveness and increased efficiency of the clinic. For this we look at:

Operational management of the running of the clinic to increase efficiencies

- We provide questionnaires to the nurses as the other “customers” who are responsible for delivering the healthcare.

- In this we test the satisfaction of the current processes within the clinic, their perception of the quality of the healthcare they deliver in the clinical control of the diabetic patients and their overall satisfaction and motivation to perform better. We then repeat the same questionnaire after 3 months.
- Same questionnaire for both the Programs manager of the Buffalo City region under whose responsibility all the Clinical Programs in the rural clinics fall under and the contract nurse employed by the NGO who facilitate the project.
- This will also be to obtain a baseline of the satisfaction of the overall running and performance of the clinics with respect to management of the chronic diseases namely diabetes. We repeat this also after 3 months.
- We involve the NGO Director Dr Paul Cromhout who holds a Doctorate Degree in Business Administration for guidance and assistance in the project and the operational improvements.
- We look at the pharmacy management and stock forecasting process and seek to understand the problems with out of stocks and poor availability of drugs. We aim to devise a new forecast and stock management process to improve this element of the operational/internal processes which are impacting on quality and effective provision of healthcare.
- We look for recommendations and improvements to the patient waiting and management system in the clinic as identified earlier in the financial arm of the BSC.

3. 9.4 Learning's and Growth

The learning's element of the balanced scorecard is very important to the continuation and sustainability of the new level of performance in the operating of the clinic, patient self management and for providing value into the future. We look at the culture aspect of the clinic, the nurses and the senior staff towards an enhanced service delivery and improved operational efficiency of their clinic. We do this within the same quantitative questionnaire and with the qualitative interviews. Once we identify themes and areas for improvement, we then propose cultural changes and other learning changes if required to embrace and drive the new vision of the clinic and become a learning clinic.

We seek to understand the culture and attitudes towards the patients in learning about their condition and to see if these patients are willing to partake in learning's for self-management of their condition. This is an important element of disease management and we seek to provide recommendations following the findings within the quantitative questionnaire and with the qualitative observations to promote this important element.

Risk sharing is important in managing the patient conditions for better outcomes. Learning's by the healthcare workers and their disease up skilling is critical to this element of learning to be translated into a culture of learning and sharing thereof. To ensure this we institute risk sharing in this element of the BSC from the Private partner by the following interventions:

- As a PPP Roche sponsors the training of the contract nurse Sr Ethel Jegels to the Centre for Diabetes and Endocrinology Diabetes course for the week of 23-29 May 2009 in Johannesburg. The Eastern Cape DOH matches the investment and sponsors the head sister and regional manageress of the Buffalo City in charge of the clinics, to the same course.
- Roche and the DOH jointly sponsor the resident Dr Mda to the same course in Johannesburg to ensure that doctor and nurse are on the same level of understanding.
- Conditions of the sponsorship is based on the following requirements
- That upon their return the above will train the nurses at the Openshaw Clinic on the relevant learning's obtained in the course.
- These expertises are then injected back in to the patients attending the Openshaw Clinic.
- We provide the doctor with the latest guidelines in treating diabetes as decided by the Society for Endocrinology and Metabolism of South Africa

3.10 DATA ANALYSIS

All research requires logical reasoning. We aim to retain the objectivity in our data analysis. We use quantitative research to formulate a theory about the effect of interventions and improvements on the efficiency of the clinic and the improvements in the patients' condition. We also use qualitative research to interview and observe actual happenings and personal perceptions towards current situation and future situations with the possibility of improvements. To ensure that we exclude experimental bias, we use the same person performing the questionnaire assistance in both groups. This will be Sr Ethel Jegels.

3.10.1 Validity of research methodology

According to Leedy and Omrod (2005:97) "here we are talking about the validity – the accuracy, meaningfulness, and credibility – of the research project as a whole." The internal and external validity of the method we use is important in answering the questions that the study controls are sufficient to ensure that the conclusions we draw are truly warranted by the data. Secondly can we use what we have observed to make generalisations about the rest of the populations living in rural Eastern Cape and South Africa accessing rural clinics for their diabetes management? Do the questionnaires answer what we really want to know? To ensure clarity the questionnaires are designed to ensure clarity, reliability and validity. We test the patient and nurse quantitative questionnaire as follows:

1. An internal Roche diabetes care division diabetes educated focus group to ensure clarity. These are sound English speaking people.
2. Changes recommended are made to ensure understanding.
3. Same focus group rechecks for clarity and approves final once clarity agreed.
4. The questionnaires are then forwarded to the two responsible sisters in East London who will be performing the data collection.
5. Any changes they believe are required to ensure clarity are then made.
6. A final check on clarity is ensured by passing the questionnaires onto 2 Xhosa speaking non-diabetic and non-medical people to ensure that they too understand the questionnaires in full.

7. The same people then translate the questionnaire into Xhosa for those patients who can read but only Xhosa.
8. The translated questionnaire was then read in Xhosa and re-translated back to English by a different person and checked by the investigator and the two responsible sisters to ensure the same clarity was present.

In this way we feel we have ensured clarity in the questionnaire. Are we sure that we are consistently going to get the right answers from the measuring instruments? We do believe that we have constructed the research in an appropriate way to ensure the internal and external validity are considered.

3.11 TOOLS USED FOR DATA COLLECTION

Quantitative pre-test and intended post-test patient questionnaire

1. *Questionnaires for patients enrolled in the research project. A ranking system will be used for ranking the patients answers.*
2. *Only one answer as a tick can be recorded per question and all questions must be answered.*
3. *The feedback will be numbered and no names will appear on the forms.*
4. *All information will be recorded and no patients individual feedback will be visible to the clinic staff*
5. *There will be no repercussion or negative treatment given to patients based on their feedback.*

Question 1

What is your understanding of your diabetes condition?

<i>1=very bad</i>	<i>2. bad</i>	<i>3 =unsure</i>	<i>4 = Good</i>	<i>5 = very good.</i>

Question 2

In terms of your understanding of your diabetes condition, how do you rate the assistance you receive in your diabetes management from the clinic?

<i>1=very bad</i>	<i>2= bad</i>	<i>3 unsure</i>	<i>4 = Good</i>	<i>5 = very good.</i>

Question 3

How would you rate your overall experience in dealing with the Openshaw clinic?

<i>1=very bad</i>	<i>2= bad</i>	<i>3 =unsure</i>	<i>4 = Good</i>	<i>5 = very good.</i>

Question 4

How would you rate the nurses' knowledge in treating your diabetic condition?

<i>1=very bad</i>	<i>2= bad</i>	<i>3 =unsure</i>	<i>4 = Good</i>	<i>5 = very good.</i>

Question 5

How would you rate the way you are treated by the clinic staff and the assistance with your disease in relation to what you expected to receive?

<i>1=very bad</i>	<i>2= bad</i>	<i>3 =unsure</i>	<i>4 = Good</i>	<i>5 = very good.</i>

Question 6

How would you rate the diabetes education you have received from the clinic to date?

<i>1=very bad</i>	<i>2= bad</i>	<i>3 =unsure</i>	<i>4 = Good</i>	<i>5 = very good.</i>

Question 7

How confident are you to self-manage your diabetes at home?

<i>1=very bad</i>	<i>2= bad</i>	<i>unsure</i>	<i>4 = Good</i>	<i>5 = very good.</i>

Rate the following questions according to 1=Strongly disagree, 2 =disagree, 3 = indifferent, 4 = agree, 5 = strongly agree

Question 8

Would you want to improve your diabetes condition the way it is at the moment?

<i>1=Strongly disagree</i>	<i>2 =disagree</i>	<i>3 = indifferent</i>	<i>4 = agree</i>	<i>5=strongly agree</i>

Question 9

Do you enjoy coming to the Openshaw clinic for your medicine and treatment?

<i>1=Strongly disagree</i>	<i>2 =disagree</i>	<i>3 = indifferent</i>	<i>4 = agree</i>	<i>5=strongly agree</i>

Question 10

Do you feel that it is worth your while, effort and transport costs to come to the Openshaw clinic for your diabetes treatment?

<i>1=Strongly disagree</i>	<i>2 =disagree</i>	<i>3 = indifferent</i>	<i>4 = agree</i>	<i>5=strongly agree</i>

Question 11

Do you feel that you wait too long to be seen by the clinic sisters and Dr?

<i>1=Strongly disagree</i>	<i>2 =disagree</i>	<i>3 = indifferent</i>	<i>4 = agree</i>	<i>5=strongly agree</i>

Question 12

Do you feel happy with the value you receive from your doctor?

<i>1=Strongly disagree</i>	<i>2 =disagree</i>	<i>3 = indifferent</i>	<i>4 = agree</i>	<i>5=strongly agree</i>

Question 13

If you were given a blood sugar meter and told to test your blood every day, would you be happy to test every day from now on?

<i>1=Strongly disagree</i>	<i>2 =disagree</i>	<i>3 = indifferent</i>	<i>4 = agree</i>	<i>5=strongly agree</i>

Quantitative pre-test and post-test questionnaire for nurses working in Openshaw Clinic and the head program manager (nurse) and NGO appointed nurse not residing at the Clinic or rural area

Rate the following questions according to the following score: 1 = very poorly, 2 = poorly, 3 = indifferent (not poor nor good), 4 = good, 5 = very good

Question 1

How do you rate the efficiency i.e. performance of the clinic you work in for general operations and in treating diabetes patients?

<i>1 = very poorly</i>	<i>2 = poorly</i>	<i>3 = unsure</i>	<i>4 = good</i>	<i>5 = very good</i>

Question 2

How do you rate your own knowledge of diabetes and being able to teach patients about self managing this condition?

<i>1 = very poorly</i>	<i>2 = poorly</i>	<i>3 = unsure</i>	<i>4 = good</i>	<i>5 = very good</i>

Question 3

How do you believe the patients are managed for their diabetes at the moment?

<i>1 = very poorly</i>	<i>2 = poorly</i>	<i>3 = unsure</i>	<i>4 = good</i>	<i>5 = very good</i>

For the following questions please rate your answers according to : 1 = Strongly disagree , 2 = Disagree, 3 = indifferent, 4 = agree with, 5 = strongly agree with

Question 4

Do you feel Openshaw clinic can be better run and smoother flowing for seeing patients?

<i>1= Strongly disagree</i>	<i>2 = Disagree</i>	<i>3 = unsure</i>	<i>4 = agree with</i>	<i>5=strongly agree</i>

Question 5

Do you feel that you would want to see this clinic more efficiently run and be the top performing clinic in the Eastern Cape?

<i>1=Strongly disagree</i>	<i>2 =disagree</i>	<i>3 unsure</i>	<i>4 = agree with</i>	<i>5=strongly agree</i>

Question 6

Do you feel that having educational and Blood glucose monitoring tools available to you will result in you being able to better teach patients self management of diabetes?

<i>1=Strongly disagree</i>	<i>2 =disagree</i>	<i>3 = unsure</i>	<i>4 = agree with</i>	<i>5=strongly agree</i>

Question 7

Do you feel that you need more training on diabetes in order to adequately treat the patients' diabetes?

<i>1=Strongly disagree</i>	<i>2 =disagree</i>	<i>3 =unsure</i>	<i>4 = agree with</i>	<i>5=strongly agree</i>

Question 8

Do you feel that the EC Dept of health and Sr Buchan are your “customers” for whom you need to do your job correctly and keep happy?

<i>1=Strongly disagree</i>	<i>2 =disagree</i>	<i>3 = unsure</i>	<i>4 = agree with</i>	<i>5=strongly agree</i>

Question 9

Do you believe that by enhancing the operations of the clinic (better patient flows, access to correct pt management tools, being able to interpret their readings) that this can impact the outcomes of diabetes?

<i>1=Strongly disagree</i>	<i>2 =disagree</i>	<i>3 = unsure</i>	<i>4 = agree with</i>	<i>5=strongly agree</i>

Question 10

Are you happy with your knowledge on diabetes management at the moment?

<i>1=Strongly disagree</i>	<i>2 =disagree</i>	<i>3 = unsure</i>	<i>4 = agree with</i>	<i>5=strongly agree</i>

Question 11

Do you agree or disagree: Diabetes is a condition that the patients cannot self-manage.

<i>1=Strongly disagree</i>	<i>2 =disagree</i>	<i>3 = unsure</i>	<i>4 = agree with</i>	<i>5=strongly agree</i>

Qualitative interviews: Semi-structured questionnaire for nurses – following the quantitative post-test

Question 1

What do you think needs to change, start happening or stop happening to make this clinic run more effectively and efficiently?

Question 2

What processes or recommendations can you think of to make things “work” better in this clinic?

Question 3

Where do you see this clinic in 5 years time in the role it plays to the community and specifically in chronic diseases management?

Question 4

What are your thoughts and attitude towards patient self management of their condition and your role?

Question 5

What drives you to come to work everyday and perform your job?

Question 6

How do you feel about the management of the clinic and the running thereof?

Question 7

How do you feel with the current low number of patients/nurse ratio seen in the Openshaw clinic in comparison to the required DOH expectation of 35/1? Why do you feel this way?

Question 8

Do you believe that the private companies & NGO's who's help and products you use in the clinic can play a part in Healthcare delivery? If so how?

Question 9

What is your wish if you have one, for working at this clinic?

Question 10

If you were a patient, unemployed and not self- reliant on transport and made an effort to get to the clinic for your monthly check-up on diabetes or another chronic condition, what would you be looking for from the clinic from arrival to departure?

Question 11

With all that you have learnt about diabetes and patient management during this time, how do you feel about imparting this knowledge to your colleagues and to the patients?

