Understanding hospital onset medication related adverse events to prioritise patients for medication review.

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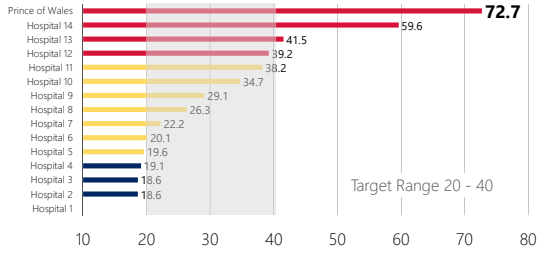
Background

A hospital-acquired complication (HAC) refers to a complication for which clinical risk mitigation strategies may reduce (but not necessarily eliminate) the risk of that complication occurring.[1]

POWH has double the rate of coded medication related HACs (MRHACs) compared to peer hospitals (Figure 1) and double the median rate of coded hospital onset Adverse Drug Reactions (ADRs).

Figure 1. Medication Related HACs per 10,000 episodes (Jan 2018 – Dec 2018)



Source: Prince of Wales Hospital HAC 2018 Report

Description

It is not well understood what is contributing to high rates of MRHACs and ADRs at POWH

Aim to assess the high rates of medication related harm to understand whether pharmacist medication review could prevent patient harm.

Actions

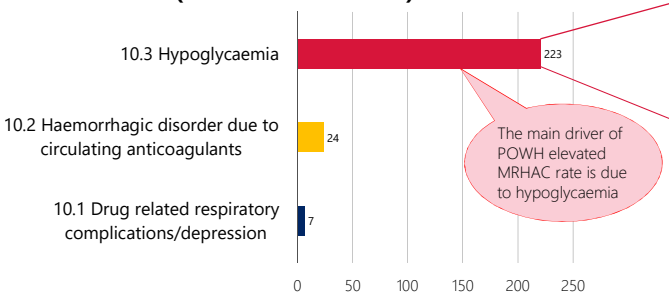
- Retrospective Review, January 2018-December 2018 of MRHACs and coded hospital onset ADRs (Y40-Y59) review
- Random sample (10%) medical records assessed to identify:
  - Risk factors and trends associated with MRHACs and coded ADRs
  - MRHACs and ADRs potentially prevented by a medication review
  - Appropriate ADR management

[1]Australian Commission for Safety and Quality in Healthcare. Hospital-Acquired Complication 10: Medication Complications. Sydney, 2018.

Results/Evaluation

Investigation of Medication Related HACs

Figure 2. MRHAC count by type (Jan 2018 – Dec 2018)



Source: Prince of Wales Hospital QIDS report

Table 1. Factors contributing to hypoglycaemia

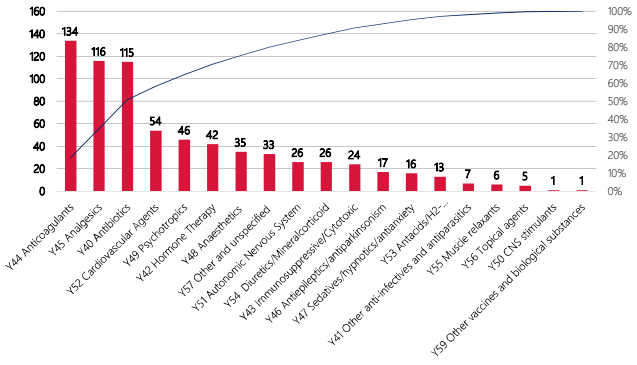
AKI *	12 (41%)
Intake Change (sepsis)	5 (17%)
ICU admission	2 (7%)
Enteral nutrition	3 (10%)
Overcorrection of hyperglycaemia	4 (14%)
Other	7 (24%)

*AKI association validated using coding data:
30-40% of hypoglycaemia MRHACs in 2018 also had a coded AKI

Source: Medical Record review of 10% of MR hypoglycaemia HACS

Investigation of Hospital Onset ADRs

Figure 3. Hospital onset ADR Count by type (Jan 2018 – Dec 2018)



Source: Lightfoot, POWH Coding data

ADR Analysis

Of the hospital onset **anticoagulant** and **antimicrobial ADRs** reviewed, the majority would not have been prevented with medication review. (Included idiopathic reactions e.g. rash, hepatitis etc.)

The majority of **opioid ADRs** are likely preventable and related to constipation (28%), nausea and vomiting (22.7%), hypotension (17.4%) and somnolence (17.2%).

40% of coded **antimicrobial ADRs** were subsequently documented as allergies in the patients record

Source: Medical record review of 10% of 2018 top hospital onset ADRs (anticoagulants, antibiotics). Review of all 2017 Analgesia ADRs.

Conclusion

Understanding risk factors for MRHACs and ADRs can assist with identifying patients to prioritise for medication review.
Medication review of hospital onset ADRs could prevent further patient harm by ensuring appropriate ADR documentation to guide future selection of antimicrobials.
Medication review of hypoglycaemics for patients with AKI, in ICU or on enteral feeds could potentially reduce hypoglycaemia.
Exploration of prioritizing medication review in patients with risk factors for hypoglycaemia is underway.

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