

# A three-pronged approach to monitoring the effect of an EMR implementation on medication-related events in a pediatric hospital



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# Comprehensive IT Solutions for Quality & Patient Safety

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The presenter has no conflicts of interest related to  
this research

# Agenda

- Project overview
- 3 Methodologies
  - Self-reporting
  - Medication administration observation
  - Trigger review method
- Results/trends
- Next steps

# Project Overview

- Children's Healthcare of Atlanta
  - Egleston- academic hospital
  - Scottish Rite- nonacademic hospital
- Implementing technology
  - Inpatient pharmacy system, eMAR, clinical documentation, CPOE, bar coding
  - Staged Implementation
  - Vendor: Epic
- **Goal:** *Reduce medication errors and increase quality of patient care*

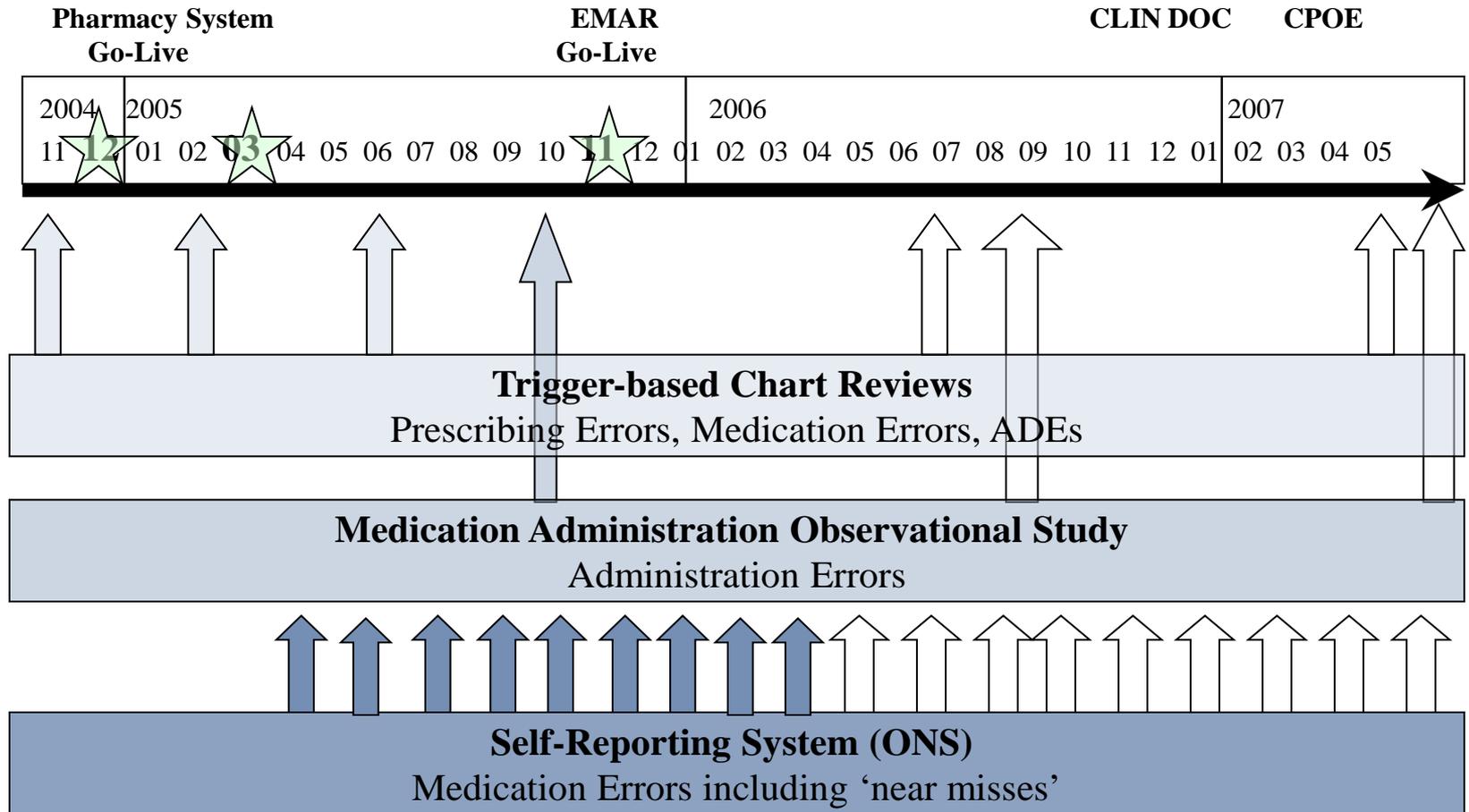
# Pediatrics: Special challenges

- Medication process challenges
  - Age/weight-based dosing
  - Multiple dosage forms (e.g., liquids, chewable tablets, etc)
  - Pediatric patients are more susceptible to adverse outcomes when errors occur<sup>1</sup>

