NATIONAL INSTITUTE FOR HEALTH AND CARE EXCELLENCE

HEALTH AND SOCIAL CARE DIRECTORATE

QUALITY STANDARD CONSULTATION

SUMMARY REPORT

1 Quality standard title

Intravenous fluid therapy in adults in hospital

Date of Quality Standards Advisory Committee post-consultation meeting:
19 May 2014

2 Introduction

The draft quality standard for IV fluid therapy was made available on the NICE website for a 4-week public consultation period between 21 March and 22 April 2014. Registered stakeholders were notified by email and invited to submit consultation comments on the draft quality standard. General feedback on the quality standard and comments on individual quality statements were accepted.

Comments were received from 8 organisations, which included national organisations, professional bodies and others.

This report provides the Quality Standards Advisory Committee with a high-level summary of the consultation comments, prepared by the NICE quality standards team. It provides a basis for discussion by the Committee as part of the final meeting where the Committee will consider consultation comments. Where appropriate the quality standard will be refined with input from the Committee.

Consultation comments that may result in changes to the quality standard have been highlighted within this report. Comments suggesting changes that are outside of the process have not been included in this summary. The types of comments typically not included are those relating to source guidance recommendations and suggestions for non-accredited source guidance, requests to broaden statements out of scope, requests to include overarching outcomes, thresholds, targets, large volumes of supporting information, general comments on the role and purpose of quality standards and requests to change NICE templates. However, the Committee should read this summary alongside the full set of consultation comments, which are provided in appendices 1 and 2.

3 Questions for consultation

Stakeholders were invited to respond to the following general questions:

1. Does this draft quality standard accurately reflect the key areas for quality improvement?

2. If the systems and structures were available, do you think it would be possible to collect the data for the proposed quality measures?

Stakeholders were also invited to respond to the following statement specific question:

3. For draft quality statement 4: This statement incorporates two closely linked concepts (identification and reporting of adverse consequences of IV fluid therapy) because identification of adverse consequences is necessary for reporting to occur. Do you think there is a case for separate quality statements, one about identifying adverse consequences of IV fluid therapy and one about critical incident reporting – would this aid understanding and measurability?

4 General comments

The following is a summary of general (non-statement-specific) comments on the quality standard.

- Overall, stakeholders supported the quality standard in reducing the risk of adult intravenous fluid mismanagement in hospital with clear and relevant areas for quality improvement.

- A stakeholder queried how NICE will propose that commissioners assess hospitals' ability to meet the standards.

Consultation comments on data collection

- Stakeholders expressed some concerns that data collection may be difficult or time consuming, as the systems and structures may not exist to support this.

5 Summary of consultation feedback by draft statement

5.1 Draft statement 1

Hospitals have an intravenous (IV) fluids lead, responsible for training, clinical governance, audit and review of IV fluid prescribing, and patient outcomes.

Consultation comments

Stakeholders made the following comments in relation to draft statement 1:

- Concern was raised that it will be difficult for a single hospital lead to be effective in this role and their workload would be considerable. This is due to the differing knowledge base, involvement and responsibilities of professional groups within a hospital. (However, the draft quality statement reflects the NICE recommendation.)
- Suggestion that it is problematic to make an individual responsible for patient outcomes from IV fluid therapy (unless it is the CEO); and this might more usefully be defined as a responsibility for a hospital committee or board.
- A stakeholder requested that the quality standard be more specific about the qualifications required of the IV fluid lead.

5.2 Draft statement 2

Adults receiving *intravenous* (IV) fluid therapy in hospital are cared for by healthcare professionals who have been assessed to demonstrate competence in assessing patients' fluid and electrolyte needs, prescribing and administering IV fluids, and monitoring patient response.

Consultation comments

Stakeholders made the following comments in relation to draft statement 2:

- Stakeholders suggested it would be challenging to achieve the training and maintenance of competence in many different staff groups and at all senior levels.

