Laboratory Stewardship and Order Set Optimization

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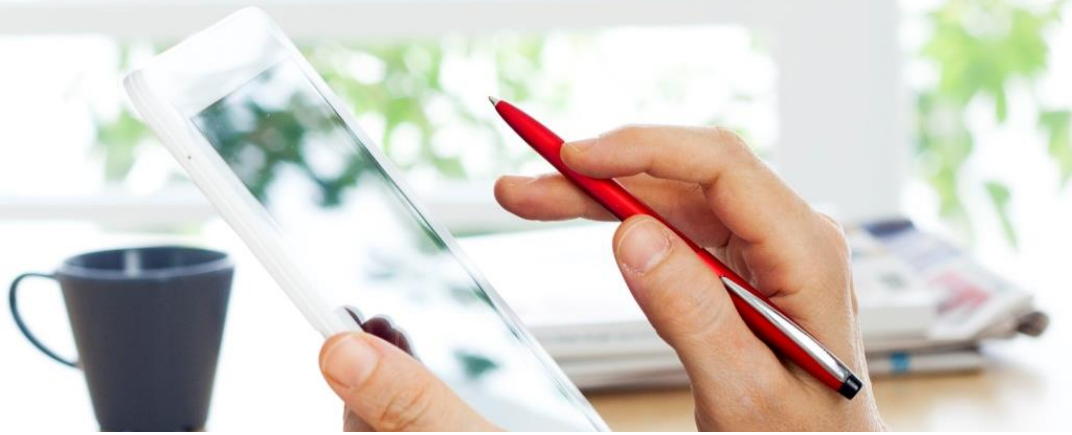

ARUP LABORATORIES

Agenda

Background

Order Set Definition

Development and Maintenance

Physician Preference Items

Next Steps

How do order sets impact the lab?

Three Initial Areas of Focus

1. Daily recurring lab tests
   - » How many patients get the same daily labs?
2. Duplicate tests
   - » How often are tests needlessly duplicated?
3. Inappropriate tests
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Definitions and Examples

- Order set
- Standing order
- Protocol

Order Set

- Group of orders used to standardize and expedite the ordering process
  - » Example: Admission order set that includes disease specific modules to expedite patient admission
    - Disease Specific Order Modules (top admitting DX):
      - › Pneumonia
      - › Sepsis
      - › Chest pain
      - › COPD
      - › Heart failure

Admission Order Set

MEDICAL ADMISSION ORDERS

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Patient Identification

Form No. EB-0709 Date: 08/06/2018

ADMITTING PHYSICIAN: _____ **DIAGNOSIS:** _____

Change Primary Care Provider: _____

ADMIT STATUS: (Required at point of entry)

❍ Outpatient in a Bed ❍ Observation ❍ Admit to Inpatient Status ❍ Admit to Inpatient Status (Inpatient Only Procedure)

For all Virginia Medicaid patients, print and complete form

BED TYPE:

❑ ICU

❑ Progressive Care Unit

- ■ Monitor: Pulse Oximetry
- ■ Pulse OX MULT
- ■ Telemetry Cardiac Monitor indicated for GREATER THAN 48 hours

❑ Medical Surgical Unit

❑ Other bed location: Chest Pain Center

❑ Other bed location:_____

CARDIAC MONITOR TELEMETRY BUNDLE: if patient requires monitoring <u>outside of ICU and PCU areas</u>:

❑ Telemetry Cardiac Monitor for less than 24 hours continuous. Indication: _____

❑ Telemetry Cardiac Monitor indicated for GREATER THAN 48 hours. Indication: _____

■ Patient may be off cardiac monitor for testing

HIGHLY INFECTIOUS DISEASE ORDERS:

❑ Highly Infectious Disease Orders:

- ■ Communication: Immediately place patient in Standard, Contact, and Droplet precautions for suspected Highly Infectious Disease
- ■ Notify: Facility Nursing Supervisor for Highly Infectious Disease Precautions
- ■ Standard Precautions
- ■ Contact Precautions, Strict
- ■ Droplet Precautions
- ■ Airborne Precautions: Place patient in airborne isolation room if available. If not available, place in standard room with door closed.
- ■ Notify: Infection Prevention Department **IMMEDIATELY**
- ■ CONSULT PHYSICIAN: Reason for Consult: Infectious Process **STAT,** I have contacted the Physician, Consult with recommendations and Interventions.

