Measuring quality & health outcomes in medical schemes: Methodology, Criterion and Technical specification

Research & Monitoring Unit

Table of Contents

Abbreviations

PMBs: Prescribe minimum benefits

CMS: Council for Medical Schemes

CDL: Chronic Disease List

MSA: Medical Schemes Act

DSP: Designated Service Provider

BMI: Body Mass Index

NDoH: National Department of Health

WHO: World Health Organisation

OECD: Organisation for Economic Co-operation and Development

CDCP: Disease Control and Prevention

IQ: Intelligence Quotient

HQA: Health Quality Assessment

NEPAD: New Partnership for Africa`s Development

R&M: Research and Monitoring

MDG: Millennium Development Goals

HIV/Aids: Human Immunodeficiency Virus/Acquired Immune Deficiency

UNICEF: United Nations Children's Fund

NHI: National Health Insurance

1.1 Introduction

There are a number of policy initiatives of the Department of Health that increase the need for some form of independent measurement of the quality of health care received by members of medical schemes. Also medical scheme need to demonstrate their value within private health care including efficient and effective management of patient disease leading to better health care outcomes.

1.2 Conceptual Framework: Quality Health Outcomes

Quality measures cover a large range of indicators, these indicators range from crude measures (such as unadjusted mortality rates) to more refined measures (such as readmission rates or proportion of the population using asthma medications to achieve better asthma control etc.). Although a full range of measures is essential for a complete picture of health care quality afforded to the population, specific process measures are also needed to guide the health care team in improving quality of care.

For example, the number of deaths related to asthma at a hospital can suggest poor quality of treatment at that hospital, but knowing the number of deaths alone does not tell the entire story which is why process measures are as important as outcome measures in determining quality of care.

Process measures: often reflect evidence-based guidelines of care for specific conditions. They are generally considered to be within the control of the provider and, therefore, are performance indicators. Also process measures are more likely to reveal actions that can be taken to improve quality. Whilst o*utcome measures* frequently relate to patient health status. Better outcomes are the ultimate objective of quality improvement, for example, lowers mortality, lower hospitalization rates, or better test results. The indicators listed in this document combine both process and outcome measures. Please refer to annexure A for the definition and technical specification of the select list of indicators.

1.3 Objectives of measuring Quality Health Outcomes in Medical Schemes

Health quality and outcomes measurement enables proper judgements to be made about the performance of a health system. Quality and health outcome measurements are some of the central components in any attempts to effectively ascertain the contribution made by medical schemes into national health policy objectives. The absence of quality and health outcomes measures creates a gap in understanding the health financing and health care provision roles of medical schemes.

Presenting data on quality and health outcomes achieves the following key objectives:

- Consumers would be better empowered to make comparisons between different medical scheme products and choose appropriately
- Medical schemes and other purchasers of health care services would be able to assess the performance of different providers who serve their members
- Health provider facility managers would have information that would assist in benchmarking performance relative to other similar providers
- It would enable policy makers to monitor performance of the health system and intervene in a timely manner should there be a need to do so.

The absence of measures for quality and health outcomes in the medical schemes environment also implies that there is no mechanism to track the effect of treatments that might have adverse results on beneficiaries. As a result, it may be difficult to monitor medical errors, in-hospital infections, disease outbreaks and other epidemiological trends that may require intervention.

1.4 Legislative requirement

Section 7 (c) of the Medical Schemes Act outlines the function of the Council to also include *" ...making recommendations to the Minister on criteria for the measurement of quality and outcomes of the relevant health services provided for by medical schemes...."* Furthermore Section 7 (e) mandates *"collection and dissemination information about performance of private health care".*

It is therefore envisaged that the health and quality outcomes framework will enable realisation of the sections mentioned above.

