

# MTb

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**GLOBAL HEALTH RESEARCH**



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licenceRESEARCH IN FLUX: FACING EVOLVING  
CHALLENGES IN GLOBAL HEALTH

This past spring, with the emergence of Covid-19 and the unprecedented mobility restrictions that came with its control measures, our age of increasing global connectivity came to a sudden halt. In the months since, as in so many other fields, global health research has been heavily disrupted, made evident by the discontinuity of numerous projects, trials and studies.

Large components of research and programmes in global health, particularly those based around low- and middle-income countries (LMICs), are rooted heavily in the understanding of local contexts. The diminished capacity for researchers to travel, and to perform the formative research necessary to acquire an improved understanding of the contextual challenges in the global South presents new challenges for all partners involved in the research. Thankfully, technology allows us much greater opportunities to stay connected, albeit most would argue that it only provides a poor substitute for what may be achieved in person, and one that is merely as strong as the WiFi connection.

In the backdrop of the pandemic, ubiquitous protests have emerged speaking out against systemic racial injustices that continue to affect virtually every sector of society. Challenges within global health are heavily interwoven into current social issues, and calls have echoed within the halls of the most prominent health institutions to diversify and decolonize the field. Currently, the actions of many research programmes in LMICs are governed by budgetary allocations and research agendas that are made in capitals across the global North. Progressive research institutions in global health are now shifting their research to focus not only on what are effective ways in dealing with health issues, but rather on effective ways for strengthening health systems locally and reducing cycles of dependency that have been evident since times of colonialism.

Partnerships between the global South and North help to build the basis of sustainable research projects that serve to strengthen health systems and increase chances of leaving a lasting impact on the communities where they take place. Moving away from models of foreign based research and implementation creates opportunities to involve local actors and create more of these partnerships that are proving to be highly beneficial for all parties involved.

Conducting research in global health is therefore not just a matter of qualitative or quantitative methods, but an art interwoven into political, social and economic realms. Intricate health challenges, nuanced by advances in technologies and setbacks in conflict and insecurity, require immense adaptability and are not effectively addressed by one size fits all approaches.

This edition is about the art of research. As the coronavirus pandemic has created immense barriers to overcome, as there is fragility in partnerships between high- and low-income countries, and as a history of exploitation and inequality makes clear that we must improve upon efforts to decolonize the field of global health, it is evident that the undertaking of these studies and trials demands considerations that go far beyond science. What exists under the research methods are the numerous components that one must consider - all the hats that one must wear - to even begin to address the multifaceted and highly consequential problems that we research in global health. The following collection of articles speaks to some of these considerations while recognizing the immense progress that has been made in the field over the past few decades, explores the importance of partnerships in maintaining and improving research quality, and reviews some of the publications that provide a platform for the dissemination of results here in the Netherlands.

Jake Mathewson

# Health research systems, globally and in LMIC



**A**bout fifteen years ago, Vidyasagar introduced the term “10/90 disparity gap in global health research”, later dubbed “the 10/90 gap”.<sup>[1]</sup> It refers to the fact that less than 10% of global funding for health research is spent on diseases that afflict more than 90% of the world’s population. In other words, diseases that affect rich people attract a disproportionate amount of money for

research, including pharmaceutical product development, further underscoring the disadvantaged position of the global poor. The phenomenon was not really new: already in 1990, when the spread of HIV/AIDS was unfolding, the Commission on Health Research for Development recognised this inequity, leading to the development of multiple agendas and strategies to reduce the 10/90 gap.<sup>[2]</sup>



Without claiming to be exhaustive, this paper tries to provide some insight into:

- global efforts that are undertaken to rectify the above mismatch;
- who decides what research is conducted and how health research gets prioritised;
- which research findings get used and why;
- global initiatives to strengthen health research systems;
- national health research systems and what it involves.

### GLOBAL EFFORTS TO ANALYSE AND ADDRESS THE 10/90 GAP

In 2013, Rik Viergever (as part of his PhD work at Radboudumc) analysed the mismatch between the health research and development (R&D) that would be needed and the R&D that is actually being undertaken and reflected on the possible solutions.<sup>[3]</sup> He found that the dependence of health R&D on market incentives in the for-profit private sector and the lack of coordination by public and philanthropic funders on global R&D priorities had resulted in a global health R&D landscape that neglects certain products and populations and is characterised, more generally, by a distribution that is not “needs-driven”. While the term “neglected tropical diseases”, to which the first edition of *MTb* in 2020 was dedicated, is a reflection of this, the 10/90 gap actually involves more than that. One of the causes that Viergever highlighted was the absence of a mechanism to comprehensively, systematically, and periodically map what kind of health R&D is needed globally. The first step to establish such a mechanism is to ensure that R&D is carried out taking into account the existing burden of health problems, the need for new knowledge and products, and the R&D that is already being undertaken.

Another attempt at assessing potential solutions to the inequitable distribution of global health research investments came from a WHO Consultative Expert Working Group.<sup>[4]</sup> The group made three recommendations to better meet the health R&D needs of LMIC: ensure sustainable financing; improve coordination of global R&D efforts; and establish a global observatory on

health R&D so as to better monitor and inform research processes.<sup>[5]</sup> Good data are obviously needed to ensure that R&D resources are allocated to diseases and regions where they are needed the most. Having such data would allow fair research priority setting and better coordination globally.

The Global Observatory of Health R&D (or “The Observatory” in short) became a reality. It is a comprehensive centralised source of information and analyses – managed by the World Health Organization (WHO) – on global health R&D for human diseases.<sup>[6]</sup> It builds on existing data, reports from a wide range of data sources, and gathers new information with the aim of informing health R&D priorities. The following two excerpts (taken from their website) further illustrate that investments in health R&D continue to be misaligned with global public health demands and needs.

“As little as 1% of all funding for health R&D is allocated to diseases such as malaria and tuberculosis (diseases that are predominantly incident in developing countries), despite these diseases accounting for more than 12.5% of the global burden of disease.” And: “The recent outbreak of Ebola virus disease dramatically exposed the lack of investment in products and approaches to prevent and minimize the impact of pathogens with epidemic potential. Recently, the gaps in R&D investments and the pipeline for antimicrobial medicines have also become a cause of global concern in the context of rapidly increasing antimicrobial resistance.”

### HEALTH RESEARCH PRIORITY SETTING

There are no easy answers to the question of who decides what research is conducted and how health research gets prioritised globally. The same questions can be asked for individual countries, but here the answers are slightly easier as we shall see further below.

Viergever and Hendriks<sup>[7]</sup> demonstrated that, in 2013, the ten largest funding organisations together (excluding government aid, labelled as “official development assistance” or ODA, and multilateral organisations) funded

research for US\$ 37.1 billion, constituting 40% of all public and philanthropic health research spending globally. The largest funder was the United States National Institutes of Health (US\$ 26.1 billion), followed by the European Commission (US\$ 3.7 billion), and the United Kingdom Medical Research Council (US\$ 1.3 billion). Among philanthropic funders, the Wellcome Trust was the largest (US\$ 909.1 million, in sixth position). Funding distribution mechanisms and patterns varied substantially between the ten largest funders. Among ODA organisations, USAID was the largest (US\$ 186.4 million), and the largest multilateral funder was the WHO (US\$ 135.0 million). However, there is a general lack of transparency on how these organisations decide what gets funded and what does not.

Health research priority setting has thus become topical. Based on a literature review and an analysis of a series of health research priority setting exercises, Viergever, in cooperation with several Geneva-based colleagues, proposed a checklist comprising nine common themes of good practice.<sup>[8]</sup> This checklist specifies information requirements, reviews approaches to health research priority setting, discusses stakeholder participation, and sets out options for the use of criteria and different methods for deciding upon priorities, for example. It also emphasizes the importance of transparency.

### WHICH RESEARCH FINDINGS GET USED AND WHY?

Other Dutch researchers, in cooperation with researchers from Ghana, systematically examined twenty studies, out of thirty studies initially selected that had originated from a Ghanaian-Dutch research programme (described below), to map their contributions to action and the factors involved.<sup>[9]</sup> It turned out that priority setting and a rather systematic proposal selection process (following calls for research proposals) led to the funding of studies which were from the outset closely aligned with existing health sector priorities. Research was more likely to be used when it was initiated and conducted by people who were in a position to use the

results in their own work. The authors found that the results of seventeen out of eighteen studies labelled as “user-initiated” were translated into action. While this may sound unsurprising, in reality (health) research is often conducted by academics who do not have a strong link with clinical practitioners, health programme managers, or policy makers. Another feature of studies that had contributed to the actual use of results in Ghana was the involvement of potential key users in formulating the research proposal and in developing recommendations. The study by Kok et al. underlines the added value of research that meets locally-expressed needs and that is led by people familiar with the local context who can play a role in articulating the research question, using the results, and implementing the eventual recommendations.

It is therefore sometimes useful to make a distinction between basic research and applied research, and to prioritise operational research, health systems research, health policy, and systems research or implementation research. This is obviously not meant to disqualify molecular research, clinical trials, or biomedical studies (to name a few), which remain necessary even though the practical application of the results that follow from such studies is not always immediately clear. Textbox 1 presents the main features of two types of multidisciplinary research that may be of interest to global health practitioners who would like to familiarise themselves with the methodologies involved.

#### TEXTBOX 1 RESEARCH TYPOLOGIES

##### Health systems research

The older readers of MTb will probably remember the Dutch funded WHO/IDRC/KIT Joint Health Systems Research Project in Southern Africa, which was based at the WHO subregional office in Harare, Zimbabwe, between 1987 and 2006. Headed initially by Corlien Varkevisser and later by Gabriel Mwaluko, the project supported: (1) training of (mostly district- and provincial-level) health professionals in fifteen countries in health systems research (HSR) methodology; (2) the actual implementation of some fifty small-scale HSR projects by the trainees; and (3) training of HSR facilitators. The HSR training modules developed under the Joint Project, particularly *Designing and conducting health research projects, volume 1. Proposal development and fieldwork*, have been widely used.<sup>[10]</sup>

##### Health policy and systems research (HPSR)

The primary defining feature of HPSR is that it is problem- or question-driven, rather than, as with epidemiology, method-driven. The first step in doing rigorous and good quality HPSR is to clarify the purpose of the research, what the study is trying to achieve, and to identify and develop relevant and well-framed research questions.<sup>[11]</sup>

##### Implementation research

Peters et al. describe implementation research as “a growing but not well understood field of health research that can contribute to more effective public health and clinical policies and programmes”.<sup>[12]</sup> They provide key principles and a framework for using a research question as the basis for selection among the wide range of qualitative, quantitative, and mixed methods that can be applied.

Shroff et al.<sup>[13]</sup> sought to understand why some research projects in various settings were perceived by key stakeholders involved to have made progress towards their goals, whereas others were perceived to have not done so well. By comparing experiences across five countries, they derived lessons to inform future evidence-to-policy efforts in LMIC.

