

# Tuberculosis and HIV Research and Programme Management at Good Shepherd Hospital, Swaziland: End of Year Report



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**Nuffield Centre for International  
Health and Development**  
LEEDS INSTITUTE OF HEALTH SCIENCES

**COMDIS**  
RESEARCH & DEVELOPMENT FOR EFFECTIVE  
COMMUNICABLE DISEASE CONTROL

## 1. Background

Prior to joining the public health training scheme, I had a keen interest in global public health and undertook short term project work in Ghana and Vietnam in order to gain more experience. Like so many others, I vividly remember the shock of seeing preventable deaths first hand, such as children who died of diarrhoeal diseases, and women dying with complications from childbirth.

These experiences and other travel also made me aware of the inextricable link between health, poverty and our living environment. Staying in a South African township and seeing informal settlements that had been cleared by bulldozers in Vietnam and India helped me understand the economic pressures driving people into cities and urban slums. Staying with a family in Ghana, I saw mango trees being cut for the immediate need for firewood, and tiny fish taken from overfished lakes to provide a day's food. Sacrificing the future of the land and lakes for the urgent need for fuel and food made sustainability arguments seem absurd. Seeing dry riverbeds from years of drought, brought to me an acute awareness of the impact of climate change. I wanted more experience to learn about this and be part of the solution.

### Application process

Upon completing of my Part A exam, I registered immediately for my OSPHE exam and simultaneously contacted the leading international health institution in my Deanery, the Nuffield Centre for International Health and Development at the University of Leeds. My timing was fortunate; there was a training vacancy coming up in Swaziland, upon successful completion of my OSPHE exam. This placement had benefited from a succession of public health trainees, FPH approved supervisors based in my region and also in Swaziland, as well as established PMETB approval.

I next sought approval from the Deanery, my Training Programme Director, and my educational and academic training supervisors. This involved presenting my aims and objectives, my expected competencies and outputs, and, most importantly, contextualising this within the training scheme and my NHS objectives. I needed to demonstrate how this particular placement would further my public health skills, address my current training gaps, and improve my experience in order to become a public health consultant. During this time, I also visited the training site in Swaziland and shadowed the current public health trainee to understand the realities. After my application and interview, I was then selected as the next public health trainee for the Swaziland placement.

### The context: The Yorkshire-Swaziland link.

Professor John Wright and Dr. Helen Ford first established the Yorkshire Swaziland link and began the process of formalised exchange, support and programme development. This has grown considerably over the past 10 years, into what is now a well-established link between Good Shepherd Hospital, the district Hospital in Lubombo in Swaziland and in Yorkshire, the Nuffield Institute for Health and International Development at Leeds University, University of Bradford and Bradford Teaching Hospitals NHS Foundation Trust.

For the past 5 years, this established link developed into a public health training placement, offering trainees the opportunity to gain further independence in managing programmes, staff and budgets and plan, implement, evaluate and disseminate public health research programmes. For me, this was a perfect fit as it provided me the leadership and research experience; fundamental skills I needed in order to become a Consultant in Public Health.

Previous trainees had implemented workstreams and programmes based on best practice evidence, national policies and WHO's Integrated Management of Adolescent and Adult Illness (IMAI) guidance in TB and HIV management. Grant and research support was provided from donors such as the Elton John AIDS Foundation, and research funding from the research consortia known as COMDIS. <http://www.comdis.org/>

I followed a succession of 4 public health trainees. My aims were to build upon their successfully implemented programmes as well as push the boundaries of operational research in low resource settings. Both in my work at the Primary Care Trust (PCT) and abroad, I had seen many well intended programmes fail due to poor planning, lack of local ownership and unsustainable funding. My ultimate goal was to overcome this by working alongside existing staff and teams to deliver efficient, effective and sustainable programmes in a healthcare arena plagued by skill and staff shortages.