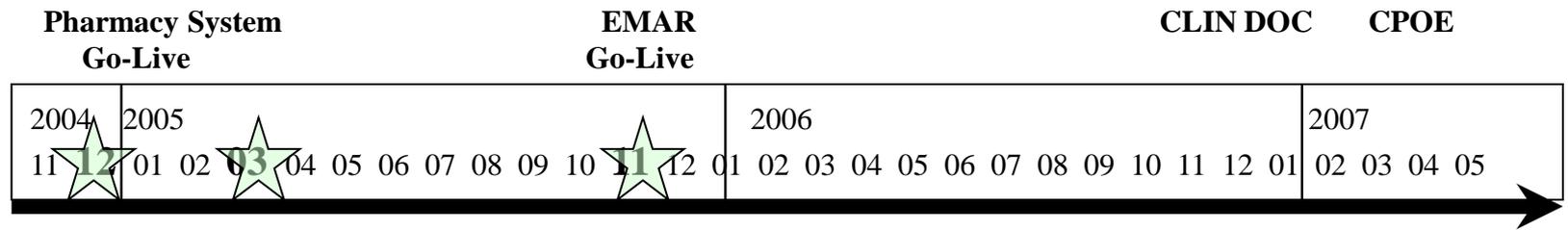
# 3-pronged approach to measuring events

- Self-report system
  - Online voluntary reporting of events
  - Current version in place since May 2005
- Medication administration observational study
  - Shadow ICU nurses in the field to measure events related to med administration
- Trigger-based chart reviews
  - Trigger tool developed based on IHI methodology

