

# Abstract #422: Needlestick Injuries With Insulin Injections: Risk Factors, Concerns, and Implications of the Use of Safety Pen Needles in the Asia-Pacific Region

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## BACKGROUND

**Insulin needles** are responsible for approximately 20% of all syringe-related NSIs.<sup>1</sup>

The global pooled prevalence of **NSIs** among HCWs is **44.5%**, with the highest occurrence of NSIs observed in **Southeast Asia**.<sup>2</sup>

59% of cases\*



Singapore<sup>3</sup>

26% of cases



China<sup>4</sup>

## RISK FACTORS<sup>5-7</sup>

Age

Inadequate training/education

Failure to observe precautions

Number of shifts per month

## COMMON CONCERNS RELATED TO NSI

- Physical effects and the risk of transmission of infections:** Fingersticks and injections administered to people with diabetes present a risk of blood exposure to the injector as well as other HCWs.<sup>8</sup>
- Psychological effects:** Stress, anxiety, and depression<sup>9</sup>
- Financial and reputational impact** on the organisation and healthcare workers<sup>10,11</sup>

## STRATEGIES TO PREVENT NSI<sup>12,13</sup>

- Education** on optimal insulin injection techniques
- Prioritize SENDs** over nonsafety devices
- In-house cost-benefit** analysis of SENDs
- Appropriate disposals** of sharps
- Adequate** staff-to-patient ratios
- Collaboration** within hospital administration
- Audits** of correct injection procedures
- Standardisation** of insulin administration practices

The annualised economic burden ranges differently in different countries

Singapore<sup>10</sup>

109.8k–563k USD

244 NSI cases

Japan<sup>11</sup>

302m USD

525k NSI cases

## CONCLUSION



**Continuous education, adherence, and introduction of SENDs can help prevent NSIs effectively.**



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## FOR FURTHER READING

This review highlights the burden, causes, and key strategies to prevent NSIs in HCWs and patients with diabetes in the APAC region. The benefits of SENDs over conventional devices in healthcare settings are also discussed.<sup>14</sup>

\*NSIs in the medical/surgical department.

APAC: Asia Pacific; HCW: Healthcare worker; NSI: Needle stick injury; SEND: Safety-engineered needle device; USD: United States dollar.

**References:** 1. International Safety Center. Needlestick and sharp object injury incident data from International Safety Center Exposure Prevention Information Network (EPINet®) Report [Internet]. Available at: <https://internationalsafetycenter.org/exposure-reports/>. Accessed on: 21 March 2022. 2. Bouya S, et al. *Ann Glob Health*. 2020;86(1):35. 3. Kuppusamy UD, et al. *Arch Emerg Med*. 2018;1(1):10–18. 4. Zhao HJ, et al. *Chin Nurs Manag*. 2011;45–47. 5. Habib H, et al. *Int J Collaborative Res Intern Med Public Health*. 2011;3(2):124–130. 6. Parsa-Pili J, et al. *Int J Occup Hyg*. 2014;5(4):191–197. 7. Zhang X, et al. *Workplace Health Saf*. 2015;63(5):219–225. 8. Strauss K. WISE Consensus Group. *Diabetes Metab*. 2012;38(Suppl 1):S2–S8. 9. Lee JM, et al. *Curr Med Res Opin*. 2005;21(5):741–747. 10. Seng M, et al. *Epidemiol Infect*. 2016;144(12):2546–2551. 11. Kunishima H, et al. *PLoS One*. 2019;14(11):e0224142. 12. US Centers for Disease Control and Prevention (CDC). Workbook for Designing, Implementing & Evaluating a Sharps Injury Prevention Program. Available at: <https://www.cdc.gov/sharpsafety/resources.html>. Accessed on: 02 November 2022. 13. Friel BA, et al. *J Nurs Care Qual*. 2022;37(1):14–20. 14. Mohamed M, et al. *JDST*. 2023;0(0): 1–10