2. Objectives of the study

The specific objective of the project is as follows:

- To develop am framework for measuring quality and health outcomes in the medical schemes industry
- To identify a select list of indicators to measure quality and outcomes in medical schemes

3. Methodology

3.1 Literature review and expert consultation

The study is mainly literature review and expert consultation based on the select list of quality and outcomes indicators. Literature review is be based on bibliographic database search of relevant sources for the selected indicators and thereafter a consultative process to get experts opinion to complement the knowledge of quality and outcomes indicators obtained from the literature review. For the consultative process, a research methodology known as the Delphi Method will be employed (Goodman CM, 1987; Linstone & Turrof, 1975). The Delphi Method requires the formation of an interactive panel of experts. These experts will be selected on the basis of their background in the industry and their willingness to share their expertise and work towards a resolution to select few ideal quality and outcomes indicators. We assume that the process of collecting quality and outcomes indicators for the private sector to be a collaborative, iterative, developmental program for progressing towards a routine collection of consistent set of quality of care and health outcome indicators.

3.2 Criterion for selecting ideal quality and health outcomes indicators

This section seeks to address key aspects of selecting quality and health outcomes indicators; the purpose is to use these criterions when selecting the indicators. It is of great importance to conceptualise what is that is being measured. For the purpose of this section we address the following two principles.

- The question of **what** dimension of quality to measure
- The **how** dimension of measuring such indicators

Kelly & Hurst states that the **how** principles of measuring quality should address both the process and outcome measures. They further states that the indicators should address the following three criterions (Kelly and Hurst, 2006):

- The importance of what is being measured

- The measure should have an impact of disease or risk on health/ expenditure
- The measure should also have relevance to policy, i.e. policy makers should be able to make decisions on such measure in order to improve health systems.

- The scientific soundness of the measure

  - Validity: The quality measure should make sense logically and clinically (face validity), it should also correlate well with other measures of the same aspects of the quality of care (construct validity) and lastly should capture meaningful aspects of the quality of care (content validity) (Carmines and Zeller, 1991).
  - Reliability: The measure should produce consistent results when repeated in the same population and settings.
  - Explicitness of the evidence base: There should be a clearly documented scientific foundation for the measure in the literature.

- The feasibility/cost of obtaining the data

  - International comparative measure should exist and characteristics differences between medical schemes/ providers should be taken into account international comparative figures

Thus, the select set of quality and outcomes indicators were subject based on the above three criterion.

4. Adjustments for case- mix

In ensuring that the data is comparable, prognostic factors will be identified in relation to the defined standards and indicators. The prognostic factors will be used as underlying factors or explanatory variables to adjust for case-mix. This is critical to evaluate whether the outcome, either favourable or not is due to health systems or due to the mix of diseases and conditions.

5. Limitations of quality and clinical health outcomes indicators

The complexity underlying the process collecting and interpreting quality indicators should not be underestimated. Even apparently simple indicators require in-depth analysis of competing operational definitions and generation of an agreed, detailed operational definition preferably supported by written, clarification and problem-solving guides (Boyce et al., 1997). Clinical outcome indicators can provide insights into quality of care and highlight variations in outcome worthy of further investigation. Limitations thereof are that the information that can be drawn from some indicators does not always include the beneficiary's views about outcome. Other limitations of clinical outcomes are that they do not necessary provide definitive proof about

performance or quality of care (Minnion et al., 2001). Outcomes data should be used as a guideline or standards and should also be a relative measure assessing the perceived ill-practice by a provider, they need to be interpreted with cautions as they may be influenced by multi-underlying factors that are not necessarily explained by the data.

6. References

Boyce N., McNeil J., Graves D. and Dunt D. 1997. Quality and Outcome Indicators for Acute Healthcare Services. Australian Government Publishing Service, Canberra.

Council for Medical Schemes, 2003. Final document recommendations of the committee on standardisation of data and billing practices. Council for medical schemes, 2003

Courtney, Mary D., O'Reilly, Maria T., Edwards, Helen E., & Hassall, Stacey L. (2010) Benchmarking clinical indicators of quality for Australian residential aged care facilities. Australian Health Review, 34(1), pp. 93-100.

Garber, A.M. Evidence-based guidelines as a foundation for performance incentives. Health Affairs 24:174–179, 2005.

Kane, Robert L. 2005. Understanding health care outcomes research. 2d ed. Sudbury, MA: Jones and Bartlett

Mannion R, Goddard M, Smith P (2001). On the limitations and drawbacks of performance measurement systems in health care. In: Quality in Health Care: Strategic Issues in Health Care Management. Davies H et al, Ashgate: Aldershot.

