ISLAND OF MAURITIUS

AN ANALYSIS OF THE HEALTH SITUATION

This analysis of the health includes discussion on population and related vital events, on health delivery system, services and personnel, and on activities carried out in public and private health institutions. The morbidity patterns and mortality trends have also been discussed.

POPULATION AND VITAL STATISTICS

The estimated resident population of the Island of Mauritius as at the end of 2004 was 1,201,000 (594,063 males and 606,937 females) as compared to 1,094,430 in 1995, with an average annual growth rate of 1% during the last ten years.

The age composition of the population showed that 32.3% of the mid-2004 population was under the age of twenty, as compared to 37.3% in 1995. The number of persons aged 60 years and over represented 9.4% of the population in 2004; it was 8.6% in 1995. The dependency ratio, which is the ratio of the sum of the components of the population aged below fifteen years, and 65 years and over (dependent ages) to the population aged between 15 and 65 years (economically productive ages) was 454 in 2004 as compared to 500 in 1995.

During the year 2004, 18,285 live births were registered, giving a crude birth rate of 15.3 per thousand mid-year resident population. In 1995, the crude birth rate was 18.2. This explains the fall in the Total Fertility Rate from 2.13 to 1.84 during the same period.

Life Expectancy at birth, 66.4 for males and 74.0 for females in 1995, was estimated to be 68.7 and 75.5 respectively in 2004. This ageing of the population, given the growing proportion of population aged 60 years and over, will place an extra burden on health related service in future years.

The number of deaths registered in 2004 was 8,259, corresponding to a crude death rate of 6.9 per thousand mid-year resident population. The crude death rate was 6.7 in 1995 and 6.8 in 2000.

The number of infant deaths, that is deaths among children aged under one year, registered in 2004 was 256, corresponding to an infant mortality rate (IMR) of 14.0 per thousand live births. The IMR which was 19.6 in 1995 increased to 22.2 in 1996, the highest rate in the last decade. Following the opening of the Neonatal Intensive Care Service at Victoria Hospital in May 1999, the IMR drastically fell from 19.2 in 1999 to 15.8 in 2000. The lowest IMR (12.4) was recorded in 2003.

The number of maternal deaths registered in 2004 was 3. The maternal mortality rate per 1,000 livebirths was 0.16 in 2004 as compared to 0.61 in 1995 and 0.05 in 2002, the lowest rate with only one death due to complication following childbirth.

HEALTH DELIVERY SYSTEM

In the Island of Mauritius, as at the end 2004, there were five regional hospitals with a total of 2,420 beds and two district hospitals namely Souillac Hospital with 20 beds - Long Mountain Hospital while being under renovation had no beds. There were also a psychiatric hospital with a bed complement of 840, and other specialised hospitals for chest diseases (62 beds), eye diseases (59 beds), ear, nose, and throat (E.N.T.) diseases (65 beds) and heart
diseases (62 beds), as well as a skin diseases infirmary (2 beds). This brought the total number of beds in government institutions to 3,530 as compared to 3,819 in 2000. A fall in the number of admissions to these centres has also been observed. In 2004, seven beds at Dr Yves Cantin Community Hospital and ten beds at Mahebourg Community Hospital are excluded from the above figures.

In the private sector there were, as at the end of 2004, twelve nursing homes (private clinics) with a total of 543 beds. The total number of beds in the public and private sectors as at the end of 2004 was thus 4,073, that is, 3.4 beds for 1,000 inhabitants. In 1995, the corresponding ratio was 3.2 beds.

All regional and district hospitals as well as the Psychiatric, Eye, E.N.T., and Cardiac hospitals have an out-patient department. Out-patient services were also delivered in two community hospitals, two medi-clinics, 22 Area Health Centres (AHC) and 109 Community Health Centres (CHC). The basic services delivered at CHC include the treatment of common diseases and injuries, maternal and child care, and family planning. In addition to these services, AHC also provide dental care. However, in 2004, three AHC did not have facilities for dental care. This service was been also delivered in two CHC. Out-patient care was also provided in the private sector, including several private clinics and 18 dispensaries on the sugar estates.

There were also 13 health offices, a chest clinic, a social hygiene clinic, and a National Centre for the Immuno-suppressed in operation as at the end of 2004.

HEALTH PERSONNEL

At the end of 2004, there were 1,303 doctors in the Republic of Mauritius, that is one doctor for every 950 inhabitants. Of those doctors, 775 (59.5%) were employed in the public sector. In 1995, there were 960 doctors, of whom 542, that is 56.5% were in the public sector. There was then one doctor for an average of 1,176 inhabitants.

