Facing the challenges of HIV in South Africa

FOCUS ON A UNIT

SUBMITTED BY
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Greys Hospital is a tertiary level provincial referral hospital in KwaZulu Natal (KZN), South Africa. The region served by the unit is richly diverse culturally, linguistically, religiously and scenically and ranges from large, wealthy metropolitan centres to small, poverty-stricken rural tribal areas.

Located in the city of Pietermaritzburg, Greys Hospital serves the western half of KZN, with a population of around 350,000 and 15-20 regional/district hospitals.

The NICU has nine ICU cots, nine high dependency and six special care. There is a constant demand for ICU beds in particular and on a daily basis an assessment must be made as to which babies are stable enough to be returned to their referral hospitals. Resource constraints mean that ventilatory criteria must be restricted and ventilation is not offered to babies under 1,000g birth weight except under exceptional circumstances. Nasal CPAP and surfactant are given to babies over 28 weeks' gestation and 900g birthweight.

KZN is a very mountainous province with some highly inaccessible areas and transport is often difficult and slow. Ambulances are considered prime targets for theft or hijack. There are few advanced paramedics trained or equipped to transport neonates, resulting in further lengthy delays, even in the case of air transfers, and babies frequently arrive in an unstable condition.

South Africa has the highest HIV positive population in the world and KZN has the highest prevalence in the country, with one in three pregnant mothers testing positive. Most people infected are in the income-generating age of 20-40 years. This impacts on the workforce and, when parents die, leads to child-headed households. Even HIV-negative babies of HIV-positive mothers appear to have an increased susceptibility to infection and poor growth.

Government offers voluntary testing and counselling and free antiretroviral treatment, but ensuring compliance and ongoing monitoring of CD4 levels is problematic.

HIV infection still retains a huge stigma in African society. Despite widespread programmes and extensive teaching, the power of the grandmothers and sangomas (witch-doctors) bears greater weight.

Even among health workers, people are frightened to reveal their status as they fear victimisation and loss of employment. This lack of transparency greatly hinders attempts to monitor and manage the disease.

The mother-to-child transmission (MTCT) rate of HIV is approximately 30%, so 70% of healthy babies are still being born to HIV-positive mothers. The infection rate can be reduced further through the neviropine programme, offered to all affected mothers. They are offered pre- and post-test counselling, are taught about healthy living, personal hygiene and appropriate nutrition – most are not on antiretroviral drugs. Mothers are given a neviropine tablet to be taken at the onset of labour. The baby receives a dose of neviropine syrup 12-72 hours after birth. This decreases the incidence of MTCT by 50%. In April a new protocol was added to the prevention of MTCT program in our province which should reduce vertical transmission to 7%:

- Optimising the number of pregnant women on HAART (highly active antiretroviral treatment)
- Zidovudine (AZT) starting at 28 weeks' gestation for HIV-infected mothers not on HAART
- Administration of AZT to the baby post-delivery

The NICU team – working together makes the most difficult days manageable.

It is vital that HIV-positive mothers make an informed choice between breast and formula feeding. The risk of HIV transmission with exclusive breast feeding is 1-4%, but the risk of dying is 10 times greater in formula-fed babies than breastfed HIV-exposed babies, primarily due to unsterile preparation of formula feeds and loss of the immunity boosting properties of breast milk making the babies more susceptible to infections, eg diarrhoeal disease and pneumonia. Exclusive breast feeding for six months decreases the risk of MTCT as the virus is less likely to be absorbed. As the family may not be aware of the mother's HIV status and the importance of feeding choice, mixed feeding (introducing any foreign/unsterile liquid, eg formula or water) can occur. This causes an allergic-style reaction, the villi in the stomach are sensitised and the virus can then be absorbed from the breast milk, increasing the risk of transmission.

The World Health Organisation therefore recommends exclusive breast feeding for HIV-exposed babies unless supplementary feeding is 'acceptable, feasible, affordable, sustainable and safe.' Unfortunately there is still so much incorrect information being given to mothers. The Department of Health issues free formula for six months to

