
Mosquitoes, malaria and Malawi

The Wellcome Trust Tropical Centre



In 2011, the Wellcome Trust celebrated its 75th anniversary with a variety of events. Away from the Trust's London headquarters, Wellcome research units were asked how they might bring their current research to local people, and eight units received small grants to help them realise their ideas. This article, one of four case studies looking back on the year's efforts, shows how the Wellcome Trust Tropical Centre in Liverpool made use of a £5000 award to extend their public engagement.

The Wellcome Trust Tropical Centre:

- produced lesson plans for secondary schools in two countries and organised school visits to the World Museum in Liverpool
- produced a 30-minute film recording what students did and their reactions
- held a celebration evening at the Museum to present the project's achievements and allow discussion with researchers
- reached an estimated audience of 110 people, including 85 school students.

When the Liverpool Centre undertakes local engagement, their definition of 'local' is a little different to that of other UK research labs. They want people in Liverpool to know and value what they do, but they also want to reach out to the countries where the illnesses they work on are affecting people – notably Malawi.

As a consequence, their 75th anniversary public engagement project was a two-pronged effort. They worked with schoolchildren in Liverpool and pupils in Malawi, where their research fellows commonly spend time working at the College of Medicine in the University of Malawi in Blantyre. The team there were keen to use the project. The final touch was to bring the two countries together using video and internet links and share perspectives on disease and prevention.

The disease being discussed was malaria (a central part of the Centre's programme), and the Liverpool team produced four lesson plans for schoolchildren aged 11–14. "For us," says Centre support officer Carolyn O'Leary, "it was going to be education from the start." The Centre already had experience working with schools, and they quickly chose malaria as the focus for their project, thinking they could use celebrity cases to engage the children.

The overseas collaboration did not figure in their plans until “it dawned on us that colleagues in Malawi could work with a couple of schools there”. The same lesson plans worked in both countries: “We developed the four lessons here, but when we sent them to the public engagement team in Malawi to check, they used them!”

The approach

Contemporary school lesson plans require elaborate preparation, and the malaria-related plans were no exception. They covered the biology of the disease, including the life cycle of the malaria parasite, the role of mosquitoes, and the signs and symptoms of infection. Blood slides allowed the children to inspect cells under the microscope and diagnose which samples indicated the donor had malaria.

The biological and medical aspects of the disease were woven into presentations and activities, which also featured information about life in Malawi and prospects for malaria prevention. Pupils took the role of World Health Organization workers planning to prevent malaria in a village in the rainy season – working out what to do, what to tell people and what it might cost. “We finished the lessons with a poster session where the students needed to think about what they would do if they were tackling malaria in Malawi,” says O’Leary.

In addition to geography, there was history, focusing on the importance of tropical medicine in Liverpool and the contribution of the Liverpool School of Tropical Medicine (LSTM) to understanding malaria. In particular, the lessons focused on LSTM teacher Ronald Ross, who discovered that malaria is transmitted by mosquitoes.

In their home city, the lessons were used in conjunction with a half-day visit to Liverpool’s World Museum. “We wanted a base – somewhere to bring the children to,” explains O’Leary. The World Museum has a tropical medicine collection, and had other attractions in reserve.

“The museum said: ‘If all else fails, and they are not very interested, they can look around the rest of the exhibits.’” Happily, the wider collection, complete with dinosaurs, was not needed to keep pupils’ attention.

The museum visit began with a session in the lecture theatre, with presentations on malaria research and life in Malawi. “Most of the people working in the Centre have spent time living in Malawi,” says O’Leary. “One thing we wanted to bring across was what it’s like to be a researcher out there. It is very challenging, culturally and geographically, but also very rewarding.”