Republic of South Africa. Medical Schemes Act (No. 131 of 1998), as amended.

Annual Performance Plan,2011. National Department of Health, 2011/2012. http://www.doh.gov.za/docs/reports/annual/2011-12/statement.pdf

Edward Kelly and Jeremy Hurst, 2006: Health care Quality Indicators Project Conceptual Framework paper: OECD Working papers.

Patel R, Wadee H, Pearmain D. Development of an Essential Healthcare Package (EHP) proposal for Medical Aid Schemes in South Africa's transition towards SHI. Draft Prepared for Board of Healthcare Funders of Southern Africa; Feb 2007.

Carmines, E.G., & Zeller, R. A. (1991). "Reliability and viability assessment." Thousand Oaks, CA: Sage.

O'Meara, P. A generic performance framework for ambulance services: an Australian health services perspective. Journal of Emergency Primary Health Care. 2005; 3(3). Available online from: http://www.jephc.com/uploads/990132WebVersion.pdf.

Chopra M, et al. Saving the lives of South Africa's mothers, babies and children: can the health system deliver? Published online in The Lancet, 25 August 2009: DOI: 10.1016/S0 140-6736(09)61123-5

Mqoqi N, Kellet P, Sitas F, Jula M. Incidence of histologically diagnosed cancer in South Africa, 1998-1999. National cancer registry of South Africa 2004: 21-22.

Risk Equalisation Technical Advisory Panel. Methodology for the Determination of the Risk Equalisation Fund Contribution Table 2007 [Base 2005, Use 2007]. Vol Report No. 9. Pretoria: Recommendations to the Council for Medical Schemes; 2007. URL: http://www.medicalschemes.com/publications/publications.aspx?

Innovative Medicines South Africa (IMSA), 2010. The Impact of Chronic Disease on a Future NHI. National Health Insurance Policy Brief 3.

Health Quality Assessment Report (HQA), 2010 Health Quality Assessment. Deloitte & Touche. South Africa

Goodman NC. The Delphi technique: A critique. J Adv Nurs 1987;12:729-34

Linstone H, Turofff M,editors. The Delphi method techniques and applications. Wellesley (MA): Addison-Wesley: 1975.

National Obesity Forum (NOF). 2006. Impact of Obesity. United Kingdom

Center of Disease Control and Prevention (CDC). (2010). Overweight and Obesity. Retrieved from http://www.cdc.gov/obesity/index.html

Goedecke, J.H., Jennings, C.L., Lambert, E.V. Obesity in South Africa. 2006. In: Steyn K, Fourie, J., Temple, N. (eds). Chronic Diseases of Lifestyle in South Africa: 1995-2005. Medical Research Council –

Technical Report. Tygerberg, W Cape: Medical Research Council (MRC): 65-79.

Wolvaardt G, van Niftrik J, Beira B, Mapham W, Stander T. The role of private and other nongovernmental organisations in primary health care. In: Barron P, Roma-Reardon J, eds. South African Health Review 2008. Durban: Health Systems Trust, 2008.

Romero-Corral, A.; Somers, V. K.; Sierra-Johnson, J.; Thomas, R. J.; Collazo-Clavell, M. L.; Korinek, J.; Allison, T. G.; Batsis, J. A. et al. (June 2008). "Accuracy of body mass index in diagnosing obesity in the adult general population". International Journal of Obesity 32 (6): 959–966.

Centers for Disease Control and Prevention (CDCP). Prevention and control of meningococcal disease recommendations of the Advisory Committee on Immunization Practices (ACIP). *MMWR.* 2005;54(No.RR-7).

Centers for Disease Control & Prevention (CDCP). *WISQARS 10 leading causes of death, United States (2005).* Available at: http://webappa.cdc.gov/sasweb/ncipc/leadcaus10.html.

GCIS - Government Communication and Information System. Pocket Guide to South Africa 2010/11 HEALTH. Government Communication and Information System. Pretoria

Uthman OA. 2008. Effect of low birth weight on infant mortality: Analysis Using Weibull Hazard Model . The Internet Journal of Epidemiology. 2008 Volume 6 Number 1

AHRQ Quality Indicators. 2001. Agency for Healthcare Research and Quality (AHRQ). Guide to Prevention Quality Indicators: Hospital Admission for Ambulatory Care Sensitive Conditions

UNICEF (2001) A league table of teenage births in rich nations. UNICEF Innocenti Research Centre.

