Adverse Drug Reaction Reporting Standardization and Application in Health-System Infusion Services

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Introduction

Adverse drug reactions (ADRs) are a potentially preventable healthcare burden that costs upwards of $30.1 billion annually in the United States[1]. Increased focus has been placed on assessing and reducing the occurrence of ADRs by many clinical organizations and accrediting bodies such as: The Joint Commission (JCAHO), Centers for Medicare and Medicaid Services (CMS), Utilization Review Accreditation Council (URAC), the National Home Infusion Association (NHIA) and the World Health Organization (WHO). Despite the quality standards set forth, our initial investigation using a benchmarking survey identified a lack of industry standardization or reported metrics and data application workflows[2,3]. This project is the second part of a two-part project to design and implement a standardized collection and application tool within the electronic health record that will build transparency among the healthcare team and in turn, improve safe medication practice by allowing informed prescribing and verification of infusion medications.

Purpose

This project assessed current ADR reporting, collection and review practices at peer institutions (Phase I) and developed a workflow to help standardizes the collection and reported metrics of adverse drug reactions within ambulatory infusion services (Phase II).

Background

NHIA Foundation (NHIF) Data Initiative

- In 2016 NHIF attempted to standardize collection, analysis and summary of patient outcome data
- One of the six core data elements included ADR reporting specifically noting the documentation of: severity, intervention and outcome

NHIA Benchmarking Group

- Industry collaborative of health-system affiliated home infusion providers started in 2014
- Aim to share best practices and foster transparency

Phase I

Multi-site Industry Survey and Focus Groups

Methods

- Distribute eleven question survey focused on ADR reporting to internal and external listservs utilizing the NHIA benchmarking group
- Three follow-up focus groups discussed survey data, limitations, and ideas

Participants

Twelve infusion sites:

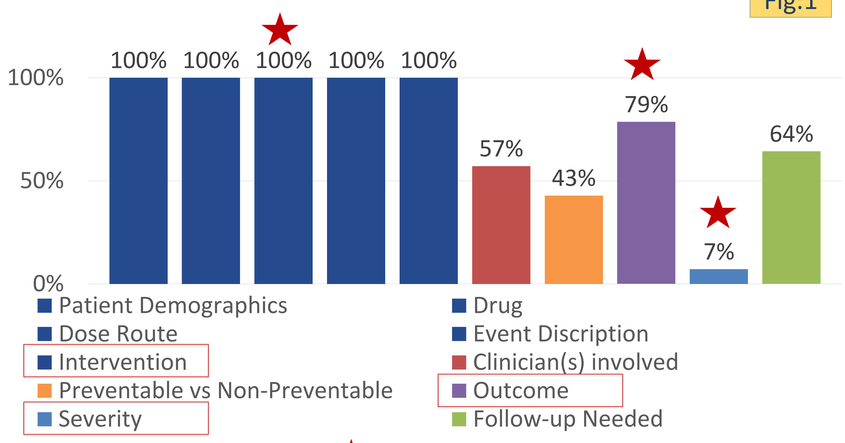
- 2 internal (Hopkins affiliates)
- 10 external (6 health-system, 2 chain, 2 independent) home infusion

Results

	Yes	No
Reporting is done within Electronic Health Record	33%	67%
Utilize standard reporting tool across system/center?	100%	0%

Site Reported Metrics (n = 12)

Fig.1



★ = NHIF Documentation Recommendation[4]

Limitations

- Small sample size
- Difficulty obtaining site/center specific data examples

Phase I Conclusion

High variation and lack of standardized collection methods between sites regarding ADR reporting workflows including reported metrics and application

Phase II

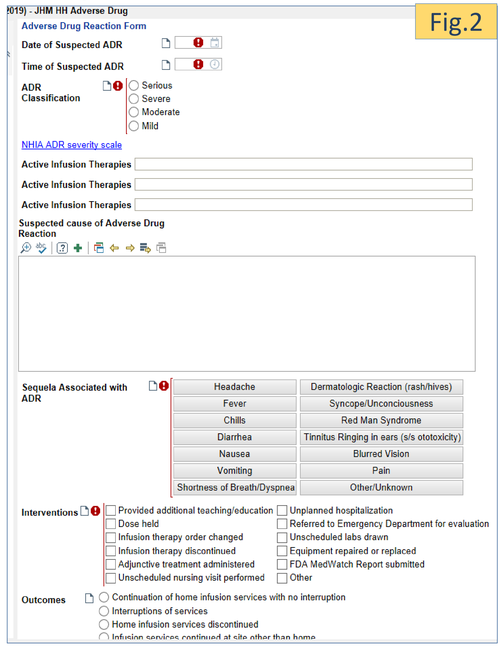
Implementation of a Standard Workflow for Reporting ADRs

Methods

- Designed an ADR reporting SmartForm within Johns Hopkins Medicine's (JHM) electronic health record (Epic) that mirrors NHIF's ADR data initiative recommendations[4]
- Currently undergoing three month SmartForm pilot initiated within three JHM ambulatory infusion suites
  - Nurses required to document in every medication administration encounter about ADRs
  - SmartForm contains discrete data elements and cascading logic based on input of initial question "Did an ADR occur this encounter?"
    - If "yes" selected form requires nurse to provide further documentation (Fig.2) to sign encounter
    - If "no" selected nurse is completed documentation and can sign encounter
- Pharmacist reviews documented ADRs ("yes" responses) to validate and escalate as appropriate

ADR Epic SmartForm "Yes" Mock-up

Fig.2



Next Steps

1. Analyze data collected from ADR pilot at three ambulatory infusion suites
2. Survey pilot sites for to identify and facilitate any tool, workflow, or data reporting changes
3. Develop standard operating procedure for daily data maintenance and review
4. Integrate workflow into all Johns Hopkins Medicine (JHM) non-oncology infusion suites
5. Cultivate standard practice toolkit to streamline data reporting and foster JHM data sharing with NHIF initiatives

References

(1) Sultana J, et al. Clinical and economic burden of adverse drug reactions. Pharmacol Pharmacother. 2013 Dec; 4(Suppl1): S73–S77.

(2) The Joint Commission, Patient Safety Systems. CAMHC Update 2.January 2018,https://www.jointcommission.org/assets/1/6/PS_chapter_OME.pdf

(3) URAC, Standards and Measures. https://www.urac.org/standards-and-measures-glance

(4) NHIA, Standard Definitions for Patient Outcome Data Elements, Adverse Drug Reactions. http://www.nhia.org/data/data_def/Adverse_Drug_Reaction.pdf