

CASE STUDY



Eight months in Lubombo: a story of change at Good Shepherd Hospital, Swaziland

Good Shepherd Hospital (GSH) is the regional hospital for Lubombo, the poorest and most rural region of Swaziland. Serving a population of approximately 220,000, the hospital operates in an extremely challenging local and national context.

The Kingdom of Swaziland is a land-locked lower middle-income country located between South Africa and Mozambique.

Although a beautiful country, Swaziland is also a place of extreme inequalities, with around 60% of the population considered 'rural poor'.

Health services are overburdened and under-resourced. Among the Swazi population of around 1 million, it is doubtful that there is a single person untouched by the HIV and TB co-epidemics.



The highveld near Manzini in Swaziland

Swaziland: key health facts

- In Swaziland, 26% of adults in the 15-49 age group are HIV positive - the highest estimated prevalence of HIV infected adults in the world¹.
- Swaziland's tuberculosis (TB) incidence is the highest in the world and 80% of TB patients are co-infected with HIV¹.
- Multi-drug resistant TB (MDR-TB) is increasing².
- 44% of the population is younger than 15 and just under one quarter (23%) of children aged 18 or younger are orphans (defined as loss of one or both parents)³.
- Non-communicable diseases (such as cardiovascular disease, hypertension and diabetes) also present huge challenges in Swaziland.



Map of Swaziland showing the region of Lubombo and the approximate position of Good Shepherd Hospital

Future hopes and the key role of GSH

Yet, against this rather bleak picture, there are signs of hope. Not least there now appears to be real political commitment to address HIV and TB, with both declared national emergencies by the King of Swaziland.

International donors and local partners continue to invest in the health system. Antiretroviral therapy is now widely available and free of charge at the point



A Swazi man in the 'rural poor' Lubombo region

of care. This represents a huge step forward.

In Lubombo there is GSH, considered one of the leading hospitals in Swaziland. As a COMDIS-HSD partner, the hospital has led the way in:

- establishing a decentralised service delivery model for multi-drug resistant TB diagnosis and treatment; and
- achieving earlier diagnosis of HIV and TB through better case finding.



Children in a poorly-ventilated Lubombo home with an indoor stove

Implementing an HIV/TB screening programme for health workers

Anyone familiar with HIV or Africa will know that testing for HIV and TB is an extremely sensitive issue. Fear and stigma associated with diagnosis are real concerns. Apathy and a feeling of inevitability are also barriers. There are also major economic disincentives for being diagnosed. Staff with active TB and MDR-TB are not permitted to work and can go without pay or receive reduced pay for long periods. In addition, there are implications for the organisation; it is not good for a hospital to be seen to have a problem with TB.

Rolling out the programme at GSH:

At GSH, the management team had already approved a sensitisation and screening programme for hospital staff. The next step was to roll these out. The sensitisation programme was used to maximise acceptability and therefore uptake of the

screening programme. It also served as a great vehicle to introduce an infection prevention and control (IPC) agenda into hospital working practices. To ensure the sensitisation sessions were as effective and relevant as possible, they were designed to be inclusive, detailed and tailored.

- Everyone from doctors to support staff were invited.
- The sessions lasted half a day for each group and covered a range of issues including general information about HIV and TB, the rationale of the screening programme, its optional nature and assurances about how confidentiality would be maintained.
- The sessions were offered in different formats to match the needs of different audiences. Some were in English and used presentation materials, others were offered in Siswati and were purely discussion based.

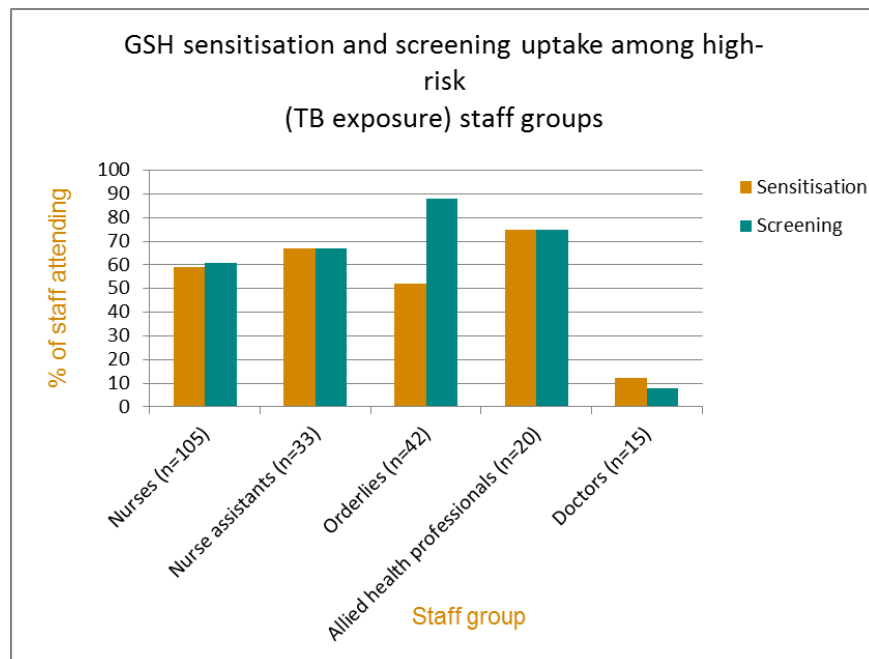
The presentations and discussions were led by Thokozani Dlamini (sister in charge of the GSH Wellness Team) and took place every day for 3 weeks. The screening at the GSH Wellness Clinic followed immediately after for 10 weeks.