CONDITION: ❑ Stable ❑ Fair ❑ Guarded ❑ Critical

■ **CODE STATUS:** ❑ Full Code ❑ NO Code / DNR ❑ Partial Code: _____

VITAL SIGNS:

■ Vital Signs: ❑ every 2 hours ❑ every 4 hours ❑ every 6 hours ❑ Specify: _____

❑ Orthostatic Blood Pressure every AM

Emergency Room Order Sets

ED DYSPNEA (ASTHMA, COPD, PNA) ORDERS

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Patient Identification

Form No. EB-1012 Date:

DIAGNOSTIC TESTS:

Cardiology:

- ❑ EKG STAT and then every 3 hours X 2
  - ■ EKG STAT
  - ■ EKG Timed every 3 hours for 6 hours

Laboratory:

- ❑ ABG STAT
- ❑ BASIC METABOLIC PANEL STAT
- ❑ BLOOD CULTURE X 2 from 2 different sites STAT
  - ■ BLOOD CULTURE, STAT
  - ■ BLOOD CULTURE, Timed different site
- ❑ BRAIN NATRIURETIC PEPTIDE (BNP) STAT
- ❑ CBC W DIFF STAT
- ❑ CBC WO DIFF STAT
- ❑ COMPREHENSIVE METABOLIC PANEL STAT
- ❑ CULTURE, RESPIRATORY (includes Gram Stain)
- ❑ D DIMER STAT
- ❑ DIGOXIN LEVEL STAT (if on DIGOXIN)
- ❑ HEPATIC FUNCTION PANEL (LFT) STAT
- ❑ LACTIC ACID (LACTATE) BLOOD STAT
- ❑ PT / INR STAT
- ❑ PTT STAT
- ❑ Troponin STAT in ED and then every 3 hours X 2
  - ■ iSTAT Troponin and Serum Troponin STAT and then every 3 hours X 2
    - ■ Perform: iSTAT Troponin STAT
    - ■ Troponin STAT
    - ■ Troponin Timed every 3 hours for 6 hours

  When iSTAT Troponin is the only test needed:

  ❑ Perform: iSTAT Troponin STAT

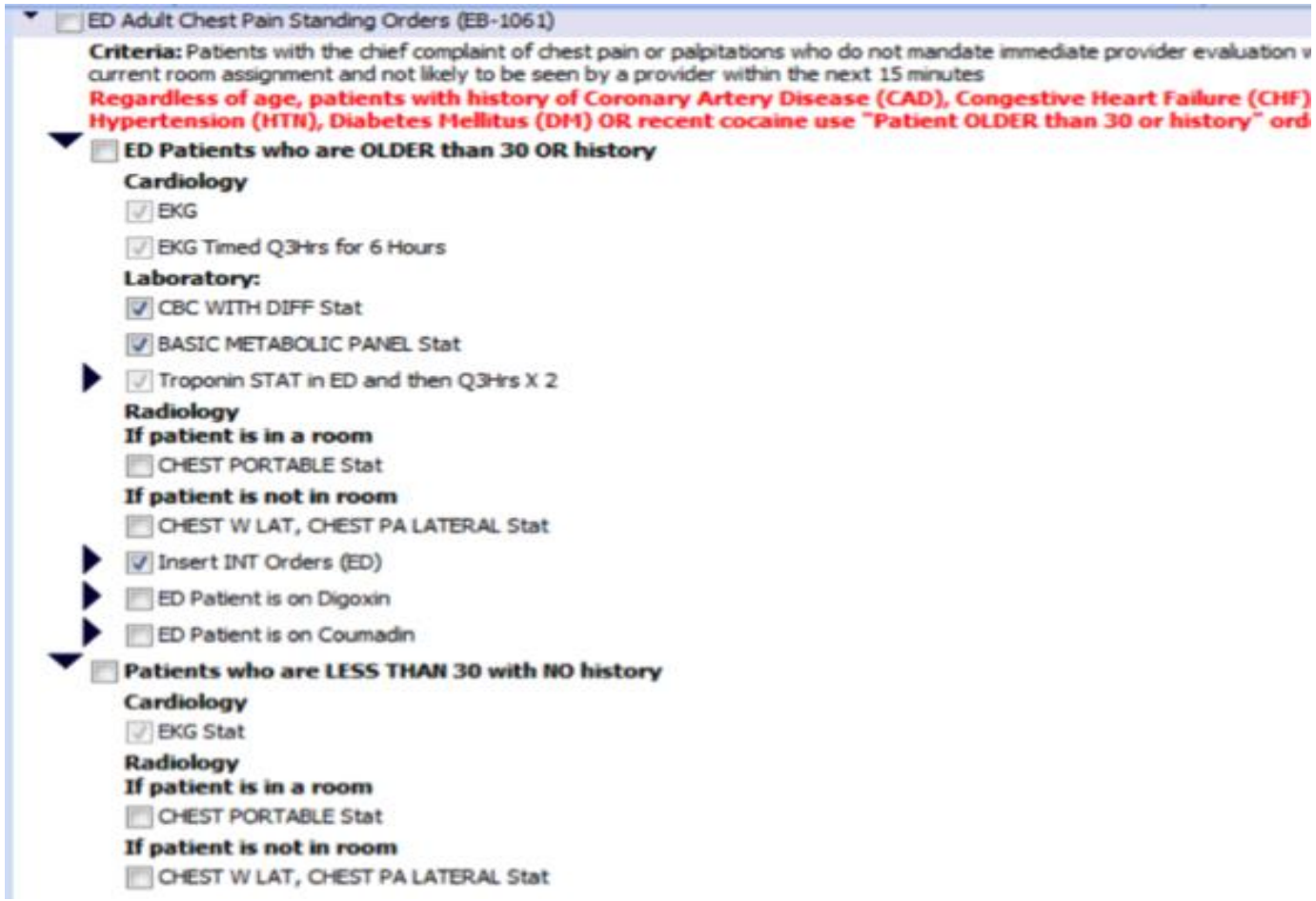
Bridge Orders

- The American College Of Emergency Physicians Orders acknowledges the ED providers may write transition orders intended to facilitate transfer to the most appropriate inpatient unit.
  - » Examples
    - Admit Status
    - Admit Patient to (attending)
    - DX
    - Bed Type
    - Standard Orders (ED/Admitting Providers agree upon)

Standing Order

- Defined criteria to carry out orders prior to physician seeing the patient
  - » Orders performed by multidisciplinary teams (Nursing, Laboratory, Radiology, Respiratory, etc.) prior to the provider seeing the patient.

Standing Order



Protocol

- Orders that allow nursing, laboratory, radiology, respiratory, or other licensed medical professionals to start/modify/stop orders on behalf of the protocol, and to automate and standardize care for a defined clinical scenario.
  - » Physician order required

Protocol

Document low Blood Glucose (BG): _____ **Date:** _____ **Time:** _____ **RN:** _____

