II. Violence against healthcare in fragile systems

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Introduction

Violence against health workers (including doctors, nurses, ambulance drivers, public health specialists, managers and administrative staff) occurs in virtually all healthcare systems. The contexts in which violence occurs differ widely—ranging from emergency rooms and psychiatric wards in otherwise stable settings to field hospitals in conflict settings—but the common link is the need to deliver health services. Further, the barriers to the delivery of health services are embedded in the specific social, cultural and economic contexts, which are influenced by external, often global-level, factors.[1] Through a systems lens, violence against health workers is not solely a health systems issue; rather, it relates to wider societal pressures.

In many fragile systems within developing countries, the consequences of violence against health workers are particularly severe due to the threat of amplifying feedback.[2] The settings are often characterized by poor health outcomes due to a lack of access to essential health services, medicines, adequate nutrition, shelter and clean drinking water. Fragile states account for more than a third of all maternal deaths worldwide; malaria death rates are 13 times higher than in other developing countries; and a third of their populations are malnourished.[3] Fragile states are increasingly faced with a double burden of disease: mortality and morbidity from infectious diseases, malnutrition and problems with maternal and child health remains high, but they are also increasingly threatened by emerging epidemics of non-communicable diseases and injuries.[4] Although complicated in fragile systems, addressing these public health challenges provides a stronger base for reaching other development goals.[5]

This section begins with some background on the issue of violence against health workers, including a discussion of challenges with data collection. This is followed by a review of the situation in 2014, and an analysis of two specific fragile systems, where violence against health workers

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[1] Hahn, R. A. and Inhorn, M. C., *Anthropology and Public Health: Bridging Differences in Culture and Society*, 2nd edn (Oxford University Press: Oxford, 2009).

[2] Fragile systems are complex settings characterized by economic, environmental or political shocks, ineffective institutions or governance, creating a risk that unresolved contests become violence or armed conflict (see section I in this chapter).

[3] Newbrander, W., 'Rebuilding health systems and providing health services in fragile states', *Management Sciences for Health*, MSH Occasional Paper no. 7 (2007).

[4] Bygbjerg, I. C., 'Double burden of noncommunicable and infectious diseases in developing countries', *Science*, vol. 337, no. 6101 (Sep. 2012), pp. 1499–1501.

[5] Newbrander (note 3).

significantly affected health delivery in 2014: challenges faced by Ebola workers in West Africa and issues of insecurity for polio workers in Pakistan. These case studies highlight the drivers of violence, the importance of a systems approach and the impact of violence on health delivery.

Background and challenges with data collection

There is no comprehensive global collection of data on violence against health workers.[6] In 2012 the World Health Organization (WHO) was mandated to develop draft methods for collection and dissemination of data on violence against health workers in humanitarian settings; these guidelines are being field tested in 2015.[7] As part of its Health Care in Danger Project, the International Committee of the Red Cross (ICRC) also collects data on incidents affecting health care, but does not report the context or name perpetrators.[8] Many other organizations collect data on incidents affecting the delivery of healthcare, but may take a country or organization-specific approach and often do not make this data public.

Global reporting on this issue often relies on the Aid Worker Security Database (AWSD), which is not health-specific and examines humanitarian aid work.[9] For 2014, the AWSD has documented that 328 aid workers were affected by 190 major security incidents (defined as killings, kidnappings and attacks resulting in serious injury). Six countries—Afghanistan, Central African Republic, Pakistan, South Sudan, Sudan and Syria—accounted for approximately 78 per cent of all victims, of which the majority (126 victims) were reported in Afghanistan.[10]

The absolute number of aid workers affected by security incidents is most likely underestimated. This is due in part to the lack of universally available and standardized reporting structures among agencies, as well as the lack of capacity and incentives for smaller non-governmental organi-

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[6] For a further discussion of data challenges (including the lack of gender-disaggregated data), see 'Violence against healthcare workers: challenges in translating research into action workshop summary', SIPRI and the Swedish Red Cross, 2014, <http://www.sipri.org/research/security/security-and-development/humanitarian/pdf_files/violence-against-healthcare-workers-workshop-summary>.