There were 167 dentists, of whom 58 in the public sector, at the end of 2004. The corresponding number of pharmacists were 286 and 20 respectively. The number of qualified nurses and midwives in the public sector were 2,774. Due to the shortage of qualified nurses, the “Bank of Nurses” Scheme was set up in 1999, allowing those who are off duty to do extra work.

INPATIENT SERVICE

The number of admissions (including re-admissions) to government hospitals in the Island of Mauritius, in 2004, was 191,142 of which 171,146 (89.5%) were in general hospitals. The number of admissions represented a decrease of 6.6% over the figure for 2000 when it was 204,673. In 1995, there was 168,835 admissions.

The total number of births (live births and stillbirths) occurring in the maternity sections of government general (regional and district) hospitals in 2004 was 15,656, that is 83.6% of all births registered in the Island. The mode of delivery was 10,225 (65.3%) normal, 235 (1.5%) instrumental, and 5,196 (33.2%) by caesarean section. The percentage of delivery by caesarean was 20.1 in 1995 and 27.2 in 2000.
OUT-PATIENT SERVICE

The total number of attendances at out-patient departments of hospitals (sorted, unsorted and casualty) was 2,676,695 in 2004 as compared to 2,680,003 in 2000 and 2,017,939 in 1995.

In 2004, attendances for the treatment of common diseases and injuries at the community hospital, mediclinics, area & community health centres was 3,547,310, as compared to 2,825,135 in 2000 and 2,138,122 in 1995.

MATERNAL AND CHILD HEALTH

The number of first attendances for antenatal examinations by the staff of M.C.H. static clinics was 15,963 in 2000 and 14,428 in 2004. The total number of first and subsequent attendances (by staff and doctors) for antenatal examinations, postnatal examinations, and examinations of children under the age of five years, at M.C.H. static clinics was 196,357 in 2004 as compared to 197,840 in 2000.

The percentage of low birth weight (less than 2,500 grammes) among live births in the public sector increased from 13.9% in 1995 to 14.3% in 2000 and 15.6% in 2004. The percentage of caesarian section on total deliveries occurring in government hospitals increased from 20.1 in 1995 to 27.2 in 2000 and to 33.2 in 2004.

The number of babies immunized against tuberculosis (B.C.G.) by M.C.H. staff in 2004 was 16,424. The number of children immunized against diphtheria, whooping cough, tetanus (D.P.T.) and hepatitis B (3rd dose) was 16,161. Those immunized against poliomyelitis (3rd dose) was 16,246 and against measles/mumps/rubella (MMR) was 16,184. The figures refer to the activities of M.C.H. staff at government vaccination centres. Vaccinations done in the private sector, estimated to be around 8%, are therefore not included in the table below.

**Immunisation Coverage Rate as a percentage of registered live births:**

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<tr>
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<th>1995</th>
<th>2000</th>
<th>2004</th>
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<tr>
<td>BCG</td>
<td>86.0</td>
<td>87.2</td>
<td>89.8</td>
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<tr>
<td>D.P.T (3rd dose)</td>
<td>92.5</td>
<td>87.3*</td>
<td>88.4*</td>
</tr>
<tr>
<td>Polio (3rd dose)</td>
<td>93.0</td>
<td>87.4</td>
<td>88.8</td>
</tr>
<tr>
<td>MMR</td>
<td>89.1 @</td>
<td>84.3</td>
<td>88.5</td>
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* with hepatitis (3rd dose) @ measles only

SCHOOL HEALTH

During the year 2004, the nursing staff responsible for school health visited 350 pre-primary schools and screened 13,157 children.
In the primary sector, the nursing staff visited 259 schools and screened 84,795 pupils. 35,541 pupils of Standards III, V and VI were submitted to vision tests and 902 of the 1,328 children with defective vision were referred to specialists. 14,966 new entrants were immunized against *diphtheria, tetanus (D.T.)* and *poliomyelitis*, 17,462 school leavers were immunized against *tetanus*. The staff of the Chest Clinic immunized 4,018 school leavers against *tuberculosis* after heaf test.

