

# BOTSWANA- CAUSES OF MORTALITY 2011

No 2015/1

STATS BRIEF

## STATISTICS BOTSWANA

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## PREFACE

This Statistical Brief summarises administrative data submitted by all health facilities from all health districts in the country. The brief also provides a snapshot on the major causes of deaths among neo-nates, children under five as well as adults for 2002 and 2011.

The Stats brief was compiled by Statistics Botswana through its Health Statistics Unit which is based in the Ministry of Health as part of the Organisation's mandate to support stakeholders in providing data for evidence based decision making, programme monitoring and evaluation.

We sincerely thank all stakeholders who contributed to the production of this brief and appreciate their continued support as we strive to serve the needs of the users.

For more information, contact Directorate of Stakeholder Relations at 3671300. All Statistics Botswana outputs/ publications are available on the website at [www.cso.gov.bw](http://www.cso.gov.bw) and the Statistics Botswana library (Head Office, Plot 8843, Khama crescent, Gaborone)



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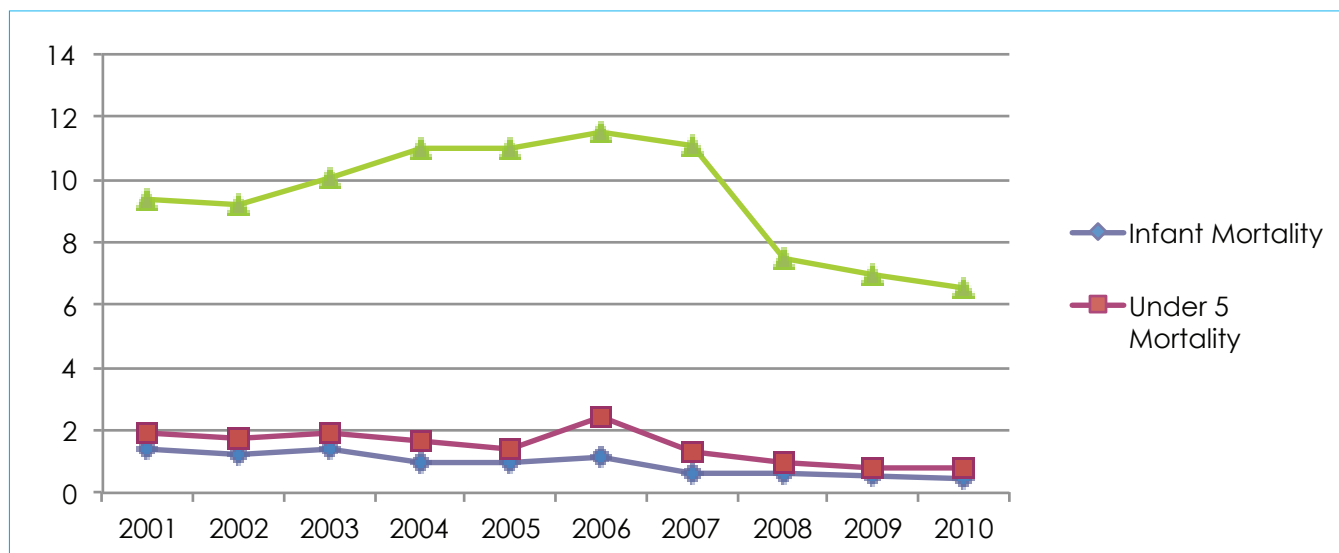
May 2015

## 1.0 Summary of Findings

### 1.1 Mortality of Infant, Children and All ages (excluding Neonatal deaths)

Infant mortality as indicated in **Figure 1** shows the same pattern as that of children Under 5. A slight decrease was observed from 2008 to 2011 in all infant, under-five and All Ages mortality levels. **Table 2**, shows that overall inpatient mortality was 6,353 in 2011 which is a slight decrease of 2.7 percent compared to 6,535 deaths in 2010. According to the results there were more male deaths for the selected period compared to female deaths.