# Medication Error Assessment Plan



# Medication Error Assessment Plan

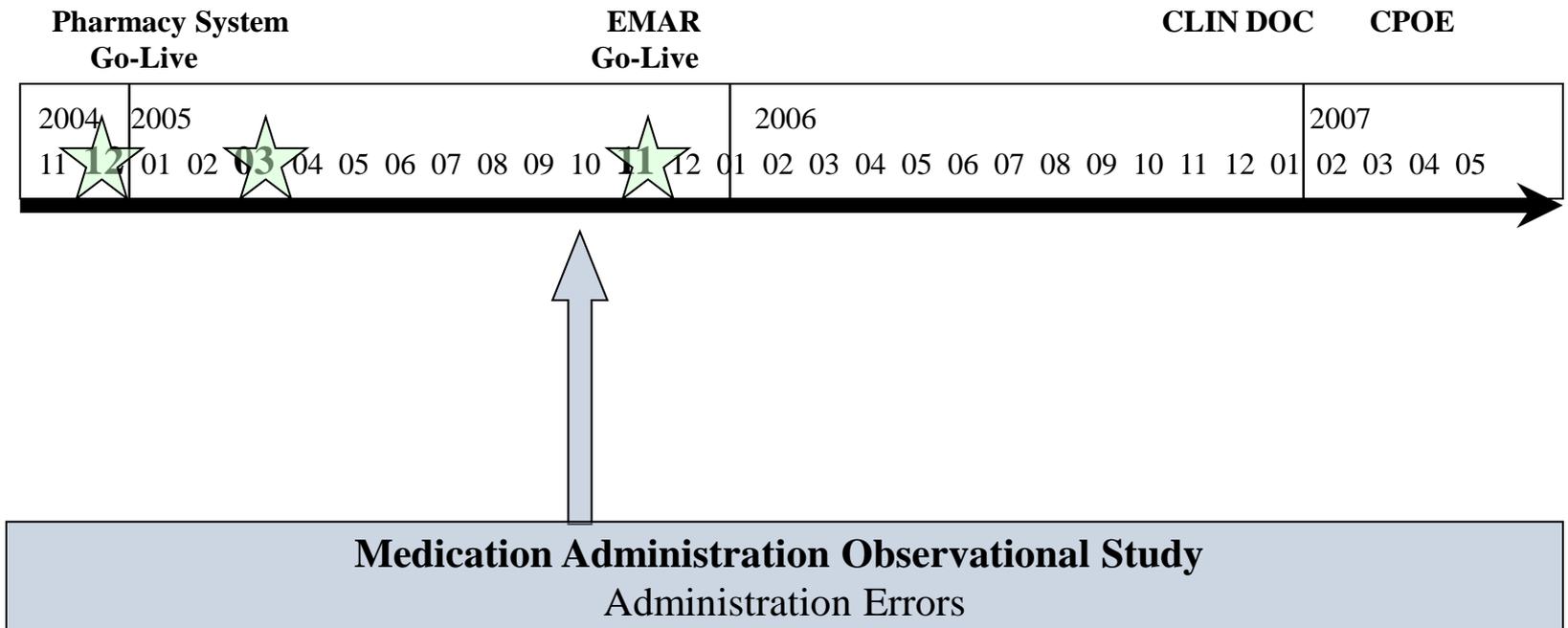


# Self-Reporting

- Staff voluntary reporting of events using existing event reporting system (ONS)
- Events reviewed and acted on by quality officers at each campus
- Trends monitored and analyzed
  
- Challenges in peds...
  - Communication limitations of children
  - Do not readily self-advocate and ask questions

# Self Report System - Results

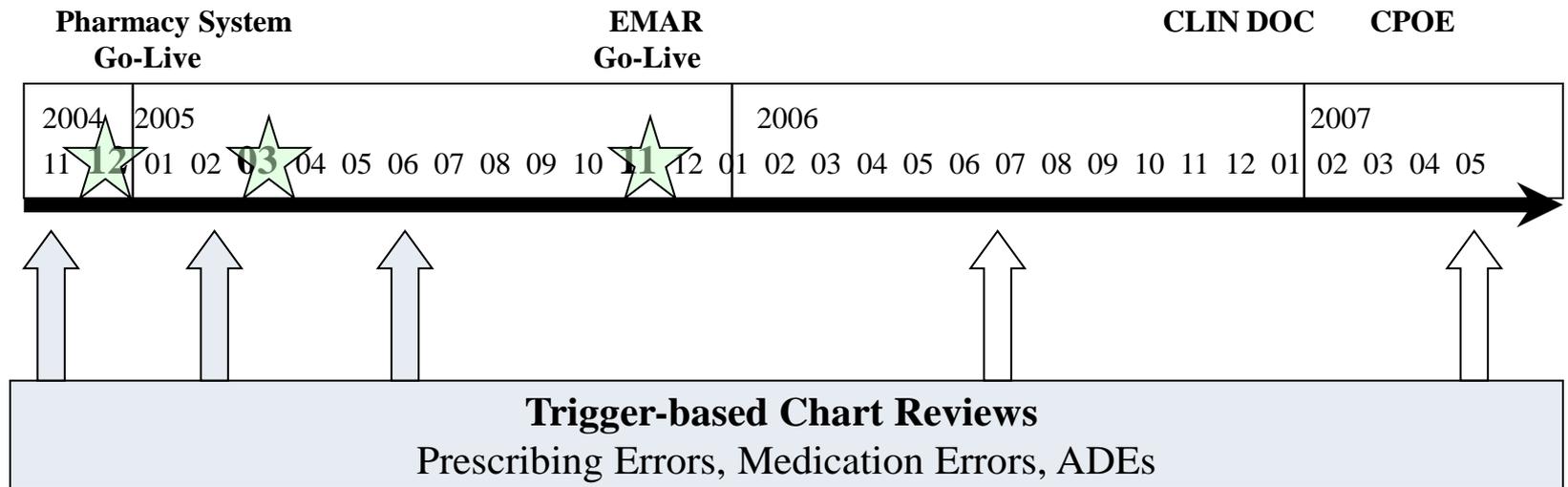
# Medication Error Assessment Plan



# Medication Administration Observation

- MedAccuracy System (AUMeds)
  - Train and certify observers
    - ◆ All observers are RNs with many years of experience
  - Observe a target number of doses administered in each area
  - Challenges in peds...
    - ◆ All rooms private
    - ◆ Fewer doses/patient
    - ◆ May take longer to administer oral meds
    - ◆ Many forms/doses/quantities
    - ◆ Adding doses to food/feeds

