

Usman contracted polio as a child in Karachi. His son Musharaf, aged two, was Pakistan's first case of 2013. The little boy is a victim of a brutal backlash against the country's vaccination efforts – which has also led to deadly attacks on health workers

Willem Marx reports
Photography by *Sam Phelps*

Usman with
his son
Musharaf, the youngest
of his four children



As Rashid Ali traces the bullet entry and exit wounds that mark his chubby frame, from groin to nose, via thigh, forefinger and neck, he recalls the events of December 18. "The way I was shot and fell, I can't get it out of my mind," he says, his voice flat. A ceiling fan thrums overhead as he perches on a bed and sketches a map of the quiet alleyway in Ittehad Colony, Karachi where he should, by rights, have died.

Ali had been administering polio drops all morning alongside his colleague Kaneez Fatima, as part of a vaccination drive overseen by the World Health Organisation. On earlier campaigns, the vaccine had been rejected by some parents but by late morning they were progressing through the couple of hundred homes in their purview, encountering no refusals. "I was chalking a wall," Ali recalled, a way of recording a given household's vaccination status for later campaigns. "All of a sudden we were fired at," he continued.

Ali had turned towards the sound of a gunshot fired at his partner when a bullet ripped through his nose, rattling between his left cheek and jaw before exiting beneath his ear. He instinctively raised his headscarf to cover his face and so never glimpsed his would-be assassin as four more bullets tore into him.

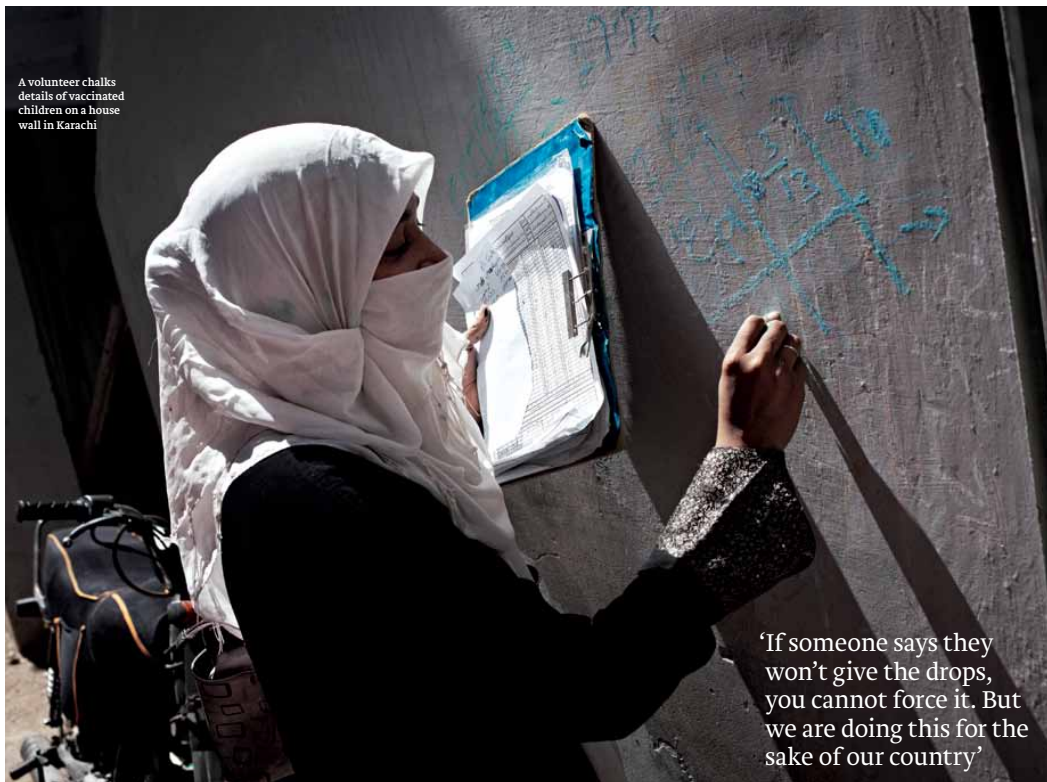
"I fell down, then after a while I got up. I saw that Kaneez had also been hit and she was just lying there." Fatima had died instantly. "I was working with her for about two years," said Ali sorrowfully. "She has eight children. The eldest son is my age, with seven younger siblings. She was trying so hard to support her family herself."

Fatima was not the only vaccination worker who died that day. Madiha Bibi, just 18 years old and a mother of two, was also murdered. She had been administering the vaccine in her own neighbourhood of Landi Town with her aunt Fehmida Bibi, 46, when a motorcycle rider drew up amid the teeming maze of alleyways and killed her with his first shot. Fehmida somehow scrambled inside somebody's home nearby, but the assassin must have followed her. Her corpse was left almost unrecognisable. The same morning, in adjacent Orangi Town, mother of five Naseem Akhtar was also gunned down. The previous afternoon, Umer Farooq, a young man who had been working across town in a largely lawless suburb called Gadap, had been shot dead. Five deaths in Karachi in two days.

