



*G. Beleme, Finn Gjertsen and
Jens-Kristian Borgan*

**Health Indicators and Health
Information System in Botswana**

Rapport

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Jens-Kristian Borgan*

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Information System in
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Rapporter

I denne serien publiseres statistiske analyser, metode- og modellbeskrivelser fra de enkelte forsknings- og statistikkområder. Også resultater av ulike enkeltundersøkelser publiseres her, oftest med utfyllende kommentarer og analyser.

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ISBN 82-537-4811-6
ISSN 0806-2056

Emnegruppe
03.00 Health general

Design: Enzo Finger Design
Trykk: Statistisk sentralbyrå

Standardtegn i tabeller	Symbols in tables	Symbol
Tall kan ikke forekomme	Category not applicable	.
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Rettet siden forrige utgave	Revised since the previous issue	r

Abstract

G. Beleme, Finn Gjertsen and Jens-Kristian Borgan

Health Indicators and Health Information System in Botswana

Reports 2000/16 • Statistics Norway 2000

As a part of the Health Sector Agreement between Norway and Republic of Botswana, Statistics Norway cooperate with Health Statistics Unit on the project Health Information System.

This document presents a revised list of health indicators for monitoring and evaluation of health care system in Botswana. The revised list with 19 health conditions and services is the outcome of reviewing the draft indicator report of April 1998 and earlier workshop and assessment on this issue.

Indicators on health conditions and services that can be handled by routine system were selected.

Acknowledgement: Norwegian Agency for Development Cooperation and Ministry of Finance and Development Planning, Botswana

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Preface

In this document the Health Statistics Unit in cooperation with Statistics Norway presents a revised list of health indicators for monitoring and evaluation of health care system in Botswana.

This is the outcome of reviewing the results and recommendations from the Workshop for the selection of essential health indicators in 1996, the Health Information System Committee, the Assessment of the Health Information System in 1997, and the draft indicator report of April 1998.

A revised list with 19 health conditions and services is presented. Indicators on health conditions and services that can be handled by routine system were selected. The indicator list includes the 11 priority health problems that were recommended during the Workshop for the Selection of Essential Health Indicators in Gaborone in March 1996.

Permanent Secretary in Ministry of Health endorsed this report on health indicators for Botswana in January 2000.

We would like to thank the consultants Mr. S. K. Lwanga and Dr. S. Orzeszna of the World Health Organization, Geneva, the different health programmes/units in the Ministry of Health, the Department of National Transport and Communication, the Health Information System Committee and University of Botswana lecturers Mr. R. G. Majelantle and Dr. S. Moeng for their contributions in the process of developing essential health indicators for Botswana.

We would also like to thank Dr. S. K. Lwanga, World Health Organization, Geneva, Dr. Egil Bovim, University of Bergen, Norway, Government statistician Mr. G. M. Charumbira and Ms. A. Majelantle, both Central Statistics Office of Botswana, and Mr. Helge Brunborg, Statistics Norway for their comments on draft report.

This report has been prepared by Ms. Gale Beleme head of Health Statistics Unit, Botswana, and Mr. Finn Gjertsen and Mr. Jens-Kristian Borgan both advisers in Statistics Norway, Division for Health Statistics.

Gaborone/Oslo, 10 May 2000

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Preface to the reprint

In this reprint, the following text has been added regarding Data source from mental health indicators: "..and inpatients (MH 2030)..". In addition some linguistic corrections have been done.

Garbonne/Oslo, 8 August 2000

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I. Introduction

Development of essential health indicators and the Health Information System

Health information is essential for the Ministry of Health. The Health Information System (HIS) is a system that collects and disseminates key information on health that can be used for monitoring, planning, decision-making and action at central and local level. A set of essential indicators for priority health problems and services is the main subject that constitutes the Health Information System.

The Health Statistics Unit in Botswana collects a lot of information, especially on health services. Health personnel complete a great number of forms with statistical, medical and administrative information. However, much of the information has not been analysed and used, and the quality of the data has been questioned. As a result, the Ministry of Health in 1995 invited some of its partners in health, Norwegian Agency for Development Cooperation, World Health Organization and UNICEF, to an examination of ways of strengthening the health information system (1). This examination was followed by the Workshop for the Selection of Essential Health Indicators in Gaborone in 1996 (2) and the Assessment of Botswana Health Information System in 1997 (3).

During the process of developing essential health indicators for Botswana, 31 health problems in total were identified. This process started with a list of 11 priority health problems identified by the 1996 Workshop (2), in order of importance:

1. HIV/AIDS
2. Diarrhoea
3. Tuberculosis
4. Pneumonia/acute respiratory infections (ARI)
5. Sexual transmitted diseases (STDs)
6. Malnutrition
7. Hypertension
8. Malaria
9. Road traffic accidents
10. Obstetrical complications
11. Expanded programme on immunisation (EPI) diseases

For each health problem three sets of indicators were proposed:

- Health problem indicator
- Critical service indicator
- Critical resource indicator

Afterwards, the Health Information System Committee was charged with the responsibility of updating health indicators and including programmes that were not covered during the workshop. The committee consists of members from:

The Primary Health Care Unit, Ministry of Health,
The Health Research Unit, Ministry of Health,
The Health Statistics Unit, Central Statistics Office,
The Department of Civil Registration, Ministry of Labour and Home Affairs,
The Ministry of Local Government, Lands and Housing,
UNICEF,
World Health Organization

This work resulted in 20 additional health problem areas, presented as an annex in the draft health indicators report (4):

1. Complication of pregnancy
2. Complications of deliveries
3. Post partum complications
4. Family planning
5. Schizophrenia
6. Mental depression
7. Alcoholic psychosis
8. Hepatitis B
9. Worms
10. Drinking water and sanitation
11. Chemical poisoning
12. Senile cataract
13. Chronic simple glaucoma
14. Eye injuries
15. Trachoma
16. Ulcer
17. Dental caries
18. Periodontal diseases
19. Oral cancer
20. Trauma

The Assessment of the Health Information System in Gaborone in 1997 identified several problems with the proposed indicators and recommended further review and update of the health indicators. This task was given to Mr. R. G. Majelantle and Dr. S. Moeng of the University of Botswana who produced a draft report of health indicators in April 1998 (4). However, the identified indicators were too many and collecting information on some of them through the routine system was going to be very difficult. Based on the model presented at the 1996 Workshop (2), each health problem is supposed to be divided into three sets of indicators: health problem indicators, critical service indicators and critical resource indicators, with a maximum of 3 indicators for each set. In total 228 indicators were proposed. Subdivision by district, age group and sex of the indicators would result in a lot of data to be collected. Further, some health problems included after the 1996 Workshop could be defined as health problem indicators, i.e. schizophrenia, mental depression and alcoholic psychosis. Mental health should be the health problem for these indicators. Further work on the draft indicator report in order to short-list those indicators that can be collected through routine data systems was therefore needed.

The Mid Term Review Team stressed in their report of September 1998 that the set of health indicators, which forms the basis for further implementation of the Health Information System, had not been completed and approved (5). A consequence of that is a delay in the progress of reviewing and redesigning health data collection instruments.