[7] World Health Assembly Resolution WHA65.20, 26 May 2012, <http://apps.who.int/gb/ebwha/pdf_files/WHA65-REC1/A65_REC1-en.pdf#page=25>; and World Health Organization (WHO), 'Progress reports: WHO's response, and role as the health cluster lead, in meeting the growing demands of health in humanitarian emergencies', A67/40, 12 Mar. 2014, <http://who.int/gb/ebwha/pdf_files/WHA67/A67_40-en.pdf>.

[8] The 'Health Care in Danger Project' is an International Committee of the Red Cross (ICRC)-led project of the Red Cross and Red Crescent Movement, scheduled to run from 2012–15. It is aimed at improving the efficiency and delivery of effective and impartial health care in armed conflict and other emergencies.

[9] The AWSD is a global compilation of reports on major security incidents involving deliberate acts of violence affecting aid workers. See <https://aidworkersecurity.org/about>.

[10] Aid Worker Security Database, 'Security incident data for 2014', 2014, <https://aidworker-security.org/incidents/search?start=2014&end=2014&detail=1>. The AWSD is regularly updated, and data is subject to change as new information on incidents in 2014 becomes available.

zations (NGOs) to publicly report incidents.[11] Other security incidents may remain unreported due to the sensitive nature of the incident (e.g. sexual assault) or fears of retaliation by the actors granting access to aid organizations (e.g. host governments, paramilitary groups and non-state actors). There are also two specific gaps in the AWSD. By focusing on major security incidents in a 'humanitarian relief context', it neglects other types of violence and obstruction (such as bullying, threats and harassment at checkpoints), as well as violence against people working in non-humanitarian settings. Consequently, an assault in the Dadaab refugee camps in northern Kenya would be reported, but an assault on an emergency room nurse in Nairobi would not, even though the underlying systemic causes for the violence might have been the same. The AWSD is transparent and explicit about the scope of its focus. However, as its data is widely used in the media and by international organizations, more attention is given to those specific categories of violence used in the database than others.

The widespread perception (within the media, advocacy and expert communities) that violence against aid workers has increased over the past two decades is largely supported by both the AWSD and the Security in Numbers Database (SIND).[12] During a speech in a high-level debate on the sidelines of the UN General Assembly in 2014, for example, Dr Margaret Chan, Director-General of the WHO, concluded that 'attacks are not just continuing. They are increasing'.[13]

There are multiple explanations for this perceived increase. First, the absolute number of aid workers has increased, although the Overseas Development Institute's Humanitarian Policy Group has argued that the growing 'humanitarian footprint' does not fully explain the upsurge in the number of incidents, as the relative number of victims per 10 000 aid workers has also increased over time.[14] Second, reporting is much more systematic than it has been in the past and large-scale incidents, particularly severe conflict or health emergencies, can affect global numbers and trends. Third, the perceived increase may be linked to awareness—the perception that violence is increasing may lead to an increase in the number of observations of it. Fourth, there is a knowledge gap regarding the geographical distribution of humanitarian workers, which can bias the analysis

[11] Stoddard, A., Harmer, A. and DiDomenico, V. 'Providing aid in insecure environments: 2009 update—trends in violence against aid workers and the operational response', Overseas Development Institute, Report no. 34, 2009.

[12] Wille, C. and Fast, L. A., 'Operating in insecurity: shifting patterns of violence against humanitarian aid providers and their staff (1996–2010)', *Insecurity Insight Report*, vol. 13, no. 1 (Apr. 2013), pp. 1–27; and Fast, L. A., 'Mind the gap: documenting and explaining violence against aid workers', *European Journal of International Relations*, vol. 16, no. 3 (Sep. 2010), pp. 365–89.

[13] 'WHO condemns rising violence against health care workers, patients', WHO, 25 Sep. 2014, <http://www.who.int/hac/events/HCWviolence/en/>.