CHAPTER 4: RESEARCH RESULTS - ANALYSIS AND INTERPRETATION OF QUANTITATIVE AND QUALITATIVE RESULTS AND DISCUSSIONS

4.1 QUANTITATIVE ELEMENT

In this analysis we look at the five nurses opinions in a pre-test and post-test five months later following the learning's and interventions implemented with the intervention group. Three are residents and are full-time at the Openshaw Clinic. The additional nurse is the head of programs for healthcare to which the Openshaw clinic's clinical management responsibility resides. The last nurse is a non government employee nurse employed by the SPF, the NGO who created the project. We seek to understand the opinions and feelings of these nurses who are in different positions and responsibility portfolios towards the diabetes problem and the operational element of the clinic. The pre- and post-test responses are below:

4.1.1 Pre- & post-test questionnaire results- nurses

Statement S1:		Pre test	Post test
How do you rate the efficiency i.e. performance of the clinic you work in for general operations and in treating diabetes patients	Poorly	20.0 %	20.0 %
	Indifferent		20.0 %
	Good	80.0%	40.0 %
	Very good		20.0%
	Total	100 %	100 %

Statement S2		Pre test	Post test
How do you rate your own knowledge of diabetes and being able to teach patients about self managing this condition	Good	80.0 %	80.0%
	Very good	20.0%	20.0%
	Total	100 %	100 %

Statement S3		Pre test	Post test
How do you believe the patients are managed for their diabetes at the moment?	Very Poorly	20.0 %	
	Poorly		20.0%
	Good	80.0%	40.0%
	Very good		40.0%
	Total	100 %	100 %

Statement S4		Pre test	Post test
Do you feel Openshaw clinic can be better run and smoother flowing for seeing patients?	Disagree	20.0%	
	Agree		60.0%
	Strongly Agree	80.0%	40.0%
	Total	100 %	100 %

Statement S5		Pre test	Post test
Do you feel that you would want to see this clinic more efficiently run and be the top performing clinic in the Eastern Cape?	Agree	20.0%	20.0%
	Strongly Agree	80.0%	80.0%
	Total	100 %	100 %

Statement S6		Pre test	Post test
Do you feel that having educational and blood glucose monitoring tools available to you will result in you being able to better teach patients self management of diabetes?	Indifferent	20.0%	
	Agree	20.0%	20.0%
	Strongly Agree	60.0%	80.0%
	Total	100 %	100 %

Statement S7		Pre test	Post test
Do you feel that you need more training on diabetes in order to adequately treat the patients' diabetes?	Indifferent	20.0%	
	Agree	60.0%	20.0%
	Strongly Agree	20.0%	80.0%
	Total	100 %	100 %

Statement S8		Pre test	Post test
Do you feel that the EC Dept of health and Sr Buchan are your "customers" for whom you need to do your job correctly and keep happy?	Indifferent	20.0%	
	Agree	20.0%	40.0%
	Strongly Agree	60.0%	60.0%
	Total	100 %	100 %

Statement S9		Pre test	Post test
Do you believe that by enhancing the operations of the clinic (better patient flows, access to correct pt management tools, being able to interpret their readings) that this can impact the outcomes of diabetes?	Agree	40.0%	20.0%
	Strongly Agree	60.0%	80.0%
	Total	100 %	100 %

Statement S10		Pre test	Post test
Are you happy with your knowledge on diabetes management at the moment?	Strongly Disagree	20.0%	
	Indifferent	20.0%	
	Agree	40.0%	80.0%
	Strongly Agree	20.0%	20.0%
	Total	100 %	100 %

Statement S11		Pre test	Post test
Do you agree or disagree : Diabetes is a condition that the patients cannot self-manage	Strongly disagree	40.0 %	60.0%
	Disagree	60.0 %	20.0%
	Indifferent		20.0%
	Total	100 %	100 %

4.2 INTERPRETATION AND COMMENTS

The nurses rated the efficiency of their clinic to be high in the pre-test and this could be attributed to not really understanding what comprises the term efficiency. From the observations that followed it became clear that this meant “how quickly we do our work and complete the patients for the day.”

When asked in S2 about their knowledge about diabetes they thought this to be good. Following the interventions seen and learning’s imparted onto them, watching the program manager impart her knowledge onto them and the patients, they then felt in the post-test that their knowledge was now quantifiably good, explaining the answers being similar for this question both pre and post.

Question S3 enquires about their feelings towards the patients’ control of their diabetes, a similar sentiment emerged as for S2, that now with the interventions it was quantifiably good. There seems to be an arrogance emerging into the self perceptions of diabetes knowledge of the nurses. This can be attributed to the lack of management and leadership with the clinics and the staff being left and trusted to their own devices. There are no regular evaluations on the knowledge of the nurses on an ongoing basis so they believe that what they know is adequate and acceptable. They believed they managed the patients well pre intervention and now they believe they are really well managed due to the interventions. The nurses also believe that they need to do something about the long waits and queues for the patients. This sentiment increased post-test due to the mention and visible awareness of this by the program manager and the investigator.

The positive sentiment is that all the nurses post-test are motivated to wanting their clinic to be the top performing clinic in the Eastern Cape and want to see improved operations and efficiencies. Now that they have seen the impact and change in the patients receiving the intervention of the glucometers and the education element, they believe that tools can assist them in improving the patients' conditions. This is followed through to the next question which finds them admitting post-test that they do and would like more education and training in diabetes management. An interesting finding is that the nurses still believe that their customer (and the one to perform for) is the government and their programs manager and not necessarily the patient. Upon observation and interview this was met with a mixed response when the true intent of the question was realised. This could well be a reason for the approach to patient care and disease management being of a basic delivery in essence. The ultimate customer to keep happy is not the patient.

On a positive closure the nurses do feel that with more, they can do more to help the patients and that the patients can be taught to self-manage their condition. A recommendation would be that the attitude and culture of the nurses believing that they know most of what is required, would need to be changed.

4.3 ALL INTERVENTION AND NON-INTERVENTION PATIENTS DESCRIPTIVE PERCENT STATS

Figure 4.1: What is your understanding of your diabetes condition

s1: What is your understanding of your diabetes condition

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Very bad	2	4.1	4.1	4.1
Bad	25	51.0	51.0	55.1
Good	20	40.8	40.8	95.9
Very good	2	4.1	4.1	100.0
Total	49	100.0	100.0	

Interpretation

The above table results reveal perceptions of participated respondents in this project. They have expressed 4.1% very bad, 51.0% bad, 40.8 % good and 4.1% very good opinions towards study statement s1: what is your understanding of your diabetes condition.

Comments

This majority result of bad and good understanding of the patients own diabetes condition demonstrates the lack of education, learning's and understanding of their condition as the "good" respondents think that they have a clear picture of what their condition and the risks are. The 51% are saying that they have no idea of their diabetes condition, indicating their lack of education, or self learning thereof.

Figure 4.2: How do you rate the assistance you receive in your diabetes management from the clinic

s2: how do you rate the assistance you receive in your diabetes management from the clinic

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid				
Good	25	51.0	51.0	51.0
Very good	24	49.0	49.0	100.0
Total	49	100.0	100.0	

Interpretation

The above table results reveal perceptions of participated respondents in this project. They have expressed 51.0% good, 49.0% very good opinions towards study statement s2: how do you rate the assistance you receive in your diabetes management from the clinic?

Comments

This Further enhances the point of lack of knowledge about diabetes and what to expect from their clinic and HC worker. The fear factor of repercussion from the

nursing sisters or having what they perceive to be good care removed from them could well be the reason for the only good and very good results.

Figure 4.3: How would you rate your overall experience with the Openshaw clinic

s3: How would you rate your overall experience in dealing with the Openshaw clinic

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Bad	1	2.0	2.0	2.0
Good	12	24.5	24.5	26.5
Very good	36	73.5	73.5	100.0
Total	49	100.0	100.0	

Interpretation

The above table results reveal perceptions of participated respondents in this project. They have expressed bad 2%, good 24.5%, very good 73.5% opinions towards study statement s3: : How would you rate your overall experience in dealing with the Openshaw clinic?

Comments

In line with the positive sentiment felt towards the treatment they receive for diabetes, the sentiment is carried over to the overall experience in dealing with the clinic. Fear of repercussion again is believed to contribute to this positive result and happiness in being able to receive healthcare for free.

Figure 4.4: How would you rate the nurses' knowledge in treating your diabetic condition

s4: How would you rate the nurses knowledge in treating your diabetic condition

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Bad	1	2.0	2.0	2.0
Good	20	40.8	40.8	42.9
Very good	28	57.1	57.1	100.0
Total	49	100.0	100.0	

Interpretation

The above table results reveal perceptions of participated respondents in this project. They have expressed bad 2%, good 40.8%, very good 57.1% opinions towards study statement s4: How would you rate the nurses' knowledge in treating your diabetic condition?

Comments

Trust is placed in educated healthcare workers from predominantly uneducated patients and due to their own lack of knowledge in Diabetes again verifies their opinion of them receiving knowledgeable treatment from the nurses.

Figure 4.5: How would you rate the way you are treated by the clinic staff and the assistance with your disease in relation to what you expected to receive?

s5: How would you rate the way you are treated by the clinic staff and the assistance with your disease in relation to what you expected to receive

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Bad	1	2.0	2.0	2.0
Good	23	46.9	46.9	49.0
Very good	25	51.0	51.0	100.0
Total	49	100.0	100.0	

Interpretation

The above table results reveal perceptions of participated respondents in this project. They have expressed bad 2%, good 46.9%, very good 51% opinions towards study statement s5: How would you rate the way you are treated by the clinic staff and the assistance with your disease in relation to what you expected to receive?

Comments

This result confirms the expectation for diabetes management from the clinic and staff is deemed adequate due to the patients not knowing what to expect and therefore what they do receive is deemed good and very good as it cannot be compared to other standards or another clinic .

Figure 4.6: How would you rate the diabetes education you have received from the clinic to date?

s6: How would you rate the diabetes education you have received from the clinic to date

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Good	22	44.9	44.9	44.9
Very good	27	55.1	55.1	100.0
Total	49	100.0	100.0	

Interpretation

The above table results reveal perceptions of participated respondents in this project. They have expressed good 44.9%, very good 55.1% opinions towards study statement s6 How would you rate the diabetes education you have received from the clinic to date?

Comments

The little education received which is basic care unspecific to diabetes as captured in the observations, again is deemed good with no benchmark to compare to.

Figure 4.7: How would you rate the diabetes education you have received from the clinic to date?

s7: How confident are you to self-manage your diabetes at home

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Very bad	1	2.0	2.0	2.0
Bad	7	14.3	14.3	16.3
Unsure	1	2.0	2.0	18.4
Good	35	71.4	71.4	89.8
Very good	5	10.2	10.2	100.0
Total	49	100.0	100.0	

Interpretation

The above table results reveal perceptions of participated respondents in this project. They have expressed very bad 2%, bad 14.3%, unsure 2%, good 71.4%, very good 10.2% opinions towards study statement s7: How confident are you to self-manage your diabetes at home?

Comments

This mixed result sentiment in favour of being able to manage their conditions at home show that the majority are confident they can, as they do not know what it entails and perhaps that living life and taking their medication is what they perceive to be managing their condition. There are a few patients aware that they do not know much about their condition and that they rely solely on the clinic and staff to teach them this, which has not happened.

Figure 4.8: Would you want to improve your diabetes condition the way it is at the moment?

s8: Would you want to improve your diabetes condition the way it is at the moment

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Agree	22	44.9	44.9	44.9
Strongly agree	27	55.1	55.1	100.0
Total	49	100.0	100.0	

Interpretation

The above table results reveal perceptions of participated respondents in this project, they have expressed agree 44.9%, strongly agree 55.1% opinions towards study statement s8: Would you want to improve your diabetes condition the way it is at the moment?

Comments

This result confirms that patients are too concerned to talk out or be honest in their sentiment towards the clinic and even if they are happy with their self management, they are aware that it is not adequate, again explaining their poor understanding of their condition.

Figure 4.9: Do you enjoy coming to the Openshaw clinic for your medicine and treatment?

s9: Do you enjoy coming to the Openshaw clinic for your medicine and treatment

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly disagree	1	2.0	2.0	2.0
Agree	14	28.6	28.6	30.6
Strongly agree	34	69.4	69.4	100.0
Total	49	100.0	100.0	

Interpretation

The above table results reveal perceptions of participated respondents in this project. They have expressed strongly disagree 2%, agree 28.6%, strongly agree 69.4% opinions towards study statement s9: Do you enjoy coming to the Openshaw clinic for your medicine and treatment?

Comments

The patients realise that the medication they are taking for diabetes is important to their survival, and this could well cause an interpretation as happiness and joy in receiving their medicine and treatment. The nurses are friendly to the patients at this clinic as observed.

Figure 4.10: Do you feel that it is worth your while, effort and transport costs to come to the Openshaw clinic for your diabetes treatment

s10: Do you feel that it is worth your while, effort and transport costs to come to the Openshaw clinic for your diabetes treatment

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly disagree	2	4.1	4.1	4.1
Disagree	4	8.2	8.2	12.2
Agree	34	69.4	69.4	81.6
Strongly agree	9	18.4	18.4	100.0
Total	49	100.0	100.0	

Interpretation

The above table results reveal perceptions of participated respondents in this project. They have expressed strongly disagree 4.1%, disagree 8.2%, agree 69.4%, strongly agree 18.4% opinions towards study statement s10: Do you feel that it is worth your while, effort and transport costs to come to the Openshaw clinic for your diabetes treatment?

Comments

Based on the previous high sentiment of enjoying coming to the clinic it could be that the transport costs which are high for the no income, pensioned if lucky ,or those on grants could influence the results to only be the 6 patients saying it is not worth their while. Those that agree could still attribute their thankfulness in being able to receive free medication and healthcare to making the effort and costs of transport worthwhile.

Figure 4.11: Do you feel that you wait too long to be seen by the clinic sisters and doctor?

s11: Do you feel that you wait too long to be seen by the clinic sisters and doctor

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Disagree	3	6.1	6.1	6.1
Agree	39	79.6	79.6	85.7
Strongly agree	7	14.3	14.3	100.0
Total	49	100.0	100.0	

Interpretation

The above table results reveal perceptions of participated respondents in this project. They have expressed disagree 6.1%, agree 79.6%, strongly agree 14.3% opinions towards study statement s11: Do you feel that you wait too long to be seen by the clinic sisters and doctor?