In October 1998 the Health Statistics Unit and Statistics Norway reviewed the areas for cooperation and included a plan for finalising the essential health indicators (6, 7) (appendix A, B). The Annual Meeting on the Health Sector Agreement in Gaborone in November 1998 (8) approved the adjustments to the contract proposed by partners.

Health Statistics Unit and Statistics Norway finalised draft health indicator report, and in October 1999 the draft was sent to Permanent Secretary in Ministry of Health (appendix C). The Permanent Secretary Dr. Jack Mulwa approved in a meeting with Health Statistics Unit in December 1999 that the report be published (appendix D). This was confirmed in a letter to Statistics Norway on 25 January 2000 (appendix E). The Permanent Secretary in Ministry of Health commends the health indicator report to all stakeholders of the Health Information System.

This report is based on previous indicators reports (2, 4), meetings with health programmes/units in October – November 1998 and September 1999, and recommendations from the workshop on Indicators and AIDS in Francistown in August 1999 (9). We have

also examined health indicators selected in other southern African countries (10, 11).

At the Annual Review Meeting for the Health Sector Agreement between Botswana and Norway in October 1998 in Gaborone it was decided that all projects in the Health Sector Agreement should integrate the HIV/AIDS epidemic into their activities (12).

In the work with the indicators the main focus was to shorten the list of health indicators by selecting key indicators that may be collected by routine systems. The list has been shortened from 31 to 19 health problem areas, including new areas and indicators that were not covered in the previous list (4). New areas are infant mortality, teenage pregnancy, major causes of inpatient diagnosis, major causes of inpatient deaths, health expenditure, hospital activities, health facilities and reported coverage of notifiable diseases. The list also includes the 11 priority health problems that were recommended by the Workshop for the Selection of Essential Health Indicators in Gaborone in 1996.

Presentation of data: Absolute or relative figures?

The purpose for establishing a health indicator system is to make the information comparable at several levels:

- comparison between districts,
- international comparisons,
- time trends.

An indicator can be presented as a number of events or as ratio, proportion, rate or probability, where the number is given relative to the population group given in the definition of that particular indicator (i.e. population in an age group, in a district etc.). There are arguments in favour of both absolute numbers and rates in the presentation of the indicators:

- In relative figures such as rates, the population by sex, age group and district in a year is usually needed. The sources for these figures are population projections based on population censuses and estimates on fertility, mortality and migration. As the period since the last census is increasing, the reliability to these figures deteriorating. The reliability of figures for sub-national and for age groups born after the census will be even poorer.
- In Botswana, each resident may visit any health facility, according to his/her preference, independent of the district where he or she is resident. Making the catchment population of the facilities in a district different from the projected population. Thus use of relative figures introduce an extra source of error.
- When comparing health problem indicators between districts with different population size we

need relative figures. However, absolute numbers can be used to see time trends for a health problem over a short period. For national and international comparison relative figures are needed.

- Rates based on low population size or rare events are often fluctuating, and make it difficult to interpret the results. The absolute numbers themselves may be of greater interest. In any way, when indicators are presented as rates they should be supplement by absolute numbers.

The revised list of health problem and health service indicators

Health problem areas

1. HIV/AIDS
2. Tuberculosis
3. Notifiable diseases (i.e malaria, diarrheea)
4. Sexual transmitted diseases (STDs)
5. Malnutrition
6. Maternal/obstretical complications
7. Road traffic accidents
8. Hypertension
9. Eye diseases – blindness
10. Mental health
11. Major causes of inpatient discharges
12. Major causes of inpatient death

Service areas

1. Health expenditures
2. Health personnel
3. Health facilities
4. Hospital activities
5. Expanded programme on immunisation (EPI)
6. Reporting coverage on notifiable diseases
7. Maternal and child health care

II. Essential Health Indicators

In this chapter we present indicators under each health problem and health service area. Data sources and presentation format of the indicators are also given. The health indicators are also given in a list in appendix F.

Health problems/status indicators

1. HIV/AIDS

Indicators

1.1. Estimated prevalence of HIV in pregnant women in samples

Numerator: Number of pregnant women 15-49 years attending ANC who are HIV positive

Denominator: Total number of pregnant women 15-49 years whose blood has been screened for HIV

1.2. Reported new cases of HIV (carriers and symptomatic cases)

Numerator: Number of reported new cases of HIV from the health care system

Denominator: Total population

1.3. AIDS deaths

Reported institutional deaths caused by AIDS (underlying cause)

Data sources

AIDS/STD Unit in the Ministry of Health (MoH) estimate prevalence figures at different district levels. The figures are based on the annual Sentinel Surveillance Survey. Health Statistics Unit will provide figures for new cases for outpatients and deaths for inpatients. Source for the population figures is population census and population projections published by Central Statistics Office (CSO).

Presentation

The indicators will be presented annually by sex, age group, and district.

2. Tuberculosis (TB)

Indicators

2.1. Reported new TB cases

Numerator: Reported new cases of tuberculosis in the health care system

Denominator: Total population

2.2. Reported relapse cases of TB

Numerator: Reported relapse cases of tuberculosis in the health care system

Denominator: Total population

2.3. Deaths caused by tuberculosis

Reported institutional deaths caused by tuberculosis (underlying cause)

Data sources

TB Programme in the Epidemiology Unit, MoH (TB cases), Health Statistics Unit (TB deaths), and the CSO (population data).

Presentation

The indicators will be presented annually by age group, sex, and district, as absolute and relative figures. TB deaths only as absolute figure.

3. Notifiable diseases

Includes Malaria confirmed, Malaria unconfirmed, Neonatal Tetanus (under 4 weeks), Diphtheria, Measles (under 5 years old), Meningitis, AFP (Poliomyelitis), Rabies, Typhoid fever, Hepatitis B, Diarrhoea (under 5 years old), Diarrhoea with blood (under 5 years old), Pneumonia and Pertussis (Whooping cough).

Indicators

3.1. Reported new cases on each notifiable disease

Numerator: Reported new cases on each notifiable disease in the health care system

Denominator: Total population, children under 5 years and live births for some of the diseases (see above).

3.2. Reported deaths on each notifiable disease
Reported institutional deaths caused by each notifiable disease (underlying cause)

Data sources

Health Statistics Unit (cases of the notifiable diseases and deaths) and Central Statistics Office (population data based on census and population projections).

Presentation

The indicators will be presented annually by age group, sex, and district, as absolute and relative figures. Deaths only as absolute figure.

4. Sexual transmitted diseases

Diseases included are Urethral discharge syndrome, Vaginal discharge syndrome, Genital ulcer syndrome, Lower abdominal pains (PID), Inguinal bubo, VDRL/RPR positive and Warts. STD contacts are also included.

Indicators

4.1. Reported new cases of each sexual transmitted diseases

Numerator: Reported new cases on each STDs for outpatients

Denominator: Population

Data sources

Health Statistics Unit

Presentation

The indicator will be presented annually by age group, sex, and district.

