Central Northern Adelaide Health Service

Observation Charts
as Point of Care Clinical Resources

Jill Kealley, Natalie Hewitt, Catherine Garvey &
the LMH Documentation Working Party
Lyell McEwin Hospital - Snapshot

Profile:
- 280 bed acute hospital
- Part of the Central Northern Adelaide Health Service (CNAHS)
- Located 20 km north of Adelaide, serves a population of 330,000 people

Specialties:
- Cardiology, Day Procedures, Emergency Medicine, Endocrinology, Gastroenterology, General Medicine, General Surgery, Gynaecology, Hospital at Home, ICU, Medical Imaging, Oncology, Neonatal, Obstetrics, Orthopaedics, Paediatrics, Palliative Care

Activity 07/08:
- Occupied Bed Days – 118,000
- Total Separations – 58,000
- Emergency Department presentations – 51,000
Observation Charts as Point of Care Clinical Resources
Observation Charts as Point of Care Clinical Resources

Where did this concept come from?

- My background
- A Heart Failure Study

How have we implemented it?

- Developing & trialling new charts
- Evaluating results
- The implementing change

SA Health
My Background

Clinician
- Nursing practice
- Language of Nursing

Ceramic Artist
- Visual language
The Nurse in Clinical Practice

Assessment  \^  Appropriate Action

No Action
Action

Material action
Linguistic action

the thinking nurse  \^  the doing nurse
the saying nurse

SA Health
1. Mary  How you going there?
2. Mrs Smith  Bit hot
3. Mary  Bit ==hot?
4. Mary  All right.
5. Mrs Smith  ==[laughter] Bit ==flushed
6. Mary  ==[chuckle]
7. Mrs Smith  I think I’ve got too many bed clothes on... for a start.

15. Mary  Don’t feel ==nauseous or... Umm?
16. Lesley  ==you got
17. Mrs Smith  No ==I don’t.
18. Mrs Smith  ==No
19. Mary  I just feel ((a little)) warm.
20. Mary  Yea.

51. Mary  What’s that blood pressure?  [Quiet chuckle]
52. Mary  One fifty.
53. Mary  That’s all right.
The Heart Failure Study

Examination and evaluation of nursing practices in the monitoring of hydration requirement for patients with cardiac failure.

Investigators: Jill Kealley, Aye Aye Gui, Angela Kucia, Richard Bates
The System

- The staff on the wards
  Nurse’s understandings & linking theory to practice
- Documentation for heart failure patients
- Dietary requirements of heart failure patients
Nurse’s understandings & linking theory to practice

- Education sessions on heart failure
- Developed new chart for monitoring hydration
- Developed resources for nurses to utilise while ‘on the floor’ to enable them to access ‘theory’
Hydration Monitoring Practices for Heart Failure Patients

During the first 24 hours after admission to the Cardiac Unit

Unstable or unknown hydration status
Patient’s hydration status is or becomes unstable

All patients with acute and/or chronic CCF
Indicated by any of the below
- Ejection fraction of 40% or less
- Basal (or greater) crops on presentation
- Peripheral edema
- Patient on regular diuretics at home
- IV isotopes
- IV diuretics in hospital

Aim — to closely monitor and assess the hydration status of all patients with acute and/or chronic CCF

Monitoring Practice: Intake and output monitoring and daily weigh

After 24 hours post admission to the Cardiac Unit

Either

Hydration status is or becomes unstable

Indicated by any of the following criteria persisting or occurring
- Pulmonary congestion — crops with or without increase in dyspnea
- Dehydration
- IV fluids-blood
- IV fluids given in a total of more than 1000mls of fluid during a 24 hour period
- IV diuretics
- Creatinine — an increase of 15% from baseline and level contribute to the
- Reduced urine output that is less than 750mls in 24 hours

Aim — to closely monitor and assess the hydration status of unstable patients

Monitoring Practice: Intake and output monitoring and daily weigh

Or

Hydration status is stable

Indicated by the presence of all of the criteria below
- Pulmonary congestion not present or stable
- No patient regularly has basal crops with or without dyspnea
- Creatinine stable and within patient’s normal range
- Urine output steady and within patient’s normal range
- No IV diuretics or fluids-bloods
- IV fluids given in a total of less than 1000mls for a 24 hour period

And either

Patient is not physically well enough and/or does NOT have the cognitive ability to monitor own care

Aim — routine monitoring and assessment of the patient’s hydration status

Monitoring Practice: Intake monitoring and daily weigh

Patient is physically well enough and has the cognitive ability to monitor their own care

