

Use of a Tracer Tool to Identify & Resolve Barriers to Safe Injectable Medication Dispensing

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Presenter

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Learning Objectives

- Describe the regulatory and patient safety implications of ready to administer concepts for injectable medications.
- Describe the goals and objectives of the ready to administer injectable medication safety initiative.
- Apply the concepts of tracer methodology to improving the safety of providing injectable medications in the hospital setting.


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Ready to Administer (RTA) Definitions

- An injectable product containing the active drug in solution at the required concentration and volume, presented in the final container (syringe, infusion bag, or elastomeric device), and ready to be administered to the patient
 - Institute for Safe Medication Practices
- Injectable medications that require no further dilution or reconstitution and are presented in the final container or device, ready for administration or connection to a needle or administration set
 - World Health Organization


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Patient Safety Implications

- Injectable medication errors associated with increased harm and morbidity than other routes of administration
- Rate of error with IV medication preparation or administration (49%)
 - 7% preparation
 - 36% administration
 - 6% both preparation and administration
 - 1% potentially severe
 - 29% potentially moderate severity
 - 19% potentially minor

Taxis K, Barber N. Ethnographic study of incidence and severity of intravenous drug errors. *Br. Med J.* 2003;326:684-7
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Patient Safety Implications

- Probability of error is high within the IV medication process

- Common errors with IV medication and preparation
 - Reconstitution of drug and diluent
 - Correct diluent use
 - Correct drug
 - Checking drug dose

McDowell SE, et al. Where errors occur in the preparation and administration of intravenous medicines: a systematic review and Bayesian analysis. *Qual Saf Health Care* 2010;19:341-345

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The Joint Commission Medication Management Standards

- MM.05.01.11, Element of Performance 4
 - Medications are dispensed in the most ready-to-administer forms commercially available and, if feasible, in unit doses that have been repackaged by the pharmacy or licensed repackager.

- MM.03.01.03, Element of Performance 3
 - Whenever possible, emergency medications are available in unit-dose, age-specific, and ready-to-administer forms.

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CMS State Operations Manual Condition of Participation

- Pharmaceutical Services §482.25, A0501

- Interpretive Guidelines §482.25(b)(1)
 - Whenever possible, medications are dispensed in the most RTA form available from the manufacturer or, if feasible, in unit dose that have been repackaged by the pharmacy

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RTA Formulations

— How can hospital pharmacies provide RTA doses?

- Purchase manufacturer prepared IV's and prefilled syringes
- Purchase 503B compounding facility prepared IV's and prefilled syringes
- Pharmacy prepared IV's and prefilled syringes

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Ready to Administer Initiative Goals and Objectives

— Understand the barriers hospitals face with providing RTA injectable medications

— Understand the perceptions, challenges, and barriers non-pharmacist clinicians had with injectable medications

— Develop a tool for hospitals to use to self-identify opportunities for providing injectable medications in the most RTA form

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Ready to Administer Initiative Goals and Objectives

— RTA principles impact every part of the medication management process


- Selection and procurement
- Ordering and prescribing
- Preparation and dispensing
- Administration and monitoring

— RTA principles impact multiple clinical disciplines

- Pharmacy staff
- Nurses
- Anesthesia providers

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Tracer Methodology as a Patient Safety Activity

- Transformational approach to surveying by The Joint Commission

- 3 means of confirming practices:
 - Observation
 - Interviewing
 - Review of documentation

- Differentiates between the current state of practices versus ideal state

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Tracer Methodology as a Patient Safety Activity

- Assess processes, communication, and coordination of the delivery of care in health care organizations

- Tracer activities used for:
 - Assessing regulatory compliance and survey preparation
 - Performance improvement activities
 - Patient safety activities
 - Drilling down on complex processes and identifying breakdowns

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RTA Tracer Tool


- Explores pharmacy leadership philosophy in dispensing practices

- Identifies barriers in carrying out dispensing objectives

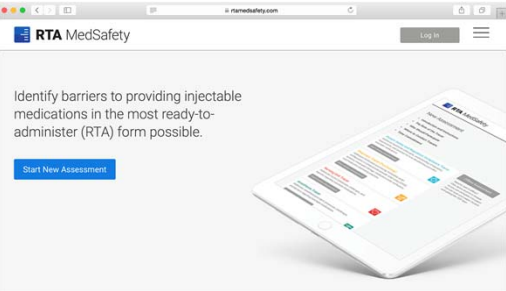
- Explores actual practices and philosophies regarding medication preparation by front line nurses