#### GLOBAL INITIATIVES TO STRENGTHEN HEALTH RESEARCH SYSTEMS

Global health research systems strengthening initiatives include:

- TDR, the Special Programme for Research and Training in Tropical Diseases, based in Geneva: a global programme of scientific collaboration that supports efforts to combat diseases of poverty, through the provision of training, fellowships and research grants. It is co-sponsored by the United Nations Children’s Fund (UNICEF), the United Nations Development Programme (UNDP), the World Bank, and the World Health Organization (WHO). ([who.int/tdr/en](http://who.int/tdr/en))
- COHRED, the Council on Health Research for Development, an international NGO, also headquartered in Geneva, whose primary objective is to strengthen research for health and innovation systems, with a focus on LMIC. COHRED engages at the country level with relevant actors involved in research for health and innovation, including research institutions and councils, ministries, civil society and the media. ([cohred.org](http://cohred.org))
- The Alliance of Health Policy and Systems Research (AHPsr), an international partnership hosted by WHO headquarters in Geneva, established in 1997. Apart from supporting institutional capacity for the conduct and uptake of health policy and systems research, it provides funding opportunities with periodic calls for proposals. The most recent call was on politics of health policy and systems research funding (deadline 5 September 2020). ([who.int/alliance-hpsr/en/](http://who.int/alliance-hpsr/en/))



## NATIONAL HEALTH RESEARCH SYSTEMS AND WHAT IT INVOLVES

Over the past few decades, several LMICs have established fairly robust national health research systems, as is demonstrated by an increase in the capacity and scientific output of research institutions and the establishment of:

- a national research agenda, with some kind of coordination of research efforts
- procedures to ensure adherence to research ethics, through ethical reviews
- data safety monitoring boards (DSMB), and
- repositories

Ghana serves as an example for other countries (Textbox 2). One of the most prolific health systems researchers with a strong link to policy and practice is Dr. Irene Agyepong who occupied (from 2008 to 2010) the Prince Claus Chair in Development and Equity, established by Utrecht University and the International Institute of Social Studies (ISS) in The Hague. ([princeclauschair.nl](http://princeclauschair.nl)) At the 2017 NVTG symposium, she delivered a keynote speech under the title *African Health Systems - Conceptualization and prioritization in national and international transitions of the past 100 years and potential future trends*.



TEXTBOX 2

## TEXTBOX 2 THE CASE OF GHANA

Ghana has built a resilient national health research system with a central role by the Research and Development Division (formerly known as the Health Research Unit, established in 1990) in the Ghana Health Service (GHS). ([ghanahealthservice.org/ghs-division.php?ghs&tghsdid=11](http://ghanahealthservice.org/ghs-division.php?ghs&tghsdid=11)) The division has three research centres that undertake research as per the needs and priorities of the GHS and also contribute to the generation of knowledge in global international health. It also hosts the Ghana Health Service Ethical Review Committee, which reviews and approves research proposals and ensures that studies are conducted according to approved protocols and in accordance with good clinical practices.

## SOME FINAL REMARKS

While there are lots of opportunities for researchers to disseminate their study findings and earn credits (for instance through journal publications and presentations at conferences and webinars), the link to local policy and practice is not always obvious. Many expatriate (health) researchers working for some time in LMICs have the ambition to make a meaningful contribution to a better world. Except for perhaps pure basic researchers, hardly anybody would claim or admit to be doing research for the sake of doing research. For studies to be useful and research findings to be applicable to clinical settings and/or transferable to new treatment guidelines, improved disease control strategies or more inclusive health policies, they need to fulfil several requirements, some of which have been touched upon in this article. Too often such requirements are overlooked. This should not discourage professionals who plan to embark on field research. However, it is fair to expect them to not only pay attention to sound methodology, but to also consider whether the planned study is (1) contextualised to the local setting; (2) aligned with local priorities and, where possible, the national research agenda; and (3) conducted in

genuine partnership with local researchers. Under all circumstances, expatriate researchers need to abide by local procedures, including seeking ethical approval from relevant authorities.



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# Research in tropical medicine: answers to (some of) your questions

**T**ropical medicine is commonly regarded as being in the domain of internal medicine and paediatrics. It can be translated as the practice of (internal) medicine in the tropics (read: low- and middle-income countries – LMICs), which would then also include the local epidemiology and pathology as well as practical issues around the availability and use of diagnostics and therapeutics, all in the context of the local culture, socioeconomic conditions, and health system set-up. Training and research are important components of tropical medicine. For other specialties, e.g. surgery, obstetrics and gynaecology (O&G), and ophthalmology, the same principles would apply.

In this paper, various common issues in the practice of tropical medicine research are discussed.

## SHOULD WE DO RESEARCH IN LMICs?

There is no doubt that research has been of tremendous benefit to population health in LMICs. Examples are abundant. The treatment of severe malaria was revolutionised by the introduction of artemisinin derivatives that were shown to be superior to quinine, due to their action early in the life cycle of the *Plasmodium falciparum* parasite which prevents infected red cells from blocking brain capillaries. This is essential in the pathophysiology of cerebral malaria. We now know how to diagnose and treat most of the opportunistic infections in HIV/AIDS due to rigorous research, although clearly questions remain. While for infectious diseases much progress has been made, there remains a lot to be done for non-communicable diseases (diabetes mellitus, hypertension, heart failure, cancer, etc.), which are at least as important in terms of morbidity and mortality. A full review of research needs is beyond the scope of this paper.

It is also important to note that not all research outcomes achieved in high-income country (HIC) settings can be extrapolated to LMICs. Ideally, research should be done in the local population. For example, the response to antihypertensive drugs is different among white and black Americans: while ACE-inhibitors work well in whites, black people respond better to isosorbide and hydralazine. Other examples include the use of co-trimoxazole (given as a prophylactic in HIV/AIDS patients), and abacavir (an antiretroviral agent) that do not cause severe hypersensitivity reactions (skin rash) in Africans compared to Caucasians.

## WOULD RESEARCH DIVERT SCARCE RESOURCES AND HENCE BE HARMFUL FOR PATIENTS?

This is a point of crucial importance, especially in resource-constrained environments. Studies should be funded and organised in such a way that the additional staff needed (doctors, nurses, lab technicians) can be hired in order to avoid a negative impact on the continuation of routine health services, infrastructure and supplies. In addition, the research staff should not work in isolation but should be integrated in and contribute to regular patient care.

## HOW TO DECIDE WHAT TO STUDY?

From a control perspective, e.g. for the neglected tropical diseases (NTDs), it is important to carefully assess the research priorities, and a holistic approach is needed. It is advisable to consult the local health authorities in the Ministry of Health, wherever appropriate, to see how a clinical or a basic science study would complement public health strategy. From a clinical perspective, it is entirely justified for a clinician to investigate any relevant clinical problem in daily practice, e.g. compliance to antihypertensive drugs, the prevalence of malnutrition, or causes of febrile illness. A simple case report or case series could make an important contribution.

## IS IT POSSIBLE FOR EVERYONE TO DO RESEARCH IN LMICs?

Certainly. One of the most valuable ways of conducting research is in the format of bilateral collaboration. The objectives, methodology, expected outcomes, relevance for the local situation, and implementation should be clearly defined. The role of each researcher and partner organisation should be clear, including (intellectual) ownership and publication policy. Capacity building is essential. Where the local researchers provide the day-to-day patient care, the partner from abroad, usually from a HIC, may provide technical expertise to perform certain tests on samples that have been shipped, or, preferably, help perform them on site. Training is also essential, both for young researchers on the site as for those joining from abroad. Training of a young researcher from the LMIC may include courses e.g. in epidemiology or statistics, specific training for example in a laboratory technique, or in the form of a master's or PhD degree depending on the stage of the candidate's career.

## SHOULD THE FOCUS BE ON RANDOMISED CLINICAL TRIALS (RCTs) AS THESE ARE CONSIDERED MOST POWERFUL?

Not at all. It simply depends on the question you want to answer. Simple and straightforward operational research may just give you the answer you are looking for, for example by analysing case notes. Once your research question is well defined, it may not be too difficult to choose an appropriate study format; and assistance of a statistician, if applicable, is preferably sought before starting data collection.

## WHAT ABOUT ETHICAL ISSUES?

In 1964, the World Medical Association defined the ethical principles for medical research, including human subjects, in the Declaration of Helsinki, which has guided the conduct of research in the tropics.<sup>[1]</sup> All research that includes data or samples taken from patients should be approved by the local ethics



committee, and in case of a collaborator overseas, in that institution. While most LMICs have ethics committees in place, in others this is not yet the case. There are programmemes in the World Health Organization where a joint review committee is formed, consisting of experts from countries with a well-established reputation in research review, who are joined by reviewers from countries that are building up this type of expertise.

If certain tests can only be done abroad, materials may be shipped after signing a Material Transfer Agreement in which is clearly stated who owns the samples, what tests will be done, and what will happen to the samples after testing is completed. All this requires permission from the local ethics committee.

#### CAN WE DO ALL TYPES OF STUDIES IN LMICs?

Clinical trials include phase 1 studies (drug dose ranging for safety), phase 2 studies (testing a drug for safety and efficacy in selected patients), and phase 3 (efficacy, efficiency and safety in all affected patients). Phase 4 studies involve post-marketing pharmacovigilance. While in phase 3 studies the number of patients studied is limited to several hundreds or thousands, after the marketing of a new drug, many more patients are treated and monitored for long-term effects in safety and efficacy.

Phase 1 studies require human volunteers, and these are usually done in young men in HICs, for practical reasons, such as close monitoring and availability of interventions in case of adverse reactions. The call to do these studies in LMICs is becoming stronger, as it is clearly more appropriate to study drug effects in the same population where the phase 2 and 3 studies will be done, as the response to drugs may be different. As research capacity in LMICs is becoming stronger and of a higher level, the perceived view that people in LMICs are used as “guinea pigs” will no longer hold.

#### SHOULD THE DUTCH MEDICAL DOCTOR IN GLOBAL HEALTH AND TROPICAL MEDICINE (MD GH&TM) DO RESEARCH?

While this is formally not a training

objective, the MD GH&TM should be encouraged to define a research question and establish a link with a supervisor in the Netherlands or elsewhere to further develop this as a potential project. Basic research methodology should be in the training programmeme. An overview of research performed by MD GH&TMs showed that most publications efforts, including PhD theses, involved research in O&G in LMICs.<sup>[2]</sup>

#### SHOULD MEDICAL STUDENTS IN LMICs BE TAUGHT IN RESEARCH?

Yes, and this is already the case in many universities in LMICs. Students are trained in research methodology and doing research projects. From this pool, new young researchers will hopefully develop who can join research efforts and become independent researchers.

