EVALUATION OF A QUALITY MONITORING PROGRAMME FOR INTRAVENOUS FLUID MANAGEMENT

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BACKGROUND AND IMPORTANCE

Intravenous (IV) fluid stewardship can support caregivers to optimize the patient’s outcome, avoid fluid overload or electrolyte disorders, and control costs. In November 2018, a hospital-wide IV fluid guideline was implemented on all adult wards of the University Hospital of Brussels as part of a stewardship programme. Implementing such an initiative requires monitoring to guarantee guideline adherence.

AIM & OBJECTIVE: to evaluate the impact of an internal audit on IV fluid use and identify opportunities to improve quality monitoring.

MATERIALS & METHODS

- Development of 5 quality indicators on fluid management (adapted from a framework for optimisation of intravenous fluid prescribing based on the 2013 NICE Guideline on intravenous fluid therapy in adults in hospital):
  - Presence of a drug prescription
  - IV fluid bag labelling
  - Documenting fluid indication
  - Body weight monitoring
  - Electrolyte monitoring

- Evaluation of the quality indicators in an internal audit in a 721-bed Belgian university hospital

Cross-sectional data collection by pharmacist trainee on the adult wards every two weeks over a six-month period (August 2019-January 2020)

Two electronic reports sent to ward stewards (22 physicians, 16 nurses):
1) 3 months after the start: first period (T1)
2) 6 months after the start: second period (T2)
Results of T1 and T2 were compared statistically using SPSS® v26 software (Chi-squared test and interrupted time series (ITS) analysis).

At the end of January 2020: electronic survey sent to all fluid stewards to identify elements in the audit process requiring optimisation.

RESULTS

INTERNAL AUDIT

Data collection
- 12 measurements (T1: 1-6; T2: 7-11) in 17 wards
- 12 internal medicine wards
- 5 surgical wards
- Included patients and IV fluid bags
- 729 patients (T1: 361; T2: 368)
- 758 IV fluid bag sets (T1: 381; T2: 377)

Quality indicator analysis
- 'Prescription' and 'Labelling': close to target value
- 'Documented indication': low (21%)
- 'Body weight monitoring':
  - Significantly better results in internal medicine wards (T1: 82.1% vs. 62.5%, p<0.05; T2: 80.2% vs. 66.3%, p<0.05).
- 'Electrolyte monitoring':
  - Significant increase between T1 and T2 (90.3% vs. 96.2%, p<0.05), though not attributable to our intervention in ITS analysis.
  - Internal medicine wards had significantly better results compared to surgical wards (T1: 95.3% vs. 77.8%, p<0.05; T2: 98.4% vs. 91.3%, p<0.05).

Overall, no effect of intervention in ITS analysis noted.

SURVEY
- 32% response rate (physicians: 27.2%, nurses: 37.5%)
- Feedback report: appropriate format and length (median scores: 3/5)
- Only 33% of the stewards had communicated the results to colleagues.

CONCLUSION & RELEVANCE

1. Awareness of electrolyte monitoring increased among physicians but the direct impact of our feedback remains unclear.
2. The documentation of indication requires targeted action. Quality indicators with results close to target need re-evaluation.
3. Overall results suggest a persistent need for increased awareness and training on IV fluids, especially on surgery wards.
4. Audit and feedback should include tailored communication with staff.

REFERENCES: 1) Royal Liverpool & Broadgreen University Hospital NHS Trust (RLBUHT), Optimisation of intravenous fluid prescribing: framework for changing practice through education and audit – Audit Data Collection Tool (ADCT) 2018.

Legend:
- Total
- Internal medicine
- Surgery
- Electronic report sent to stewards

The patient’s condition doesn’t always allow us to weigh him appropriately.

High workload on the wards is a limiting factor in quality management.

I don’t think it is relevant to document the indication of an IV fluid.