Letters to the Editor
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Needlestick injury among healthcare workers of a tertiary care centre in Haryana, India

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Dear Editor,

Occupational exposure to pathogenic microbes as a result of needle stick injury (NSI) is associated with significant risk to a healthcare professional's career, health, families and also the patients.[1] In India, it is not known exactly how many occupation-related injuries occur each year, and as data is scarce, it is not possible to estimate an annual incidence.[2] Data from the EPInet system suggests that in an average hospital, workers incur approximately 27 NSIs/100 beds/year.[3] Injuries recorded through standard occupational reporting systems may underestimate the true injury rate, as much as tenfold.[3] This cross-sectional study was carried out to discover the incidence of NSI, probable reasons for getting it and to determine barriers in seeking care after NSI among healthcare workers (HCWs) of a tertiary care centre in Northern India.

A total of 300 HCWs of the MM Institute of Medical Sciences and Research, Mullana including 60 senior doctors, 125 junior doctors, 35 laboratory technicians and 80 staff nurses were selected for the study by simple random sampling method. A semi-structured interview schedule was used to collect data from the participants by interview.

Out of 300, 244 (80.5%) HCWs reported having had one or more NSI in their career, the maximum among the nursing staff (94.2%). The average number of NSIs was found to be 1.85 per HCW per year (±2.29 SD). NSI incidents were higher (64%) among the junior doctors (SRs, JRs and interns) followed by nurses (22%) and the laboratory technicians (9.7%) who are less likely to know the clinical history of the patient. The incidence was least among senior faculty members. Out of the 95 respondents, 32 (33.6%) attributed NSI as having been self-inflicted, while the remaining 63 (66%) reported that it was due to the carelessness of the patient, assistant or co-worker. A majority 58 (61%) of the NSI were from a hollow-bore type of needle, with solid-bore needles being involved in only 37 (38.9%) of incidents of injury. In 43% the injury occurred during use of the needle, with the greater part of injuries (49%) occurring after use but before disposal and 8% during disposal of the needle. The index finger was the commonest (68%) site of injury followed by the thumb (21%), the palm (7%) and the hand (4%).

Table 1: Procedures in different stages of needle use involving needlestick injuries.

S no.	Stages and Procedures	Frequency	%
During use of needle			
1	Passing a needle	5	5.2
2	Administrating injection	6	6.3
3	Drawing blood	6	6.3
4	Cleaning a needle with a swab	4	6.3
5	Suturing	9	9.4
6	Doing a specific procedure	11	11.5
After use but before disposal			
7	Recapping a needle	27	24
8	Bending or breaking by hand before disposal	20	25
During disposal			
9	Handling trash and dirty linen	5	5.2
10	Others	2	2
	Total	95	100

HCWs were also enquired about the perceived cause of their recent NSI. One-third (30.5%) ascribed fatigue as a cause of their injury. Twelve (12.6%) of those who suffered cited a lack of assistance as their reason for the NSI. Ten (10.52%) accepted that they lacked the skills required for performing the activity. Twenty-three (24.42%) considered the NSI due to being rushed. A further 74% of HCWs were wearing gloves at the time of NSI, which included senior doctors (83.3%), interns (45%), junior residents (42%), staff nurses (71%), student nurses (60%) and laboratory technicians (62%). Regarding practices that the HCW thought should be performed after sustaining the NSI, 290 (96.67%) respondents were of the opinion that washing the wound immediately with soap and water should be performed; 232 (77.33%) preferred to use antiseptics while 212 (70.67%) considered use of alcohol/chlorine/caustic agents after sustaining the NSI. A further 103 (34.3%) considered replacing gloves as an option while 82 stated that there is

no harm in putting the pricked finger into the mouth after sustaining NSI. Only 2 out of 95 HCWs had their blood tested immediately after the injury. These HCWs got themselves investigated for hepatitis surface antigen. A total of 101 (35%) respondents out of 300 were completely (three doses) immunised against hepatitis B and the rest 65% were either partially immunised or not immunised against this disease. The rate of immunisation was 20% among those who got the NSI and 43% among those without history of NSIs. Thus hepatitis B immunisation was significantly (p=0.0004) lower in HCWs with history of NSIs. Of participants, 23% thought that PEP is needed by all those who had had NSI whereas 56% were not sure about who should be given PEP.