**Steven leads this HIV testing and support group-A community group that advocate for HIV testing and counselling. Steven links them into clinic services, provides education and tracks their clinical and immunological status.**



## 2. Setting

### Swaziland, Lubombo, Good Shepherd Hospital.

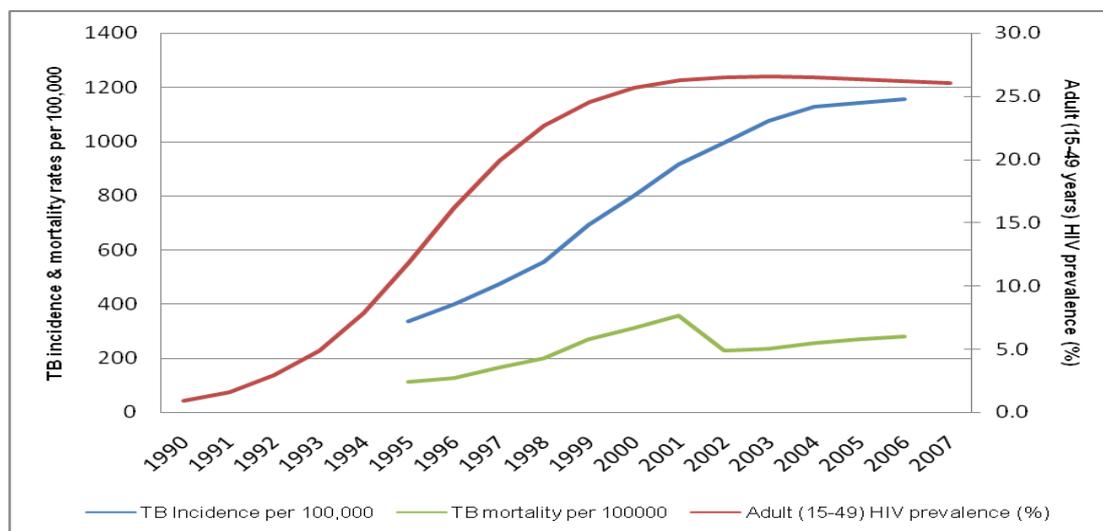
Swaziland is a small land-locked country that borders South Africa and Mozambique. This country of just over one million people is governed by the last remaining absolute monarch in sub-Saharan Africa, King Mswati III. Seventy six percent of the population reside in rural areas and 60% of the population exist on less than US \$1.25 per day. The country is subdivided into four administrative regions and 55 Tinkhundla (constituencies). Lubombo, the eastern region, is the most rural and poor of the 4 regions, with the majority of the population working as subsistence farmers or informally or seasonally employed.

Good Shepherd Hospital is the only inpatient hospital serving the Lubombo region. This 225-bed facility is a Catholic Mission Hospital which receives a mixture of funding, the bulk of which comes from the government's Ministry of Health and Social Welfare. Other support comes from the Catholic Diocese and external donors and aid organisations such as UNICEF and ICAP. The hospital provides a range of inpatient and outpatient services. Specialist services include ophthalmology, ear nose and throat, obstetrics and gynaecology, paediatrics and surgery.

### Health Status

Swaziland has the highest HIV prevalence in the world (26% of the adult population) and the highest TB incidence rate in the world. This is against a backdrop of one of the lowest life expectancies at birth world wide (32 years) and a disproportionately high infant mortality rate of 69 deaths per 1,000 live births.

**Figure 1: Time trends in TB incidence and HIV prevalence in Swaziland**



There are immense challenges to delivering healthcare with the high disease burden, low numbers of skilled staff and high patient to staff ratios. Prior to arrival, I familiarised myself with the statistics, disease profiles of the country and healthcare delivery systems. However, I felt encouraged by the recent global response to TB and HIV. I was due to arrive in a time when investment and advocacy were at an all-time high. The past several years provided unprecedented global attention and investment in HIV prevention and treatment from countries and aid agencies such as the US President's Emergency Plan for AIDS Relief (PEPFAR) and the Global Fund for AIDS TB and Malaria (GFATM). I knew of the progress being made in achieving Millennium Development Goal (MDG) 6, combating HIV, malaria and other diseases. I felt inspired to be part of the delivery of the G8 commitment of "Universal Access to HIV and AIDS treatment."

None of this had adequately prepared me for the reality of working in this challenging context. I had wrongly assumed that with the development and provision of HAART (highly active anti-retroviral therapy) patients in Swaziland were now living healthy active lives. Upon my arrival on the first ward round, seeing wards full of people dying of late-stage AIDS, Kaposi sarcoma and multi-drug resistant (MDR) TB gave me a feeling of hopelessness. When I later visited the rural homesteads to follow up on our MDR TB patients, I was met with an even greater challenge - how to manage these patients in the community.

