## DOCUMENT CONTROL PAGE

| Title | Title: Fluid Balance Policy for adult in-patient areas  
Version: 1 |
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</table>
| Originator or modifier | Originated By: Donna Egan  
Critical Care Outreach Coordinator  
Sarah Ingleby  
Acute Care Lead Nurse  
Steve Jones  
Consultant Critical Care  
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Assistant Director of Nursing  
Jane Eddleston  
Clinical Director- Critical Care |
| Ratification | Referred for approval by: Professional Forum  
Date of Referral: 4th August 2010 |
| Application | Patients – Adults only |
| Circulation | Issue Date: October 2010  
Circulated by: Donna Egan Outreach Coordinator |
| Dissemination and Implementation: Refer to section 7. |
| Review | Review Date: October 2011  
Responsibility of: Donna Egan Outreach Coordinator |
| Date placed on the Intranet: | 28/10/10  
Please enter your EqIA Registration Number here: IP/93/2010  
Refer to section 5: Equality, Diversity and Human Rights Impact Assessment |
**Summary of Fluid Balance Policy**

**Standard:** All inpatients within the Trust who meet the criteria for fluid balance measurement will have accurate and fully completed fluid balance charts as set out in the fluid balance policy

**Which patients require a fluid chart?**
- All adults inpatients should be assessed for the need to have a fluid balance chart utilising flow chart 1 (page 6) to assess for risk factors
- Once a fluid balance chart is commenced using flow chart 2 (page 9) on a daily basis
- For IV fluids the actual amount infused each hour should be documented. If a pump is not used for example when giving a fluid bolus, then the amount infused is recorded at the end of the infusion.
- The patient is on the end of life care pathway—the fluid balance chart should be discontinued once the pathway is commenced.
- Patients with long term urinary catheters on diet and fluids can have fluid balance discontinued at the discretion of the ST1 or above or shift leader caring for the patient

**Documentation:**
- If the fluid balance starts or finishes at a specific time other than midnight then staff must draw a line through the time lines not used.
- The daily fluid balance amount must be entered clearly once the chart is complete at the end of the 24 hour period.
- All fluid balance charts should be completed in black pen with the patients name, date, ward and hospital number.

**Estimation of fluid balance:**
- As much as possible oral fluids should not be estimated, recognised measuring containers must be used and an actual volume documented.
- Include each saline flush given between bolus of IV drugs on the fluid chart
- Insensible loss must be considered when working out fluid balance as it is an essential component of working out accurate fluid balance.
- Clinical staff should estimate urine output in cases of incontinence. Care must be taken in the case of vomiting, diarrhoea and blood loss that attempts are made to arrive at an estimate of volume. This is especially important in cases where this is the contributing cause of the patient’s dehydration.

**Escalation:**
- Acute patients’ with a urinary catheter in situ must have their output monitored and measured hourly until the patient’s clinical condition has improved and observations are required 8 hourly or more.
- If adult patient’s produce <2mls/kg over 4hrs or 0.5mls/kg/hr (exemption in chronic renal failure patients who are anuric) then this is an **automatic trigger for referral** requiring primary medical and nurse responder review.
- If urine output is less than 0.5mls/kg/hr in adults review should be escalated as per trust EWS policy.
1 Introduction
Nurses, midwives and doctors have pivotal role in the early identification of patients at risk of deterioration through early and accurate assessment of all physiological parameters.
This document sets out good practice in the use of fluid balance.

The need for accurate monitoring of physiological status is recommended strongly by both the National Patient Safety Agency (NPSA 2008) and the National Institute for Clinical Excellence (NICE 2007). The elements within this guideline are therefore aimed at achieving this through the accurate measurement of fluid balance in conjunction with the Trust’s EWS policy and Trust Oxygen policy.

The need for accurate fluid balance is also a key component of the Acutely Ill competencies produced by NICE guideline 50 (2007)

A separate fluid balance chart for children-Appendix 5 (defined as age 16 years or less) is also available within Central Manchester Foundation Trust (CMFT)

2 Purpose
Timely and appropriate use of fluid balance observation and recording is an essential tool in determining adequate hydration. When patients are actually or potentially acutely ill they may show early warning signs which can be detected through accurate fluid balance as well as an appropriate track and trigger observation chart. Without appropriately accurate fluid balance monitoring these signs may go undetected which can contribute to increased length of stay/mortality. It is the requirement of all health care staff within the Trust to assume the relevant responsibility to ensure that this guideline is met.

