

BACKGROUND

- Automated dispensing systems or cabinets (ADS or ADCs) provide hospitals with decentralized medication storage by residing directly on medical floors
- A centralized approach consists of pharmacists checking patient-specific unit dosed medications within the central pharmacy before delivery to the medical floor
- ADCs have been shown to reduce delays in medication administration, enhance inventory control through electronic tracking and distribution, and increase workflow efficiency
- ADCs also have shortcomings such as inadequate inventory leading to frequent stock-out of medications, drawer and pocket size limitations, and expiration of stored medications with infrequent use
- Alton Memorial Hospital transitioned from a hybrid system of both centralized and decentralized modes of medication distribution to a strictly decentralized approach

OBJECTIVES

- To optimize the larger inventory load residing in the automated dispensing systems at Alton Memorial Hospital
- Identify proper minimum/maximum values to decrease number of medication stock-outs but have adequate inventory turns of stock
- Develop a standard procedure when loading a new medication into the ADS

METHODS

- 7 ADCs were selected for optimization
 - 5 from general medical units
 - 1 from surgical care unit
 - 1 from intensive care unit
- Optimization efforts occurred between September and October of 2021
- Optimization data was obtained through reports generated by Carefusion™ – Knowledge Portal (KP)
- Analyzed key performance indicators consisting of stock-out % and vend/refill ratio

