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## Implementation of a Tech-Check-Tech Program at an Academic Medical Center

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**Running title:** Implementation of a Tech-Check-Tech Program at an Academic Medical Center

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### Abstract:

**Objectives:** To implement a tech-check-tech (TCT) program at Rush University Medical Center (RUMC) and determine the effect on workflow, safety, and productivity.

**Methods:** This was a prospective, single-center study in the central inpatient pharmacy at RUMC. Technicians and student interns meeting predetermined criteria completed a three-step validation process to ensure competency. Medications included in the TCT pilot program were first doses, cart fill doses, and Pyxis replenishment. All included doses were dispensed from an automated dispensing carousel with closed-loop barcode scanning. The primary outcome was to assess the change in the mean number of minutes pharmacists spent on checking medications dispensed from the carousels pre- and post-TCT implementation. The secondary outcomes were to assess the number of medication errors pre- and post-TCT, as well as the perceptions and overall satisfaction of the TCT program for both pharmacists and technicians.

**Results:** The mean time spent by pharmacists checking medications before TCT implementation was approximately 270 minutes each day. This time was reduced by 87.7% after implementation of the TCT program with a daily mean time of 31 minutes. The total number of carousel dispensing medication errors did not differ greatly before and after TCT implementation. 100% of technicians and 77.8% of pharmacists either strongly agreed or agreed that the TCT workflow was at least as safe and effective as the previous workflow. Additionally, 80% of technicians and 77.8% of pharmacists strongly agreed or agreed that the TCT program increased their overall job satisfaction.

**Conclusion:** Implementation of a TCT program in the central inpatient pharmacy at RUMC was shown to save pharmacists time spent on dispensing tasks and allowed for additional patient-centered clinical activities. The pilot TCT program changed workflows and improved productivity while maintaining safety. Overall, this was perceived to benefit both pharmacists and technicians job satisfaction.

**Key Words:** pharmacist, pharmacy technicians, Tech-Check-Tech, safety, clinical, inpatient, academic medical center

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