Kirkcaldy and Levenmouth Community Health Partnership
Mental Health Services

Hydration in Mental Health Wards Project

Evaluation Report

Christopher Mulraney,
Quality Improvement Practitioner
Mental Health Quality Improvement

April 24th, 2013
Acknowledgements

A special thank you to Michelle MacDonald, Mental Health Dietician, for her co-facilitation of this project and her involvement in designing the education sessions, the assessment tool and her involvement in supporting nursing staff through the implementation process.

John Duffus, Senior Charge Nurse, should be acknowledged for sharing his experience and knowledge in implementing hydration assessment in other areas of NHS Fife and for his ongoing involvement in raising hydration awareness throughout NHS Fife and beyond.

The project was also supported by the Physical Healthcare Group comprising:

- Sam Allen    Chairperson and Senior Nurse
- Kate Thomson  Clinical Services Manager
- Sharon Rodger Clinical Service Manager
- Linda Kirumbux Senior Nurse
- Mike Kelly    Project Manager
- Alyssa Bell   Project Manager
- Christopher Mulraney Quality Improvement Practitioner
- Michelle MacDonald Mental Health Dietician
- Fiona Watt    Senior Charge Nurse
- Gillian Grubb Senior Charge Nurse
- Iain Millar   Senior Charge Nurse
- Dr Paramore   Consultant Psychiatrist
- Dr Phillipson Consultant Psychiatrist
- Hilary McAulay former chair and Quality Improvement Practitioner

Thank you to all the Senior Charge Nurses who were involved in the evaluation on behalf of their areas.
Contents

Acknowledgements 2
Introduction 4
Background 4
Promoting Hydration Education Sessions 5
The Hydration Status Assessment Tool 7
Implementation 10
Senior Charge Nurse Evaluation 11
Impact of the Project 12
Discussion 13
Conclusion 15

List of Tables

Table 1 Criteria and Rationale of Hydration Status Assessment Tool 8
Table 2 Questions, Comments and Concerns 10
Table 3 Project Evaluation Recommendations 14

List of Figures

Figure 1 Percentage of attendees per ward at Promoting Hydration Education Sessions 6
Figure 2 Guidelines of Hydration Status Assessment Tool 9
Figure 3 Senior Charge Nurse Evaluation Results 11
Figure 4 Dehydration related acute hospital transfers 13

Appendices

Appendix 1 Hydration Status Assessment Tool V2.1 (pilot) 17

Reference List 19
Introduction

This report will evaluate a year long quality improvement project that began in May 2012 and completed in April 2013. The project aimed to raise awareness of hydration promotion among nursing staff, reduce occurrences of dehydration and prevent acute hospital transfers, due to dehydration, across mental health inpatient wards in NHS Fife.

Background

It is widely recognised that dehydration can be prevented by ensuring we have enough to drink, however, dehydration in hospital in-patients remains problematic. Reports from organisations such as The Patients Association (2010), the Care Quality Commission (2011) the Health Service Ombudsman (2011) all raise concerns about the level of dehydration in hospital inpatients and are instructing health boards and trusts across the UK to make improvements on how hydration is assessed and promoted in hospitals.

A great deal of the literature on hospital related dehydration relates to older adults. It is widely recognised that older adults with cognitive difficulties and dementia type illness can become dehydrated whilst in hospital or residential care due to their inability to maintain their own hydration levels (Ulrich and McCutcheon, 2008, Mentes, 2006). However, it should not be ignored that mental conditions such as depression and psychosis can also have a significant bearing on fluid intake making people with such conditions at risk of dehydration.

NHS Fife Mental Health Services recognise that people with mental health are at greater risk of cardiac, renal disorders and diabetes (Scottish Executive, 2006) and the potential for such conditions being exacerbated by dehydration. Additionally an audit of reasons for acute hospital transfers from the Mental Health Services revealed that between November 2010 and July 2012 there had been an average of two patients, per month, being transferred to acute hospitals for artificial re-hydration.