UNICEF, WHO, Low Birth Weight Country, Regional and Global estimates

National Department of Health. Saving mothers 2002-2004. National Department of Health. Pretoria

Bulatao, Rodolfo, A., and John A. Ross. 2002. “Rating Maternal and Neonatal Health Services in Developing Countries.” Bulletin of the World Health Organization 80: 721–727.

Ross, John A., Oona Campbell, and Rodolfo Bulatao. 2001. “The Maternal and Neonatal Programme Effort Index (MNPI).” Tropical

Norman R, Bradshaw D, Schneider M, Pieterse D, Groenwald P. Revised Burden of Disease Estimates for the Comparative Risk Factor Assessment, South Africa 2000. Cape Town: Medical Research Council; 2006, revised by D Bradshaw to distinguish deaths in the neonatal period.

Saving Babies 2003-2005: Fifth perinatal care survey of South Africa. Pretoria: University of Pretoria, Medical Research Council of South Africa, Centres for Disease Control; 2007.

UN Interagency group for mortality estimation. National Department of Health, Saving Mothers: third report on confidential inquiries into maternal deaths in South Africa, 2002-2004

OECD Health Data 2010. How Does South Africa Compare with OECD Countries. Available at http://www.oecd.org/dataoecd/20/40/45703998.pdf.

Robert L. Kane et. al, 2003: Total Knee Replacement Evidence Report/Technology Assessment. Number 86. AHRQ Publication No. 04-E006-2

Tracey O'Neill 2007, Decision-making regarding total knee replacement surgery: A qualitative meta-synthesis. BMC Health Services Research 2007, 7:52

Dieppe P, Basler D, Chard J, Croft P,Dixon J, Hurley S, Lohmander , Raspe H 1999. Knee replacement surgery for osteoarthritis: effectiveness, practice variations, indications and possible determinants of utilization. Rheumatology 1999;38:73–83

Ju¨ni P, Dieppe, Donovan, Peters, Eachus, Pearson, Greenwood, Frankel 2003. Population requirement for primary knee replacement surgery: a cross-sectional study. Rheumatology 2003;42:516–521

Jeffrey N. Katz, John Wright, Elizabeth A. Wright, Elena Los ina 2004. Failures of Tot al Hip Replacement: A Population-Based Perspective. NIH P60 AR 47782.

Natasha D, Anaesthesia for Hip replacement. Update in Anaesthesia

Mahomed NN, Barrett JA, Katz JN, Phillips CB, Losina E, Lew RA, Guadagnoli E, Harris WH, Poss R, Baron JA. Rates and outcomes of primary and revision total hip replacement in the United States Medicare population. J Bone Joint Surg Am 2003; 85-A: 27-32.

Ekelund A, Rydell N, Nilsson OS. Total hip arthroplasty in patients 80 years of age and older. Clin Orthop Relat Res. 1992; 281:101–106.

JNC VI (Joint National Committee, 1997)

World Health Organisation - International Society of Hypertension Guidelines for the management of Hypertension (Guidelines Subcommittee, 1999)

World Health Organisation, 2004. Low Birth Weight: Country , Regional & Global Estimates