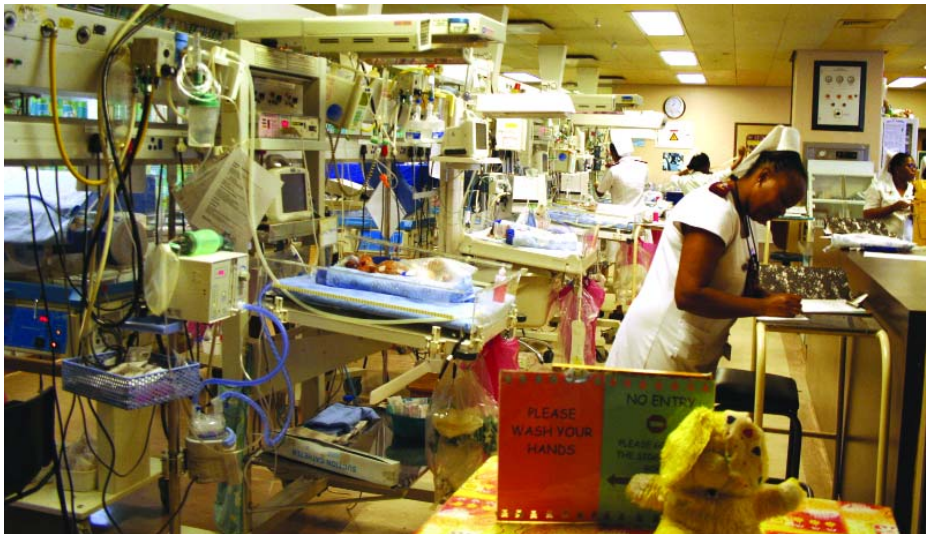
mothers who choose formula feeds. Lay counsellors almost routinely advise mothers to formula feed as this carries no risk of transmission. Formula advertising and the advice of family all influence a mother's ability to make an informed decision. Premature and sick infants are therefore frequently given formula milk, gut priming cannot occur and they are at increased risk for NEC and other infections. Routine administration of TPN is not a cost-effective solution. Pasteurising breast milk using the Pretoria or flash pasteurisation methods – which kills HIV and cytomegalovirus but retains its nutritional and protective properties – and the availability of pasteurised donor milk, offer further feeding options. Greys NICU is routinely counselling mothers about these options and now has close to 100% of HIV-exposed babies on pasteurised breast milk.

As can be seen, HIV places a great strain on resources and an extra stress on staff. The government has provided free healthcare for all children under six so people flock to the clinics and hospitals. There are very few hospitals in outlying areas that have the resources or skills to treat sick neonates so the unit is constantly bursting at the seams. Only one hospital in the province accepts referrals for cardiac and neurosurgery. A single neonatologist based at Greys has responsibility for all the referral hospitals, while the three private hospital NICUs in Pietermaritzburg are run by paediatricians.

Most families are illiterate, come from rural, poverty-stricken areas and speak Zulu, one of 11 official languages. Consequently, communication and effective health education is difficult for English-speaking nurses. Multi-cultural and multi-racial staffing has positive and negative aspects. It lends a richness to interaction, but offers challenges to working with and understanding other staff. For example, in Zulu culture it is essential that a subordinate lowers her eyes when addressing a senior, while to Western culture this can be seen as an unwillingness to communicate. However, nurses speaking a variety of languages is a great asset in communicating with patients.

The government is focusing on providing access to health care for as much of the population as possible which, in a principally rural country, is achieved through the provision of primary health clinics. This has resulted in a decrease in funding to state hospitals which previously received a large portion of the health budget.

Hospitals are now struggling to adjust to extremely tight budgets and limited facilities. Ordering of non-routine stock – the majority of the NICU's requirements – is a lengthy process, sometimes taking up to six months for a simple thing like an inline filter. In an effort to avoid corruption the requisition process has become very involved, with hospitals having to display all their requisitions on a board outside the hospital to enable interested companies to quote. The unit may not stipulate a brand name and must explain in detail, in writing, why they reject a particular item. A unit can therefore end up with poor quality items and the wrong delivery sets for syringe pumps/infusion pumps etc.



Above: A busy day in Greys NICU.

Left: A sister and doctor review a patient. The bubble plastic is used to decrease insensible heat and transdermal fluid losses.

While this situation continues in most state hospitals, Greys NICU has been fortunate. A pro-active and committed Chief Specialist has worked wonders to transform Greys into a leading tertiary level unit with the latest ventilators, nasal CPAP, patient monitors, ultrasound and even an oscillator.

Neonatal training is a huge issue. The state offers a diploma in advanced midwifery and neonatal nursing which is recognised by the nursing council, however this provides only basic training and does not equip the sister to work in or run an NICU. A certificate course is available which provides up-to-date theoretical training but little practical input and it is not officially recognised. Neither course offers any financial benefit and unit managers do not receive any more remuneration than other senior sisters in the unit. The perinatal education programme – an inexpensive self study course on maternal and newborn care – is an excellent tool available nationally to provide some training for all maternity nurses.

The paediatric department at Greys supports and trains staff in the referral hospitals with monthly consultant visits. Last year Greys instituted a scheme whereby doctors and nurses are brought to the unit for a two-week training period to equip them with basic skills, supported by weekly or monthly visits by a coordinator.

Greys is held in high regard throughout the country for the quality of its training. This, and the atmosphere of camaraderie, allows staff to support each other and carries them through even the most difficult days.

Ruth Davidge ran Greys NICU for 11 years and has since taken up a regional training post. The unit has had no unit manager since she left. The provincial department of health has frozen all posts and with the loss of a third of the metropolitan paediatric doctors recently the department is faced with the closure of the paediatric units (excluding NICU) at Greys.