5. Malnutrition

Indicators

5.1. Prevalence of underweight among children under 5 years

Numerator: Number of children under 5 years attending child welfare clinics who are below 2 standard deviations from the median weight-for-age of WHO/NCHS populations

Denominator: Number of children under 5 years attending child welfare clinics

5.2. Prevalence of anaemia (haemoglobin below 12 g/dl) among pregnant women

Numerator: Number of pregnant women attending ante natal care (ANC) with anaemia (haemoglobin below 12 g/dl)

Denominator: Number of pregnant women attending ANC

Data sources

Routine data will be collected from the Nutrition Unit (on underweight) and the Health Statistics Unit (on anaemia). Data on mothers and children who attending health facilities.

Presentation

Annual figures by age groups, and district.

6. Maternal/obstretical complications

Indicators

6.1. Maternal mortality rate (ratio)

A maternal death is the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and the site of the pregnancy, from any cause related to or aggravated by pregnancy or its management, but not from accidental or incidental causes (13).

Numerator: Number of institutional maternal deaths (direct and indirect) x 1000

Denominator: Number of institutional live births

6.2. Infant mortality rate

Numerator: Estimated number of infants deaths under one year of age x 1000

Denominator: Estimated number of live births

6.3. Neonatal mortality rate

Numerator: Number of institutional neonatal deaths (deaths to infants under 28 days of age) x 1000

Denominator: Number of institutional live births

6.4. Proportion of live births with low birth weight

Numerator: Number of institutional live births with birth weight less than 2500 g x 100

Denominator: Number of institutional live births

6.5. Teenage pregnancies

Numerator: Number of pregnant women less than 20 years attending ante natal care

Denominator: Number of pregnant women attending ANC

6.6. Reported new cases of complicated pregnancies
Number of reported new cases of complicated pregnancies (haemorrhage, infection, anaemia and hypertension) among women attending antenatal care

Denominator: Number of pregnant women attending ANC

6.7. Reported new cases of complicated deliveries (obstructed labour)

Numerator: Number of complicated deliveries (obstructed labour) at health facilities

Denominator: Number of deliveries at health facilities

Data sources

Maternal and Child Health, Family Planning Unit (MCFP) will provide data on maternal deaths. The Central Statistics Office will provide estimates of infant mortality, and Health Statistics Unit will provide figures for the rest.

Presentation

Maternal, infant and neonatal mortality will only be presented at the national level.

Low birth weight among children, teenage pregnancy (for each single year), complicated pregnancies and deliveries, will be presented by age group, and at district level.

7. Road traffic accidents*Indicators*

7.1. Police reported road traffic accidents

Numerator: Number of police reported road traffic accidents

Denominator: Number of registered vehicles

7.2. Major causes of road traffic accidents

Numerator: Number of police reported road traffic accidents by causes x 100

Denominator: Total number of road traffic accidents

7.3. Police reported number of injuries (fatal, serious and minor)

Fatal is deaths, serious is admitted and minor is outpatients.

Numerator: Number of police reported road traffic injuries

Denominator: Total population and number of registered vehicles

Data sources

Data on road traffic accidents will be collected from the Department of National Transport and Communication, Road Safety Division. These figures are based on reported cases from the Botswana Police. The police use and complete the BP 68 Traffic Accident Report Form. Data from the police are of superior quality compared with figures based on reported cases in the health care system (undercoverage).

Presentation

The indicators will be presented annually for the whole country, with absolute number by police district. The police districts are different from health districts.

Road traffic accidents per 1000 vehicles will be published at the national level. The number of persons injured (fatal, serious and minor) will also be presented per 100 000 population and per 1000 vehicles at the national level.

8. Hypertension*Indicators*

8.1. Reported deaths due to hypertension

Numerator: Number of institutional deaths caused by hypertension (underlying cause)

Denominator: Population

Data sources

Health Statistics Unit

Presentation

The indicator will be presented annually by age group, sex and district.

9. Eye diseases – blindness*Indicators*

9.1. Reported new cases of Senile Cataract

Numerator: Number of reported new cases of Senile Cataract for outpatients

Denominator: Total population

9.2. Reported new cases of Chronic Simple Glaucoma

Numerator: Number of reported new cases of Chronic Simple Glaucoma for outpatients

Denominator: Total population

9.3. Reported new cases of Trachoma

Numerator: Number of reported new cases of Trachoma for outpatients

Denominator: Total population

9.4. Reported new cases of Ulcer

Numerator: Number of reported new cases of Ulcer for outpatients

Denominator: Total population

Data sources

Health Statistics Unit.

Presentation

The indicators will be presented annually by sex, age group, and district (form MH3028).

10. Mental health*Indicators*

10.1. Reported new cases of schizophrenia

Numerator: Reported new cases of schizophrenia for outpatients

Denominator: Total population

10.2. Reported new cases of alcohol and drug related problems

Numerator: Reported new cases of alcohol and drug related problems outpatients

Denominator: Total population

10.3. Reported new cases of affective disorders, depression and mania

Numerator: Reported new cases of affective disorders, depression and mania for outpatients

Denominator: Total population

Data sources

The Health Statistics Unit will provide figures based on outpatients (MH 1053) and inpatients (MH 2030) forms on mental health.

Presentation

The indicator will be presented annually by age group and sex at national level.

11. Major causes of inpatient diagnosis*Indicators*

11.1. The five major causes of inpatient diagnosis
 Numerator: Number of the five major causes (ranged by three-category level in ICD) of inpatient discharges x 100

Denominator: All inpatient discharges

Data sources

Health Statistics Unit

Presentation

The figures will be presented annually by sex and age group at national level. In order major causes of diagnosis the three-category level in ICD will be used, as absolute number and in per cent of all inpatients.

12. Major causes of inpatient deaths*Indicators*

12.1. The five major causes of inpatient deaths
 Numerator: Number of the five major institutional causes of deaths (ranged by three-category level in ICD) x 100

Denominator: All inpatient deaths

Data sources

Health Statistics Unit

Presentation

The indicator will be presented annually by sex and age group at the national level. The major causes will be ranged with diseases at the 3-digit level in ICD. The absolute number and in per cent by inpatient deaths.

Health service indicators**1. Health expenditures at national level***Indicators*

- 1.1. Recurrent health expenditure per capita
- 1.2. Recurrent health expenditure used on health administration, training and research per capita
- 1.3. Recurrent health services expenditure per capita
- 1.4. Health expenditure in per cent of total governmental expenditures

Data sources

Central Statistics Office (national accounts)

Presentation

The indicators will be presented at the national level.

2. Health personnel

Health personnel categories included are physicians, midwives, nurses and family welfare educators.

Indicators

2.1. Health personnel on each personnel category
 Numerator: Number of health personnel on each personnel category x 10000
 Denominator: Total population

Data sources

Directorate of Public Service Management (computerised personnel management system). Health Statistics Unit will give figures for those that are not computerised.

Presentation

The indicator will be presented by district (absolute number and rate).

3. Health facilities*Indicators*

3.1. Number of health facilities
 Number of health facilities by type (hospital, clinics and health posts)

Data sources

Health Statistics Unit

Presentation

The indicator will be presented by facility type (hospital, clinics and health posts), and by district.