www.njrcentre.org.uk

www.nice.org.uk

www.hqip.org.uk

www.ahrq.gov

7. Annexure A

Obesity prevalence (1)	
Indicator Name	Prevalence obesity
Indicator Definition	Obesity is calculated based on self reported weight and height and defined as body mass index (weight [kg] / height [m]2) ≥30.
Detailed Description	Body mass index (BMI) is a measure of weight adjusted for height, and is calculated by dividing weight in kilograms by height in metres squared (kg/m2). For all adults aged 18 years and over, the World Health Organization defines obesity as having a BMI greater than or equal to 30 kg/m2 (WHO 2000). For participants under 18 years, BMI cut-off points developed by the International Taskforce on Obesity (IOTF) have been used to define obesity (Cole et al 2000). The IOTF BMI cut-off points are sex and age-specific, and have been designed to coincide with the WHO BMI cut-off points for overweight and obesity.
Objective	Determine the prevalence of obesity amongst beneficiaries in the medical scheme industry
Rationale	Over the past decade, obesity has become recognized as a national health threat and a major public health challenge. WHO estimates that by 2015 the number of overweight people worldwide will increase to 2.3 billion, while more than 700 million will be obese. Obesity is a costly condition that can reduce quality of life and increase the risk for many serious chronic diseases and premature death. Obesity should be addressed through a comprehensive approach across multiple settings and sectors that can change individual nutrition and physical activity behaviours and the environments and policies that affect these behaviours
Technical note[1]	Adjustment data to consider the following factors:- - **Age:** studies have shown an increase in BMI in older people than in younger people - **Gender:** In the South African context, black women turn to be more obese than their counterparts, while urban women were found to have significantly higher BMI than their rural counterparts. A different pattern is seen in men were prevalence of

[1] Note: analysis of data will consider all the factors listed

	obesity is highest amongst white men. - **Environment**: urbanisation is associated with obese due to the change in dietary intake which is westernised - **Socioeconomic status (SES):** level of education , employment status associated with improvements in general health and lower disease incidence - **Socio-cultural factors**: Cultural diversity can influence the perception of body image. For example in the black community, overweight body symbolizes happiness, beauty, affluence, health and negative HIV/Aids status (Andriam *et al*, 2008) - **Genetics**: Studies have shown that approximately 75% of the variation in percent body fat and total fat mass is determined by culture and lifestyle, whereas 25% can be attributed to genetic factors - **Dietary intake**: High-fat diets promote fat accumulation significantly more than high-carbohydrate diets because of the high energy density, metabolic efficiency, palatability, poor regulation and weak satiating effect of fat - **Physical activity**: has a high impact on energy expenditure, body composition, and substrate oxidation and metabolism - **Parity**: is associated with obesity in women - **Stress**: high levels of stress are associated with increased weight gain *Risk factors:* Lack of physical activity, parity, stress, incorrect dietary intake, urbanisation *Complications:-* Type 2 diabetes, Coronary heart disease, Hypertension, Cancer, Psychological implications, Osteoarthritis, Morbidities in children, *Limitations:-* - BMI cut-offs are intended to identify populations at increased risk of poor health conditions associated with excess body fat, not to measure body fatness as such.
Sub-indicators	Type 2 diabetes, CHD, Hypertension, Osteoarthritis
Methodology	Screening of BMI in Medical Aid beneficiaries
Sources of Data	Medical schemes data
Reference period	2010-2011 financial year

Immunisation coverage of children 12-23 months (2)	
Indicator Name	Immunisation coverage of children aged 12 months -23 months (%)
Indicator Definition	Proportion of children aged 12 to 23 months who had received BCG, 3 doses of DTP and polio, and Measles vaccine, but not necessarily Hepatitis B.
Detailed Description	The indicator is calculated as the total number of children under one year old that have received all their vaccinations up to the first measles, divided by the target population of children under one year old.
Objective	To establish baseline data this will be used to monitor health outcomes related to immunisation coverage.
Rationale	Children below the age of five years are at risk of fatal acute infectious diseases resulting in infant and child mortality. Control of these infectious diseases is important to the reduction of childhood mortality and could make a significant contribution towards the achievement of Millennium Development Goal. In South Africa this goal aims to reduce child mortality by two thirds by the year 2015 and the National DoH target for full immunisation coverage of 90%.
Technical note	This indicator measures the percentage of children under one year old who have received the following immunisations: - At birth: TOPV (0), BCG - 6 weeks: TOPV (1), DTP-HiB (1), Hep B (1) - 10 weeks: TOPV (2), DTP-HiB (2), Hep B (2) - 14 weeks: TOPV (3), DTP-HiB (3), Hep B (3) - 9 months: Measles (1). *Limitation:-* Immunisation coverage indicators are dependent on accuracy of the population estimates, which are used in the denominator. It is important to avoid over-counting and under counting of the number immunised children since this can give a misleading conclusion.

