Rates and Reasons for Safety Incident Reporting in the Medical Imaging Department of a Large Academic Health Sciences Centre

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Introduction

- Safety incident reporting is essential in medical imaging (MI) departments **due to the fast-paced environment and high patient volume.**
- The hospital under investigation has a safety incident reporting system in place but no protocol **to identify overall trends or patterns** found within staff descriptions of incidents.
- An evident knowledge gap in the **identification and investigation of contributing factors** to incidents reports in MI Departments exists.

Objective

To investigate the following rates of a MI Department:

① Departmental incident Rate

② Incident rates per imaging modality

③ Incident rates per incident type

To determine characteristics associated with the most frequently occurring incident types to identify opportunities for quality improvement.

Materials & Methods

- This observational, retrospective study collected all MI incident reports submitted by staff between July 2018 and July 2019, from an electronic incident report database (**665 reported incidents**).
- Individual incident reports were categorized according to the imaging modality and incident type
- The **departmental incident rate**, **incident rates per modality**, and **incident rates per incident type** were determined for baseline measurement.
- Subcategories of the top four incident types were also created to **identify possible contributory factors** based on the staff member's safety incident report submission.

Results

- The safety incident rate for the **MI Department was 0.263%.**
- The highest safety incident rates based on modality: **IR (1.26%), CT (0.457%), MRI (0.352%),** Gen Rad (0.193%), NM (0.156%), BI (0.113%), and US (0.063%)
- **Top four incident types**:
  - Adverse drug reaction (ADR) (21.5%)
  - Delay in care/treatment (18.9%)
  - Identification/documentation/order (18.5%)
  - Extravasation (11.4%)

Figure 1. Variations in patient preparation leading to an adverse drug reaction incident

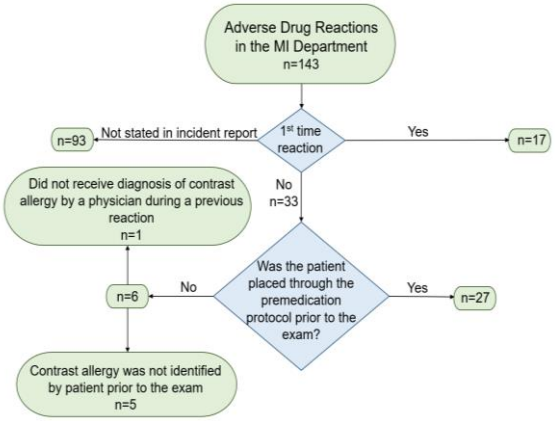


Figure 2. Descriptive statistics of delay in care/treatment incidents (n=126)

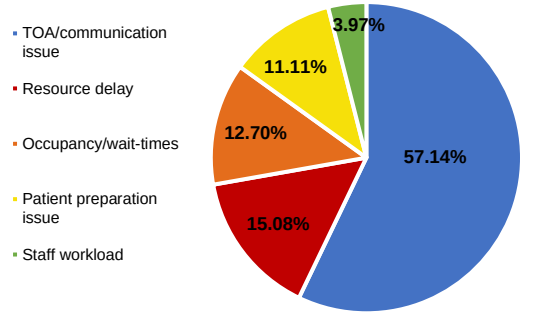
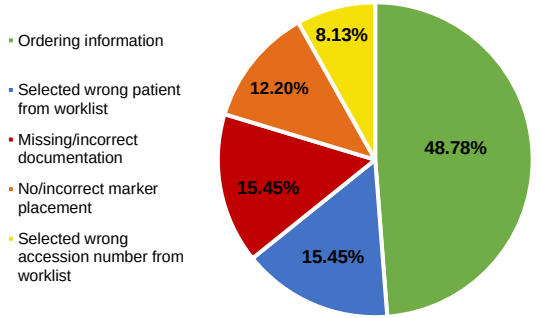


Figure 3. Descriptive statistics of identification/documentation/order incidents (n=123)



Discussion

- Many ADR patients were **not first-time reactors to contrast media (Figure 1).**
- Figure 2 highlights that a majority of incidents stem from **a lack of TOA,** mainly due to unclear protocols during patient transfers and post-care.
- In Figure 3, 60% of delay in care/treatment incidents involving ordering information had **incorrect clinical history** in the patient's order or **wrong imaging exam** ordered.
- **Further investigation of extravasation incidents is required** as many incident reports did not disclose essential details.

Future Directions

- **Create a communication protocol** to improve TOA for specific MI procedures
- **Improve ordering the correct examination** with relevant clinical history
- **Standardize safety incident reporting** to improve feasibility of future comparison studies