BioSpectrum the business of Bi
24 years of leveraging the business of Bio
www.biospectrumindia.co

Protecting India's Healthcare Workers

04 June 2026 | Views | By Atul Grover, ASSOCHAM Chairman of Medtech Council and Managing Director, BD India

Needlestick injuries, which can lead to bloodâ??borne infections, are a major concern in hospital settings

India’s healthcare system serves a vast and diverse population of over 1.4 billion people, making it one of the largest and most complex healthcare ecosystems globally. One of the key focus areas for healthcare institutions has been the occupational safety of healthcare workers (HCWs), as they are the backbone of the healthcare system and are exposed to several occupational hazards, including bloodâ??borne infections such as human immunodeficiency virus (HIV), hepatitis C virus (HCV), and hepatitis B virus (HBV), as well as exposure to cytotoxic drugs.

Among the various occupational health hazards, needlestick injuries (NSIs), which can lead to bloodâ??borne infections, are a major concern in hospital settings.

The cost of inaction includes increased treatment costs, workforce loss, and absenteeism. India’s nurse to population ratio of 1.7 per 1,000 is below WHO norms of 3 nurses per 1,000 population underscores the need for a proactive safety culture. We must transition to an integrated safety approach that addresses mechanical, chemical, and systemic risks simultaneously.

Scale of the Problem

India’s hospital-based studies suggest that NSIs are common (often affecting ~30–60% of healthcare workers (HCWs) annually in facility-level reports) and are significantly underreported, making them a major yet preventable occupational safety concern. In India, it is estimated that around 20,000 NSI incidents occur annually, as reported by the ICMR.

NSIs remain one of the most pervasive threats to healthcare workers. Studies indicate that 11.7% of HCWs in a hospital in Lucknow experienced an NSI within one year, while 79.5% of HCWs in Delhi reported experiencing at least one NSI during their careers. Globally, the prevalence of NSIs is approximately 44.5%.

Underreporting remains a critical issue, with only 30 – 70% of incidents being reported, leaving a substantial number of cases unaddressed and unmanaged.

Device and Transmission Risks

In a study conducted at a tertiary care center, needlestick injuries (NSIs) were most commonly associated with blood sample collection (42.86%), making it the leading cause. This was followed by IV cannulation (36.90%), which also contributed significantly. In comparison, surgical procedures accounted for a smaller proportion (13.09%), while needle detachment after use (7.14%) was the least common cause.

Overall, the majority of NSIs were linked to routine bedside procedures rather than surgical activities. These injuries carry a risk of transmission of HIV (0.3%), Hepatitis C (1.8%), and Hepatitis B (6–30% in nonâ??immunised individuals). Despite >95% vaccine protection against HBV, timely intervention remains critical, including adherence to the 72â??hour window for HIV postâ??exposure prophylaxis (PEP).

The Critical Gap: Adoption of Safety-Engineered Devices

Safety-engineered devices are proven to reduce injuries and are globally recommended, yet adoption in India remains inconsistent due to cost and regulatory gaps. The cost of inaction, however, far exceeds upfront investment. Only about 68% of healthcare workers receive post-exposure prophylaxis after reported injuries, as limited awareness, delayed access, stigma, and underreporting persist, while rising cytotoxic exposure amid cancer cases projected to exceed 1.5 million annually underscores the need for safety infrastructure and improved biomedical waste handling.

India’s nurse ratio remains below WHO standards and 30 to 50% of trained nurses migrate overseas. Fatigue from long shifts increases injury risk, with 58% of workers feeling unsafe and 63% citing inadequate safety protocols.

Prevention Pathways

Clinical studies have shown that safetyâ??engineered devices can prevent up to twoâ??thirds of needlestick injuries (NSIs), with the greatest benefit seen in IV safety technologies.

NSI prevention requires the use of safetyâ??engineered devices, adherence to safe practices (such as avoiding recapping and ensuring immediate disposal), and the implementation of robust training and reporting systems. It also involves promoting the use of personal protective equipment (PPE), vaccination, and prompt postâ??exposure care to reduce injury risk and protect healthcare workers.

Strengthening universal Hepatitis B vaccination, ensuring 24/7 access to postâ??exposure prophylaxis, and fostering nonâ??punitive reporting systems are critical to closing existing gaps, as protecting healthcare workers is essential for

building a resilient healthcare system in India.

Conclusion

Strengthening safety measures through proper training, availability of personal protective equipment (PPE), adherence to infection control practices, use of safetyâ??engineered devices, and supportive institutional policies is essential to safeguard healthcare workers and ensure quality patient care.

As India’s healthcare system continues to advance, protecting healthcare workers from preventable occupational injuries must remain a commensurate priority. Investing in safetyâ??engineered devices, implementing evidenceâ??based practices, and prioritizing worker wellâ??being are not optional—they are essential for building a sustainable and resilient healthcare system. The use of safetyâ??engineered devices can also generate cost savings for hospitals while helping achieve healthcare worker safety goals.

Atul Grover, ASSOCHAM Chairman of Medtech Council and Managing Director, BD India