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Increasing Barcode Medication Administration (BCMA) To Improve Patient Safety

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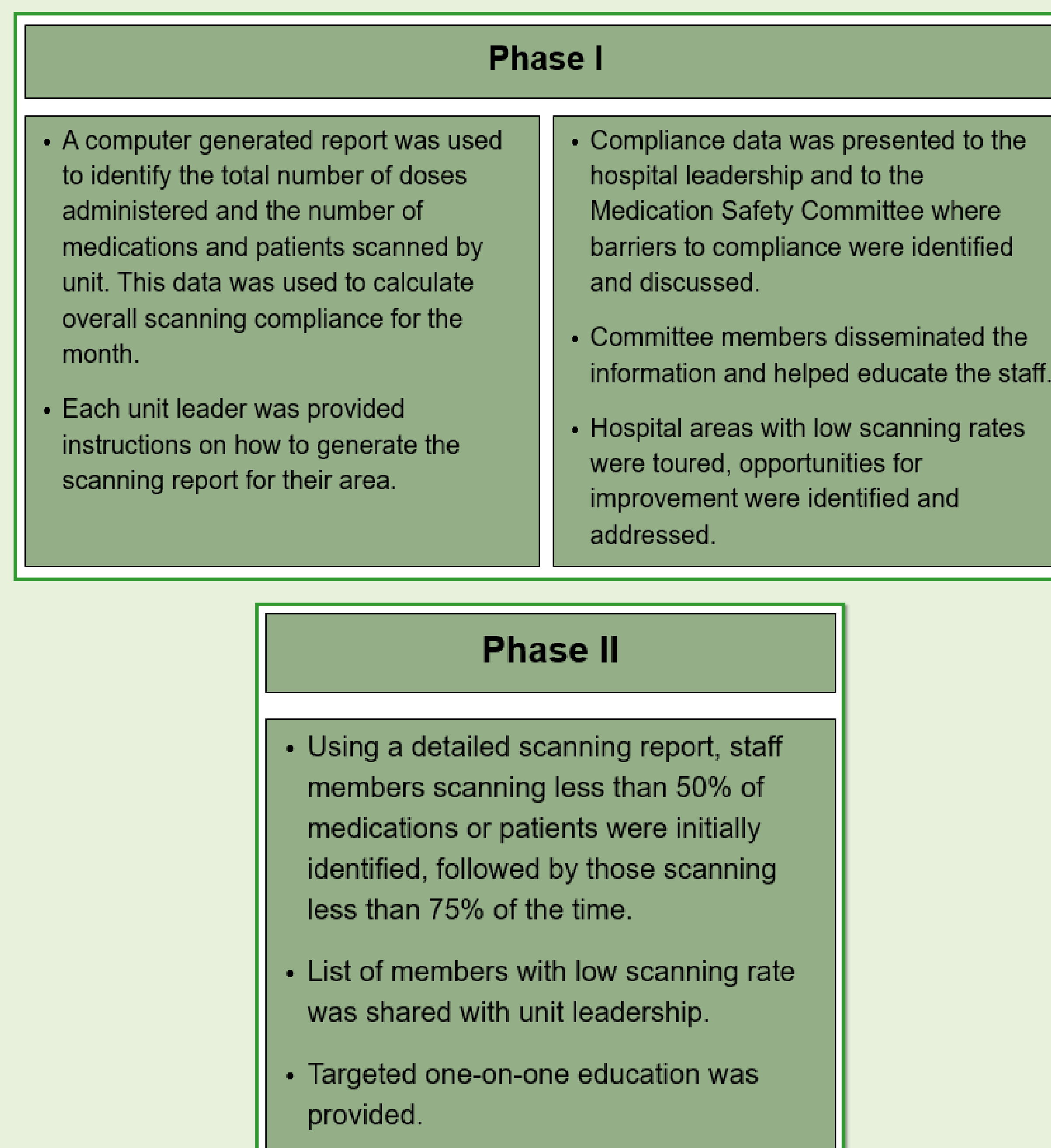
Background

- Medication errors frequently have catastrophic consequences for the patients, and place enormous financial burden on our health care system.

- The Institute of Medicine Report, "To Err is Human" published in 1999, estimated that medication errors account for more than 7,000 deaths annually, and many of them are preventable.

- Errors may happen at different stages of the medication use process, but most commonly take place at the point of administration.

- Barcode medication administration (BCMA) technology requires the nurse to scan the patient's wrist band, to ascertain the correct patient, and the medication barcode, to verify the right medication, dose, route and time, which are recognized as the "Five Rights" of medication administration.

- BCMA implementation has demonstrated to significantly reduce errors at the point of administration.

- The Leapfrog Group, a national organization and coalition of public and private purchasers of employee health coverage, has developed a national standard for BCMA which requires to have both, patient and medication scans in 95% of medication administrations in units where this technology has been implemented.

Purpose

- The purpose of this Performance Improvement project was to increase the rate of patient and medication scanning to meet the Leapfrog standard.

Methods

- A review of medication and patient scanning compliance was conducted from January 2018 to July 2019.

Phase I

- A computer generated report was used to identify the total number of doses administered and the number of medications and patients scanned by unit. This data was used to calculate overall scanning compliance for the month.
- Each unit leader was provided instructions on how to generate the scanning report for their area.

