



**The Scottish
Government**
Riaghaltas na h-Alba

IMMPAQKT

Impact on Malaria, Maternal health and
the Prognosis for Aids by Quality
Assurance, Knowledge exchange and
Training

Carol Clements

Background

- **80%** of the population of Malawi routinely take herbal medicines for the treatment of different ailments.
- Currently there are **no mechanisms for Quality Assurance** for traditional medicines in Malawi.
- It essential that these traditional herbal medicines are
 - **quality assured** and that
 - medical professionals are informed about their possible side effects and interactions with conventional pharmaceuticals.



They can:

- be ineffective
- be too potent
- be toxic
- interact adversely with conventional drugs
- kill
- worsen the condition
- cause permanent long term damage
- increase the risk of cancer and chronic disease.



Formation of the collaborative project

January 2014



March 2014



July 2014



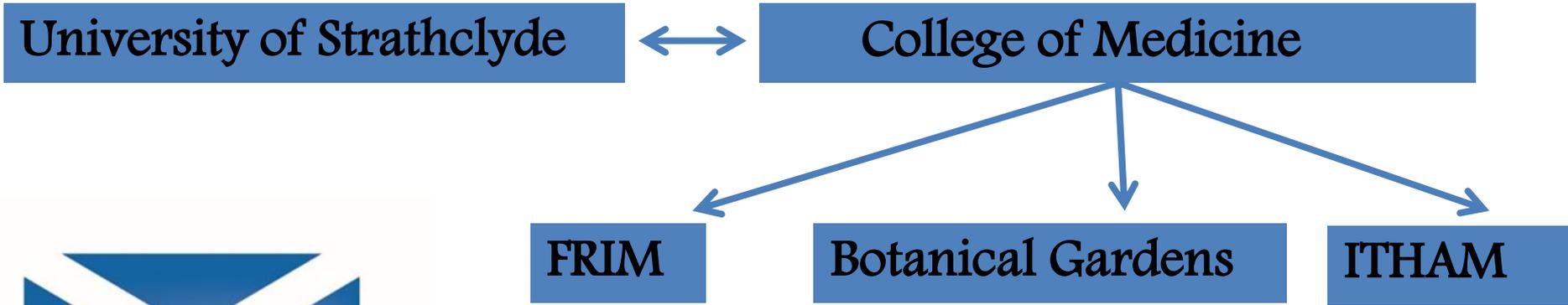
August 2014



January 2015

- **“Linking Health Research with local priorities in Malawi”** Dr. Mathildah Chithila –Munthali (Malawi National Health Research Agenda)
- **Strathclyde Global Engagement Fund** provided resources to allow Strathclyde scientists to travel to Malawi
- **Meetings with potential collaborators** highlighted the great need for improving the safety of Traditional Herbal Medicines
- **A collaborative proposal** was submitted to the Scottish Government International Development Fund.
- **The IMMPAQKT project was funded** and commenced in April 2015

Project structure



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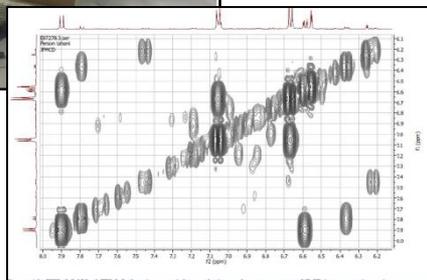


Aims of project

This project aims to improve the safety and efficacy of traditional herbal medicines in Malawi by:

- The development of a Quality Assurance programme for Traditional Herbal Medicines.
- Training and education of Doctors and Pharmacists in Traditional Herbal Medicine.
- Knowledge Exchange between Traditional Herbal Healers and Conventional Medical Professionals

The development of a Quality Assurance programme for Traditional Herbal Medicines



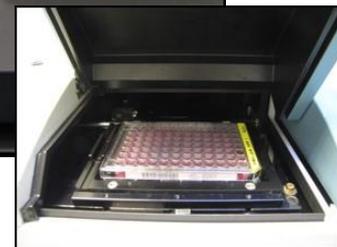
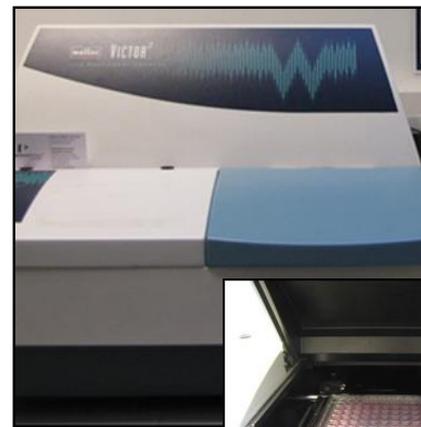
November 2015

- Mr. John Mponda visited Strathclyde - Training secondment in pharmaceutical analysis techniques.
- Prof. A.I. Gray, and Carol Clements visited College of Medicine – meetings and training workshops in Spectroscopy and Bioassays.