**Figure 1: Infant, Under-Five and Total Mortality Trend, 2002-2011**



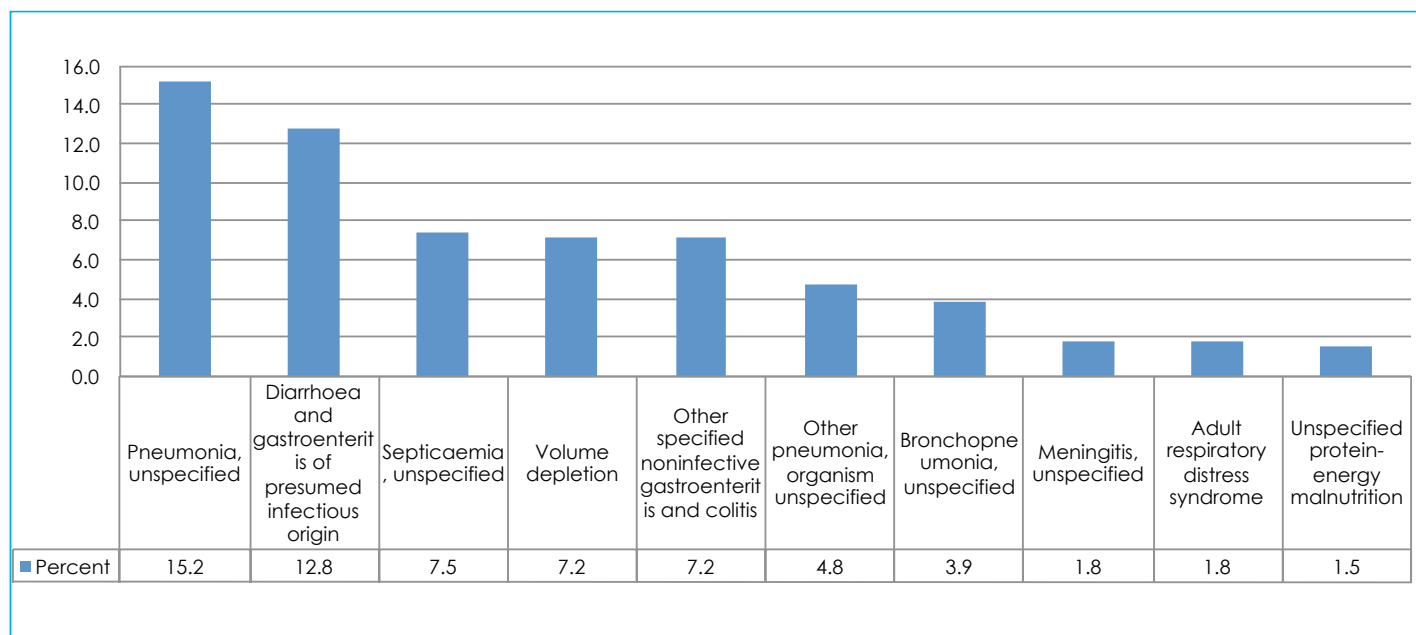
In addition, infant and under five mortality show a decrease of 21.9 percent and 3.6 percent respectively for 2010 and 2011. The report shows that despite the decline in infant mortality over the years some infants did not survive to age 5 years. It further indicates that infant mortality is also higher in males than in females.

#### 1.1.1 Major causes of Infant Mortality

The report shows that Pneumonia and Diarrhoea are the major causes of deaths among infants and children under 5 in Botswana, followed by Septicaemia and Volume Depletion (**Table 3 and Table 4**).

**Additionally, Figure 2** shows major causes of infant inpatient mortality in 2011. Pneumonia constituted the highest with 15.2 percent followed by Diarrhoea (12.8%), Septicaemia (7.5%) and Volume Depletion (7.2%). Other major causes reported recorded less than 5 percent each. The data, however, shows a slight decrease in the percent of infant deaths associated with pneumonia from 18.9 percent in 2010 to 15.2 percent in 2011 (**Table 3**).