4. Hospital activities*Indicators*

- 4.1. Bed occupancy rate
 Numerator: Total patient days x 100
 Denominator: Number of beds x number of days per year
- 4.2. Hospital bed turn over rate
 Numerator: Number of discharged plus deaths
 Denominator: Rated beds
- 4.3. Average length of stay
 Numerator: Number of patient days
 Denominator: Number of discharged plus deaths

Data sources

The Health Statistics Unit will give figures from the midnight census.

Presentation

The indicator will be presented by facility type.

5. Expanded programme on immunisation (EPI)

Proportion of children under one year immunised against on poliomyelitis, BCG, Measles, DPT3 (diphtheria, pertussis and tetanus) and hepatitis B.

Indicators

5.1. Immunisation coverage for each vaccine

Numerator: Number of children under one year old immunised with each vaccine (see above)

Denominator: Estimated number of children less than one year old

Data sources

Data will be collected from the Expanded Programme on Immunisation (EPI) Unit. The Central Statistics Office will provide figures for births estimate at district level.

Presentation

Annual figures by district.

6. Coverage of notifiable diseases

Each facility with nurse must report weekly notifiable diseases (MH 2007). The indicator shows the annually reported coverage

Indicators

6.1. Proportion of facilities that have reported notifiable diseases

Numerator: Number of facilities that have reported notifiable diseases x 100

Denominator: Number of facilities expected to report notifiable diseases

Data sources

Health Statistics Unit.

Presentation

The indicators will be presented by district.

7. Maternal and child health care

Indicators

7.1. Proportion of women who received ANC services in first trimester of pregnancy

Numerator: Number of women who received ANC services in the first trimester of pregnancy from outpatients

Denominator: Total number of women who received ANC services

7.2. Proportion of women who attended PNC services

Numerator: Number of women who received PNC services for outpatients

Denominator: Estimated total number of deliveries

Data sources

The Health Statistics Unit and Central Statistics Office

Presentation

The indicator will be presented by age group, and by district.

References

1. Lwanga, S.K. (1995): Preliminary examination of ways of strengthening the health information system. 29 May - 2 June 1995. Botswana Ministry of Health in collaboration with NORAD/WHO/UNICEF. Geneva: HST/SCI, WHO HQ.
2. Ministry of Health, Botswana (1996): Results of the Workshop for the Selection of Essential Health Indicators. 11 - 15 March 1996. Gaborone. Ministry of Health, Botswana in co-operation with the World Health Organization, UNICEF and Statistics Norway.
3. Ministry of Health, Botswana (1997): Botswana Health Information System: Assessment and Five-Year Plan. October 1997. Gaborone. Ministry of Health, Botswana in co-operation with the World Health Organization, UNICEF and Statistics Norway.
4. Majelantle, R. G. and S. Moeng (1998): Botswana Health Indicators. April 1998. Draft.
5. Moeti, Themba, Patricia Leepile, Tharald Hetland and Lisa Lundgren (1998): Final report on the Mid Term Review of the Health Sector Agreement between Norway and Botswana. September 1998.
6. Contract between Statistics Norway and Ministry of Health regarding improvement of health statistics (1996): Signed by both partners in August 1996.
7. Letter from Health Statistics Unit (1998): Letter dated 23 October 1998 to Program Co-ordinators Ms. G. Moalosi, Ministry of Health and Mr. I. T. Olsen, Centre for Partnership and Development. 4 documents were enclosed with the letter, incl. Amendments to the contract.
8. Agreed Minutes of the Annual Meeting on the Health Sector Agreement between Norway and Botswana (1998): Gaborone, November 26 1998. Point 7.2 Health Information System.
9. Moalosi, Gillian M. and Ingvar Theo Olsen (1999): Report from Workshop on Indicators and AIDS. Francistown, 24 - 27 August 1999.
10. Ten important health indicators for South Africa (1998): Health Status. Last modified 18 August 1998. Web-address: <http://www.hst.org.za/sahr/ch3hi10.htm>
11. Central Board of Health, Lusaka (1997): Health Management Information System. Indicators. 9 May 1997.
12. Minutes from the Annual Review Meeting Gaborone (1998): 14 - 15 October 1998. Reported by Gillian Moalosi and Ingvar Theo Olsen.
13. World Health Organization (1993): *ICD-10. International Statistical Classification of Diseases and Health Related Problems. Tenth Revision Volume 2*, Geneva. 1993.

Contract between Statistics Norway and Ministry of Health. August 1996

CONTRACT
between
STATISTICS NORWAY
and
MINIATRY OF HEALTH
regarding

0. PREAMBLE

Norway and Botswana have had close cooperation regarding the development of the health sector in Botswana since the early seventies.

An Agreement between Norway and Botswana regarding Institution Cooperation within the Health Sector, " the Health Sector Agreement" , was signed on 21 February 1996. The objective of the Health Sector Agreement is to support and supplement Botswana's development efforts in the health sector in the planned period 1996-2000 with the goal to improve the quality of the health care services. The Project for Improvement of Health Statistics (" the Project"), as an element of the Health Information System, constitutes one of the activities under the mentioned Agreement. This contract shall be governed by and subordinated to the Health Sector Agreement.

1. SCOPE AND OBJECTIVES

- 1.1 This contract sets forth the terms and procedures regarding cooperation between Statistics Norway on one side and the Ministry of Health on the other side regarding Improvement of Health Statistics.
- 1.2 The Aim of the Project is to contribute to the improvement of the quality of health care services in Botswana.
- 1.3 The Goal of the Project is to improve Health Statistics, as part of the Health Information System, making it more efficient, timely and designed to meet the needs of the health system and its clients.
- 1.4 The Purpose of the Project is to assist in improving the collection, compilation, processing, analysis and dissemination/ publication of health statistics.
- 1.5 The agreed volume of the Project is NOK 4,883,200 over the five-year period 1996-2000.
- 1.6 Statistics Norway shall provide up to four person-months of assistance per year. Further assistance may be agreed upon.

2. PROGRAMME MONITORING

The Partners shall meet annually in August/September each year, alternately in Gaborone and Oslo. The meeting shall be coordinated with the meetings of the other components under the Health Sector Agreement. The meeting shall prepare documentation that shall be forwarded to the Planning Unit in the Ministry of Health, and hence form the basis of the Annual Report that Botswana shall submit to Norway before the Annual Meeting between the two countries, as stated in the Health Sector Agreement, Article VII.

The documentation shall include:

- a progress report giving information on output compared to targets, workplan and time schedule, use of inputs, problems encountered or foreseen and other information related to the implementation of the Project;
- Project accounts related to the agreed budget, specifying income from all sources and all expenditures;
- workplan with planned outputs and time schedule for the next year;
- a budget for the next year, showing all expenditures.

The meeting may also:

- propose amendments or additions to this Contract for consideration of the Partners;
- propose new components/activities to be included in the Health Sector Agreement;
- cater for a technical/professional seminar regarding specific issues.

The procedures for the annual reporting routines may be changed after the mid-term review of the Health Sector Agreement.