The vaccinators were part of a Pakistani government initiative to eradicate polio, funded by foreign donors through the WHO. These volunteer health workers, answering to the Pakistani health authorities, receive less than £2 a day for their work.

Not long afterwards, I stood by the graves of Madiha and Fehmida Bibi, marked by two mounds of earth baked hard by the sun. Dusk was falling over the cemetery on the forgotten outskirts of Pakistan's murder capital. Madiha's mother - Fehmida's sister - spoke aloud to no one in particular: "Why were they martyred and by whom?"

Intimidation of the country's roughly 200,000 polio workers was clearly part of the answer. The Karachi attacks were the opening salvo of a brutal campaign that resulted in 20 polio-related assassinations in three months. A fortnight ago, two workers were attacked outside Peshawar, and one woman was killed, forcing the WHO to suspend their polio campaign in the city. An attack a week earlier in the tribal belt left a campaign security worker dead.



A volunteer chalks details of vaccinated children on a house wall in Karachi

'If someone says they won't give the drops, you cannot force it. But we are doing this for the sake of our country'



Rashid Ali, a health worker, survived five gunshot wounds in an attack that killed his colleague

Rukhsana and Syed Ataullah Shah, parents of Madiha Bibi, 18, who was killed while distributing polio vaccine



This was supposed to be the year that polio would finally be eradicated in Pakistan - a feat achieved by India in 2011. But today that looks increasingly unlikely. A viral disease that thrives in dense populations with poor sanitation, poliomyelitis passes from faeces to the mouth, often via dirty hands. In about one in 1,000 cases of infection, the virus attacks the nervous system, muscles start failing, and the victim is left with paralysed limbs or even worse disabilities.

In 1988, with about 350,000 children around the world suffering paralysis every year, a global eradication effort was launched. The WHO began its work in Pakistan in 1994, with the blessing of the then prime minister Benazir Bhutto. The previous year, about 5,000 new cases of polio had been recorded; by 2007, the year in which Bhutto returned to Pakistan to face elections - and ultimately assassination - that total was down to 32.

But by then experts had begun questioning the eradication efforts. The global campaign was sucking up \$1bn each year, and international funders were experiencing "donor fatigue".

"I think it's possible that the polio campaign could have failed," says Svea Closser, a medical anthropologist and author of the book *Chasing Polio in Pakistan*. Then the Bill and Melinda Gates Foundation intervened. "Gates really started

getting involved at a time when it looked like it would wither for a lack of funding," says Closser, who (like many other academics in the field) has previously received funding from the Gates Foundation. Global polio cases dropped from 650 in 2011 to fewer than 250 in 2012.

But in Pakistan, polio began to rise again: by 2011, there was a sharp increase, to 198 confirmed cases. The Pakistani government instituted an emergency action plan in response. Then came last winter's attacks. "If only one incident had happened," Ali reasons, "then I would have said they did it out of anger. But it happened all over the country." Many consider one event above all others to be responsible: the raid that killed Osama bin Laden.

Dr Shakil Afridi was initially a nameless participant in the CIA's campaign to find the al-Qaeda chief. The Americans recruited him to organise a fake hepatitis B vaccination drive in a sleepy garrison town called Abbottabad - as a pretext to get inside bin Laden's suspected residence. They hoped that, by obtaining blood samples of the children in the compound, a DNA match could go some way to confirming the presence of bin Laden himself.

But it did not take long for details of the operation to leak to the press (though it has never been publicly confirmed). Pakistan's intelligence agencies soon arrested Afridi, and he was summarily convicted in a tribal court on a trumped-up charge of colluding with a militant group. Most damagingly, his highly publicised involvement fuelled extremists' long-held suspicions that Pakistan's various inoculation efforts were in reality just cover for US information-gathering, and that the nation's Pashtun population was the number one target. It did not help that Kathryn Bigelow's Oscar-winning film *Zero Dark Thirty* suggested that the cover used by Dr Afridi was that of a polio campaign doctor.

The first reprisal came last June from a high-ranking Islamist commander, Hafiz Gul Bahadur. His religious decree, or fatwa, banned the polio campaign from a region of the Federally Administered Tribal Areas where he claimed influence, North Waziristan. At the time some 160,000 children there were slated for a fresh round of vaccinations. It should have come as no surprise that extremist groups like Tehreek-e-Taliban, the Pakistani Taliban, might view those administering the vaccinations as legitimate targets. But Pakistan's authorities offered little protection for such workers until too late.

