The Right Amount of the Right Fluid at the Right Time

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Aim
To improve fluid prescription and fluid balance charting across NHS Fife.

Why is this needed?
20% of patients, particularly the elderly, who receive intravenous fluid in hospital suffer morbidity or mortality as a result. This is a huge burden to the NHS and to patients. Much of this is preventable, but change has been slow to occur due to the widespread change in practices required. The OPAH Report of 2014 demonstrated that no Scottish hospitals chart fluid balance adequately.

Methods
1. Examine existing practice Fig 1.
2. Review guidelines on fluid therapy in adults.
3. Engage management.
4. Develop guidelines based on the GIFTASUP and NICE guidelines.

Fig 1: Patient days and amounts of fluid, sodium and potassium in SHDU 2010

5. Educate medical and nursing staff. Fig 3.
7. Introduce new charts Fig 7, 8 after employing a Quality Improvement Nurse for Fluid Management.

Fig 2: NHS Fife guidelines for intravenous fluid and electrolyte prescription in adults

Fig 3: Staff education
- Junior doctor induction
- Consultant mandatory training
- FY1 and 2 teaching
- Presentations to various departments
- Talks in other hospitals
- Presentations and workshops in conferences
- Teaching sessions for nurses, ANPs, non-medical prescribers, Hospital at Night
- Learnpro module for nurses and junior doctors
- Patient leaflet
- Reminder cards
- Posters in lifts and in wards
- Paper in preparation
- App to be developed with NES

Fig 4: Staff education poster

Fig 5: Staff education poster

FLUIDS are DRUGS

STOP and THINK

1. Does the patient need IV fluids?
2. Why? Replacement, Hydration, Maintenance
3. How much?
4. Which fluid?

See the NNT/FM intravenous fluid and hydration/maintenance Fluid guidelines available in your ward and in the inpatient

Fig 6: Staff education poster

Fig 7: Fluid prescription chart

Fig 8: Input output chart

Fig 9: Fluid nurse

A part-time Quality Improvement (QI) Nurse for Fluid Management was appointed in 2013 from a Research and Development QI Grant. This post was funded for a further two years by NHS Fife after savings were made on fluids and is now being funded full time for a year by the Scottish Government to support the national programme.

8. Standardise the fluids used for maintenance, replacement and resuscitation. Fig 10.

Fig 10: Standardised fluid bag (maintenance)

Fig 11: Audit results ward X before and after nurse education

Fig 12: Fluid use NHS Fife in litres/month

Fig 13: Litres/occupied bed day

Fig 14: National Fluid IV Programme

Outcomes
Process measures such as ward audits and prescription audits are ongoing. Fig 11. We have looked at fluid use in terms of total volumes used and the cost of the fluids. Fig 12, 13. A study of blood tests from 2007-2017 looking at lab results from thousands of patients is underway with Dundee University.

Fig 11 Audit results ward X before and after nurse education

Fig 12 Fluid use NHS Fife in litres/month

Fig 13 Litres/occupied bed day

Fig 14 National Fluid IV Programme

References
- NHS Fife Fluid team. Part of this programme will focus on peri-operative fluid management.

Fig 14 National Fluid IV Programme

Conclusion
The culture around fluid use has changed and junior doctors now have a logical system on which to base prescribing decisions. Nursing education in the wards continues with a full-time Fluid Nurse (E. Ridley). Nurse education is effective in improving fluid balance charting.

Fig 15 National Fluid IV Programme

The Future
A national intravenous fluid programme with financial support for all boards was launched by the Scottish Government in February 2018, in conjunction with the NHS Fife Fluid team. Part of this programme will focus on peri-operative fluids and there will be a drive to standardise fluid education in the universities.

Fig 16 National Fluid IV Programme

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