In January 2012, a group consisting of management, senior nursing, medical and allied health professionals was created to examine ways in which mental health services could improve the physical healthcare delivery to in-patients in NHS Fife Mental Health Services. It was unanimously agreed that hydration should be prioritised as an area for quality improvement. At any given time the patient population in the Mental Health Services will include people with acute mental health disorders, longer-term patients with severe and enduring mental health conditions, and a very large elderly population many of whom will have cognitive difficulties. All of these groups can be considered at potential risk of dehydration for a number of medical, lifestyle and pharmaceutical reasons. To this end Michelle MacDonald (Mental Health Dietician) and Christopher Mulraney (Mental Health Quality Improvement Practitioner) were elected to facilitate a project that aimed to re-highlight the importance of hydration promotion on mental health wards, and to

<table>
<thead>
<tr>
<th>Hydration Status Assessment Tool Evaluation</th>
<th>Report</th>
<th>April, 2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kirkcaldy and Levenmouth CHP</td>
<td>Mental Health Services</td>
<td>C Mulraney, Quality Improvement Practitioner</td>
</tr>
</tbody>
</table>
create a “mental health friendly” hydration assessment tool that would identify patients at risk of dehydration so that these patients could be given further support and supervision with their fluid intake.

The “Hydration in Mental Health Wards Project” began in May 2012 with the development of education sessions. The education sessions are described in the next section.

Promoting Hydration Education Sessions

As hydration issues had caused concerns among the Physical Healthcare Group, it seemed prudent to deliver some education sessions on hydration issues. These were delivered simultaneously with the training that was delivered on using the hydration status assessment tool.

The sessions lasted approximately 45 minutes and took the form of a presentation, with discussions about ways nursing staff can make small changes to maximise opportunities to provide and promote adequate hydration among their patients. Following this, an introduction to the tool itself was delivered. Additionally at the training sessions wards were provided with resources such as hydration promotion posters, fluid measurement guides and signposting to other resources which may be of benefit to them.

The aims of these sessions were:
- To enable participants to enhance their knowledge and awareness of hydration issues
- To raise skills in the assessment of hydration status

The learning objectives were for nursing staff to:
- Recognise the clinical signs of dehydration
- Understand the importance of hydration
- Understand the need to promote hydration in patients – particularly those who require support
- Be equipped to use the Hydration Status Assessment Tool

Prior to the commencement of the education sessions taking place, it was agreed, in collaboration with the Physical Healthcare Group, the Senior Nurses, and Senior Charge Nurses that 70% of staff from each ward should attend these sessions before the tool was launched. This percentage was chosen as it had been used when the Malnutrition Universal Screening Tool (MUST) was launched in mental health services, facilitated by Michelle MacDonald, which was widely recognised as a successful implementation.

Most wards achieved this target percentage by the end of October 2012 enabling the launch date of 14th November 2012. Ravenscraig Ward at Whyteman’s Brae Hospital were unable to meet this deadline due to the challenges of being a stand-alone site and releasing staff for the education sessions. They reached the 70% target by the end of November allowing their launch date to be 17th December 2012.
Figure 1 is a graph that shows the percentage of staff who attended education sessions for each area;

![Graph showing percentage of staff attendance at awareness sessions](image)

**Figure 1 – Percentage of attendees per ward at hydration education sessions**

Feedback from the sessions was mainly positive; some more experienced nurses felt that the sessions had acted as a good “reminder” of the importance of hydration whilst newer staff had found it beneficial to their clinical development. Some responders did point out that hydration promotion was a basic nursing skill where training shouldn’t be required, but recognised that hydration is problematic in hospitals. Below are examples of feedback from the sessions;

“This session has challenged me to re-evaluate how we provide hydration to our dependent patients”

“It was good to see this training focussed on younger adults with mental health problems too, they can be at risk of dehydrating too”

“I think there is a need in my area to improve on hydration – the training and suggested resources has given me the confidence to do this”

“It was good to share ways we deal with patients who are challenging to keep hydrated – some useful tips from the trainers and the other participants”

“The health promotion tools are useful”
“Hydration is a basic nursing skill that all nursing staff should be able to deliver without additional training”

“Although hydrating patients is a simple task, we are obviously not getting it right in hospitals; this training was a good reminder of the need to change culture and routines”

Outcomes of the sessions were also positive and many wards went on to develop their own means of hydration promotion on the wards, examples include:

- Using Royal College of Nursing (2007) Wise up on Water resource packs to improve hydration promotion on wards
- Introducing red beakers for patients who require assistance with drinking or lack motivation to ensure they given adequate support with drinking
- Adding more drink “rounds” in wards where patients are less able to help themselves
- Obtaining extra jugs so that patients have easier access to drinking water
- Designating a member of the nursing team to oversee internal hydration improvement projects and the introduction of the Hydration Status Assessment Tool
- Implementing hydration care plans for patients they knew to be at risk

The Hydration Status Tool

In developing the assessment tool, we were supported by John Duffus (Nurse Practitioner, Cameron Hospital). He had developed and rolled out a hydration tool aimed at older adults based on validated tools by Zembrzuski (1997) and Mentes (2004). His tool has proven effective at Cameron Hospital.

Although the tool was initially thought to be transferable to Mental Health Services, on local consultation, it was felt that this tool would need some adaptation to best suits the clinical needs of patients in mental health settings.

On consulting with ward nursing staff, it soon became clear that they desired an assessment tool that was self-explanatory, easily interpreted and that gave them direction on how best to manage patients who could be considered at risk. Nursing staff were given the opportunity to review draft versions of the tool and give their opinion as ward-based clinicians, which led to several versions of the tool before the pilot version was finalised.

The pilot version (See appendix 1) of the assessment tool has two sections to it. It was created using a checklist format to ensure ease of completion and grading of risk. It is primarily a risk assessment tool, which grades the level of risk dependent upon number of positive responses. The assessment is in two sections. The first section is an assessment of the early physical signs of dehydration and involves nursing staff carrying out visual examinations of their patients and urinalysis. The second part consists of an assessment of the risk factors that would make a person...
Table 1 - Criteria and Rationale of Hydration Status Assessment Tool

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dry skin</td>
<td>Dry skin indicates a lack of moisture in the skin cells which is often secondary to dehydration</td>
</tr>
<tr>
<td>Skin turgor unsatisfactory</td>
<td>When a person is dehydrated their skin loses its elasticity.</td>
</tr>
<tr>
<td>Patient tongue coated or furrowed</td>
<td>When the cilia of the tongue becomes dry it makes the tongue appear furry, this indicates dehydration. Poor oral health and the tongue becoming coated are often secondary to dehydration.</td>
</tr>
<tr>
<td>Dry oral mucosa</td>
<td>The absence of mucosa would indicate dehydration.</td>
</tr>
<tr>
<td>Poor urinary output &lt;700mls</td>
<td>This would suggest a poor fluid intake provided urinary retention can be ruled out</td>
</tr>
<tr>
<td>Concentrated Urine</td>
<td>This may indicate poor fluid intake</td>
</tr>
<tr>
<td>Constipation</td>
<td>Provided a bowel obstruction can be ruled out, dehydration is one of the major causes of constipation</td>
</tr>
<tr>
<td>Increased confusion</td>
<td>Dehydration can cause symptoms of delirium</td>
</tr>
<tr>
<td>Increased agitation</td>
<td>People who are dehydrated are more prone to becoming agitated due to electrolyte imbalance</td>
</tr>
<tr>
<td>Increased falls</td>
<td>Dehydration causes the blood pressure to become hypertensive, this may explain increased falls</td>
</tr>
<tr>
<td>Urine Specific Gravity &gt; 0.1020</td>
<td>This is a clinical marker for dehydration</td>
</tr>
<tr>
<td>Loss of body weight despite good dietary intake</td>
<td>A loss in weight could be attributed to fluid loss – a fluid loss that causes body weight changes could cause major fluid imbalance</td>
</tr>
<tr>
<td>BMI &lt;20</td>
<td>People with poor nutritional intakes are more at risk of dehydration</td>
</tr>
<tr>
<td>Poor fluid intake</td>
<td>Poor fluid intake leads to dehydration</td>
</tr>
<tr>
<td>Dysphagia</td>
<td>People who have difficulty swallowing have an increased risk of dehydration due to the risks associated with choking. They require special supervision to ensure adequate intake</td>
</tr>
<tr>
<td>Nil by mouth</td>
<td>People who are NBM pose a greater risk of dehydration</td>
</tr>
<tr>
<td>Medications &gt;4</td>
<td>The more medications, the greater the renal effort to filtrate medications meaning more fluid may be used for filtration</td>
</tr>
<tr>
<td>Vomiting and diarrhoea</td>
<td>These cause gross fluid loss which will lead to dehydration</td>
</tr>
<tr>
<td>Blood results with raised Sodium, Urea or Creatinine</td>
<td>These are a clinical marker of dehydration</td>
</tr>
</tbody>
</table>

