



IEQAS CONFERENCE  
Dublin  
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Nora Kinsella  
St James's Hospital



In my career, I have been fortunate to be involved in 2 countries in Africa- Lesotho and Kenya and shared my haematology knowledge with my medical scientist colleagues in those 2 countries

# Lesotho

## *(Khotso Pula Nala- Peace & Rain in abundance)*

- The Irish government funded a bilateral aid program for over 20 years in Lesotho in Southern Africa from the late 70s.
- The program was spearheaded by the late Brid Ann Ryan from DIT and many other lab science alumni including Moss Mc Cormack, Joe Vaughan and Noel Whyte.
- The program provided a DIT approved lab training program up to certificate level.
- Irish medical scientists were recruited to this project over several years
- The Irish medical scientists worked in hospital labs all over the country alongside their Basotho colleagues.
- Their role was improving techniques and standards in the laboratories, hospital based training to trainee medical scientists and class room based lectures and laboratory practicals in a dedicated laboratory training centre (MLTP) in the capital Maseru
- The top students won scholarships to Ireland to complete their studies to degree and masters levels.
- Many of these students returned to Lesotho to become laboratory managers or to advisory positions in the dept of health.
- I was fortunate to work in this program from 1983- 1986.



# My experience in Lesotho

## The Mountain Kingdom

- I joined the project for 3 years in my early 20s
- I taught haematology and blood transfusion in Medical Lab Training Project(MLTP) delivering lectures and practical classes
- I worked in a rural multidiscipline laboratory in Roma Hospital with one other Basotho colleague.
- Our main roles were Hb and WCC estimation,
- TB( AFB) screening using ZN stain on sputum samples
- Recruiting of family members to donate blood and to collect blood donation. Group and cross match of blood.
- Frequent issues were loss of electricity, delay in reagent supplies and urgent calls for blood collection in the middle of the night .
- There was manual in a drawer with pictures to identify different snakes which we needed to use if a patient presented with a snake bite and brought the dead snake with them to ensure correct antivenom.. I opened that drawer rarely.



# My experience in Lesotho

## The Mountain Kingdom

- Addition roles included visiting remote labs in hospitals high in the mountains on a regular basis to provide training, support and bring supplies.
- This was a time of no social media and we had rare access to a telephone, so we became proficient letter writers and loved to see the arrival of the aerogram from home.
- In the 2<sup>nd</sup> part of my stay there I worked in the main hospital in the capital Maseru
- This was a reference haematology laboratory with Sysmex automation, coagulation and blood film examination.
- More specialised tests were sent to South Africa
- There was no endemic malaria in Lesotho because anopheles mosquito does not live at the high altitude however travel to nearby countries was a malaria risk
- A national blood transfusion centre for blood collection was set in Maseru during my time there led by Gerry Judge
- HIV/AIDS was only emerging as a serious transmissible illness in mid –late 80s and did not have an impact on lab practice during my time there

