



Profile

Firdausi Qadri: putting Bangladeshi science on the map



icddr,b

Firdausi Qadri, infectious disease specialist and Senior Scientist at icddr,b, found time on a hectic day to speak with me. She was taking a lunch break on day 5 of Bangladesh's 7-day vaccination blitz in July, 2022, during which more than 2.4 million people were immunised with oral cholera vaccine (OCV). A vaccination roll-out of this speed and scale is not unusual for Bangladesh. But this year's campaign is different because "it is aimed at breaking the cycle of infection in the country's worst cholera outbreak in 60 years", says Qadri.

Qadri's 50-year career has been dedicated to understanding and treating enteric disease, mostly working at icddr,b in Dhaka, where she has used microbiological and immunological approaches to research the pathogens responsible for cholera and typhoid diseases, as well as enterotoxigenic *Escherichia coli* and rotavirus. Qadri has had a pivotal role in creating, developing, testing, and delivering affordable vaccines for these enteric diseases, most notably cholera. The low cost OCV has been a gamechanger, says John Clemens, Senior Scientific Advisor at the International Vaccine Institute, Seoul, South Korea, and former Executive Director at icddr,b. "Shahla has been the leading figure on introduction of low cost oral cholera vaccines into programmes for the poor, leading crucial clinical trials and working with government in its massive rollouts of OCV for the Rohingya in Cox's Bazar and other cholera-affected populations in Bangladesh", he says, using the nickname close colleagues have for Qadri. In one such clinical trial, Qadri and colleagues found that a single dose regimen of Shanchol, locally produced in India, was protective against cholera for up to 2 years in children older than 5 years and adults in urban slums in Bangladesh, and that it could be successfully delivered through routine government services. These findings complemented earlier smaller studies indicating the prospect of single dose protection. Subsequently, Qadri and her colleagues helped lead the emergency deployment of this low cost vaccine among Rohingya refugees in 2017. In an extraordinary joint effort by icddr,b, the Government of Bangladesh, international agencies, and non-governmental organisations, almost 1 million doses of vaccine were delivered in a month to 155 vaccination sites in the refugee camps in Cox's Bazar, with the help of local volunteers and community leaders.

Naturally I assume her work on this cholera vaccine would be Qadri's proudest achievement. But she says otherwise: "I see myself first as a scientist. What's most important to me is capacity building for researchers and local production of vaccines and biotech for my country. The cholera vaccine is what people see as a product of that desire."

Born in Dhaka in 1951, Qadri's inquisitiveness and quest to learn started early. She was raised, along with three sisters,

by a supportive grandmother and mother who emphasised the importance of education. "There was clearly a time for play and a time for study. My grandmother wanted us girls to pursue our education, become professionals, and establish our own earnings and strengths, keeping marriage and family for later." Qadri's "first love" was Florence Nightingale, whose life and career sparked curiosities in health and medicine. After an undergraduate degree in biochemistry and molecular biology at Dhaka University, she pursued a PhD in immunology at the University of Liverpool, where her new husband was also studying. Their first 4 years of marriage living in the UK produced many fond memories. Qadri says that they "relished time with other local and international students, sharing meals, and visiting that part of a beautiful country". She and her husband have three children who now live in Canada and Singapore pursuing their careers.

In recognition of her work, Qadri has received a string of crown jewel awards, including the Christophe Mérieux Prize in 2012, the L'Oréal-UNESCO For Women in Science Award in 2020, and in 2021 the prestigious Ramon Magsaysay Award for her instrumental work in discovering life-saving vaccines. "The Ramon Magsaysay Award brought me something that I had always wanted", she says, "for my country to be proud of me, for my young people to know me, and for having given people hope that we can do research and implementation in Bangladesh and it can be evaluated positively globally." Sadly, the day the award was announced, her beloved husband, Professor Syed Saleheen Qadri, died in intensive care in Dhaka. Their life's work had intersected in the past decade with the founding in 2014 of the Institute for Developing Science and Health Initiatives in Dhaka, which trains biomedical scientists and clinicians in immunology and molecular biology-based research and advances knowledge of genetic disorders. Clemens confirms that "one of the most impactful features of Shahla's stellar scientific career has been its demonstration to young, female Bangladeshi scientists that it is possible not only to rise to the top of the scientific ladder but, while doing so, to have a fulfilling family life".

Emerging from a period of mourning and the pandemic, I ask Qadri what her current passion project is. She says she is working on a typhoid conjugate vaccine in Bangladesh and getting very good results, and also would like to see the HPV vaccine rolled out among young girls. But her attention again quickly turns to lifting up others: "I want to give young people the capacity to grow in science. I want to develop women scientists and make them aware of the way to do science and tackle all that comes in the way, to tell them about how women are born with this talent and can nurture it."

Jocalyn Clark