Once this assessment is complete, nursing staff will total the number of positive responses. The final score is therefore indicative of three levels of risk; 0-2 positive responses indicate a patient is LOW risk of becoming dehydrated. 3 positive responses indicate a patient is MEDIUM risk of becoming dehydrated. 4+ positive responses indicate a patient is at HIGH risk of becoming dehydrated. Figure 2 (below) illustrates the guidance that should be taken dependant upon their risk category.

![Diagram](image)

Figure 2 – Guidelines from Hydration Status Assessment Tool (Pilot Version)

One major concern among the nursing staff at the time of writing the tool was that many patients may have enough positive responses to score at as risk (e.g. due to their low weight, past dehydration or number of medications they are on) but may in
fact have a perfectly adequate intake and not be in a state of dehydration. Therefore the guidelines suggest that any patient who scores at medium or high risk should have fluid balance recorded (as accurately as possible) for 24 hours. If after 24 hours their intake has matched their recommended intakes, they have sound fluid balance, and their urine specific gravity is normal, they can be considered to be not at risk of dehydration (at that time) and daily monitoring can cease. However, there should be a care plan in place to ensure that their hydration needs are considered and met and is reviewed periodically by continued hydration status assessment.

**Implementation**

The launch dates were agreed once all areas had achieved the target of 70% of their staff having attended the education sessions. In Stratheden Hospital and Queen Margaret Hospital this was 14th November 2012. In Whyteman’s Brae Hospital this was 17th December 2012.

Most areas found this unchallenging; however some areas raised questions, comments or concerns about the tool during the initial stages of the launch, as illustrated in Table 2.

<table>
<thead>
<tr>
<th>Question/Comment/Concern</th>
<th>Speciality</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>What is meant by &gt;4 medications in 24 hours</td>
<td>Rehab</td>
<td>Re-explanation of meaning and rationale. No further problems.</td>
</tr>
<tr>
<td>When can acute patients (with lengthily admissions) be classed as long term</td>
<td>Acute</td>
<td>Explained this was a common question and it will be explored at time of evaluation (see recommendations).</td>
</tr>
<tr>
<td>Is a separate care plan required for hydration? Can this be care planned simultaneously with nutrition</td>
<td>Elderly</td>
<td>Following discussion with Physical Healthcare Group and SCNs it was agreed that this can be done with blank care plans. Prescribed care plans were not deemed suitable for meeting hydration needs, and are likely to be abandoned when the nursing documentation is re-developed.</td>
</tr>
<tr>
<td>We are struggling to complete the urinalysis component due to incontinence</td>
<td>Elderly</td>
<td>This was an anticipated problem. This will be reviewed at time of evaluation</td>
</tr>
<tr>
<td>All of our patients are on more than four medications, are they at risk?</td>
<td>Rehab</td>
<td>At time of evaluation consultation will be carried out to find the drugs that are most likely to contribute to dehydration</td>
</tr>
<tr>
<td>This tool has already helped us identify people at risk who may have been missed before</td>
<td>Acute Elderly</td>
<td>Nil</td>
</tr>
<tr>
<td>The guidelines are useful in helping to formulate care plans</td>
<td>Elderly</td>
<td>Nil</td>
</tr>
<tr>
<td>We have a patient who scores high risk but they are drinking fine and</td>
<td>Acute Elderly</td>
<td>Explained that the guidance allows them to discontinue</td>
</tr>
</tbody>
</table>
Senior Charge Nurse Evaluations

Prior to this evaluation being written, a questionnaire was created and distributed to the Senior Charge Nurses of inpatient mental health wards. The questionnaire aimed to establish if the tool was easy to use, if they had experienced any challenges in implementing tool in their area and if they felt the guidelines were appropriate.

There was an 87% response rate.