Aim — to monitor and assess the hydration status and teach patient in preparation for discharge

Monitoring Practice: Intake monitoring and daily weigh — self care
<table>
<thead>
<tr>
<th>Food Item</th>
<th>Volume of Fluid (mls)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Juice (apple/orange)</td>
<td>110</td>
</tr>
<tr>
<td>Juice (apple &amp; blackcurrant)</td>
<td>150</td>
</tr>
<tr>
<td>Milk (plain/light start)</td>
<td>150</td>
</tr>
<tr>
<td>Milk (flavoured)</td>
<td>250</td>
</tr>
<tr>
<td>Milkshake</td>
<td>200</td>
</tr>
<tr>
<td>Jelly</td>
<td>100</td>
</tr>
<tr>
<td>Icecream</td>
<td>150</td>
</tr>
<tr>
<td>Custard</td>
<td>250</td>
</tr>
<tr>
<td>Tea/coffee</td>
<td>200</td>
</tr>
<tr>
<td>Yoghurt</td>
<td>200</td>
</tr>
<tr>
<td>Soup</td>
<td>300</td>
</tr>
<tr>
<td>Sustagen tetrapak</td>
<td>250</td>
</tr>
<tr>
<td>Ensure Plus — can</td>
<td>237</td>
</tr>
<tr>
<td>Ensure Plus — tetrapak</td>
<td>200</td>
</tr>
<tr>
<td>Enlive Plus — tetrapak</td>
<td>220</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Equipment</th>
<th>Volume of Fluid (mls)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Large pink/grey bowl (soup/custard)</td>
<td>300</td>
</tr>
<tr>
<td>Small pink bowl (soy milk)</td>
<td>150</td>
</tr>
<tr>
<td>Pink Mugs (coffee/milkshakes)</td>
<td>200</td>
</tr>
<tr>
<td>Tall tumbler</td>
<td>230</td>
</tr>
<tr>
<td>Short fat tumbler</td>
<td>250</td>
</tr>
</tbody>
</table>
Function of Charts

- Medico-legal record
- Inter and intra professional communication
- Facilitate clinical reasoning
Hydration Monitoring for CHF Patients & Identification of Patients at Risk

Information/data
Treatment = fluid intake

Outcome of treatment = output (hours) = daily weigh (days)
Displaying Visual Data

- show the data
- induce the viewer to think about the substance rather than about the methodology, graphic design, the technology of the graphic production, or something else
- avoid distorting what the data have to say
- present many numbers in a small space
- make large data sets coherent
- encourage the eye to compare different pieces of data
- reveal the data at several levels of detail, from a broad overview to the fine structure
- serve a reasonably clear purpose: description, exploration, tabulation or decoration
- be closely integrated with the statistical and verbal descriptions of the data set

(Tufte 2004 p 13)
# Fluid Balance Worksheet

**LYELL McEWIN HEALTH SERVICE**

**FLUID BALANCE WORK SHEET**

<table>
<thead>
<tr>
<th>DAY</th>
<th>DATE</th>
<th>WARD</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>TIME</th>
<th>24 HR</th>
<th>ORAL</th>
<th>INTRAVENOUS</th>
<th>INTRAVENOUS</th>
<th>INTRAVENOUS</th>
<th>URINE</th>
<th>VOMIT</th>
<th>BOWEL</th>
<th>SUCTION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>DESCR</td>
<td>AMT</td>
<td>DESCR</td>
<td>AMT</td>
<td>DESCR</td>
<td>AMT</td>
<td>DESCR</td>
<td>AMT</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TOTAL</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>DAILY TOTAL</th>
</tr>
</thead>
</table>

---

**SA Health**
**FLUID BALANCE SUMMARY**

<table>
<thead>
<tr>
<th>DATE</th>
<th>INTAKE (ml)</th>
<th>OUTPUT (ml)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **Intravenous**
- **Oral**
- **Tube**
- **Daily total Intake**
- **Intramuscular**
- **Central Venous**
- **Drain**
- **Urine**
- **Other**
- **Daily total Intake**
- **Daily Balance (ml)**

*SA Health*
<table>
<thead>
<tr>
<th>TIME 24 HR</th>
<th>ORAL</th>
<th>INTRAVENOUS</th>
<th>ORAL</th>
<th>INTRAVENOUS</th>
<th>ORAL</th>
<th>INTRAVENOUS</th>
<th>ORAL</th>
<th>INTRAVENOUS</th>
<th>OUTPUT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>06:00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>800</td>
</tr>
<tr>
<td>09:00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12:00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15:00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18:00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21:00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**TOTAL**