- Successful fluid balance is dependent upon:
  - Timely/appropriate rationale for commencement/discontinuation.
  - One system for detailed & accurate measurement of input/output.
  - Consideration of insensible loss.
3 Roles and Responsibilities

3.1 Duties within the Organisation

- **Heads of Nursing** – to ensure that policy is disseminated and audited and corrective action taken as required
- **Lead Nurses/Matrons** - to ensure that delivery of care to all patients within the Division adhere to the policy and all staff groups are educated to the level required, whilst keeping up to date with current practice.
- **Ward Managers** - to ensure that delivery of care to all patients within the ward adheres to the policy and all staff groups are educated to the required level, whilst keeping up to date with current practice.
- **Ward Staff** - to ensure that delivery of care to all patients within the ward adheres to the policy and keeps up to date with current practice.
- **Clinicians** - to ensure that in all patients under their care there is adherence to the policy and all staff groups are educated to the level required, whilst keeping up to date with current practice. To review and respond to issues highlighted by the policy.
4 **Detail of Procedural Document.**

4.1 **Indications for commencement/ discontinuation of Fluid Balance Monitoring**

- **Are any of the following 6 risk factors relevant?**

  - **Actual or potential dehydration**
    - Diarrhoea
    - High output stoma
    - Large open wound/vac therapy
    - Excessive vomiting/ high NG output
    - RR ≥ 20bpm (25bpm in chronic respiratory conditions)
    - Temp ≥ 38°C
  
    **Adults:**
    - Urine output ≥ 200mls/hr
    - Urine output ≤ 0.5mls/kg/hr
    - Requires assistance to eat and drink

  - **Commencing or prescribed IV Fluid/ IV drug therapy/ enteral feeding**

  - **Actual or potential acute illness**
    - EWS ≥ 3
    - At risk of Level 2/3 care
    - Level 2/3 care discharge ≤ 48hrs
    - Sepsis
    - Systolic BP ≤ 90mmhg
    - Concern for patient

  - **Routine post operative management**

  - **Fluid Restriction**
    - Unstable cardiac failure
    - Liver failure
    - Acute renal failure
    - Chronic renal failure

  - **Urinary catheter in situ**

**Fluid Balance Flow Chart 1**

- **None are applicable or relevant**
  - Go to flow chart 2

- **1 or more factors present?**
  - Commence fluid balance chart within one hour

**If patient commences fluid balance chart, daily reassessment using flow chart 1 & 2 should be used to determine the need for continued fluid balance monitoring.**

**Document assessment of fluid status and the reason for commencing and discontinuing fluid balance chart in the patients nursing and medical notes.**
4.2 Flow Chart 1 in detail:

Each adult patient on admission to the CMFT should be assessed by a registered nurse band 5 or above using flowchart 1 and risk factors identified. Any identified risk factors should be reported to the primary nurse responder and relevant member of the medical team.

4.3 Actual or potential dehydration

4.3.1 Diarrhoea- a history in the last 24hrs of loose stool of increased frequency.

4.3.2 High output stoma- a history in the last 24hrs of loose stool or increased frequency > 1 litre/24hrs.

4.3.3 Large open wound/ Vac therapy- all output must be accounted for and estimated if unable to measure as patients can lose large fluid volumes through an open wound.

4.3.4 Excessive vomiting/ high nasogastric output- particularly if high output (>500 ml / day) cause:

- Dehydration
- Electrolyte and acid-base imbalance
- Malnutrition

4.3.5 Respiratory rate ≥ 20bpm (25bpm in chronic respiratory conditions)- can lead to fluid loss > 500mls/24hrs.

4.3.6 Temperature ≥ 38 °C in adults- increased fluid losses to > 500mls /24hrs.

4.3.7 Urine output >200mls/hr- is unsustainable in adults and will lead to dehydration, requires further investigation.

4.3.8 New Urine output< 0.5mls/kg/hr- is a sign of acute renal failure in adults that may be caused by dehydration and requires urgent medical review i.e. not applicable in end stage renal failure.

4.4 Intravenous/enteral fluids- any patient prescribed fluids or medication via any route other than oral.

4.5 Actual or potential acute illness- any patient who has an EWS ≥3, shows signs of clinical deterioration or displays signs and symptoms of sepsis or severe sepsis. Severe Sepsis Pathway accessed via acute care website on the Trust Intranet.

4.6 Routine post operative management- any patient who has undergone surgery-intra operative fluid balance must be considered.

4.7 Fluid restriction- any patients with cardiac, liver or renal failure that are fluid restricted should ideally be weighed daily to assist in the accurate assessment of fluid status.
4.8 **Urinary catheter**—any patient with urinary catheter, convene, urostomy or bladder irrigation should have urine volumes measured.

4.9 **Flow chart 2**

![Fluid Balance flow chart 2]

Daily assessment
Are any of the following relevant?

- Patient is on the End of Life Care Pathway
- The patient is currently being monitored using a fluid balance chart
- The patient is to go to a rehabilitation/complex discharge ward
- Is the patient NG/PEG fed?