3. OBLIGATIONS OF STATISTICS NORWAY

3.1 Statistics Norway shall provide professional assistance in the following fields of importance for the health information system, as further outlined in Project Document of March 1996, but not necessarily limited to these areas if both parties agree:

a. Review of data collected to identify areas for simplification as well as for additional collection of data, including data on diseases, treatment, personnel, facilities and expenditures. The review will also look at the data collection systems, including computer systems, and recommend revised or new systems if required. The review will further make recommendations for processing, analysis, dissemination, publication and use of health statistics.

b. Community-based studies, if the review under (a) finds that routine data collection cannot satisfactorily provide the required data, including data on health indicators.

c. Improved registration of births and deaths, including the possibilities for expanding the O

mang register to a comprehensive population register.

- 3.2 Assistance from Statistics Norway will be given through advisory personnel to Botswana, professional advice through telecommunication, and short term training of Botswana in Norway.
- 3.3 Statistics Norway shall arrange for training of Botswana during the period of cooperation 1996-2000.
- 3.5 Statistics Norway shall make available sufficient and qualified personnel as stated in the annual plans agreed upon in the Annual Meeting referred to in Article II, clause 6, of the Health Sector Agreement.
- 3.6 Statistics Norway shall facilitate and carry out necessary preparations and arrangements in connection with Government of Botswana personnel visiting Norway in connection with this contract.
- 3.7 Statistics Norway shall forward invoices for reimbursement of the costs incurred to the Ministry of Health twice a year, by 1 March and 1 October.
- 3.7 Statistics Norway shall carry out their obligations under this contract in accordance with the highest professional standards.
- 3.8 The Parties shall accept Centre for Partnership in Development as coordinator for the Norwegian institutions participating in activities under/components of the Health Sector Agreement.

4. OBLIGATIONS OF THE MINISTRY OF HEALTH

- 4.1 The Ministry of Health in cooperation with Central Statistics Office (CSO) shall make available sufficient and qualified personnel and equipment, including office space and transport, to cooperate with Statistics Norway regarding all activities under this agreement. The focal point and coordinator of the cooperation is the Health Statistics Unit.
- 4.2 The Ministry of Health shall facilitate and carry out necessary preparations and follow-up of tasks in connection with the cooperation, hereunder all necessary arrangements in connection with Statistics Norway personnel visiting Botswana in connection with this contract.
- 4.3 MoH in cooperation with CSO shall undertake a review of training needs in health statistics at national and district level.
- 4.4 The MoH shall provide computer hardware and software required for an effective health information system at national and district level.
- 4.5 The designated unit in the Ministry of Health shall, after approving the supporting documentation / invoices from Statistics Norway, forward these to the Planning Unit in Ministry of Health, without delay.

5. FINANCING OF THE PROGRAMME

All costs in connection with the Project shall be covered under and/or in accordance with the Health Sector Agreement between Norway and Botswana, according to annual budgets to be agreed upon in accordance with the procedures set forth in the mentioned Agreement and in para 2 of this Contract.

6. DISPUTES

- 6.1 If any dispute arises relating to the implementation of this contract, there shall be mutual consultations between the Partners with a view to secure a successful implementation of the Project.
- 6.2 Any dispute in connection with this Contract which cannot be solved amicably, between the Partners, shall be referred to the Annual Meeting referred to in Article II, Clause 6, of the Health Sector Agreement for final settlement.

7. ENTRY INTO FORCE - TERMINATION

- 7.1 This Contract shall enter into force on the date of its signature.
- 7.2 The Contract shall remain in force until the expiration of the Health Sector Agreement, or as otherwise agreed between the Partners in writing.
- 7.3 Each Partner may terminate the Contract by giving three months written notice to the other Partner, with copy to NORAD and Ministry of Finance and Development Planning.

Upon the receipt of such notice of termination both Partners shall exert their best efforts to bring the work to an end in a rapid, orderly and economical manner, and will deliver to each other any plans or documents completed as part of this Agreement.

In the event of termination, the Parties shall be entitled to payment for services satisfactorily performed and expenses properly incurred prior to the date of termination.

—0—

In witness whereof the undersigned, acting on behalf of their respective institutions, have signed this Contract in two originals in the English language.

Gaborone 9-August-1996
.....
Place and date

Oslo 29.08.96
.....
Place and date

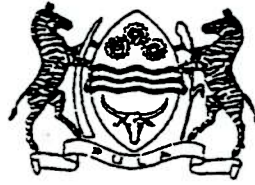
Eddy Maganu
For Ministry of Health

Roar Langa
For Statistics Norway

Appendix B

Letter from Health Statistics Unit to Programme Co-ordinators. 23 October 1998. Encl. only documents 2-4

TELEPHONE: 356855
 FAX: 314697
 TELEGRAMS: RABONGAKA
 TELEX: 2818 CARE BD
 REFERENCE:



REPUBLIC OF BOTSWANA

Health Statistics Unit
 MINISTRY OF HEALTH,
 PRIVATE BAG 0038,
 GABORONE.

23 October 1998

Ms. G. Moalosi, Programme Co-ordinator, Project Co-ordination Unit, The Ministry of Health
 Mr. Ingar Theo Olsen, Programme Co-ordinator, Centre for Partnership and Development (DIS)

Project for Improvement of Health Information System

Reference is made to the Annual Review Meeting 14 - 15 October in Gaborone.

After this meeting the Health Statistics Unit and Statistics Norway have been working on the project. Together we have gone through the work plan and budget, the recommendations from the Mid Term Review Team and the areas of co-operation. Please find enclosed a set of four documents about these issues. Please go through this document and please tell us if you have comments or feel something needed to be clarified.

Parts of document 1 have been corrected, so the enclosed document will replace that version you were given at the annual meeting.

Enclosed are the following documents:

1. Progress reports, accounts, work plans and budgets
 - 1996/96 accounts
 - 1997/98 progress report and accounts
 - 1998/99 (1 April-30 September) progress report and accounts
 - 1998/99 (1 October 1998-31 March 2000) work plan and budget
 - 1999/2000 work plan and budget
2. Reasons for the exclusion of civil registration from HIS project
3. Amendments to the contract
4. Comments on the recommendations made by the Review Team

All these documents were discussed and agreed upon by the both partners, Health Statistics Unit and Statistics Norway. Questions or request for more information can be addressed to any of the partners.

Thank you.

Sincerely,

G. Beleme

F. Gjertsen

Co-ordinators, Health Information Systems

J. K. Borgan

Encl.: 4 documents

Copy with enclosures to:

Dr. Themba Moeti, The Mid Term Review Team of the Health Sector Agreement
 Dr. Tharald Hetland, The Mid Term Review Team of the Health Sector Agreement
 Ms. Lisa Lundgren, The Mid Term Review Team of the Health Sector Agreement
 Ms. P. Leepile, The Mid Term Review Team of the Health Sector Agreement
 Mr. Bjørn K. Wold, Head of International Consulting Office, Statistics Norway

Gaborone, 20 October 1998

Project document

Improved registration of births and deaths and the health information system

by Finn Gjertsen, G. Beleme and Jens-Kristian Borgan

Introduction

The mid term review of the Health Sector Agreement between Norway and Botswana (1) found that the registration of births and deaths as a component of the contract between Statistics Norway and the Ministry of Health in Botswana regarding improvement of health statistics (2), has not been addressed. During the exercise the review team was informed that this issue could not be dealt with during the current contract. As this is an important issue, the review team recommended that clear decision be made, as how this could be addressed. This issue was also taken up at the Annual Review Meeting for the Health Sector Collaboration on 14 - 15 October 1998 in Gaborone.