BG 50-69 in an ALERT patient	BG < 50 in an ALERT patient	↓ LEVEL OF CONSCIOUSNESS
1. Give one of the following (check the one given): ☐ **(Preferred)** 1 tube (15 grams) glucose gel, *if able to swallow* ☐ 3 Graham Crackers ☐ 4 oz Apple juice ☐ 6 ounces clear non diet soft drink ☐ *if NPO or unable to swallow:* 20 ml D50 IV and start IV of D5W at 100 mL/hour ☐ *if unable to swallow **AND** no IV access:* glucagon 1mg IM/SubQ* **Time given:** _____	**1. Give one of the following (check the one given):** ☐ **(Preferred)** 2 tubes (30 grams) glucose gel, *if able to swallow* ☐ 4 oz apple juice & 3 graham crackers ☐ 6 oz clear non diet soft drink & 3 graham crackers ☐ *if NPO or unable to swallow:* 50 ml D50 IV (1 amp) and start IV of D5W at 100 mL/hour ☐ *if unable to swallow **AND** no IV access:* glucagon 1mg IM/SubQ* **Time given:** _____	**1. Give one of the following (check the one given):** ☐ 50 ml D50 IV (1 amp) and start IV of D5W at 100 mL/hour ☐ *if no IV access*: glucagon 1mg IM/SubQ* **Time given:** _____
2. Notify MD (verify IV solution, volume, rate, and duration, if applicable) **Time:** _____ **MD notified:** _____	**2. Notify MD (verify IV solution, volume, rate, and duration, if applicable) Time:** _____ **MD notified:** _____	**2. If there is a change in level of consciousness from baseline, then call Condition C** **Time called:** _____ **3. Notify MD (verify IV solution, volume, rate, and duration, if applicable) Time:** _____ **MD notified:** _____
3. Recheck BG in 15 min BG: _____	**3. Recheck BG in 15 min BG:** _____	**4. Recheck BG in 15 min BG:** _____

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CMS Regulatory Criteria

Development

- Establishes that such orders and protocols have been reviewed by the medical staff, nursing, and pharmacy

Evidence

- Demonstrates that order sets have been reviewed and based on nationally approved evidence-based guidelines

Review

- Ensures that periodic review of order sets, protocols have been conducted by the Medical Staff, Nursing, and Pharmacy

Development & Implementation of Order Sets

Order Set Steering Committee serves to determine:

- ✓ Is a new order set needed
- ✓ Why change is necessary
- ✓ How to engage key stakeholders
- ✓ Measure success

Order Set Process

Development Process

- New vs. Revised
- Meet with subject matter experts
- Final DRAFT submitted for approval

Approval Process

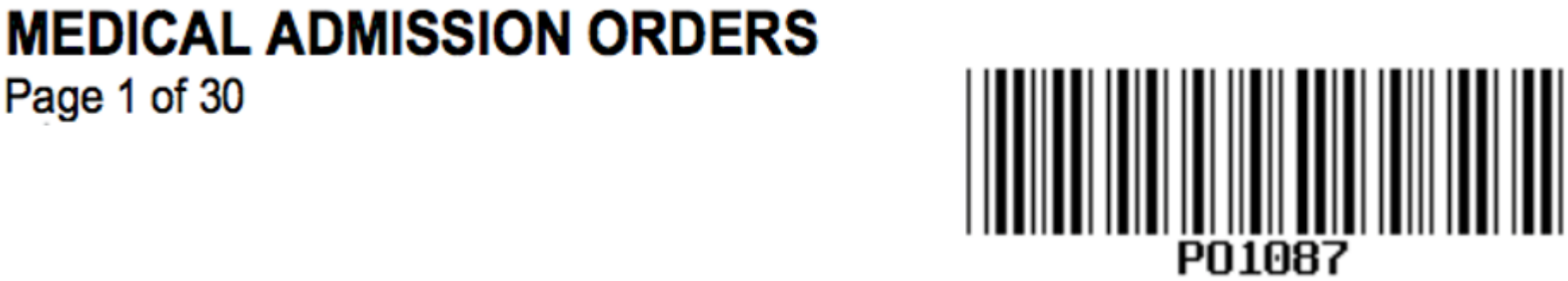
- Accreditation
- Quality
- Pharmacy
- Applicable Departments
- Governing committee