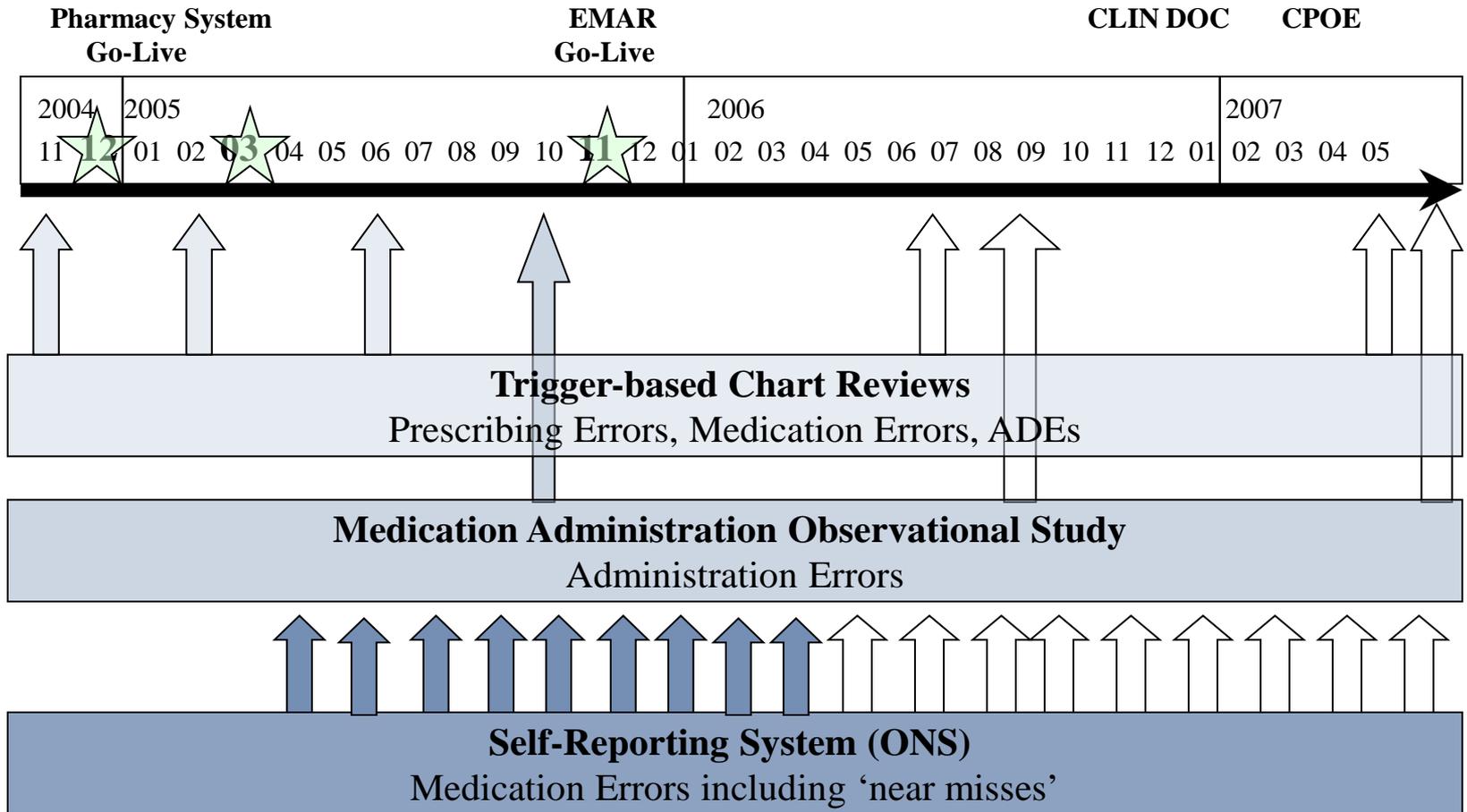
# Medication Error Assessment Plan



# Trigger Tool Chart Reviews

- 4 patient groups: Intensive care and general pediatric patients in each facility
- Comprehensive list of triggers
  - Includes 19 IHI triggers + ISPM list
  - “Events” = ADEs or med errors
    - (prescribing errors in separate study)
  - Track efficiency of triggers and chart sections
- Categorized using MERP definitions
- Challenges in peds

# Medication Error Assessment Plan



# Impact of new systems

- Impact of Pharmacy order entry system
  - Increased order entry “burden” on pharmacy
  - System dose range checks, clinical screening (allergy, interactions, duplicate therapy) improve ability to catch preventable errors
- Impact eMAR system
  - Major changes in nursing workflow
  - Increased use of pre-defined order sets
  - Increase in pharmacy order entry to populate the eMAR

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# References

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