Background

Currently there is significant under-registration of births and deaths, especially deaths and causes of deaths. At the Workshop for the selection of Essential Health Indicators in March 1996 in Gaborone, improved registration of births and deaths was discussed and given priority. This workshop (3) gave the following tasks recommendation:

- Decentralize issuing of birth and death certificate.
- Improve registration of non-institutional births and deaths.
- Assign ID number at birth (*O mang*).
- Link *O mang* and civil registration.
- Introduce legislation to make a certificate a requirement for all services.
- Issue certificates to all *O mang* card holders.

This issue is reflected in the Contract between Botswana Ministry of Health and Statistics Norway on Improvement of health statistics (2). According to point 3.1.c in the contract, Statistics Norway shall provide professional assistance in the field "Improved registration of births and deaths, including the possibilities for expanding the *O mang* register to a comprehensive population register". In general under point 3.1 it says that assistance not necessarily shall be given to fields mention under point 3 if both parties agree.

Exclusion of civil registration in this project

In the project document of 25 March 1996 from Statistics Norway (3), this issue is outlined and discussed. It is stated that the total budget for the co-operation between The Health Statistics Unit and Statistics Norway would be too limited, if the Government of Botswana wished Statistics Norway to provide substantial assistance in improving civil registration and expanding the *O mang* register. However, Statistics Norway followed up this subject with the Department of Civil Registration in the Ministry of Labour and Home Affairs in 1996. In a telefax of 23 August 1996 from Statistics Norway to Civil Registrar - with copy to Mr. Semele, the Ministry of Health and Mr. I.T. Olsen, the Centre for Partnership and Development - it was suggested the if the Ministry would like support from Statistics Norway on this issue, a letter requesting funds possible through the Ministry of Finance and Development Planning is needed. This was followed up in a meeting in September 1996 (4).

The other point that lead to the exclusion of civil registration in this project was the fact that when the project started, The Department of Civil Registration was already engaged in a project aimed at improving the registration of births and deaths. The project is still on going. The revised Civil Registration Act was passed by parliament early in 1998 (5). Births and deaths forms have been revised and plans are underway to engage a consultant to develop computer systems. Government of Botswana funds the project and the United Nations Fund for Population Activities provides technical assistance in some areas.

Conclusion

The co-operation between the Health Statistics Unit and Statistics Norway, Division of Health Statistics will not include improved registration of births and deaths. The explanation is partly that the Ministry of Labour and Home Affairs already addresses this issue, and partly because of the magnitude of the work, it would exceed the budget.

Documents and references

1. Draft report on the mid term review of the health sector agreement between Norway and Botswana. Dr Themba Moeti, Mrs Patricia Leepile, Dr Tharald Hetland, Mrs Lisa Lundgren. September 1998
2. Contract between Statistics Norway and Ministry of Health regarding improvement of health statistics. Signed by both partners in August 1996. 5 pages.
3. Project Document on Improvement of Health Statistics. Co-operation between Statistics Norway and Ministry of Health of Botswana. Helge Brunborg. 25 March 1996. Statistics Norway.
4. Report from the Annual Review Meeting on the Health Sector Agreement between Botswana and Norway. Gaborone 3 - 4 September 1996. Leif Korbøl. 17 October 1996. Statistics Norway.
5. Amendment Bill No. 16 of 1988 in Botswana Government Gazette, Supplement A of 25 September 1998.

Gaborone, 22 October 1998

Project document

Review of areas of co-operation between Health Statistics Unit and Statistics Norway and the agreement for the project to improve health information system

By Finn Gjertsen, Gale Beleme and Jens-Kristian Borgan

Introduction

Through the co-operation between Health Statistics Unit (HSU) in Botswana and Statistics Norway (SN), Division for Health Statistics, it has been cleared out that there are needs for updating areas of the co-operation, as they are described in the contract (1).

Review of the contract

Based on the results and recommendations of the Workshop for selection Essential Health Indicators in 1996 (2), the Assessment of Botswana Health Information System in 1997 (3), and the Mid Term Review of the health sector agreement in 1998 (4) and the Annual Review Meeting 14 - 15 October 1998, the contract is reviewed on the following points (1) :

1. Scope and objectives

1.1 "This contract sets forth the terms and procedures regarding co-operation between Statistics Norway on one side and the Ministry of Health on the other side regarding Improvement of Health Statistics."

Comment: Add after end of the sentence:, as part of the Health Information System.

1.3 "The Goal of the Project is to improve Health Statistics, as part of the Health Information System, making it more efficient, timely and designed to meet the needs of the health systems and its clients".

Comment: The project has been extended to include both health statistics and information from the health programmes.

1.4 "The Purpose of the Project is to assist in improving the collection, compilation, processing, analysis and dissemination/publication of health statistics."

Comment: Health statistics replaced with health information.

1.6 "Statistics Norway shall provide up to four person-months of assistance per year. Further assistance may be agreed upon."

Comment: This is part of the obligations of Statistics Norway under point 3.

3. *Obligations of Statistics Norway*

3.1. a, b and c (a. regarding review of data, b. regarding community-based studies and c. regarding improved registration of births and deaths).

Comment: These are areas of the project co-operation between the Health Statistics Unit and Statistics Norway.

3.1.a “Review of data, collection to identify areas for simplifications as well as for additional collection of data, including data on diseases, treatment, personnel, facilities and expenditures. The review will also look at the data collection systems, including computer systems, and recommend revised or new system if required. The review will further make recommendations for processing, analysis, dissemination and use of health statistics.”

Comment: The main areas of the project co-operation are covered in this point. However, the areas have been extended to include a) a link to the health indicators, and b) data from health programmes. These issues include review of forms, designing of forms, review of data flow pathways, and review instructions, feedback mechanisms and evaluation of the use of forms. Expenditure is not included in the Health Indicators, but the issue is still on the plan.

3.1.b. “Community-based studies, if the review under (a) finds that routine data collection cannot satisfactorily provide the required data, including data on health indicators.”

Comments: If the review of forms and data finds that routine statistics cannot provide data to the health indicators, data would have to be collected through community based studies. The partners (the Health Statistics Unit and Statistics Norway) have to specify and identify the need for such data. Community based studies will be co-ordinated by the Health Research Unit in the Ministry of Health. If the Health Research Unit will need assistance from Statistics Norway in planning and analysing these studies, they will have to request for a separate contact and budget.

3.1.c “Improved registration of births and deaths, including the possibilities for expanding the *O mang* register to a comprehensive population register.”

Comment: Improved registration of births and deaths has been excluded from this project. Detailed explanation for the exclusion in a separate document (5).

3.4 is missing and 3.7 is doubled.