Does the **patient have any of the 6 risk factors?**

- Yes
- No

- Stop fluid balance chart. ST1 or above or shift leader decision Reassess weekly or if clinical condition changes
- Commence/continue fluid balance chart

- Continue fluid balance chart
- Stop fluid balance
4.10 Flow Chart 2 in detail:

Daily, at the beginning of each early shift the registered Nurse with responsibility for the patient (before appropriate delegation of care to CSW) should assess the patients fluid status for the previous 24hrs and report abnormalities to the primary nurse responder and appropriate member of the medical team. The patient will fall into 3 categories:

4.10.1 **The patient is on the end of life care pathway**- the fluid balance chart should be discontinued once the pathway is commenced.

4.10.2 **The patient is to go to a rehabilitation ward**- if the patient has any form of input other than oral then fluid balance should be measured. Patients with long term urinary catheters on diet and fluids can have fluid balance discontinued at the discretion of the consultant caring for the patient.

4.10.3 **Fluid balance is currently measured**- if the patient has any of the 6 risk factors continue fluid balance if not then following review by senior band 5 or above the fluid balance is discontinued and reassessed in weekly or with any change in clinical condition.

4.11 Documentation

The Trust fluid balance chart should be used. (Adults appendix 3). If local fluid balance charts are required for use; this must be agreed by the outreach team to ensure quality and standards.

4.12 Input

Misunderstandings with documentation can cause inaccuracies with input. **Do not** document the full volume of fluid on commencement and/or completion. This is not acceptable as it has potential for error.

4.12.1 **Intra venous input**

- Staff must record the **actual amount infused** each hour, (e.g. 1 litre over 8 hours would be 125ml/hr). This is the only accepted method for documenting input of intra-venous fluids.
- If the fluid is not running through a pump the fluid is recorded at the end of the infusion.
- Include each saline flush given between bolus of IV drugs on the fluid chart. If a patient is on multiple IV drugs it can add up to a substantial amount over a 24hr period.

4.12.2 **Non Intravenous input**

If the patient is receiving oral or naso-gastric input or any other type of fluid intake then this must be accurately documented.

- Oral input must be documented clearly and should not be a matter of guesswork. Input based on what is missing from the patient’s jug is prone to error as there are too many variables for why the fluid may be missing.
- Use a glass, cup or other vessel that have known or clearly marked volumes.
- If possible/relevant, get the patient/relatives to document input.
It is **not acceptable** to write ‘sips’. If an accurate measure is not possible an estimate of input must be given on any fluid that has been given. Running totals must be completed throughout the day.

**Figure 1. Volumes of different vessels.**

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<td>200 mls</td>
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<td></td>
<td>1000 mls</td>
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</table>

**4.13 Output**
All forms of fluid loss should be accounted for with as much accuracy as possible. Poor documentation can be life threatening and is indefensible.

**4.13.1 Insensible loss**
Insensible loss is the mechanism whereby patients lose fluid through processes such as sweating and respiration.

- Insensible loss must be considered when working out fluid balance in all acute areas as it is an essential component of working out accurate fluid balance.
- Accurate insensible loss is calculated from patient’s weight. However, this presents some practical challenges in that patient’s weight may be unknown and that the calculation takes time. A routine baseline of 500mls is acceptable for use in calculation of insensible loss for patients in non critical care areas.
- Patients who are known to be underweight or overweight may require application of the critical care method of determining insensible loss (appendix 1).
- Running output totals must be completed throughout the day

**4.13.2 Urine output**
It is unacceptable to document urine output ambiguously, (exceptions include the patient accidentally passing urine in the toilet,). If patients meet the criteria for fluid balance then they must meet the criteria for accuracy.

- Patients must be encouraged to use receptacles for urine collection.
• Clinical staff should estimate urine output in cases of incontinence.
• Acute patients’ with a urinary catheter in situ must have their output monitored and measured hourly until the patient’s clinical condition has improved and observations are required 8 hourly or less. If such patient’s produce less than 2mls/kg over 4hrs or 0.5mls/kg/hr (exemption in chronic renal failure patients who are anuric) then this is an automatic trigger for referral requiring primary medical and nurse responder review.
• If urine output is less than 0.5mls/kg/hr with an EWS ≥ 3 review should be escalated as per trust EWS policy.
• If a patient is catheterised then mechanical obstruction must be ruled out as per guidelines for establishing patency of a urinary catheter utilising aseptic non touch technique following Royal Marsden guidelines.

4.13.2 Other forms of output
• Any drain or stoma output must be entered accurately.
• One or more of the columns may be used to chart volume within chest drains. The column must then be labelled clearly (e.g. ‘chest drain’)
• Care must be taken in the case of vomiting or diarrhoea that attempts are made to arrive at an estimate of volume. This is especially important in cases where this is the contributing cause of the patient’s dehydration.
• The clinician may be able to advise on an estimated volume of overt blood loss in the case of trauma, peri operative or post operative patients.
• In patients with severe leaking oedema /excessive wound exudates it is possible to arrive at an estimate. A wound evaluation chart must be used as per Trust policy.