Uptake and results summary:

- Of 356 staff, 253 (60%) attended the sensitisation sessions.
- 247 (59%) of high-risk and lower-risk groups attended screening (attendance being optional).
- Among these, there were 79 positive TB screenings, with 2 cases of active TB detected. These individuals were promptly commenced on therapy.
- Just over half (127) of those attending for screening opted for HIV testing. Of these, 2 staff were newly diagnosed with HIV.

The screening programme is now run annually at GSH.

Figure 1:



We managed to secure a supply of isoniazid for the programme; sufficient to offer all staff TB chemoprophylaxis, regardless of their HIV status. TB chemoprophylaxis is used to prevent TB infection from developing into active disease. The decision to offer it to all staff was made in partnership with the Swaziland National Wellness Programme and reflected the generally high-risk environment at GSH at that time. 133 staff (54% of those screened) took it up, with a 70% completion rate at six months.

TB ward renovation: before and after

Conditions on the TB ward were pretty much 'perfect' for developing hospital-acquired TB transmission. The facilities, mostly built in the 1950s and 1960s (before the HIV epidemic), were simply not fit for purpose. For example:

- Patients were not effectively grouped together.
- The nurses' station was located along the corridor from the TB wards so patients moved in and out without restrictions, mixing with other non-TB inpatients (most of these HIV positive).
- Bathrooms for female TB patients were located across the main hospital corridor.
- Airbricks allowed the transfer of airborne-suspended TB from TB to non-TB patient areas.
- There was no dedicated TB in-patient nursing team (nurses divided their duties between

all-male or all-female medical in-patients). As a result, TB patients received less attention than other in-patients, impacting on length of stay and exacerbating the situation.

Imagine being a Swazi nurse on duty for this ward...

As you venture through the door there are a number of patients with TB lying on beds close together. The room is dark and very poorly ventilated.

The ward is sectioned off into three parts; there is no window to the outside in two of the three sections, including the one you have walked into.

The patients are sick, many of them dying. Some of them need to be washed. You are wearing the N95 face mask that you have been issued for the month (in the UK nurses get a new face mask every day). Your colleague recently got MDR-TB.

Now imagine doing that day after day...

Making the new TB ward happen

One of the biggest challenges we faced in improving care for TB patients at GSH was lack of money. Although HIV and TB have mobilised the global community, TB infection control has been largely neglected in policy and practice.

Infrastructure projects tend not to appeal to international donors. This may be because they perceive certain risks with these projects, such as lack of design expertise and potential issues of ownership.

It was clear we would have to rely on local donations and the budget was likely to be very low. In addition, any new design would have to fit into the existing hospital infrastructure, as there would certainly not be enough money for a purpose-built facility.

How we found the funds

Working with the in-house hospital maintenance

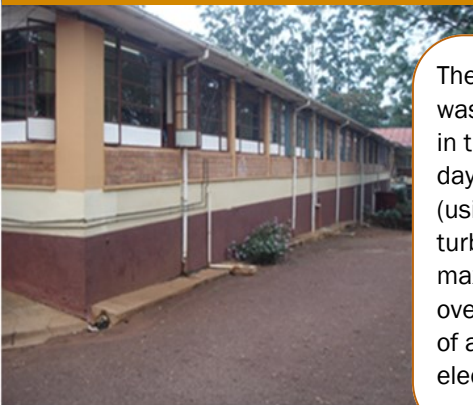
team, we came up with a provisional budget while ensuring that our plans remained realistic.

We presented the plan to the GSH management team who were very enthusiastic. We then approached Themba Dlamini, head of the National TB Programme and a valued supporter. He had been increasingly concerned about the problems of workplace TB infection and promised to allocate some funds.