- Explores actual practices and philosophies regarding medication preparation by anesthesia providers


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RTA MedSafety Tracer Tool – RTAmedsafety.com




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RTA MedSafety Tracer Tool

Patient Safety and Regulatory Tracer

- Addresses the philosophy and practices of the pharmacy with providing injectable medications
 - Procuring and providing RTA injectable medications
 - Regulatory requirements
 - Medication errors
 - Communication of RTA priorities



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Patient Safety and Regulatory Tracer

Patient Safety and Regulatory Compliance Tracer

Direct the following questions to the most senior pharmacy leader and the individual(s) with sterile compounding oversight who will set direction for patient safety and regulatory compliance.

On a scale of 1 to 10, with 1 being "strongly disagree" and 10 being "strongly agree," rate your level of agreement with the following statements regarding how the pharmacy should provide routine, scheduled medications based on orders for injectable medications (not urgent or emergent orders):


Have the nurse prepare doses as IV admixtures (bags) from vials sent by the pharmacy.

1 2 3 4 5 6 7 8 9 10
strongly disagree strongly agree

Observations and Responses:

Opportunities for Improvement and Consultative Recommendations:


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RTA MedSafety Tracer Tool

Pharmacy Tracer

- Medication purchasing practices
- Medication order configuration in CPOE systems
- Medication storage
- Automated dispensing cabinets practices
- Order verification
- IV room practices
- Dispensing practices



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Pharmacy Tracer

Pharmacy Tracer (Injectable Medication Orders and CPOE)

Review the orderable options for the following injectable medications in the CPOE.

Depot/Infusion
What are the standard doses and concentrations of injectable medications defined by the hospital?

Dose(s):	Concentration(s):
Route(s) of Administration:	Diluent(s):
Rate of Administration:	Special Instructions:


Are nonstandard elements able to be ordered (for example nonstandard doses and concentrations)?

Yes
 No

Observations and Responses:

Opportunities for Improvement and Constructive Recommendations:

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RTA MedSafety Tracer Tool


Nursing Tracer

Addresses processes, challenges, and barriers that nurses have with injectable medications

- Where injectable doses are obtained from
- Handling and manipulation of injectable medications
- Multi dose vials
- Medication syringes
- IV infusions
- Labeling
- Use of technology



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Nursing Tracer

Nursing Unit Tracer


Direct the following questions to nurses who are involved in direct patient care.

1 What are some reasons that you decide to prepare injectable medications rather than get them from the pharmacy?

Observations and Responses:

Opportunities for Improvement and Consultative Recommendations:


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RTA MedSafety Tracer Tool

Anesthesia Tracer

- Addresses processes, challenges, and barriers that anesthesia providers have with injectable medications
 - Handling of injectable medications
 - Labeling
 - Prefilled syringes
 - IV solutions
 - Irrigation solutions
 - Epidurals
 - PCA's
 - PACU procedures



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Anesthesia Tracer

Anesthesia Tracer

Pre-Procedure: Direct the following questions to anesthesia providers during the setup ~~before~~ an invasive or operative procedure.


1 Are injectable medications prepared by anesthesia providers that are not immediately administered labeled? That is, is the prepared medication given immediately after preparation and does not leave the hand of the individual preparing the dose?

Yes
 No

Observations and Responses:

Opportunities for Improvement and Consultative Recommendations:


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RTA MedSafety Tracer Tool

- Allows for multiple observations and answers from many different clinicians to gain an understanding of injectable medication practices
- Identify area/unit-specific issues as well as trends in practices throughout the hospital
 - Questions applicable to various hospital care settings
- Allows for involvement of multiple clinical disciplines
- Observations can be documented online electronically or on paper


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Who Should Participate?

- Pharmacy leadership
- Pharmacy staff
- Nursing leadership
- Anesthesia leadership
- Accreditation professionals
- Quality and Performance Improvement professionals
- Patient Safety


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Where to conduct tracers?