[14] Stoddard, Harmer and DiDomenico (note 11).

of aggregated data. For instance, a large number of security incidents in a single region may inflate national-level numbers.[15]

Some analysts who support the notion that violence is increasing have also developed overarching narratives to explain the perceived increase in violence (e.g. 'politicization and militarization of aid', the 'shrinking humanitarian space' and 'loss of impartiality and neutrality'). It is difficult and at times misleading to apply these macro-level concepts to single, often highly contextual, security incidents.[16] Systems thinking would seek to calibrate the analysis to the appropriate level of the process. For example, in many cases, the motivations of perpetrators are complex: often the attacks are made by individuals for personal motives, such as personal enmities or gain (e.g. robbery), which can occur within a wider geo-political context, including backdrops of war or terrorism.[17]

Regardless of whether the violence is targeted at health workers in their occupational role, for personal reasons or indiscriminately (and it is very difficult to determine intent), these incidents often have significant consequences and amplifying feedback into systems of health delivery. For instance, in August 2013 Médecins Sans Frontières (MSF) closed all its programmes in Somalia, following a series of violent attacks against its staff, which occurred over a five-year period. MSF also noted an increasing acceptance of violence against its staff. Parties with whom MSF had negotiated access were sometimes even involved or actively supported this violence.[18]

During the eight months prior to the suspension of all activities, MSF had provided over 300 000 patients with outpatient consultations, treated 15 600 patients in feeding centres and administered 28 600 routine vaccinations.[19] Clearly, therefore, its decision to withdraw from Somalia had significant consequences. While decisions of this magnitude are rare, the outcome illustrates the importance of unobstructed access and the safeguarding of healthcare. Next, two cases from 2014 are described in more detail, with a focus on their complexity and context, as well as their impact on the system of health delivery.

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[15] Dandoy, A. and Pérouse de Montclos, M.-A., 'Humanitarian workers in peril? Deconstructing the myth of the new and growing threat to humanitarian workers', *Global Crime*, vol. 14, no. 4 (2013), pp. 341–58.

[16] Fast, L., *Aid in Danger: The Perils and Promise of Humanitarianism* (University of Pennsylvania Press: Philadelphia, 2014); and Irwin, R., *Violence against Health Workers in Complex Security Environments*, SIPRI Background Paper, Nov. 2014 (SIPRI: Stockholm, 2014), <http://books.sipri.org/files/misc/SIPRIBP1401.pdf>.

[17] Irwin (note 16); and Aid Worker Security Database (note 10).

[18] Médecins Sans Frontières, 'International Activity Report 2013', 2013, <http://www.msf.org/sites/msf.org/files/msf_activity_report_2013.pdf>, p. 8.

[19] Médecins Sans Frontières (note 18).

Violence against healthcare workers in 2014

In 2014 there was a wide range (in terms of perpetrators, type of attacks and motives) of violent incidents involving health workers. Occasionally, some of these incidents of violence and denial of access even forced organizations to temporarily suspend all, or parts of, their operations. The following is a brief, indicative synopsis of a number of these events and their implications for health delivery:

1. On 3 January 2014, a Somali national working for the Global Polio Eradication Initiative in Somalia was abducted by suspected al-Shabab affiliates. According to reports, the abductors' motive was the suspicion that polio workers were spies.[20]

2. In January, five international MSF health workers were abducted in northern Syria. Though the abducted staff members were later released, the incident forced MSF to close its hospitals as well as two of its health centres in the Jabal Akkrad region, diminishing capacity already reduced by war.[21] In the aftermath of the release, Joanne Liu, International President of MSF, concluded that 'the direct consequence of taking humanitarian staff is a reduction in lifesaving aid. The long-term victims of this abduction are the Syrian population'.[22]

3. On 21 July, the al-Aqsa Martyrs Hospital in Gaza was shelled by tanks, leaving the surgical ward and intensive care unit severely damaged, and resulting in 10 fatalities and 70 wounded, including health workers and patients.[23]

4. In July, the ICRC evacuated all international staff members from Libya following escalating violence, including the murder of a Swiss employee in Sirte. Operations in the field have since been managed by the organization's 140 national employees and through support by the Libyan Red Crescent. The security situation has disrupted health delivery and access to medicines in major cities, such as Tripoli and Benghazi.[24]

5. Other incidents that led to temporary suspensions of activities on local and regional levels, included: the looting of a MSF compound in Malakal, South Sudan; an armed robbery of an MSF hospital in Boguila, Central

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[20] Aid Worker Security Database (note 10).