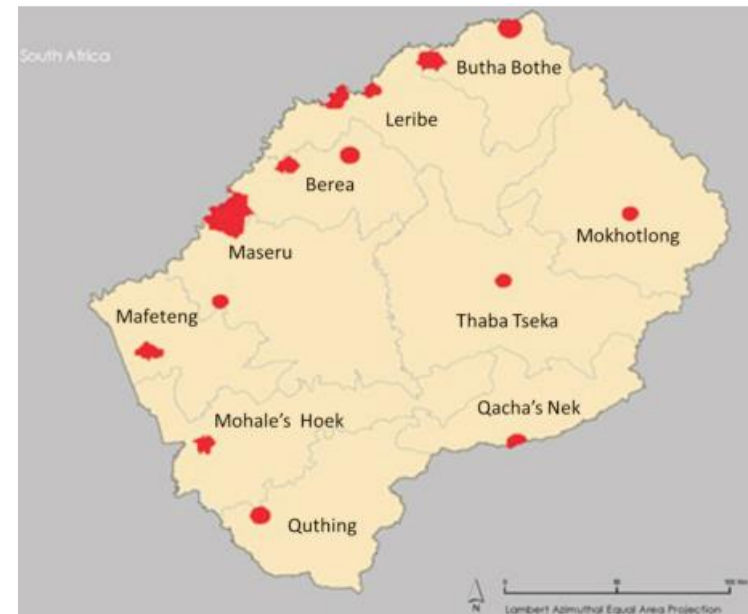


# Student Graduation Ceremonies In Lesotho



# Health service in Lesotho

- Lesotho achieved great strides in improving its health indicators from 1966 to 1990, with life expectancy rising from 40 years to 59 years.
- In the 90s Lesotho was devastated by HIV/AIDS, which reversed the gains the country achieved in health indicators
- Life expectancy dropping from 59 to age 44 in 2008
- In recent years, there has been a recovery in health service and development of new hospital in Maseru thanks to support from USaid.
- Many of the medical scientists who trained and graduated through the program have been key in keeping the laboratory services going through tough and improving times



# Achievements by Graduates of Lesotho Laboratory Training

## Strengthening Laboratory Management Towards Accreditation: The Lesotho experience

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**Introduction:** The Lesotho Ministry of Health and Social Welfare's (MOHSW) 5-year strategic plan, as well as their national laboratory policy and yearly operational plans, directly addresses issues of accreditation, indicating their commitment to fulfilling their mandate. As such, the MOHSW adopted the World Health Organization Regional Headquarters for Africa's Stepwise Laboratory Quality Improvement Toward Accreditation (WHO-AFRO-SLIPTA) process and subsequently rolled out the Strengthening Laboratory Management Towards Accreditation (SLMTA) programme across the whole country, becoming the first African country to do so.

**Methods:** SLMTA in Lesotho was implemented in two cohorts. Twelve and nineteen laboratory supervisors and quality officers were enrolled in Cohort 1 and Cohort 2, respectively. These 31 participants represented 18 of the 19 laboratories nationwide. For the purposes of this programme, the Queen Elizabeth II (QE II) Central Laboratory had its seven sections of haematology, blood bank, cytology, blood transfusion, microbiology, tuberculosis laboratory and chemistry assessed as separate sections. Performance was tracked using the WHO-AFRO-SLIPTA checklist, with assessments carried out at baseline and at the end of SLMTA. Two methods were used to implement SLMTA: the traditional 'three workshops' approach and twinning SLMTA with mentorship. The latter, with intensive follow-up visits, was concluded in 9 months and the former in 11 months. A standard data collection tool was used for site visits.

**Results:** Of the 31 participants across both cohorts, 25 (81%) graduated (9 from Cohort 1 and 16 from Cohort 2). At baseline, all but one laboratory attained a rating of zero stars, with the exception attaining one star. At the final assessment, 7 of the 25 laboratories examined at baseline were still at a rating of zero stars, whilst 8 attained one star, 5 attained two stars and 4 attained three stars. None scored above three stars. The highest percentage improvement for any laboratory was 51%, whereas the least improved dropped by 6% when compared to its baseline assessment. The most improved areas were corrective actions (34%) and documents and records (32%). Process improvement demonstrated the least improvement (10%).

**Conclusion:** The SLMTA programme had an immediate, measurable and positive impact on laboratories in Lesotho. This success was possible because of the leadership and ownership of the programme by the MOHSW, as well as the coordination of partner support.