Comments

The honest answer seen here agrees with what we know is a problem in the clinics and other public institutions – long waiting periods. The patients must feel strongly about this for 79% of them to say something against the clinic or nurses.

Figure 4.12: Do you feel happy with the value you receive from your doctor?

s12: Do you feel happy with the value you receive from your doctor

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly disagree	1	2.0	2.0	2.0
Disagree	1	2.0	2.0	4.1
Agree	17	34.7	34.7	38.8
Strongly agree	30	61.2	61.2	100.0
Total	49	100.0	100.0	

Interpretation

The above table results reveal perceptions of participated respondents in this project. They have expressed strongly disagree 2%, disagree 2%, agree 34.7%, strongly agree 61.2% opinions towards study statement s12: Do you feel happy with the value you receive from your doctor?

Comments

The patients are unsure of what to receive or how to benchmark the doctor against, same as with the nurses, hence the overwhelming response in favour of the value they receive from their doctor. From the observations they are thankful to see the doctor.

Figure 4.13: If you were given a blood sugar meter and told to test your blood every day, would you be happy to test every day from now on?

s13: If you were given a blood sugar meter and told to test your blood every day, would you be happy to test every day from now on

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly disagree	3	6.1	6.1	6.1
Disagree	3	6.1	6.1	12.2
Agree	6	12.2	12.2	24.5
Strongly agree	37	75.5	75.5	100.0
Total	49	100.0	100.0	

Interpretation

The above table results reveal perceptions of participated respondents in this project. They have expressed strongly disagree 6.1%, disagree 6.1%, agree 12.2%, strongly agree 75.5% opinions towards study statement: If you were given a blood sugar meter and told to test your blood every day, would you be happy to test every day from now on?

Comments

The patients had seen the machine and briefly explained the working and idea behind the meter. They are happy to receive a free item by a company and which resembles a cell phone which they are told will help them in managing their condition at home. They are unaware of the true benefit yet and are also eager to being able to improve their condition.

4.4 CORRELATIONS

Correlation scales (Interpretation rules)

- The Sig. value (probability value) $p \leq 0.05$, then there is statistically significance correlation.
- Pearson correlation co efficient (r) values starts from -1 to +1

- If -- means negative correlation (If one variable increases other variable will decrease)
- If + means positive relationship. (If one variable increases other variable will also increase)
- - or + indicates direction of relationship between two variables.
- Strength relationship:
 $r = .10$ to $.29$ or $-.10$ to $-.29$ small (moderate) correlation
 $r = .30$ to $.49$ or $-.30$ to $-.49$ medium correlation
 $r = .50$ to 1.0 or $-.50$ to -1.0 large (strong) correlation

Correlations

		s5	s6	s7
s1	Pearson Correlation	.041	.139	.136
	Sig. (2-tailed)	.782	.342	.350
	N	49	49	49
s2	Pearson Correlation	.183	-.101	.062
	Sig. (2-tailed)	.208	.492	.671
	N	49	49	49
s3	Pearson Correlation	.523**	-.123	-.038
	Sig. (2-tailed)	.000	.400	.793
	N	49	49	49
s4	Pearson Correlation	-.176	-.224	.183
	Sig. (2-tailed)	.226	.122	.209
	N	49	49	49

** . Correlation is significant at the 0.01 level (2-tailed).

Interpretation

- The research statement s1 with other statements s5, s6, s7 have **p** values 0.782, 0.342, 0.350 and these **p** values are above **0.05**, it indicates the statement s1 with other statements s5, s6, s7 **does not have statistically significance correlation** between them.

The above non-statistical correlation also applies to all the other questions except for:

- The research statement s3 with other statement s5
- The research statement s3 with other statement s5 has p value 0.000 and this p value is less than 0.05, it indicates the statement s3 with the other statement s5 **has statistically significant correlation** between them. The + Ve sign in front of s5 indicates positive correlation and the p value 0.523 indicates strong correlation between them.
- The research statement s7 with other statement s10 (Interpretation and comment there under).
- The research statement s8 with other statement s12 (Interpretation and comment there under).

Comments

The statistical significance correlation found between Q3 and Q5 is that the positive Q3 sentiment causes a positive effect on Q5 answer. We are aware that the positive sentiment of the patients coming to the clinic is attributed to the fact that they rate the service they receive from the nurses to be good.

Correlations

		s8	s9	s10
s1	Pearson Correlation	-.046	.244	.108
	Sig. (2-tailed)	.754	.092	.459
	N	49	49	49
s2	Pearson Correlation	-.018	.226	-.024
	Sig. (2-tailed)	.900	.119	.869
	N	49	49	49
s3	Pearson Correlation	.019	.127	-.134
	Sig. (2-tailed)	.898	.384	.360
	N	49	49	49
s4	Pearson Correlation	-.224	.317*	.095
	Sig. (2-tailed)	.122	.026	.514
	N	49	49	49

*. Correlation is significant at the 0.05 level (2-tailed).

Comments

There is a moderate positive correlation between S3 and S9: The patients like coming to the clinic because they rate the nurses' knowledge on diabetes to be good and very good and that this helps them to manage their condition.

Correlations

		s11	s12	s13
s1	Pearson Correlation	.062	.013	.020
	Sig. (2-tailed)	.672	.930	.893
	N	49	49	49
s2	Pearson Correlation	.165	.091	-.238
	Sig. (2-tailed)	.258	.533	.099
	N	49	49	49
s3	Pearson Correlation	-.153	-.150	-.099
	Sig. (2-tailed)	.295	.303	.498
	N	49	49	49
s4	Pearson Correlation	.240	-.182	-.048
	Sig. (2-tailed)	.096	.211	.742
	N	49	49	49

Correlations

		s8	s9	s10
s5	Pearson Correlation	.022	-.075	-.275
	Sig. (2-tailed)	.881	.608	.056
	N	49	49	49
s6	Pearson Correlation	.010	.055	-.011
	Sig. (2-tailed)	.945	.710	.941
	N	49	49	49
s7	Pearson Correlation	-.130	.205	.407**
	Sig. (2-tailed)	.375	.158	.004
	N	49	49	49

** . Correlation is significant at the 0.01 level (2-tailed).

Interpretation

The research statement s7 with other statement s10 has p value 0.004 and this p value is less than 0.05, it indicates the statement s7 with the other statement s10 **has statistically significance correlation** between them. The + Ve sign in front of s10 indicates a positive correlation and the p value 0.407 indicates medium correlation between them.

Comments

The majority of patients are happy to still come to the clinic (that they rate high and the nurses as good) and the costs and efforts to do this and as a result this causes a positive effect as they feel confident to self manage their condition at home.

Correlations

		s11	s12	s13
s5	Pearson Correlation	-.240	-.159	.019
	Sig. (2-tailed)	.096	.275	.895
	N	49	49	49
s6	Pearson Correlation	-.168	-.093	-.004
	Sig. (2-tailed)	.248	.526	.976
	N	49	49	49
s7	Pearson Correlation	.156	.163	-.081
	Sig. (2-tailed)	.285	.264	.578
	N	49	49	49

Correlations

		s11	s12	s13
s8	Pearson Correlation	-.036	.377**	.137
	Sig. (2-tailed)	.804	.008	.348
	N	49	49	49
s9	Pearson Correlation	.017	.082	-.125
	Sig. (2-tailed)	.905	.575	.392
	N	49	49	49
s10	Pearson Correlation	.039	-.040	-.033
	Sig. (2-tailed)	.791	.783	.821
	N	49	49	49

** . Correlation is significant at the 0.01 level (2-tailed).

The research statement s8 with other statement s12 has p value 0.008 and this p value is less than 0.05, it indicates the statement s8 with the other statement s12

has statistically significance correlation between them. The + Ve sign in front of s12 indicates positive correlation and the p value 0.377 indicates medium correlation between them.

Comments

In S8 All the patients expressed that they want to improve their condition compared to the way it is at the moment and this creates a positive effect on the way they see their doctor in being able to do this. They attribute high contentment with the doctor as he will help them to better their condition. They see this as “this is what doctors do.” They are unable to evaluate his treatment besides that they are still alive and feel ok majority of times as per the observations.

4.5 CLOSING COMMENTS

There are one or two patients who are unhappy with the clinic and what they receive in terms of healthcare and all the clinic offers. These patients could well be the only two educated patients (a school teacher) and one with a full matric education and hence understand that what they are receiving albeit for free, seems inadequate versus expectation. For the majority the clinic is the best thing they have for free.

Patients in general are thankful to receive anything when they have very little. It is not in the Xhosa culture to be unappreciative or unhappy when you are being cared for, even if this seems somewhat inadequate. The low level of education and understanding of their condition and diabetes results in a low expectation on the nurses and doctor which for the nurses could be perceived to be ideal in terms of basic service delivery and the offering of basic healthcare and not having to work harder for the same salary.

4.5.1 Clinical evaluation of patients blood glucose control HBA1c T-test: Pre- and post-test

The rationale for conducting this specific clinical test is that all the enhanced performance intentions and operational improvements sought are ultimately aimed at

ensuring that enhanced quality of healthcare is delivered at a rural clinic level to patients.

There are sufficient amounts of large multicentre studies conducted in the healthcare environment available that shows clear benefits for diabetic patients in reduction of hard-endpoints and major debilitating co-morbidities resulting in longer chances of survival, by reducing the overall blood glucose levels in the blood stream namely the HBA1c levels. This is the goal of any diabetes medication and therapies by healthcare workers.

We introduced a number of interventions as a multi-disciplinary approach to which correcting medication taking, education, lifestyle changes and regular home testing of blood sugars - being aware of what they mean and how to react to them, form a holistic approach to diabetes self-management. Here we measure the reduction in HBA1c as a result of these interventions. We seek a significant clinical reduction in these levels from baseline. We further check if gender and age contributes to the results in any way.

Interpretation rules:

1. If **p** value is less than or equal **p ≤ 0.05**, statistically there is Significant difference between pre and post test results

2. If **p** value is greater than **p > 0.05**, statistically there is **NO** Significant difference between pre and post test results

Figure 4.14: Paired samples statistics

Paired Samples Statistics

	Mean	N	Std. Deviation
Pair 1 Clinical data-Pre test	9.3970	33	2.62333
Clinical data- post test	7.8030	33	2.02723

Figure 4.15: Paired samples test

Paired Samples Test

	t	df	Sig. (2-tailed)
Pair 1 Clinical data-Pre test - Clinical data- post test	5.818	32	.000

Interpretation

The above T-test results disclose, the p significance value is 0.000 for research project pre, post tests and this value is less than 0.05. It reveals statistically there is **significance difference** between pre and post test results. This means there is adequate significance difference in pre and post tests HbA1c results and difference in towards **-Ve** direction means post readings are much lower than pre test readings, which concludes the intervention has influenced the HbA1c values.

Comments

This is a very positive and important finding. This indicates that we have proved the hypothesis 1 that A PPP in healthcare delivery can increase the performance of a Public clinic in chronic disease management through interventions. The quantitative intervention from the private partner was the glucometer, education, correcting medications and the additional attention given to the patients.

We further prove the Hypothesis 2 that better patient self –management and enhanced disease management by rural clinics can create better clinical control in diabetes patients. The patients had to perform home blood glucose testing and perform self-management by watching their eating habits and doing all that they were taught in the education they received, at home. This was done over three months which is the time period in-between the two tests done. The significant reduction in HBA1c levels after 3 months, which is the earliest that HBA1c levels can be re-measured physiologically, indicates that the interventions worked. We can further add that the added individual counselling and attention given to these patients during the study also created a self-willingness to adjust their lifestyles and to be compliant to the education and blood testing requirements.

Figure 4.16: T-test: Pre-test: gender

T - Test

		t	df	Sig. (2-tailed)
Clinical data-Pre test	Equal variances assumed	-1.563	32	.128
	Equal variances not assumed	-1.517	9.032	.164

Interpretation

The above T-test results disclose, the **p** significance value is 0.128 for research clinical pre test HbA1c and this value is above **0.05**. It reveals statistically there is **NO significant difference** between different gender groups (male and females) readings of HbA1c. (This means gender participants have almost similar readings with the HbA1c and no huge difference in different gender respondents readings).

Figure 4.17: T-test: Post-test: gender

T- Test

		t	df	Sig. (2-tailed)
Clinical data- post test	Equal variances assumed	-2.230	33	.033
	Equal variances not assumed	-2.494	17.453	.023

4.5.2 Anova test: Age groups

Interpretation rules

1. If **p** value is less than or equal **p ≤ 0.05**, statistically there is a significant difference between groups' opinions.
2. If **p** value is greater than **p > 0.05**, statistically there is **NO**

significant difference between groups' opinions.

Note: p indicates probability

Figure 4.18: Pre test vs. age groups

ANOVA

Clinical data-Pre test

	Sum of Squares	df	Mean Square	Sig.
Between Groups	22.393	3	7.464	.398
Within Groups	212.087	29	7.313	
Total	234.480	32		

Figure 4.19: Post test vs. age groups

ANOVA

Clinical data- post test

	Sum of Squares	df	Mean Square	Sig.
Between Groups	10.173	3	3.391	.509
Within Groups	128.905	30	4.297	
Total	139.079	33		

Interpretation

The Anova test results reveal there is **no statistically significant difference** in HbA1c readings of different age groups **respondents towards the pre test results** because this pre test **p** significance value is 0.398 and this value is above **0.05**. This means different **age groups** respondents have almost similar readings **towards** pre test and there is no huge difference in different age groups respondent's readings.

Comment

The no statistical difference found within the age or gender of the intervention group demonstrates that the problems and reduction in blood sugars namely HBA1c levels are not specific to age or gender, provided the understanding is made that the patients are all over the age of 30 years old and more towards 50-60. This informs

that intervention success or failure is not specific to certain age groups or gender responding better or worse.