[21] WHO, 'Syrian Arab Republic: donor update 2014 (Q2)', Regional Office for the Eastern Mediterranean, 2014, <http://www.emro.who.int/images/stories/syria/documents/WHO_Donor_Update_Q2.pdf>.

[22] Médecins Sans Frontières, 'Five MSF Staff Held in Syria Released', Press release, 15 May 2014, <http://www.doctorswithoutborders.org/news-stories/press-release/five-msf-staff-held-syria-released>.

[23] Solberg, K., 'Gaza's health and humanitarian crisis', *The Lancet*, vol. 384, no. 9941 (Aug. 2014), pp. 389–90.

[24] ICRC, 'Libya: ICRC delegate murdered in Sirte', Press release, 4 June 2014, <https://www.icrc.org/eng/resources/documents/news-release/2014/06-04-libya.htm>; and ICRC, 'Libya: tens of thousands affected by fighting', 11 Dec. 2014, <https://www.icrc.org/en/document/libya-tens-thousands-affected-fighting#.VOsp1UJN25Q>.

African Republic, that resulted in 18 fatalities, including three MSF employees; and an increase in insecurity in the area surrounding the Al Nasser General Hospital in Ad Dhale, Yemen, where MSF had been providing support.[25]

Not all interruptions in fragile healthcare systems are directly due to physical violence. There were also two significant cases of 'denial of access' in 2014: in Sudan and Myanmar.

In 2013 the ICRC provided over 1.5 million people in Sudan with humanitarian assistance, including 70 000 medical consultations, services to over 6 000 disabled people at the ICRC's orthopaedic centres and improvements of access to clean drinking water for more than 700 000 people.[26] However, on 1 February 2014, the ICRC was ordered by the Sudanese Government to suspend all its operations due to 'technical issues'. The organization was allowed to resume operations again in late September 2014, but seven months of absence resulted in diminished capacity.[27]

In February 2014 MSF was expelled from the Rakhine state in Myanmar by the country's government, following a claim by MSF that it had treated people it believed to be victims of sectarian violence. In July 2014, MSF was permitted to start operating in a few communities with mobile primary health care teams, in collaboration with the Ministry of Health, and was eventually allowed to resume most if its operations five months later in December.[28]

While these examples offer a glimpse into the type of direct and indirect violence health workers face, it is necessary to explore two case studies (in West Africa and Pakistan) in more detail in order to fully appreciate what a systems approach can bring to understanding violence against health workers.

The Ebola outbreak in West Africa

In March 2014 the first cases of Ebola virus disease (EVD) were reported in Guinea and later similar reports followed in the neighbouring countries

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[25] Médecins Sans Frontières, 'South Sudan: MSF forced to suspend activities in Malakal', Press release, 17 Jan. 2014, <http://www.doctorswithoutborders.org/news-stories/press-release/south-sudan-msf-forced-suspend-activities-malakal>; Médecins Sans Frontières, 'Médecins Sans Frontières in Central African Republic: crisis update May 2014', 2014, <http://www.lakare utangranser.se/sites/sweden/files/en_2014_may_crisis_update_low_res.pdf>; and Médecins Sans Frontières, 'Yemen: MSF suspends activities in Ad Dhale following security concerns', 15 Feb. 2014, <http://www.msf.org/article/yemen-msf-suspends-activities-ad-dhale-following-security-concerns>.

[26] ICRC, 'Facts and figures (Sudan)', 7 Mar. 2014, <https://www.icrc.org/eng/where-we-work/africa/sudan/sudan-facts-and-figures-2011-12-02.htm>.

[27] ICRC, 'Sudan: ICRC set to resume its humanitarian work', News Release, 22 Sep. 2014, <https://www.icrc.org/en/document/sudan-icrc-set-resume-its-humanitarian-work#.VOsygUJN25Q>.

[28] Médecins Sans Frontières, 'Myanmar: MSF restarts basic medical activities in parts of Myanmar's Rakhine State after nine-month absence', 20 Jan. 2015, <http://www.msf.org/article/myanmar-msf-restarts-basic-medical-activities-parts-myanmar's-rakhine-state-after-nine-month>.