#### INTERNATIONAL COLLABORATION

In any bilateral or multilateral collaboration, the work of the local scientists and collaborators should be prominently acknowledged in the list of authors, in accordance with current international practice. Most journals will not accept publications of work done in the LMICs without one or more local collaborators. A training component is essential including the transfer of knowledge of technology, such as the establishment of a lab where certain tests that have been evaluated in a study can be done locally after completion of the study. Career development for the researchers from LMICs should be a priority. While a PhD in the partner country overseas is considered more prestigious, a joint PhD in two universities would benefit the partner university in the LMIC. Postdoc research grants such as those offered by the European and Developing Countries Trial Partnership (EDCTP) provide opportunities for a young postdoc student to develop his further career and become an independent researcher.

#### WHO IS FUNDING RESEARCH?

There are many donors, both public and private. Among the main funding agencies are the Bill & Melinda Gates Foundation, the Wellcome Trust, the National Institutes of Health (USA), the Medical Research Council (United Kingdom), EDCTP (with focus on

Africa) and the European Union.

#### WHERE TO PUBLISH?

Publication is not restricted to typical tropical medicine journals. It depends on the quality and expected impact of the research. RCTs are often published in the *New England Journal of Medicine (NEJM)* or *The Lancet*. Outstanding fundamental (often biomedical) research may be published in *Nature* or *Science*. Among the tropical medicine journals *The American Journal of Tropical Medicine and Hygiene*, the *Transactions of the Royal Society of Tropical Medicine and Hygiene*, and *Tropical Medicine & International Hygiene (TMIH)* feature most prominently. There are however many more reputable journals that publish general or more specialized papers, for example on entomology, pathology or therapeutics.

All too often one hears that researchers from LMICs feel that they are discriminated against when they submit their work for publication. While in general one can say that good work will be acknowledged and published, it is not clear if a potential bias exists against a paper with no names of established workers in the field. Editorial independence and rigorous peer review are clearly important.

#### CONCLUSION

Research in tropical medicine has made a tremendous contribution to the health of people and patients in LMICs. There are many ways in which anyone can make a sound contribution. Clear objectives and methodology are crucial to reaching a meaningful outcome that can be implemented, or that contributes to the body of knowledge. Basic science, clinical research, and public health studies are clearly complementary. Training in research methodology is essential for students both in HICs and LMICs.



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# Improving research through strong partnerships in rural Tanzania

This article is based on a series of interviews conducted in September 2020 on four subjects, each with separate involvement in the Shirati Research Centre in Tanzania.

In 2012, Dr. Bwire Chirangi returned from two years of living abroad in the Netherlands to start his position as medical director of the Shirati KMT Hospital. Having just completed his masters in public health at Maastricht University, Chirangi made the long trip back to the lake-side village of Shirati, in Northern Tanzania with a heightened perspective on global health, a refined understanding of what would be needed to establish and carry out meaningful research, and the seedlings of newly formed partnerships that would grow considerably in the years to come. Shirati, a lively town close to the Kenyan border, is home to the largest healthcare facility in Rorya District, the Shirati KMT Hospital. The catchment area of the hospital covers about 250,000

people, most of whom live in widespread rural villages scattered alongside Lake Victoria.<sup>[1]</sup> In the time since his return, and with the help of the present head of operations, Nyamusi Magatti, Dr. Chirangi founded an adjoining research centre as part of the health promotion programme of the hospital. Although not yet operating at the capacity that Chirangi ultimately aspires for, the two have established firm collaborations with several universities around the world that have contributed to and supported an influx of several new research projects in the past years. "There were areas of research we wanted to continue (pursuing), and we thought students could help us with that, so it was in the interest of the local team", Magatti explained about the start of the collaboration with student researchers. Chirangi and Magatti are striving to use existing partnerships to help expand the centre's operational capacity, and in turn offer some lasting change to the community by improving health outcomes both within and beyond the hospital walls.

## CHALLENGES IN PERFORMING RESEARCH IN RURAL TANZANIA

Growing up with a father who was working on projects in AIDS and Burkitt's Lymphoma, Mr. Magatti was no stranger to the world of research even before he took his current position. Magatti obtained a BSc in biology in the United States of America followed by a masters in global health in the Tanzanian capital, Dar es Salaam, before returning to Shirati where he was born and raised. There, he began to immerse himself in research projects that sought to better understand components of the poor health in the community around him, like the high prevalence of schistosomiasis and high maternal mortality. Numerous other illnesses - malaria, malnutrition, and



Shirati Research Centre



HIV to name a few - are also extremely common within the Shirati catchment area, and are compounded by infrastructural limitations like poor road systems and lack of access to clean water.

“The high burden of disease in the region also offers new opportunities to do more research”, Dr. Chirangi says, speaking to some of Shirati’s challenges. Lieke Buijs is a medical student from Maastricht University who stayed in Shirati last fall to collect data on a project related to the double burden of malnutrition. Buijs’ passion for global health and interest in expanding her horizons beyond medicine in the Netherlands made her join the research project in Shirati. Buijs echoes Chirangi’s sentiment, acknowledging that while the prevailing disease and infrastructural aspects of the setting can be difficult, the high prevalence of some of these health conditions makes Shirati a good setting for research. “There are a lot of unknowns still, and not that much research has been done here previously.”

Buijs’ field supervisor, Global Health and Tropical Medicine Doctor-in-training Victoria von Salmuth, recalled local challenges that she encountered during her medical elective in Shirati in 2015. “I was struck by the numbers of children with acute and chronic malnutrition and the few treatment options we had access to.” Von Salmuth has since returned to Shirati multiple times, both to work as a doctor, and in cooperation with the Shirati Research Centre and Maastricht University to help establish the research project that Ms. Buijs is currently working on. “There were a lot of challenges we were faced with from the beginning”, Von Salmuth remembers of the first months on the ground. “There was a clear language barrier, as many people are speaking local languages in the region, and many cultural differences.”

#### PARTNERSHIPS AND THE RESEARCH CENTRE

Mr. Magatti regards Shirati’s challenges as precisely why it is beneficial to have strong local partnerships on the ground. “You need the perspective from a local person; culture and language are

usually a big barrier.” Together with a small team that is responsible for facilitating various forms of data collection in the surrounding communities, Magatti takes on several roles to ensure that studies remain operational and that the research remains viable. Magatti’s team has built up expertise on community relations, ever acknowledging the many points in the research and dissemination process where communication and acceptance are as essential as they are delicate. Composed of about ten people based in Shirati, the translators and research assistants that make up the team, some doubling as nurses in the hospital, are all trained and overseen by Dr. Chirangi and Mr. Magatti.

One particularly successful research project at the Shirati research centre that has exemplified what can be achieved through its strong partnerships is the Saving Mothers Project, established in 2012.<sup>[2]</sup> The success of this project has been a motivating factor for the centre to continue implementing large-scale studies. Together with partners from Innovating for Maternal and Child Health in Africa (IMCHA), they introduced a distribution system of birth kits to reduce the risk of postpartum haemorrhage and infections, examined barriers to antenatal care in rural healthcare facilities, and equipped community health care workers with a mobile health application that was shown to improve the tracking and registration of patients.<sup>[3]</sup>

#### COLLABORATIONS WITH INTERNATIONAL RESEARCHERS AND STUDENTS

What started as a medical internship programme that Dr. Chirangi has worked to incrementally advance is now an ever-evolving international collaboration of doctors, students, researchers and global health professionals. In the years prior to the Covid-19 pandemic, Shirati was experiencing a continuously increasing influx of foreign-based research associates. In a typical year, between five and eight international research students come to Shirati to work on existing projects. Chirangi and Magatti both consider the cooperation with international universities as a valuable addition to their

research endeavours: “For us it is really important to get different ideas and perspectives to improve our research projects, including new ideas from the students, to add some meat to the bone of our research”, Magatti explains.

Ms. Buijs reflected on how the Tanzanian based partners helped guide her through her own experience in Shirati, both in giving direction to the research itself and also in sharing essential knowledge on local needs and priorities. “Many discussions with the research team in Shirati helped to develop the scope of our research project further, influenced the methods used, and extended the subjects covered.” Buijs was able to draw from the wealth of experience and tailored community expertise that Chirangi and Magatti have harnessed through years of community based research.

Ms. von Salmuth noted the importance and the advantages of collaborating with locally based researchers, where a network of partnerships already built into the fabric of the research centre facilitates broad access to the community. “Personal relationships that have been built over years are the foundation of our project - they involve trust, mutual respect, and clear communication.”

#### COLLABORATIONS WITH LOCAL LEADERS AND POLICY MAKERS

For Chirangi and Magatti, valuable partnerships and collaborations are not merely between researchers, but also with governmental actors and local community leaders. Chirangi emphasizes the importance of involving all stakeholders from the very beginning in the process of setting up new research projects, including community leaders, policy makers and the government, to align research priorities.<sup>[2]</sup> “Start with an introduction to research, so that the community becomes familiar not only with the aim of the research but also the intended results”, Chirangi states. In his experience, making an effort to ensure that the community leaders understand why the research is being conducted can help to encourage the community to be more receptive not only to participating in a study but to

proposed interventions upon the study's conclusion. Dr. Chirangi also believes that disseminating the results of the research back to the community is vital and helps to build acceptance for the implementation of interventions. The results of the Saving Mothers study was presented back to the regional health management team and culminated in the use of safe birth kits being implemented in the Comprehensive Council Health Plan, which entails their distribution in all health care facilities in the Rorya district. As for the part of the project aimed at reducing the barrier of transportation, two villages have started community funding to support women financially to reach the nearest health facility. "This for me shows sustainable implementation and real community involvement", Chirangi adds.

Mr. Magatti hopes to further collaborate with government actors in the future, but notes the difficulties in doing so. "Resources here are very limited; the government would love to get involved in research studies, but they have to choose their priorities. Even if you do want to invest in research, but at the same time no medication is available or medical staff, you have to make choices." In a hierarchy of hospital needs, such choices will often defer to the latter. Therefore, the government encourages the public-private partnerships that the Shirati research centre has shaped, to fund what they cannot.

Funding, however, continues to pose a major challenge to the research projects in Shirati. "Funding is difficult to get, also due to Shirati's location in a very rural part of Tanzania - far away from big cities and difficult to reach", Chirangi states. The international collaborations have helped in attracting donors in the past, Chirangi notably mobilizing numerous global partners, such as UKAID and Grand Challenges Canada in the undertaking of the large scale Saving Mothers Project. "Partnerships have absolutely helped in moving closer to reaching our goals", Magatti affirms.

## ASPIRATIONS

Working tirelessly to oversee operations

in the centre, Chirangi and Magatti have high hopes for the future of their research initiatives. Their dream is to expand their professional research centre in Shirati to one that eventually will attract more researchers and operate at a greater capacity. "A place where students, doctors, and people with different ideas from around the world can meet, exchange ideas, write proposals and apply for new funding, and where people of the community can start to understand that this research we are doing can have a big impact on them: this is the future", Magatti says. "We can do research that can be an example for this area and that people can emulate; we can set an example for the region and the country."