Table 2: Reasons cited by respondents for getting needlestick injury

S no.	Reasons	Frequency	%
1	Lack of assistance	12	12.64
2	Lack of skill required	10	10.52
3	Fatigue	29	30.5
4	Due to being rushed	23	24.42
5	Negligence	12	13.68
6	Non cooperation from patient	9	9.47

Table 3: Reasons cited by participants for not reporting needlestick injury

S no.	Reasons	Frequency	%
1	No spare time	14	14.73
2	Low incidence of HIV/HepB/Hep C in the patient group	8	8.42
3	Not knowing where to report	18	18.94
4	Not knowing how to report	12	12.63
5	Fear of positive result affecting the career	2	2.1
6	No utility in reporting it	14	14.73
7	Fear of being considered unskilled	22	23.15
8	Other	5	5.26
	Total	95	

Thus, to reduce the burden of occupationally acquired infections in HCWs, increasing staff awareness and educating them on methods and precautions for preventing NSI is a felt need. An adequate NSI surveillance mechanism must be developed in the hospital and preventive practices like vaccinations for hepatitis B, institution of appropriate PEP, psychological support and counselling of affected HCWs and stringent follow-up must be ensured.

Sincerely,

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Organised terrorism: An emerging barrier for public health

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Dear Editor,

The recent declaration by the WHO [1] identifying the origin of the latest polio cases in China (the first since 1999) as from the poorly immunised areas of Pakistan (especially the Khyber and Federally Administered Tribal Areas or FATA) is worrying on several levels. The world has been on the brink of eradicating the dreaded polio virus for several years now, with endemicity being reported from only a handful of nations (like Pakistan, India, Nigeria and Afghanistan). The rising success rates in India[2] had also raised hopes of overpowering this pathogen until this latest tragedy struck.

According to the WHO, the poor coverage of vaccination in the inaccessible and security-compromised areas of Pakistan like the Khyber and FATA has led to a rise in the number of polio cases. Currently, the country is in the

clutches of a Wild Polio Virus type 1 (WPV 1) that has currently caused 99 cases compared to 50 WPV 1 cases overall at this time from last year.[2] Now the spread of the same virus to China and the imminent spread globally during the upcoming Hajj is a serious threat to global health. Again, it is particularly striking that all 10 cases reported from China this year have been reported from the Xinjiang Uygur autonomous region,[2] an area long known to be a focus of separatist, ethnic, religious and fundamentalist tension.[3]

The spread of polio cases now focuses the world on a rarely discussed issue in public health – organised terrorism as a barrier to public health and preventive medicine efforts. With insurgencies rife in several regions of Africa and allegations of organised terrorism running rampant in Southeast Asia, it is not often appreciated that sustained terrorism in a geographical area can have devastating effects on public health. While the focus of the world is always on events that cause "shock and awe" such as bomb blasts, airplane crashes, and killings, the more insidious and often unintended results are no less terrifying. A lack of immunisation due to a sustained lack of security in susceptible areas has led to a weakening of the herd immunity and has precipitated the calamitous rise in the number of cases of polio. Add to that the effects of globalisation and travel, especially in the context of events like Hajj when a large population of potentially infected people will make the journey to another country, and a major public health disaster is a distinct possibility.

The need of the hour is to control the efflux of the virus out of the endemic countries. Once the spread occurs to nations where there have been no routine immunisations for several years (and hence no or minimal residual herd immunity), the possibility of an epidemic cannot be ruled out. For that purpose, the first responsibility should be to limit the spread, followed by an aggressive campaign to bring the susceptible areas under immunisation schedules. The long-term goal should be to achieve stability and sustainable development in the strife-stricken areas and to bring these areas within the reach of organised healthcare delivery systems.

However this is easier said than done. Achieving such a Herculean task would require socio-economic and political goodwill of maximal dimensions and a lot of global support. With the socio-political, economic and cultural ramifications of such an event being numerous, it is time for public health professionals to acknowledge that with the changing scenario of the global crises, newer and unprecedented barriers are coming up to obstruct the proper dispensing of preventive measures. The real challenge lies not in apportioning blame but in mediating a solution to a potentially global problem.

Sincerely,

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