Build and Implementation Process

- Order set forward to build
- Provider education
- Implementation
- Follow up

Order Set Identification Number

- Order sets are required to have a Identification tracking number.
  - » Track of order set usage
  - » Maintenance of order sets
  - » ☑ Orders Chosen from Medical Admission Orders (EB-XXXX)



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PT/INR Timed Q6Hrs Daily for 99 Days

ALBUMIN Timed Q12Hrs Daily for 99 Days

PHOSPHORUS Timed Q6Hrs Daily for 99 Days

CK-TOTAL Timed Once Daily for 99 Days

SERUM OSMOLALITY Timed Q4Hrs Daily for 99 Days

D-DIMER Timed Q6Hrs Daily for 99 Days

SODIUM Timed Q4Hrs Daily for 99 Days

BASIC METABOLIC PANEL Timed Q2Hrs Daily for 99 Days

CBC WITH DIFF Timed Q8Hrs Daily for 99 Days

BILIRUBIN TOTAL Timed Q12Hrs Daily for 99 Days

COMPREHENSIVE METABOLIC PANEL Timed Q6Hrs Daily for 99 Days

FIBRINOGEN Timed Q6Hrs Daily for 99 Days

LACTIC ACID (LACTATE) - BLOOD Timed Q6Hrs Daily for 99 Days

H&H, HGB & HCT Timed Q4Hrs Daily for 99 Days

MAGNESIUM LEVEL Timed Q6Hrs Daily for 99 Days

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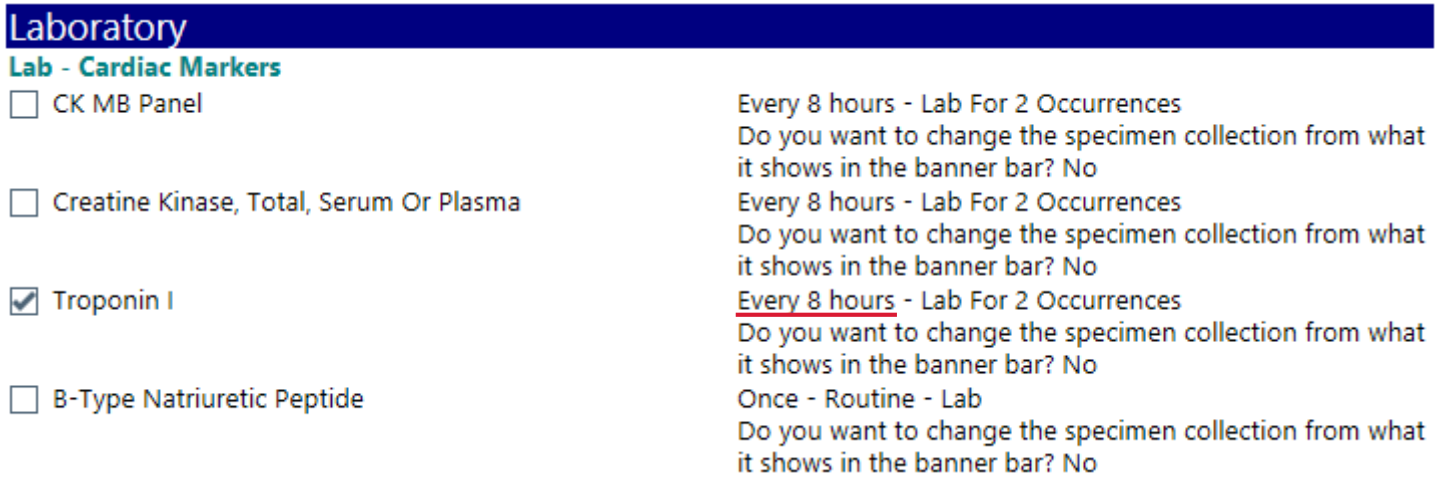
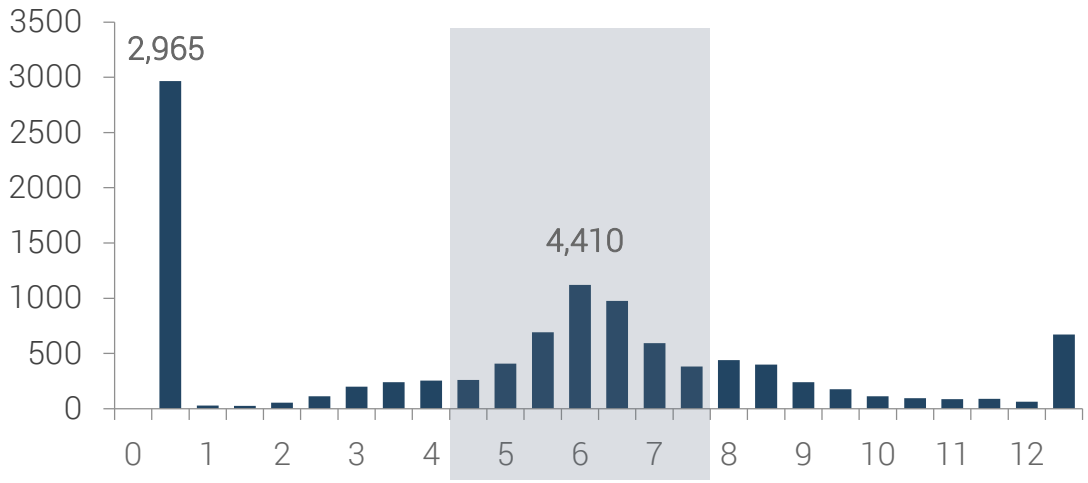
Troponin Orders and Chest Pain LOS