Working alongside me was a dedicated team of doctors, nurses, community workers, adherence officers, and expert patients who had the first-hand knowledge, experience and clinical skills to manage these patients. I became acutely aware of the lack of resources, medication, staff, and vehicles but felt inspired by the way that staff would come up with new ways to encourage patients to test and screen for HIV and TB, and link them into early treatment for HIV and TB.

With this in mind, I thought about my goals for the placement: 1. To conduct and evaluate evidence-based research; 2. To establish and manage TB and HIV programmes and staff; and 3. To develop and support national and regional policies to strengthen TB HIV services and provide better healthcare in our region.

My wider goals within the public health training were to gain increased independence and leadership in managing public health programmes, conduct quality research and publish the findings and achieve key public health competencies in my personal portfolio.

**Infants receiving their first vaccinations and PMTCT education provided by the “mothers to mothers” team.**



### 3. Programmes and Progress

The placement provided me with experience in global health policy and strategy, operational and line management, research, and clinical skills.

#### Research

My primary responsibility was a public health operational research role. The two major areas of research I undertook were:

1. Exploring the effectiveness, feasibility and acceptability of TB intensified case finding (ICF) in rural clinics as part of routine TB HIV care
2. Exploring the outcomes of a Pre ART programme to bridge the gap in testing and treatment in rural clinics.

#### 1. ICF research

TB remains the leading cause of mortality amongst people living with HIV and AIDS (PLWHA) in Swaziland. Although National Policy Guidelines recommend ICF at all HIV testing and counselling services, this has so far not been implemented widely. The main challenges to effective and integrated TB HIV care remain TB detection and diagnosis in primary care clinics.

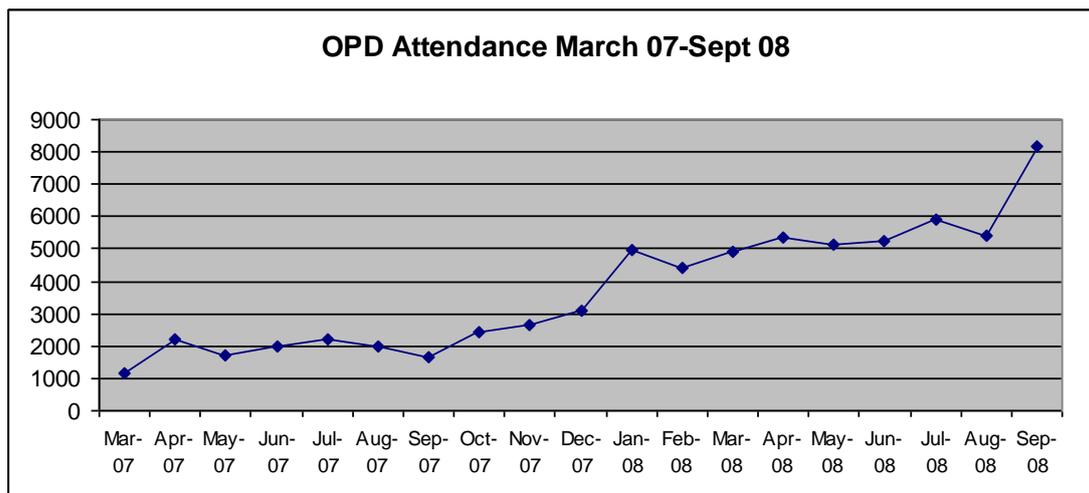
I conducted operational research to explore the implementation of ICF in primary care clinics and in Good Shepherd Hospital. Logistics necessary to undertake this included training the staff in rural clinics on how to TB screen, providing regular transportation to pick up sputum specimens and return results to the clinics. It also required additional laboratory capacity to prepare microscope slides and conduct tests in order to diagnose patients with AFB+ (acid fast bacilli) pulmonary TB. Once this had taken place, the results were analysed. Over the first three months 1988 HIV positive patients were screened for TB. I then followed these patients through the pathway of receiving a diagnosis and commencing TB treatment. Analysis included GIS mapping, and a mixture of qualitative and quantitative methods. Afterward comparative analysis was undertaken to examine the proportion that received a diagnosis and treatment and the time it took to receive diagnosis and treatment at both the hospital and the clinic sites.

