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How Vaccine Safety can Become Political – The Example of Polio in Nigeria

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Abstract: Vaccine safety is increasingly a major aspect of immunization programmes. Parents are becoming more aware of safety issues relating to vaccines their babies might receive. As a consequence, public health initiatives have had to take note of pressures brought to bear by individual parents and groups. Now we document a new phase in vaccine safety where it has been used to achieve political objectives. In 1988, the World Health Assembly declared its intention to eradicate poliomyelitis from the globe by the year 2000. This goal had to be postponed to 2005 for a number of reasons. Although the progress has been spectacular in achieving eradication in almost all nations and areas, the goal has been tantalizingly elusive.

But arguably the most difficult country from which to eradicate the virus has been Nigeria. Over the past two years, tension has arisen in the north against immunizing against polio using the oral polio vaccine (OPV). Although this vaccine has been used in every other country in the world including other Muslim states, some religious leaders in the north found reason in August 2003 to advise their followers not to have their children vaccinated with OPV. Subsequent to this boycott, which the Kano governor had endorsed for a year and then ended in July 2004, cases of polio occurred in African nations previously free of the virus, and the DNA finger-print of the virus indicated it had come from Nigeria. In other words, Nigeria became a net exporter of polio virus to its African neighbours and beyond. Now the disease has spread to a dozen formerly polio-free countries, including Sudan and Indonesia. We show that, while the outward manifestations of the northern Nigerian intransigence were that of distrust of vaccine, the underlying problem was actually part of a longstanding dispute about political and religious power *vis a vis* Abuja. It is unlikely that polio transmission will be interrupted by 2005 if this dispute is allowed to run its course.

INTRODUCTION

In 1988, the World Health Assembly declared its intention to eradicate poliomyelitis from the globe by the year 2000 [1]. This goal was postponed to 2005 for a number of reasons. Although the progress has been spectacular in achieving eradication in almost all nations and areas, the goal has been tantalizingly elusive. The number of countries where polio is endemic declined from 125 in 1988 to six by the end of 2003. Further progress in 2004 toward interruption of transmission has continued in the three Asian countries where polio is endemic (Afghanistan, India, and Pakistan). However, in 2003, two countries in Africa experienced a resurgence of polio cases; the resurgence continued to spread in 2004 from the Nigeria-Niger endemic reservoir to involve a total of 14 countries that had not reported polio for over a year. Local transmission of wild poliovirus has been reestablished in six of these 14 countries, including Sudan, where a major outbreak occurred [2].

Arguably the most difficult country from which to eradicate the virus has been Nigeria. Being not only a densely populated country, it has a number of other factors that have made success especially hard. The country is divided into 36 states and one territory that have considerable autonomy, but are controlled in certain aspects of administration from President Olusgun Obasanjo's central government in Abuja. There is a north/south divide that can be seen geographically as desert/savanna to the north and a lush tropical climate in the south. It also divides the country into predominantly Muslim in the north and predominantly Christian in the south. Over the past two years, tension has arisen in the north against immunizing against polio using the oral polio vaccine (OPV). Although this vaccine has been used in every other country in the world including other Muslim states, some religious leaders in the north found reason in August 2003 to advise their followers not to have their children vaccinated with OPV.

Subsequent to this boycott, which the Kano governor had endorsed for a year and then ended in July 2004, cases of polio occurred in a dozen formerly polio-free neighbours of Nigeria. Ethiopia had been polio-free for a year when cases reoccurred. Genetic tests showed that the virus was the same one that originated in northern Nigeria. Now Sudan, Ethiopia and Yemen are all experiencing outbreaks that can be traced back to Nigeria. Dr. David L. Heymann, director of polio eradication for the WHO, says Ethiopia is now trying to raise $15 million to stop the spread of the disease throughout the country, which is one of the most populous African nations

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[3]. Nigeria had become a net exporter of polio virus to its African neighbours.

NOT UNIQUE

The rejection of vaccines has, of course, not been limited to Northern Nigeria. Rumours from a number of countries in Africa relating to presumed adverse events from various vaccines have been well documented by UNICEF [4]. A fall in vaccine acceptance has generally followed such rumours. Nor is such rejection limited to Islamic societies. For instance the vaccine preservative thiomersal that contains small amounts of mercury has generated widespread hostility against certain vaccines in many Western countries [5].

ESCAPE FROM AFRICA

A case of polio was detected in April 2005 in Indonesia, indicating that the outbreak had spread from northern Nigeria and had crossed the Indian Ocean. The World Health Organization reported that Indonesia's last case was in 1995, and was the 16th country to be re-infected by a strain of the virus that broke out in northern Nigeria [6].

NOW MEASLES

According to IRIN[a], the Nigerian Red Cross and the World Health Organization, Nigeria reported over 20,000 measles cases and nearly 600 deaths from the disease from the start of the year until March 2005. More than 90 percent of the measles cases reported by this time had occurred in Nigeria's northern states, as had the overwhelming majority of deaths. People in the northern region were reported to be wary of vaccinations for religious reasons [7,8].