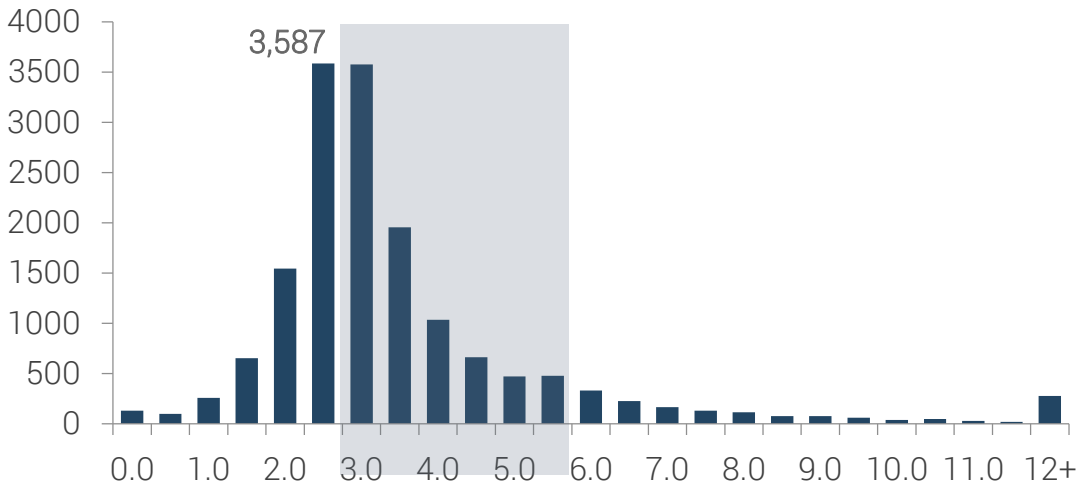
Troponin I



1. Identify order mechanisms that drive the repeat interval.
2. Modify the repeat time to be 3-6 hours after.

Improve the time-to-decision by improving the test interval by up to **3 hours.**

Troponin I



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References

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- Documentation of Hypoglycemia Treatment Protocol. University of Pittsburgh Medical Center. http://inpatient.aace.com/sites/all/files/UPMC_Hypoglycemia_Treatment_Protocol_Documentation-jan2011.pdf. Updated January 11, 2011. Accessed February 3, 2020.

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