Going forward, Magatti and Chirangi are aiming at improving multi-sectoral collaborations with regional and international partners. Chirangi emphasizes that "different perspectives matter, especially when talking about new interventions". He hopes to achieve this by creating more opportunities for foreign and local partners alike to get involved with the centre, and also by making living in the town more appealing to people from elsewhere in Tanzania and abroad, which would in turn gradually improve aspects of the local infrastructure. "And of course", he adds smiling, "we want to keep our close ties with Maastricht University."



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*The research team in front of the Shirati Hospital, Nov 2019. From left: Victoria von Salmuth, Onno van Schayck (Prof Maastricht University), Bwire Chirangi, Lieke Buijs*

## PERSONAL PROFILES

**Bwire Chirangi, MD, MPH**

PhD candidate at Maastricht University, Medical Director of the Shirati KMT Hospital and principle investigator of a number of research projects

**Nyamusi Magatti, Bsc, MSc**

Coordinator of Research Centre in Shirati, Executive Director Shirati Health Education and Development Foundation (NGO)

**Victoria von Salmuth, MD, MPH**

Resident in Global Health and Tropical Medicine, PhD candidate Maastricht University, research coordinator project on malnutrition, Shirati

**Lieke Buijs**

Medical student at Maastricht University, research internship in Shirati, Tanzania

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# TMIH: publishing research that matters by scientists who matter

Scientists in tropical medicine and global health have many options to publish their work, one of which is through the European journal *Tropical Medicine & International Health* (TMIH). After first presenting the history of the journal, we describe TMIH's position in two ongoing debates: on diversity in scientific publishing and on the relevance of scientific publishing in the light of the sustainable development goals (SDGs).

## HISTORY OF TMIH

Revisiting the history of scientific publishing is no trivial matter. The current debate on decolonising global health requires historical grounding in order to develop forward looking thinking in addressing exclusion and exclusivity: “We are in effect still trapped in a history which we do not understand and until we understand it, we cannot be released from it.” (James Baldwin)<sup>[1]</sup>

Research on tropical medicine and international health has a long tradition in the Netherlands, originating in colonial

health care in the Dutch East Indies in the mid-nineteenth century, evolving into medical development cooperation in the second half of the twentieth century, to current collaboration in international/global health.<sup>[2]</sup> Not surprisingly, scientific publishing on tropical medicine and international health followed suit. Three main periods can be distinguished: (1) a Dutch “colonial” perspective from 1852-1942, represented by the *Geneeskundig Tijdschrift voor Nederlandsch-Indië* (GTNI, Medical Journal for the Dutch East Indies); (2) a Dutch perspective of “development cooperation” represented by *Tropical and Geographical Medicine* (TGM; 1949-1995); and (3) a European approach to international/global health, represented by TMIH (1995-present). Table 1 provides an overview of Dutch journals on tropical medicine and international health from 1850 to the present.

In 1995 the Dutch journal TGM merged with four other European institutional journals from London, Antwerp, Basel and Hamburg [Table 2] into *Tropical Medicine & International Health* (TMIH)

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to become the official scientific journal of the Federation of European Societies of Tropical Medicine and International Health (FESTMIH).

TMIH is run by an editorial board, consisting of five editors, four of which represent their respective institutions and the Dutch editor representing the Stichting TMIH (foundation), the latter closely linked to the Netherlands Society for Tropical Medicine and International Health (NVTG). Over the years TMIH has maintained a good position. On the 2019 Journal Citation Reports (Clarivate Analytics), it ranks seventh among 23 tropical medicine journals and 81<sup>st</sup> among 193 public, environmental and occupational health journals. Its impact factor currently stands at 2.308.

TMIH is hosted on the internet by its publisher Wiley (previously Blackwell),



YEAR	JOURNAL	OWNER
1852-1942	<i>Geneeskundig Tijdschrift voor Nederlandsch-Indië</i> (Medical Journal for the Dutch East Indies)	Vereeniging ter bevordering van geneeskundige wetenschappen in Nederlandsch-Indië (Society for the Advancement of Health Sciences in the Dutch East Indies)
1942-1949	No journal editions during Japanese occupation of Indonesia and subsequent Indonesian War of Independence.	
1949-1951	<i>Documenta neerlandica et indonesica de morbis tropicis</i>	
1952-1957	<i>Documenta de medicina geographica et tropica</i>	
1957-1993	<i>Tropical and Geographical Medicine</i> (TGM)	Stichting TMIH (Foundation), under auspices of the NVTG
1993-1995	<i>Tropical and Geographical Medicine</i> (TGM), incorporating <i>Acta Leidensia</i> *	Stichting TMIH (Foundation), under auspices of the NVTG and VIT
1995-present	<i>Tropical Medicine &amp; International Health</i> (TMIH)	Stichting TMIH (Foundation), under auspices of the NVTG, along with four European institutes.

Table 1: Dutch journals on tropical medicine and international health (1852-present).

INSTITUTE	PREDECESSOR JOURNAL	TMIH EDITOR (2020)	AREA OF EXPERTISE
London School of Hygiene & Tropical Medicine, London, United Kingdom	<i>Journal of Tropical Medicine and Hygiene</i>	Helen Fletcher* Tanya Marchant*	Tuberculosis control Biomedical science
Swiss Tropical and Public Health Institute, Basel, Switzerland	<i>Acta Tropica</i> **	Thomas Junghanss	Tropical and infectious diseases
Bernhard Nocht Institute for Tropical Medicine, Hamburg, Germany	<i>Tropical Medicine and Parasitology</i>	Christian Meyer	Infectious diseases and genetic epidemiology
Prince Leopold Institute of Tropical Medicine, Antwerp, Belgium	<i>Annales de la Société Belge de Médecine Tropicale</i>	Patrick Van der Stuyft	Social epidemiology and health systems
Stichting Tropical Medicine and International Health, the Netherlands	<i>Tropical and Geographical Medicine</i> (incorporating <i>Acta Leidensia</i> ) Leon Bijlmakers	Global public health	

\* Dual appointment.

\*\* Since the launch of *TMIH* in 1995, *Acta Tropica* has continued to be published by Elsevier.

Table 2: *TMIH*: founding institutions and editors.

which provides full-text access to all articles published since the journal's first edition was released in 1996. The predecessor journals, *GTNI* and *TGM*, are hosted full-text and indexed by author and title on the NVTG website ([nvtg.org/wat-we-doen/archief-gtni-en-tgm](http://nvtg.org/wat-we-doen/archief-gtni-en-tgm)).

#### DIVERSITY IN SCIENTIFIC PUBLISHING

The diversity of scientific journals in terms of their ownership, editors, authors and readership can be defined along several domains: gender, race, country income level and geographic region. Bhaumik and Jagnoor<sup>[4]</sup> developed a Composite Editorial Board Diversity Score considering three domains: gender diversity, whereby 40-60% representation by either gender is considered optimal; country income-level diversity, whereby at least one editor from all four World Bank income classification groups being represented is considered optimal; and geographic region diversity, whereby at least one editor from six out of seven World Bank regions being represented is considered optimal. Among 27 journals analysed, three journals scored 8 points out of a maximum of 10: *Globalization and Health*, *Journal of Global Health*, and *TMIH*.

Nafade et al.<sup>[5]</sup> examined the composition of editors and editorial board members of twelve major global health journals, including *TMIH*. Across all journals, 35% (195 of 551) of editors were

female, and 33% (184 of 551) were based in low- and middle-income countries (LMICs). Only 11% (61 of 551) of all editors were women based in LMICs. Only 4% of the editors with leadership roles were women from LMICs. The results of a recent (2019) study<sup>[6]</sup> showed that African researchers are under-represented as first and last author of papers from research performed in Africa. Within Africa, particularly non-Anglophone regions are even less well represented. In proposing new editors, the *TMIH* editorial board explicitly considers age and gender for a balanced composition. In the appointment of associate editors, geographical diversity has improved in recent years: of the 55 current associate editors 60% are affiliated with institutions from Europe, 20% from Asia, 11% from Africa, 5% from USA and 4% from Latin America.

Rees et al.<sup>[7]</sup> looked into authorship of articles published from 2006 to 2015 in four paediatric journals and showed that authorship parity (equitable representation and author order) requires more attention, particularly for publications on studies conducted in low-income countries and multi-country studies. Out of 1,243 papers, 95.9% did include at least one author affiliated with a LMIC. However, 40.4% of multi-country studies (n=165) did not include at least one author from every LMIC involved. Among the 9,876 authors of these 1,243 papers, the majority

were affiliated with institutions from high-income (32.7%) or upper-middle-income countries (41.7%), with far fewer affiliated with lower-middle-income (15.5%) and low-income countries (5.4%). This indicates underrepresentation of LMIC research institutes in scientific output from international research collaboration. In articles from low-income countries, first and last authors from high-income countries were much more common than authors with low-income country affiliations.

For manuscripts to be considered for publication in *TMIH*, it is an absolute requirement that they include authors affiliated with institutions in the country where the research was conducted. Even in the case of internationally accessible databases as a source of data, involvement of authors from the countries concerned is considered important for the interpretation of data in their context. *TMIH* abstracts are available in French and Spanish (online only). As it is an Anglophone journal, authors from non-Anglophone regions are likely to be under-represented, and dissemination of scientific content outside the Anglophone world has its limits. Maintaining a truly global discourse on global issues is a challenge for *TMIH* and other international journals.

While open access (OA) provides access to readers free of charge, it may jeopardize access to publishing for authors



from LMICs, particularly if their research projects are locally funded (with relatively small budgets), as page charges for OA manuscripts may be as high as US\$ 1,000 per page. The *TMIH* editorial board therefore has so far maintained a mixed publication model, offering authors OA as an option.

### THE WAY FORWARD IN THE DEBATE ON DIVERSITY IN GLOBAL HEALTH AND SCIENTIFIC PUBLISHING

“In many ways, the growing concerns about imbalances in authorship are a tangible proxy for concerns about power asymmetries in the production (and benefits) of knowledge in global health. In fact, authorship per se is not the fundamental issue; undoing what those imbalances represent - a continuity of the colonial project in global health - is often the issue.” (Seye Abimbola, editor in chief of *BMJ Global Health*)<sup>[8]</sup>

Several European institutions (the London School of Hygiene & Tropical Medicine amongst others) are addressing the diversity issue under the moniker Decolonising Global Health.<sup>[9,10]</sup> This includes overt acknowledgement of past colonial behaviours and their impacts, in addition to the current hegemonic power dynamic, widely prevalent unconscious biases, and resulting inequity. The *TMIH* editorial board is presently grappling with these serious and complex issues.

### RELEVANCE OF SCIENTIFIC PUBLISHING IN THE LIGHT OF SUSTAINABLE DEVELOPMENT

A systematic classification of peer-reviewed literature according to their contribution to the SDGs is currently missing. In a sample of 216 papers published in *TMIH* between January 2018 and July 2019,<sup>[11]</sup> the number of SDGs addressed ranged from one

to eight per paper. More than a third of the papers targeted two SDGs.

