

## **Intravenous Fluid Management Audit**

### **Questions to be answered: -**

1. Are intravenous fluid regimes accurately prescribed, administered and documented?
  2. Are Intravenous fluids monitored accurately during administration?
  3. Are fluid balance charts accurately completed?
- Intravenous fluid therapy has well documented risks involved and in March 2006 the D.O.H.S.S.N.I. Issued new guidance on safe administration for children aged 1 month -16 years, who were previously well.
- A program of teaching for nursing and medical staff was developed to inform staff of the new guidelines. These sessions were provided in the Erne Hospital in June & July. They were well attended and evaluated very positively.

**The aim** of this audit is to ascertain how effective the guidelines are being implemented and what areas of practice do we need to improve on.

### **Objective**

To audit 10 sets of notes on patients who received Intravenous fluids from first of January until end February 2006, prior to the new guidelines from the Department of Health. These notes will be picked from each month at random on both medical & surgical patients.

The second stage is to audit 10 sets of notes each month on patients who received Intravenous fluids from the first of December 2006 to the end of January 2007.

If the patient required Intravenous Fluids for a number of days during admission the first complete chart for a 24 hour, period will be audited.

### **Evaluation**

The results will be compared to the D.O.H.S.S.N.I guidelines  
Areas of good & poor practice will be highlighted and action plans developed to try and identify means of improving standards to meet those within the guideline. The audit tool will form the basis for re-evaluating any strategies implemented to help improve the practice of I.V Fluid Management in children.

## Intravenous Fluid Management Audit

Patient Identification no:.....

Date of admission.....Risk category.....

Name of Auditor.....

**Risk category A = patient identified at particular risk of hyponatremia**  
**Risk category B = patient identified as other and plasma sodium within normal limits**

Fluid balance chart	YES	NO	NA
Patients ID addressograph correctly placed			
Patients actual recorded weight ( not an estimated weight)			
Date & Time clear			
Maintenance Fluid solution appropriate			
Replacement fluid solution appropriate			
Calculation section completed according to weight			
Maintenance Fluid rate appropriate			
Replacement fluid rate appropriate			
Additive section completed correctly			
Prescribing Doctor clearly identified			
Administering nurses clearly identified			
Fluid Balance chart dated correctly			
Any omissions on the following monitoring:-			
Hourly rate			
Total amount infused hourly			
Volume remaining in bag hourly			
Venflon checked hourly			
Signature hourly			
Correct Completion of 12 hour total of Enteral, Intravenous fluids & output			
Correct Completion of 24 hour total of Enteral, Intravenous fluids, & output			
Correct Completion of 24 hour total Intake			
Correct Completion of 24 hour total output			
Initial blood U&E recorded			
Appropriate blood U&E rechecked within 12 hours ( Risk A group) or within 24 hours ( Risk B group)			

## **Audit Results**

13 Intravenous Fluid Balance charts were obtained from 23/12/05- 23/03/06

### **4 risk A category (results)**

<b>Fluid balance chart</b>	<b>YES</b>	<b>NO</b>	<b>NA</b>	<b>comment</b>
Patients ID addressograph correctly placed	2	2		
Patients actual recorded weight (not an estimated weight)	3	1		
Date & Time clear	3	1		
Maintenance Fluid solution appropriate	3	1		
Replacement fluid solution appropriate	2		2	
Calculation section completed according to weight	4			
Maintenance Fluid rate appropriate	4			
Replacement fluid rate appropriate	2		2	
Additive section completed correctly	1		3	
Prescribing Doctor clearly identified	2	2		
Administering nurses clearly identified	4			
Fluid Balance chart dated correctly	3	1		
Any omissions on the following monitoring: -				
Hourly rate	1	3		
Total amount infused hourly	1	3		
Volume remaining in bag hourly	1	3		
Venflon checked hourly	1	3		
Signature hourly	1	3		
Correct Completion of 12 hour total of Enteral, Intravenous fluids & output	2	2		
Correct Completion of 24 hour total of Enteral, Intravenous fluids, & output	1	3		Nappy not weighed
Correct Completion of 24 hour total Intake	2	2		
Correct Completion of 24 hour total output	2	2		
Initial blood U&E recorded	4			
Appropriate blood U&E rechecked within 12 hours ( Risk A group) or within 24 hours ( Risk B group)	3		1	

**Intravenous Fluid Balance charts were obtained from 23/12/05- 23/03/06**  
**9 (risk B) results**

<b>Fluid balance chart</b>	<b>YES</b>	<b>NO</b>	<b>NA</b>	<b>comment</b>
Patients ID addressograph correctly placed on both sides	5	4		
Patients actual recorded weight (not an estimated weight)	8	1		
Date / Time clear	9			
Maintenance Fluid solution appropriate	9			
Replacement fluid solution appropriate	1		8	
Calculation section completed according to weight	4	5		
Maintenance Fluid rate appropriate	8	1		
Replacement fluid rate appropriate	1		8	
Additive section completed correctly	1		8	
Prescribing Doctor clearly identified	4	5		
Administering nurses clearly identified	7	2		
Fluid Balance chart dated correctly	9			
Any omissions on the following monitoring:-				
Hourly rate	3	6		
Total amount infused hourly	3	6		
Volume remaining in bag hourly	3	6		
Venflon checked hourly	3	6		
Signature hourly	4	5		
Correct Completion of 12 hour total of Enteral, Intravenous fluids & output	3	5	1	
Correct Completion of 24 hour total of Enteral, Intravenous fluids, & output	1	8		
Correct Completion of 24 hour total Intake	3	6		
Correct Completion of 24 hour total output	1	8		
Initial blood U&E recorded	9			
Appropriate blood U&E rechecked within 12 hours ( Risk A group) or within 24 hours ( Risk B group)	4		5	