4.6 QUALITATIVE ELEMENT ASSESSMENT

The observations conducted at the Openshaw clinic by the investigator at the beginning, middle and end of the study as well as close workings with the NGO nurse and director and the programs manager provided key insights into how things are done and perceived by all stakeholders. Namely subordinate community healthcare workers, colleagues, peers, patients and the outside private partners.

The result of the findings in the quantitative analysis as well as the observations culminated in an interview of the nurses with the aid of a semi-structured questionnaire. The questions were crafted around the findings and observations to date and seek clear understandings and themes to the overall clinic operational and clinical element from the nursing staff perspective internal and external to Openshaw.

The intention of the interviews post-test in addition to the quantitative pre and post-test questionnaire completed was to establish the following:

- The level of motivation amongst the nurses to genuinely or not, seek improvements in the clinic operationally as well as the patients management and to their daily duties
- Recommendations from the nurses for any improvements to the clinic or disease area to ensure a better operating environment and patient management
- Feelings towards management and leadership of the clinic and this, being above, below or average performance.
- The ratio of patients seen in a month and annually per nurse versus the requirements of the DOH and the sentiment and reasoning towards the deviation.

- How they feel about the private sector and NGO's in a PPP setting, adding value to the clinic or not.
- The sentiment and inherent culture towards imparting knowledge of disease learning's to colleagues and patients and indirectly seeking if this power sharing is a threat to them or not?

The summaries of the findings are found in the table below:

Table 4.1: Key themes emerging from interviews and motivations

Theme	Frequency
Tools, resources & processes lacking	<p>Frequency – High. Resident clinic nurses were quick to find resource and requirements lacking in order to perform their function effectively and efficiently. It is clear that no training or guidance is given for operational effectiveness or efficiency being important to the success of a clinic. There is no audit of services. There are NCD guidelines however the feeling is that there is no strict application thereof. The nurses agree that an NGO and a private company can add value but again refer to the tools as the value adding element. The learning's that can be obtained from others seems to be slow in acknowledgement. The management of programs and the NGO nurse feel that a poor example is shown by leadership regarding work ethic and expectations. A concern here is that a blame culture has settled in at Openshaw and no accountability for wrong doings is taken by the resident nurses.</p>

<p>Clear lack of leadership and management</p>	<p>Frequency – Low. This is not an open acknowledgement from the nurses at Openshaw. They seem content with the “no management” style as this allows flexibility and ease of work. Nurses come and go as they please. There seems to be little work ethic in working hours. Working decisions are made as to what the clinic needs, by the staff themselves. No reference is made to the Supervisor or the DOH guidelines. Recommendations from DOH are seen to be far-fetched and not designed with the real daily life at a clinic taken into account .The clinic recommendations are based on processes and resources incl specialities needed. The nurses in Openshaw feel the management is good only because it is non-existent. The NGO nurse and Program Manager are very concerned, as the lack thereof is impacting healthcare delivery. There is no visible leadership, on the ground , in the culture or in clinic management except from Sr Buchan. This is critically needed for enhanced performance.</p>
<p>Hard work and more effective work is non rewarding</p>	<p>Frequency - Medium. The nurses are all motivated to see a better clinic in the future, some more than others, however without a compelling vision set by the leadership and goals to achieve this, any recommendation for harder or more work is not readily accepted. The salary and perks would remain the same and if more was done it is not felt that it would be seen and recognized, least of all remunerated. The issue of a low patient to nurse ration of 8 versus expectation of 35:1 was not well accepted. It was felt that this was not communicated to them before and other felt that it is an Unrealistic target without the time spent on certain conditions being borne in mind. This is a sensitive issue that would require careful management.</p>
<p>Patient empowerment and Getting the basics right</p>	<p>Frequency Low: The intervention of the glucometers has worked well from a patient empowerment perspective and the multidimensional approach has created a heightened expectation from the patients to the nurses. The patients are now eager to see more and</p>

	<p>this has created a secondary impact. The nurses do not seem over ecstatic about this new expectation. All the nurses internal and external agree on wanting to deliver better healthcare to the patients, however this did not blurt forward from the Openshaw nurses. Expectations of delivery vary and all do want to share knowledge to colleagues and patients, they are just lacking direction and reassurance that this will not be a threat to their jobs and will in fact be rewarding and recognised as a positive.</p> <p>The Openshaw Clinic is in dire need of leadership and effective management, from the Supervisor. The staff have been allowed to do their jobs as they see fit. It is no wonder that this culture has emerged.</p>

4.7 CONCLUDING OBSERVATIONS FROM THE VISITS TO THE OPENSHAW CLINIC

4.7.1 Staff behaviour

1. A key motivational factor was that Sr Buchan (Head of Regional Programs) and the NGO Sister coupled to the investigator showed interest and paid attention to the nurses and the clinic. This increased the motivational levels alone in the nurses and patients.
2. The head sister tends to walk around a lot supervising, chatting to patients and nurse assistants yet not doing a specific job or consulting with patients. The other sisters are attending to the patients yet this seems to be fine with all.
3. There is a concerning issue we see on each visit. There is never a full complement of employed nurses at the clinic at any one time. Upon investigation we discover that there is always a nurse or two on leave – annual or sick, on course attendance or did not come in today. There is a visible lack of a work ethic in this regard. The nurses are at free will to alter their working hours as deemed by the work load and outside commitments. A further concern is the sick note that the nurses can give patients requiring this for their employee. A question looms if this is not an easy system for abuse and leading to an increase in clinic visits, increasing patient numbers. A win win for all?
4. An observation is that the nurses possibly cover for each other and allow leave from work without this being reported.
5. This clinic is not busy enough for all the nurses needed together, stimulating the latter observation to possibly occur.
6. The nurses are always positive in approach towards each other and the patients, however this does not translate into quality healthcare delivery.
7. It is clear that a job is being done for a salary without a clear, compelling vision or strategy in place being pursued and this can be attributed to the lack of visible leadership at the clinic.
8. There is a clear lack of privacy given to patients in treatment. Once a door is closed there seems to be an open door policy and assistants and others can enter at any time to answer a phone call while a consultation is in progress.

This could well lead to a patient/ nurse trust levels being reduced as confidentiality seems breached.

4.7.2 Operational aspects

1. The clinic phone was broken on two visits out of four. This can take up to 3 days to be repaired leaving the clinic completely isolated without communication to the outside world except by nurse private cell phones
2. There is no chronic registry of patients that seems to work, only a tick registry.
3. There is no regard for costs. Stoves are put on full as heaters when cold despite each room having heaters. All lights are on despite room being unoccupied. Consumables are used readily and a perception of wastage is given.
4. Individual clinic operational plans for following year are required. Guidelines are given and the clinic (head nurse) chooses which fits that clinic, then the plan is developed. No leadership is visible in this process and again self management of this by the clinic is evident. The supervisor called in June to say that the plan was needed that same day without warning, hence a rushed plan was put together which is then seldom a reality plan.
5. Measurement of nurses is according to their evaluated job description on pre-determined days. No clarity regarding this process was able to be explained.
6. Openshaw clinic has seven community healthcare workers, one for each catchment area feeding the clinic. These are funded by the SPF (participating NGO) at R1000 per person per month. The SPF has ensured they have clear roles and responsibilities.
7. Programs manager Sr Buchan has a realistic, concerning yet positive approach to the clinic's poor standards of quality healthcare delivery and the operational issues. The problem areas and causes of poor healthcare delivery are pointed out to the staff however this cannot be translated into improvements as she is not their supervisor. No performance management process is in place for poor performance and ultimately this is the supervisor's role who is seldom at the clinic. Distance management does not work.
8. The glucometers given to patients as the intervention has empowered the patients and created a lever for heightened expectations from the nurses.

9. There seems to be a poor working relationship and difficulty in communication between the head of programs and the clinic senior management. There is evidence of more effort and concern for the clinic from a Programs point of view compared to the management of the clinic. A clear mismatch in these values with different viewpoints will result in improved operational aspects not becoming a reality unless there is regular communication, synergy and a common shared vision for excellence. The clinic management was not present in any one joint visit from the project team for this pilot.

4.7.3 The NGO – Small projects foundation as pilot leader

1. The initial project was driven by the NGO and Dr Cromhout. A meeting was held between most stakeholders (clinic management was not present or invited) to discuss the project. Inputs were put in from the partners as of the PPP, DOH, SPF, Buffalo City Programs Manager and Roche Products.
2. The project rollout plan and further agreed to objectives are attached as the meeting minutes as an appendix 1.
3. The SPF provided key indicators and assistance to the investigator in how to go about the fundamentals for the study, however further involvement and monitoring to the actual pilot was lacking. The expertises of the NGO head in the pilot execution could have been extremely beneficial due to his educational accreditation (DBA) and experience.
4. The NGO provided a nurse with an interest in Diabetes due to the expertise's of working with retinopathy (a key complication in poorly managed diabetics) this lead to a donation from Roche to have the nurse brought to Johannesburg to attend and be accredited by the only nurse educator course in South Africa the CDE course. Despite this there was a dual agenda from the nurse to continue with an eye project during the project, however she did give her best effort to make the pilot work.
5. NGO's are a vital link and intermediary between private and public in any project. However this needs to be well managed and clear roles and responsibilities defined as the NGO nurse did follow her own agenda somewhat creating a level of discomfort for the head of programs and the nurses at the Openshaw clinic.

CHAPTER 5

RECOMMENDATIONS AND CONCLUSION TO THE OPENSHAW CLINIC

5.1 INTRODUCTION

We provide recommendations in line with the agreed to measurement tool for increased performance of the clinic – the balanced scorecard. These measures discussed below are specific to the clinic and are deemed to be critical to the enhanced performance of the clinic in line with the strategy of *Ensuring a high quality of healthcare delivery through increased clinic performance and operationally efficient clinics*. We aim to provide a chain of cause and effect relationships that ultimately reflect a chain of performance drivers that determine the effectiveness of the strategy implementation.

The importance of the outcomes of the pilot project conducted will need to be evaluated by the EC DOH and we believe that credibility can be achieved by the DOH if and when this outcome can be regionalised. It is without doubt that a formal process with transparent processes and steps as well as clear outcomes and benefits to the people of the province will need to be conducted in order to gain maximum support and social agreement.

5.2 FINANCIAL/ EFFICIENCY IMPROVEMENTS

1. **Strategic objectives:** Increasing the ratio of patients/nurse for optimal cost efficiency within the clinic.

Drive future costs down in diabetes management by reducing HBA1c results in patients which will reduce risk of high visitations and debilitating complications.

2. **Measures:** We seek to measure the progress of the above by increasing the number of patient visits to nurse ratio without reducing patients numbers, and lower overall number of nurse work days per month which will all increase this ratio

3. **Targets:** 15 patients/ day/ nurse for intensive conditions (e.g. pregnancy, and all NCD diseases). HBA1c levels of patients under 8.
4. **Initiatives:** Removal of a professional nurse to another HR needing clinic for optimisation of efficiencies. Constant 3-6 monthly measures of HBA1c of patients and effective management of the diabetics as identified in the learnings and customer arms.

5.2.1 Increasing the ratio of patients to nurse for optimal cost efficiency

Currently there are 7 professional nurses in Openshaw. It is clear that this number of nurses compared to the number of patients is too high. This is causing higher costs for the clinic and a low ratio of patients: nurse. We demonstrate below by transferring a professional nurse to another clinic what this does to the efficiency calculations:

Figure 5.1: Openshaw data, patient and nurse day sheet

Sort Order	DataElementShort	Apr-08	May-08	Jun-08	Jul-08	Aug-08	Sep-08	Oct-08	Nov-08	Dec-08	Jan-09	Feb-09	Mar-09	Grand Total
1	PHC headcount <5	163	186	204	211	230	304	168	213	168	139	296	243	2525
2	PHC headcount >=5	755	925	997	869	1230	1310	953	1000	762	887	1106	1024	11818
3	PHC hcnt 7pm to 7am	0	0	0	0	0	0	0	0	0	0	0	0	0
4	Nurse work days PHC	159	121	123	154	141	149	156	165	133	134	154	159	1748
5	Prof Nurse work days	137	104	107	132	119	127	133	154	105	112	118	137	1485
6	Nurse Assist. work days	22	17	16	22	22	22	23	11	28	22	36	22	263
7	Seen by doctor ref	0	35	44	41	79	47	39	35	45	29	55	47	496
9	Doctor work days	4	4	4	4	4	4	4	4	4	4	4	4	48
11	Supervisor visit	1	1	1	1	1	1	1	1	1	1	1	1	12
13	HIV couns (excl ANC)	35	14	22	40	30	29	20	61	26	19	25	30	351
119	HIV test (excl ANC)	27	12	17	34	26	22	19	51	18	15	21	28	290
120	HIV pos (excl ANC)	2	3	2	6	7	9	3	11	2	3	2	5	55
121	Hypert on treatm	0	0	21	0	1	9	5	15	5	0	10	3	69
150	Hypertens follow-up	279	294	243	306	313	321	255	285	155	261	334	302	3348
151	Hypertensive on reg	310	310	331	96	278	381	390	395	410	410	344	344	3999
152	Diab on treatm	0	4	2	11	0	1	4	2	0	0	1	0	25
153	Diab follow-up	40	49	54	46	57	37	52	55	38	53	50	61	592
154	Diabetes on reg	60	64	66	13	71	70	71	75	77	77	54	64	762
155	Chronic visit	385	774	415	576	460	908	582	799	274	379	475	447	6474
350	Diabetes visit	40	53	56	57	57	38	56	57	38	53	51	61	617
351	Hypertension visit	279	294	264	306	314	330	260	300	160	261	344	305	3417
352														

Figure 5.2: Costs for Openshaw Clinic

<u>Schedule of Openshaw Operating Costs for 2008 and no of patients seen in 2008</u>	<u>Total Costs 2008</u>
Salaries (1 x Operational Manager, 1 Chief professional nurse, 4 Senior Professional Nurses, 1 Professional nurse, 1 Enrolled Nurse, 3 Property Care Takers	1,526,232
Drug utilisation	146,201
Telephone	3,336
Electricity	7,700
Total costs for 2008 Financial Year	<u>1,683,469</u>
Total no of patients seen in 2008	14,343
Total cost per patient in 2008	117.37
No of working days / annum	1,748
Total Ratio of patients / nurse seen per day in 2008 (1716 nurse days worked - 7 total nurses)	8
DOH required patient ratio per day	35
Average Prof Nurse Salary / month	15,000
Annual salary savings only of Removal of 1 prof nurse in order to reduce costs and increase nurse/patient ratio ,before other costs to company	180,000
New Total annual costs / Clinic	<u>1,346,232</u>
New ave work days / annum @ ave 85 work days/ month	1,283
New Ratio: Nurse/ pt per day	11

Key Change in efficiency

By transfer of one Prof nurse (occurred August 09) to another clinic we increased the ratio of pts / nurse/ day, reduced total costs and therefore increased the efficiency of the clinic.

