It was back in 1985 when Tahmeed Ahmed joined the International Centre for Diarrhoeal Disease Research, Bangladesh, today known as icddr,b, in Dhaka. On Feb 1, 2021, he became icddr,b’s new Executive Director, its first leader from within Bangladesh. Before his new role, he was Director of Nutrition and Clinical Services at icddr,b, where he also led the organisation’s response to COVID-19. As a distinguished clinician and research leader, Ahmed’s career has been defined by public health developments in his country, notably in the areas of cholera treatment and in confronting malnutrition. And as icddr,b’s new Executive Director, his research will remain a priority. “One of my current projects is a collaboration with Cambridge University in the UK, analysing the population dynamics for non-communicable diseases, a major challenge for Bangladesh’s 21st-century public health agenda”, he says.

Ahmed was schooled by Catholic missionaries at Dhaka’s St Gregory’s School and Notre Dame College and his parents also influenced his early career. Although he died when Ahmed was a child, his father, an economist, remains an inspiration; his mother encouraged Ahmed to study medicine at Mymensingh Medical College, before he joined icddr,b as a junior clinician. “This is where I really started to learn about medicine, at icddr,b’s cholera hospital, where 95% of patients were mothers and children, their poor health directly linked to poverty, which resulted in widespread and combined morbidities, including diarrhoeal disease, pneumonia, tuberculosis, and meningitis. Every woman and child I treated was a new lesson for me, and the start of my awakening into the importance of public health research”, he recalls.

Noticed by others at icddr,b for his industrious approach to clinical work, Ahmed was soon recruited into clinical research programmes and found this work was “a lesson for me to appreciate the rigour, tenacity, and energy required to do quality clinical research”, he says. It was during this early stage in his research career, in the late 1980s, where Ahmed contributed to important work showing the efficacy of single dose doxycycline in the treatment of cholera.

Then, in 1996, after returning to icddr,b from a 4-year PhD programme in Japan, where he had worked on food allergies in impoverished children, Ahmed focused on severe acute malnutrition (SAM) among children in Bangladesh. “After the seminal work in the research generation before me that had led to the discovery and widespread uptake of oral rehydration salt solution, SAM was the next and most pressing public health priority for our country. As clinicians we witnessed it on a regular basis; my idea was to assess whether adherence to a standardised treatment protocol—which promoted slow and steady use of oral nutrition and rehydration among young children with SAM and diarrhoea—would lead to better outcomes”, Ahmed explains. The results were striking: adoption of the protocol halved mortality, and after its publication in The Lancet in 1999, Ahmed worked closely with WHO and UNICEF to develop SAM treatment guidelines based on the protocol. “Two decades later it remains at the heart of treatment of children with SAM”, he adds.

In collaboration with Jeffrey Gordon, Director of the Edison Family Center for Genome Sciences and Systems Biology at Washington University in St Louis, USA, Ahmed has investigated the underlying mechanisms of malnutrition, notably defects in the development of the gut microbiomes of malnourished children. They have identified therapeutic food formulations composed of components of the diets of healthy children during weaning that increase the presence of key beneficial bacteria strains that are under-represented in the microbiomes of children with SAM. “This decade-long research programme has demonstrated that the gut microbiome can be modulated, which has enormous potential for reducing malnutrition in young children”, Ahmed says. Science published this research in 2019, naming it a top ten scientific breakthrough that year. Commenting on Ahmed’s career, Gordon says: “Tahmeed has a deep devotion to basic science and its marriage to clinical science. This devotion is incredibly important if we are to make progress in understanding the origins of diseases that represent global health challenges, and developing new and more effective approaches to their treatment and prevention.”

Looking ahead, Ahmed hopes to continue as Professor of Public Health Nutrition at the James P Grant School of Public Health at BRAC University in Dhaka. And he remains proud of his country’s health development over recent decades. “Bangladesh is an outstanding role model for public health development among low and middle income countries, with the indices around infant mortality, neonatal mortality, and longevity having improved substantially in recent times. This should help icddr,b’s evolution by increasing the capacity of researchers from Bangladesh, while at the same time attracting more international collaborators to participate in our work”, he says. Ahmed believes that the COVID-19 pandemic has fundamentally changed the wider research landscape. “Without doubt the areas of prevention efforts such as vaccine initiatives and COVID-19 treatment developments will dominate our research agenda for the next few years. Our organisation has come such a long way since its inception in 1960; it now has an exciting future ahead if we can build on our strengths to become a prominent centre for research excellence, both in the Global South and internationally”, he says.

Richard Lane