**Figure 2: Percentage Distribution of Major Causes of Infant Mortality, 2011**



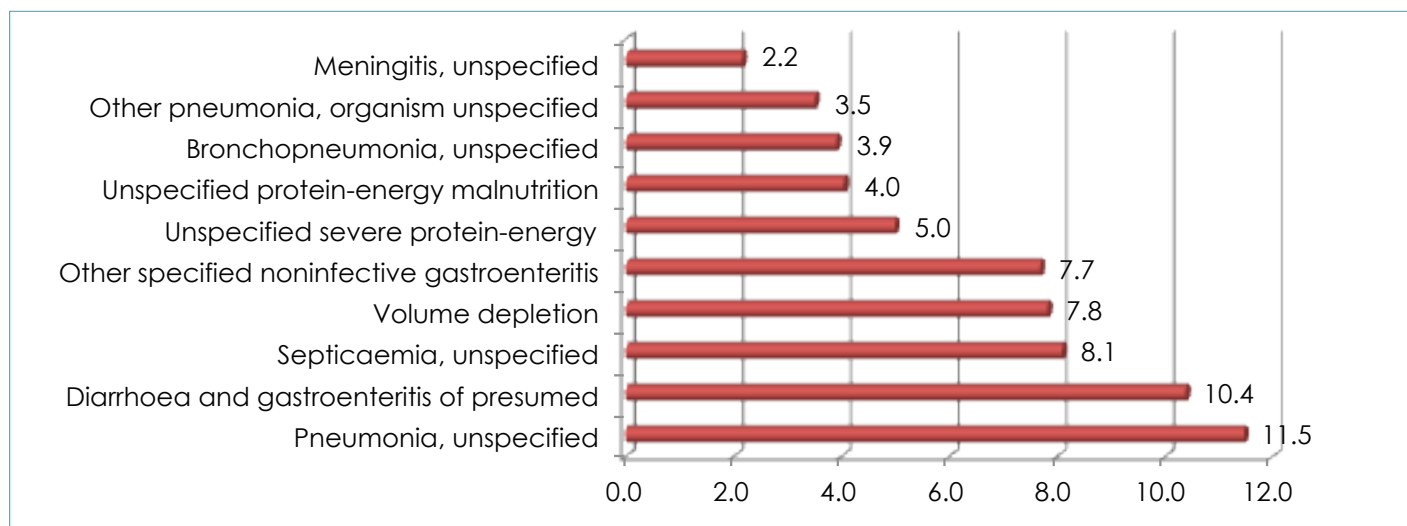
Source: 2002-2011 Health Statistics Reports: Statistics Botswana

### 1.1.2 Major causes of Children Under-Five Mortality

Just as the case of infants, pneumonia, diarrhoea and septicaemia were found to be the leading causes of under-five mortality. Figure 3 shows that in 2011 the above conditions were responsible for 11.5 percent, 10.4 percent and 8.1 percent of under-five deaths respectively. These were followed by volume depletion at 7.8 percent. It is worth noting that the same conditions were still the leading causes in the same order in 2010 as shown in (Table 4).

In its efforts to alleviate the situation, the Botswana Government has embarked on a number of programs to promote the health and survival of the mother and the child. These include the 'Accelerated Child Survival and Development Programme', a robust immunization programme and periodic prevention campaigns. These have resulted in declining infant and child mortality and improved health of mothers between 2008 and 2011. This is in line with the Millennium Development Goals which call for reduction in child mortality and improvement in maternal health.

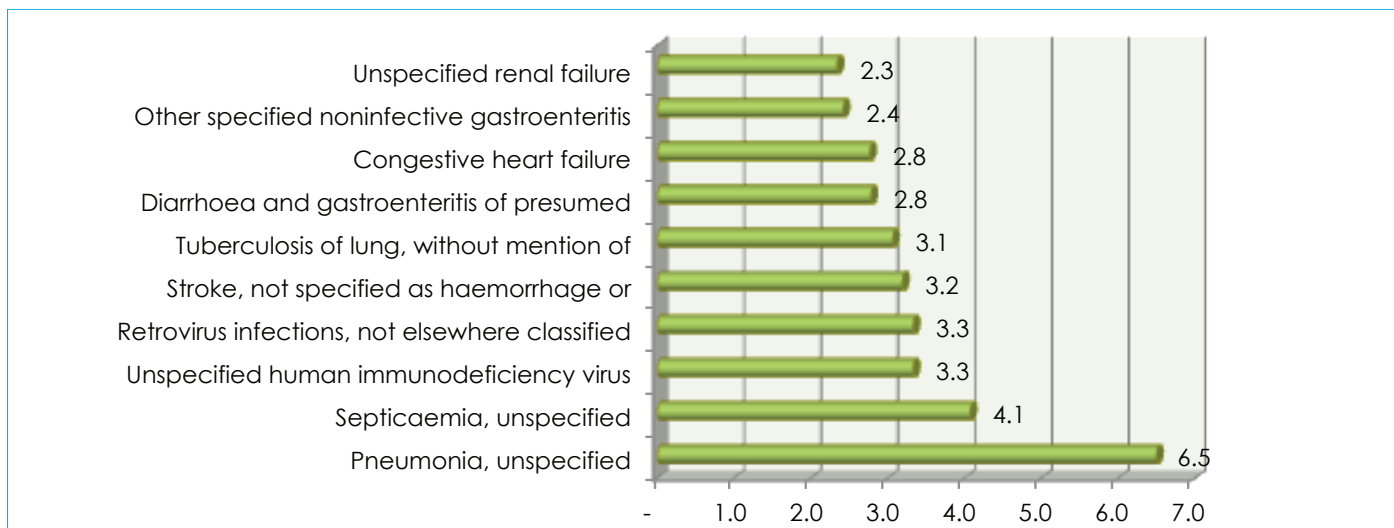
**Figure 3: Percentage Distribution of Major causes for Children Under-Five Mortality, 2011**