5.2.2 Enhancing the efficiency and performance of the clinic with significant reductions in HBA1c

With the statistical reduction in HBA1c levels we have contributed to reducing the risk of costly complications that these patients would develop with high levels of HBA1c. To calculate this exact cost is difficult as this would vary case per case and over a period of time which too cannot be determined from this study. We have proved statistically that with interventions we can reduce these levels significantly. This is in addition to reducing the loss of income and morbidity associated with these debilitating complications in the future. This cost can also not be calculated here as this would require a Pharmaco-economics study to evaluate this cost versus savings.

By significantly decreasing the HBA1c levels we have achieved enhanced quality of Healthcare delivery, a measure we included for improving the efficiency of the clinic.

5.3 OPERATIONAL/ INTERNAL IMPROVEMENTS

1. **Strategic objectives:** Drive efficiencies into the patient visitation and flow system, create an effective drug forecasting and management tool.
2. **Measures:** We seek to improve on and create a more effective flow patient system in the clinic and reduce the lengthy queues and patient waiting times. Reduce frequency of unscheduled arrivals. We also seek to create a drug forecasting and management tool to improve on the out of stocks and poor drug access for patients.
3. **Targets:** Reduction in patient waiting times that is measured as positive in a patient satisfaction index. Limit out of stocks of A products to zero per year.
4. **Initiatives:** A re-organised patient flow system and initiatives to drive this. Design of a computer assisted drug importance ranking system that is usage decided and not cost. A forecast system that facilitates no out of stocks of key products.

The operational aspects identified for improvements are the following:

1. The clinic patient flow process and reduction in long waiting periods
2. The drug procurement system and management

5.3.1 The clinic patient flow process

The quantitative and qualitative findings have shown that patients are unhappy about the long waiting periods for their treatment and to be seen to. The nurses are aware of this and agree that this needs to be looked at and the waiting times reduced. This will also add to the patients satisfaction levels and improve the customer arm of the BSC.

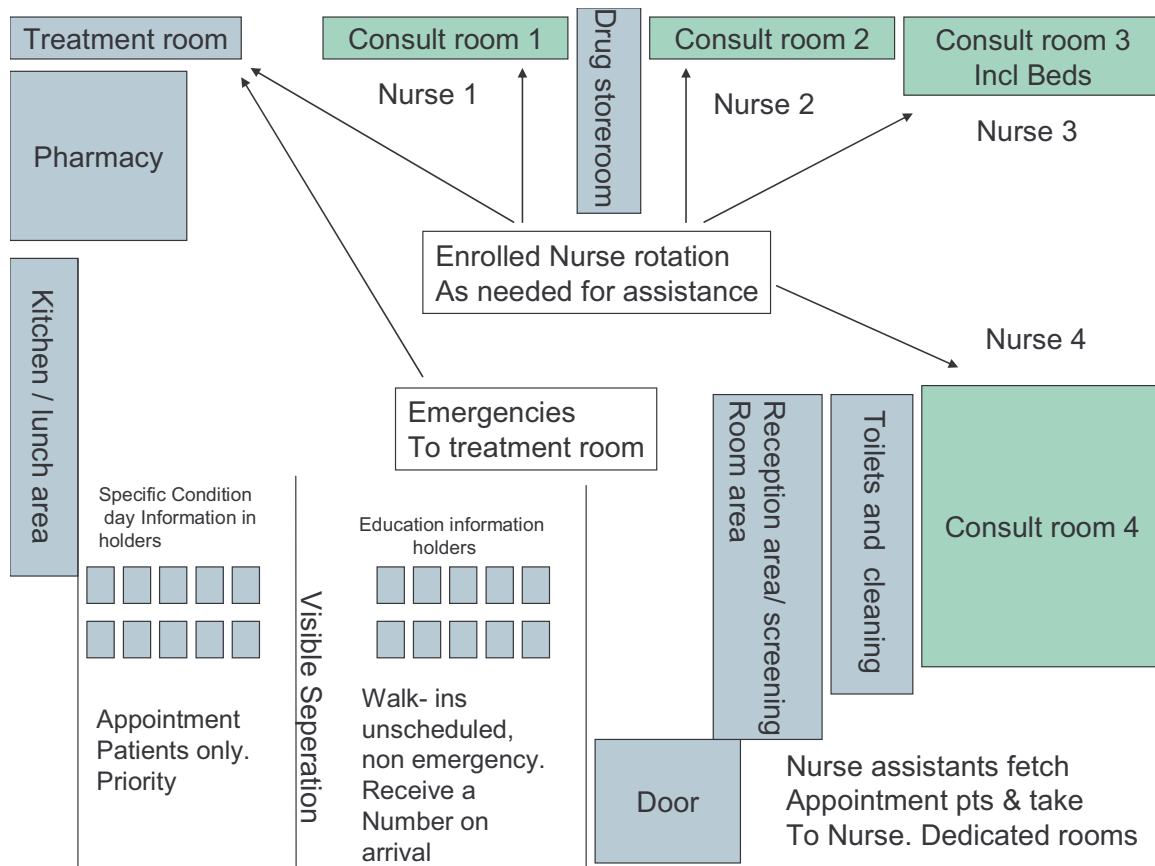
Currently there are no appointments made for regular patients which return for their monthly check up and medication supply. Unscheduled patients cause delays in the scheduled patients for that day, as well as for themselves and the emergencies. There is a dedicated day for diabetes committed to, that was made for the purpose of this study and all patients were aware that they needed to return on a specific Thursday every month as told to them in addition to the doctor usually attending once a week on this day. This worked well as majority returned on their specific date, also aware that they were going to be giving more education and feedback on their home blood sugar readings which were downloaded and possibly see the doctor if an appointment was made to see him.

The patients that are given a date to return are not given an appointment time. They have to slot in with the other walk-ins and other patients who are told to come back on the same day perhaps for a different condition or medication collection.

5.3.2 Observed movement/flow of patient

1. Both scheduled and unscheduled patient arrives in the morning and announces arrival.
2. Patients sit down until scheduled patient is called to the reception room converted into a screening room.
3. Nurse assistant does the blood sugar tests, blood pressure and weight.
4. The nurse records this in the patient book and pt returns too waiting area to see the nurse.
5. Nurse calls a patients (not specific to a nurse or according to how long needed i.e. a pt with requiring a quick item or measurement can be given preference over the waiting patient requiring a more in-depth visit).
6. Patient consulted and taken to waiting area for pharmacy nurse to complete prior patient or with consultation.
7. Patient called to receive medication and leave the clinic.
8. Unscheduled patients depending on emergency or not is attended to between patients and not according to any specific process. This causes delays in the seeing of scheduled patients and emergencies

Figure 5.3: Proposed flow diagram for patients



5.3.3 Suggested operational patient flow

1. Registered patients are given appointments and this is assigned to a particular nurse who has had the specialty training in that disease area. The approximate time needed for each patient including all requirements and counselling included into this time slot is given by the nurse when planning the scheduled patients visits requirements the previous afternoon.
2. Unscheduled patients and non emergencies are given a number and they are seen to when the scheduled patients are completed, according to their arrival time and number. This will also serve as a deterrent to arriving without an appointment. Emergencies are excluded from this.
3. The sheet of patients for the day per nurse is given to them the day before in order to prepare what consumables and time is needed. This is preparation for each patient.
4. Before the clinic shuts for the day, the education stands are filled with that disease specific, localised, visual education information. This follows a course

throughout the year to ensure all education areas are then covered in that disease.

5. When the clinic opens scheduled patients move to the right for appointment patients area. The nurse/s partaking in that day handles these pts for relationship and expertise's.
6. The reception room becomes the data and information room only and is under lock and key handled by head nurse. A recommendation of a computer for all pts data capture, practice guidelines and clinic, disease knowledge management, reporting is stored here.
7. The patients screening tests are conducted in the treatment room by the nurse assistants.
8. The remaining three nurses either assist with the disease day pts depending on the number or they will see the unscheduled, walk-inns in a specific consulting room.
9. Each room has a theme and the education in the room walls and on tables educates on a specific disease. 5 rooms and 5 main disease themes. HIV/AIDS/ART. NCD (non communicable disease), Cardiovascular room – hypertension, diabetes, cholesterol, ante-natal room. When pts enter this room they identify their condition with the theme encouraging the patients for self management and sensing better care.
10. The patient once seen by the nurse moves to the pharmacy where the dedicated nurse who has been sent (one for every clinic) for the dispensing license course and handles the stock management system, hands the patient the medication which is pre-prepared due to the knowledge of the patients arrival and medication required.
11. The patient then leaves the clinic and goes home.

5.3.4 Recommendations for increasing efficiency in patient visits

- Dedicated disease days are set up for calendar year i.e. diabetes days, AIDS days, ARV and counseling days, ante-natal days.
- Communication board outside clinic showing which disease day that day. This promotes awareness of the treatment and conditions to community.

- A reminder system can be instituted for patients' appointments via SMS.
- Nurses are further trained according to one of the most important and frequently seen condition. There needs to be a nurse who is the leader for a disease area. This nurse is the head of that disease and ensures the other nurses respect this.
- A computer system with internet connectivity is required for patient data management, calendar and flagging of non-arrivals, reminders. Clinical knowledge management and stock ordering/ procurement process and regular reporting. E-mail connectivity to the clinic and head nurse will increase efficiency in requirements and reporting.

5.3.5 Drug management and forecasting tool

Clinics are faced with continuous drug and essential medication shortages throughout the year. This causes tremendous inconveniences and non-compliance with patients taking chronic medication and can end up that a patient can go for a week or even a month without medication as they cannot get back to the clinic until they have transport funds again or simply are too far away.

Clinics try to borrow stock from surrounding clinics in this situation and have set up a borrow system which adds to the collective problem as forecasting your stock requirements now become even more difficult.

Process

1. Clinics receive stock every 5-6 weeks and can only order on stipulated days once a month as dictated to by the provincial depots.
2. The order is placed 2 weeks before due arrival and items ordered are prioritised according to cost and not utilisation as all clinics run on a budget which the provincial supervisor monitors.
3. The forecast is inaccurate and has no measure of history or peak seasonality and is based on previous month's movement.
4. The order is then manually created in an order book and the regional office sends a person from East London (60 km) to collect the actual order a few days

before it is due, for checking and signature prior to being placed by the regional supervisor once checked.

5. Codes are used for products which if entered incorrectly or if changed by the depot, the order sent is incorrect with wrong items or dosage forms. Only 6 weeks later can the correct stock be received if done correctly then.
6. This process is manual, inefficient and is plagued with errors and potential for errors ultimately resulting in health consequences for the patients.

5.3.6 Suggested recommendation to drug management and forecasting process

1. A forecasting tool needs to be designed on a computer placed in the clinic.
2. Full accountability and inclusion into the objectives and deliverables for this one nurse is required
3. This nurse needs to have completed the accredited dispensing course .All drugs need to be classified according to A, B and C which is according to most frequent and higher usage (A) down to least used (C) and not cost.
4. These A drugs need to be forecasted for a 12 month period on an APO system (A product optimisation).

Figure 5.4: Clinic drug forecasting and APO system for 2010

Clinic Drug Forecasting and APO System for 2010

Drug Name	Dosage	CAT Code	<u>2009 Historical usage report</u>												Total Annual usage			
			Jan	Feb	Mar	Q1	Apr	May	Jun	Q2	Jul	Aug	Sep	Q3		Oct	Nov	Dec
A Product																		
Metformin	500mg	111	50	80	100	<u>230</u>	100	105	95	<u>300</u>	125	138	121	<u>384</u>	113	157	152	2250
Gliclizide	10mg	222	20	15	30	<u>65</u>	28	32	36	<u>96</u>	40	31	37	<u>108</u>	52	59	38	687
Drug Name	Dosage	CAT Code	<u>2010 APO Forecast</u>												Total Annual usage			
A product			Jan	Feb	Mar	Q1	Apr	May	Jun	Q2	Jul	Aug	Sep	Q3		Oct	Nov	Dec
Metformin	500mg	111	160	152	165	<u>477</u>	163	171	180	<u>514</u>	181	185	190	<u>555</u>	194	198	203	3688
Gliclizide	10mg	222	57	36	65	<u>158</u>	68	72	78	<u>218</u>	84	91	97	<u>272</u>	103	109	115	1624

5. The APO system requires input for the following year in Dec the previous year as exemplified above.

6. Historical sales by month, Qtr and annual are used in the tool for reference purposes
7. The APO forecast is updated each month for the earliest being for 2 months later according to increase trends in disease or conditions and prescribed medications.
8. This is updated directly to the supervisor monthly and 1 week prior to order placement dates by the depot
9. This will assist the depot in knowing how to place their orders with manufacturers and to predict requirements for coming months, making the entire system more predictable.
10. All stock purchased and used is recorded. Usage is recorded against the patients data which is now all kept on computer (backed up daily). The computer system will flag when the pt is returning and medication required as well as flag the system when A stocks are not being replenished (buffer levels are pre-set and warning given when low and will indicate an order is due).
11. A buffer of A stock is critical. Due to the long time lines for order arrival and often incorrect stock sent, this needs to be at least 4-6 weeks stock to prevent clinic stock outs and depot stock outs as well as keeping A stocks at levels which can supply a clinic for a month if the depot is out.