INFLUENZA IN THE COLONY

Without the hindsight of history, the world might think the behaviour of the northern Muslim clerics as extreme and time-bound. This may not be the truth. For instance, in 1918 the world was freeing itself from the clutches of the Great War. But it was caught up in the death throes of a great influenza pandemic called "Spanish Flu". Millions of people throughout the world succumbed to this scourge, including many in Nigeria. Influenza spread throughout the northern part of the country by December of 1918 through the colonial trade and communication networks of roads, railways, and rivers. The Muslim population generally ignored what British colonial medical assistance there was during the epidemic. In the north, they attempted different treatments from either Europeans or other local groups. While Europeans inhaled eucalyptus vapors, Muslims drank water that contained slips of paper inscribed with prayers and extracts from the Koran. The Muslim population of the Northern states also did not go to the colonial hospitals in as large numbers as other ethnic groups. The Muslim villagers mainly kept to their houses and did not interact with British medical officers as they passed through their districts. The population's tendency to ignore British advice on the epidemic surfaced throughout the reports of British medical officials both in the Northern and Southern provinces [9].

In reporting on the epidemic, the British sanitary officers noted the increasing levels of tension and unrest they experienced throughout Nigeria, including the Northern provinces. In addition to the economic unrest created by the flu, the British also indicated marked anti-colonial and anti-British sentiment throughout the country. Throughout Nigeria there were attempts to rid themselves of the British whom they explicitly blamed for the epidemic and the resulting crises. One report described attempts to drive the white man into the sea. There was also a plan to prepare medicines that would make the land "too hot" for white men [10,11]. The influenza epidemic in Nigeria constituted more than a medical crisis. It highlighted the tensions already present between Nigerians and the British colonial regime as well as creating new points of conflict between Nigerians and the British. The Muslims' responses to the epidemic emphasized their lack of faith in the supposedly superior British medical knowledge.

Non-Muslim Nigerians also resisted British medical authorities and Western-style treatments. The British officials' main strategy in combating the epidemic in Lagos was to institute house to house inspections by doctors. If the inspectors found an infected person in a house, they would remove him or her to the infectious disease hospital or they would quarantine and extract a promise from those living in the house that no one would be allowed to go in or out until the sickness passed. British officials soon gave up enforced hospitalization because "prominent and influential natives and native practitioners were unanimous in stating that the fear of being sent to hospital was very great, the idea being that any who went there were sure to die" [12].

COMPULSORY VACCINATION?

Sporadic local resistance based on moral or religious objections has dogged public health efforts in other key 20th-century immunization campaigns. For example in the final phase of smallpox eradication in eastern India and Bangladesh in 1973-74, vaccination teams were sometimes opposed by tribal patriarchs and peasant figures who considered vaccination equivalent to impiety. Instead of negotiating such concerns on a case by case basis, WHO epidemiologists adopted the view that "to make an omelet, eggs must be broken," and "containment" teams in both countries swept the objectors aside [13]. Police force and military methods were used when necessary, and it was standard practice to post guards on houses and establish tight perimeters in villages where smallpox cases were detected; everyone inside the village was vaccinated, even though some may have been immunized previously [14]. While smallpox eradication has been rightly hailed as a great public health achievement and a blessing on future generations, it was achieved in parts of South Asia at the price of ignoring rights that would have been respected in the North, where conscientious objection guaranteed exemption from immunization for the last century [15,16].

The Islamic world is not oblivious to the strategic use of compulsory vaccination. Saudi Arabia states, for instance, that for intending travelers to the Haj in Mecca "Vaccination against meningococcal meningitis is compulsory" [17]. Leadership from such a highly respected country within the Islamic world may offer a way out of the current dilemma relating to polio vaccine.

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[a]IRIN - Integrated Regional Information Networks, part of the UN Office for the Coordination of Humanitarian Affairs.

WHAT TO DO?

By July 2004, following pressure from the World Health Organization and other African countries, and after receiving assurances about vaccine safety from laboratories in Muslim nations, the governor of Kano State agreed to resume polio mass campaigns [18]. If this promise does not result in effective action and the world is serious about the task of completing polio eradication, there is only a limited number of options available to the international health community. First the world can look on and encourage the central government in Nigeria to solve its own internal politics. This is not going to happen quickly if history is any guide. While the outward manifestations of the northern intransigence are that of distrust of vaccine, the underlying problem is a longstanding dispute about political and religious power *vis a vis* Abuja. It is unlikely that polio transmission will be interrupted any time soon if this dispute is allowed to run its course. In the mean time, Nigeria may continue to export polio and measles viruses and precipitate neighbouring countries such as Kenya [19] and Sudan [20] to embark on aggressive polio mass campaigns to contain the spillover [21].

The second option would be to request the central Nigerian government to impose compulsory vaccination. The initial world reaction to such a suggestion would likely be one of dismay. However, this was the way the only other successful eradication campaign - smallpox - was conducted in certain high-transmission countries. What will the world do about polio and measles in Nigeria if the north does not comply? Will it permit the democratic process to be played out, if that means that the north will be allowed to continue limited compliance? Or will it decide there is a greater good to be chosen by insisting on compulsory vaccination? What has to be weighed is the possible violation of in-country human rights and the sovereignty of Nigeria against the well-being of millions of children for generations to come. Not to mention the three billion dollars already invested by countries and donors in getting this far. Northern Nigeria could push the world towards an historic, but uncomfortable choice.

CONFLICT OF INTEREST STATEMENT

All authors declare that there are no conflicts of interest to declare. In the spirit of full frankness, Dr. C.J. Clements declares that he was employed by the World Health Organization from 1985 to 2002 but believes this does not constitute any conflict of interest.

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