In the wake of the December attacks, the provincial authorities offered blood money to Fatima's immediate family, and paid Ali's hospital bill plus £3,000 for his injuries. But no charges have been brought - neighbourhoods like Ittehad Colony tend to have low expectations of law enforcement. It was only after the assassinations - and a four-week hiatus in the country's vaccination campaign - that police forces were deployed nationwide to guard workers going door-to-door in dangerous neighbourhoods. In early March, I accompanied a group of them in one such district - Karachi's Gadap Town.

Gadap is home to 300,000 people, a large suburb to the northwest of Karachi proper, split by a filthy canal - the "major sanctuary of the polio virus", says a WHO doctor. According to Dr Elias Durry, an Ethiopian veteran of global eradication efforts and WHO country chief for polio, the sector has long

THE GLOBAL EFFORT

Andrew Jack

Three decades after success in defeating smallpox triggered a programme to eradicate a second human scourge, the global burden of polio has fallen sharply. Despite sharp reductions in infections since 1988, a small tail of polio cases - 223 cases last year, almost all in Pakistan, Afghanistan and Nigeria, with a handful in Chad and Niger - has proved resistant, sparking a fresh push at an international summit in Abu Dhabi this spring to raise \$5.5bn to finish the job.

One obstacle is biological. The virus is more easily transmissible and harder to detect than smallpox. It can easily spread and surge, highlighted by new cases this year in Kenya and Somalia. Another is practical: the very success in fighting polio - in contrast to other health and social problems facing the communities where it remains endemic - means it is not perceived as a priority. A third is ideological. International polio campaigns have often been perceived as western-imposed, and regarded with suspicion by local religious and political leaders.

There have been renewed efforts to achieve eradication within the next five years, and the Abu Dhabi summit generated \$4bn in support. Aside from the money, the contributions (albeit still modest) from Muslim-dominated countries and financial institutions was a step forward towards winning over suspicion of foreign influence.

Another change is the shift towards the use of injectable polio vaccines. These are costlier, but could provide more rapid and effective protection. A final need is to integrate polio vaccination with other health and social services. That way, even if eradication remains elusive, at least the latest push will provide broader benefits.

Andrew Jack is the FT's pharmaceuticals correspondent



Two boys scavenge among rubbish by the side of a watercourse in Karachi, whose canals are one of the world's main reservoirs of poliovirus

◀ been a focus because a national sewage sampling programme indicates the virus maintains perhaps its strongest presence here. (I visited the government laboratory in Islamabad where hundreds of effluent samples from around the country are tested for the polio virus each day by US-trained scientists using state-of-the-art technology. Although just a nondescript building on the outskirts of the capital, it allows polio experts like Durry to track the virus in almost real time.)

One of Durry's greatest fears is that the virus could reinfect other countries, and in January his worries were nearly realised when a Pakistani strain showed up in a sewage sample from Cairo – nine years after Egypt was officially declared polio-free. Strains from Gadap have appeared repeatedly elsewhere in Pakistan, marking it out as a polio “reservoir”. Durry and his colleagues insisted to the authorities that repeated campaign drives to inoculate Gadap's 22,000 under-fives was the only way to catch the wild poliovirus at the right moment. The vaccine only works effectively when it encounters the virus inside the stomach, and it can require a dozen doses for a child in a poorly sanitised environment to develop immunity. The equation, says Durry, is simple; the more regularly you administer the drops, the more likely you are to interrupt full transmission of the virus.

I found a group of vaccination workers in a small office with windows tinted against the sun, discussing the day's routes and objectives. They were already well behind that month's “micro plan”, a detailed schedule drawn up by the WHO, because local police had repeatedly failed to turn up in sufficient numbers to protect them. One exasperated WHO eradication specialist remarked in my presence that Pakistani bureaucrats and police officials had often played the “security card” after the December attacks, to mask their own failings. “There is no accountability. Security becomes the excuse for everything. Bad planning, bad worker attendances, bad follow up,” he said in exasperation. “Everything is blamed on security.”

But the volunteers seemed eager to work and filed out into the sunshine as a group before splitting into pairs, with their assigned police officers following them somewhat grudgingly. There were some final encouraging instructions from their supervisor, Abida Irfan, a woman in a black abaya and white hijab headscarf who exuded professional enthusiasm. “If someone says they won't give the drops, you cannot force it. But we are doing this for the sake of our country.”

High breezeblock walls separated the compounds from the dusty roads, and goats rooted around in the rotting rubbish that lay piled up in the open areas. Few residents were visible and the only sounds were the occasional motorbike, a crackle of police radios and the repeated knock on metal doorframes by the vaccination workers.