We gained the support of the national infection control and quality assurance teams, who inspected the site and plans in person and promised to help facilitate the project.

Potential donors were approached, including the Ministry of Health. The fundraising culminated in an appearance on stage at the World TB Day celebrations to receive a cheque from the Honourable Minister of Health for the Kingdom of Swaziland. Our total budget was 280,000 Swazi Emalangeni (then around £18,800).

1: The existing veranda at GSH



The hospital veranda was well-elevated and in the sun most of the day. Natural ventilation (using wind-driven turbines) could be maximised, to overcome the problem of an unreliable electricity supply.

2: Professional, pro-bono input



Pro-bono support from UK healthcare architects, Apex4d and Bowman Riley, meant the plans could be simulated and modified remotely from the UK. (Pic courtesy of Bowman Riley)

3: Construction underway



Knocking down 4 walls opened up the TB ward. The extended unit was sealed off from the rest of the hospital. A new entrance and a nurses' station ensured TB patients would be grouped together and would not come into contact with non-TB in-patients.



Open for business: the new TB ward at Good Shepherd Hospital

Introducing infection prevention and control training

Better IPC had been a long-standing issue at GSH. However, a neonatal sepsis outbreak and problems with MDR-TB had pushed it to the fore. Together with Dr Samson Haumba, Country Director of the University Research Company (a global organisation dedicated to improving the quality of health care, social services and health education worldwide) we organised and ran training sessions for around 220 hospital staff.

There were big challenges. Unlike in the UK, hand washing was not part of routine accepted practice. If you've never been taught the importance of good hand hygiene and hand hygiene technique, and there are few well-maintained hand basins, why would you practice good hand hygiene?

The training was well received by GS staff. The highlight was a 5-minute talk given at the beginning of every session by a member of staff who had been affected by MDR-TB. They would tell their colleagues about their experiences and urge them to act to protect themselves. You could see sleepy eyes suddenly focus.

We also used the infection control training sessions to boost IPC capacity and recruit focal nurses for IPC in all hospital departments



One of the IPC posters created and displayed around the hospital. It says in Siswati: 'Are they clean? Washing hands stops microbes spreading'

The bigger IPC picture and scaling up

Clearly the IPC problem was bigger than the issues faced by GSH or Lubombo. There were significant gaps at national level in terms of communicable disease control, particularly around infectious disease surveillance and response.

We approached Chikwe Ihekweazu, a consultant epidemiologist seconded to the South African National Institute of Communicable Disease (NICD) in Johannesburg, to advise us on IPC. NICD has a remit to provide communicable disease support for the Southern African region. It has international funding, excellent laboratory facilities and, most importantly, it was willing to help.

After a short but fruitful meeting with Dr Simon Zwane, the Director of Health Services for Swaziland, it was clear that the Swazi Ministry of Health was also open to potential collaboration with the NICD.

Working together, both organisations agreed to share resources and establish joint projects to

protect the health of the populations of both countries. Specifically, NICD would provide additional training and expert support to help the Ministry of Health build capacity in:

- infectious disease surveillance
- epidemiology
- outbreak response
- laboratory diagnostics, and
- public health research.

This agreement has been included in a memorandum of understanding between the governments of South Africa and Swaziland.

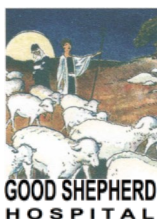
The Good Shepherd Hospital [Tuberculosis Infection Prevention and Control Policy](#) was published in December 2014. The policy builds on this early work and provides detailed information on what hospital staff can do to protect themselves and others from infection.

Note on the author:

Dr James Elston is an infectious disease physician and one of the public health registrars to have completed a secondment to Good Shepherd Hospital as part of the COMDIS-HSD research programme. Read more about our work to [increase TB and HIV case-finding in Swaziland](#).

References:

1. Centres for Disease Control and Prevention. (2013) CDC in Swaziland factsheet. Atlanta
2. Kingdom of Swaziland Ministry of Health. (2012) TB Program annual report. Swaziland
3. Central Statistical Office. (2008) Swaziland Demographic and Health Survey 2006-07. Swaziland



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[COMDIS-HSD](#) is a Research Programme Consortium funded until the end of 2016 by UK aid from the UK government. Working with partner NGOs in 7 low and middle income countries, we carry out research and, using our findings, provide evidence to policymakers to help them improve the way they deliver health services to their populations. Together with our partners, our aim is to improve the quality of prevention and care services for common diseases, as well as making these services easier for people to access, especially in underserved populations.