**DENTAL HEALTH**

The total number of attendances at government dental clinics (static and mobile) in 2004 was 280,036, out of which 63,228, that is 22.6% were of primary schoolchildren, 12,037 (4.3%) were of expectant women and nursing mothers, and 7,083 (2.5%) were of pre-primary schoolchildren. The number of cases treated for paradontal diseases was 25,171 and the number of surgical operations on jaws, including surgical extractions of roots and impacted teeth, was 6,284. Fluoride was distributed to 25,149 children and 24,187 children and adults were exposed to oral health education.

**NURSING HOMES (PRIVATE CLINICS WITH IN-PATIENT SERVICE)**

The total number of admissions and other attendances at the 12 nursing homes in operation in 2004 was 80,953. 32,594 of these cases were seen for treatment (including operations) and 48,359 for examinations, investigations or observations. The total figure also include 2,643 deliveries, of which 1,223, that is 46.3% was by caesarean section; the corresponding figures was 31.6% in 1995 and 35.3% in 2000. The percentage of total births in 2004 represents 14.5% of total registered births in the whole island. 8.6% of livebirths occurring in the nursing homes had low birth weight (less than 2,500 grammes); the corresponding figure was 4.7% in 2000. The percentage of caesarian section on total deliveries occurring in nursing homes increased from 31.6 in 1995 to 35.3 in 2000 and to 46.3 in 2004.

**MORBIDITY**

The first case of AIDS was notified in October 1987. As at the end of 2004, a total of 1,233 cases of HIV/AIDS were detected, of whom 1,124 (869 males, 255 females) were Mauritians. 120 of these Mauritians were known to have passed away by the end of 2004.

In 2004, a total of 84,981 persons were tested for HIV and 534 positive cases were detected. The annual number of new cases among Mauritians drastically increased from 50 in 2000 to 225 in 2003 and 525 in 2004. Of the 525 cases, 87% were found to be intravenous drug users, mostly among prison inmates.

*Deliveries* constituted 9.4% of all cases treated as in-patients in general government hospitals in 2004. Among other principal causes of discharges, there were *Diabetes Mellitus* with 4.5%, *Diarrhea and gastroenteritis* with 3.7%, *Acute Myocardial Infarction and other Ischaemic Heart Diseases* with 3.7%, *Abdominal and Pelvic Pain* with 2.9%, and *Hypertensive Diseases* with 2.7%.

The distribution by age-groups shows that, in 2004, 20.5% of all cases treated were of persons aged sixty years and over. This group represented only 9.4% of the population. This is not at all surprising as it is generally known that it is the senior citizens who are in greatest need of medical care. The main causes for treatment in the age-group 60 years and over were *Acute myocardial infarction and other ischaemic heart diseases, diabetes mellitus,*
cerebrovascular disease, hypertensive disease and heart failures. The breakdown by sex of patients under thirteen years of age revealed that boys were more prone to accidents than girls. The number of female patients largely exceeds that of male patients; this was due to the high number of discharges for conditions associated with pregnancy, childbirth and the puerperium.

*Cataract* was responsible for 2,334 of the 3,550 cases treated as in-patients at S. Bharati (Eye) Hospital in 2004 (that is 65.7%). Among the cataract cases, 2,325 (99.6%) were operated upon. *Extracapsular extraction of lens* accounted for 2,334 that is 85.8% of the 2,720 operations carried out on in-patients.

During the year 2004, 495 in-patients were treated at the Poudre d’Or (Chest) Hospital. Thirty-six patients died at the Hospital, giving a fatality rate of 7.3%. Of the 495 patients, 354 (71.5%) were males. *Pulmonary tuberculosis* was the morbid condition for 148 patients (105 males, 43 females), that is 29.9% of the total.

Of the 4,947 in-patients treated at Brown Sequard Hospital in 2004, *alcohol related conditions (dependence syndrome and psychoses)* accounted for 2,551 cases (2,320 males, 231 females), that is 51.6%. *Schizophrenic psychoses* were responsible for 1,472 (29.8%) cases.

Of the 434 cases treated as in-patients in 2004 at the Neonatal Intensive Care Unit, located in the complex of Victoria Hospital and SSRN Hospital, 210 (48.4%) were for *disorders related to length of gestation and fetal growth*, 71 (16.4%) for *respiratory and cardiovascular disorders specific to the perinatal period*, 28 (6.5%) for *congenital malformations*, 16 (3.7%) for *infections specific to the perinatal period*. There were 78 deaths among those 434 cases, giving a fatality rate of 18%.