- Suggestion to focus on training on ethical considerations in regards to variations in prescribing practice as well as the technical training issues was raised.
- Suggestion to highlight the role of the pharmacy team in supporting induction, ongoing training and education in best practice use of medicines for relevant clinical and support staff across the organisation as well as to identify and report medication errors.
- Suggestion to remove the paragraph on 'training in fluid management' within the definitions section on page 11 because this is more about responsibilities for deaneries and Royal Colleges rather than acute hospitals or commissioners
- Suggestion that the proposed measurement is difficult to obtain.
- A stakeholder questioned whether nursing staff (implied by those administering IV fluids) should be able to make prescribing decisions as mentioned in the rationale of draft statement 2.
- Suggestion that the sentence 'assessed to demonstrate competence in assessing patients' needs' should be re-phrased.

5.3 Draft statement 3

Adults receiving intravenous (IV) fluid therapy in hospital have an IV fluid management plan, given by and reviewed by an expert, which includes the fluid and electrolyte prescription for the next 24 hours and arrangements for assessment and monitoring.

Consultation comments

- Suggestion that elements of this statement need to be measured separately.
- Suggestion for measures about patients receiving fluids for longer than 24 hours.
- The e-learning module referenced in this statement was supported as a valuable resource but it only caters for the needs of those prescribing IV fluid therapy and not for those delivering it (i.e. nursing staff).
- Request for inclusion of practical guidance specific to emergency departments within this standard.
- Stakeholders highlighted that the definition of 'expert' will be open to a wide range of interpretation. A clearer definition was requested. One suggestion was to

replace the term ‘expert’ in the statement with ‘healthcare professional with the appropriate core competencies’ as described in the definition.

5.4 Draft statement 4

Adults who receive intravenous (IV) fluid therapy in hospital are assessed within appropriate timescales for consequences of fluid mismanagement, which are reported as critical incidents if no other cause can be identified.

Consultation comments

We asked a specific consultation question about this draft statement:

For draft quality statement 4: This statement incorporates two closely linked concepts (identification and reporting of adverse consequences of IV fluid therapy) because identification of adverse consequences is necessary for reporting to occur. Do you think there is a case for separate quality statements, one about identifying adverse consequences of IV fluid therapy and one about critical incident reporting – would this aid understanding and measurability?

In response to the specific consultation question, stakeholders generally supported the idea of separating this statement into two: one about identifying adverse consequences and one about critical reporting.

Additional consultation responses included:

- Request to clarify the term ‘critical incident’.
- One stakeholder suggested the assessment part of the statement could be subsumed in statement 3 about management plans.
- Concern that data collection for this statement would be labour intensive.
- A stakeholder queried the robustness of the separate process measures.
- Suggestion to base this statement on the requirement for daily monitoring.
- Suggestion that the percentage of patients assessed for adverse consequences should be 100% and this assessment should be made each time their fluid prescription is reviewed and renewed.

- Highlighted difficulty in making the assessment that a patient is given the appropriate dose of IV fluids
- Request to define ‘appropriate timescales’.

6 Suggestions for additional statements

The following is a summary of stakeholder suggestions for additional statements.

- Suggestion to have an IV fluids lead for each professional group involved in the prescribing, administration, and monitoring of IV.
- Following a protocol for IV fluid therapy.
- Suggestion to have a specific statement on fluid resuscitation.

Appendix 1: Quality standard consultation comments table

ID	Stakeholder	Statement No	Comments[1]
1	British Association for Parenteral and Enteral Nutrition (BAPEN)	General	BAPEN agrees with this statement, although for such a role to be effective would be a considerable undertaking.
2	British Association for Parenteral and Enteral Nutrition (BAPEN)	General	BAPEN agrees with this aspiration, but to train and maintain competence in IV fluid prescribing in many different staff groups at all levels of seniority will be a challenge, especially given the amount of mandatory training that all staff are obliged to undertake
3	British Association for Parenteral and Enteral Nutrition (BAPEN)	General	Yes, the key areas are clear and relevant
4	British Association for Parenteral and Enteral Nutrition (BAPEN)	General	Unfortunately the potential burden of data collection on this topic, as described in this quality standard, would be enormous. Furthermore, there is often considerable debate about fluid balance, and experienced senior health professionals may disagree about the fluid management of individual patients – this would make data collection difficult. The authors have tried to define a series of mismanagement scenarios in Standard 4, some of which are more readily defined than others. For example, there would often be debate about whether respiratory deterioration is due to fluid overload (pulmonary oedema) or infection. Abnormal measurements of electrolytes are simpler to define but often a multiplicity of reasons lead to abnormalities – inappropriate iv fluid

