Implementing Technician-Checking-Technician (TCT) Programs: A CSHP Toolkit
The CSHP TCT Toolkit includes:

- A general overview of TCT programs
- A brief history of TCT in California
- California Code of Regulations requirements
The CSHP TCT Toolkit includes (continued):

- Suggested components of a TCT Program
- A description of the TCT Process, including validation and quality assurance components
- A sample TCT Training Module
The CSHP TCT Toolkit includes (continued):

- Appendices
  - TCT Training Checklist
  - Initial Validation Form
  - TCT Audit Tool
  - QA Tracking Form
  - Annual Re-certification Form
A TCT Program should include:

- Validation and QA Process
- Quality Assurance Process
- TCT Training Checklist
- Initial Validation Form
- TCT Audit Tool
A TCT Program should include:

- TCT Audit Results
- TCT Monthly/Quarterly/Annual QA Tracking Form
- Technician Policy and Procedure
This toolkit is intended to provide inpatient hospital pharmacists the information necessary to implement a TCT program within their institution that is consistent with California regulatory requirements.

This toolkit was compiled by the California Society of Health-System Pharmacists (CSHP).
The Goal of a TCT Program

- To utilize specially trained pharmacy technicians to perform daily non-judgmental pharmacy functions, and allow the pharmacist to perform more clinical services.
Definition:

Automated Dispensing Cabinet (ADC)

- Secured device that stores and distributes applicable medications upon request and requires an electronic personnel identification system
Definition: Error in ADC or Cart fill

- An occurrence of a wrong drug, dose, route, concentration, quantity, dosage form, volume/dose, expired date in a line item (for ADCs) or a medication cart, poor integrity of package, missing expiration date, missing warning labels, omission of drug or “missing drug” label, patient name missing from the drawer (for medication cart) or broken/crushed tablet.

- A checking unit for ADC restocking (example: a single product of a specific drug and dose, regardless of quantity).
Definition: Tech-Check-Tech (TCT) Program

- A program utilizing specifically trained and qualified pharmacy technicians to check ADC medications and unit dose batches filled by another technician.
Definition: Technician Checker

- An individual who has completed the TCT validation process and is currently authorized to check another technician’s work.
- The checking technician may not check his/her own work.
Definition: TCT Coordinator

- The pharmacist responsible for assuring that all legal requirements of a TCT program are met.
- This may be the Pharmacist-in-Charge, Pharmacy Supervisor or a Designated Pharmacist.
Definition: Unit Dose

- A physical quantity of drug product designed to be administered to a patient specifically labeled to identify the drug name, strength, dosage amount and volume, if applicable.

- Unit dose examples include oral solids individually packaged by a manufacturer or re-packaged, oral liquids drawn up in a labeled oral syringe, injectable products, and pre-mixed IV products.
Definition: Unit Dose

- Unit dose cassettes or envelopes are modes of delivering a hospital inpatient’s medication doses for a predefined period of time, usually 24 hours.

- Cassette drawers or envelopes are labeled with the patient’s name and location and are typically delivered to the patient care area by a pharmacy technician.
Pharmacy technicians have been used in the hospital setting in California for decades.

CSHP has advocated for the authority for hospitals to implement TCT programs for many years.

Regulations authorizing TCT programs in the inpatient setting were first enacted by the California Board of Pharmacy on January 5, 2007.
A 2002 study published in the American Journal of Health-System showed a 99.89% accuracy rate for technicians which was higher than the 99.52% accuracy rate for pharmacists.
A subsequent two-year study at the same sites analyzed the impact of pharmacists re-deployed to provide direct patient care services and physician drug consultations as a result of the presence of a TCT program.
Study measured pharmacists’ impact

Intercepted 1855 errors

682 of which prevented potential harm, including the prevention of:

- four deaths
- permanent harm in 28 patients
- temporary harm in 590 patients
- an increase in the length of a patient’s hospital stay in 60 encounters

An additional 834 medication errors were prevented with the level of harm unspecified
Regulatory Authority for TCT Programs

- California Code of Regulations, Title 16, Division 17, Article 11, Section 1793.8
  - 1793.8. Technicians in Hospitals with Clinical Pharmacy Programs
Regulatory Requirements

- TCT only allowed in acute care inpatient hospitals
  - Pharmacists must be deployed to the inpatient care setting to provide clinical services
- Only for the filling of floor and ward stock and unit dose distribution systems
- Only for hospital patients whose orders have been previously reviewed and approved by a licensed pharmacist.
Compounded or repackaged products must have been previously checked by a pharmacist
Regulatory Requirements: TCT Program Components

- The overall operation of the program shall be the responsibility of the pharmacist in-charge.