#### 2. Pre-ART research

Limited scale up, high rates of lost to follow up, defaulting and death are continual challenges to the delivery of HIV care in the region and in Swaziland. Our current antiretroviral therapy (ART) services in Swaziland reach less than half (43%) of the estimated eligible population. Of those patients which do receive antiretrovirals (ARVs), deaths, defaulting and loss to follow up are significant barriers. Only 65% of those people initiating treatment are still alive 12 months after initiation.

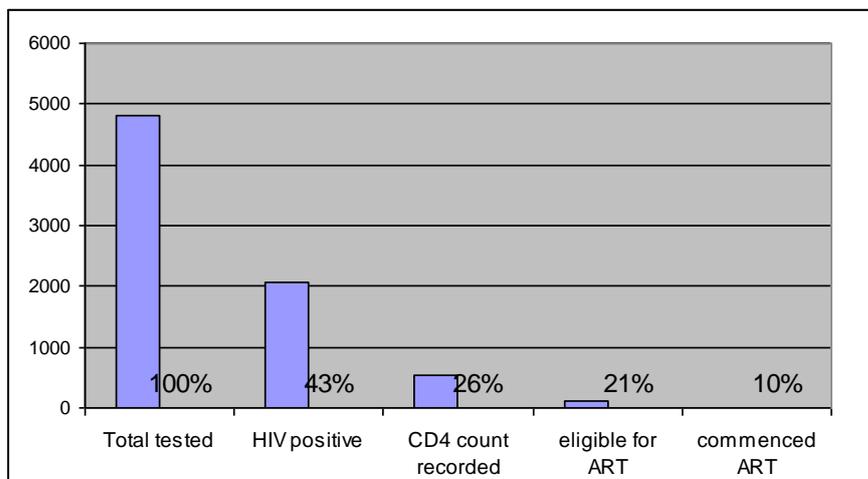
At Good Shepherd Hospital, one of the key challenges was providing accessible services to those people who needed to commence ART but had not yet started. A typical scenario was that HIV positive patients would not yet commence ART treatment, but rather return to the hospital several times in order to treat opportunistic infections through the Hospital Outpatient Department (OPD)(Figure 2). This created a steadily increasing number of new admissions and returning patients which had grown considerably over the previous years creating an inefficient and unmanageable scenario for our OPD unit and hospital.

**Figure 2**



In 2008, 891 people were initiated on ART treatment at Good Shepherd. In attempting to match those which were eligible for ART and had CD4 counts below 200, we were able to find only 10% (11 of the 114) who had initiated ART treatment at Good Shepherd. Three patients had died and we were unable to trace the outcomes of the remaining 89% of those eligible for ART who had not yet started. (Figure 3)

**Figure 3: HIV Testing and treatment services at Good Shepherd Hospital, 2008**



Researching “pre ART”, the service that links HIV testing to care and treatment, was complementary to the ICF research. In fact, both research programmes were conducted simultaneously. This research aimed to explore the populations who received pre ART care and the outcomes of care amongst those patients who were eligible to receive ARVs.

The intervention of this research was a pre ART package of care which consisted of training on guidelines of care, a patient information system, and a system of monitoring eligibility, return appointments and follow up care. We then registered all HIV positive patients who had not yet started ART. After 3 months of implementation, 1842 pre ART patients registered. Patient records and those commencing ART were collected until 31 July 2009. Analysis included the demographics of those registered including age, geographical location, sex and time to registration from testing. We

also examined the proportion of those eligible for ART, on the basis of their clinical and immunological status, and the time it took from registration until initiation of treatment. Qualitative analysis with nurses and community health workers examined the aspects of implementation and the barriers to providing care and encouraging patients to test and to begin treatment.

