



HIV Injustice in Libya — Scapegoating Foreign Medical Professionals

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On December 19, 2006, a Libyan court is scheduled to announce its verdict in the trial of five Bulgarian nurses and one Palestinian doctor who have languished in prison for 8 years on charges

that they intentionally injected more than 400 Libyan children with human immunodeficiency virus (HIV) in 1998, while they were guest workers at a children's hospital. In 2004, the six were tried and sentenced to death. A new trial was ordered last year after international protests, but scientists and politicians are worried about the defendants' fate.

The scientific evidence being used against them "is so irrational it's unbelievable," said Vittorio Colizzi, an infectious-disease specialist based at Tor Vergata University in Rome and one of a number of international scientists who have visited Libya to study the case

and treat the children. But such scientists have not been called to testify in the current trial, which began in late August.

The HIV outbreak at Al-Fateh Children's Hospital in Benghazi, Libya, that peaked in 1998 has been studied in detail by international experts, who have pored over patient charts, tested hundreds of blood samples to characterize the virus, and observed patient care activities at the hospital. All have concluded that the outbreak was nosocomial, resulting from the reuse of contaminated medical equipment. The efforts to understand the outbreak include a site visit by the World Health

Organization (WHO) conducted in December 1998 and January 1999 that resulted in a 1999 report, as well as an investigation by Colizzi and Luc Montagnier,¹ a codiscoverer of HIV, who were hired by the Libyan government, were given broad access to the hospital and patients, and completed their report in March 2003.

But in the Libyan court, such evidence does not seem to matter. "Science has not been respected in this court; without the scientific evidence, there's no way there could be a fair trial," said Richard Roberts, a winner of the Nobel Prize in Physiology or Medicine, who hand-delivered a letter of protest signed by more than 100 Nobel laureates to the Libyan Mission to the United Nations in New York in late October. "The Libyan government doesn't want to admit that their



The Palestinian Doctor and Five Bulgarian Nurses Being Retried on Charges of Injecting Libyan Children with HIV.

hospital had a problem with hygiene that spread HIV,” said Roberts. “These people were the ideal scapegoats: they were foreigners. And the Libyans knew that the Bulgarian and Palestinian governments couldn’t kick up much of a fuss.”

Some of the evidence suggesting that the foreign workers are innocent comes in the form of two published molecular analyses of blood samples from the children, which demonstrated remarkable similarity among the strains of HIV-1 in all the children and revealed that the majority were coinfecting with hepatitis C virus (HCV) but that the HCV strains varied.^{2,3} This diversity of strains suggests that the hospital has a history of poor infection control, since children become infected with HCV primarily during medical procedures. In addition, according to the report by Colizzi and Montagnier, genetic analysis of blood samples from children who were last admitted to the hospital in 1997 detected the presence of HIV RNA — the same unusual virus type found in the rest of the children — indicating that the vi-

rus was in the hospital before the guest workers arrived.

Moreover, in visits to the hospital, both the WHO team and Colizzi found that syringes and other types of medical equipment that could retain infected blood were being routinely reused. Infusions of albumin, an unscreened blood product, were commonly used if a child looked weak, and the bottle and tubing were often used for more than one child.

“No evidence has been found for a deliberate injection of HIV contaminated material (bioterrorism),” wrote Colizzi and Montagnier. “Epidemiological stratification, according to admission time, of the data on seropositivity and results of molecular analysis are strongly against this possibility.”

In the first trial, a panel of judges set aside this scientific evidence in favor of a dramatic cloak-and-dagger scenario based on testimony by Libyans who said they had witnessed the nurses hoarding vials of HIV-infected blood; the testimony was bolstered by confessions that the nurses have since said were elicited by torture. A panel of Libyan doctors filed a

counterreport,⁴ which, according to Montagnier, “was filled with basic scientific errors.” For example, it concluded that the virus was “genetically altered” (and therefore intentionally created) because laboratory analysis had shown it to be a “recombinant” strain of HIV. But though the strain, CRF02-AG, had not been previously reported, it resembles and is thought to be a natural mutation of a strain that is common in central Africa.

Similarly, the Libyan doctors concluded that the infections must have been deliberate because the infection rate was “too high” for nosocomial transmission, which, they argued (baselessly), could account only for rates below 3 cases per 1000 patients. Because of unsanitary practices, infection rates in Benghazi were indeed extraordinarily high, Western experts agreed. The HIV outbreak was, according to a 2001 article, “the largest documented outbreak of nosocomial transmission”² of HIV. Although the exact figures vary, Libyan authorities now list more than 400 cases associated with the cluster, including 2 in nurses



Demonstrators outside Libya's Supreme Court Holding Photographs of the HIV-Infected Children.

who worked at the hospital and at least 12 in mothers of the affected children.

Several dozen children have died, and their enraged families, who now form a potent political force, are demanding punishment. According to Bulgarian diplomats, last year the Libyan government suggested that Bulgaria might appease the families and obtain freedom for the accused under Islamic law by paying \$10 million in “blood money” for each child. Bulgaria rejected the request, saying that acceptance would constitute an admission of guilt; the diplomats also noted that the sum would bankrupt the government.