[1]PLEASE NOTE: Comments received in the course of consultations carried out by NICE are published in the interests of openness and transparency, and to promote understanding of how quality standards are developed. The comments are published as a record of the submissions that NICE has received, and are not endorsed by NICE, its staff or its advisory committees.

ID	Stakeholder	Statement No	Comments[1]
			prescription may be one of these reasons, but the decision about the importance of this in comparison to drug treatment may be a rather subjective one.
5	Department of Health	General	I wish to confirm that the Department of Health has no substantive comments to make, regarding this consultation.
6	NHS England	General	There is also variation in mouth care practice when IV is withdrawn leading to patient and relative distress in many cases.
7	Baxter Healthcare	General	Baxter Healthcare (Baxter) considers the publication of NICE Quality Standards for Intravenous (IV) fluid therapy in adults in hospital to be an important step towards reducing the risk of adult intravenous fluid mismanagement in hospital. Baxter agrees in principle that the four quality statements reflect the most important standards to be met.
8	Baxter Healthcare	General	Baxter agrees that if the systems and structures were available then it would be possible to collect the data for the proposed quality measures. However Baxter believes that much of the data indicated for collection will be either very difficult or very time consuming to collect for most organisations, as the systems and structures do not exist to do so. Much of the data collection requires matching specific patient prescription data to the prescriber and the person administering the IV therapy. In many cases the data collection also requires matching the data to training records. Realistically the data collection requires electronic prescribing, electronic patient records and electronic training record systems to be in place, and integrated.
9	Baxter Healthcare	General	Baxter have a question about how NICE will propose that Commissioners assess hospitals' ability to meet the Standards and the risk to care should no hospital be able to fully meet the Standards.
10	Baxter Healthcare	General	Baxter would like NICE to consider being more specific about the qualifications required of the IV fluid lead. It is important to give guidance to hospitals for who they should appoint to the role, such as a specific type(s) of healthcare professional (HCP), and level of seniority.
11	Baxter Healthcare	General	Baxter would like NICE to include carers and family included as well as patients.
12	Royal College of Nursing	1	Nurses working with adult patients undergoing intravenous fluid therapy in hospital were invited to review the draft quality standard. There are no further comments to make on this document on behalf of the Royal College of Nursing.

ID	Stakeholder	Statement No	Comments[1]
13	College of Emergency Medicine	1	I think the statement is fine, although it can be argued that simply appointing an IV fluids lead and defining their actual role along the lines indicated by NICE CG 174 are actually two separate things. As an aside, I think it is problematic to make an individual responsible for patient outcomes from IV fluid therapy (unless it is the CEO); this might more usefully be defined as a responsibility for a hospital committee or board.
14	College of Physicians	1	Our experts believe that it will be difficult for a single hospital lead to be effective in this role. This is due to the differing knowledge base, involvement and responsibilities of professional groups within a hospital. We therefore recommend that there is an IV fluids lead for each professional group involved in the prescribing, administration, and monitoring of IV fluids i.e. one for medical staff, one for nurses, one for physicians associates etc.
15	British Association for Parenteral and Enteral Nutrition (BAPEN)	1	BAPEN fully support attempts to improve the prescribing of intravenous fluids. Overall, the aspiration of these standards is commendable but their implementation will be a considerable challenge. We would see improved training at undergraduate level as well as raising awareness through ongoing professional updates as key to success. An iv fluid lead could be very influential in this process locally, but the workload for such an individual would be very considerable. Requiring regular (and mandatory) training for all relevant staff could be dealt with by elearning and update meetings. Clear planning and reassessment of iv fluid regimes by senior staff might require to be more frequent than daily for unstable patients and less frequent for more chronic situations. The definition and measurability of adverse events is potentially difficult and regular review of critical incidents by the lead in discussion with relevant clinicians might be the most practical way of proceeding in the first instance.
16	NHS England	2	My comments relate specifically to older patients and patients with dementia. There is a postcode lottery around discharge from hospital with IV fluids prescribed. Many care settings won't accept residents with these needs and this can in turn influence prescribing practice. (e.g. hostels, secure settings) There is custom and practice around not providing IV in Hospices (in some cases contested) and in the 'own home' setting which limits 'choice'. Similar concerns at 'reassessment stages' regarding how ethical issues are not clearly set out and worked through with patients and