### Operational and Programme Management

Public health activities programmes by the hospital are regional serve the hospital outpatient population as well as the clinics and surrounding homesteads of the through the following channels:

#### Comprehensive TB HIV services:

- **Testing:** HIV testing and counselling services are provided at every point within the hospital inpatient and outpatient departments. A well established outreach service provides support to 18 surrounding rural clinics. Outreach testing and counselling services include the distribution and collection of testing kits, patient booklets and monitoring forms, the collation of testing data linked to comprehensive TB HIV care.
- **TB management:** Crucial to the provision of integrated TB HIV services is the detection, management and prevention of TB in patients with HIV. This service includes implementing intensified case finding (for detection), isoniazid prevention therapy (IPT) for the prevention of TB, and infection control in the hospital and clinics. At every point of HIV care provision, patients are screened routinely for TB; for those with symptoms, specimens are collected in order to detect TB. For HIV patients already diagnosed with TB, active monitoring of immunological status and commencement of ART are key responsibilities to ensuring that both dual conditions are well managed. Another pilot programme commenced at Good Shepherd Hospital was developing and validating the TB screening tool. Once this was approved, the surrounding rural clinics provided intensified case finding (ICF) and 8 of the 16 clinics had commenced provision of IPT to eligible patients. This was the first IPT pilot in the country. It required training of clinic nurses and staff, monitoring and follow-up for adherence side effects, completion and failure rates. Results were reported monthly to the TB HIV National Coordinating Committee. Another TB specific activity was services provided for drug resistant (DR) TB. In this programme, patients who had failed or defaulted first-line TB treatment were actively followed. Patients with either suspected DR TB or culture-confirmed DR TB were actively followed to ensure they received treatment support and nutritional support. Home assessments were conducted by the motorcycle adherence officers (MAOs) to reduce transmission in the homesteads. This included teaching cough hygiene and where possible providing isolation facilities within the homestead or through the provision of temporary tents or shelters. Patients were also provided a small monthly stipend for transportation to and from the national TB centre in order to collect drugs and have return appointments.
- **Adherence Support:** Patients who receive ARVs, TB and epilepsy treatment are followed by the staff for patients who have either missed appointments or defaulted from treatment. This uses a combined approach of contacting patients via mobile phone in the first instance and if unsuccessful, visiting the rural homesteads on a motorbike to determine the reasons that patients have not returned for appointments and providing small additional funds or nutritional support where possible. Each day 2 motorcycle adherence officers check TB ART Preventing Mother to Child Transmission (PMTCT) records and record those who have missed appointments and require follow up.

- Prevention of Mother to Child Transmission (PMTCT) services are provided inpatient, outpatient and in the surrounding rural clinics. This is integrated within the wider HIV care services but specifically addresses the prevention of vertical transmission of HIV through targeted HIV testing and maternal and neonatal ART administration.
- Home-based care team: For chronic patients who are bedridden and no longer attend clinics, discharge planning and community care is provided for these patients. This includes preventative (health education), curative and palliative measures, nutritional support, and addressing the care and support needs of the homestead.
- Epilepsy services: Good Shepherd Hospital established the first epilepsy programme in the country. This service provides the diagnosis, treatment and monitoring of epilepsy. It provides outreach services to the rural clinics and ensures the distribution and monitoring and followup of patients receiving treatment for epilepsy.
- Basiti: This programme was started by GSH in 2003 in Lubombo as a network of 26 'helpers' ('Basiti' in Siswati). These were all people who were HIV positive and taking anti-retrovirals (ARVs). The programme was introduced on a controlled trial basis to assess the impact and outcomes after a one year period. This programme, originally funded by the Elton John Aids Foundation continued to produce positive outcomes in testing, ART adherence and community education. For the past 6 years, the Basiti provided the essential link between communities, clinics and the hospital. A qualitative study conducted in July 2007 support provided to people who had access to Umsiti (helper) was compared to people who did not. This highlighted the success of Basiti. It resulted in better access to primary care and hospital services for HIV testing and initiation and also less defaulting in people who were part of the Basiti support groups. Basiti outcomes include:
  - Over 50 support groups across Lubombo for people who are HIV positive.
  - Over 300 people supported per week through community support groups, group counselling and home based counselling for people on households affected by HIV. This includes those who are positive, those who require testing and those who are on ART.

Two key service roles during my time were to 1) Establish and provide patient-centred HIV services linking testing to treatment thus reducing the flow to outpatient department and 2) to provide decentralised HIV TB care in the surrounding rural clinics following a model of basic chronic disease management.