July/ August 2016

- Instrumentation and equipment purchased
Installation and initial training



Knowledge Exchange between Traditional Herbal Healers and Conventional Medical Professionals



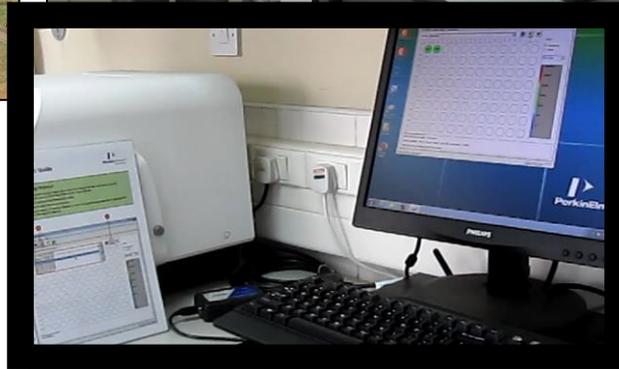
**April 2015 to March
2017**

**12 Knowledge Exchange
workshops between
Traditional Healers and
Conventional medical
professionals, at
Blantyre, Zomba,
Chikwawa, Tulu,
Mangochi, Nsanje.**



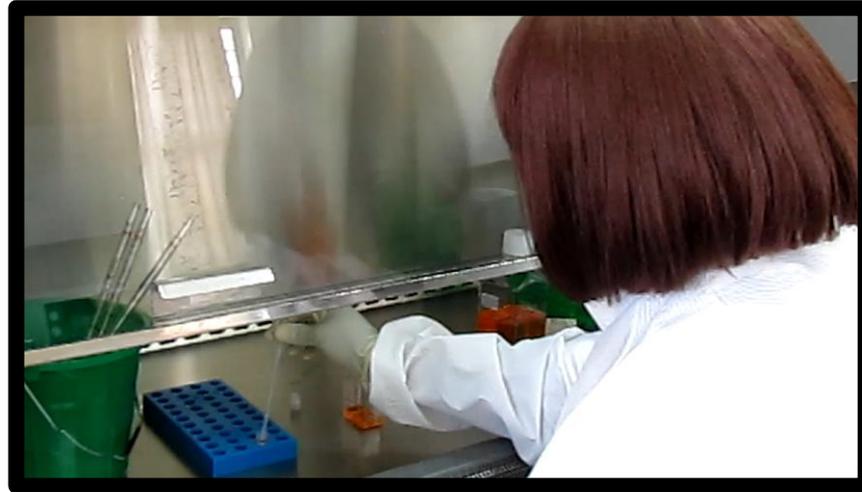
Establishment of Cell Culture / screening laboratory at CoM

June/July 2017



Applied training: Cell culture / bioassay workshops

June / July 2017 Carol Clements



Workshops:

- **Tissue Culture Laboratory Requirements**
- **Cell Culture Basics**
- **Viability Bioassay**



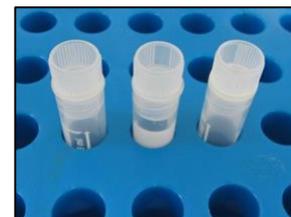
- 9 men and 6 women attended the workshops
Monitoring and Evaluation feedback very positive

<https://www.youtube.com/embed/5ExMJJa1OjBw>

Standard Operating Procedures (SOPS)

June /July 2017

- **Tissue Culture Laboratory Standard Operating Procedures**
Daily / weekly equipment checks and cleaning regimes
Spillage actions
Waste disposal
Use of: Class II cabinet; CO₂ incubator; laboratory centrifuge.
- **Preparation of RPMI 1640 from liquid**
- **Preparation of RPMI 1640 from powder**
- **Cryopreservation procedure**
- **Recovery of Cryopreserved cells**
- **Subculturing a monolayer of cells**



Establishment of Extraction / Analytical Chemistry Laboratory

November 2017

Visit to College of Medicine by:

- **Dr. John Igoli - Phytochemist – University of Strathclyde**
- **Dr. Darren Edwards – Analytical chemist – University of Dundee**



Applied training: Extraction, Fractionation and Analytical techniques

November 2017

Seminars/ applied workshops:

- **Natural product extraction**
- **Fractionation**
- **Analytical techniques- Focus on High Performance Liquid chromatography (HPLC)**

