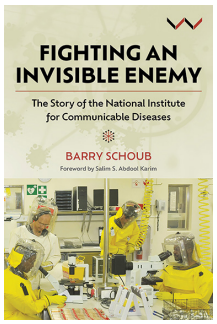
**BOOK TITLE:**
Fighting an Invisible Enemy: The Story of the National Institute for Communicable Diseases

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# From polio to COVID: Inside story of the NICD

Barry Schoub has written a first-hand account of his almost four decades at the helm of South Africa's major public health institute. The memoir provides an important historical narrative on the birth and evolution of the National Institute for Communicable Diseases (NICD), located on the outskirts of Johannesburg. The NICD is a national asset responsible for safeguarding the public against infectious disease outbreaks, and Schoub has done an invaluable job in documenting its long and tangled history. From its start in the mid-1950s using public donations to produce a much-needed polio vaccine, it was transformed in the mid-1970s into a virology institute following a fatal case of a viral haemorrhagic fever. It was not until 2001 that the NICD in its current form came into being. Over the last 25 years, the NICD has tackled such formidable foes as HIV, Ebola, tuberculosis, influenza, listeriosis and COVID-19.

The book is part memoir and part history, and covers all the major transitions and much more. It provides a compelling insight into the inner workings of how teams of scientists go about their mission. Complemented by vivid pictures of microscopic viruses and bacteria, high-tech laboratories with staff in space suits, and an iron lung that is still on display at the NICD today, it strikes a balance between technical detail and engaging stories that is readily accessible to a general audience. Tellingly, the book is more about the Institute and its scientific endeavours than about Schoub's own scientific accomplishments, which are numerous. But there is no doubt that Schoub is an institution-builder, able to bring his vision of a science-led public health institution to fruition despite considerable opposition.

One of the most revealing aspects of the book is Schoub's candid description of his frustrations in dealing with senseless bureaucracy and political interference in the early years under the apartheid government. He laments the Institute being treated as an administrative office rather than as a scientific organisation and the requirement for lengthy approvals to attend conferences and publish scientific manuscripts. Appeals to those on the outside, including colleagues within government departments, went unheard, and he threatened to resign. He also talks of the depth of despair at international isolation and colleagues declining invitations to visit because of the apartheid regime. Reading this now, it is clear that Schoub's intention in creating the NICD was not only to broaden its mandate but also to free the Institute from this stifling situation. He recognised that we needed a modern, globally relevant public health institute capable of addressing the country's unique disease burden and dealing with future outbreaks.

Appropriately, there is a whole chapter devoted to the topic of HIV and AIDS and how, through its advanced surveillance systems, the NICD documented the rise of infection rates from 0.7% in 1990 to over 20% among pregnant women in a period of 8 years. He details one of the most ludicrous and shameful periods in South African medical history: the era of AIDS denialism. For a president and health minister to go against the advice of not only their leading medical professionals, but of globally accepted scientific norms, is still beyond comprehension. This period cost hundreds of thousands of lives and left many, myself included, feeling helpless. Reading this book brought back unpleasant memories of being compelled to participate in the bizarre Presidential AIDS Advisory Panel which included one of the denialists, who refused to wear protective clothing, handling a flask full of infectious HIV particles. There is also the embarrassment of the Virodene scandal and the brave members of the Medicines Control Council who lost their jobs after refusing to register this chemical solvent as an anti-HIV treatment. This era remains a mystery, and Schoub speculates as to the possible reasons for this.

The last chapter deals with emerging communicable diseases and the ongoing threats of epidemics and pandemics. He explains how environmental destruction, climate change and increased wildlife trade contribute to the emergence of new viruses. Respiratory-spread viruses like influenza and SARS-CoV-2 have already had devastating effects and have shaped human history. Despite retiring as NICD Director a decade earlier, Schoub played a key role during the COVID-19 pandemic. Fortunately, this time around the government chose to listen to the experts and relied heavily on the epidemiological and viral genetic data that were generated by the NICD and others. One of the controversies during the COVID-19 pandemic was vaccine access and Schoub rightly criticises rich countries for hoarding vaccines during the pandemic.

Throughout the book, Schoub highlights the many talented and dedicated staff of the NICD. Having served in a leadership position there, I strongly concur with his sentiments. When COVID-19 struck, the NICD became the epicentre of South Africa's response. What impressed me greatly was how willingly the divisional heads stepped up to lead the emergency outbreak response, often sacrificing their own research programmes and responsibilities and putting in unimaginably long hours. The NICD is not a purely research or academic environment – but it relies on having strong research leaders to fulfil its public health mandate. Balancing the needs of individual research careers against the need to have staff service the public interest, is a delicate task that Schoub managed exceptionally well. As a result, many scientific leaders emerged from the NICD, some of whom continue to work there today.

In the epilogue, Schoub reflects on the lessons learned and the need for preparedness in fighting the invisible enemies of the future. He highlights that while scientific contributions are critical, other factors such as communication, community involvement, and economics are equally important. The impact of misinformation around COVID-19 caused significant harm as people refused vaccinations or used untested and toxic treatments. He discusses the international efforts underway to deal with future pandemics and the critical role of independent public health institutes in monitoring and responding to these threats. *Fighting an Invisible Enemy* is an essential read for anyone interested in global health, leadership, and the inner workings of disease surveillance and control.