Failing in that effort, the Libyan government this fall paid for the children to go to Europe's premier pediatric hospitals for treatment. Although most were receiving some form of antiretroviral therapy when they arrived in Europe, few had been adequately treated in Libya, said pediatric immunologist Guido Castelli-Gatti-

nara, who recently examined dozens of the children at Bambino Gesù Hospital in Rome.

It seems that the nurses and doctor were simply in the wrong place at the wrong time. Last year in Sofia, Bulgaria, I spoke with the 28-year-old daughter of Valya Cherveniyashka, one of the nurses, who described her mother's plight as “surreal.” A nurse from the Bulgarian countryside, she had signed up to work at the hospital in Benghazi for \$250 a month in order to pay her daughter's university fees. One year later, she was sitting in a Libyan prison, accused by the country's leader, Colonel Muammar al-Gaddafi, of working for Israeli intelligence.

Indeed, the 200-page verdict from the first trial reads, says Colizzi, “like a bad spy film,” laying out a sinister official theory of how these nurses brought AIDS to Benghazi. One nurse, the court decision says, masterminded the plan to spread HIV, storing the virus at her home in 24 green-

topped blood-culture bottles. She lured the Palestinian doctor to participate in her scheme with the promise of a Bulgarian wife and \$500,000 in a Swiss bank account. According to court documents, witnesses said the project was “prepared by Israeli Intelligence for political reasons and to start commotion” in Libya. The nurse supposedly carried out the plot on behalf of two English-speaking intermediaries named John and Adel, who supplied the virus. As corroborating physical evidence, investigators could point only to five “plasma bottles” purportedly found in the nurse's home, two of which they said had been shown to contain HIV. Colizzi and Montagnier examined the Western blots used and called them ambiguous. When they asked for the bottles so they could conduct their own analysis, the request was not granted.

Although the defense lawyers have repeatedly complained that key scientific evidence was being dismissed, the judge told them that such “technical” data represented just one sort of evidence. In the retrial, the court has “rejected requests for new examinations of the medical facts,” according to a status report by the Bulgarian Foreign Ministry.

In view of the charts and laboratory tests he has seen, Colizzi believes that the epidemic probably began with an importation of a different sort: Libya has 1.5 million workers from sub-Saharan Africa, where some countries have HIV infection rates as high as 10 to 20%. Libyan government statistics on HIV and AIDS do not include these residents, who rely on Libya's hospitals. Perhaps an

HIV-positive worker went to Al-Fateh Hospital to deliver a baby, who was born infected with HIV. Poor infection-control practices in use at the hospital, noted in the 1999 WHO review, might have allowed the virus to spread to other patients.

Indeed, just months after the nurses and doctor were first jailed, in 1998, WHO compared the outbreak to documented nosocomial HIV outbreaks in Russian and Romanian hospitals. Now, 8 years and many scientific studies later, professionals who sought to pro-

vide needed health care to Libyan children may sadly become the scapegoats for another country that is loath to admit to a home-grown HIV problem — derived, in this case, from dismal hygiene practices that are only slowly being corrected. “The court is misusing science,” Richard Roberts said in explaining his decision to mobilize his fellow laureates in protest. “So scientists need to speak out.”

Dr. Rosenthal is a reporter for the *International Herald Tribune*.

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The Eradication of Polio — Progress and Challenges

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Six years after the original 2000 target date for the global eradication of polio, public health workers are encountering several stumbling blocks. Poliovirus circulation persists in countries where the virus is endemic; new outbreaks are occurring in previously polio-free areas, including, most recently, Kenya's first documented wild-type poliovirus infection in 22 years; and complex social challenges stand in the way of public health efforts in some countries.

Since 1988, when the World Health Assembly adopted the goal of eradication, the public health initiative has made extraordinary progress: the disease burden has been reduced by more than 99%, and the number of countries with endemic transmission has been reduced by more than 96%. Yet according to the reports from the global polio surveillance network,

as of November 15, a total of 1646 cases had been confirmed this year,¹ and the annual incidence has remained steady for the past 4 years (ranging from 784 to 1972 cases per year). This apparent lack of progress in reducing the number of cases in the past few years has resulted in occasional impatience and frustration, even leading some to question the ultimate feasibility of global eradication.

The simple count of cases, however, does not fully reflect either the extent of recent accomplishments or the remaining barriers to eradication.² The past several years have been a roller-coaster ride in which progress against the virus has repeatedly been followed by setbacks in the form of outbreaks. Nevertheless, only four countries where the virus remains endemic — Nigeria, India, Pakistan, and Afghanistan — account for 93% of the world's cases of

poliomyelitis; unlike all other countries, they have never succeeded in interrupting the transmission of wild poliovirus.

A major accomplishment of the polio eradication program is the establishment of a global integrated virologic surveillance network. Because of the rapid mutation rate of poliovirus, molecular surveillance can provide greater insight into its circulation than would be possible with strictly epidemiologic tools. Thanks to continual changes in the genetic material of the virus and the routine molecular characterization of every wild poliovirus isolate in the world, patterns of genetic similarity can be used to help public health officials track individual virus lineages, understand the implied patterns of transmission, and monitor the progress of the eradication efforts.

Genetic sequencing has, for