

Enhancing Patient Safety and Nursing Efficiency through the Implementation of a MBLP System

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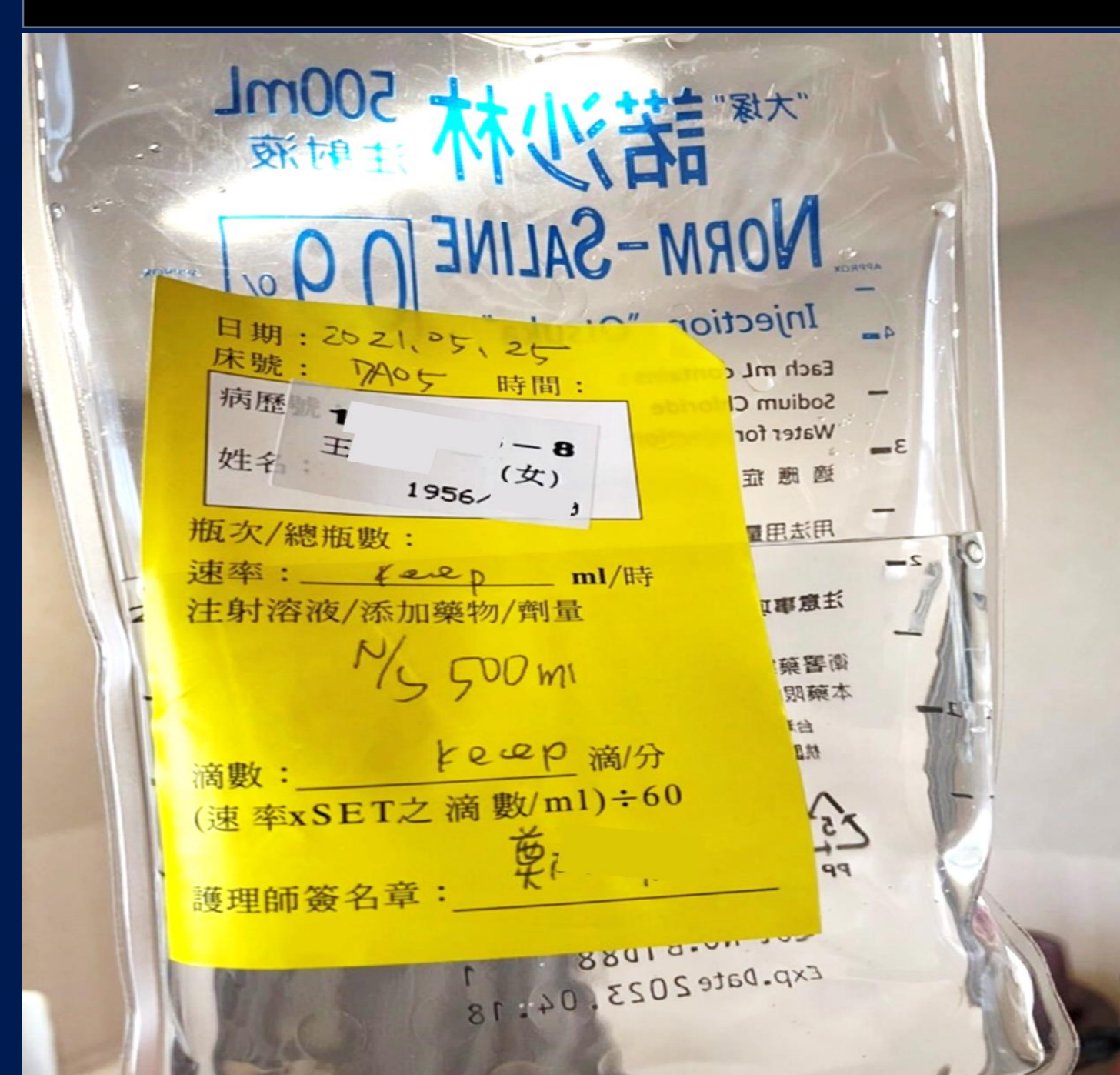
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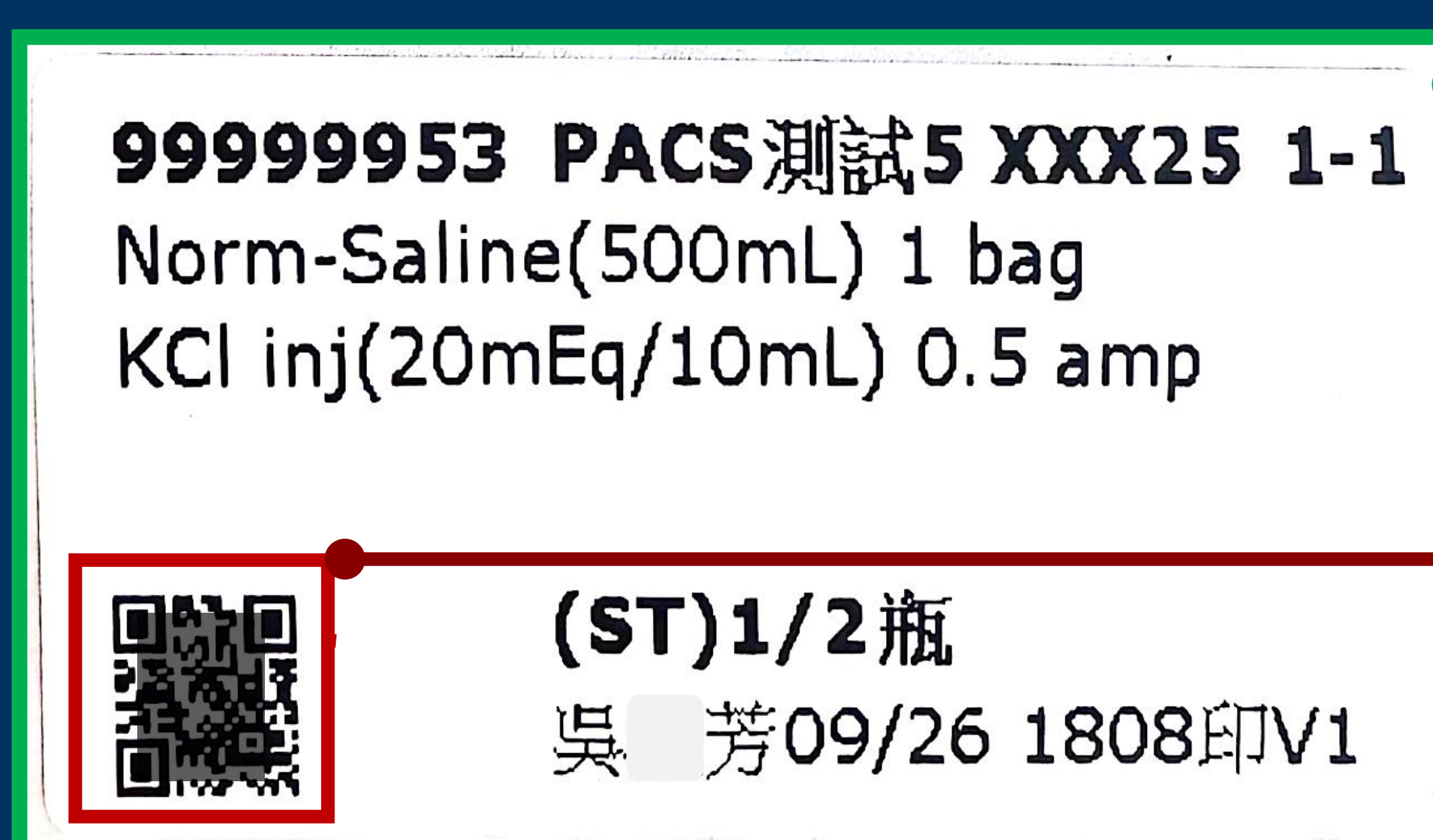
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- Human errors account for 80% of nurses' medication administration errors.
- Human factors such as distractions, interruptions, poor communication, fatigue, and time pressure contribute to these errors.
- BCMA technology can reduce manual transcription errors and lower human error rates by 50%.
- Studies show that barcode scanning reduces medication errors by over 50% and patient identification errors by 70%.
- Medication and patient identification errors can be significantly reduced through human factors engineering and system improvements in the medication process.