4.14 Completing Fluid Balance
• If the fluid balance starts or finishes at a specific time other than midnight then staff must draw a line through the time lines not used.
• The daily fluid balance amount must be entered clearly once the chart is complete at the end of the 24 hour period.
• All fluid balance charts should be completed with the patients name, date, ward and hospital number.
• Any IV infusion devices should be documented on the fluid balance chart.
• All fluid devices should have the pump number recorded on the fluid balance chart and rates of infusion checked and signed for on each shift. (Allitt Inquiry/ Clothier Report 1994)
• All intravenous access devices should be assessed as per hospital policy utilising the VIP score or Mr Victor score for central lines as part of the nursing assessment.
4.15 Communicating, Reviewing & Reporting on Fluid Balance

**Patient commences fluid balance**

**When to review patients fluid status - minimum guideline**

- **Routinely**
- **Emergency/Acute Illness**
  - EWS trigger
  - Actual / potential clinical deterioration

**Emergency/Acute Illness**

**Nurse**

- Review fluid balance immediately as part of assessment using ABCDE approach (see appendix 3)

**Review fluid balance**

- **Immediate referral to relevant medical staff if 1-4 apply. Escalate if cause for concern or as per EWS trigger**

**Immediate nurse referral to relevant medical staff if 1-4 apply. Escalate if cause for concern or as per EWS trigger**

**Nurse**

On shift handover, nursing staff must ensure that they clearly indicate which patients are on fluid balance and which patients demonstrate cause for concern.

When patients are transferred between wards or departments, verbal and written documentation must include fluid balance and any concerns if applicable.

FY1 doctors must alert an FY2 doctor immediately if there are concerns about fluid balance which cannot be resolved within 4 hours if EWS ≤ 3. If EWS ≥ 4 FY2/ST1 or ST2 must be contacted within 1 hr.
5 Equality, Diversity and Human Rights Impact Assessment.

5.1 The best way to promote equality is to make sure it is embedded into all procedural documents. All Trust procedural documents must be inclusive. It is important to address, through consultation, the diverse needs of our community, patients, their carers and our staff. This will be achieved by working to the values and principles set out in the Trust’s Equality, Diversity and Human Rights Strategic Framework. The Trust is committed to ensuring all new procedural documents and functions are impact assessed and monitored in accordance with the letter and the spirit of the law regarding equality. The Trust's Equality, Diversity and Human Rights Strategic Framework can be found on the Trust’s Intranet or from the Service Equality Team.

5.2 Please contact the Service Equality Team (SET) on Ext 66897 for support to complete an initial assessment. Upon completion of the assessment, SET will assign the Policy a unique EqIA Registration Number.
6 Consultation, Approval and Ratification Process

6.1 Consultation Process, Consultation and Communication with Stakeholders
   The document was sent to the following groups for review and ratification:
   · Members of Outreach and Acute Care team
   · Critical Care Clinical director
   · Lead Nurse Critical Care
   · Assistant director of Nursing
   · Critical Care Delivery group
   · Clinical governance Lead

6.2 Policy Approval Process
   This policy will be approved by the Critical Care delivery group and professional forum.

6.3 Ratification Process
   This policy will be approved by the Critical Care delivery group and professional forum

7 Dissemination and Implementation

7.1 Dissemination
   7.1.1 The policy is available to all staff via the Trust intranet site.
   7.1.2 The policy is launched via Team Brief, Trust wide launch event and briefings from the Outreach and Acute Care Team to line managers at Divisional and Department meetings, also through drop in/ ad hoc sessions, ward meetings and the educators in each division..

7.2 Implementation of Procedural Documents
   7.2.1 All staff receive training detailing the new principles and systems for the policy and implementation date, distributed through their line manager, Early Warning Score Link nurses and departmental meetings.
   7.2.2 The policy is implemented through local training sessions provided in departments by the Outreach, Acute Care Team and divisional educators.

8 Monitoring Compliance of Procedural Documents

8.1 Competency
   8.1.1 The NICE guidance 50 (2007) states that “staff caring for patients in acute hospital settings should have competencies in monitoring, measuring interpretation and prompt response to the acutely ill patient appropriate to their level of care that they are providing”. Within CMFT it is deemed that this includes the monitoring of a patients fluid balance status for clinical support workers.
   8.1.2 All new to the Trust nurses, midwives and clinical support workers will receive training during their induction period utilising a presentation provided by the Critical Care Outreach Team that will be supplied to all ward managers, divisional educators and EWS link nurses throughout the Trust. This is also available on the Trust Intranet.