Results from 20 Intravenous Fluid Balance Charts from 16/12/06-14/01/07  
4 Risk A category

<b>Fluid balance chart</b>	<b>YES</b>	<b>NO</b>	<b>NA</b>	<b>Comment</b>
Patients ID addressograph correctly placed	2	2		
Patients actual recorded weight (not an estimated weight)	4			
Date & Time clear	2	2		
Maintenance Fluid solution appropriate	3	1		
Replacement fluid solution appropriate	1		3	
Calculation section completed according to weight	2	2		
Maintenance Fluid rate appropriate	4			
Replacement fluid rate appropriate		1	3	
Additive section completed correctly			4	
Prescribing Doctor clearly identified	2	2		
Administering nurses clearly identified	3	1		
Fluid Balance chart dated correctly	4			
Any omissions on the following monitoring:-				
Hourly rate	1	3		
Total amount infused hourly	1	3		
Volume remaining in bag hourly	1	3		
Venflon checked hourly	1	3		
Signature hourly	1	3		
Correct Completion of 12 hour total of Enteral, Intravenous fluids & output	2	2		
Correct Completion of 24 hour total of Enteral, Intravenous fluids, & output	2	2		
Correct Completion of 24 hour total Intake	3	1		
Correct Completion of 24 hour total output	3	1		
Initial blood U&E recorded	4			
Appropriate blood U&E rechecked within 12 hours ( Risk A group) or within 24 hours ( Risk B group)	2		2	

## 16 Risk A Category Intravenous Fluid Balance Charts from 16/12/06-14/01/07

Fluid balance chart	YES	NO	NA	comment
Patients ID addressograph correctly placed	14	4		
Patients actual recorded weight ( not an estimated weight)	16			
Date & Time clear	16			
Maintenance Fluid solution appropriate	16			
Replacement fluid solution appropriate	3		13	Bolus given
Calculation section completed according to weight	10	6		
Maintenance Fluid rate appropriate	16			
Replacement fluid rate appropriate	1		15	
Additive section completed correctly			16	
Prescribing Doctor clearly identified	11	5		
Administering nurses clearly identified	15	1		
Fluid Balance chart dated correctly	16			
Any omissions on the following monitoring:-				
Hourly rate	5	11		
Total amount infused hourly	5	11		
Volume remaining in bag hourly	6	10		
Venflon checked hourly	5	11		
Signature hourly	5	11		
Correct Completion of 12 hour total of Enteral, Intravenous fluids & output	8	8		
Correct Completion of 24 hour total of Enteral, Intravenous fluids, & output	8	5	3	
Correct Completion of 24 hour total Intake	11	3	2	
Correct Completion of 24 hour total output	8	6	2	Nappies not weighed
Initial blood U&E recorded	16			
Appropriate blood U&E rechecked within 12 hours ( Risk A group) or within 24 hours ( Risk B group)	8		8	

## **Results and evaluation**

From the 13 charts obtained prior to the implementation of the new guidelines (D.O.H.S.S.N.I March 2006) the following areas of good practice were identified: -

- Appropriate I.V Fluid solution used in 12 out of 13 cases.
- Actual weight was recorded on 11/13 charts.
- Maintenance fluid rate was correct in all 12/13 charts.
- An initial U&E was obtained in all 13 cases.
- An appropriate blood U&E was obtained in all patients requiring a recheck within 12-24 hrs.

The following poor areas of practice were identified as: -

- Patient I.D addressograph not placed correctly on 6/13 of charts.
- Actual weight not recorded on 2/13 charts.
- Maintenance fluid solution inappropriate compared to recent guidelines, 0.45 % saline and 2.5 % dextrose used instead of 0.9 % saline in one chart
- Calculation section not completed on 5 charts.
- Maintenance fluid rate inappropriate on one chart
- Prescribing Doctors signature not clearly identifiable on 7/13 charts.
- Nursing Signature not clearly identifiable on 2 charts
- Hourly nursing checks incomplete on 5/13 charts
- 12 & 24 hour totals not completed on 50% of the charts

From the 20 charts obtained following the implementation of the new guidelines (D.O.H.S.S.N.I. March 2006) and staff education sessions, the following areas of good practice were identified: -

- Appropriate I.V Fluid solution used in 19 out of 20 cases.
- Actual weight was recorded on all 20 charts.
- Maintenance fluid rate was correct in all 20 charts.
- An initial U&E was obtained in all 20 cases.
- An appropriate blood U&E was obtained in all patients requiring a recheck within 12-24 hrs.

The following poor areas of practice were identified as: -

- Patient I.D addressograph not placed correctly on 6/20 charts.
- Calculation section not completed from 8/20 charts.
- Maintenance fluid solution inappropriate in one chart compared to recent guidelines, 0.45 % saline and 2.5 % dextrose used instead of 0.9 % saline.
- Prescribing Doctors signature not clearly identifiable on 7/20 charts.
- Nurses signature not clearly identified on 2/20 chart.
- Hourly nursing checks incomplete on 6/20 charts
- 12 & 24 hour totals not completed on 50% of the charts.

Overall the results indicate appropriate management of Intravenous fluids in the majority of charts audited. The main areas for improvement are concerned with documentation and ensuring the signatures are clearly identifiable, the calculation section is used on all charts, nursing checks are completed hourly and fluid balance totals are also completed for each 12 and 24 hour period.