- Compliance data was presented to the hospital leadership and to the Medication Safety Committee where barriers to compliance were identified and discussed.
- Committee members disseminated the information and helped educate the staff.
- Hospital areas with low scanning rates were toured, opportunities for improvement were identified and addressed.

Phase II

- Using a detailed scanning report, staff members scanning less than 50% of medications or patients were initially identified, followed by those scanning less than 75% of the time.
- List of members with low scanning rate was shared with unit leadership.
- Targeted one-on-one education was provided.

Results

- During Phase I of the project, medication and patient scanning increased from 82% to 87%, and from 83% to 88% respectively. Phase II, which included identification and targeted one-on-one staff education, raised medication scanning to 95% and patient scanning to 97%.
- For the duration of the study, a total of 1,220,650 medications doses were administered. Overall, medication scanning compliance increased from 82% to 95%, while patient scanning compliance increased from 83% to 97%. This resulted in 16% improvement in medication scanning, 17% improvement in patient scanning, and 195,304 additional doses scanned.
- Barriers to scanning identified included insufficient number of scanners in the Emergency Department and medication barcodes not scanning properly.

Results

Medication Scanning — Goal 95%

Patient Scanning — Goal 95%
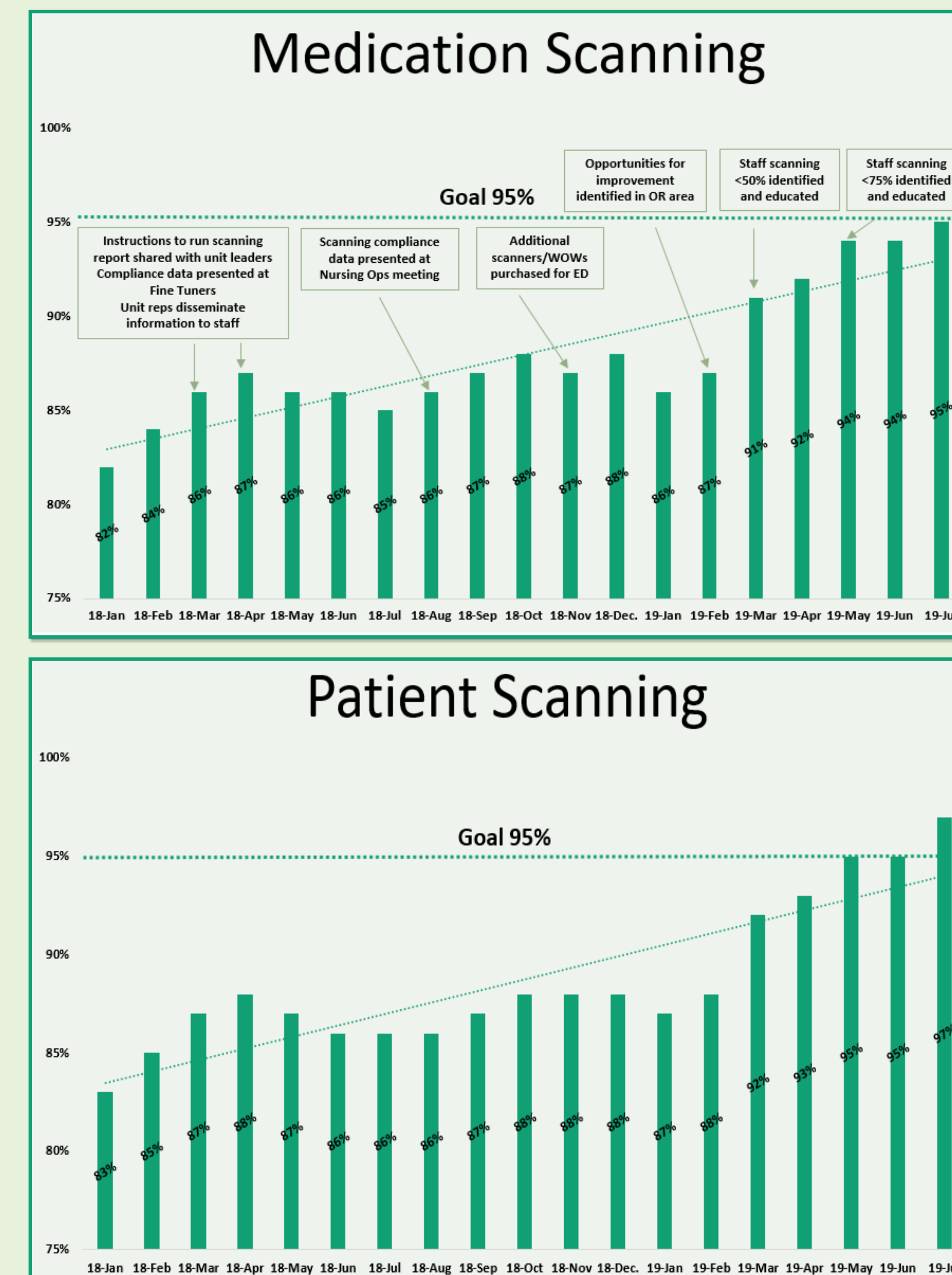
Conclusion

- Barcode medication scanning has shown to reduce medication errors at the point of administration. Interventions such as raising awareness of the importance of this measure, securing leadership support, targeted individual staff education, and identifying and addressing barriers to scanning, are tools that can be successfully implemented to increase compliance.

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