8.2 Quality Assurance and Audit
8.2.1 Any deviation from this policy leading to deterioration of the patient requires completion of an incident report the level of which will be determined on a patient specific basis.
8.2.2 All in-patient areas of the Trust will be subject to quarterly audit encompassed within the matron’s ward round to ensure that fluid balance charts are completed to the Trust standard as set out in this document.
8.2.3 Responsibilities for conducting the monitoring/audit will be coordinated by the Senior Nursing Management via the Matrons ward round.
8.2.4 Method to be used for monitoring/audit – matrons ward round.
8.2.5 Frequency of monitoring/audit - quarterly on the Matrons Ward round with point prevalence audit as required (appendix 2 and 7).
8.2.6 Process for reviewing results and ensuring improvements in performance occur:
   - If the level of accuracy is less than 100%, then the manager for each area will be expected to inform the education development practitioner and lead nurse and heads of nursing for the division so monitoring procedures can be instigated. In conjunction the ward can receive training as required in the accurate recording of fluid balance supported by the Critical Care Outreach team.
   - All acute in patient areas not meeting 100% accuracy on routine audit are subject to random audit by the Critical Care Outreach team if deemed appropriate and Senior Nursing Management via the Matrons ward round.
   - Responsibility for audit compliance lies with the Senior Clinical Nurses/Matrons or Directors.
8.2.7 Action plan contingencies may include:
   - A thorough evaluation of priorities within the ward area
   - Evidenced meetings and awareness sessions with staff. These should demonstrate that each member of staff has been briefed
   - If a shift in prioritisation impacts on other cares then it will be up to the ward manager to decide how this will be addressed
   - Attendance at an AIM course
   - Personal responsibility framework for non compliant staff

8.3 Standards and Key Performance Indicators ‘KPIs’
8.3.1 The policy is available to all staff via the Trust intranet site
8.3.2 This policy must be reviewed at least every three years or when there are significant changes to the document. The policy will be reviewed every 3 years
8.3.3 Training, as required by this policy, will be made available throughout the Trust and supported by the Outreach and Acute Care Team. Training will be reviewed for attendance and content.
8.3.4 Yearly audit reports will be produced by the Outreach and Acute Care Team utilising matrons ward round data.

9 References and Bibliography
Allitt Inquiry Independent Inquiry relating to deaths and injuries on the children’s ward at Grantham and Kesteven General Hospital.
London: HMSO, 1994


10 Associated Trust Documents
All available on the intranet-
  10.1 EWS policy
  10.2 Observation Policy
  10.3 Sepsis version guideline 2009
  10.4 Catheter Management Protocol 11th September 2009
  10.5 Retention of Urine Protocol 11th September 2009
  10.7 Royal Marsden Hospital Manual of Clinical Nursing Procedures

11 Appendices

Appendix 1

Insensible Loss in Critical Care

a) Find out the patient’s weight (e.g. 70kg)
   Divide the figure by half (e.g. 35)
   Convert the figure to mls (e.g. 35ml)
   This is the amount that the patient will lose per hour

b) Add 25% to the insensible loss for every 2 degrees of temperature above 37 degrees. You also need to subtract 25% for every one degree under 35 degrees.

So, for example:

- Temperature 39.1. Insensible loss was 20ml/hr. Insensible loss is now 25ml/hr but only whilst the temperature is raised
- Temperature 34. Insensible loss was 20ml/hr. Insensible loss is now 15ml/hr but only whilst the temperature is low

c) You need to half the insensible loss if the patient is on humidification
Appendix 2
Central Manchester University Hospitals

Audit of Fluid Balance Charts- Adults

Hospital Site: ..................  Ward: ...................

Date: ..........................  Completed by: ..........................

This proforma is to be used to audit one side of a completed fluid balance chart i.e. input and output over 12 hours or for the period of the length of stay in the clinical area (i.e. theatre recovery stay)

1. Are the following patient details completed?
   a) Name
   b) Hospital number?
   c) Name of fluid being administered recorded?

2. Are the following details recorded every hour for the fluid being administered (Only evaluate one IV infusion)
   a) Hourly rate?
   b) Hourly total?
   c) Cumulative total?

3. Are the following details completed?
   a) Is the oral/NG intake recorded in mls or documented in alternate format? (e.g. Nil By Mouth)
   b) Is cumulative total detailed?

4. Are the following details completed?
   a) Urine output recorded in mls estimated or measured or as statement (e.g. incontinent, passed urine, catheter not emptied)
   b) Cumulative hourly urine output recorded or detailed urine voided?
   c) Cumulative output recorded hourly or when additions to output made?

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Upon completion of all 5 audits, the auditor must complete the following table on one of the audit proformas to indicate overall performance for the clinical area

Overall Performance indicator

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See the Intranet for the latest version.  Version Number:- 1
## Appendix 3- Fluid chart Adult

### FLUID BALANCE CHART (ADULT)

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<th>INTRAVEHOURS THERAPY/SCUBUT</th>
<th>HOURLY TOTAL</th>
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<td>07:00</td>
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</tbody>
</table>

**TOTAL ORAL:** *ml + TOTAL IV: * *ml - TOTAL INPUT: * *ml + TOTAL OUTPUT: * *ml = BALANCE: * *ml ± /.

**PUMP No.:**

**Signed Early:**

**Signed Late:**

**Signed Night:**

**Signed:**

**Signed Early:**

**Signed Late:**

**Signed Night:**

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Appendix 4- Fluid balance chart: Directions for Use- Adults

FLUID BALANCE CHART - DIRECTIONS FOR USE

This document provides guidance for using the adult fluid balance chart (58/10)

PATIENT INFORMATION
• Patients full name, hospital number, ward and consultant must be entered onto each side of the chart should be written in black pen.
• The date of the chart should be written on the top of the chart in the space provided

INPUT

ENTERAL (Oral/ NG/ Peg Intake
This section records any liquid food or fluid given to the patient.
• ORAL; A description of the type and volume of oral intake should be documented
• NG/GT This is the volume of naso-gastric / gastrostomy feed.
• CUMM TOTAL This is the cumulative or running total of all enteral intake and should be completed hourly.