Sub indicators	The framework could only focus on three vaccinations which are crucial in terms of reducing infant mortality. Of the list presented above in the technical note , the clinical committee would have to make a recommendation in terms of important sub-indicators
Methodology	Population survey
Sources of Data	Primary data source :- Medical schemes data Secondary data source : Medical Research Council , HSRC, District Health Barometer & South Africa Demographic and Health Surveys (for comparison purposes)
Reference period	2010-2011 financial year

Infant mortality (3)	
Indicator Name	Infant mortality rate (deaths under 1 year per 1 000 live births)
Indicator Definition	The number of children less than one year old who die in a year, per 1 000 live births during that year.
Detailed Description	This indicators outlines the probability of dying before age 1 year
Objective	It will be used to establish baseline data which will be used to monitor health outcomes in relation to child health care
Rationale	One of the most important MDG indicator of health for any developing country is the number of children who die within the first year of life. The infant mortality rate also plays a role in reflecting health status in the general community. Given the wealth disparities within the South African society, monitoring the infant mortality rate is critical to track inequalities in child health.
Technical note	This indicator is usually calculated for a given year (i.e. on an annual basis), and out of 1,000 live births **Caution:-** Common errors that occur in the collection of retrospective data include omission of births and deaths which then lead to biased estimates (Sullivan, 1990). Such omissions are especially common for infants who die shortly after birth. Other problems may include misreporting of the date of birth and age at death which can distort both the level and trends in child mortality
Sub indicators	The clinical committee would have to make a recommendation in terms of important sub-indicators
Methodology	Survey & retrospective review of claims data
Sources of Data	Primary data source :- Medical schemes data Secondary data source : Medical Research Council , HSRC, District Health Barometer & South Africa Demographic and Health Surveys (for comparison purposes)
Reference period	2010-2011 financial year

Maternal mortality (4)	
Indicator Name	Maternal mortality ratio
Indicator Definition	Deaths while pregnant due to pregnancy-related causes
Detailed Description	Probability of dying as a result of one's pregnancy
Objective	This indicator will be used to establish baseline data which will be used to monitor health outcomes on maternal health care.
Rationale	This indicator is part of the MDG's which seeks to encourage individual countries to reduce maternal deaths by 75 percent between 1990 and 2015. Many studies have observed that in South Africa's maternal mortality ratio has more than quadrupled over the past decade.
Technical note	This indicator is usually calculated for a given year (i.e. on an annual basis), and out of 100,000 live births.
Sub indicators	The clinical committee would have to make a recommendation in terms of important sub-indicators
Methodology	Survey & retrospective review of claims data
Sources of Data	Primary data source :- Medical schemes data Secondary data source : Medical Research Council , HSRC, District Health Barometer & South Africa Demographic and Health Surveys (for comparison purposes)
Reference period	2010-2011 financial year

Low birth weight rates (5)	
Indicator Name	Low birth weight rates
Indicator Definition	Birth weight is the first weight of the foetus or newborn obtained after birth. For live births, birthweight should preferably be measured within the first hour of life, before significant postnatal weight loss has occurred. Low birth weight is defined as less than 2,500 g (up to and including 2,499 g) (WHO, 2004).
Detailed Description	A baby's low weight at birth is either the result of preterm birth (before 37 weeks of gestation) or of restricted foetal (intrauterine) growth. Low birth weight is closely associated with foetal and neonatal mortality and morbidity, inhibited growth and cognitive development, and chronic diseases later in life
Objective	To establish baseline data this will be used to monitor health outcomes and the effectiveness of medical schemes in management of low birth weight amongst newborns.
Rationale	Low birth weight has long been used as an important public health indicator. Low birth weight is not a proxy for anyone dimensions of either maternal or perinatal health outcomes. Globally, this indicator is a good summary measure of a multifaceted public health problem that includes long-term maternal malnutrition, ill health, hard work and poor pregnancy health care
Technical note	**Data adjustment to consider the following factors**:- - Gender, race and region. - Income level, level of education , employment status (high risk factors due to poor feeding and inadequate growth) **Note for analysis**:- - Exclude children not weighed at birth - Exclude low birthweight rates Including 2,500 g the digit preference at 2,500 g can give misleading results - Low birthweight rates should cover an extended period of time, as rates covering a short period only may be subject to seasonal variations. Seasonal fluctuations are usually due to the availability of food or to disease epidemics
Methodology	Cross sectional survey
Sources of Data	Medical schemes data , Medical Research Council & South Africa Demographic and Health Surveys & household surveys
Reference period	2010-2011 financial year