Liberia and Sierra Leone. Due in part to the three countries' weak health systems and history of instability, this EVD outbreak quickly became the most severe one to date and in August 2014 the WHO declared it a Public Health Emergency of International Concern (PHEIC).[29]

Fear and mistrust hindered responses to EVD, confirming a pattern seen in other disease outbreaks. Stigmatization and discrimination of people with Asian appearance was prevalent during the SARS outbreak in 2003, for example, and Native Americans were stigmatized during the Hantavirus epidemic in southern USA in 1993.[30] When trust is missing within a society or between nationals and internationals, health workers can be stigmatized, often due to their contact with sick people. For instance, during an earlier outbreak of EVD in the Democratic Republic of Congo (DRC), many people drew the conclusion that EVD originated from the health facilities and that health workers were actively killing people, since most deaths occurred inside those facilities.[31] During another outbreak in Uganda, local nurses working with international (mainly Western) health workers were suspected of selling patients (both alive and deceased) to Western buyers. These rumours were spread due to a general distrust in Westerners and the fact that relatives were not allowed to see the deceased persons' bodies. This led not only to delays in health-seeking behaviours, but also had amplifying feedback into violence, with threats targeted against national health workers and destruction of property.[32]

Similar patterns emerged during the EVD outbreak in Western Africa. In Liberia, there were rumours that health workers were harvesting organs from unconfirmed EVD patients and many people remained sceptical about the reality of the disease.[33] In Guinea, rumours (in some parts of society) that health workers were spreading the disease were possibly fuelled by the reality that people who lost relatives in EVD treatment centres were not always allowed to see the bodies of their loved ones due to the limited capacity of the centres to handle such requests in a safe way.[34] Since EVD is highly infectious in recently deceased people, and remains infectious for several days post-mortem, high levels of safety procedures are required

[29] WHO, 'Ebola virus disease', World Health Organization, Fact Sheet no. 103, 2014, <http://www.who.int/mediacentre/factsheets/fs103/en/>.

[30] Person, B. et al., 'Fear and stigma: the epidemic within the SARS outbreak', *Emerging Infectious Diseases*, Centers for Disease Control and Prevention (CDC), vol. 10, no. 2 (Feb. 2004), <http://wwwnc.cdc.gov/eid/articles/issue/10/2/table-of-contents>.

[31] Hewlett, B. L. and Hewlett, B. S., 'Providing care and facing death: nursing during Ebola outbreaks in Central Africa', *Journal of Transcultural Nursing*, vol. 16, no. 4 (Oct. 2005), pp. 289–97.

[32] Hewlett and Hewlett (note 31).

[33] Józwiak, K., 'Ebola crisis in Liberia brings rumours, hygiene lessons and hunger', *The Guardian*, 9 Aug. 2014.

[34] Sandner, P., 'Attacks on health workers hamper Ebola fight', *Deutsche Welle*, 18 Feb. 2015.

when handling and burying bodies of potential EVD victims.[35] These procedures often stand in stark contrast to traditional funeral rites and can generate hostility and violence from relatives and communities. EVD workers and burial teams are highly stigmatized and have repeatedly been targeted with both verbal and physical abuse, mainly due to misconceptions of how the disease spreads.[36]

In mid-September 2014, seven members of an EVD response team (including health workers, government officials and journalists) were killed by an armed crowd of villagers in Wome, south-eastern Guinea.[37] A government spokesperson noted that the attack came just as the international community was mobilizing to aid the affected country in its struggle to contain the outbreak.[38]

As in Guinea, the situations in Liberia and Sierra Leone deteriorated in the latter part of summer 2014. Health workers increasingly faced a double threat: contracting the virus and being attacked or killed. Health workers and burial teams were chased away, hospitals were threatened with arson and in August an armed crowd of villagers raided an EVD treatment centre in Liberia, where patients were forced to flee and thus risked infecting others.[39]

The wave of fear and mistrust is also partly attributed to the fact that EVD is a new disease within these countries and the populations have misgiving about the countries' weak health systems. All three countries were increasing their health expenditure prior to the outbreaks, however the spending remained at comparably low levels. Additionally, much of this spending was targeted at addressing specific diseases, and there were no resources or capacity to build resilience for a sudden and unanticipated crisis.[40] Insufficient efforts to educate people about the disease and poorly planned government interventions were other drivers of violence against

[35] Prescott, J. et al., 'Ahead of print: postmortem stability of Ebola virus', *Emerging Infectious Diseases*, Centers for Disease Control and Prevention (CDC), vol. 21, no. 5, May 2015.