5.4 LEARNINGS AND GROWTH

Growth in the BSC looks at the learning's obtained by the nurses and the support staff which enable growth within the clinic. In order for this perspective to work there needs to be an existent culture of learning and growth and sharing of these learning's not only within the clinic but within the region. We look at these issues in this section and creating specialities in healthcare provision for learning's and growth in disease management. Key requirements for learning's are that three kinds of motivation needs to take place:

1. More attention needs to be paid to the nurses and clinic staff by the supervisors and the local Department of Health.

2. Regular Feedback from the patients must be encouraged and facilitated around nurse driven initiatives and self-management as this is motivating as it heightens expectations.
3. More motivation from the community healthcare workers due to the empowerment factor

Strategic objectives: Create a learning culture in the clinic that drives disease learning's and knowledge sharing within and external to the clinic.

Measures: A disease specialisation program involving regional integration and implementation. Incorporation into the performance management and job specification of each professional nurse in each clinic. Specific disease education days for patients for each NCD and priority conditions (max 4) held at the clinic and at a community location. This element will be discussed under the patient/ customer arm of the BSC later in the recommendations.

Targets: Creation of a learning and disease accountability culture within the clinics by end of 2010.

Initiatives: Compulsory, quarterly, regional, disease specific 2-3 day workshops for designated (agreed to) professional nurses. Incorporation of a leadership objectives section of the performance review and job spec which measures this implementation. Monthly rotating community education day per specialisation Professional nurse. One clinic based-community education day every per month per priority disease. Total coverage of three therapeutic area educations per clinic every year.

5.4.1 Nurse specialisation and up skilling program for clinic and region

- Nurse makes the decision of which compulsory specialisation from choice of the four prioritised options.
- DOH and regional programs manager to facilitate, source and finance up skilling and training in specific disease area, with accreditation for 2010.
- The newly trained nurse is measured on her impartation of her knowledge on the fellow learners at the clinic through regular, scheduled, compulsory disease feedback discussions between nurses at the clinic every month. A 360 view

assessment is required as part of the nurse evaluation of annual objectives. Learners are compulsory to attend for instilling this culture into them for future sustainability.

- This culminates in a further compulsory quarterly and regional disease specific or grouped (NCD) feedback and discussion workshop facilitated by the program manager for the region as part of the PPP. Amongst tools used we also introduce a visual training guide for the nurses to be trained on in order to train the indigent often uneducated patients in their native language as a tool funded from the participating private companies with the direction and focus of this tool decided with the NGO. The private companies' part of the initiative takes responsibility of ensuring up to date content and new direction in disease management and the presentation to the regional workshops.
- The nurses then return to their clinics armed with the new knowledge and learning's to implement within their individual clinics.
- The learning's are documented and entered into the knowledge management portal of the clinic computer for continuation of these practices and clinic knowledge retention. This is also a measure included in the nurse job spec.

The implementation of such a program is dependent on the buy-in and agreement of the need thereof by the senior management team. This would form part of the requirements in the achieving of the strategy in reaching the agreed to vision by the senior management team.

5.6 CUSTOMER/PATIENTS

This perspective looks at the patients as the customers and in this context, how they view the clinic from the perspective of the quality of healthcare they receive, the performance of the nurses and clinic and their overall satisfaction levels. The difficult element in this context is that these are non-paying customers and the receivers of the clinics programs and the very reason for the clinic's existence. It is due to this that there is a confusion in who the customer really is.

The qualitative element of the nurse interviews revealed that the prevailing perception is that the DOH and their supervisors are the customers and the ones to perform for, though without mention that the patients are not. This mind-shift needs to be changed to ensure clarity that the real “customer” is the patient and their receiving of quality and effective healthcare as the goal.

The reality is that all the objectives and strategies put in place throughout the balanced scorecard are to ensure that the patient receives enhanced and quality healthcare. The only additional customer initiative we still need to cover here is the self- management of patients through clinic education days coupled to in-community disease learning’s.

Strategic objectives: Create a patient self- management disease program

Measures: Continuous reduction in condition specific markers (e.g. reduction in viral load in HIV positive patients, reduced rate of new infections, in diabetes: continuous reduction in blood glucose control -HBA1c levels).

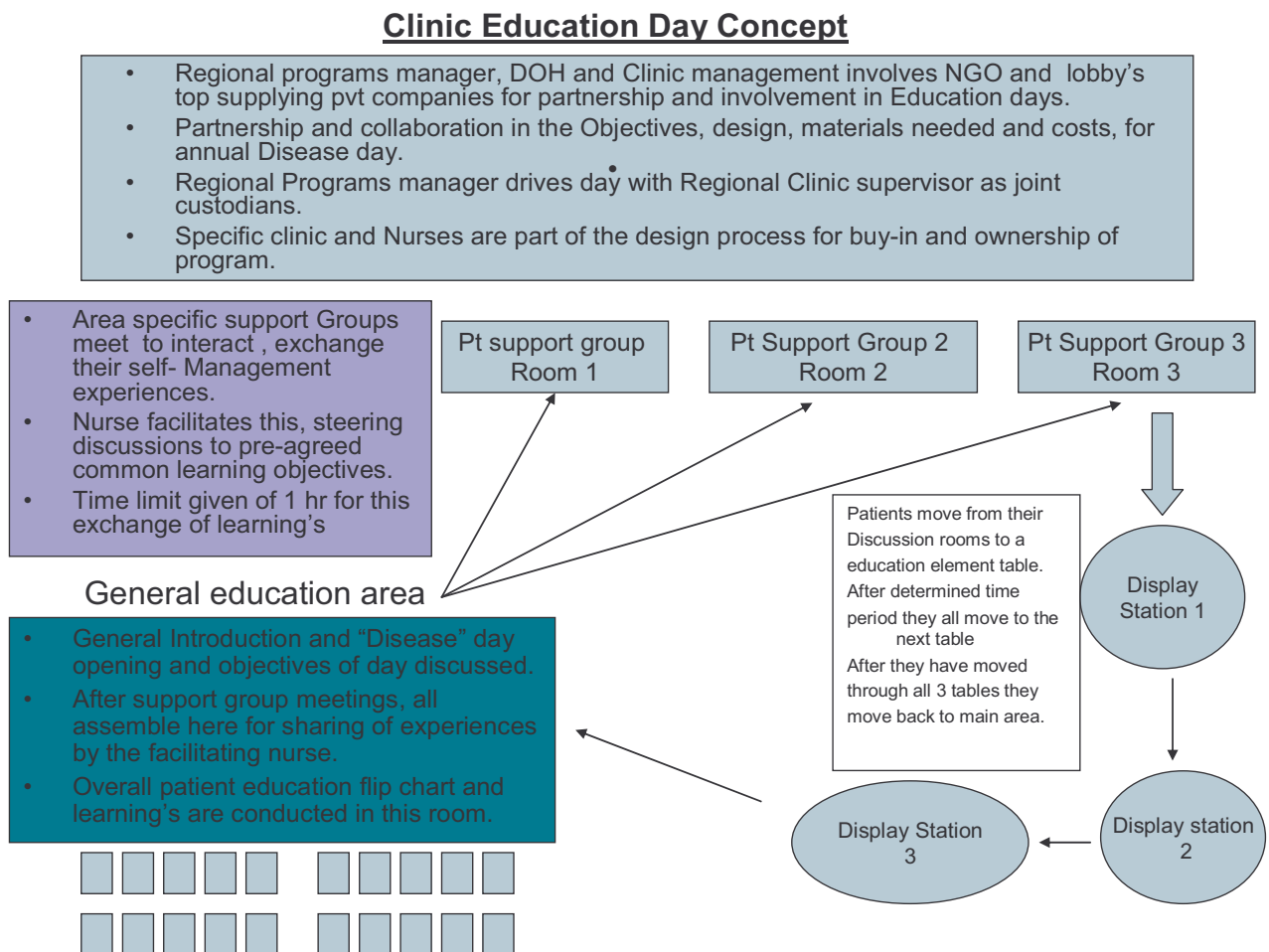
Targets: Diabetic patients HBA1c levels to below 8 in diagnosed patients and improvement in lifestyle and prevention of diabetes measured by a reduction of 25% in new diagnoses.

Initiatives: Specific disease education days at the clinic and “in the community” education, and support groups that change behaviours and create self-management of conditions.

5.6.1 Clinic education days

The literature suggests that patient interactions amongst themselves provide valuable learning’s that Healthcare workers struggle to achieve, due to not being in the shoes of the patient. The concept of Clinic education days is not unknown. The following can be done to drive a jointly linked clinic disease education day program and follow through “in-community” program.

Figure 5.5: Clinic education day concept



5.6.2 "In-community support" groups

Key objectives: Access and continuity in learning's, community support groups

Key problems identified in the observations, interviews and quantitative questionnaires is that patients are challenged by the distances and costs to get to their nearest clinic. Rural clinics feed a large area and often villages are located in geographically challenging areas. This affects compliance to therapy and lifestyle changes required cannot be well managed, especially if a patient misses a monthly visit. Access to healthcare remains a challenge.

Once the clinic support groups have been established according to sub- regions, a nearby meeting point in that sub-region for regular condition feedback and group interactions or one on one discussions needs to be implemented. Currently the community health workers do make home visits to patients in order to check compliance and provide assistance, however this is not a structured and managed program. The value of this is questionable.

A key departure point for sustainability of health education into the future for the PPP could be the establishment of a container placed in each of the rural, sub-regions. This container could be equipped with basic education and information for the four priority conditions and with a table and chairs to provide a meeting point for the support groups. This container could also be used for the community visits by the specialised nurses during the course of the month. Issues that would have to be considered would be:

- Power and safety of the container contents.
- Accountability and custodian of the container/ venue.
- Transport for the community worker and professional nurse to the container.
- Safety of the above personnel when travelling alone.
- Development of a continuation of the clinic program for the containers.
- Feedback mechanisms.
- Frequency of support group meetings.

In conclusion this element is imperative for self-learning and knowledge sharing amongst patients with the same condition and provides the “legs” and sustainability of continuous education. This element needs to be developed further post this study.

5.7 CONCLUSIONS

The study has looked at the balanced scorecard as the measurement process in order to realise the vision and strategy that the program manager has for the clinics with healthcare delivery. We have proved the quantitative hypothesis 1 and 2 by

significantly reducing the HBA1c levels - which remains the gold standard of diabetes management. This was performed as a multi-disciplinary approach with interventions. We have looked at the operational aspect of the clinic in order to understand the current operating conditions and operational reality, the problems and concerns and have recommended solutions in line with the balanced scorecard approach. This was done with a qualitative approach to the clinic and has ensured that our recommendations have included the learning's in this element of the study. We summarise the findings and recommendations to date as follows:

- **Financial perspective**

Key issues – No cost efficiencies in place. Low ratio of nurse to patients seen per day.

Recommendations and implementations – The costs have been reduced by transferring one headcount to another clinic simultaneously increasing the nurse/patient ratio. We have increased the efficiency of the clinic by driving a significant improvement in the diabetic HBA1c levels indicating improved clinical control through interventions, as this is a major contributor to debilitating and costly complications that diabetic patients are exposed to.

- **Operational/internal perspective**

Key issues: Poor operational excellence and lack of efficiencies. Long waiting times for patients, high level of unscheduled patient arrivals creating delays in scheduled patients for that day. No patient management process in place, poor stock control and regular drug, out of stock situations.

Recommendations and implementations: - We design a new clinic patient flow layout that facilitates more efficient flow which aims to reduce the time wastage and long patient waiting times. We encourage scheduling of patients as a priority on an appointment system which facilitates pre-planning of the patient needs and requirements which allows a time slot per patient to be allowed. We recommend how to handle unannounced non emergency patients in order to reduce the frequency of unscheduled patients.

We recommend a new drug stock management system that priorities high usage drugs and not by high cost. We recommend a forecasting system that stimulates pre-thought and future requirements and schedules key drug usage for a year in advance with buffer stocks.

- **Learning's and growth perspective**

Key issues: Lack of a learning culture and knowledge retention rather than knowledge sharing.

Recommendations and implementations: - The setting up of a disease specialisation program. Nurses choose the choice of specialisation from the choices available as a compulsory requirement. This is enhanced with learning's driven as a regional workshop initiative where cross-experience sharing and discussions regarding a specific disease area is focused on. Private companies are involved with the risk sharing by providing education and current practices and assistance towards the workshops as the private partner in the PPP. Leadership and senior management are part of the process.

- **Customer perspective**

Key issues: No process to facilitate and drive self-management of patients from clinics. No education days or initiatives at the clinics or in the community programs.

Recommendations and implementations: We introduce the concept of specific clinic education days and the process to drive this and the set-up of the concept. We further devise a patient flow layout in order to manage the education and patients and obtain maximum learning's for all. We continue this with recommendation around an "in-community" support system with support groups and a venue for various chronic disease support groups.

5.8 CLOSING CONCLUSION

In conclusion with all the findings and recommendations which have been directional to a much needed and future problem in healthcare, namely diabetes as a part of non-communicable diseases, the investigator is acutely aware that with the involvement and created partnerships with the private and NGO elements in this study, a framework for future PPP's in Healthcare, of this nature, specifically in NCD's is required. This key consideration points Framework can be seen in Appendix 3.

Design of a framework for PPP's in healthcare delivery would need to incorporate all the findings within the study as well as more findings specific to other healthcare delivery conditions that are not necessarily chronic or NCD-based. These would provide valuable insights into ensuring that the rural clinic becomes an efficient and performance driven vehicle for effective healthcare delivery overall and not specific to a spectrum of healthcare only. The initiatives in this study for implementation of changes and improvements in clinics represent only one sector, yet a vitally important sector of the healthcare environment. We would need to look for the key components for a proper PPP framework in this arena for someone to build on into the future.