*TMIH* took up this issue by introducing a new SDG reporting scheme. As of January 2020, *TMIH* adds a novel feature to original research articles, reviews and editorials. As part of the submission process, prospective authors must specify the contribution of their research to one or several of the SDGs. A simple guideline how to assign SDGs to their work has been developed for *TMIH* authors.<sup>[11]</sup>

### CONCLUSION

*Tropical Medicine and International Health* is continuing a long tradition in scientific publishing in the Netherlands and in Europe. It has progressed from initially a platform for mainly North-South collaborative research, to a platform that increasingly includes South-South and global research initiatives. The journal has made progress in the diversification of associate editors, authors and readership and is actively participating in the decolonising global health debate. It also made an important step in monitoring and increasing the contribution of published papers to achieving the SDGs. Taken together, we hope and expect that these developments will result in a global sense of ownership by the scientific community in tropical medicine and international/global health.

### Note

*There is continuing debate on what (if anything) differentiates international health from the more recently coined term global health.<sup>[2,3]</sup> In this paper we use both terms, in their context, or as used in the sources quoted.*



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### THE RELATIONSHIP BETWEEN FESTMIH, ECTMIH, AND TMIH

"Jointly improve global health" was the spirit that motivated the organizers of the first European Conference on Tropical Medicine and International Health (ECTMIH), in Hamburg in 1995, to formalize a collaboration between professionals active in tropical medicine and international health throughout Europe into a formal partnership. Twenty-five years later the Federation has evolved into a thriving network of sixteen national societies or platforms active in tropical medicine and global health.

FESTMIH's mission is to improve the health status of people worldwide through establishing partnerships and mobilizing professionals in global health and tropical medicine in Europe and beyond, and by promoting and disseminating research and development in global health and tropical medicine ([festmih.eu](http://festmih.eu)). The latter is done through the publication of *TMIH*, the official journal of FESTMIH, and the organization of the ECTMIH every two years.

In collaboration with its member societies, FESTMIH has organized eleven ECTMIHs throughout Europe, the most recent one in Liverpool in 2019. Besides scientific presentations, the congresses proved they could serve other purposes as well, including the organization of debates and networking in the field of tropical medicine and global health. The congress title of the 5<sup>th</sup> ECTMIH in Amsterdam (2007, organised by the NVTG) *Partnership and innovation in Global He@lth* illustrated this gradual shift in focus. For the first time, member societies were invited to host organized sessions and workshops, something which has become a standard feature of the ECTMIHs.

Over the past 25 years, the congresses transitioned from mainly focusing on tropical diseases and international health to also including debate on other issues in global health. This shift was clear in the 2009 Verona congress, titled *Equity, human rights and access to care*. This congress involved a wide community in the discussion on human rights dynamics in global health and eventually led to the formulation of the Verona Declaration, emphasizing the right to health as a fundamental human right for all people irrespective of origin, ethnicity and legal status (see [festmih.eu](http://festmih.eu)). The Antwerp congress in 2017, titled *Health in (r) evolution. Environment – migration – technology – empowerment* fed the debate on the role and position of tropical medicine, global health and international cooperation in the 21<sup>st</sup> century, taking into consideration human migration, environmental change, technological innovation and political power shifts. The theme "migration and health" was a prominent feature of the 7<sup>th</sup> congress in Barcelona in 2011, and will feature again at the upcoming 12<sup>th</sup> ECTMIH in Bergen in September 2021, under the title *Global challenges in health, migration and equity*. For all the latest news, abstract submission dates and updates, check the congress site: [ectmih2021.no](http://ectmih2021.no)



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federation of european societies for tropical medicine and international health





# Otto Kranendonkfonds: stimulating small-scale research in resource-limited settings

The Otto Kranendonkfonds (OKF) (Fund) was established as a foundation in 1994 under the name of Stichting Erefonds Tropische Geneeskunde (Honorary Fund Tropical Medicine Foundation), later also called Stimuleringsfonds (Stimulation Fund). The purpose of the OKF is to stimulate scientific research and knowledge transfer in the area of global health (including tropical medicine) by members of the Netherlands Society for Tropical Medicine and International Health (NVTG). The fund provides grants to studies in line with sustainable development goal 3 (“ensuring healthy lives and promoting well-being for all at all ages”), with a specific focus on low- and middle-income countries (LMICs) or low-resource settings<sup>[1]</sup> The fund typically supports operational research conducted by clinicians and researchers at the start of their careers.

## HISTORY

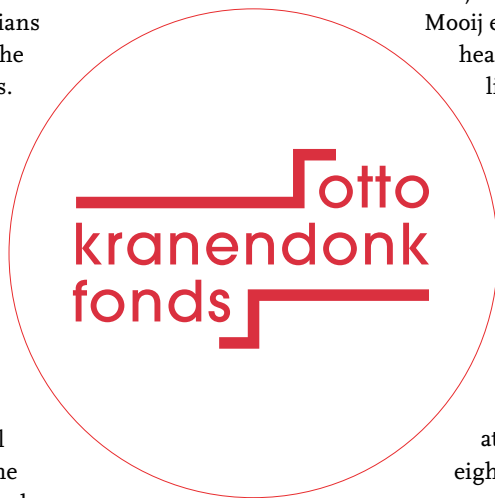
The fund was an initiative of the late prof. dr. Otto Kranendonk, after his retirement as extraordinary professor in tropical health sciences at the University of Amsterdam, and director of the department of Tropical Hygiene at the Royal Tropical Institute in Amsterdam. He donated stock market shares to the NVTG with the intention that the annual dividend (profit) would be used to support research, without affecting the total value of the investment. In reality this has not always worked out, since there have been episodes of stagnation or even declines of the investment, which precluded the granting of subsidies. While initially the benefactor preferred to remain anonymous – hence the name Stimuleringsfonds – one

of his grandchildren later expressed the desire to rename the fund in honour of his late grandfather. Since 2011 the fund has been known under the name Otto Kranendonkfonds.

## TYPES OF RESEARCH THAT ARE (CO-)FUNDED

Since the establishment of the fund, quite a number of research projects have been funded, many in the field of maternal health, others on infectious diseases such as tuberculosis, HIV and malaria, and more recently on a wider range of global health topics (Table 1). The majority of the projects resulted in one or more scientific publications. Three of them have so far contributed to PhD dissertations.

A recent journal article by Mooij et al. listed global health research published by Dutch medical doctors in global health and tropical medicine in LMIC (not limited to OKF funded studies) and explored the evidence generated.<sup>[2]</sup> It identified eighteen PhD theses successfully completed by medical doctors in global health and tropical medicine over the past thirty years. More than half of these involved maternal health and obstetrics, and the majority of the studies were conducted in low-income countries, mostly in rural hospitals, involving more than seventy local co-authors. The authors conclude that expatriate physicians are in a unique position to conduct scientific research in an LMIC setting, in addition to their clinical and other tasks. This brings added value, often in terms of health service quality improvement and strengthening local research capacity.



## APPLICATION PROCEDURES AND CRITERIA

The Science Committee of the NVTG evaluates applications for OKF funding and advises the NVTG Board. Criteria for application can be obtained from the NVTG secretariat. Unfortunately, there has been no financing available to fund any studies since the beginning of this year (2020).

## CONCLUSION

The OKF has played a modest but successful role in supporting research by NVTG members and their colleagues in LMICs. It stimulates health professionals to undertake operational studies and for some juniors it has boosted a career in health research. Some of the subsidised projects have been part of a PhD trajectory. The application process is relatively simple and quick, although funding opportunities are rather erratic. We encourage those of you who are out “in the field” or have plans to work abroad to look out for future calls for proposals on the NVTG website or in the newsletter.



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2. Mooij R, Jurgens EM, van Dillen J, et al. The contribution of Dutch doctors in Global Health and Tropical Medicine to research in global health in low- and middle-income countries: an exploration of the evidence. *Trop Doc*. 2020 Jan;50(1):43-49. DOI: 10.1177/0049475519878335



*Table 1. Awarded OKF subsidies*

YEAR	NAME APPLICANT	RESEARCH TITLE	RELATED PUBLICATIONS	PHD YEAR
1998	Patrick van Rheenen	The use of paediatric tuberculosis score-card in an HIV-endemic area in Zambia	Van Rheenen P. The use of the paediatric tuberculosis score chart in an HIV-endemic area. <i>Trop Med Int Health</i> . 2002 May;7(5):435-41.	-
2001	Marjan Hoexum	Maternal mortality, Nicaragua	-	-
2001	Marieke Lagro	Postnatal follow-up and problems in the postpartum period, Zambia	Lagro M, Liche A, Mumba T, Ntebeka R, van Roosmalen J. Postpartum health among rural Zambian women. <i>Afr J Reprod Health</i> . 2003 Dec;7(3):41-8. PMID: 15055145.  Lagro M, Liche A, Mumba T, Ntebeka R, van Roosmalen J. Postpartum care attendance at a rural district hospital in Zambia. <i>Trop Doct</i> . 2006 Oct;36(4):205-8.	-
2002	Peter Petit and Patricia Buijtels	Tuberculosis research in Zambia	Unknown	-
2003	Marita Nijenhuis	Chloroquine efficacy in pregnant women in a rural area in Zambia where HIV-prevalence is high	Unknown	-
2003	Jeroen van Dillen	Therapeutic efficacy of chloroquine and sulfadoxine-pyrimethamine in Onandjokwe Hospital, Northern Namibia And: Malaria diagnosis using automated detection of malaria pigment in Northern Namibia	Van Dillen J, De Jager AJ, De Jong I, Wendte JF. Overdiagnosis of malaria in hospitalized patients in Namibia. <i>Trop Doct</i> . 2007 Jul;37(3):185-6.  de Langen AJ, van Dillen J, de Witte P, Mucheto S, Nagelkerke N, Kager P. Automated detection of malaria pigment: feasibility for malaria diagnosing in an area with seasonal malaria in Northern Namibia. <i>Trop Med Int Health</i> . 2006 Jun;11(6):809-16.	2009
2003	Patrick van Rheenen	Delayed cord clamping as an intervention to reduce infant anaemia in a malarious area in Zambia	van Rheenen P, de Moor L, Eschbach S, de Grooth H, Brabin B. Delayed cord clamping and haemoglobin levels in infancy: a randomised controlled trial in term babies. <i>Trop Med Int Health</i> . 2007 May;12(5):603-16.	2007
2004	Eveline Geubbels	?	-	-
2008	Heleen van Beekhuizen	Treatment of retained placenta with misoprostol: a double blind randomized placebo controlled study	van Beekhuizen HJ, Pembe AB, Fauteck H, Lotgering FK. Treatment of retained placenta with misoprostol: a randomised controlled trial in a low-resource setting (Tanzania). <i>BMC Pregnancy Childbirth</i> . 2009 Oct 23;9:48.  van Beekhuizen HJ, Tarimo V, Pembe AB, Fauteck H, Lotgering FK. A randomized controlled trial on the value of misoprostol for the treatment of retained placenta in a low-resource setting. <i>Int J Gynaecol Obstet</i> . 2013 Sep;122(3):234-7.	
2010	Ed Zijlstra	Survey of the management and complications of diabetes mellitus in Malawi	Cohen DB, Allain TJ, Glover S, Chimbayo D, Dzamalala H, Hofland HW, Banda NP, Zijlstra EE. A survey of the management, control, and complications of diabetes mellitus in patients attending a diabetes clinic in Blantyre, Malawi, an area of high HIV prevalence. <i>Am J Trop Med Hyg</i> . 2010 Sep;83(3):575-81.  Glover SJ, Burgess PI, Cohen DB, Harding SP, Hofland HW, Zijlstra EE, Allain TJ. Prevalence of diabetic retinopathy, cataract and visual impairment in patients with diabetes in sub-Saharan Africa. <i>Br J Ophthalmol</i> . 2012 Feb;96(2):156-61.	