**MoHSW**  
Ministry of Health and Social Welfare  
Kingdom of Lesotho



## Laboratory strengthening in high TB-burden African countries

Seminar

jointly organized by the Ministry of Health Lesotho and FIND under the auspices of WHO

Maseru, 24 February 2010

Laboratory services, Lesotho

David Mothabeng

Acting Director



# Achievements by Graduates of Lesotho Laboratory Training

## Designing an optimized diagnostic network to improve access to TB diagnosis and treatment in Lesotho

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Affiliations + expand

PMID: 32492022 PMID: PMC7269260 DOI: 10.1371/journal.pone.0233620

[Free PMC article](#)

### Abstract

**Background:** To reach WHO End tuberculosis (TB) targets, countries need a quality-assured laboratory network equipped with rapid diagnostics for tuberculosis diagnosis and drug susceptibility testing. Diagnostic network analysis aims to inform instrument placement, sample referral, staffing, geographical prioritization, integration of testing enabling targeted investments and programming to meet priority needs.

## APHL LIMS to Save Lives in Lesotho ( Med Lis)

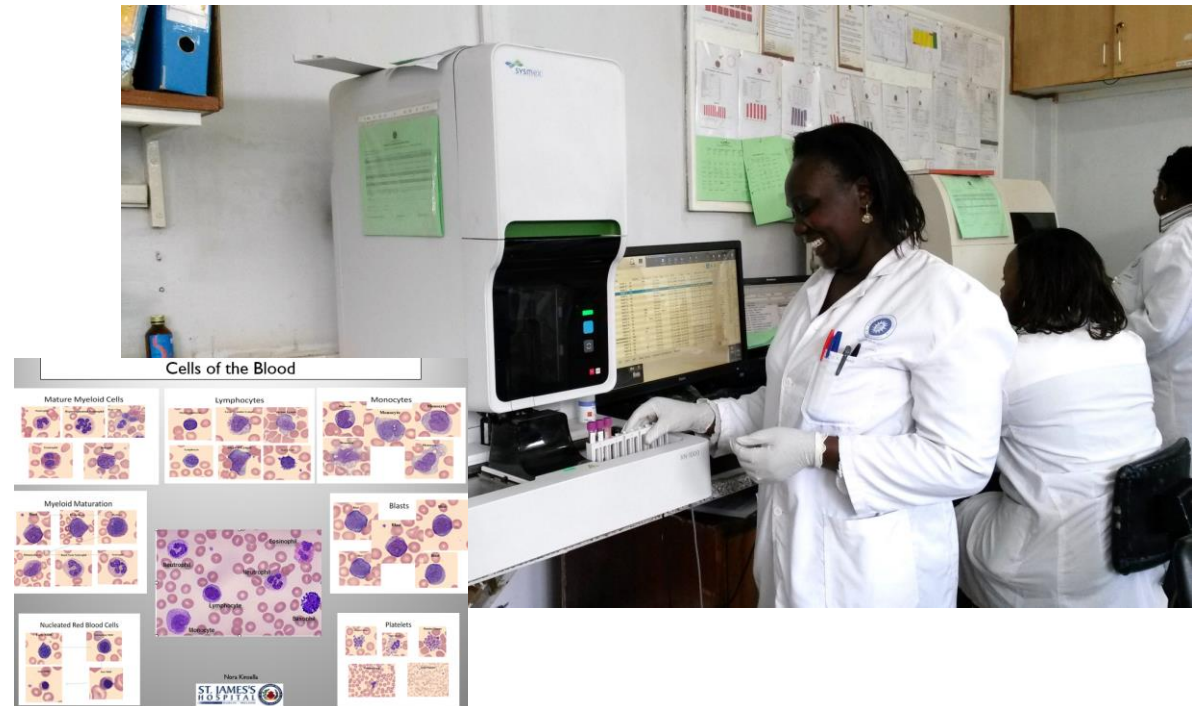
Winter 2015

19 laboratories now have direct links to exchange data and information.