The number of new cases diagnosed at the specialist clinics in dermatology in 2004 was 13,357 of which 3,204 (24%) were *skin infections* (1,805 of fungal origin and 771 of viral origin). 15.6% of new cases were treated for *eczema*, 9.8% for *psoriasis and similar disorders*, and 7% for *acne*.

The number of new cases diagnosed at the out-patient specialist clinics in chest diseases during the year 2004 was 936, excluding the 45 cases for which there were no definite diagnoses. The number of new cases of *tuberculosis* diagnosed was 60, of which 41 was *pulmonary*. Among the non-tuberculous diseases, *asthma* was in first place with 373 (40.0%) new cases.

The number of new cases diagnosed by specialists at the out-patient clinics of the E.N.T. Centre in 2004 was 7,142. *Diseases and conditions of ear* accounted for 2,725 new cases (38.2% of the total new cases diagnosed), *diseases and conditions of nose* for 2,247 (31.5%), and *diseases and conditions of throat* for 2,107 (29.5%). *Tonsilitis (acute or chronic), allergic rhinitis, sinusitis and otitis externa* were the most common diseases diagnosed at the centre.

The number of cases treated at the Social Hygiene Clinic in 2004 was 334 (259 males and 75 females). The main venereal diseases treated were *gonococcal infections* with 73 cases, *venereal warts* with 81, *syphilis* with 50 and *herpes simplex* with 10 cases. The total attendances at the National Day Care Centre for the Immuno-suppressed was 858 (639 males, 219 females), of which 439 were for voluntary counseling and 271 for HIV/AIDS.

The disease responsible for the greatest number of first attendances at the community hospitals, mediclins, area and community health centres for the treatment of common diseases and injuries in 2004 was *influenza*; in fact, first attendances for that disease
represented 20.3\% of the total number of first attendances. Other most common causes of first attendances were *abdominal pain and colic* with 5.9\%, *gastritis and duodenitis* with 5.5\%, *ill-defined intestinal infections* (*colitis, enteritis, gastro-enteritis, diarrhoea*) with 5.3\% and *superficial injury, contusion and crushing with intact skin surface* with 5.2\%.

The distribution by ICD chapters shows that 32.3\% of first attendances were due to "**Diseases of Respiratory System**", 10.8\% due to "**Injury & Poisoning**", and 8.1\% due to "**Infectious and parasitic diseases**". It should be noted that 18.5\% of the first attendances were due to "**Symptoms, signs, and ill-defined conditions**", mainly "*abdominal pain and colic*" and "*symptoms involving head and neck*".

Of all new cases of cancer registered in 2001, the most common types among males were that of the trachea, bronchus and lung with 10.2\% of all males cancer, followed by that of prostate gland (8.4\%). The two main types of cancer among females were that of breast (33.8\%) followed by that of cervix uteri (11.7\%).

**CAUSE OF DEATH**

*Heart diseases* (excluding *hypertensive disease, acute rheumatic fever and diseases of pulmonary circulation*), and *cerebrovascular diseases* were the first two principal causes of death in 2004, with 2,558 (31.0\%) and 1,244 (15.1\%) deaths respectively; *diabetes mellitus* was in the third position with 6.2\%.

The distribution of deaths by Chapter of the International Classification of Diseases showed that *Diseases of the Circulatory System* (Chapter VII) were responsible for 50.7\% of the deaths. *Neoplasms* (Chapter II) with 11.3\% of the deaths were in second place, followed by *Diseases of the Respiratory System* (Chapter VIII) with 7.8\%.

Of the 936 deaths due to *Neoplasms* in 2004, the most common types of cancer were that of *trachea, bronchus and lung* with 13.0\%, *female breast* with 10.6\%, *rectum, recto-sigmoid junction and anus* with 8.7\% and *stomach* with 8.0\%. 22 persons died due to *leukaemia* (2.4\%)

Of the 525 deaths due to external causes in 2004, 33.0\% were due to *Motor vehicle traffic Accidents*, 18.5\% due to *Suicides* and 8.0\% due to *Accidents caused by fires and flames*. 39 persons died due to *Accidental drowning and submersion* (7.4\%).

*Slow fetal growth, fetal malnutrition and immaturity* with 69 deaths, that is 27.0\% of the total (256), were the principal killers of children under the age of one year in 2004. The other principal causes of infant deaths were *'congenital anomalies'* responsible for 51 (19.9\%) of the deaths, and *hypoxia, birth asphyxia and other respiratory conditions of newborn* with 46 (18.0\%) deaths.