4. *Obligations of the Ministry of Health*

4.3 “The MoH in co-operation with CSO shall undertake a review of training needs in health statistics at national and district level.”

Comment: The Ministry of Health should also arrange for training of Botswana during the project period.

Consensus

The co-ordinator of both parties agreed on this review and comments.

Documents and references

1. Contract between Statistics Norway and Ministry of Health regarding improvement of health statistics. Signed by both partners in August 1996. 5 pages.
2. Results of the Workshop for the Selection of Essential Health Indicators. Gaborone. 11 - 15 March 1996. Ministry of Health, Botswana in co-operation with the World Health Organisation, UNICEF and Statistics Norway.
3. Botswana Health Information System: Assessment and Five Years Plan. Gaborone, October 1997. Ministry of Health, Botswana in co-operation with the World Health Organisation, UNICEF and Statistics Norway.
4. Draft report on the mid term review of the health sector agreement between Norway and Botswana. Dr Themba Moeti, Mrs Patricia Leepile, Dr Tharald Hetland, Mrs Lisa Lundgren. September 1998.
5. Project document. Improved registration of births and deaths. Finn Gjertsen, Gale Beleme, Jens-Kritian Borgau. Gaborone, 20 October 1998.

Gaborone, 21 October 1998

Health Information System: Comments on the recommendations in the Mid Term Review of the Health Sector Agreement between Norway and Botswana

By Jens-Kristian Borgan, G. Beleme and Finn Gjertsen

Introduction and comments on the recommendations

The Agreement between Norway and Botswana regarding Institutional Co-operation within the Health Sector was reviewed in August/September 1998. The team reviewed the nine component of The Health Sector Agreement. Their focus was on continuation of the institutional co-operation within the individual components/activities, the institutional capacity of the involved institutions, achievements regarding goals and purpose of the individual components, the success of the institutional co-operation and the interest for continued co-operation and the future financing of the programme. Based on this they came up with some recommendations for each component. Below are our comments on recommendations on the project Health Information System:

28. The 5-Year Plan of Action for the Botswana Information System will run until year 2003. The co-operation project between Statistics Norway and Health Statistics Unit will be a incorporated in this plan. The Health Sector Agreement between Norway and Botswana will run until year 2001. It seems not probable that the project Health Information System can be carried out in the supposed time. New forms will be implemented in year 2001 and it will therefore be impossible to evaluate them during the Health Sector Agreement period. We will therefore send a proposal to the Ministry of Finance and Development Planning and NORAD to extend the project period.

A reason for extending the project is also that the project will cover the whole Health Information System, not only data from HSU.

29. The staffing capacity in Health Statistics Unit (HSU) is a serious problem, and we agree with the Review Team that it has to be strengthened. HSU will be responsible for Health Information System activities also concerning data collected by programmes in Ministry of Health. For doing these tasks, HSU needs capacity especially in computing, medical coding (ICD) and epidemiology. Medical support for coding of written information is also needed. We are however, a bit worried because this is not the first review to come up with this recommendation but it is never implemented.

It is true that the Health Statistics Unit has shortage in skill personnel but we feel there is more to that. It is a pity the review team did not look at the structure of the ministry which we think contributes a lot to this shortage. For example, there are several surveillance units in the ministry. If these units were place under one section they would be in a position to share the resources.

Health information is part of the health care system and as such all management structures in the systems are fully responsible for the support of health information systems activities. There is need for the health information systems to be represented at the policy and decision

making level. This is very important for the success and effectiveness of the systems.

30. Mr. Leif Korbøl, Head of Division for Health Statistics was co-ordinator on the Norwegian side until he moved to Mozambique in February 1998. We agree with the Review Team that it was unclear who was the project co-ordinator at Norwegian side from then, but the project members took care of the contact to the Botswana side. From now Mr. Finn Gjertsen will be the project co-ordinator on the Norwegian side.

When the co-operation started in 1996 the following persons were involved from Statistics Norway: Mr. Helge Brunborg, Mr. Leif Korbøl, Ms. Anne Mundal and Mr. Finn Gjertsen. Mr. Jens-Kristian Borgan has participated from mid of 1997. Mr. H. Brunborg, Mr. L. Korbøl and Mrs. A. Mundal are not involved in the project at present time.

After the Annual Review Meeting in Gaborone 14-15 October 1998, we discussed past communication problems and how to ensure progression of the co-operation. We recommended that the co-ordinator on the Norwegian side should be someone who is actively involved in the project. This is important for continuity. Based on earlier experience the project progresses better when communication is directly between actively involved persons from both sides. The only person who has been involved in the project on Norwegian side since the start in 1996 will from now on be the co-ordinator on the Norwegian side.

Other comments to the Review Report

It is a problem that the Health Indicators are still in draft form. This matter will delay the progress of reviewing and redesigning health data collection instruments more. The draft of the Health Indicators was handed to the Programmes in April 1998 for comments. Some programmes have still not responded despite follow up. The finalisation of this document is important for the further work with the data review of forms used by HSU and the programmes.

Appendix C

**Letter from Statistics Norway to Ministry of Health, Botswana.
28 October 1999****Statistisk sentralbyrå**
Statistics Norway

Ministry of Health
Att: Permanent Secretary Dr. J. K. Mulwa
Private Bag 0038
Gaborone
Botswana

Kongens gt. 6
P. b. 8131 Dep.
N-0033 Oslo
Tel.: +47-22 86 45 00
Fax: +47-22 86 49 73

Postgiro/ Postal account:
0801 5053004
Bankgiro/ Bank account:
8200 01 32450

Oslo, 28 October 1999
Our ref.: 99/2839-1/FGj
Executive officer: Finn Gjertsen. Tel.: +47 22 86 45 44. E-mail: fgj@ssb.no
Division for Health Statistics
Health Information System project

The Essential Health Indicators and the Health Information System in Botswana

Dear Dr. J. K. Mulwa,

Reference is made to Health Information System's presentation at the Annual Review Meeting of the Health Sector Agreement between Botswana and Norway, Sundvolden Hotel, Norway, 20 - 21 October 1999.

The report of health indicators for Botswana is now finalised. Enclosed, please find a copy of this report. We ask the Permanent Secretary to endorse the health indicators.

After the endorsement from you, the report will be published and distributed.

Yours sincerely,

G. Beleme
project co-ordinator, Botswana side

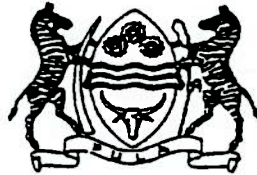
Finn Gjertsen
project co-ordinator, Norwegian side

Encl.: 1

Copy: Head of Division for Health Statistics

**Letter from Health Statistics Unit, Botswana to Statistics Norway.
8 December 1999**

TELEPHONE: 305169
FAX: 314697
TELEGRAMS: RABONGAKA
TELEC 2818 CARE BD
REFERENCE:



REPUBLIC OF BOTSWANA

MINISTRY OF HEALTH,
PRIVATE BAG 0038,
GABORONE.