TOTAL ORAL
• The total oral input from 08:00 until 07:00

IV FLUID
Provision is made for four infusions which should cater for the majority of patients receiving IV fluids. If you have a patient using more than four infusions please use a separate chart.
• The blank space at the top of each column is to record the type of fluid with additives to be infused
• Pump No. – this is the serial number for the infusion pump in use i.e. MEAM number and is to be checked and signed on each shift
• The rate is the hourly prescribed rate and should be checked and documented hourly
• Hourly total is the amount infused in that particular hour
• Cumulative total is the cumulative or running total for that particular infusion from the time the fluid chart commences and should be completed hourly

TOTAL IV
• The total IV from 08:00 until 07:00

• IV Cannula should be observed and VIP charts completed as per policy.

OUTPUT

URINE
• The amount of urine output is recorded each hour or whenever the patient passes urine.
• A full description of any abnormalities of the urine ie colour, consistency, amount e.g <0.5- 1mls/kg/hr should be documented in nursing documentation and urinalysis taken if appropriate.
• The cumulative running total of urine output should also be recorded and added to the total cumulative output.
VOMIT
• The amount of each vomit is recorded, again with a full description i.e. colour, consistency, amount in nursing documentation.
• This should be added into the cumulative output

ASPIRATE
• Record the amount of hourly aspirate or whenever the naso-gastric tube is aspirated.
• A full description of the aspirate should also be recorded i.e. colour, consistency, amount.
• This should be added into the cumulative output

STOOL
• A description of the patients’ stools i.e. colour, consistency, amount, must be recorded in nursing documentation and along with the volume, if appropriate. Stool charts and ICP documentation to be commenced as appropriate.

DRAINAGE
• Record in this section the drainage from wounds or drains. You need to write in the space at the top of the column what you are recording. If the patient has more than 2 drains a further chart can be utilised.
• This should be added into the cumulative output

CUMULATIVE OUTPUT
This will record the cumulative or running total for each hour cumulating in the daily total

FLUID BALANCE
• The total input should be calculated and the total output and a balance for that period can be determined, insensible loss should be considered when replacing fluids

WEEKLY FLUID BALANCE CHARTS
• A separate document is available to record overall daily input and output and balance to determine if the patient is in negative fluid balance (more output than input) or positive fluid balance (more intake than output) over a seven day period.
• The fluid balance for the 24 hour period takes into account the difference between the total amount of intake and the total amount of output. More output than intake is a negative balance, more intake than output is a positive balance.

SIGN
• This chart is an important part of the care process and is also a legal document. You may therefore be asked to account for your actions.
• In signing your name you are stating you have performed the care necessary for a patient with an IV infusion.
• Write your initials in the column provided for each pump. If you do not sign it is assumed you have not provided the necessary care.
## Appendix 5 - Fluid balance chart Childrens

### Central Manchester and Manchester Children's University Hospitals NHS Trust

#### Children's Division Fluid Balance Chart

<table>
<thead>
<tr>
<th>Time</th>
<th>IV Fluid 1</th>
<th>IV Fluid 2</th>
<th>IV Fluid 3</th>
<th>Enteral</th>
<th>Total Hourly Input</th>
<th>Running Input Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>00:00</td>
<td>100 ml</td>
<td>200 ml</td>
<td>300 ml</td>
<td>0 ml</td>
<td>600 ml</td>
<td></td>
</tr>
<tr>
<td>01:00</td>
<td>50 ml</td>
<td>100 ml</td>
<td>150 ml</td>
<td>0 ml</td>
<td>200 ml</td>
<td></td>
</tr>
<tr>
<td>02:00</td>
<td>75 ml</td>
<td>150 ml</td>
<td>225 ml</td>
<td>0 ml</td>
<td>450 ml</td>
<td></td>
</tr>
<tr>
<td>03:00</td>
<td>100 ml</td>
<td>200 ml</td>
<td>300 ml</td>
<td>0 ml</td>
<td>600 ml</td>
<td></td>
</tr>
<tr>
<td>04:00</td>
<td>50 ml</td>
<td>100 ml</td>
<td>150 ml</td>
<td>0 ml</td>
<td>200 ml</td>
<td></td>
</tr>
<tr>
<td>05:00</td>
<td>75 ml</td>
<td>150 ml</td>
<td>225 ml</td>
<td>0 ml</td>
<td>450 ml</td>
<td></td>
</tr>
<tr>
<td>06:00</td>
<td>100 ml</td>
<td>200 ml</td>
<td>300 ml</td>
<td>0 ml</td>
<td>600 ml</td>
<td></td>
</tr>
<tr>
<td>07:00</td>
<td>50 ml</td>
<td>100 ml</td>
<td>150 ml</td>
<td>0 ml</td>
<td>200 ml</td>
<td></td>
</tr>
<tr>
<td>08:00</td>
<td>75 ml</td>
<td>150 ml</td>
<td>225 ml</td>
<td>0 ml</td>
<td>450 ml</td>
<td></td>
</tr>
</tbody>
</table>