The questions posed were:

1. Do you feel the tool is easy to use?
2. Do you feel the tool is effective in highlighting people at risk of dehydration?
3. Do you feel the frequency of assessment is suitable for your area?
4. Have you encountered any challenges in introducing the tool in your areas?
5. Are there any ways the tool can be adapted to improve its effectiveness in your areas?
6. Do you have any further comments?

Figure 3 illustrates the outcomes of the questionnaires

<table>
<thead>
<tr>
<th>Question</th>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Question 1</td>
<td>100%</td>
<td>0%</td>
</tr>
<tr>
<td>Question 2</td>
<td>80%</td>
<td>20%</td>
</tr>
<tr>
<td>Question 3</td>
<td>70%</td>
<td>30%</td>
</tr>
<tr>
<td>Question 4</td>
<td>60%</td>
<td>40%</td>
</tr>
<tr>
<td>Question 5</td>
<td>50%</td>
<td>50%</td>
</tr>
<tr>
<td>Question 6</td>
<td>30%</td>
<td>70%</td>
</tr>
</tbody>
</table>

Common themes from the Senior Charge Nurse Evaluation:

<table>
<thead>
<tr>
<th>Hydration Status Assessment Tool Evaluation</th>
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</tr>
</thead>
<tbody>
<tr>
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<td>Mental Health Services</td>
<td>C Mulraney, Quality Improvement Practitioner</td>
</tr>
</tbody>
</table>
• All responders felt the tool is easy to use
• Most responders find the tool has been effective in highlighting people at risk of dehydration
• All long-term areas feel the frequency of assessment is appropriate, however some of the acute areas felt that patients who were stable at low risk or were experiencing lengthy admissions should be assessed less frequently as in longer-term wards
• Many of the elderly wards had found obtaining urine specimens very difficult due to incontinence. Some areas had found patients refused to provide urine specimens for various reasons associated with their mental illness.
• Two areas felt there was scope for nurses to use their clinical judgement regarding following the guidelines that accompany the tool. Many wards felt that a “variance” section should be added to the tool to enable greater transparency in the risk assessment process.
• Other comments included that the tool had been useful in highlighting which patients required more support with their hydration needs, when it had been less obvious before. One ward felt that hydration should only be assessed once dehydration had begun. Many wards felt that the frequency of assessment should be decided depending upon clinical judgement, rather than formally stipulated. Many wards were complimentary about the education programme provided when the project began and felt this had been more influential in reducing dehydration and acute transfers than the tool.

Impact of the Project

Overall 330 nursing staff (plus 24 student nurses on Clinical Placement) were provided with education sessions on hydration promotion and introduced to the Hydration Status Assessment Tool.

Many areas reported back the improvement projects they had carried out to enhance the effectiveness of hydration promotion in their areas.

The tool has also proven to be clinically effective in aiding nurses to recognise patients who may be at risk of dehydration and taking meditative, timeous steps to prevent patients from becoming dehydrated. Additionally many areas have found that following the guidelines to the tool have been effective in reversing patients, who are admitted in a state of dehydration, to being better hydrated through oral rehydration.

The most pleasing quantitative data is the complete prevention of acute hospital transfers, caused by dehydration. The education sessions began in June with the tool being launched in November/December.

Since July 2012 there have been no dehydration related acute hospital transfers, which indicates the education sessions were successful in raising awareness of the importance of hydration promotion, and the tool has proven to maintain this
awareness through acting as a prompt and measure of how at risk patients of dehydration are.

Figure 4 illustrates the reduction of dehydration related transfers from the mental health services from November 2012 to March 2013.

![Figure 4 – Dehydration related acute hospital transfers (numbers per month, service wide)](image)

### Discussion

The aims of the “Hydration in Mental Health Wards” project were to raise awareness of hydration promotion among nursing staff, reduce occurrences of dehydration, prevent dehydration related acute hospital transfers and to create a robust assessment tool that would enable nursing staff to recognise people at risk of dehydration and take steps to reverse this before it becomes acute.

Overall the project has been highly successful in achieving these aims.

The education sessions were extremely beneficial in raising awareness of the importance of hydration promotion. Feedback was very positive and the sessions appear to have resonated strongly in many areas. There is strong evidence of changes in practice in many areas, which came about as a direct result of attendance at training sessions.