- The program shall be under the direct supervision of a pharmacist and the parameters for the direct supervision shall be specified in the facility's policy and procedure.
Regulatory Requirements: TCT Program Components

- The pharmacy technician who performs the checking function must have received specialized and advanced training as prescribed in the policies and procedures of the facility.

- There shall be ongoing evaluation of programs that use pharmacy technicians to check the work of other pharmacy technicians.
Technician-Check-Technician Programs

Suggested Hospital and Technician Requirements
Hospital Requirements

When implementing a TCT program, a hospital should:

- Designate one pharmacist as the person responsible for assuring that all legal requirements associated with the TCT program are met.
  - This person shall be called the TCT Site Coordinator.
    - May be the Pharmacist-in-Charge, Pharmacy Supervisor, Designated Pharmacist, etc.

- Assure adequate staffing to support consistent utilization of the TCT program.
Hospital Requirements

When implementing a TCT program, a hospital should:

- Develop a written policy and procedure to guide the operation of the TCT program that may be made available to Board of Pharmacy inspectors upon request.
- Define a list of high-risk medications that may not be checked via the TCT program and include this list in the policy and procedure.
Hospital Requirements

- When implementing a TCT program, a hospital should:
  - Incorporate the TCT program into the hospital pharmacy department’s general orientation process.
Hospital Requirements

- A TCT program is a tool to allow the re-direction of pharmacists from performing distributive tasks to cognitive tasks.
  - It is designed to allow pharmacists to further improve patient safety by focusing on assessing the accuracy and appropriateness of the medications ordered and on educating staff and patients.
Hospital Requirements

- A TCT program should not be used as a mechanism to reduce the number of pharmacist staff.

- The Pharmacist-in-Charge should review all records on an annual basis to assure compliance with the hospital’s TCT program policies and procedures.
Technician Eligibility

In order for a technician to participate in a TCT program, a technician may fall into one of the following categories:

- A registered intern (in pharmacy school) with 6 months experience in unit dose filling.
- A technician working full or part time with one-year experience in unit dose filling.
The participating hospital should develop a TCT training module to formalize didactic training and quality control.
Technician Requirements

- All technicians must complete and pass a TCT training to participate in a TCT program.
- The goal of this training process is to have the technician checker become validated and accomplish all the necessary didactic objectives.
Technician Requirements

The training process should include the following:

- Didactic lecture (or equivalent training with a self-learning packet)
- Practical sessions (one-on-one training) that consists of observation of a pharmacist checking a unit dose medication batch and/or cart
- Validation shall include “Initial validation” and “On-going QA audits” performed quarterly for the first year; then once every six months
- Completion of the learning and testing module with a score of at least _____%
- Observation training that consist of observation of a pharmacist checking a cassette fill and/or ADM restocking.
Loss of Validation

- If at any time a TCT technician loses his/her validation, that individual must be reassigned to another task until he/she is retrained and revalidated.
Process

- A pharmacy technician fills the medication for the unit dose or Automated Medication Distribution System restocking batch.

- A validated technician checker may check the accuracy of unit dose batches or automated medication distribution system restocks. The technician checker reviews the medications for the correct drug, dose, dosage form, quantity and reviews the expiration date.
If a filling error is found, the technician checker records the error and the product is given back to the technician who originally filled it (if available) or another technician.

The technician then corrects the error and technician checker checks the correction.

A pharmacist or another validated technician checker must check any dose corrected/filled by a technician checker.
Process

- If a validated checker is not available, then all doses must be checked by a pharmacist.

- This process continues until all doses have been checked.
Validation and QA Process

- Initial Validation and re-validation if needed.
  - Unit of Use Batch
  - Automated Dispensing Cabinet (ADC)
Validation and QA Process

- **Unit of use Batch Initial validation**: the technician checker must obtain a 99.8% accuracy rate in 1500 consecutive doses divided into 5 separate audits.

- The audit process will consist of a registered pharmacist checking the accuracy of a unit of use medication after the technician has checked them. Any errors found must be reported and documented.
Validation and QA Process

- All audit results will be documented by the TCT Coordinator

- Each dose will count as one error. If the technician checker misses more than three errors in 1500 doses, they fail the validation.
Validation and QA Process

- **ADC**: For initial validation: the technician checker must obtain a 99.8% accuracy rate in 500 total line items divided in 5 separate audits.