### Output

<table>
<thead>
<tr>
<th>Time</th>
<th>Urine</th>
<th>Vomiting</th>
<th>Aspirate</th>
<th>Stool</th>
<th>Drainage</th>
<th>Total Hourly Output</th>
<th>Running Fluid Balance</th>
</tr>
</thead>
<tbody>
<tr>
<td>00:00</td>
<td>10 ml</td>
<td>5 ml</td>
<td>2 ml</td>
<td>0 ml</td>
<td>15 ml</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01:00</td>
<td>5 ml</td>
<td>2 ml</td>
<td>1 ml</td>
<td>0 ml</td>
<td>8 ml</td>
<td></td>
<td></td>
</tr>
<tr>
<td>02:00</td>
<td>2 ml</td>
<td>1 ml</td>
<td>0.5 ml</td>
<td>0 ml</td>
<td>3.5 ml</td>
<td></td>
<td></td>
</tr>
<tr>
<td>03:00</td>
<td>1 ml</td>
<td>0.5 ml</td>
<td>0.25 ml</td>
<td>0 ml</td>
<td>1.25 ml</td>
<td></td>
<td></td>
</tr>
<tr>
<td>04:00</td>
<td>0.5 ml</td>
<td>0.25 ml</td>
<td>0.125 ml</td>
<td>0 ml</td>
<td>0.625 ml</td>
<td></td>
<td></td>
</tr>
<tr>
<td>05:00</td>
<td>0.25 ml</td>
<td>0.125 ml</td>
<td>0.0625 ml</td>
<td>0 ml</td>
<td>0.375 ml</td>
<td></td>
<td></td>
</tr>
<tr>
<td>06:00</td>
<td>0.125 ml</td>
<td>0.0625 ml</td>
<td>0.03125 ml</td>
<td>0 ml</td>
<td>0.1875 ml</td>
<td></td>
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</tr>
<tr>
<td>07:00</td>
<td>0.0625 ml</td>
<td>0.03125 ml</td>
<td>0.015625 ml</td>
<td>0 ml</td>
<td>0.09375 ml</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Relevance Score

<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
<th>Interventions</th>
<th>Total Input</th>
<th>Total Output</th>
<th>Fluid Balance</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>No reduction, just vomiting</td>
<td>Note, observe</td>
<td>250 ml</td>
<td>250 ml</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Slight fluid or slight vomiting</td>
<td>Lose weight, observe carefully</td>
<td>350 ml</td>
<td>350 ml</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Evidence of dehydration, pale skin, weight loss</td>
<td>Observe closely</td>
<td>450 ml</td>
<td>450 ml</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>As in 2 plus excessive weight loss and vomiting</td>
<td>As in 2 report to medical staff</td>
<td>550 ml</td>
<td>550 ml</td>
<td></td>
</tr>
</tbody>
</table>

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See the Intranet for the latest version.  
Version Number: 1
Appendix 6

FLUID BALANCE CHART - DIRECTIONS FOR USE

This document provides guidance for using the re-designed fluid balance chart (December 2003).

The fluid balance chart is an A3 size document which can be folded and hole punched to store in the notes. The guidance is split into the key headings that you will see on the chart. The top half of the chart is for input and the bottom half is for output with an overall total at the very bottom of the chart on the right hand side.

PATIENT INFORMATION
• Patients’ full name, date of birth, hospital number, ward and consultant must be entered onto each side of the chart.
• Weight and the amount of mls per Kg in 24 hours as indicated by medical staff is entered as appropriate.
• The date the chart commences also needs to be entered on each side of the chart.

INPUT

IV FLUID
Provision is made for three infusions which should cater for the majority of patients receiving IV fluids. If you have a patient using more than 3 infusions please use a separate chart.
• The blank space above this is to record the type of fluid to be infused
• MEAM No. – this is the serial number for the infusion pump in use eg Alaris volumetric / syringe pumps
• The rate is the hourly prescribed rate
• Hourly total is the amount infused in that particular hour
• Running total is the running total for that particular infusion from the time the fluid chart commences

PRESSURE
• This is the pressure as recorded on the infusion pump.
• All pumps are defaulted to 74mmHg.
• Normal peripheral venous pressure ranges from 0 – 10mmHg. In practice all that is usually required for IV therapy is a higher pressure just above that of venous pressure. Pump pressures should be set approximately 30mmHg above the recorded venous pressure.
• Extravasation can take place as low as 21mmHg.
• The larger the gap between venous pressure and the level at which you have set the pressure alarm limit the longer the pump takes to alarm.
• REMEMBER – a low pressure limit enables the fastest alarm response from onset of any complication.