On auditing the compliance of the tool it was noted that continued assessment of the hydration status of patients enables nursing staff to pinpoint patients at risk. This was most obvious in the Acute Elderly wards where there were numerous examples of patients being admitted in states of dehydration and scoring “high risk” to them scoring as “low risk” a week later. Therefore there is solid evidence that the tool is
clinically effective in aiding nurses to recognise vulnerable patients, consequently enabling them to promote hydration more systematically.

The project has also been highly successful in its aims to reduce and prevent dehydration related hospital transfers. The SCN evaluations indicated that there was a belief the education sessions had been instrumental in this. This may well be the case. However evidence suggests that having assessment tools in place; strengthen the clinical knowledge and skills of nurses (Taylor, 2005). It is anticipated this tool will serve to maintain this heightened awareness of hydration promotion as the implementation of MUST improved nursing awareness of nutrition assessment. It will continue to provide nursing staff with a robust evidence base when assessing hydration status whilst simultaneously providing guidelines on how to manage patients who are at risk of dehydration whilst under the care of mental health services.

It is clear that certain elements of the assessment tool will require some revision before it is finalised. These are detailed below.

One of the biggest challenges of the project was designing a tool that meets the needs of a very diverse patient group. Some of the questions, comments and concerns that were raised at the time of implementation highlight this. Similarly the SCN Evaluation raises some issues that strongly suggest the pilot version of the tool may need some alteration and amendment before it is finalised.

Urinalysis

The feedback suggests that the tool needs to be more considerate of patients who are incontinent. Urinalysis of incontinent patients is highly challenging, as accurate urinalysis relies on a “fresh” sample of urine which can be difficult to obtain. Although there are ways in which to conduct urinalysis using specially designed pads, these are uncommon in adult sizes and costly and the accuracy of the results are not always certain (Farrell, 2002). In many cases, nurses are able to recognise when a person’s urine may indicate dehydration through visual examination. There is scope for nurses to use their clinical judgement in this matter, where urinalysis and recording of urine specific gravity cannot be obtained. It is proposed that, where urinalysis is concerned, the finalised version will read “Concentrated urine/SG>1.020”, allowing nursing staff to include their concerns about the urine output simultaneously. Previously concentrated urine and SG>1.020 were separate meaning there was scope for patients to graded at a higher risk by default.

Medications

It is common for patients with mental health disorders to be on numerous medications, especially among an ageing population. Previously, poly-pharmacy marked a person at risk of dehydration because of the additional renal effort required to process medications effectively. However, the SCN evaluation, and audit of compliance, revealed that many patients were being graded at high and medium risk because of this. Therefore, the issue of medication has been more robustly examined. The main groups of medications which make people more at risk of
becoming dehydrated are laxatives/aperients, diuretics, sedating medications, opiates and blood pressure medications (Mentes, 2012, Thomas et al, 2008). The finalised version of the assessment tool will reflect this.

**Frequency of assessment**

Presently the guidelines suggest that acute wards should assess their patients weekly. Some areas have found this to be excessive and time consuming, particularly when patients remain stable. The finalised tool will continue to advocate that ALL patients are assessed on admission. If they score as high risk and medium risk the guidance should be referred to, and followed if necessary until the patient becomes low risk. For low risk patients the guidance will advocate weekly assessment in the first instance. However, if on reassessment (i.e. one week later) they are still low risk, they can be classed as stable and can be assessed monthly thereafter, unless there is a clinical change and reassessment is felt necessary. Nursing staff should use their clinical judgement. In longer-term areas, the frequency has been agreed as suitable and will remain monthly, unless there is a clinical change and reassessment requires to be expedited.

**Conclusion**

Although the tool requires some adaption to make it more use-friendly and to allow scope for clinical judgement, this should not be detracted from the overall success of the project. The project achieved all its aims, and currently the awareness of hydration promotion and hydration assessment has been improved considerably. The complete reduction in dehydration related transfers is significant and demonstrates the success of the project. Additionally there is strong evidence of positive clinical changes to practice, routine and knowledge bases on hydration matters which can be substantiated throughout the inpatient wards in the mental health service.

