



MARY GUINAN

Mary Guinan assessed the health of Afghan refugees in camps in Pakistan in the 1980s.

EPIDEMIOLOGY

Chasing epidemics

Tilli Tansey engages with the medical autobiography of a pioneer in the field of HIV/AIDS.

Stories of inspiring female scientists who have cracked the glass ceiling are much in demand. Mary Guinan's *Adventures of a Female Medical Detective* ticks that box — and is a rip-roaring read. An epidemiologist with the US Centers for Disease Control and Prevention (CDC) in Atlanta, Georgia, for decades, Guinan was involved in global smallpox eradication and served as its first female chief scientific adviser. She has also had a distinguished career in HIV/AIDS research as one of the first US scientists to identify early AIDS cases as harbingers of a new epidemic.

As a 'medical detective', Guinan (co-writing with Anne Mather, former managing editor of the CDC newsletter, *Morbidity and Mortality Weekly Report*) presents a series of case studies in explicit homage to super-sleuth Sherlock Holmes. These are not tales of forensic pathology but anecdotes from her career as a field officer for the Epidemic Intelligence Service (EIS), part of the CDC.

Guinan's route to medicine was tortuous. She graduated in chemistry at the turn of the 1960s, when *The New York Times* segregated job adverts by gender, and openings for women in science were few; her first job was developing flavours in a New York City chewing-gum factory. She was rejected by several higher-degree programmes that barred women, finally winning a place at the University of Texas Medical Branch in Galveston,

where she received a PhD in physiology in 1969. Following a secret dream of becoming an astronaut, she enrolled in a space and aviation medicine class at Houston's NASA space centre, only to discover that women were not allowed in the command area, in case they distracted men. Guinan settled on medicine, graduating from Johns Hopkins University in Baltimore, Maryland, in 1972.

Inspired by the World Health Organization's Smallpox Eradication Programme, begun in 1966, she joined the EIS as the only woman in her intake year. But her application for the programme's smallpox work in India was rejected on gender grounds. She insisted that if India could have a female prime minister (Indira Gandhi), the smallpox programme could accommodate a woman. In 1974, she finally succeeded.

A little more reflection on some of Guinan's 'firsts' would be welcome. She was, for instance, sent to investigate bacterial contamination in an intensive-care unit at a unnamed military base. When the commander, announcing that the CDC had sent an expert, asked, "Please will he stand up?", she sat silently. Did she view this as

Adventures of a Female Medical Detective: In Pursuit of Smallpox and AIDS

MARY GUINAN WITH ANNE D. MATHER
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an effective strategy? How did often being the sole woman doing the work affect her? She mentions a husband and son, but does not discuss whether her domestic situation influenced her career. Some commentary by this successful pioneer would be instructive.

Guinan delivers gripping accounts of work with vulnerable populations. On her first overseas trip for the EIS smallpox programme in 1975, to Uttar Pradesh in India, she lived in rat-infested mud huts while seeking out people with smallpox and their contacts. When the region was declared smallpox-free that May, she decided to dedicate her career to public health.

In 1980, she was part of a CDC group asked by the US state department to assess the health of Afghan refugees in Pakistan. The Soviet Union had invaded Afghanistan, and hostages from the US embassy in Tehran were still in captivity. As Guinan reveals with fury, this risk-ridden situation had a disturbing extra dimension. The CIA, she later learned, was using the CDC team as a front for its operatives. The US government would use this tactic again in 2011, when it created a sham vaccination team to cover its surveillance of al-Qaeda founder Osama bin Laden's house in Pakistan. The repercussions against vaccination programmes and individuals have been catastrophic. As Guinan puts it, the CIA "had stolen part of our souls".

Guinan worked with some of the very first US people with AIDS, and was an expert witness in a landmark legal case that outlawed employment discrimination on the basis of HIV status. Some of her work was captured in Randy Shilt's best-selling book *And the Band Played On* (St Martin's, 1987), later made into a film that disconcerted Guinan with its anodyne portrayal of her. One poignant case study from the mid-1980s is that of 'Lir', a woman infected with HIV by her husband, a preacher jailed for sexually abusing their children. There was no known treatment, and hysteria and condemnation were rife. To keep her HIV status secret in her community, Lir regularly drove more than 190 kilometres to consult Guinan at a clinic in Georgia for several years. In 1995, when Guinan's clinic obtained a supply of the new, effective antiviral drugs, staff members tried to contact all patients likely to benefit. Despite her best efforts, Guinan never found Lir.

With its emphasis on smallpox and AIDS, *Adventures of a Female Medical Detective* will seem to many to fall within the category of medical history. But with Ebola and Zika now in daily headlines, epidemiology and spirited individuals such as Guinan have a very current value for health research. ■

Tilli Tansey is professor of the history of modern medical sciences at Queen Mary University of London.
e-mail: t.tansey@qmul.ac.uk