Specific tasks within this included line management of staff, establishing recording and data monitoring systems, producing monthly and quarterly progress reports and managing finances.

**Healthy mother on ARVs for 3 years and her baby receiving follow up care at a local clinic.**



**Nurse Thandiwe provides comprehensive HIV and TB care at St. Phillips clinic.**



#### 4. Public Health Skills and Competencies

This placement provided an invaluable experience of managing programmes, developing research agendas, linking with donors and policy makers on funding and strategic direction. These experiences also translated into tangible public health skills both within the competency framework and other areas that are key components of public health practice.

This placement contributed towards my CCT and helped me to achieve a number of competencies within my Public Health Training Portfolio. For me, the key competency areas were in Area 9: Research and Development and Area 10: Ethically managing self, people and resources (including education and continuing professional development).

The process of achieving competencies was as follows:

First, prior to arrival in Swaziland, I submitted to my educational supervisor the competencies I felt were realistic and how I might achieve these within placement. Secondly, I submitted these competencies to my day to day supervisor in Swaziland for agreement. Once these were agreed, I provided monthly updates to my educational supervisor and my (Swaziland-based) placement supervisor. We reviewed progress toward the competencies and addressed any outstanding issues or evidence needed to demonstrate competence. My educational supervisor and placement supervisor provided a mid-term evaluation highlighting progress and areas for future development. I had a final evaluation with both my educational and placement supervisor with the final agreement on areas of competence.

Some specific competencies I achieved in this placement were:

- 9.5 Be able to decide on the data required to answer a specific question.
- 9.6 Undertake data collection and analysis using specially collected ad hoc health information.
- 9.8 Identify steps for recommendation based on research findings.
- 9.9 Turn complex research outcomes into information and knowledge that can be used to improve health.
- 10.2 Understand relevance of management skills and apply them for effective public health practice.
- 10.9 Understand and appreciate ethical and legal issues surrounding confidentiality, data protection information
- 10.13 Demonstrate adherence to professional codes of ethics at all times including financial probity and professional confidentiality.

## 5. Conclusion

This has been my best and most memorable experience so far as a public health trainee. It provided mentorship, supervision and support from experts in global health (Professors John Wright and John Walley). I also gained valuable experience from other public health colleagues on the ground in Swaziland. It renewed and encouraged my passion for global public health and gave me a confidence to lead public health programmes. The skills I developed in managing services and conducting research have provided excellent preparation for my future work as a public health consultant.

Beyond achieving my individual goals and objectives, I developed close working relationships and immense respect for all the staff at Good Shepherd Hospital. I spent time with them to understand their perspectives, to hear their stories and help them solve problems and to continue the battle in the midst of a society desperate to get ahead of this pandemic.

One of our HIV testing staff summed it up best.

He writes:

*“During our visit to one of the local clinics, I met a 15 year old lady who entered my room to have her CD4 count taken. When I asked her name, she told me but she was full of tears on her face. I asked her what was wrong and what I can do for her. She started to narrate her story.*

*She is orphaned and lost both parents. Now she stays with her brother and sister in law and what she had come for today is a CD4 count. When I asked how had she come across that situation, she says she was raped by one of her mother’s brothers when she was at the age of 14 years. Now what made her to cry is that she had lost her virginity in this and had tested and found to be HIV positive, claiming now she does not have a future.*

*I tried to talk to her and how she can cope with this situation, like now the availability of ARVs if her CD4 count is below 200. I asked her to come back with her sister in law, when she comes back for the results so that we can share how to live a positive life.*

*They both finally came for the collection of the results. I was able to educate her and her sister in law about HIV and how the sister in law can help her to cope with her positive status. On that day, the sister in law also decided to go for the HIV test.*

*Now the situation is coming together. The sister in law is also found to be HIV positive. They can now help each other and live in the open about this situation.”*

This is just one example of the daily activities that happen in the Lubombo region. This counsellor understands the realities, and plays his part in caring for each individual patient. He uses his skills to encourage and support others in their journey of testing, treatment and care.

There is no way to adequately express the gratitude and appreciation I have for those who worked tirelessly with patients, lived the realities and will continue to challenge the norms and press ahead in the years to come.