**DAILY TOTAL**

---

SA Health
LMHS Fluid Balance Chart [DRAFT]

<table>
<thead>
<tr>
<th>Date: ............</th>
<th>Name: ...............</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fluid Restriction</td>
<td>Litre(s) ml(s)</td>
</tr>
<tr>
<td>Notify TI/MD if output &lt; 50 ml/hr or &gt; 100 ml/hr</td>
<td></td>
</tr>
<tr>
<td>Previous day's Balance (indicate neg or pos)</td>
<td>............</td>
</tr>
</tbody>
</table>

### TABLE

<table>
<thead>
<tr>
<th>Time (0000)</th>
<th>Intake</th>
<th>Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>0001</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0100</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0200</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0300</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0400</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0500</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0600</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0700</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0800</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0900</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1100</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1200</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1300</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1400</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1500</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1600</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1700</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1800</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1900</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2100</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2200</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2300</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2400</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2500</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total Intake ............ml  Total Output ............ml  Balance ............ml
### Lyell McEwin Hospital Nursing Composite Chart [DRAFT]

**Date:**

<table>
<thead>
<tr>
<th>IV Cannula</th>
<th>Type</th>
<th>Location</th>
<th>Inserted</th>
<th>Removed</th>
<th>New site</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**SC Butterfly**

<table>
<thead>
<tr>
<th>Change</th>
<th>Type</th>
<th>Location</th>
<th>Inserted</th>
<th>Removed</th>
<th>New site</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>change prn</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**CVC/PAC/Artline**

<table>
<thead>
<tr>
<th>Change</th>
<th>Type</th>
<th>Location</th>
<th>Inserted</th>
<th>Removed</th>
<th>New site</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>change 24 hrs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Patient Information**

- **Name:**
- **Age:**
- **Gender:**
- **Address:**
- **Telephone:**

**Diagnosis:**

- **Primary:**
- **Secondary:**

**Medical History:**

- **Allergies:**
- **Medications:**

**Medication Administration:**

- **Intravenous:**
- **Oral:**
- **Parenteral:**

**Fluids and electrolytes:**

- **Intake (ml):**
  - Oral
  - NE/PEG
  - Intravenous/Subezi

**Output (ml):**

- Urine
- Vomitus
- Nasogastric drainage
- Wound Drain
- Other

<table>
<thead>
<tr>
<th><strong>Intake</strong></th>
<th><strong>Output</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Total Intake: 0 ml**

**Total Output: 0 ml**

**Weight in Kg:**

- **Current weight:**
- **Goal daily weight:**
  - AM
  - PM

**Bowel Function:**

- **Last open:**
  - AM
  - PM

**Urine Analysis:**

- **Specific gravity:**
- **pH:**
- **Urine colour:**
- **Urine protein:**
- **Urine glucose:**
- **Leucocytes:**
- **Nitrites:**
- **Blood:**
- **Nitrogen:**
- **Protein:**
- **Urobilinogen:**
- **Ketones:**
- **Creatinine:**
- **Bilirubin:**
- **N Salts:**

**Patient Education:**

- **Nutrition:**
- **Activity:**
- **Mood:**
- **Sleep:**

**Service:**

- **Physiotherapy:**
- **Occupational Therapy:**
- **Speech Therapy:**
- **Social Work:**
- **Psychology:**

**Nursing Actions:**

- **Skin Care:**
- **Medication Administration:**
- **IV Line Care:**
- **Wound Care:**
- **Oxygen Administration:**

**Signature:**

- **Nurse:**
- **Doctor:**
- **Physiotherapist:**
- **Occupational Therapist:**
- **Social Worker:**