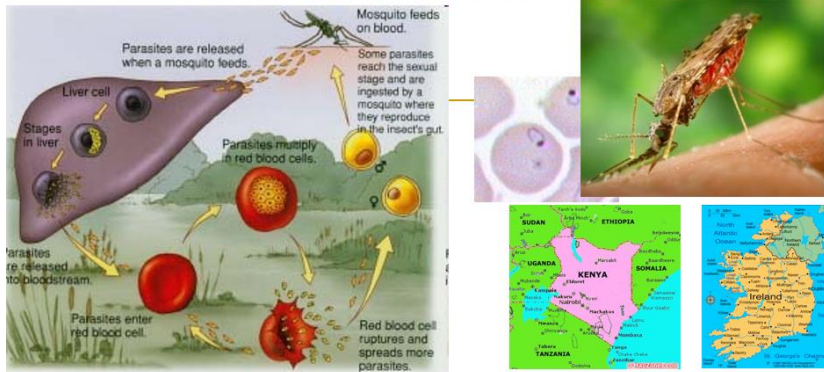
# Mater Hospital Nairobi

- More Recently in 2014 & 2015 I was invited by Joe Vaughan (now retired from DIT) and working in a managerial position there to visit the Mater Hospital in Nairobi, Kenya.
- This lab is ISO 15189 accredited.
- Staff were well training but lacked ongoing CPD opportunities.
- During my visit we organised a day long lecture program on latest updates in haematology for lab staff in the Mater
- And a full day morphology workshop in blood films and parasitology for the lab staff in the Mater and some other city centre hospitals.
- We also installed some training material such as classic blood film morphology and accompanying training aids

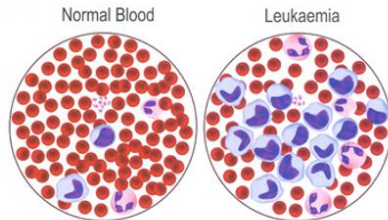


# Mater Hospital CPD 2014-2015

## Laboratory Diagnosis of Malaria and other Parasites



## Laboratory Diagnosis of Leukaemia

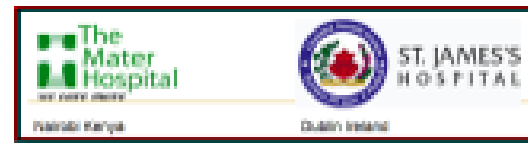


Nairobi Kenya

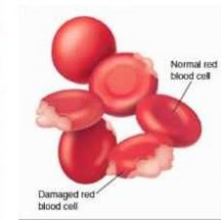
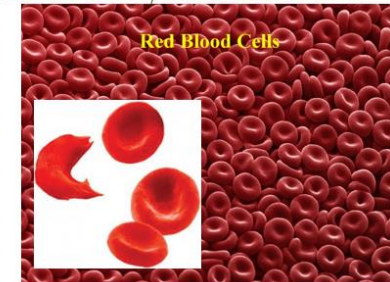


Dublin Ireland

## Anticoagulant Therapies Platelet Transfusion



## Laboratory Diagnosis of Haemolytic Anaemia



## Introduction to Coagulation and Haemostasis



# Mater Hospital Nairobi

## From their user manual

**Hematology** - The section deals with diagnosing blood disorders such as:

The main Equipment in this section

- SYSMEX XN-1000 as the main Haematology analyzer
- CELL-DYN RUBY as a backup

Coagulation studies are performed using ACL Elite as the main machine while ACL 200 acts as a backup coagulation machine.

BD.Facs used to perform CD4 counts



Blood films were examined by medical scientist  
Histopathologist examined bone marrow  
Leukaemia immunophenotyping was sent to India



# Brother Andre Medical Centre Dandora Nairobi

- In 2018, Joe Vaughan moved to a managerial role in a very small mother and baby clinic in an impoverished area of Nairobi close to the city dump.
- With the help of American donors ,under Joes guidance, this clinic has developed into a centre of healthcare in a very neglected part of Nairobi.
- On my visit there , the lab staff were as always interested in CPD but also had different needs as they were developing their own blood collection on site with very little equipment.
- The main request here was for blood packs, metal sealer clips and plasma expressors.... All long extinct from modern Irish laboratories