Training and education of Doctors and Pharmacists in Traditional Herbal Medicine

MSc in Traditional Medicine



May 2017

- Awaiting review by University of Malawi Academic Planning and Courses Committee
- Awaiting final approval by UNIMA Senate
- MSc course co-ordinator/ lecturer employed
- First intake of students expected 2017/2018



Sustainability / Funding



October 2016

- **The IMMPAQKT project** provided a key role in the successful application to the World Bank by the College of Medicine for funding to establish an **“African Centre for Public Health and Herbal Medicine”**. This resulted in total committed funding from the World Bank of **6 million US dollars** over a 5 year period. <https://spider.science.strath.ac.uk/immpaqkt/video.htm>

April 2016

- **Collaboration with NIKOM**
(National Development Institute of Korean Medicine)
- **MSc. Traditional Medicine**
- Fees 2017/2018



Key Learning so far

- **Importance of applied learning**
 - Strong theoretical knowledgebase
 - Importance of opportunities to access equipment/ instrumentation and training
- **Plants and Forests are a key part of the environmental cycle in Malawi**
 - Energy
 - Water
 - Climate
- **Importance of sustainable managed programmes of cultivation of THM.**





Impact on Malaria, Maternal health and the Prognosis for Aids by Quality Assurance, Knowledge exchange and Training

Background

80% of the population of Malawi routinely take Traditional Herbal medicines. They are taken to speed up labour and to combat AIDS and Malaria. Currently there are no mechanisms for the Quality Assurance of Traditional medicines in Malawi. Therefore they can be: ineffective; too potent; toxic; and can interact adversely with conventional drugs. They can kill; worsen the condition or cause permanent long term damage and can increase the risk of cancer and chronic disease.

Formation of the collaborative project

After a meeting at Strathclyde University to discuss "Linking Health Research with local priorities in Malawi", the Strathclyde Global Engagement fund provided resources to allow Strathclyde scientists to travel to Malawi to meet with potential collaborators. At these meetings the Malawian Scientists highlighted the great need for a Quality Assurance programme for Traditional Herbal Medicines. A collaborative proposal in this area was formulated by the University of Strathclyde and the College of Medicine (University of Malawi), with input from our partner organisations, the Forest Research Institute Malawi, the National Botanic Gardens of Malawi and the National Traditional Healers Umbrella Organisation. This proposal was submitted to the Scottish Government International Development Fund. The IMMPAQKT project was funded and commenced in April 2015.

Aims of project

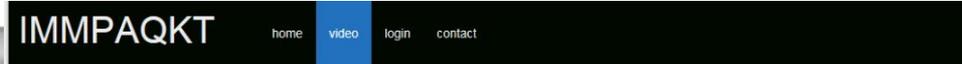
This project aims to improve the safety and efficacy of traditional herbal medicines by:

- The development of a Quality Assurance programme for Traditional Herbal Medicines.
- The training and education of Doctors and Pharmacists in Traditional Herbal Medicines.
- Knowledge exchange between Traditional Herbal Healers and Conventional Medical Professionals.

How these will be achieved

- A member of staff from the College of Medicine will undertake specialised training in pharmaceutical analysis techniques at the University of Strathclyde.
- The most appropriate herbal medicines will be selected for the project: one to combat Malaria one to enhance labour and one to treat AIDS.
- A MSc. in Traditional Herbal Medicine will be established at the College of Medicine.
- University of Strathclyde staff will provide training workshops at the College of Medicine in specialised techniques for analysis Traditional Herbal Medicines.
- A series of 18 Knowledge Exchange Workshops will be held, each with 10 Traditional Herbal Healers and 10 Conventional Medical professionals

VIDEO: IMMPAQKT project manager (Malawi) Associate Professor Fanuel Lampiao talks about the project



IMMPAQKT project manager (Malawi) Associate Professor Fanuel Lampiao (University of Malawi) talks about the project.



Zikomo kwambiri



University of Strathclyde team



College of Medicine team

Forest Research Institute Malawi

National Botanic Gardens of Malawi

National Traditional Healers of Malawi

Umbrella Organisation

International Traditional Healers Association of Malawi

Conventional Medical Professionals

Ministry of Health

Visit to Scotland by Dr. Fanuel Lampiao



Seminar SIPBS University of Strathclyde



“Research Activities at the College of Medicine, Malawi” By Dr. Fanuel Lampiao

- **Monday 2nd October 2017**
- 13.00 -14.00
- SIPBS Hamnett Wing 113-114
- Meetings by arrangement 14.00-16.00
- All welcome
- Refreshments 12.00 -1.00 Social area Level 1 SIPBS