### 1.1.3 Major causes of mortality in All ages

Figure 4 and Table 5 show that Pneumonia was the leading cause of deaths among the general population and accounted for 6.5 percent of all deaths in all ages, followed by Septicaemia and unspecified Human Immunodeficiency Virus (HIV) disease at 4.1 percent and 3.3 percent respectively. Other conditions which accounted for a significant proportion of deaths included retroviral infections, not elsewhere classified at 3.3 percent, stroke at 3.2 percent and Tuberculosis of lung without mention of bacteriological or histological confirmation at 3.1 percent.

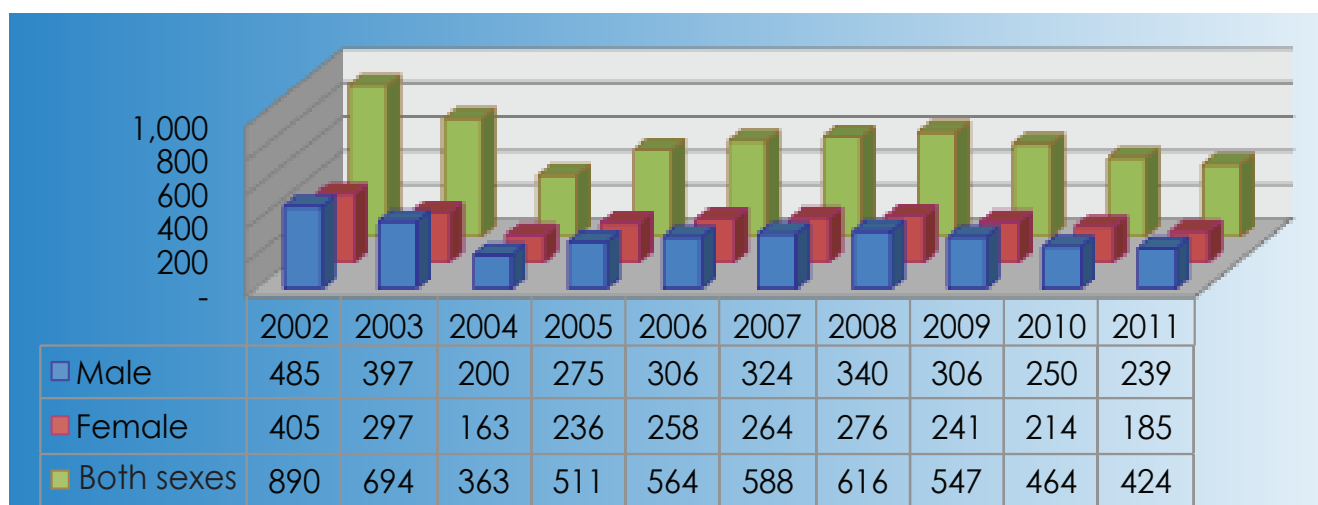
Figure 4: Percentage Distribution of Major causes for All Ages Mortality