[36] ICRC, 'Red Cross Red Crescent denounces continued violence against volunteers working to stop spread of Ebola', News release, 12 Feb. 2015, <https://www.icrc.org/en/document/red-cross-red-crescent-denounces-continued-violence-against-volunteers-working-stop-spread#.VQAuPEJN25Q>.

[37] International Federation of Red Cross and Red Crescent Societies (IFRC), 'Red Cross condemns killing of personnel working to stop the spread of Ebola', Press release, 20 Sep. 2014, <http://www.ifrc.org/en/news-and-media/press-releases/africa/guinea/red-cross-condemns-killing-of-personnel-working-to-stop-the-spread-of-ebola/>.

[38] Presidence de la République de Guinée, 'Drame de Womey, Communique du Gouvernement' [Drama Wome, Communicates Government], Press release, 18 Sep. 2014, <http://www.presidence.gov.gn/index.php/component/content/article/20-communique-de-presse/342-drame-de-womey-communique-du-gouvernement>.

[39] 'Ebola-infected patients driven from treatment centre in Liberia', *The Guardian*, 17 Aug. 2014.

[40] WHO, 'High level meeting on building resilient systems for health in Ebola-affected countries', Geneva, 10–11 Dec. 2014, <http://www.who.int/csr/resources/publications/ebola/hs-meeting.pdf>.

health workers in the affected countries.[41] In remote communities where access to public information is scarce or non-existent, ignorance, super-stition and rumours impede education programmes. Further, as EVD is new to these societies and health workers arrived shortly after EVD cases began to occur, the mistaken connection was made that health workers were the ones spreading the disease.[42] As noted by Dr Margaret Chan, fear generates hostility, which in turn affects the security of national and inter-national health workers.[43]

In the case of highly infectious diseases such as EVD, attacks on health workers and patients may not only disrupt health delivery, but can also contribute to the spread of disease. The closure of a health facility in one region may lead to patients not seeking health care and consequently infecting others. The fact that EVD remains infectious post-mortem requires health workers to handle corpses with extreme care, which hinders people from exercising traditional funeral rites. This in turn gener-ates rumours—for example, that patients are being killed in health facilities or are being harvested for organs—that increase fear and stigmatizes health workers, making them targets of violence. When health workers are not able to perform their duties due to obstructions or safety issues, the deadly infection continues to spread, instilling more fear and fuelling the vicious cycle.

Polio eradication in Pakistan

In 1988 the Global Polio Eradication Initiative (GPEI) set out to eradicate polio globally by 2000. Today, polio remains endemic in three countries: Afghanistan, Nigeria and Pakistan. These are all fragile states according to the Organization for Economic Co-operation and Development (OECD) and are perceived as environments where conflict and insecurity have con-tributed to fragile immunization systems. A key challenge in Pakistan has been violence targeted at polio workers. In the period December 2012–February 2013, more than 20 polio workers (the majority of them women) were killed in Pakistan.[44] These attacks have continued in 2013 and 2014.

In mid-January 2014 three polio workers were shot dead by four gun-men. The attack took place less than a day after the launch of a local vaccin-

[41] Sirkin, S. and Rubenstein, L. S., 'Fear, trust and attacks on Ebola workers', Safeguarding Health in Conflict Coalition, 24 Sep. 2014, <http://www.safeguardinghealth.org/fear-trust-and-attacks-ebola-workers>.

[42] IFRC, 'Using a multi-faceted approach to stop the transmission of Ebola virus disease', 3 July 2014, <http://www.ifrc.org/en/news-and-media/news-stories/africa/guinea/using-a-multi-faceted-approach-to-stop-the-transmission-of-ebola-virus-disease-66280/>.

