Improving Intravenous Fluid Prescribing in the Medical Emergency Assessment Unit
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Background

Problems:
- Intravenous (IV) fluid prescribing is highly variable and is often poorly done
- Frequently left to the most junior member of staff
- IV fluid prescribing is complicated and can be challenging
- Poor fluid management contributed to around half of all deaths

Issues with fluid prescribing have been recognised by the National Institute of Clinical Excellence who produced guidance for IV fluid prescribing - Intravenous fluid therapy in adults in hospital (CG174) (December 2013)

What are we trying to accomplish?
- IV fluid prescribing is highly variable within our Trust – demonstrated by the results of a survey of Junior Doctor prescribing practice
- There is a lack of awareness of the NICE guidance (published 2013) for adult fluid prescribing
- IV fluid prescription regimens and management plans are rarely documented in the medical notes

Project Aims

1. Increase appropriate fluid prescribing within our Trust
2. Management plans document in 95% of notes
3. Increased the application of the NICE guidance

Materials and Methods

Prospective, cross-sectional study of patients on MEAU – only those receiving IV fluids selected
Five week study period in total
Interventions made followed by five days of data collection (12-15 patients each PDSA cycle) to study impact of single intervention

Project Team
Dr Amir Malik (Project Mentor and Consultant Nephrologist)
Dr Luke Duggleby & Dr Luke Sansom (Joint Project Leads and Foundation Year One Doctors)
Stakeholders: Dr R Gossiel (Clinical Lead MEAU)

Changes

PDSA One
Assess current prescribing practice in MEAU
- Key factors needed for IV fluid prescription identified as being frequently omitted from medical notes
- Lack on management / review plans documented

PDSA Two
Poster intervention in MEAU – Documentation advice and NICE Guidance Algorithm
- Some improvement in prescribing practice
- Difficult to ensure staff have seen and read poster

PDSA Three
Teaching session to medical faculty
- Teaching to all grades – focus on common prescribing errors, NICE guidance, current intervention and prescribing methodology
- Feedback – strong preference for individual lanyard cards as possible future intervention

PDSA Four
Introduction of lanyard card trial
- Positive feedback on card
- Improvement in documentation practice
- Constructive feedback on design

Measuring and Communicating Impact

Model for Improvement

AIM
Improve fluid prescription practice by:
1) Structured documentation
2) IV fluid prescription for maintenance dependent on patient weight (NICE Guidance)

IV fluids in MEAU to have documented:
- Prescription aim, indication, patient weight, request for twice weekly weight and input / output chart, 24 hour fluid plan / review

MEASURE
Improve documentation by:
1) Structured documentation
2) IV maintenance prescription dependent on patient weight (NICE Guidance)

1) Random sampling of MEAU clerking performed with review of the Management Plan for those receiving IV fluids
2) Assessment of prescription to determine whether fluid rate and volume are appropriate for the patient (dependent on weight)

CHANGE
Increase awareness of NICE Guidance – Poster
Increase awareness of common prescribing errors – Teaching Programme
Increase awareness of correct approach to documentation – Teaching / Poster / Cards

Summary and Recommendation

We have demonstrated that rates and volumes of IV fluids prescribed are not consistent with NICE guidance and can cause harm to patients in keeping with national reports. Simple common errors and omissions were identified in IV fluid prescribing. We outlined what parameters are important for safe IV fluid prescribing.

The poster intervention indicated an impact on prescribing practice but was unsustainable. Introduction of lanyard cards showed improvement in practice. These interventions have improved measures in a small area and would result in patient safety and reduced mortality.

A further trial after distributing lanyard cards with improved design will now be performed in other areas where IV fluid prescription is regularly undertaken.

We recommend that if these cards are distributed to all new junior trainees joining the Trust as of August 2014, this would advance their knowledge of IV fluid prescribing and improve patient safety.