Hypertension prevalence (per 1 000) (6)	
Indicator Name	Hypertension prevalence (per 1 000)
Indicator Definition	Number of people with hypertension per 1 000 people in the medical schemes beneficiary population
Detailed Description	The prevalence of hypertension reported can be classified as follows : - Moderate and severe hypertension: BP equal to or above 160/95 mmHg or taking hypertension medication - Any hypertension: BP equal to or above 140/90 mmHg or taking hypertension medication
Objective	To establish baseline data which will be used to monitor health outcomes and the effectiveness of medical schemes in management of hypertension
Rationale	The impact of untreated hypertension on the health of people is a major contributor to the overall burden of adult diseases in any population that does not actively work towards improving the early detection and cost-effective management of the condition. Burden of disease linked to hypertension includes:- strokes (cerebrovascular diseases), heart attack (myocardial infarction), kidney disease or failure as well as heart enlargement due to left ventricular hypertrophy, which could predispose to congestive heart failure (Guidelines Subcommittee, 1999).
Technical note2	This indicator includes the number of people being treated for hypertension. Require disaggregated data classified by : - Age: hypertension is most common amongst adults in the working group - Gender: more men than women are prone to hypertension which can be exacerbated by alcohol intake. - Race: in the South African context hypertension is most common amongst the white population - Region: urban/rural differences exist regarding sources of dietary Na - Socio-economic status: hypertension is an emerging risk factors with increasing wealth - Dietary intake: increased salt intake and the decrease in fruit and vegetables, higher intake of alcohol products together with other risk factors like obesity may result in high blood pressure

[2] Note: analysis of data will consider all the factors listed

*Results from SAHDS

	Define the inclusion and exclusion criteria:- As part of independent variables researchers need to define parameters leading to a compliance score *Risk factors* Important to correlate body mass index (BMI) /lifestyle Cholesterol levels *Complication* Heart attacks, stroke, left ventricular hypertrophy, renal disease, blindness Cardiovascular disease risks are often classified according to low, medium, high and very high risk. Each range of the risk is determined by severity and the number of risk factors. Co-morbidity Diabetes, obesity **Note:** Standard treatment guidelines are important so as to establish whether or not appropriate treatment was afforded to the patient. **Caution:** Poor fieldwork measurement of BP can result in low/high estimates
Sub indicators	Hospitalisation rate - due to inadequate management hypertension Mortality rate - due to inadequate management of hypertension
Methodology	Monitoring blood pressure levels and co-morbidities of beneficiaries in the Medical Scheme industry
Sources of Data	Medical schemes data , Medical Research Council & South Africa Demographic and Health Surveys
Reference period	2010-2011 financial year

Total number of asthma cases (7)	
Indicator Name	Total number of asthma cases
Indicator Definition	Total number of asthma cases in the medical schemes beneficiary population
Detailed Description	Asthma is a chronic obstructive lung disease caused by inflammation and increased reaction of the airways to various triggers. Symptoms can include wheezing, coughing, chest tightness and shortness of breath. Asthma can be a life-threatening disease if not managed properly. Indoor environments and poor indoor air quality (IAQ) appear to play a key role in the development and/or exacerbation of this disease
Objective	To establish baseline data which will be used to monitor health outcomes and the effectiveness of medical schemes in management of asthma cases
Rationale	In South Africa, asthma is one of the most common chronic respiratory diseases. This diseases is recorded as being responsible for one percent of DALYs lost (comparable to diabetes) and 0.4% of all deaths. Within the medical schemes population, asthma is ranked as the 4th most prevalent chronic condition.
Technical note	Collect base line data to include:- - Age - Gender - Race - Educational status - Income - Geographic location *Risk factors* Smoking , Environmental tobacco smoke, depression etc *Complication* An adequate assessment of severity is a key in determining appropriate management and treatment plans for patients with asthma. Each indicator should be linked to the standards of care and treatment of patients. *Co-morbidity* Depression, diabetes, cardiac disease, hypertension, cerebrovascular disease, musculoskeletal disorders, malignancies etc.