**Date:**

**Time:**

**Hospital:**

**Floor:**

**Room:**

---

**SA Health**
### Nursing Composite Chart Instructions for Use

#### Lyell McEwin Hospital

<table>
<thead>
<tr>
<th>Date</th>
<th>24/12/08</th>
<th>25/12/08</th>
</tr>
</thead>
</table>
| **IV Cannula**
  - **Change**: 24 hrs if inserted during an emergency.
  - **Retention**: 7 days if inserted under aseptic conditions.
  - **Status**: signs of infection & length of device (if applicable)
  - **PICC/CVC/PAC/Arterial**: Dressing done
    - **Date Inserted/Changed**: 24/12/08
    - **Type**: Short-term
    - **Dressing Change**: 24/12/08
  - **Type**: IV
    - **Location**: L arm
  - **Inserted**: 24/12/08
  - **Status**: NAD

| **SC Butterfly**
  - **Change**: 24 hrs if inserted during an emergency.
  - **Retention**: 7 days if inserted under aseptic conditions.
  - **Status**: signs of infection & length of device (if applicable)
  - **PICC/CVC/PAC/Arterial**: Dressing done
    - **Date Inserted/Changed**: L arm
    - **Type**: Long-term
    - **Dressing Change**: 24/12/08
  - **Type**: IV
    - **Location**: L arm
  - **Inserted**: 24/12/08
  - **Status**: NAD

| **Hydration Monitoring**
  - **Intake (ml)**
    - **Oral**: 1000
    - **NE/PFG**: 2515
    - **Total Intake**: 3515
  - **Output (ml)**
    - **Urine**: 1050
    - **Vomitus**: 200
    - **Wound Drainage**: 200
    - **Total Output**: 1230
    - **Balance (ml)**
      - **Change**: 2929
  - **Weight in Kg**
    - **Goal Weight**: 65
      - **Standing**: 64.5
      - **Sitting**: 66.8

| **Bowel Function**
  - **AM**: BNO
  - **PM**: BO

| **Admission Information**
  - **Date**: 22/12/08
  - **Cat**: Amber
  - **Lancet**: Pno
  - **Reaction (pH)**: Pno
  - **Glucoma**: Pno
  - **RBCs**: Pno
  - **M/S**: NAD

| **Usual**
  - **Delivery**: Amber
  - **Counts**: Pno
  - **Protein**: Pno
  - **Glucose**: Pno
  - **Keton**: Pno
  - **Bilirubin**: Pno
  - **Bld**: Pno
  - **M/S**: NAD

---

**SA Health**
Approach to the Evaluation

- Did the charts fulfil their purpose as point of care clinical resources?
- Educative process – encourage clinician to look at the chart as a point of care clinical resource.
- Recognise that clinicians, other than nurses, use the charts – multi-discipline involvement.
Questions for Evaluation

The chart explains what information I need to collect.
The chart gives me guidelines about the information I’m required to enter.
The chart gives me information about what may be considered abnormal, and if I need to have the patient assessed by someone else.
The chart makes it easy to enter information/data that I need to monitor, assess, and treat my patient.

Once the information/data is entered, it is easy for me to see changes in my patient’s condition.

Is there any other information that would help you assess your patient’s condition that is not on the chart? Please give details and reasons:

Can you please tell us what you think is the best thing about this new chart and why?

Can you please tell us what you think is the worst thing about this new chart and why?

Are there any modifications to this chart that you would like to see that may improve its application in your clinical practice? Why?
The chart explains what information I need to collect.
The chart gives me guidelines about the information I'm required to enter.
The chart gives me information about what may be considered abnormal, and if I need to have the patient assessed by someone else.
The chart makes it easy to enter information/data that I need to monitor, assess, and treat my patient.
Once the information/data is entered, it is easy for me to see changes in my patient's condition.
Results

Comments

Generic
Have A4 version available for patients with less IV lines
Swap output columns around so urine and vomit columns are visible when chart is folded
Larger size print for fluid restriction information
Associate with partogram information
Add paediatric criterion
Remove site check columns (adult wards)
Make chart smaller so folds more easily

4 hourly
Have A4 version available for patients with less IV lines
Swap output columns around so urine column is visible when chart is folded
Make chart smaller so folds more easily
Include an area for abdominal drains
Have progressive totals for intake only
# Implementation of the Results of Evaluation

<table>
<thead>
<tr>
<th>Title</th>
<th>Chart Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fluid Balance Chart Generic A3</td>
<td>Complex adult surgical patients/women’s health patients</td>
</tr>
<tr>
<td>Fluid Balance Chart 4 hourly A3</td>
<td>Complex adult</td>
</tr>
<tr>
<td>Fluid Balance Chart Generic A4</td>
<td>Simple adult surgical patients/women’s health patients</td>
</tr>
<tr>
<td>Fluid Balance Chart 4 hourly A4</td>
<td>Simple adult medical patients</td>
</tr>
<tr>
<td>Fluid Balance Chart Pediatrics A4</td>
<td>Paediatric patients</td>
</tr>
</tbody>
</table>