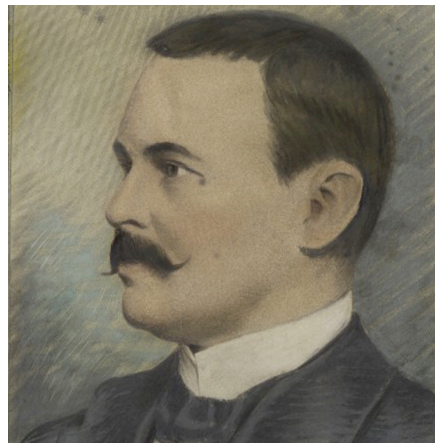
The lecture session was followed by a tour of selected exhibits, including some ‘backstage’ areas, the bug house and laboratory. The main focus was on mosquitoes, but a few other creepy-crawlies were included for good measure.

Teaching the Liverpool children about life in Malawi as well as the effects of malaria helped to reinforce their interest. It is startling to learn that the best method of prevention is still to use mosquito nets but many families cannot afford the £6 cost, and that this one small country sees 8 million cases of malaria every year. The entire population of Malawi is at risk from malaria, and 50 per cent of the Liverpool school pupils’ contemporaries in Malawian schools will be infected at some stage.

The opportunity to use handheld cameras to film ‘vox pop’ videos was especially popular. The videos were also shown in Malawi, and similar videos were made there. All of these contributed to a final project video, *Mission Malaria*, which was shown at the celebration evening in at the museum that concluded the events, and the children who came along were given copies of the video to keep.



Liverpool Museum



Sir Ronald Ross. Wellcome Library, London

After the lessons and visit, the UK pupils compiled more than 50 questions for Malawian researchers and students. Initial plans to have them answered live on video proved too complicated, so they were used as written and tackled at a science cafe event in Malawi. They covered several aspects, from everyday life (e.g. “How many people live in your house?”) to queries about their experience of malaria. The school pupils in Blantyre reciprocated, and their list of questions – which concentrated exclusively on malaria and the prospects for its treatment or prevention –

helped underline the differences between life in the two countries.

The questions fed into the celebration evening, which included the premiere of the *Mission Malaria* film, a question time session and a live Skype broadcast from Malawi and brought together students, teachers, LSTM researchers, Malawi-based researchers, Malawi–Liverpool–Wellcome's Science Communication officer, some current students from the Wellcome Trust's clinical PhD programme and staff from National Museums Liverpool. The discussion covered current and future work in Africa, as well as researchers' experience overseas.

The researchers and the local schools were impressed with the results of the project. One teacher said: "Students have been really interested in it because it's quite different from the things we're doing on the curriculum at the moment – we've been able to look at a different disease, a biology-based subject, but been able to link that with a foreign country. The students have really got a lot from the project."

The interest generated by the project has stayed with the British pupils: some have begun fundraising efforts to buy mosquito nets, and the possibility of retaining links with Malawian schools is being discussed. Some pupils would like to investigate more direct communication between students in Liverpool and Malawi, although this is difficult because the postal system in Malawi does not feature personal addresses and internet access there can be unreliable.

Next steps

The experience will definitely lead to more work along similar lines from the Centre, building on what they have learned this time round. "This has been a pilot project for the Centre...a big project. To engage with four schools in the UK and two in Malawi has actually been a lot to coordinate," says O'Leary.

The resources are still available, including the lesson plans. One school used the lesson plans again during National Science Week in 2012, and requests are starting to come in to repeat the whole set of sessions, including the Museum trip. Some schools would like to expand their involvement from one class to all the students in the year.

Above all, the project has fuelled the scientists' enthusiasm for public engagement. In the future, the programme will try to put resources aside for public engagement in the UK and in Malawi when projects are still at the planning stage. As O'Leary found: "Some of our early-stage researchers didn't realise how interested people are in what they do."

Further information

To learn more about the Centre, see www.liverpoolwttc.org.uk/.

To learn more about this project, contact Alex MacKay (alex.mackay@glasgow.ac.uk).

To learn more about the support and opportunities that Wellcome Trust has to offer, see www.wellcome.ac.uk/Education-resources/Communicating-your-research/index.htm.