YEAR	NAME APPLICANT	RESEARCH TITLE	RELATED PUBLICATIONS	PHD YEAR
2011	Yadira Roggeveen	Innovative partnerships for safe motherhood: participation and trans-disciplinary collaboration as tools towards increasing skilled birth attendance	Roggeveen Y, Birks LK, van Kats J, Manyama M, Hatfield JM, Bunders JFG, Scheele F & van Roosmalen J. Low utilization of skilled birth attendants in Ngorongoro Conservation Area, Tanzania: a complex reality requiring action. <i>Health Vol.5 No.7D</i> , July 18, 2013. <a href="http://dx.doi.org/10.4236/health.2013.57A4011">http://dx.doi.org/10.4236/health.2013.57A4011</a>	Expected
2011	Remco Peters	Epidemiology of chlamydia and gonorrhoea in women in Mopani District, South Africa	Peters RP, Dubbink JH, van der Eem L, Verweij SP, Bos ML, Ouburg S, Lewis DA, Struthers H, McIntyre JA, Morr� SA. Cross-sectional study of genital, rectal, and pharyngeal Chlamydia and gonorrhoea in women in rural South Africa. <i>Sex Transm Dis</i> . 2014 Sep;41(9):564-9.  Dubbink JH, de Waaij DJ, Bos M, van der Eem L, B�b�ar C, Mbambazela N, Ouburg S, Peters RP, Morr� SA. Microbiological Characteristics of Chlamydia trachomatis and Neisseria gonorrhoeae Infections in South African Women. <i>J Clin Microbiol</i> . 2016 Jan;54(1):200-3.	
2013	Reinou Groen	Traumatic injuries in Sierra Leone	Stewart KA, Groen RS, Kamara TB, Farahzad MM, Samai M, Cassidy LD, Kushner AL, Wren SM. Traumatic injuries in developing countries: report from a nationwide cross-sectional survey of Sierra Leone. <i>JAMA Surg</i> . 2013 May;148(5):463-9.	
2013	Sybrich Tiemersma	Delayed cord clamping in South Africa	Tiemersma S, Heistein J, Ruijne R, Lopez G, van Lobenstein J, van Rheenen P. Delayed cord clamping in South African neonates with expected low birthweight: a randomised controlled trial. <i>Trop Med Int Health</i> . 2015 Feb;20(2):177-83.	
2014	Floris Braat	Maternity waiting home to improve maternal and neonatal outcome in the Gurage Zone, Southern Ethiopia (Butajira General Hospital)	Windsma M, Vermeiden T, Braat F, Tsegaye AM, Gaym A, van den Akker T, Stekelenburg J. Emergency obstetric care provision in Southern Ethiopia: a facility-based survey. <i>BMJ Open</i> . 2017 Nov 8;7(11):e018459. doi: 10.1136/bmjopen-2017-018459.  Braat F, Vermeiden T, Getnet G, Schiffer R, van den Akker T, Stekelenburg J. Comparison of pregnancy outcomes between maternity waiting home users and non-users at hospitals with and without a maternity waiting home: retrospective cohort study. <i>Int Health</i> . 2018 Jan 1;10(1):47-53.  Vermeiden T, Braat F, Medhin G, Gaym A, van den Akker T, Stekelenburg J. Factors associated with intended use of a maternity waiting home in Southern Ethiopia: a community-based cross-sectional study. <i>BMC Pregnancy Childbirth</i> . 2018 Jan 19;18(1):38.	
2014	Barbara Nolens	Outcomes of vacuum extraction at Mulago Hospital, Uganda	Nolens B, Lule J, Namiiro F, van Roosmalen J, Byamugisha J. Audit of a programme to increase the use of vacuum extraction in Mulago Hospital, Uganda. <i>BMC Pregnancy Childbirth</i> . 2016 Sep 2;16(1):258.  Nolens B, Namiiro F, Lule J, van den Akker T, van Roosmalen J, Byamugisha J. Prospective cohort study comparing outcomes between vacuum extraction and second-stage caesarean delivery at a Ugandan tertiary referral hospital. <i>Int J Gynaecol Obstet</i> . 2018 Jul;142(1):28-36.	
2016	Alinda Vos	Unmasking a silent killer: diabetes care in HIV-patients in a rural medical clinic in South Africa	In process	
2017	Thom Hendriks	Evaluation of a quality assured in-service training in surgical treatments for burns at Haydom Lutheran Hospital (Mbulu, Manyara, Tanzania)	Unknown	

YEAR	NAME APPLICANT	RESEARCH TITLE	RELATED PUBLICATIONS	PHD YEAR
2017	Natasha Housseine	The development of a simple decision-making tool for optimal allocation of intra-partum care in low-income countries.	Unknown	
2018	Benjamin Jelle Visser	A pragmatic approach to treat podoconiosis in Ethiopia	Article in press	-
2018	Elena Ambrosino	Urogenital infections and pregnancy in Pemba Island (Zanzibar, United Republic of Tanzania)	Juliana NC, Deb S, Ouburg S, Chauhan A, Pleijster J, Ali, S.M.; Morré, S.A.; Sazawal, S.; Ambrosino, E. The Prevalence of Chlamydia trachomatis and Three Other Non-Viral Sexually Transmitted Infections among Pregnant Women in Pemba Island Tanzania. <i>Pathogens</i> 2020, 9, 625.  Two other manuscripts in preparation.	
2018	Hanna Mathéron	Prevalence and pathogen identification of peripartum infections in Sierra Leone	In preparation	Expected
2018	Jonathan H. Vas Nunes	Wounds in Sierra Leone; a knowledge, attitude and practice study	In preparation	Expected
2019	Anneloes Eleveld	Evaluation of access to care, incidence and outcome of treatment of patients with fractures of the lower extremities in Haydom Lutheran Hospital (Tanzania)	In preparation	-
2019	Dickens Oyango	Validity of urine dipstick for routine assessment of adherence to isoniazid preventive therapy (IPT) among children living with HIV (CLHIV) in Western Kenya	In preparation	-

Table 1: Awarded OKF subsidies.





# Vitamin B12 as the root cause of anaemia in tea garden workers in Makunda, India

Makunda Christian Leprosy & General Hospital (MCL&GH) is situated in the picturesque landscape of Assam in the North-east of India. The region's stunning tea plantations host some of the poorest and most marginalised patients: the tea garden workers. Their poor living and working conditions are the cause of several poverty-related conditions, such as anaemia.<sup>[1-4]</sup> Research shows that poor nutritional status, resulting in iron, folate and vitamin B12 deficiencies, contribute to the prevalence of anaemia in poorer populations.<sup>[3,5]</sup> To tackle this problem, the Indian government started implementing a programme in 2013 to supplement iron and folate in vulnerable populations, such as children and women in the reproductive age.<sup>[6]</sup> Vitamin B12 is not included, despite short-



ages of this nutrient being similarly infamous for causing anaemia in India.<sup>[5,7]</sup> MCL&GH is therefore investigating the prevalence of anaemia caused by vitamin B12 deficiency among tea garden workers and their family members, to inform possible changes in the government's food supplementation policy. This article reports on a pilot study.

## METHODS

The prevalence of vitamin B12 deficiency among tea garden patients was investigated by means of a retrospective study done in the fall of 2019, based on hospital data collected over a two-year period in 2017-2018. This was compared with the prevalence in the non-tea garden patients. Since vitamin B12 levels are not tested in MCL&GH (due to expenses), the cases were defined as hospitalised patients

with macrocytic anaemia (Hb <7g/dL, MCV >110fL), a typical feature of vitamin B12 deficiency.<sup>[8-10]</sup> To make the diagnosis more likely, all charts of patients with macrocytic anaemia were screened for possible other causes, such as parasitic infections and postpartum haemorrhage.<sup>[10]</sup> If another diagnosis was more plausible, these patients were excluded from analysis.

To gain insight in the possible causes of vitamin B12 deficiency in tea garden patients, a qualitative study was undertaken. Previous research had shown that vitamin B12 deficiency in low- and middle-income countries is most often caused by an inadequate intake of products that contain vitamin B12, in particular animal products.<sup>[7,11,12]</sup> The aim of the current study was therefore to investigate the dietary habits and socioeconomic status of these patients. A small sample of ten tea garden patients with macrocytic anaemia was interviewed on their dietary habits and socioeconomic status. The results were compared with an equal number of non-macrocytic anaemic tea garden patients.

GENDER		
	Male	11
	Female	25
	Pregnant	8
	Not pregnant	17
AGE	MEAN (STANDARD DEVIATION)	RANGE
	33.8 (±16.9)	13-78
AGE YEARS	NUMBER OF PATIENTS	PERCENTAGE
12-20	9	25.0%
21-30	12	33.3%
31-40	5	13.9%
41-50	3	8.3%
51-60	4	11.1%
>60	3	8.3%
TOTAL	36	100%

Table 1: Baseline characteristics.

VARIABLES (*)	MEAN (STAND. DEV.)	RANGE
Hb (>10 g/dL)	4.2 (±1.90)	1.2-6.9
MCV (80-96 fL)	113.4 (±13.04)	100-151.7
RDW-SD** (40.0-55.0 fL)	79.3 (±20.35)	52.7-130.7
RDW-CV (11.5-14.5%)	22.5 (±6.81)	13.9-37.5
Platelets (150-450)	132 (±120.03)	0-481
WBC (4.5-11.0 x 10 <sup>9</sup> )	8.5 (±6.32)	0.93-29

\* Normal values

\*\* Increased RDW-values, as well as bi- and pancytopenia, in combination with increased MCV is typical for vitamin B12 deficiency<sup>[13]</sup>

Table 2: Laboratory results.