OUTCOMES

Figure 1. Vend/Refill Ratio for Quarter 3 of 2021

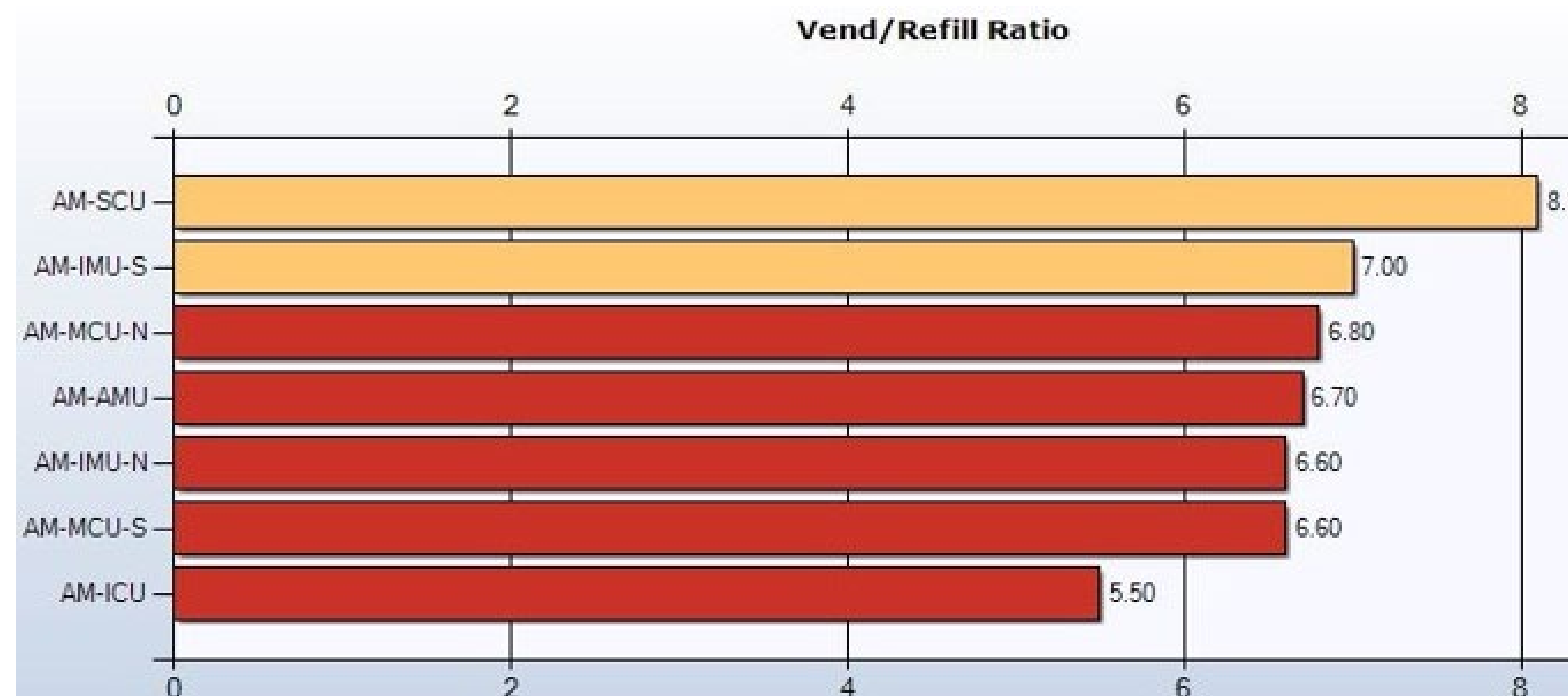
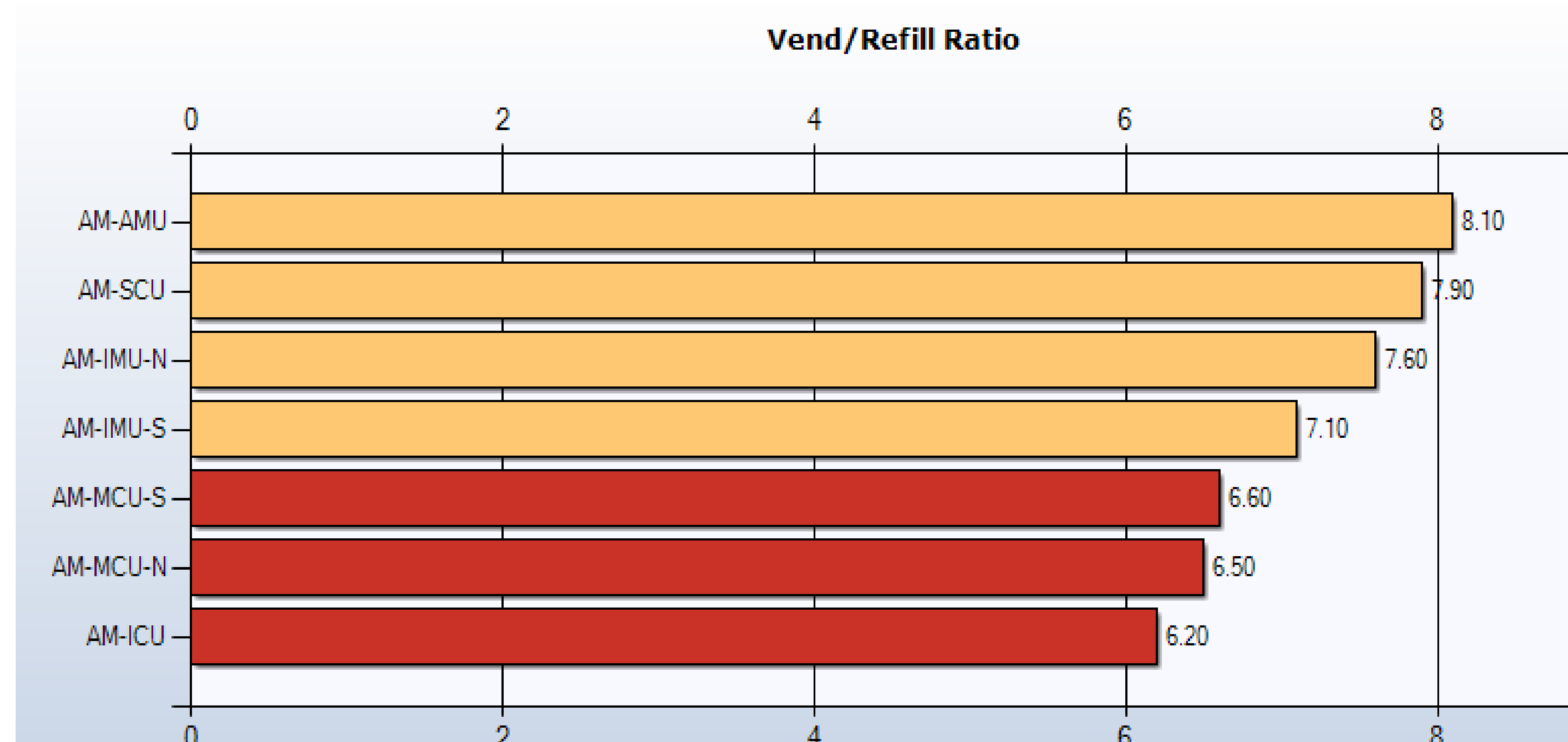


Figure 2. Vend/Refill Ratio for Quarter 1 of 2022



DISCUSSION

Strengths

- Baseline vend/refill ratio far from goal so significant room for improvement is possible
- Implementation of a new standard procedure results in greater consistency for pharmacy staff to follow ideally leading towards a more efficient process

Limitations

- Lack of physical space and capacity limitations within the ADCs prove bulkier items such as IV premixes, certain injectables, and unit-dosed oral liquids more difficult for optimal storage within these machines
- Staffing and time constraints may not always easily allow time for continued optimizations to be performed

Impact

- This optimization project directly impacts the quality of patient care through efficient and timely availability of medications, thus preventing lapses in patient care as well as improving both pharmacy and nursing satisfaction

NEXT STEPS

- Evaluation for appropriateness and feasibility of other medications to be stored within the ADCs
- Annual, comprehensive optimization of each ADC based on recent trends and reports
- Optimization of other ADCs at Alton Memorial Hospital not included within this project
- Emphasizing the efficiency benefits the new standard procedure allows for in order for compliance from the whole pharmacy team