8 December 1999

Statistics Norway
Oslo

Attention: J. Borgan

Health Indicators Report

I have just come back from the Permanent Secretary's Office to get feedback of the indicators report. He said he has read the report and was very impressed. Our indicators are said to be very good. He told me that he was in Geneva last week and he shared the report with some of his colleagues from UNFPA and they also said that the document was good. The P.S. therefore, has endorsed that the report be published and distributed to all the stakeholders.

Best regards to everyone and have a wonderful festive season.

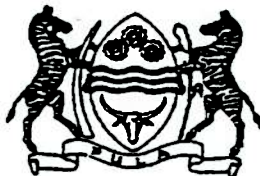
A handwritten signature in cursive script that reads "G. Beleme".

G. Beleme

Health Statistician

**Letter from Ministry of Health, Botswana to Statistics Norway.
25 January 2000**

TELEPHONE: 305169
FAX: 314697
TELEGRAMS: RABONGAKA
TELEC: 2818 CARE BD
REFERENCE:



REPUBLIC OF BOTSWANA

MINISTRY OF HEALTH,
PRIVATE BAG 0038,
GABORONE.

25 January 2000

Statistics Norway
Kongens gt. 6
p.b. 8131 Dep
N-0033 Oslo
Norway

Attention: Finn Gjertsen

**Report on the Essential Health Indicators and Health Information
Systems in Botswana**

I acknowledge receipt of the above-mentioned report.

Good health is a major component in the development of a country and planning for it demands availability of quality data. Your report covers selected key indicators on health problems, health services and health resources. I hope that the proposed indicators would assist us to measure progress towards established targets and goals including the monitoring of changes in the health status of the population.

I therefore commend the report to all stakeholders of the Health Information System, with the hope that they will facilitate the production and dissemination of the indicators.

Yours Sincerely

A handwritten signature in black ink, appearing to read 'Dr. Mazonde'.

Dr. Mazonde
Acting Permanent Secretary, Ministry of Health

cc. Senior Statistician
Health Statistics Unit
Ministry of Health

Appendix F

List of health indicators

Health problem	Health indicator	Source of indicator
1. HIV/AIDS	1.1 Estimated prevalence of HIV in pregnant women in sample	AIDS/STD Unit
	1.2 Reported new cases of HIV	Health Statistics Unit (HSU) MH 1049
	1.3 Deaths of AIDS (underlying cause)	HSU MH 017 (limited to in-patients)
2. Tuberculosis	2.1 Reported new TB cases	Epidemiology Unit
	2.2 Reported relapse cases of TB	Epidemiology Unit
	2.3 Reported institutional deaths by TB (underlying cause)	HSU MH 017 (limited to in-patients)
3. Notifiable diseases (Malaria confirmed, Malaria unconfirmed, Neonatal tetanus (under 4 weeks), Diphtheria, Measles (under 5 years old, Meningitis, AFP (Poliomyelitis), Rabies, Typhoid fever, Hepatitis B, Diarrhoea (under 5 years old), Diarrhoea with blood (under 5 years old), Pneumonia and Pertussis (Whooping cough))	3.1 Reported new cases of each notifiable disease	HSU MH 2007
	3.2 Reported deaths of each notifiable disease (underlying cause)	HSU MH 017 (limited to in-patients)
4. Sexual transmitted diseases (Urethral discharge syndrome, Vaginal discharge syndrome, Genital ulcer syndrome, Lower abdominal pains (PID), Inguinal bubo, VDRL/RPR positive and Warts. STD contacts are also included)	4.1 Reported new cases of each sexual transmitted disease	HSU MH 1049
5. Malnutrition	5.1 Prevalence of underweight among children under 5 years	Nutrition Surveillance Nutrition Unit
	5.2 Prevalence of anaemia (haemoglobin below 12 g/dl) among pregnant women	HSU MH 1049
6. Maternal/obstretical complications	6.1 Maternal mortality rate (ratio)	MCFP-Unit
	6.2 Infant mortality rate	Central Statistic Office (CSO)
	6.3 Neonatal mortality rate	HSU MH 017 (for in-patients)
	6.4 Proportion of children with low birth weight	HSU MH 017 (limited to institutional births)
	6.5 Teenage pregnancies	HSU MH 1049
	6.6 Reported new cases of complicated pregnancies (haemorrhage, infection, anaemia and hypertension)	HSU MH 1049
	6.7 Reported new cases of complicated deliveries (obstructed labour)	HSU (limited to institutional births)
7. Road traffic accidents	7.1 Police reported road traffic accidents	Department of National Transport and Communications, Road Safety Division
	7.2 Major causes of road traffic accidents	Department of National Transport and Communications, Road Safety Division
	7.3 Police reported number of injuries (fatal, serious and minor)	Department of National Transport and Communications, Road Safety Division
8. Hypertension	8.1 Reported deaths due to hypertension (underlying cause)	HSU (limited to in-patients deaths) MH 017
9. Eye disease - blindness	9.1 Reported new cases of Senile Cataract	HSU MH 3028
	9.2 Reported new cases of Chronic Simple Glaucoma	HSU MH 3028
	9.3 Reported new cases of Trachoma	HSU MH 3028
	9.4 Reported new cases of Ulcer	HSU MH 3028

Health problem	Health indicator	Source of indicator
10. Mental health	10.1 Reported new cases of Schizophrenia	HSU MH 2030 and MH 1053
	10.2 Reported new cases of alcohol and drug related problems	HSU MH 2030 and MH 1053
	10.3 Reported new cases of affective disorders, depression and mania	HSU MH 2030 and MH 1053
11. Major causes of in-patient diagnosis	11.1 The five major causes of in-patient diagnosis	HSU MH 017
12. Major causes of in-patient deaths	12.1 The five major causes of in-patient deaths	HSU MH 017

Health service	Health service indicator	Source for indicator
1. Health expenditure at national level	1.1 Recurrent health expenditure per capita	CSO
	1.2 Recurrent health expenditure spent on health administration, training and research per capita	CSO
	1.3 Recurrent health service expenditure per capita	CSO
	1.4 Recurrent expenditure on health in per cent of total governmental expenditures	CSO
2. Health personnel	2.1 Health personnel on each personnel category	Directorate of Public Service Management and HSU
3. Health facilities	3.1 Number of health facilities by type a	HSU
4. Hospital activity	4.1 Bed occupancy rate	HSU MH 002
	4.2 Hospital turnover rate	HSU MH 017 (and MH 002)
	4.3 Average length of stay	HSU MH 017 (and MH 002)
5. Expanded programme on immunisation (EPI) (DPT (diphtheria, pertussis tetanus), measles, poliomyelitis, BCG and hepatitis B)	5.1 Immunisation coverage for each vaccine	EPI-Unit
6. Coverage of notifiable diseases	6.1 Proportion of facilities that have reported notifiable diseases	HSU
7. Maternal and child health care	7.1 Proportion of women who received ANC service in the first trimester of pregnancy	HSU MH 1049
	7.2 Proportion of women who attended the PNC service	HSU MH 1049

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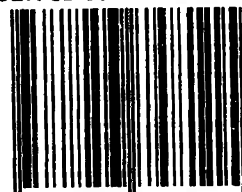
ISBN 82-537-4811-6
ISSN 0806-2056

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