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LETTER

Millennial trends in inpatient paediatric care at New Somerset Hospital, Cape Town

To the Editor: The first decade of this millennium witnessed considerable changes and challenges in child health in South Africa. Census figures have shown major migration towards urban centres such as Cape Town.[1] Child mortality rates were very high and not improving.[2] The prevalence rates for HIV infection peaked, and efforts to prevent mother-to-child-transmission (PMTCT) of HIV were introduced and then scaled up.[3] New techniques of neonatal care such as nasal continuous positive airway pressure ventilation for small preterm babies with immature lungs were introduced.[4]

New Somerset Hospital in Cape Town is a regional hospital serving the Western sub-district of Cape Town and Vredenburg in the West Coast district. Its paediatric wards also provide relief for Red Cross War Memorial Children's Hospital (RCCH), which serves three high-density sub-districts in the city. The paediatric service is led by paediatricians and provides neonatal and paediatric care.

In the light of changing demographics and epidemiology in Cape Town, a review of trends in neonatal and paediatric admissions in the first decade of the new millennium (2000 - 2010) was undertaken. For the neonatal section (36 beds, rising to 42 in 2009), information on total births, admissions to the nursery and number of neonatal deaths were collated by KJ from routine data recorded by GM during the review period. In paediatrics (39 beds, expanding to 53 during the annual summer diarrhoea season), the records maintained by ML and MR were analysed by SM using admission data and number of deaths. Cause-of-death data were collated by SM from the copy of the Death Notification Form retained by the hospital.

The number of live births rose steadily from 4 083 in 2000 to 7 057 in 2010 (46% increase), with a low birth weight (LBW) rate of 16.5% (range 15 - 18%). Annual admissions to the nursery rose from 700 to 1 100 (57%) over the same period. The early neonatal mortality rate (ENMR) declined in the early part of the decade to a nadir of 4.4/1 000 live births, but the trend has been upwards as the number of admissions increased in the latter years of the decade (Fig. 1). The early neonatal care index (ENMR/LBW rate) dropped from 0.46 in 2000 to 0.27 in 2005, but by the end of the decade had returned to 0.46.

Reliable data for paediatrics were available from 2004 to 2010. Average monthly admissions rose from 122 in 2004 to 190 in 2009 (56%), with summer peaks (maximum admissions 242 in March 2009). In 2010 the measles epidemic increased the monthly average to 283 admissions per month (223 if measles cases are excluded). Total measles admissions for 2010 numbered 726, which included referrals from other parts of western Cape Town. There were no measles admissions in the other years. The in-hospital mortality rate (IHMR) dropped from 17.6/1 000 admissions in 2004 to 3.7/1 000 admissions in 2010 (measles cases excluded). There were 3 hospital deaths due to measles (IHMR 4.1/1 000). Tellingly, the number of deaths due to HIV/AIDS fell from between 10 and 15 per annum in the first 3 years (half of all deaths) to 2 or 3 per annum from 2008 to 2010. Likewise and independently, IHMRs for diarrhoea and severe malnutrition dropped to below 2/1 000 admissions in the latter years.

These data show a marked increase in paediatric and obstetric workload at this hospital in the past decade, in all likelihood reflecting the major demographic shifts in the region it serves.[1] For the neonatal unit this has been accompanied by a rise in neonatal mortality, though in South African terms these are low rates.[5] As this rise is in the context of improved PMTCT coverage and no reduction in access to level 3 neonatal care, it is likely to reflect overcrowding and inadequate staff/patient ratios. That levels of nursing or medical expertise may have deteriorated simultaneously cannot be excluded. In paediatric wards, higher caseload, throughput and occupancies have been accompanied by a continuous and marked decline in mortality. A reduction in HIV-associated disease as a result of successful PMTCT and improved access to antiretroviral therapy is one definite factor that explains this finding. A similar

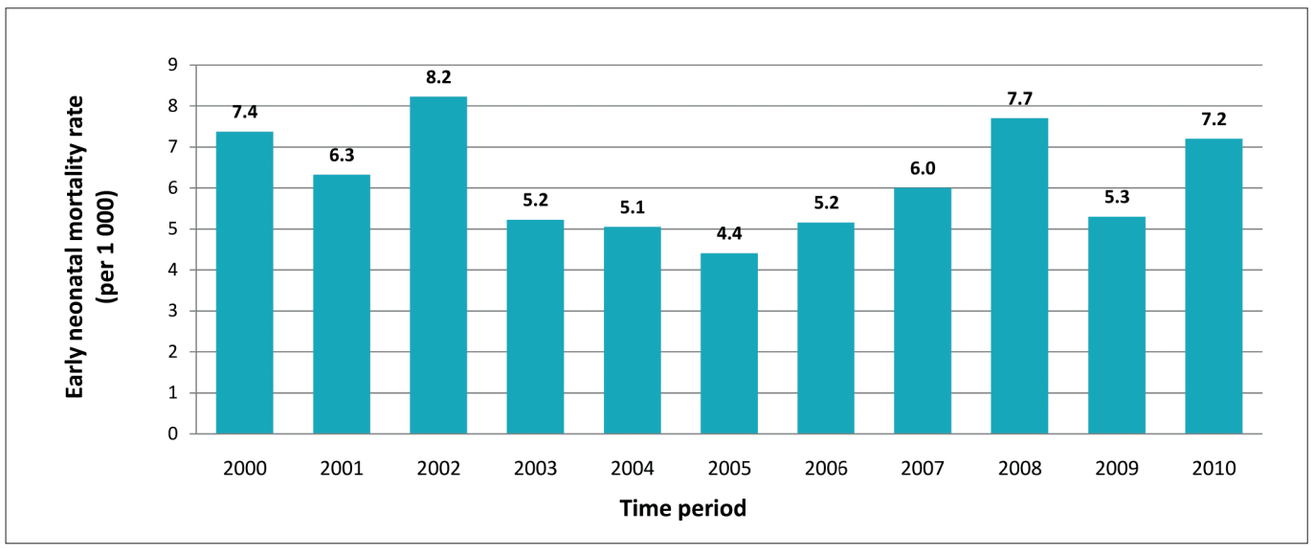

Fig. 1. Trends in early neonatal mortality rates at New Somerset Hospital, 2000 - 2010.

decline in HIV mortality has been seen at RCCH.[6] More careful attention to discharge planning, leading to higher patient throughputs and thus minimising overcrowding, and to the care of common conditions such as diarrhoea and malnutrition, also appear to have played a role.

A Westwood
G Moller
M Levin
M Richards
School of Child and Adolescent Health
University of Cape Town, and
Department of Paediatrics
New Somerset Hospital
Cape Town
anthony.westwood@uct.ac.za

K Jacobs
S Mohamed
2nd-year medical students
Faculty of Health Sciences
University of Cape Town

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