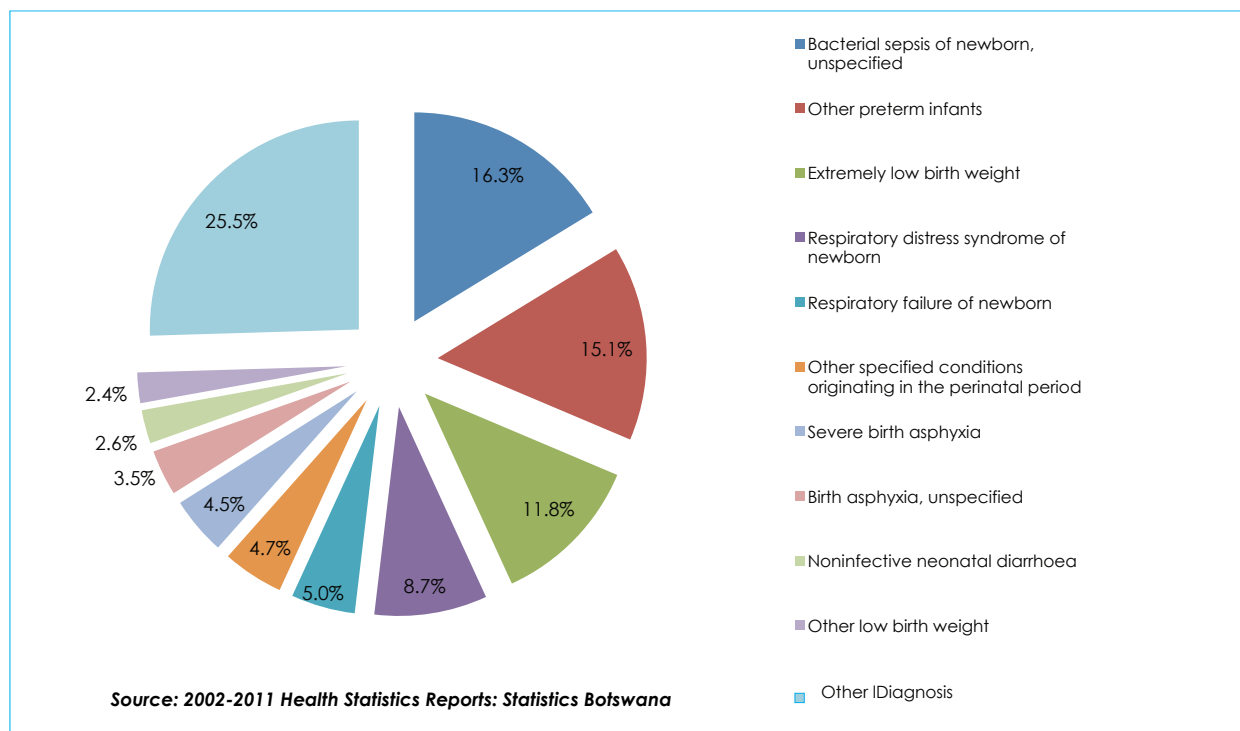
### 1.14 Neonatal Mortality

Neonatal mortality refers to deaths among live births which occurred during the first 28 completed days of life. In 2011, there were 424 in-patient neonatal deaths in Botswana. Males accounted for 239 (56.4%) of this number while females accounted for 185 (43.6%)(Figure 5). The results further show that from 2008 to 2011 neonatal deaths decreased by 31.2 percent from 616 to 424. In-patient neonatal mortality was mostly caused by Disorders related to short gestation and low birth weight (29.3%) followed by Bacterial sepsis of newborn, unspecified (16.3%), Respiratory distress syndrome of newborn (8.7%) and Respiratory failure of newborn (5.0%)(Figure 6).

Figure 5: Neonatal Mortality Trend, 2002-2011



**Figure 6: Percentage Distribution of Major Causes for Neonatal Mortality, 2011**



## 1.2 Midnight Census

The Midnight Census is the counting of patients present in the ward at midnight. At this time of the day, a nurse in charge of each ward counts patients and fills out the ward census slip.

The midnight census trend indicates that for the past five years there was a decline in the institutional deaths recorded for all ages, although between 2007 and 2008 the total number of deaths recorded was constant. From 2007 to 2011 a decrease of 17.9 percent was realized from 7,064 to 6,537 deaths.

However, neonatal mortality level fluctuates as indicated in (Table 6). The neonatal deaths increased from 578 in 2009 to 659 in 2010 (14.0%) and increased further to 979 cases in 2011. The highest numbers of neonatal deaths in general hospitals were recorded at Princess Marina Hospital (300) and Bamalete Lutheran Hospital (141). In primary hospitals Tsabong recorded the highest neonatal deaths (66) followed by Ghanzi with 62 deaths.