“Are there three children?” Irfan asked a mother opening a door, after noting the chalk markings from a previous visit. “Write this down,” she said to a younger volunteer beside her, before turning back to the mother. “Have they been marked?” she demanded, referring to the permanent ink used to stain the fingernails of those already vaccinated, then added, “Bring the children out.”

This pattern repeated itself at dozens of homes, the polio workers corralling toddlers and infants in doorways before tilting their heads back. They filled pipettes from vaccine vials stored in bright



‘Our window of opportunity is shrinking. We need to do as many campaigns now as we can’

Dr Elias Durry

blue cool-boxes, and released two drops into mouths that often required forcing open.

Meanwhile the police, apparently bored, stomped around impatiently outside. Their rifles slung casually on their shoulders, they appeared woefully unprepared should our small party encounter hostility. But when the vaccination teams continued to the edge of the settled area, our security contingent swelled as other officers joined us. This cluster of several dozen homesteads, known as Memon Society, had proved problematic for the vaccinators on prior campaigns, said Irfan. “We're going to a refuser's home,” she explained, striding purposefully onwards in the afternoon heat. “They may be al-Qaeda members,” she added, “that's why they refuse” – employing that notorious Arabic term as shorthand for the multitude of militant groups who operate in the region.

With another woman, Irfan climbed three concrete steps to a rusting door. “Children from infants to five-year-olds for polio drops,” she intoned. “Our team has come to give the drops. Come quickly.” The door opened a crack, and the near-whispered response came from a woman inside. “We don't take drops.”

“Why not?” demanded Irfan cheerfully.

“They say they are damaging,” the unseen woman replied.

“No they don't damage anyone,” said Irfan impatiently. “It protects your child and you should give it to your children.”

“I've never given them drops.”

Conversations like this have played out in dozens of countries over the past quarter century, according to Svea Closser, who has focused her recent research on the efforts of frontline polio workers. “You see a lot of the same problems in Nigeria,” she told me, where large swathes of the country's north have struggled with local officials who stymie WHO programmes, a population hostile to outside intervention and, more recently, militants targeting polio workers. But a singular challenge for vaccination workers in

both countries is to explain why so much effort is being expended on this one disease in areas where other healthcare services are practically nonexistent. “If you only care about polio, and people sense that,” she explained, “if there are no services provided but you turn up 13 times a year at their doorstep, that makes people really pissed off.”

Furthermore, pernicious rumours about the vaccine have long plagued Pakistan's polio campaigns. The pink serum, I was told several times during interviews with the parents of young children, was either designed to render Muslim children sterile, or contained some combination of monkey blood, pork tissue and faeces. Following the raid on bin Laden's compound and ensuing fears about American spying programmes, the vaccine refusal rate here has risen dramatically.

This is especially true among Pashtun parents like Usman. A father of four living in the Karachi slum of Bhains Colony, he contracted polio as an infant in the early 1980s. It has left him visibly disabled, his loping gait the result of an almost useless right leg that he must lock out with a rigidly tensed right hand at every step. As a polio victim himself, he insisted that his eldest children be vaccinated. But by the time workers came to inoculate his youngest child, Musharaf, reports of Dr Afridi's activities on behalf of the CIA had reached him.

“If the incident in Abbottabad did not happen,” he admitted ruefully, speaking of his fellow Pashtuns in general, “and these rumours didn't spread to us, we would have continued the vaccinations as we had been.” But Usman refused the vaccine drops for Musharaf, and one morning in January the two-year-old woke crying and unable to move his leg. “I was trying to get him to sit and I remember what my mother told me: ‘When you were little I was trying to get you to stand and you couldn't stand.’” His face is pained as he recounts the episode. “With my mother's words in my mind I tried to make him stand, but he couldn't and it hit me hard – that, God forbid, something has happened to him.” Just weeks after the deaths of those vaccination workers, the young child with a winning smile had become Pakistan's first confirmed polio case of 2013.

“I know if I had given him the vaccine this wouldn't have happened,” Usman confesses, admonishing himself. “You shouldn't have been fooled by people.” I follow him as he clambers slowly down the rough concrete stairs out of his house and stops to watch a hobbling Musharaf join a group of children playing with a pink balloon.

In places like this, the coming summer heat has traditionally proved a boon for the poliovirus, according to Durry. But he believes there is another pressing reason to get through as many vaccination drives as possible: the new government of Nawaz Sharif may not place polio eradication high on its agenda.

“Our window of opportunity is shrinking,” he admits. “We need to do as many campaigns now as we can.” And on the likelihood of further violence, an Algerian colleague of Durry's was especially frank. “More vaccinators will die. The question is – is it worth it?” **FT**

Willem Marx is a television correspondent based in New York, and author of the forthcoming “Balochistan at a Crossroads”. For a slideshow of further images, go to www.ft.com/pakistanpolio. To comment, email magazineletters@ft.com