



Profile

Matthias Egger: a man with a method



For Egger and colleagues' paper on tuberculosis mortality see [Articles](#) page 298

For the International epidemiological Database to Evaluate AIDS (IeDEA) see www.iedea.org

For the Swiss HIV Cohort Study see www.shcs.ch

Raised in Switzerland's capital Bern, Matthias Egger had the importance of education instilled early by his architect father, whereas his humanitarian passion came from his mother who worked with the International Committee of the Red Cross. "But my first interest in medicine came from a family tragedy", Egger tells *The Lancet Infectious Diseases*. "My brother died suddenly, when I was just 10 years old, probably from complications of influenza."

Egger enjoyed his medical studies at the University of Bern, but found himself asking questions about the bigger picture that were often left unanswered by teachers. Although epidemiology and global health were relatively new in the 1980s, Egger became fascinated. After his clinical training in surgery, paediatrics, and internal medicine, he was awarded a British Council fellowship in 1986 to study epidemiology at the London School of Hygiene & Tropical Medicine (LSHTM).

He would later team up with his LSHTM classmate, George Davey Smith, in an HIV/AIDS prevention project in Nicaragua. It was on this Nicaragua project that he met his future wife, Nicola Low, also an epidemiologist.

In the early 1990s, while based at University College London, he became involved in the Swiss HIV Cohort Study, documenting the uniformly dire HIV prognosis. When potent antiretroviral treatment (ART) arrived, Egger understood that large cohort collaborations were needed to assess outcomes of HIV infection in the ART era. In 1997, he moved to the University of Bristol, where he was key in setting up the ART Cohort Collaboration, which combined data from 13 HIV cohorts from Europe and North America.

Today, Egger helps run the International Epidemiology Database to Evaluate AIDS (IeDEA), which includes data from almost 2 million people living with HIV across the globe, co-leading the Southern African region with Mary-Ann Davies of the University of Cape Town. "HIV prognostic models for high-income and lower-income settings, and the demonstration of high early mortality in low-income settings were among our more important outputs from this work", he explains. More recently, Egger's team analysed data from almost a million people starting ART, showing that CD4 counts have improved much more quickly in high-income than resource-poor settings.

Methodological work, on meta-analysis and the quality and transparency of health research, has been a focus of his work since the 1990s, often in collaboration with the late Douglas Altman, one of Egger's most important mentors. A 1997 paper on detecting bias in meta-analysis using "Egger regression", rapidly became a classic in medical statistics.

Between 2002 and 2017, Egger was chair of the Institute of Social and Preventive Medicine at the University of Bern, where he and his team researched an eclectic range of topics. "One of my most controversial papers was a comparison of placebo-controlled trials of homeopathy and allopathy (conventional medicine) published by *The Lancet* in 2005. Our analysis showed that allopathy was more effective than placebo, whereas homeopathy's effects were consistent with the placebo effect", says Egger. This paper, and the accompanying editorial announcing the "end of homeopathy", led to an avalanche of media coverage. "I received a number of threatening messages, but do not regret publishing the paper" he says.

Egger also helped to design a new type of trial that was used to establish the efficacy of the rVSV-ZEBOV Ebola vaccine during the outbreak in west Africa, inspired by smallpox eradication in the 1960s. "We used the ring vaccination approach, in which you vaccinate all community members who were in contact with the index case, but randomise the rings to receive immediate or delayed vaccination", he explains. "This means all exposed people got vaccinated, while allowing evaluation of vaccine efficacy." The vaccine is has since been central to Ebola control.

In this issue of *The Lancet Infectious Diseases*, Egger and colleagues report results of an international study of drug susceptibility testing for tuberculosis in high-burden countries, showing that when local testing was inaccurate, leading to under treatment, mortality increased substantially.

Since 2017, Egger has been busy as President of the Research Council of the Swiss National Science Foundation, which distributes US\$1 billion in grant money each year. Outside work, Egger has a passion for the outdoors, enjoying hiking and skiing. He recently bought a Cape Cod catboat to go sailing with friends and family on a lake near Bern.

"Matthias bridges old-school and modern epidemiology, in that he does work that has real public health impact, and also wants to apply methods that can provide reliable evidence about how to intervene. In this he is becoming increasingly unusual", says George Davey Smith, Professor of Epidemiology at the University of Bristol, UK. "He is the best collaborator anyone could have, and while for some of us it is a loss that he will spend more of his time leading a funding agency than doing research, this will undoubtedly be a good thing for global health."

Tony Kirby