

Can you just write me up a bag of fluids?

Andrew Kermode, Harriet Cunningham, Shuaib Quraishi, Natalie Powell

Department of Acute Medicine, Surrey & Sussex Healthcare NHS Trust

Aim

Safe prescribing including IV fluids is a key feature of the Foundation curriculum¹ yet anecdotally we felt that juniors may not be treating fluids as they would another prescribed medication.

NICE introduced a clinical guideline; IV Fluid therapy in adults in hospital²

These made the following recommendations;

• **All patients should have an IV fluid management plan;** containing:

- Assessment of fluid requirements
- Fluid & Electrolyte prescription for the next 24 hours
- Monitoring plan for IV fluids

• **Regular IV fluids require assessment of:**

- Clinical fluid status
- Laboratory values
- Fluid balance charts
- Weight measurement

Methods

Audit

Medical notes and prescription charts for **100 in-patients** were audited against the identified NICE guideline.

Survey

31 junior doctors (12 FY1 Doctors, 3 FY2, 9 CMT/equivalent and 2 StR) about their knowledge of and confidence in (rated from 1 to 5) **prescribing IV fluids** and **assessing fluid status**.

Assessment

Juniors were also asked to identify which fluids (by pictures) should be used in different clinical scenarios (e.g. resuscitation).

Results

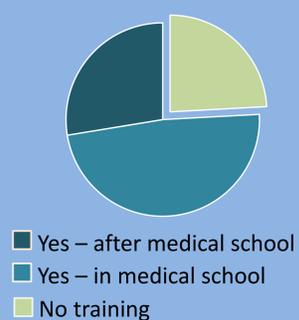
Audit

The majority of IV fluid prescriptions met guidelines standards of including the type, rate and method of IV fluid administration

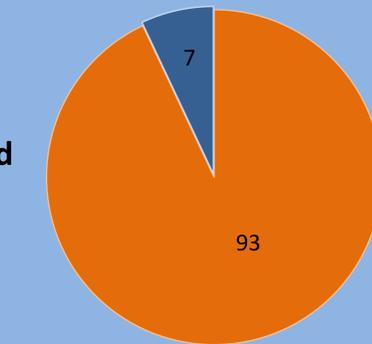
However, there was **poor reassessment of fluid status** (51%) once fluids prescribed, and **incorrect volumes used for fluid bolus administration** in resuscitation (13% correct).

Maintenance fluids were **poorly prescribed** – only **10% met guideline requirements**. 34% had correct electrolytes and 25% had correct glucose requirements

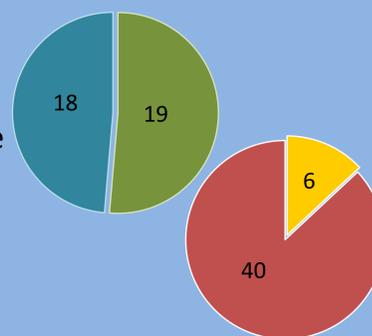
Formal Training in IV Fluid Prescription



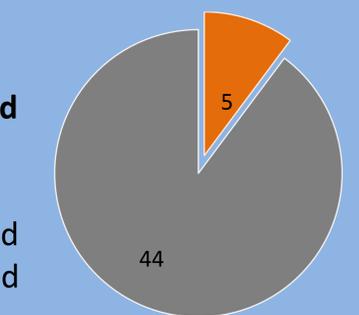
10% were able to prescribe the correct amount of fluid and electrolytes for maintenance treatment. 74% of respondents had encountered patients whom had come to harm due to inappropriate fluid administration.



Correct Prescriptions
Incorrect Prescriptions



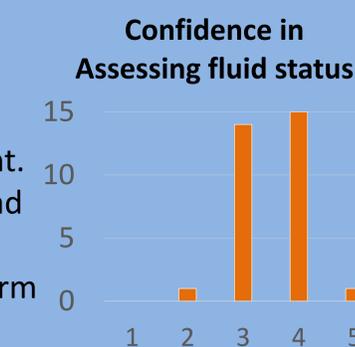
Fluids reassessed
Fluids not reassessed
Correct fluid bolus (500mls)
Incorrect fluid bolus



Correct maintenance fluids
Incorrect maintenance fluids

Questionnaire

31 junior doctors took part in our questionnaire. 74% of doctors had previous training, but 45% of this was at medical school. Overall, 52% were confident assessing fluid status.



Discussion

The audit suggests that fluid prescribing is poor and our survey suggests a gap in training of junior doctors and opportunity for intervention.

As a result we have drafted a hands on guide for new FY1 doctors as well as a dedicated teaching session. We would encourage all hospitals to include such training early in an FY1 teaching programme.

This has been implemented across SaSH this year. A dedicated IV Fluid teaching session for FY1 Students was created, as a result of this assessment.

IV Fluid Teaching Session

Following teaching, both FY1 knowledge and confidence in prescribing fluids had improved. This was measured on a scale of 1-5, where 1 was No Confidence, and 5 Very Confident.

Assessing Fluid Status: FY1s had an average confidence of 3.38 ± 0.0071 (CI) in their assessment of fluid status prior to teaching. Following teaching this increased to 3.71 ± 0.0069 (CI)

Fluids in Resuscitation: Prior to teaching, confidence in this type of prescription was 2.944 ± 0.0107 (CI), which increased to 3.78 ± 0.0062 (CI).

Next Steps

Our aim is to continue the teaching of junior doctors in appropriate IV Fluid prescription.

To do this we plan to:

1. Continue teaching sessions for each FY1 cohort starting at SaSH.
2. Reassess IV fluid management by re-auditing SaSH prescriptions
3. Provide ward based posters & information to aid prescriptions

References

1. The Foundation Programme (2012) 'FP Curriculum' [online] Available at: <http://www.foundationprogramme.nhs.uk/pages/foundation-doctors/training-and-assessment/fpcurriculum2012> (Accessed 27 July 2014)
2. National Institute of Clinical Excellence (2013) 'Intravenous fluid therapy in adults in hospital' [online] Available at: <http://www.nice.org.uk/guidance/CG174> (Accessed 27 July 2014)