## 1.3 Non-institutional Deaths

Non-institutional death refers to death that did not occur in health facility. The data of non-institutional deaths is collected on the Medical Notification of Deaths Form (MH 3002). The form is completed by the Family Welfare Educators in their catchment areas in each district. The forms are then sent to the Health Statistics Unit on a monthly basis where they are captured and analyzed.

The data on non-institutional deaths show a downward trend over the period 2002 to 2011. There was a decrease of 26.6 percent on non-institutional deaths between 2010 and 2011 from 84 to 62. More non-institutional deaths were recorded for males as compared to their female counterparts from 2004 to 2009, however in 2010 and 2011; more female non institutional deaths were reported as illustrated in Table 1.5

**Table 1: Non-Institutional Deaths, 2002-2011**

Sex	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Male	888	989	496	225	205	169	131	59	38	24
Female	969	989	461	183	179	156	110	45	46	38
All deaths	1,857	1,978	947	408	384	325	241	104	84	62

Source: 2002-2011 Health Statistics Reports: Statistics Botswana

**Table 2: Mortality Trend for Infants, Under 5 and All Ages (excluding neonates), 2002-2011**

Mortality	Sex	2002	2003	2004	2005	2006	2007	2008	2009	2011
Infant Mortality	Male	664	787	494	535	587	353	308	295	158
	Female	571	643	438	409	565	305	319	264	177
	Both Sexes	1,235	1,430	932	944	1,152	658	627	559	335
Under 5 Mortality	Male	946	1,045	832	762	1,219	692	493	419	382
	Female	803	880	783	659	1,177	610	482	345	359
	Both Sexes	1,749	1,925	1,615	1,421	2,396	1,302	975	764	741
All Ages	Male	5,054	5,336	5,766	5,811	6,180	5,972	4,036	3,827	3,419
	Female	4,181	4,726	5,275	5,147	5,329	5,103	3,451	3,125	2,937
	Both Sexes	9,235	10,062	11,041	10,958	11,509	11,075	7,487	6,952	6,356

Source: 2002-2011 Health Statistics Reports: Statistics Botswana

**Table 3: Major Causes of Infant Mortality (Excluding Neonatal Deaths) Below One Year, 2010 and 2011**

Diagnosis/cause	2010				2011				
	Male	Female	Both Sexes	Percent	Diagnosis/cause	Male	Female	Both Sexes	Percent
Pneumonia, unspecified	38	43	81	18.9	Pneumonia, unspecified	22	29	51	15.2
Diarrhoea and gastroenteritis of presumed infectious origin	32	24	56	13.1	Diarrhoea and gastroenteritis of presumed infectious origin	23	20	43	12.8
Septicaemia, unspecified	18	23	41	9.6	Septicaemia, unspecified	11	14	25	7.5
Volume depletion	10	6	16	3.7	Volume depletion	9	15	24	7.2
Adult respiratory distress	9	6	15	3.5	Other specified non-infective gastroenteritis and colitis	13	11	24	7.2
Other lack of expected normal physiological development	3	8	11	2.6	Other pneumonia, organism unspecified	8	8	16	4.8
Bronchopneumonia, unspecified	6	4	10	2.3	Bronchopneumonia, unspecified	6	7	13	3.9
Cardiac arrest, unspecified	2	5	7	1.6	Meningitis, unspecified	4	2	6	1.8
Meningitis, unspecified	3	4	7	1.6	Adult respiratory distress syndrome	3	3	6	1.8
Unspecified severe protein-energy malnutrition	3	3	6	1.4	Unspecified protein-energy malnutrition	2	3	5	1.5
<b>Causes Specified Above</b>	124	126	250	58.3	<b>Causes specified above</b>	101	112	213	63.6
<b>Other Diagnosis</b>	63	55	179	41.7	<b>Other Diagnosis</b>	57	65	122	36.4
<b>All diseases and Conditions</b>	187	181	429	100	<b>All diseases and conditions</b>	158	177	335	100