The next section suggests recommendations on how the current state of improvement can be maintained, following the completion of the Hydration in Mental Health Wards Project.

<table>
<thead>
<tr>
<th>Recommendation</th>
<th>Timeframe</th>
<th>Persons Responsible</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maintaining a focus of the importance of hydration awareness and promotion</td>
<td>Ongoing</td>
<td>Recommendation Senior Charge Nurses Nutrition Link Nurses Nursing staff Medical staff Physical Healthcare Group Mental Health Quality Improvement Christopher Mulraney</td>
</tr>
<tr>
<td>Re-development of the Hydration Status Assessment Tool (as described in May 2013)</td>
<td>May 2013</td>
<td>Christopher Mulraney Michelle MacDonald Physical Healthcare Group</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
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<th>Persons Responsible</th>
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</tr>
<tr>
<td>Kirkcaldy and Levenmouth CHP</td>
<td>Mental Health Services</td>
<td></td>
</tr>
</tbody>
</table>
Table 3 – Project Evaluation Recommendations

For further information about this evaluation report please contact

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# Appendix 1 – Hydration Status Assessment Tool – Version 2.1 (Pilot)

Kirkcaldy and Levenmouth Community Health Partnership
Mental Health Services

Hydration Status Assessment Tool for Inpatients

*Instruction:*
The information required for this assessment may be obtained from patient observation or from documentation review. This assessment should be completed within the first 48 hours of admission. Please circle *Yes* or *No* on the table below and total number of positive responses. Thereafter, please refer to the guidelines overleaf regarding assessment.

<table>
<thead>
<tr>
<th>Date</th>
<th>Early warning signs</th>
<th>Risk factors</th>
<th>Total positive responses</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Early warning signs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dry skin</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Skin turgor unsatisfactory</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Patient tongue coated or furrowed</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Dry oral mucosa</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Poor urinary output (&lt;700mL)</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Concentrated urine</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Constipation</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Increased confusion</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Increased agitation</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Increased falls</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Urine specific gravity &gt;1.020</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Loss of body weight despite good dietary intake</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Risk factors</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BMI &lt;20</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Poor fluid intake (35mL/kg 18-80) (30mL/kg 60+ years)</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Previous dehydration</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Dysphagia</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Nil by mouth</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Medications &gt;4</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Vomiting and diarrhoea</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Blood results with raised Sodium, Urea or Creatinine</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Total positive responses</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Staff Signature</strong></td>
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</table>
Kirkcaldy and Levenmouth Community Health Partnership
Mental Health Services

Hydration Status Assessment Tool for Inpatients Guidelines

Hydration Status Assessment Tool to be completed within 48 hours of admission to ALL mental health in-patient wards

- 1 positive response
  - LOW RISK
    1. Encourage fluids aiming for 30ml/kg (60+ or 35ml/kg (15-60))
    2. Assess weekly in acute areas or monthly in longer term areas

- 3 positive responses
  - MEDIUM RISK
    1. Ensure hydration care plan in place
    2. Encourage fluids aiming for 30ml/kg (60+ or 35ml/kg (15-60))
    3. Commence fluid balance chart and assess intake and output fluid balance 24 hourly
    4. Complete urine analysis daily
    5. Request medical review

- 4+ positive responses
  - HIGH RISK
    1. Encourage fluids aiming for 30ml/kg (60+ or 35ml/kg (15-60))
    2. Encourage fluids aiming for 30ml/kg (60+ or 35ml/kg (15-60))
    3. Commence fluid balance chart and assess intake and output fluid balance 24 hourly
    4. Complete urine analysis daily
    5. Request medical review
    6. Agree frequency for fluid observation
    7. Consider reviewing fluids

<table>
<thead>
<tr>
<th>Hydration Status Assessment Tool</th>
<th>Produced by C Mulroney, Mental Health Quality Improvement and M. MacDonald Nutrition and Dietetic Department</th>
</tr>
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<tr>
<td>Nursing Documentation and Continuous Care Record</td>
<td>Version 2.1 – July 2012 Review Date – July 2013</td>
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</table>

Kirkcaldy and Levenmouth CHP Mental Health Services C Mulroney, Quality Improvement Practitioner
Reference List


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