[43] Chan, M., 'Ebola virus disease in West Africa—no early end to the outbreak', *New England Jour-nal of Medicine*, vol. 371, no. 13 (Sep. 2014), pp. 1183–85.

[44] Irwin, R., 'The polio endgame: update from the 132nd Executive Board', *Health Diplomacy Monitor*, vol. 4, no. 1 (Feb. 2013), pp. 4–5.

ation drive in Karachi and the incident forced local authorities to suspend the campaign.[45] In late May a female polio worker in Peshawar was violently abducted from her home, tortured, and repeatedly shot by a group of armed men. The day before her abduction, she had been participating in an anti-polio campaign organized by the provincial government.[46] Further, in November 2014, two armed men opened fire on a polio vaccination team in Quetta, resulting in four casualties and the suspension of a drive by the Baluchistan provincial Government to administer polio vaccines.[47] In a similar attack, a schoolteacher volunteering as a polio worker in Faisalabad was shot dead by two gunmen. Police officials stated that the attack was the result of a family dispute, but a militant group claimed responsibility for it. However, irrespective of the cause, the attack resulted in a temporary pause in the anti-polio campaign. Further, the polio workers and the schoolteachers also became involved in the campaign to protest against the insecurities.[48]

Seen through a systems lens, violence targeted at immunization campaigns is an output of the fragile systems in Pakistan. While healthcare providers' first response to such attacks may be to withdraw (thus disrupting their vaccination campaigns), a more lasting solution would require resolving the complex underlying structural conditions that contribute to these attacks.

As with the EVD outbreak in West Africa, drivers in this system include mistrust and misinformation. In this case, rumours were further fuelled by the revelation that the US Central Intelligence Agency (CIA) had used a Pakistani doctor to collect DNA in the search for Osama bin Laden, while posing as a Hepatitis B vaccinator.[49] There have also been attacks targeting polio workers as retaliation to US drone strikes.[50] Polio workers in fragile systems are easily accessible targets: in 2014, 80 per cent of the country's new polio cases were in the Federally Administered Tribal Areas (FATA)

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[45] Shams, S., 'Violence hampers polio eradication in Pakistan', *Deutsche Welle*, 22 Jan. 2014; and Bokhari, F. and Kazmin, A., 'Pakistan suspends polio vaccination campaign after team shot dead', *Financial Times*, 21 Jan. 2014.

[46] Boone, J., 'Pakistan polio vaccinator's murder by militants raises health workers' fears', *The Guardian*, 25 Mar. 2014.

[47] Agencies, 'Polio workers killed in Pakistan attack', Al Jazeera, 26 Nov. 2014, <http://www.aljazeera.com/news/asia/2014/11/polio-workers-killed-pakistan-attack-2014112655685 4951.html>.

[48] Islam, S., 'Polio worker shot dead in Faisalabad', *Express Tribune*, 10 Dec. 2014, <http://tribune.com.pk/story/804505/polio-vaccinator-shot-dead-in-faisalabad/>; Khan, R., 'Attack on workers: Polio campaign halted in Faisalabad', *Express Tribune*, 10 Dec. 2014, <http://tribune.com.pk/story/804444/attack-on-workers-polio-campaign-halted-in-faisalabad/>; and Saleem, M., '"Bad blood" led to polio worker's killing', Dawn.com, 1 Jan. 2015, <http://www.dawn.com/news/1154358>.

[49] Irwin (note 16).

[50] Irwin (note 16).

and the Khyber Pakhtunkhwa province (KPK).[51] FATA and KPK are also the two provinces in Pakistan most affected by political violence.[52]

However, the triggers for the attacks against polio workers in Pakistan are far more complex and are not solely politically motivated. Other important factors include scepticism towards the vaccine's efficacy, a lack of trust in the weak health system and religious objections.[53] Regardless of the motives, the attacks all impact significantly on immunization. Even personally motivated attacks can have severe implications since they instil fear among vaccinators.