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Medication Barcode Label Printing System, MBLP



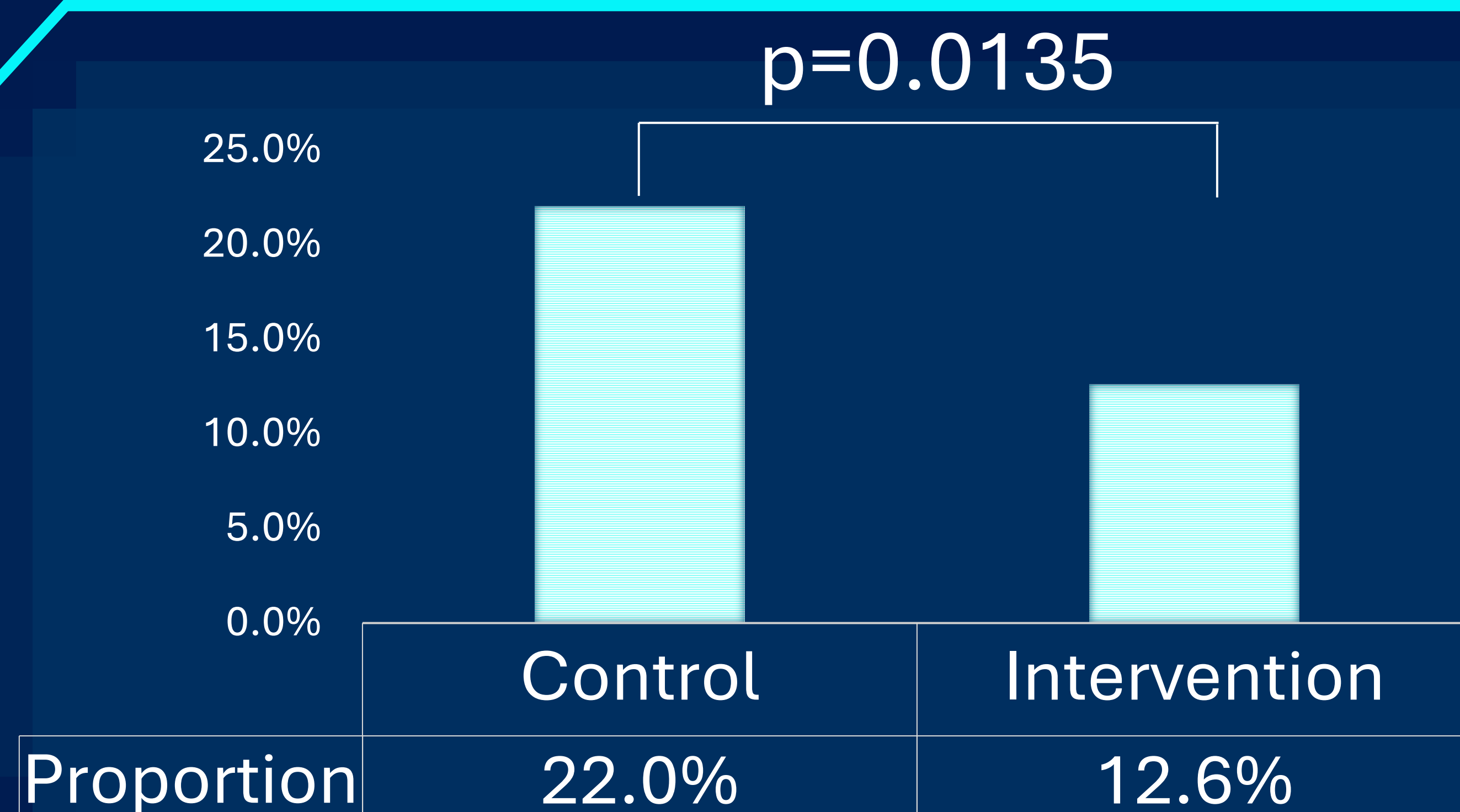
One-click printing

- Real-time integration with medical orders
- Recording and tracking print version history

Barcode scanning

- Double verification
- Mandatory verification of correct patient and medication

Figure 1. Comparison of the Proportion of Medication Errors Related to Patient or Drug Identification Between Intervention and Control Wards



- From 2020 to 2023, the hospital gradually implemented the Medication Barcode Label Printing System in wards.
- Wards with a higher proportion of medication errors were prioritized for MBLP system implementation.
- In the **control group** (wards without MBLP system), **22.0% (37/168)** of medication errors were related to patient or drug identification.
- In the **intervention group** (wards with MBLP system), only **12.6% (28/222)** of medication errors were related to patient or drug identification.

This study provides a successful case of using barcode technology to reduce medication errors among nurses. It also offers solid evidence for other healthcare institutions to adopt similar technologies, enhancing nursing efficiency, improving care processes, and increasing patient safety and care quality.



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