Association of Pharmacy-driven fluid stewardship recommendation acceptance rate on outcomes in critically ill adults
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BACKGROUND
- Intravenous fluids (IVFs) comprise a vast majority of medications utilized in the intensive care unit (ICU).
- With the wide use of IVFs, the role of the pharmacist is increasing in enforcing fluid stewardship to ensure safety and effective use in critically ill patients.
- Improper use of IVFs in critically ill patients can lead to worsening patient outcomes.
- The role of pharmacy-driven fluid stewardship recommendation acceptance rate has yet to be discovered.

METHODS
- **Design:** IRB-approved, retrospective, single-center cohort study
- **Time Frame:** June 2016-September 2020
- **Setting:** Community hospital
- **Inclusion Criteria:** Adult (≥18 years old), critically ill, and followed on academic rounds
- **Statistics:** Chi-squared test and Mann-Whitney U were used to analyze nominal and continuous data, respectively.

OUTCOMES
- **Primary:** Incidence of fluid overload in patients with high versus low acceptance rate of pharmacy-driven fluid stewardship recommendations
  - Fluid overload is defined as at least a 10% increase in weight from hospital admission to discharge
- **Secondary:** In-hospital mortality and percent weight change between groups

CONCLUSIONS
- Authors hypothesize that patients with at least a 70% acceptance rate of fluid stewardship recommendations will have lower incidence of fluid overload, percent weight change, and in-hospital mortality.
- Pharmacists play a crucial role in fluid stewardship within the critically ill patient population, and this may have implications on improved patient outcomes.

PRELIMINARY RESULTS

- **Table 1. Overview of Recommendations**
  - Total Patients: 179
  - Total Patients-days: 668
  - Total Pharmacy Recommendations: 2,089
    - Fluid Stewardship Recommendations: 313 (15% of total)
    - Fluid Stewardship Recommendations per Patient-day: 0.47

- **Table 2. Overall Patient Data**
  - **Demographics**
    - Male: 90 (52.9% of fluid)
    - African American: 106 (63.5%)
    - Caucasian: 56 (33.5%)
    - Other Race: 5 (3%)
    - COVID-19 Admission Diagnosis: 79 (44.1%)
    - History of End Stage Renal Disease: 17 (10.5%)
    - History of Congestive Heart Failure: 29 (17.9%)
    - Taking Home Diuretics: 56 (34.6%)
  - **Outcomes**
    - Mortality: 49 (27.4%)
    - Incidence of Fluid Overload: 22 (12.3%)
    - Mean Number of Mechanical Ventilator-Free Days: 16.2 (SD 13)

FUTURE DIRECTIONS
- Further studies are required to explore the relationship between the COVID-19 diagnosis and fluid stewardship acceptance rates.
- This data showed fluid stewardship recommendations represented more than 1 in 8 pharmacy recommendations in critically ill adults with COVID-19.
- Fluid stewardship is a key intervention that pharmacists can make in the ICU during the COVID-19 pandemic.

LIMITATIONS
- Retrospective data collection
- Single-center design
- Lack of diversity in admission diagnoses

REFERENCES