Effective leadership represents probably the most important pillar on which to build a successful and efficient healthcare delivery system. Without this instilled right at the top structures in a country to the top structures of the healthcare sector, it becomes a silo and near impossible attempt to drive programs and performance enhancing initiatives at any lower levels. Without a filtering down of strong leadership and a clear, compelling vision bought into by all, it becomes difficult to expect the lowest subordinate levels in the hierarchy to assume this performance enhancing culture in their daily environments. Leading by example or Walking the Talk is an important factor in expecting earth moving change from people. When dealing with people and new expectations, one has to be acutely aware of past expectations, prevailing situations, localised cultures and perceptions, mannerisms and environmental factors. An important confirmation from the Minister of Health in the Department of Health is the commitment to NCD's and specifically diabetes in the 2010 strategic

plan. To quote *“Moving into 2009/10, the Department will continue to implement interventions to curb the impact of NCDs. Primary focus will be on diabetes and hypertension as proxy conditions, but effort will also be devoted to other chronic conditions.. The diabetes strategy will be implemented jointly with other departments in the government social cluster. The goals of the strategy include preventing diabetes and related NCDs; ensuring early diagnosis; improving quality of life of people living with diabetes; reducing morbidity and premature mortality; and promoting research into NCDs.”*

The importance of this acknowledgement is that leadership is making the statement and this leadership is the initial requirement for any change needed that requires a filtering down to the lower levels where the actual health problems reside.

It is the belief of the investigator that if you move one lever, you change the system and this study provides key insights into the real occurrences at a rural clinic level when attempting to make performance changes in one disease area. Trying to improve one disease area created learning's of which an important one was about getting a lot of the basics right first. We feel that people need a reason to change and being in a comfort zone as a service delivery provider without visible and effective leadership coupled to additional incentives which are not necessarily financial in order to make the change, will make it a challenging task.

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Appendix I

OPENSHAW HGT CHALLENGE PILOT PROJECT MEETING

Held on 12th March 2009 at 5 St James Road, Southernwood, East London.

Present: Sr Sharon Buchan: Sub Region: Chronic Diseases: Buffalo City LSA
Mr Lance Hilliard-Lomas: Export and Public Sector Manager: Roche
Mr Thembinkosi Nyamakazi: Ass. Manager: Chronic Diseases,
Department of Health
Dr Paul Cromhout: Managing Director: Small Projects Foundation

Welcome: Dr Cromhout welcomed all and thanked them for attending.

Approval of Agenda: Background

Pilot at Openshaw Clinic

Possible Roles

Way Forward

Closure

The agenda was approved.

Introduction: The participants were introduced.



BACKGROUND

Dr Cromhout gave a brief background to the problems related to diabetes and that Small Projects Foundation, Sr Buchan and the East London Eye Centre had embarked on a pilot project which looked at the extent of diabetic retinopathy in 8 clinics in the District Municipality. Seven (7) of these clinics had been in Buffalo City Municipality

area and one in Willowvale. A report on this pilot had been provided to Mrs Mayekiso and the Department of Health.

The results had shown that the majority of diabetes patients were not managing their condition and that the worst instances were from Openshaw Clinic.

Small Projects Foundation and Sr Buchan had requested the support of the Chronic Diseases Directorate to start a pilot to address this. This had been approved.

Sr Buchan had also ensured training of nurses at Openshaw Clinic in diabetes management and started to put into practice an intervention.

Small Projects Foundation had developed with Sr Buchan a framework for a pilot project to address diabetic care and management. Small Projects Foundation submitted this framework and a request to Roche Products (Pty) Ltd for support.

Mr Hillard-Lomas had indicated Roche's support for such an initiative and indicated that Roche would support a well-designed pilot programme which could be used as a key learning tool for Roche, the Department of Health and Small Projects Foundation and which, if successful, could provide a model for replication into other clinics in the Province and the country.

The objective of this meeting was then to get the interested parties together to determine if all were in support of such a pilot project and to then determine the steps forward if all parties were in support of the pilot. The participants agreed that such a pilot was necessary.

PILOT AT OPENSHAW CLINIC

The rationale and criteria used for choosing Openshaw Clinic as a pilot site were discussed and accepted.

These included:

- Worst managed cases from initial data
- Two trained nurses keen to improve services
- Supportive sub-regional supervision and management
- Accessibility of site for monitoring
- Community request for such service
- Rural disadvantaged community

POSSIBLE ROLES

A lengthy discussion about Targets and Outcomes ensued. It was confirmed that what all participants wanted was the following:

- 1) Better patient care
- 2) Development of a model which improves:
 - i) Resources
 - ii) Level of skills of health care workers
 - iii) Access
 - iv) Empowered patients.

It was agreed that the target was a HbA_{1c} result per patient of less than 8 (i.e. G/DL Level).

People to be involved:

- St Jegels : To be trained further in diabetes expertise (as a trainer of trainers).
Implement and train.
- Sr Buchan : Supervision and driver of programme
- Openshaw Clinic: Nurses at Openshaw → trained to empower patients and help manage diabetes.
- Mr Nyamakazi : Guidance and ensuring the Department of Health is aware, committed and supportive of the initiative.
- Mr Hilliard-Lomas : Support, advice, guidance, materials, training.

- Dr Cromhout : M&E, implementation reporting.

The participants agreed that these were acceptable in principle. The key parties were thus:

- Department of Health: Chronic Diseases Directorate
- Roche (Pty) Ltd
- Clinic Management and Supervision (Sub-region), Sr Buchan
- Openshaw Clinic
- Small Projects Foundation
- Patients

It was agreed that each of these parties had a crucial role to play.

WAY FORWARD

1) Commitment of Roleplayers

Mr Nyamakazi indicated that Public Private Partnerships were an important aspect for the Department in terms of meeting needs of communities. Diabetes had been identified as a National Programme Priority and there was a great need to take effective action at a provincial level on diabetes.

His Department would support such an initiative in principle. He indicated that he would have to obtain input and support from his superiors in terms of getting a Memorandum of Understanding in place and that this would take some time.

Mr Hilliard-Lomas indicated that from Roche's perspective the following applied:

- i) The private sector (Roche) could be a key partner in ensuring social development, skills development and as a supplier.
- ii) Roche wished to be seen to be helping Provinces to fight chronic diseases.
- iii) Roche wished to enter into authentic partnerships.

- iv) Roche wanted to be involved in delivering projects that achieved meaningful results and improved sustainability of health care delivery.

Dr Cromhout indicated that Small Projects Foundation wished to see an improvement in services to the communities and patients and development of a systemic solution that could be replicated.

Sr Buchan indicated that she wished to see an improvement in services to patients, improved clinic operations and empowered patients.

2) Next Steps

It was agreed that Small Projects Foundation, Roche, Sr Buchan and Mr Nyamakazi would work on developing a project proposal by the 14th April 2009 and then meet in the week of 20-24 April to take the proposal forward.

CLOSURE

Dr Cromhout thanked everyone for attending and for Sr Buchan being willing to take Mr Hilliard-Lomas to see Openshaw Clinic after the meeting.

Dr Cromhout undertook to provide the secretarial services to ensure the proposal was completed.

The meeting was declared closed.

APPENDIX II: TREND GRAPHS

Smart Pix Trend Graph

Mabuku Momthandazo

Page 1 of 1

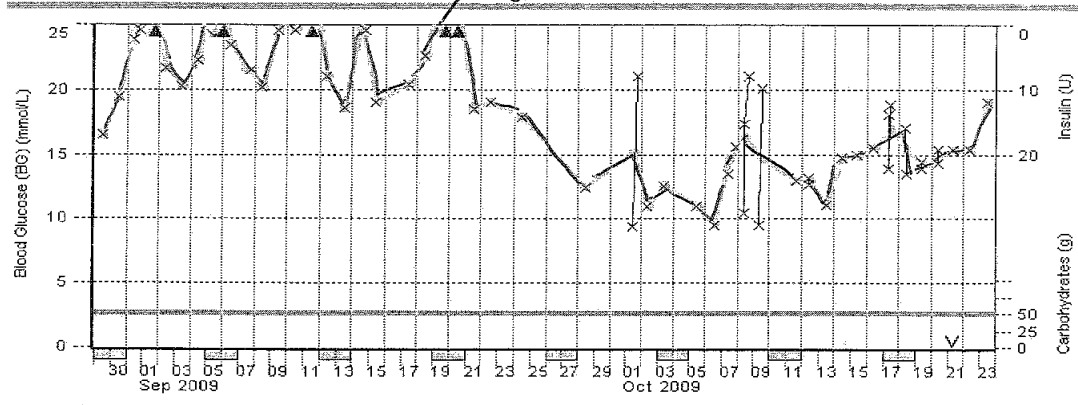
ACCU-CHEK

7

Trend Graph
8 weeks up to 23.10.2009



Serial Number
11130932



× Blood Glucose (BG) × Hypo —•— Mean BG (MBG) Weekend



ACCU-CHEK
Live life. The way you want.

Mels Nhlanguyaba

ACCU-CHEK

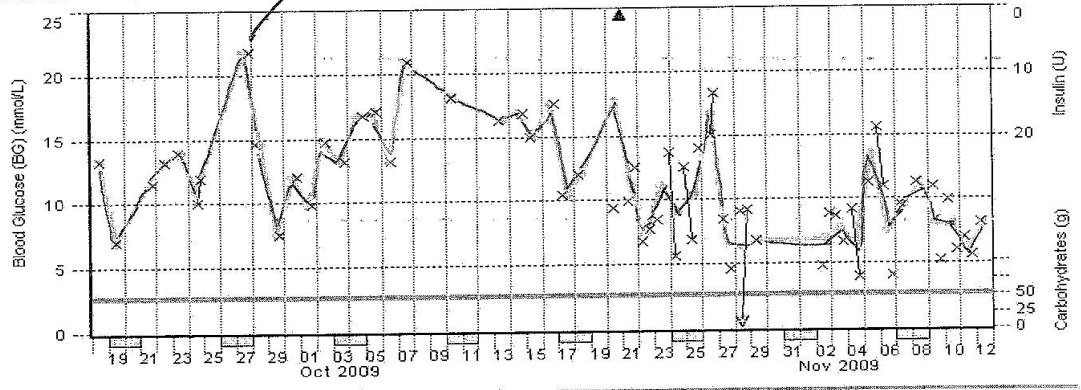
4

Trend Graph
8 weeks up to 12.11.2009

Point of Consultation



Serial Number
11130510



x Blood Glucose (BG) x Hypo ▲ Mean BG (MBG) [] Weekend



ACCU-CHEK
Live life. The way you want.

ACCU-CHEK

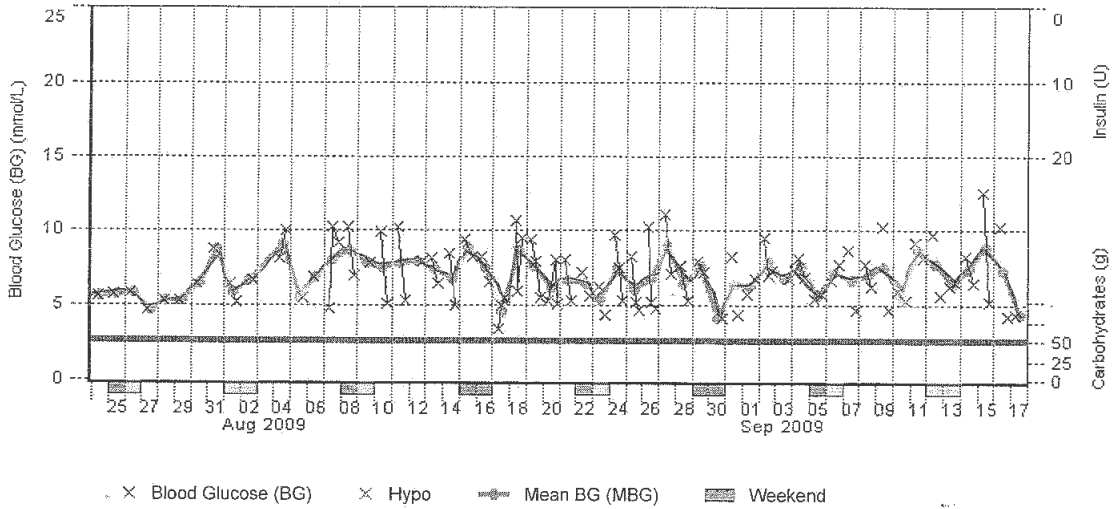
L4



Serial Number 11131104

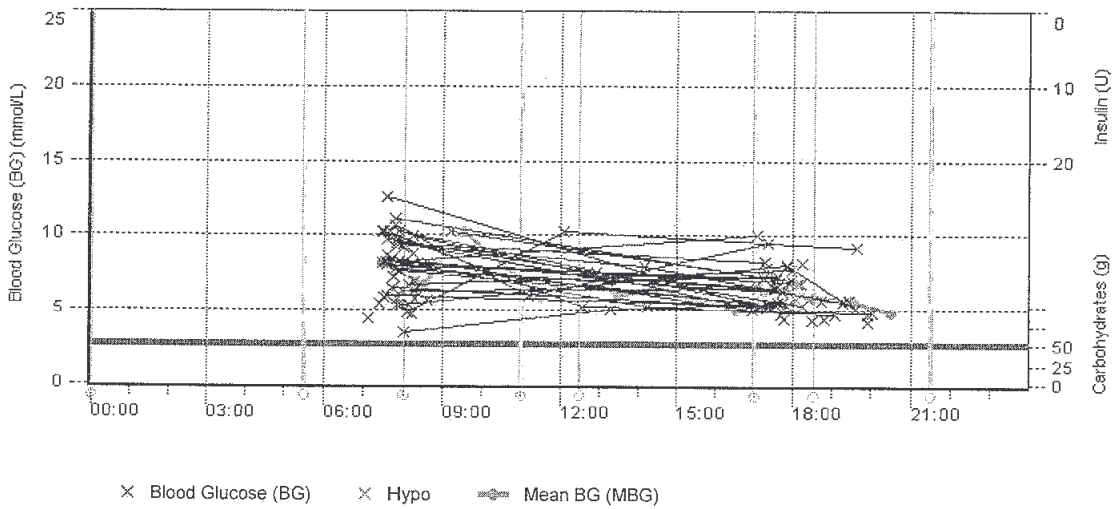
Trend Graph

8 weeks up to 17.09.2009



Day Graph

8 weeks up to 17.09.2009



ACCU-CHEK
Live life. The way you want.