- Hospital pharmacy
- Patient care areas
 - Medical/surgical
 - Telemetry
 - Critical care
 - Labor and Delivery
 - Emergency Department
- Procedural areas
 - Operating room
 - Areas supported by anesthesia providers

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Comparative Reports 

4 Does the decision to prepare a dose differ between injectable medications in syringes versus IV admixtures?

12.26.18	12.26.18
No	Yes

Observations and Responses

Opportunities for Improvement and Consultative Recommendations

5 What are some reasons that you decide to prepare injectable medications rather than get them from the pharmacy?

12.26.18	12.26.18
Patient acuity - need med fast	Easier

Observations and Responses

Opportunities for Improvement and Consultative Recommendations

6 What percent of injectable medication doses sent by the pharmacy do you need to further manipulate or adjust (for example, dilute)?


12.26.18	12.26.18
20%	90%

Observations and Responses

Opportunities for Improvement and Consultative Recommendations

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Experiences With RTA MedSafety Tracer Tool 

- Pilot tests of the tracer tool conducted
 - Community hospital
 - Academic medical center
- Finalized tool was utilized in a community teaching hospital
- Observations, feedback, lessons learned

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RTA MedSafety Tracer Tool Pilots 

- Involvement at hospitals included:
 - Pharmacy leadership
 - Nursing clinicians
 - Quality and Patient Safety officers
 - Medication safety specialists
- Areas traced: SICU, Labor and Delivery, Telemetry, Medical/Surgical units, Operating Room, Labor and Delivery, GI Labs, PACU


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RTA MedSafety Tracer Tool Pilot Feedback 


- "The tracer tool opened our eyes to processes we were unaware of that needed improvement"
- "The feedback received from anesthesia providers and anesthesia technicians was beneficial"
- "The tracer has helped us identify priorities and action plans – especially initiatives with Anesthesia."
- "The tool has helped us identify opportunities for improvement and has provided information that will help us drive process improvement."
- "The questions on the tracer tool lead to other questions being asked – the questions opened doors to other areas of patient safety."
- "Great tool to guide people and assess injectable medication processes. Often pharmacists are focused solely on order verification and dispensing. This tracer tool gives pharmacists the opportunity to get onto nursing units, OR's and procedural areas and really see what is happening with injectable medications."

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Community Teaching Hospital Lessons Learned Pharmacy Tracer 


Findings	Risk
Injectable medications prepared and administered in different ways <ul style="list-style-type: none"> • Dose, concentration, and diluents are not standardized in CPOE 	High
Custom CPOE IV builder available to create different IV solutions and concentrations	High
Staff not clear on decision making process for the following: <ul style="list-style-type: none"> • Medications loaded into ADM • Dispensing location for injectable medications 	Medium
Telling the story – change made based on the assessment of the errors	Low

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Community Teaching Hospital Lessons Learned Nursing Tracer 


Findings	Risk
Delivery delays of scheduled injectable medication	High
Nurses reported diluting certain medications due to concern of potential adverse drug events	High
Barcode scanner does not prompt for actual amount to administer when partial doses have to be administered	High
More education needed for multi-dose vials	High
Needle used to draw up medication for IV Push has no safety mechanism	High

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Community Teaching Hospital Lessons Learned  **Nursing Tracer**


Findings	Risk
Difficulty with activating some proprietary bag and vial system (e.g. piperacillin/tazobactam, azithromycin)	Medium
Expectation of Pharmacy turnaround time/communication with nursing staff regarding problematic orders	Low
Few nurses reported withdrawing medication from syringe cartridge units	Low
Use of saline flushes versus saline vial to prepare medication	Low
Withdrawing medication from 2 syringes when higher dose is ordered	Low
No formal education or training on injectable medication preparation	Low

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Community Teaching Hospital Lessons Learned  **Anesthesia Tracer**

Findings	Risk
Missing required elements on medication labels	High
Providers unclear of expiration dates and times	High
Insulin vials brought to OR room	High
Dating multi-dose vials once opened	High
Medication preparation in OR	Medium
Emergency medication kits prepared by providers are not standardized	Medium

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Summary of Key Concepts

- Ready to administer principles have significant patient safety and regulatory implications for injectable medications.
- Using the RTA MedSafety tracer tool allows the Pharmacy to connect with clinical areas where injectable medications are used/prepared.
- Tool to be used periodically to reassess injectable medication processes.

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Questions and Discussion

Thank You

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