		SUBGROUP MACROCYTIC ANAEMIA		SUBGROUP NON-MACROCYTIC ANAEMIA	
<b>DEMOGRAPHICS</b>	Male	5/10		3/10	
	Female	5/10		7/10	
	Age	39 (6-75)		27 (13-57)	
	Mean Hb + range (mg/dL)	5.3 (1.8-7.8)		6.2 (3.2-8.9)	
	Mean MCV + range (fL)	109 (100-124)		77.9 (61-91)	
<b>SOCIOECONOMIC STATUS OF THE FAMILY</b>	Monthly income p.p. (in Indian rupees, INR)	635 (208-1240)		1467 (375-3571)	
	Monthly expenditure p.p. (INR)	900 (187-2476)		1010 (229-1839)	
	Insurance	8/10		7/10	
	Above poverty line	0/10		2/10	
	Below poverty line	8/10		5/10	
	Food subsidies	8/10		8/10	
	<b>24-HOUR RECALL OF INTAKE</b>	Kilocalories	890 (270-1545)		1496 (1068-1892)
Carbohydrates		152.9 (51.2-255)		241.9 (195.5-320)	
Proteins		27.9 (13.4-40.9)		42.9 (26.3-61.3)	
Fats		22.97 (1.15-44.9)		34.9 (11.02-40.18)	
Any source of vitamin B12		1/10		3/10	
<b>WEEKLY AND MONTHLY INTAKE OF ANIMAL PRODUCTS</b>		<b>WEEKLY</b>	<b>MONTHLY</b>	<b>WEEKLY</b>	<b>MONTHLY</b>
	Beef	0/10	0/10	0/10	0/10
	Chicken	5/10	8/10	7/10	10/10
	Fish	4/10	8/10	8/10	10/10
	Egg	2/10	4/10	3/10	6/10
	Cheese	0/10	0/10	0/10	0/10
	Milk	2/10	3/10	0/10	1/10
<b>INTAKE OF SUPPLEMENTS</b>	Iron	0/10		2/10	
	Folate	0/10		0/10	
	Vitamin B12	0/10		0/10	
	Other	0/10		0/10	

Table 3: Socioeconomic status and dietary habits of tea garden patients.

## RESULTS

In the period 2017-2018, 54 patients with macrocytic anaemia were admitted to MCL&GH, of which forty (74.1%)

were from tea gardens. In comparison, tea garden workers represent only 35% of the total hospital population. In four of the forty included patients no

paper charts were available, so these patients were excluded for further analysis. Baseline characteristics and laboratory results are summarised in





Table 1 and Table 2. All patient charts were analysed thoroughly to check for possible causes of the anaemia; in all cases vitamin B12 deficiency seemed the most plausible diagnosis.

The results of the dietary and socio-economic interviews investigating the causes of vitamin B12 deficiency are presented in Table 3. Although the sample was too small to produce statistically significant differences, a few interesting results were seen. First, patients with macrocytic anaemia seemed generally poorer than their non-macrocytic counterparts. This was the case in terms of actual income, but also as number of persons below the poverty line. Furthermore, the macrocytic anaemia patients tended to have a lower overall food intake, as well as a lower weekly intake of products that contained vitamin B12.

#### DISCUSSION AND PLANS FOR FUTURE RESEARCH

This pilot study showed that, compared to the non-tea garden population in MCL&GH, both severe macrocytic anaemia and vitamin B12 deficiency seem to be more prevalent among tea garden patients. Moreover, compared to non-tea garden patients, tea garden patients with macrocytic anaemia are generally poorer and report lower intake of products that contain vitamin B12, suggesting

that 1) vitamin B12 deficiency might be causing the anaemia, and 2) these patients are less able to afford these expensive animal products, which is in line with previous research.<sup>[3,5,7,11]</sup>

Although these findings could have serious implications for governmental food supplementation policies, some limitations should be considered when interpreting the results and designing future studies. One limitation is the weak case definition, which could give both an overestimation (by including patients with folate deficiency that also present with macrocytic anaemia) and underestimation (by excluding the patients with a combined nutritional deficiency that present with normocytic anaemia) of the actual prevalence. Additionally, the weak case definition could cause a distorted picture of the causes of vitamin B12 deficiency. Concerning the investigation of possible causes, although previous research has shown that a lack of intake is the most common cause of vitamin B12 deficiency in LMICs, one could argue that other causes should be studied so as to reduce confounding. Lastly, although the present study provides implications for future research, the sample size was too small to draw firm conclusions.

Based on this pilot, plans have been made to conduct a comprehensive study

that doesn't have the above limitations and thus could confirm the preliminary results. A larger sample size of tea garden patients with macrocytic and normocytic anaemia (to catch solitary vitamin B12 deficiencies, as well as combined deficiencies) will be prospectively studied, with determination of vitamin B12 levels being an essential part. To effectively rule out other causes of vitamin B12 deficiency (e.g. alcohol abuse, parasitic infection), the interviews will be expanded with questions on alcohol use and hygiene, among others, and stool tests will be added to the analysis. In addition, patients will be treated with vitamin B12 supplements and followed up, to assess the effect of vitamin B12 on their Hb-levels and consequent general health.



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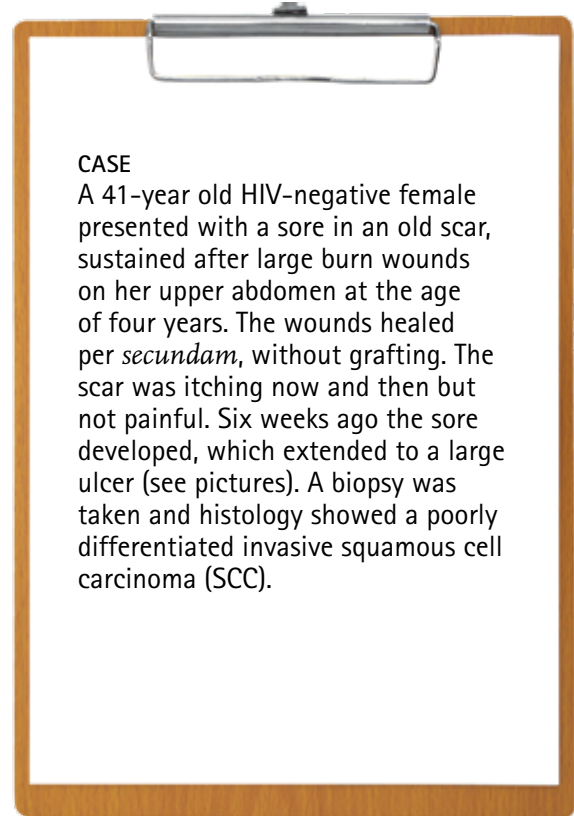
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# Marjolin's ulcer



## CASE

A 41-year old HIV-negative female presented with a sore in an old scar, sustained after large burn wounds on her upper abdomen at the age of four years. The wounds healed *per secundam*, without grafting. The scar was itching now and then but not painful. Six weeks ago the sore developed, which extended to a large ulcer (see pictures). A biopsy was taken and histology showed a poorly differentiated invasive squamous cell carcinoma (SCC).

## SETTING

This case is from Mbumba, a remote village in Zimbabwe. The Mbumba Mission Hospital has a labour ward and general wards, with a capacity of eighty beds, an outpatient department with an opportunistic infections clinic, mother and child care department, environmental health department and home based care department. There is a functional operating theatre, a laboratory with limited capacity, and a well-stocked pharmacy. Currently there is one doctor.

**T**he surgeons of the consult online panel were asked for the best treatment, specifically to advise on the margins to be observed if excision of the ulcer would be considered and if grafting of the wound would be possible in the same session. Advice on the need for chemotherapy was also solicited.

## SPECIALIST ADVICE

The diagnosis Marjolin's ulcer was proposed by the consult online panel. Excision of the tumour with one centimetre margin in all fields was advised, with the explanation that excision with a wider margin is better than a too small margin to minimise the risk of recurrence of the tumour. A split skin graft at the donor site was advised. It was also suggested to check for

metastases by examining both the inguinal and axillar lymph nodes and by performing a chest X-ray. A surgeon with expertise in burning wounds provided the Dutch guidelines on SCC of the skin.<sup>[1]</sup>

## MARJOLIN'S ULCER

A SCC of the skin is the most common type of skin cancer in the world, and the incidence is still growing. It is well known that the risk of developing a SCC is higher in fair skin types, with the most important cause being the exposure to direct ultra-violet light. However, it can also occur in chronic wounds, burn wounds, scars, sores or fistula.<sup>[1]</sup> If the SCC develops in an old wound or scar it is called a Marjolin's ulcer, named after the French surgeon Jean Nicholas Marjolin. He was the first to describe





transformations of the skin in burn scars in 1828. Two hundred years later, several reviews have been published on this malignant degeneration.<sup>[2,3]</sup>

A Marjolin's ulcer is most often a squamous cell tumour but can also be a basal cell carcinoma or a melanoma. It typically develops at least thirty years after the primary condition, although exceptionally it may occur earlier. The lower extremity is the most common localisation of the ulcer. Old burn scars are the main cause (65% of the ulcers<sup>[3]</sup>), with approximately 2% of them undergoing malignant transformation.<sup>[2]</sup> Other causes are osteomyelitic fistulae and development secondary to ulcers due to venous insufficiency or pressure ulcers. It is more common in men than in women, with a higher prevalence in low- and middle income countries. The Marjolin's ulcer is an aggressive cancer, and may lead in a minority of cases to lymph node metastasis and even distant metastasis. The prognosis depends on the differentiation of the tumour, with well-differentiated lesion being less aggressive. The overall 3-year survival rate is 65%-75%, compared to 35%-50% for those with metastasis to the lymph nodes.<sup>[2]</sup> Treatment options are excision or amputation, and adjuvant radiation or chemotherapy can be discussed. In case of clean wound margins following a wide excision, there is no difference in recurrence compared to amputation.<sup>[2]</sup>

The exact pathophysiology of a Marjolin's ulcer is unknown, but it is plausible that multiple mechanisms play a role. While chronic irritation and underlying immunodeficiency may be risk factors for malignant transformation, it is thought that the relative avascularity and lymphatic obstruction of the scar tissue slows down growth and metastasis. When metastasis occurs, the spread is generally quite rapid with an incidence of 95% within one year after diagnosis.<sup>[2]</sup>

#### FOLLOW-UP

Most likely due to the travel restrictions under the Covid-19 lock down, the patient was lost to follow-up before treatment could be initiated.



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MOST LIKELY DUE TO THE TRAVEL RESTRICTIONS UNDER THE COVID-19 LOCK DOWN, THE PATIENT WAS LOST TO FOLLOW-UP BEFORE TREATMENT COULD BE INITIATED





# Lower extremity fractures: access to care and outcome of treatment in rural Tanzania

The rates of extremity fractures in low- and middle-income countries (LMICs) are two to five times higher than in high-income countries (HICs).<sup>[1]</sup> Trauma contributes significantly to the burden of disease worldwide and injuries account for a major part of the surgical burden.<sup>[2,3]</sup> Little is known about the access to care and outcomes of clinical management which create unethical health inequity for the inhabitants of LMICs compared to HICs.