- The audit process will be conducted by a registered pharmacist checking the accuracy of the ADC medications after the technician has checked them.
Validation and QA Process

- All audit results will be documented by the pharmacist and kept in the quality assurance file.

- Each dose will count as one error. If the technician checker misses more than one error in 500 doses, they fail the validation.
Quality Assurance Process

- The hospital TCT pharmacy coordinator shall maintain documentation of the quality assurance checks (audits).
- Audits should be conducted in the same manner as in the initial validation process.
- To maintain validation, no more than one error can be made.
Quality Assurance Process

- Note: The audit sample should be at least 300 doses for the unit of use batch and 100 line items for the ADC batch.

- If a technician does not perform the TCT duties for more than six months, that technician must be re-validated.
Quality Assurance Process

- If a validated technician checker fails any of the audits, the audit should be repeated in the same month.

- If the technician fails the re-audit, they should be reassigned to another duty and must be re-validated prior to checking any more doses.
Audit reports should include:

- The total number of errors, the total number of doses or line items checked and the percent error rate.

- If a technician does not perform the TCT duties for more than six months, that technician must be re-validated.
Attachment 1

TCT Training Checklist

Technician Name: ______________________________ Date: _____________

• Qualifications: (check all that apply)
  ___ A registered intern (in Pharmacy school) with six month’s experience in Unit Dose filling
  ___ A technician working full or part time in Unit Dose filling with one year’s equivalent experience

• Areas trained in as a Technician: (check all that apply)
  ___ IV  ___ First Fill  ___ Cart Fill
  ___ UD  ___ OR  ___ ED
  ___ ADC  ___ Billing  ___ Purchasing
  ___ Other __________

• TCT Training

  Didactic completed: ____________________________ (enter date)
  Process (1:1) completed: ________________________ (enter date)
  Quizzes completed: _____________________________ (enter date)
  Initial validation completed: _____________________ (enter date)
  T-C-T Training completed: ______________________ (enter date)
  On-Going validations scheduled: __________________ (enter dates)
  (recommended quarterly for first year, then yearly thereafter)
To obtain TCT validation, a 99.8% accuracy rate must be achieved.

Unit of Use Batch: Must achieve required accuracy rate in 1500 consecutive doses (divided in at least 5 separate audits). If candidate misses more than three errors they will fail the validation process.

ADC Batch: Must achieve required accuracy rate in 300 doses for unit of use and 100 line items in an ADC batch. If candidate misses more than one error they will fail the validation process.

A medication error when checking is considered any one of the following:

1. Wrong dose
2. Wrong route
3. Wrong concentration
4. Wrong number of doses
5. Wrong patient
6. Wrong volume/dose
7. Expired drug or poor integrity of package
8. Missing expiration date
9. Missing auxiliary labeling
10. Omission of drug or “missing drug” label
11. Patient name or “missing drug” label
12. Broken/crushed tablet

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<th># of Errors</th>
<th>Accuracy %</th>
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Unit of Use Batch

- Must achieve required accuracy rate in 1500 consecutive doses (divided in at least 5 separate audits).

- If candidate misses more than three errors they will fail the validation
Automated Dispensing Cabinet Batch

- Must achieve required accuracy rate in 300 doses for unit of use and 100 line items in an ADC batch. If candidate misses more than one error they will fail the validation process.
Medication Error Considerations

A medication error when checking is considered any one of the following:

- Wrong drug
- Wrong dose
- Wrong route
- Wrong concentration
- Wrong number of doses
- Wrong patient
- Wrong volume/dose
- Expired drug or poor integrity of package
- Missing expiration date
- Missing warning labeling
- Omission of drug or “missing drug” label
- Patient name missing from drawer
- Broken or crushed tablet
## Attachment 3

### TCT Audit Tool

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<th>TCT Technician being audited:</th>
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### Audit Results

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Attachment 4
Tech-Check-Tech Monthly/Quarterly/Annual QA Tracking Form

Each new TCT must complete 1500 consecutive doses (in 5 separate audits) of Unit of Use batch fill/Cassette Fill and 500 doses of ADC medication fills (in 5 separate audits) and obtain a 99.8% accuracy rate to become/remain validated.

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