Sub-indicators	Hospitalisation rate - due to inadequate management asthma Mortality rate - due to inadequate management of hypertension asthma
Methodology	Depending on the selected indicators. Cross-sectional and prospective/Retrospective survey
Sources of Data	Medical schemes data , Medical Research Council & South Africa Demographic and Health Surveys
Reference period	2010-2011 financial year

Total number of type 1 and Type 2 Diabetes cases (8)	
Indicator Name	Total number of type 1 and Type 2 Diabetes cases
Indicator Definition	Total number of type 1 and Type 2 Diabetes cases in the medical schemes beneficiary population
Detailed Description	Diabetes is caused by a failure of the pancreas to produce insulin (type 1) or to produce enough adequately functioning insulin (type 2) to enable the glucose from food to enter the body cells and be used as a source of energy. As a result, in both types the glucose level in the blood remains too high. Good glycemic control of diabetes prevents micro-vascular complications and reduces the risk of macro-vascular disease
Objective	To establish baseline data which will be used to monitor health outcomes and the effectiveness of medical schemes in management of diabetes
Rationale	Over 12 million people in sub-Saharan Africa are estimated to have diabetes, and 330,000 people will die from diabetes-related conditions. Type 2 diabetes accounts for well over 90-95% of diabetes in Sub-Saharan Africa.
Technical note	Collect base line data such as the following variables so as to understand the characteristics of the population being studied. Population dynamics have an impact on analysis and interpretation of data:- - Age : type 1 diabetes often common amongst children under age of 15 , whilst type 2 diabetes is common amongst adults) - Gender : sometimes high admission rate in males may be attributed to uncontrolled blood pressures or differences in health seeking behaviour between males and females) - Race : In Sub –Sahara Africa , the highest diabetes prevalence is in people of Indian origin, followed by native Africans - Educational status - Income - Geographic location Define the inclusion and exclusion criteria. This criterion will inform sampling of the participants in the study. - Examples of inclusion criteria: - patients, who have been diagnosed with diabetes on the basis of blood

	glucose estimation, include both type 1 and type 2 diabetes, as well as the variables listed above. - Exclusion criteria :- type 1 diabetes requiring continua's treatment or hospital admission > 1 week (linked to the analytic horizon) As part of independent variables researchers need to define parameters leading to a compliance score. Variables such as testing of blood glucose, eye examination, electro cardiogram; visits to health facility (linked to the analytic horizon of the study), taking SMBG, Taking OHA's and insulin etc could be included in the compliance score. The decision to include or exclude variables in the compliance score should also be informed by the treatment care pathways/protocols/guidelines *Risk factors* Identify risk factors such as obesity , lack of physical activity, smoking & alcohol use *Complications:* People with diabetes are already at a significantly increased risk of developing one or more of the complications of diabetes such as heart attack, stroke, blindness, kidney failure and neural problems that often lead to amputation. A number of these complications develop, usually after a number of years and particularly if diabetes is not managed or treated properly *Co -morbidity data* Co-morbidity data is required in-order to properly assess health outcomes. This data is available from patient's health record. Appropriate care for complications can also affect health outcomes. Treatment sometimes includes medication, kidney dialysis and transplant, eye surgery and lower-limb amputation. To look at diabetes health outcomes, it is ideal to correlate diabetes rates to complications and how far do patients receive recommended care as per care path way.
Sub-indicators	**Hospital admission**: - due to inadequate management of diabetes. A study undertaken in Canada showed that patients who consulted specialist had worse health outcomes compared to GP consultations. This conclusion drawn in cognisance of the fact those specialists also see serious health problems compared to GP's. Severity of illness and other patient characteristics can also be linked to specialist's consultations/admission to the hospitals.

	Mortality /Case fatality rate : proportion of patients with a primary diagnosis of diabetes mellitus who die within 30 days of their admission **Reduced risk of complications**: this sub-indicator relates to risk factors associated with the development of complications, metabolic control markers of late complications & symptoms.
Methodology	Cross sectional survey triangulated with longitudinal cohort survey
Sources of Data	Medical schemes data , Medical Research Council & South Africa Demographic and Health Surveys
Reference period	2010-2011 financial year