Lower extremity fractures are common in Tanzania. In 2019 a research project was started in Haydom Lutheran Hospital (HLH), with the aim of investigating the access to care and outcome of treatment for patients who sustained either an open tibial fracture or proximal femur fracture. Patients were included at the time of admission to the hospital and interviews were conducted to assess potential delays in seeking, reaching and actually receiving care. Patients were seen after three, six and twelve months for follow-up on their clinical and self-reported treatment outcomes.

## START OF THE PROJECT

HLH is a large regional referral hospital in rural Tanzania with its own research department. HLH has an established collaboration with Global Surgery Amsterdam (GSA), an institute that focusses on research and training to improve access to safe surgical care worldwide. Thom Hendriks, a Dutch medical doctor in global health and tropical medicine, worked in HLH until March 2019 and conducted studies on burns in conjunction with GSA. HLH and GSA together, with financial support from the Tweega Medica Foundation, created a job opportunity for a successor of Hendriks to work at HLH and conduct research on lower extremity fractures. Anneloes Eleveld,

a Dutch medical doctor in global health and tropical medicine, started working in Haydom in March 2019. Grayson Mtui, a Tanzanian medical doctor, had been involved in the burn studies and his interest and intention to work on a new research project on trauma care were clear. In the first half year, Fleurance Smit, a Dutch medical doctor, also joined the project and this resulted in the formation of a research team with supervision through GSA.

Mtui and Eleveld established a close working relation and initiated the study by developing a research proposal and applying for ethical clearance. Dr Bellet, head of the orthopaedic department, could not play an active role in conducting the research himself but agreed, with the support of the hospital administration, to be the formal supervisor. The project received funding from the Otto Kranendonk Fund (OKF), which is managed by the Netherlands Society for Tropical Medicine and International Health (NVTG).

The acceptance by and trust of the hospital administration, other doctors at HLH, and patients was crucial to the success of the research project. Teamwork, transparency and local stakeholder involvement were given due attentions. To make sure that the hospital staff were aware of the project activities, several presentations were held explaining the content and purpose of the study, and providing periodic updates of study progress and preliminary results.

## TEAMWORK

The research team consisted of Eleveld, Mtui and Smit. In day-to-day operations, Mtui was responsible for patient inclusion and setting up appointments for follow-up visits. He was also the first person to be approached by the hospital administration in case of any questions. Eleveld and Smit oversaw the data collection, processing, and analysis



and kept abreast of relevant literature. The strength of the research team was its mixed nature, Tanzanian and Dutch, with complementary qualities and expertise. It proved important to have a team member who was familiar with local customs, the cultural background, and the setting, and who was also fluent in Swahili. He also helped in formulating interview questions, for example about a patient's financial status, and how to act when unexpected events happened that could interfere with interviews. Dutch team members added research experience and access to an extensive network of supervisors and funding opportunities.

In implementing the study, the research team relied on the cooperation of hospital staff, including nurses in the wards who helped in finding patient files, seeing patients and informing the research team about changes. Officers working in medical records, radiology, finance department each had their roles as well.

Dr. Bellet, as the formal supervisor, was very supportive and helped where



possible whenever practical issues arise. Support also came from the trauma and plastic surgery department of Amsterdam University Medical Centre and from the main supervisors: dr. Botman, dr. van Embden, professor Bloemers and professor Ritt.

#### DATA COLLECTION AND FOLLOW-UP

Clinical measurements on patients, the initial interviews, and follow-up were part of a prospective cohort design. The research team followed a schedule for data collection and interpretation. Back-ups of files were made, which turned out to be an excellent idea, as some time back a lightning strike destroyed the digital X-ray archives.

For quality purposes, a high follow-up rate is needed. One of the most commonly heard answers while calling study participants to set up appointments for follow-up visits is: “Namba umepiga haipatikani kwa sasa, tafadhali jaribu tena baadae” (translated: the number you are calling is not reachable at the moment, please try again later). Telephone numbers might have changed, phones may not be charged, or people may be staying in areas without a network. About 60% of the patients do visit the hospital for follow-up. It is a significant effort for them to travel for limited personal benefit. So it is important that they feel noticed and appreciated and do not have to wait too long once they arrive at the hospital.

The precise moment of their arrival was not known beforehand though, which requires some flexibility on the side of the research team to combine the follow-up visits with their clinical work, which could be challenging. The OKF research grant allowed us to reimburse patients for their travel expenditure and to refund the cost of X-ray examinations, where applicable. Usually a small lunch allowance or compensation for loss of a day's income was added.

Some patients, however, lived too far away or were unable to travel due to their clinical condition. If patients were

unable to reach the hospital, the team undertook an outreach visit to their homes, which was time consuming and posed all kinds of logistical challenges. The follow-up of treatment outcomes over a period of twelve months was one of the biggest challenges, as the story of Getabang (pseudonym) shows. Getabang sustained an open tibia fracture, was admitted to the hospital in August 2019 for two months, and was included in the study. After he was discharged, the research team tried to reach him for several weeks, but could not get hold of him. A home visit was then considered, but during the rainy season the roads to his remote village were inaccessible. Eventually the outreach team did manage to visit him, after a drive of more than two hours. A man at a local market area who knew Getabang gave us directions to his house.



“It is just there”, after which another one and a half hour drive followed, through dry lands, bushes, and small hills, with here and there a house made of mud or some cattle herded by children. The team reached a small compound surrounded by a fence made of branches and that is where Getabang with his family lived.

The team recognised his happy smile straight away. Somehow surprised, but happy to see them, Getabang invited the team members into his house, where the follow-up measurements and interview could be conducted. After being invited for lunch, the team was offered a present: a goat! Satisfied and accompanied by goat sounds, the long journey back home began.

#### ADDED VALUE

The project aimed to evaluate access to care and treatment outcomes in patients who sustained an open tibial fracture or proximal femur fracture, with a view to improving protocols and clinical guidelines suitable for low-resource settings and adapted to patients' individual needs. The project showed the importance of a sustained international partnership to eventually

strengthen the local health system and patient care. It also stimulated the development of knowledge and an infrastructure for health research. The study provided an invaluable opportunity to establish a bond with patients, which would not be possible in an ordinary medical care setting.

Combining research with a full-time clinical job without compromising on the quality of care forms a challenge. We conclude with a note directed to global health workers: if you have the opportunity to engage in research, do so. Take on the challenge to combine research with your clinical duties, as it will enhance collaboration, learning from each other, and hopefully contribute to equitable medical care.



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# Wisdom of whores

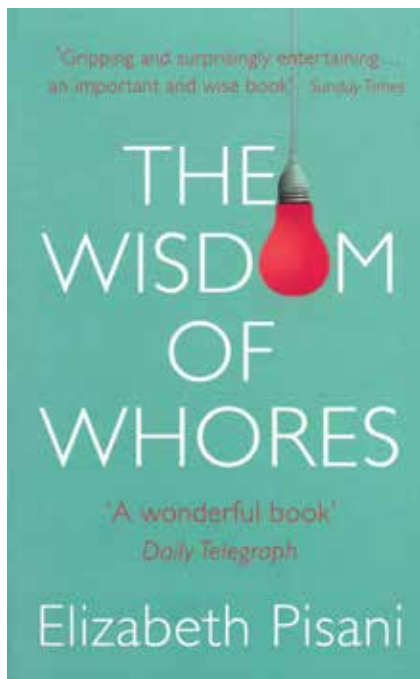
## *Bureaucrats, brothels and the business of AIDS*

By Elisabeth Pisani  
 ISBN 978 1 84708 076 9  
 363 pages  
 Granta Publication, current edition: 2008  
 Priced €9.99

Sex and drugs, cookbooks for UNAIDS and foreskin soup; not something you encounter in every book you read. Nonetheless, these are elements from Elisabeth Pisani's 10-year long experience as a researcher in the field of HIV/AIDS. In *Wisdom of whores: Bureaucrats, brothels and the business of AIDS* Pisani states that HIV can be shut down everywhere, except sub-Saharan Africa. She describes that this could be achieved in a few simple steps, saving billions of dollars and countless feel-good programmemes and projects that do not make much of a difference. In her book, Pisani shares somewhat controversial stories, her honest opinion about everything that is wrong with HIV/AIDS programmemes, and humorous personal experiences from everyday life as a field epidemiologist in Indonesia.

Pisani describes how challenging it is to perform field research ("anything that can go wrong, will go wrong") and uses her own stories to explain this. "In HIV research you're going from brothel to gay bar asking about behaviours that are often illegal or embarrassing and collecting specimens to test for an unspeakable fatal disease in countries with erratic vigilante movements and an irregular

power supply." One can imagine the countless difficulties. She describes how practice in the frontline of sex and drugs can be so different compared to the theories and study designs that are developed in offices in Geneva or elsewhere far from field realities. Her research participants, for example, often didn't fit into the pre-fabricated boxes (e.g. male prostitute, drug injector, client of female sex worker), but were rather all at the same time, or none at all.



Billions of dollars have been spent on scientific evidence collection and "common sense" projects in the field of HIV/AIDS, but it does not seem to make much of a difference. HIV/AIDS remains a major global health burden to this day. What is the problem, and where did all that money go? As Pisani states, "hard science" is not enough. "You work in public health because you want to save a lot of lives. If you're going to do that effectively, you cannot stop at the perfect study design, or even at the publication of your perfect paper in *The Lancet* or the *New England Journal of Medicine*. [...] Something that works in the lab but doesn't work at the ballot box might be good science, but it is unlikely to get translated into good public health. You have to do good science, and then sell good science." She argues that science does not exist in a vacuum. "It exists in a world of money and votes, a world of media enquiry and lobbyists, of



pharmaceutical manufacturing and environmental activism and religions and political ideologies and all the other complexities of human life." Her field experience has taught her that ideology and too much money (and not lack thereof, as we are often made to believe!) are the major obstacles to sensible HIV prevention and actually doing the right thing. These two factors often drive important choices, from local prevention strategies to international funding decisions. Many parties share the blame for the inefficient use of funding. An absurd example of squandering of taxpayer's money is from East Timor. After becoming an independent nation in 2002, the country received US\$ 2 million to fund its HIV program-memes, although only seven people had tested positive for HIV at that time.

In this thought-provoking book, Pisani shares her honest and critical look at the state of HIV/AIDS, while remaining respectful to all parties involved. Furthermore, her witty writing style and amusing examples have created an easy read, recommended to everyone who is open to rethinking the current approach to tackling HIV/AIDS.



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SOMETHING THAT  
 WORKS IN THE LAB BUT  
 DOESN'T WORK AT THE  
 BALLOT BOX MIGHT  
 BE GOOD SCIENCE,  
 BUT IT IS UNLIKELY TO  
 GET TRANSLATED INTO  
 GOOD PUBLIC HEALTH



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