Costly lessons from Nigeria suggest a way forward. In 2003 five northern states in Nigeria staged a boycott of the polio vaccine. The boycott was based on deeply rooted misconceptions and the only lasting solutions involved overcoming socio-economic marginalization, weak health systems, objections from formal and informal leaders, corruption and violence.[54] The boycott and the failure to quickly resolve the situation had catastrophic consequences for polio eradication, allowing the disease to spread to 20 countries in the region and beyond, generating costs of over $500 million to control the outbreak.[55]

Pakistan presents similar challenges today; targeted attacks against polio workers and regional bans on polio vaccination are responsible for both the increasing number of polio cases in Pakistan and for the recent importations of polio from Pakistan to Afghanistan and Syria.[56] In May 2014 the WHO International Health Regulations Emergency Committee agreed that all conditions had been met for labelling the international spread of polio as a PHEIC.[57] As the incidence of polio in Pakistan increased by more than 300 per cent from 2013–14, it is crucial to urgently bring an end to attacks against polio workers.[58] This is a complex task, but lessons from Nigeria,

[51] End Polio Pakistan, 'Polio cases in provinces', [n.d.], <http://www.endpolio.com.pk/polioin-pakistan/polio-cases-in-provinces>.

[52] Shapiro, J. and Gulzar, S., 'Political violence in Pakistan: myths vs. reality', Policy Brief, International Growth Centre (IGC), 2014, <http://www.theigc.org/wp-content/uploads/2014/09/Rais-Et-Al-2012-Policy-Brief.pdf>.

[53] Larson, H. J., 'Bittersweet start to the year for polio', Centre on Global Health Security, Chatham House, 21 Jan. 2013, <http://www.chathamhouse.org/media/comment/view/188723>; and Irwin (note 16).

[54] Ghinai, I. et al., 'Listening to the rumours: what the northern Nigeria polio vaccine boycott can tell us ten years on', *Global Public Health: An International Journal for Research, Policy and Practice*, vol. 8, no. 10 (Dec. 2013), pp. 1138–50.

[55] Kaufmann, J. R. and Feldbaum, H., 'Diplomacy and the polio immunization boycott in northern Nigeria', *Health Affairs*, vol. 28, no. 4 (July-Aug. 2009), pp. 1091–1101.

[56] Moturi, E. K. et al., 'Progress toward polio eradication—worldwide, 2013–2014', *Center for Disease Control and Prevention, Morbidity and Mortality Weekly*, vol. 63, no. 21 (May 2014), pp. 468–72.

[57] WHO, 'WHO statement on the meeting of the International Health Regulations Emergency Committee concerning the international spread of wild poliovirus', 5 May 2014, <http://www.who.int/mediacentre/news/statements/2014/polio-20140505/en/>.

[58] End Polio Pakistan (note 51).

where a comprehensive set of tools were used to solve the situation, indicate that a systems approach may be necessary to identify sustainable solutions.

Conclusions

Although there is a common perception within the media, advocacy and expert communities that violence against health and humanitarian aid workers increased in 2014, more empirical evidence is needed to draw any definite conclusions about trends and patterns. There are still significant barriers to quantitative analysis, including the lack of standardized global reporting systems, robust aggregate data and consistency in key terms and definitions. However, since the impact of violence has wide-reaching implications for public health and health service delivery, addressing this issue and why it is perceived to be increasing also necessitates a conceptual shift in the way attacks on health workers, facilities and transports are understood.

Violence against health workers in fragile systems takes place within wider social, cultural and economic contexts, which are in turn affected by external forces to varying degrees. Perpetrators are found in all parts of society and include state actors, partisan groups and other groups of individuals in a community. Attacks can be either deliberately targeted or indiscriminate, while attackers can be motivated by political ideologies, financial gain or personal enmities. In many cases, fear, rumours, misconceptions and distrust of and dissatisfaction with the health service delivery of a state have also been linked to violence.

In order to achieve lasting solutions, several factors need to be taken into consideration: the social relationships between service providers and the community; how information is disseminated; and how social capital and trust in the health system are mediated by and relate to other systems, at local, national and international levels. Addressing the public health issues that exist in fragile states is integral to reaching several other development goals.[59]

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[59] Newbrander (note 3).