Source: 2002-2011 Health Statistics Reports: Statistics Botswana



**Table 4: Major Causes of Children Under-Five Mortality (Excluding Neonatal Deaths), 2010 and 2011**

Diagnosis/cause	2010				2011				
	Discharges				Discharges				
	Male	Female	Both Sexes	Percent	Diagnosis/cause	Male	Female	Both Sexes	Percent
Pneumonia, unspecified,	60	73	133	<b>17.3</b>	Pneumonia, unspecified	43	42	85	<b>11.5</b>
Diarrhoea and gastroenteritis of presumed infectious origin	64	42	106	<b>13.8</b>	Diarrhoea and gastroenteritis of presumed infectious origin	40	37	77	<b>10.4</b>
Septicaemia, unspecified	39	36	75	<b>9.8</b>	Septicaemia, unspecified	28	32	60	<b>8.1</b>
Unspecified severe protein-energy malnutrition	20	19	39	<b>5.1</b>	Volume depletion	25	33	58	<b>7.8</b>
Volume depletion	19	15	34	<b>4.4</b>	Other specified non-infective gastroenteritis and colitis	31	26	57	<b>7.7</b>
Adult respiratory distress syndrome	13	9	22	<b>2.9</b>	Unspecified severe protein-energy malnutrition	16	21	37	<b>5.0</b>
Unspecified protein-energy malnutrition	16	6	22	<b>2.9</b>	Unspecified protein-energy malnutrition	18	12	30	<b>4.0</b>
Meningitis, unspecified	9	11	20	<b>2.6</b>	Bronchopneumonia, unspecified	17	12	29	<b>3.9</b>
Bronchopneumonia	9	9	18	<b>2.3</b>	Other pneumonia, organism unspecified	13	13	26	<b>3.5</b>
Other lack of expected normal physiological Development	5	13	18	<b>2.3</b>	Meningitis, unspecified	10	6	16	<b>2.2</b>
<b>Causes Specified Above</b>	254	233	487	<b>63.3</b>	<b>Causes specified above</b>	241	234	475	<b>64.1</b>
<b>Other Diagnosis</b>	146	136	282	<b>36.7</b>	<b>Other Diagnosis</b>	141	125	266	<b>35.9</b>
<b>All diseases and Conditions</b>	400	369	769	<b>100</b>	<b>All diseases and conditions</b>	382	359	741	<b>100.0</b>

Source: 2002-2011 Health Statistics Reports: Statistics Botswana

**Table 5: Major Causes of All Ages Mortality (Excluding Neonatal Deaths), 2010 and 2011**

Diagnosis/cause	2010				2011				
	Male	Female	Both Sexes	Percent	Male	Female	Both Sexes	Percent	
Pneumonia, unspecified,	278	224	502	7.7	Pneumonia, unspecified	224	189	413	6.5
Diarrhoea and gastroenteritis of presumed infectious origin	160	130	290	4.4	Septicaemia, unspecified	110	149	259	4.1
Septicaemia, unspecified	140	138	278	4.3	Unspecified human immunodeficiency virus [HIV] disease	122	90	212	3.3
Unspecified human immunodeficiency virus (HIV) disease	141	131	272	4.2	Retrovirus infections, not elsewhere classified	114	98	212	3.3
Tuberculosis of lung, without mention of bacteriological or histological confirmation	162	107	269	4.1	Stroke, not specified as haemorrhage or infarction	70	133	203	3.2
Retrovirus infections, not elsewhere classified	137	120	257	3.9	Tuberculosis of lung, without mention of bacteriological or histological confirmation	123	72	195	3.1
Other specified viral diseases	90	90	180	2.8	Diarrhoea and gastroenteritis of presumed infectious origin	87	90	177	2.8
Stroke, not specified as haemorrhage or infarction	61	117	178	2.7	Congestive heart failure	96	80	176	2.8
Cardiac arrest, unspecified	89	61	150	2.3	Other specified noninfective gastroenteritis and colitis	83	71	154	2.4
Unspecified renal failure	89	53	142	2.2	Unspecified renal failure	75	74	149	2.3
<b>Causes Specified Above</b>	1,347	1,171	2,518	<b>38.5</b>	<b>Causes specified above</b>	1,104	1,046	2,150	<b>33.8</b>
<b>Other Diagnosis</b>	2,135	1,882	4,017	<b>61.5</b>	<b>Other Diagnosis</b>	2,315	1,891	4,206	<b>66.2</b>
<b>All diseases and Conditions</b>	3,482	3,053	6,535	<b>100</b>	<b>All diseases and conditions</b>	3,419	2,937	6,356	<b>100.0</b>