# Requests for simple blood transfusion equipment



Thank you to my colleagues in National Blood Centre , St James Hospital, Tallaght Hospital and Mater Hospital who searched their drawers and storerooms to find the requested equipment

In addition NBC donated a large supply of blood packs for blood donation which was gratefully received

# Bro Andre Medical Centre



Bro Andre Medical Centre is located near the city dump in Dandora in the outskirts of Nairobi





# Bro Andre Medical Centre Laboratory



# Biochemistry and microbiology

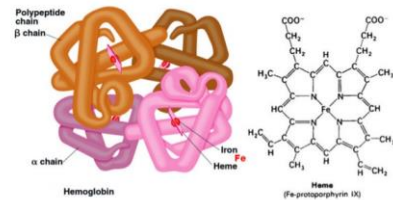


# Blood Transfusion( note empty Blood fridge)



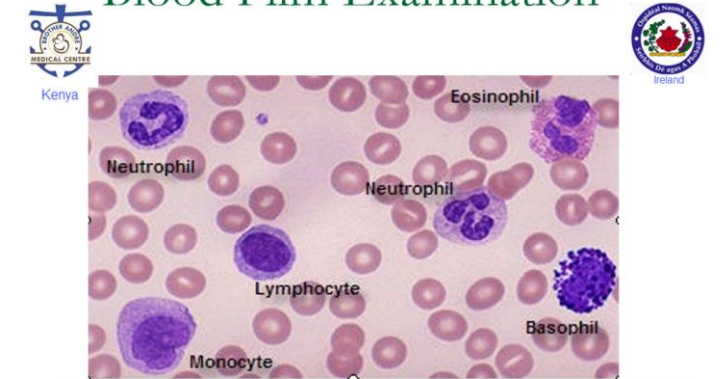
# BAMC 2018-2019 CPD toLab, Medical and Nursing staff

## Anaemia in Antenatal Mothers and Interpretation of Iron Profiles



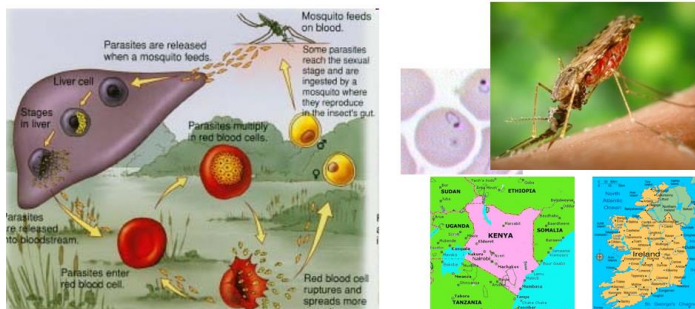
Particular interest in malaria vaccine which was undergoing large-scale pilot programme in Kenya coordinated by WHO

## Blood Film Examination



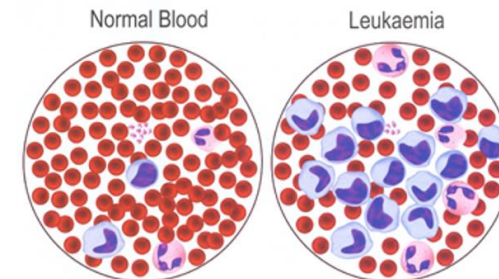
## Malaria in Kenya

Life Cycle, Pathophysiology Lab Diagnosis, Malaria in Pregnancy Cerebral Malaria, Malaria prevention and vaccine Brief into to other Blood Parasites



In addition, staff were directly affected by malaria and were keen to understand the pathophysiology

## Laboratory Diagnosis of Leukaemia



# Thank you Kea Leboha Asante Sana

I have been very fortunate to spend this time with colleagues in Africa.  
For whatever small amount you give, the return is immense and very rewarding.

I would recommend that all medical scientists travel & work overseas  
should the opportunity arise