Tool used for visual impact given to Nurses & Patients in HbA1c decreases!

Patients who came down!

Openshaw Clinic Diabetes Project With Glucometers												
No.	Surname	First Name	HbA1c	New Treatment	20-Aug		17-Sep		15-Oct		12-Nov	
					B.P.	RBS	B.P.	RBS	HbA1c	B.P.	RBS	B.P.
42	Baliso	Nomatshayina F	10%	Metformin 1g bd. Glibenc 10-5mg	130/80	7.9			7.80%	✓	11.1	
57	Booi	Phindiwe F	14.30%	Actraphane 40-20u					14.30%	✓		
56	Bushula	Nopici F	7.90%						7.90%	12/60	3.5	
35	Dick	Nompukwana F	10%	Metformin 1g bd. Glibenc 10-5mg	120/90	8.3		7.90%	✓			
14	Dick	Vulile M	5.10%	Actraphane 30-16u	150/80	5		4.9	✓		6.1	
29	Dikileyo	Gladys F	11.85%	Metformin 1g bd. Glibenc 10-5mg	150/80	10.9		9.10%	✓		5.7	
36	Dumisa	Nomvuyo F	7.90%	Metformin 1g bd. Glibenc 10-5mg	150/90	5.4		7%	✓		8.4	
9	Gutyana	Vuliswa F	10.60%	Metformin 850mg tds. Glibenc 10-5mg			160/70	11.4	7.70%	140/80	11.5	
38	Ham	Phindiwe F	12.30%	Metformin 1g bd. Actraphane 40-15u					11.20%			
27	Jelu	Sweetness F	13.10%	Metformin 1g bd. Gliclazide 160mg bd	160/100	26.2			8.60%	150/100	8.9	
40	Kilimani	Nolili F	11.20%	Metformin 1g bd. Gliclazide 80mg bd	140/90	6.8			6.40%	✓		
23	Koliso	Joyce F	5.50%	Metformin 1g bd. Glibenc 10mg mane								
16	Komani	Sithiwe F	8.30%		140/90	13.1	140/90	13	7.40%	✓		
7	Mabulu	Nomthandazo F	11.40%		120/90	13.7	140/90	5.5	10.50%	140/80	15	
48	Maganqana	John M	5.10%			5.4			4.50%	✓		
32	Makeleni	Mkiwe M	12.35%		160/100	9.3	118/110	19.6	7.60%	✓	5.2	
26	Mandla	Nokwanuye F	12.15%	Metformin 1g bd. Glibenc 10mg daily	150/100	10.1	170/100	13.8	9.50%	190/100	15.5	
39	Mdza	Mavis F	9.20%		150/90	15			9%	✓		
52	Mgweje	Nomaphesheya F	9.90%	Metformin 500mg bd. Glibenc 5mg daily	160/120	9.7	170/110	7.7	7.7	160/100	13.2	
30	Mnika	Vuyiswa F	5.30%	Metformin 500mg. Glibenc 10-5mg	130/90	6.8	140/90	6.8	4.80%	✓	6.7	
4	Molo	Nhlangqabani M	9.60%	Metformin 1g bd. Gliclazide 160mg bd	120/80	12.8	110/80	12.7	7.50%	140/80	15	
18	Mtsatse	Yekiwe F	11.70%	Metformin 1g bd. Glibenc 10-5mg					9.1%	✓		
49	Mxovulo	Mzwandile M		Actraphane 30-15u. Metformin 500mg bd	130/80	5.3	110/70	4.4	4.50%	120/80	5.3	
31	Mzinani	Nocinge F	7.70%	Metformin 500mg bd. Glibenc 5mg daily	160/100	11.4	160/100	11.4	8%	150/100	12.4	
47	Mzinjani	Khethekile M	8.00%		150/100	7.7			8%	✓		
10	Ngqongqo	Siyabonga M	9.30%		130/110	6.7			8.5%	✓		
22	Nomnganga	Namhla F	12.10%	Actraphane 30-15u. Metformin 500mg bd	150/100	14.3	150/90	8.8	7.80%	140/70	18.7	
2	Nqinileyo	Adelaide F	9.90%	Actraphane 40-20u.	160/100	6.2	170/90	11.3	7.30%	✓		
58	Ntsini	Jacob M			160/90	15.2			6.1%	✓		
37	Peni	Nombulelo F	7.80%	Metformin 1g bd. Glibenc 10-5mg	140/100	20.8			7.10%	140/90	8.9	
33	Rawuzele	Logan M	5.90%	Actraphane 40-22u. Metformin 1g bd	150/100	6.4		5.5	5.60%	✓	7.9	
5	Sebenzi	Grace F	5.30%	Metformin 500mg bd. Glibenc 5mg daily	160/90	5.9	160/90	11.7	5.40%	✓	6.6	
34	Sofeya	Nongetheni F	8.70%	Metformin 1g bd. Glibenc 10mg daily	140/90	9.8			7.50%	✓	9.3	
8	Strato	Nompumzi F	5.40%		160/80	11.9		10.1	5.30%	✓	8	
43	Stuurman	Princess F	8.60%				180/100	10.7	9.80%	✓	16.7	
20	Zondani	Nikelisa F	10%		120/80	15.3			8.80%	✓		

APPENDIX III: DESIGNING OF A PPP FOR HEALTHCARE : KEY INCLUSION CRITERIA

This framework is designed and based on the literature review from the study coupled to the learning's obtained within the sphere of the specific PPP in this study. The idea behind developing this framework is to be aware of key consideration points before embarking on a PPP for the before, during and after of a PPP in healthcare in South Africa. It needs to be understood that this framework is created with a key criteria of being an existent, respected and credible key player in a supplier / govt procurement position wanting to strengthen public services in the field of your supply. Alternatively with the desire to become a key player in the public healthcare environment within a certain field of your specialty. **This is not a framework** for a contractual or a concession award for operating within a public organization, building of infrastructure or a PFI (public finance initiative), for example constructing a new building and managing a Hospital.

Key organizational considerations to ask before entering into a Healthcare disease specific PPP..

- Why do you want to consider a PPP as an option , what are your objectives?
- Have you been approached to enter into a PPP or are you going to approach?
- Can you define the PPP in terms of your objectives, goals, disease area and beneficiaries?
- Are you a key supplier or a potential new key supplier?
- Is this your way of entering into a CSI?
- Are any of your competitors considering the same option?
- If accepted, will this PPP create a substantial change to the way your disease area is managed in the public arena?
- Can you add value to your companies knowledge and to the public sector by embarking on this PPP?
- Are the patients the ultimate beneficiary of the PPP?
- Is there more to gain than lose in terms of social development and upskilling?
Can you measure this?

- What do you think all the players can learn from this PPP?
- Are you clear about what you have to bring to the PPP?
- Do you have the time & resources to be fully involved in the PPP?
- Do you believe that you can add significant Risk Sharing attributes?
- Are you prepared to accept part of the risk – sharing?
- Are you aware of the risks of entering into a PPP?
- Are you prepared and willing to partake in skills transfer?
- Are you prepared to take the interests of all stakeholders into account?
- Are you ready and prepared to be in this for a lengthy period of time?

Key market Considerations about entering into a PPP

- Is there a dire need in the public or private environment or a mutual need for both players to enter into a PPP?
- Are the market conditions and timing in favour of your proposed PPP's?
- Is there support and urgency from the public body regarding entering into this PPP with you?
- Is there a legal framework existent for PPP's and the type of PPP you have in mind?
- Are you willing and able to set-up a specialized task force with all players which will facilitate the PPP project which is mandatory for a PPP?
- Have you evaluated any current, operational PPP's in this line as yet?
- Do you have a success model to base your intentions on?
- Are you prepared to potentially have a competitor and complementor in the same PPP?
- As indicators for external preconditions we need to identify :
 1. legal certainty,
 2. enforceable contractual law,
 3. a functioning market economy,
 4. a strong private sector/investors
 5. and a specialised task force which facilitates PPP projects.

If these external preconditions prevail, the second step, namely the evaluations of specific projects can be undertaken. As indicated in the graph below, we identify

four phases. We propose to split the decisions pro or contra realising a PPP project in two steps. A primary assessment evaluates the suitability of the project for PPP. All positively assessed projects will be analysed in more detail in the conceptual phase, where the final decision pro or contra PPP has to be made. As a PPP is a co-operation which will last for an extended period of time, it is crucial for success to define the rights and duties of each partner. This will be done in the contractual phase. Finally, it is also necessary to evaluate the results of a PPP project and compare it with the expectations to ensure that PPP's will cause additional benefit.

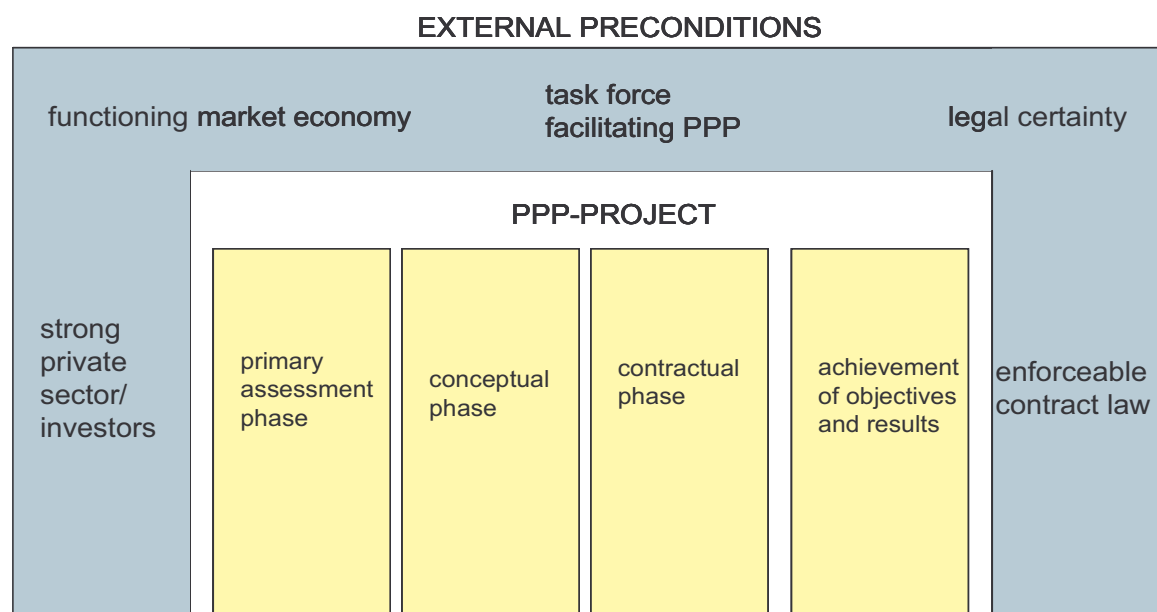


Figure 2.1: Four phases of PPP projects

Key considerations questions you would ask after the implementation of a PPP ?

1. What were the intended outcomes of the public-private partnership effort versus the actual outcomes?
2. Did the effort target specific aspects of health and wellbeing for improvement?
3. Did the effort identify specific, measurable indicators of the intended outcomes?
4. Did the effort identify specific target levels to be attained for these indicators?
5. Are the methods used to measure the outcome indicators reliable & consistent over time?

6. Did the indicators change during the period of the effort under study? If so, in the desired direction? Did they attain the target levels?
7. Are there sufficient longitudinal or comparison data to support the conclusion that identified changes in the indicators were the result of the programs and activities under study?
8. Were there any outcomes from the effort (either beneficial or detrimental) that were not expected to occur?

Considerations for PPP's to be successful

- Risk sharing according to type of supplier
- Sustainable partnerships
- Skills transfer from private to public
- Clear separation between PFI's and PPP's
- Agreed to objectives and goals
- A legal framework.
- Affordability of the PPP to all parties
- Value for money and affordability are the benchmarks for PPP viability
- A Task team with equal representation from each partner
- Key accountability and responsibilities for each partner
- Clear expectations, delivery requirements and timelines from each partner
- Key public sector leadership and endorsement
- Transparency and intentions from players for wanting to enter into a PPP
- Key goals and objectives from each player what intends to be the achievement
- Set- up as a project and managed accordingly.
- Regular project audits
- Experienced NGO as a mediator and intermediary with strong track record, roles, key responsibilities and deliverables, boundaries.
- Key Communication criteria and frequency
- Creation of a social network for learning's and interactions.
- Measures of success – KPI' s
- The Culture of the PPP
- Setting of a agreed to vision and Strategy by all stakeholders

- Development of an execution framework
- The PPP governing body needs to evaluate the PPP model recommendations and identify the right level of participation on areas like funding and equity stakes. There needs to be clarity on what each party would bring in and what controls each can exercise
- Consideration of using the balanced Scorecard as a management tool for the PPP
 - A financial perspective
 - A internal/ operations perspective
 - A customer perspective
 - A learning's and Growth
- clear definition of the 'beneficiary,'
- clarity of the respective roles of public player and private player,
- road map for scalability,
- identification of key risks and mitigation plans,
- dispute resolution mechanism
- Exit options for private player, without causing hardship to intended beneficiaries.
- Private sector participation in the PPP governing body
- Identify priority sectors and regions
- Identify level of participation.
- Run pilot campaigns
- Adopt measures for scalability
- Advocacy.

Thus, a successful PPP has to address the priorities of service provider, patient and government.