Source: 2002-2011 Health Statistics Reports: Statistics Botswana

**Table 6: Midnight Census Deaths, 2006-2010**

Facility	2007		2008		2009		2010		2011	
	All Ages Dead	Newborns Dead	All Ages Dead	Newborns Dead	All Ages Dead	Newborns Dead	All Ages Dead	Newborns Dead	All Ages Dead	Newborns Dead
General Hospitals										
Maun Hospital	372	15	378	14	245	19	310	29	163	8
Delta medical Centre	8	-	3	1	4	2	-	1	0	0
Sekgoma Hospital	331	45	369	23	377	25	385	34	365	30
Scottish Livingstone Hospital	413	49	425	52	510	44	426	46	319	8
Bokamoso Private	-	-	-	-	-	-	68	5	99	5
Jwaneng Mine Hospital	145	24	135	9	126	10	138	15	90	13
Seventh Day Adventist Hospital	330	16	292	20	249	22	198	27	288	23
Mahalapye Hospital	318	51	356	44	382	27	405	47	402	0
Deborah Retief Mem. Hospital	275	10	286	16	228	11	178	19	233	12
Orapa (De-beers) Hospital	59	2	53	13	26	5	17	6	22	1
Princess Marina Hospital	1,437	52	1,159	202	1,226	1	931	1	886	300
Gaborone Private Hospital	106	4	104	1	114	4	72	28	91	5
Nyangabgwe Hospital	1,459	82	1,459	187	1,645	-	1,440	-	1,361	2
Bamalete Lutheran Hospital	217	3	208	127	206	13	252	11	205	141
Athlone Hospital	202	19	264	16	220	30	255	28	151	9
Sbrana Mental Hospital	-	-	12	-	6	-	7	-	1	0
BCL Hospital	-	-	11	-	3	-	11	-	5	0
Selibe-Phikwe Hospital	225	41	257	34	197	46	206	40	153	40
<b>Total</b>	<b>5,969</b>	<b>413</b>	<b>5,771</b>	<b>759</b>	<b>5,764</b>	<b>259</b>	<b>5,299</b>	<b>337</b>	<b>4,834</b>	<b>597</b>
Primary Hospitals										
Masunga Primary Hospital	98	2	107	6	128	9	134	8	121	11
Palapye Primary Hospital	270	35	252	21	211	16	227	20	238	20
Bobonong Primary Hospital	128	16	172	18	138	21	120	28	144	27
Mmadinare Primary Hosp.	44	9	49	2	50	4	45	6	45	10
Thamaga Primary Hospital	80	4	84	6	120	6	96	6	103	8
Ghanzi Primary Hospital	124	8	205	17	153	22	165	24	108	62
Sefhare Primary Hospital	188	20	124	13	114	12	112	14	141	22
Kasane Primary Hospital	90	5	49	6	26	17	43	9	140	15
Tsabong Primary Hospital	42	8	98	5	89	19	83	2	46	66
Tutume Primary Hospital	126	20	175	12	158	19	146	14	94	5
Gweta Primary Hospital	107	16	59	6	58	8	78	2	189	18
Rakops Primary Hospital	54	7	74	3	65	5	54	2	31	28
Letlhakane Primary Hospital	64	14	91	12	81	7	129	18	113	16
Gumare Primary Hospital	145	23	173	24	175	30	142	28	32	4
Thebe-Phatshwa Primary	6	-	1	-	7	-	-	-	1	0
Goodhope Primary	64	13	130	13	115	13	110	17	47	3
Hukuntsi Primary hospital	79	6	92	8	31	7	74	9	68	4
<b>Total</b>	<b>1709</b>	<b>199</b>	<b>1,935</b>	<b>172</b>	<b>1,719</b>	<b>215</b>	<b>1,758</b>	<b>207</b>	<b>1,661</b>	<b>319</b>
<b>All Clinics</b>	<b>36</b>	<b>107</b>	<b>8</b>	<b>129</b>	<b>8</b>	<b>104</b>	<b>7</b>	<b>115</b>	<b>42</b>	<b>63</b>
<b>Grand Total:</b>	<b>7,714</b>	<b>719</b>	<b>7,714</b>	<b>1,060</b>	<b>7,491</b>	<b>578</b>	<b>7,064</b>	<b>659</b>	<b>6,537</b>	<b>979</b>