PHLEBITIS SCORE
• The scoring system for observing cannula sites is at the bottom of the chart.
• Infusion sites must be checked hourly.
• The bandage must be removed so that the site can be adequately inspected.
• A sterile dressing should be in place with gauze underneath the hub.
• A safety loop must also be securely in place.
• If in doubt as to whether a complication has arisen, obtain a second opinion.

**SIGN**
• This chart is an important part of the care process and is also a legal document. You may therefore be asked to account for your actions.
• In signing your name you are stating you have performed the care necessary for a patient with an IV infusion.
• Write your initials in the column provided. If you do not sign it is assumed you have not provided the necessary care.

**ENTERAL**
This section records any food or fluid given to the patient.
• **ORAL** A description of all food or drink taken orally should be recorded here. Obviously more than one line can be used as most children will not be eating/drinking every hour.
• **NG/GT** This is the volume of naso-gastric / gastrostomy feed.
• **TOTAL** This is the running total of all enteral intake.

**TOTAL HOURLY INPUT**
• Record here the running total of all intake ie. intravenous, oral, naso-gastric and gastrostomy for that hour alone.

**RUNNING INPUT TOTAL**
• The running total amount of all intake, ie. intravenous, oral, naso-gastric and gastrostomy, hour on hour is recorded in this column

**OUTPUT**

**URINE**
• The amount of urine output is recorded each hour or whenever the child passes urine.
• A full description of the urine is necessary ie colour, consistency, amount and urinalysis if appropriate.
• The running total of urine output should also be recorded.

**VOMIT**
• The amount of each vomit is recorded, again with a full description ie colour, consistency, amount.
• The running total also needs to be recorded.

**ASPIRATE**
• Record the amount of hourly aspirate or whenever the naso-gastric tube is aspirated.
• A full description of the aspirate should also be recorded ie colour, consistency, amount.
• The running total of aspirate also needs to be recorded.

**STOOL**
• A description of the child’s stools ie. Colour, consistency, amount, must be recorded along with the volume, if appropriate.
• The running total also needs to be recorded as appropriate.

**DRAINAGE**
• Record in this section the drainage from wounds, chest drainage or peritoneal dialysis fluid.
• The extra column can either be used for an extra drain or for confirming with a tick that a chest drain is oscillating. You need to write in the space at the top of the column what you are recording.

**GLUCOSE**
• The blood sugar following a capillary stab or venous blood sample should be recorded in mmol/l.

**TOTAL HOURLY OUTPUT**
• This is the total amount of output ie. urine, vomit, aspirate, stool and drainage for that hour alone.

**RUNNING OUTPUT TOTAL**
• Record here the running total output ie. add together each total hourly output hour upon hour.

**RUNNING FLUID BALANCE**
• This section is a running record of whether the child is in negative fluid balance (more output than input) or positive fluid balance (more intake than output).

**TOTAL INPUT / OUTPUT / FLUID BALANCE**

This box at the bottom right hand corner of the page is to be completed at the end of the 24 hour period or from whenever the chart was commenced.
• The total amount of input i.e. Intravenous, and enteral within the 24 hour period or within a specific period of time must be recorded.
• The total amount of output i.e. Urine, vomit, aspirate, stool and drainage within the 24 hour period or within a specific period of time must be recorded.
• The fluid balance for the 24 hour period takes into account the difference between the total amount of intake and the total amount of output. More output than intake is a negative balance, more intake than output is a positive balance.

**APPENDIX**
• Morphine infusions – continue to record as previously – just ensure total is added on to the total intake on the fluid chart.
• When recording phlebitis score, if patient has Central line – record it as CL instead of recording phlebitis score.
• All fluids will be zeroed at 8am and the new chart commenced at 9am.
• If your patient is receiving continuous enteral feeding, you could record it on one of the IV fluid line spaces if you think it would be easier for you to do this.
Appendix 7: Monitoring Template, Blank

<table>
<thead>
<tr>
<th>Minimum Requirements</th>
<th>What will be monitored, what is your aspirational target?</th>
<th>When are you going to monitor, how often, monthly quarterly etc.</th>
<th>What data will be collected</th>
<th>Who will be involved in the monitoring process</th>
<th>Where will monitoring results be reported</th>
<th>Action plans against deficiencies</th>
</tr>
</thead>
<tbody>
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</tbody>
</table>

The process for monitoring compliance with all of the above

Refer to above details