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			families. The reference to previous history regarding limited intake-and weight assessment. How is this rigorously assessed and applied in dementia cases?
17	NHS England	2	The guidelines need to focus on training around the ethical considerations around variations in prescribing practice as well as the technical training issues. There is little consultation with relatives about IV decisions around dementia and a number of cases of withdrawal with no consultation of relatives
18	Royal Pharmaceutical Society	2	The development of systems that ensure adults receiving IV fluid therapy in hospital are cared for by healthcare professionals who have appropriate training should be highlighted as a multidisciplinary issue with the appropriate support from different healthcare professionals including pharmacists being made available. As highlighted in the Royal Pharmaceutical Society Professional Standards for Hospital Pharmacy Services the pharmacy team has a key role in supporting induction, and ongoing training and education in the best practice use of medicines for relevant clinical and support staff across the organisation.
19	Royal Pharmaceutical Society	2 & 4	Local arrangements to ensure that consequences of fluid mismanagement in adults are reported as incidents should be a multidisciplinary issue that includes pharmacists. As part of promoting a safety culture within the Royal Pharmaceutical Society Professional Standards for Hospital Pharmacy Services standards we highlight the need for the pharmacy team to ensure medication errors are identified, recorded, monitored, reported and investigated and that learning from medication errors and systems failures related to medicines is shared with the multidisciplinary team and the whole organisation if appropriate, and acted upon to improve practice.
20	College of Emergency Medicine	2	Regarding 'Training in fluid management must also be embedded in both general and specialty training programmes with clear curriculum based teaching objectives and delineation of minimum standards of clinical competency and knowledge for each stage of training and clinical delivery. Recognition and management of the clinical complications of fluid management should also be considered.' I do not disagree with any of the above, but think that this paragraph is more about responsibilities for deaneries and Royal Colleges rather than acute hospitals or commissioners – suggest

ID	Stakeholder	Statement No	Comments[1]
			remove.
21	College of Emergency Medicine	2	Regarding 'Service providers ensure that systems are in place to ensure that adults receiving IV fluid therapy in hospital are cared for by healthcare professionals…' This ought to be phrased better!
22	College of Emergency Medicine	2	The proposed measurement is difficult to obtain. It would be better (and just as meaningful) to measure (through mandatory training logs) competent IV fluid prescribers as a proportion of all prescribers. Separately, staff assessed to be competent to administer IV fluids as a proportion of all staff administering fluids should be measured and reported.
23	College of Emergency Medicine	2	Regarding 'Proportion of adults who receive IV fluid therapy in hospital who are cared for by healthcare professionals are assessed to demonstrate competence in assessing patients' fluid and electrolyte needs, prescribing and administering IV fluids, and monitoring patient response.': This sentence does not read right. Suggest remove the second 'are' in the sentence or replace with 'who have been'
24	College of Emergency Medicine	2	Regarding 'In addition, those administering IV fluids need to be able to assess patients' needs and make prescribing decisions.': I am not sure if nursing staff (i.e. staff administering fluids) need to be able to make prescribing decisions.
25	College of Emergency Medicine	2	Regarding 'assessed to demonstrate competence in assessing patients needs': This ought to be phrased better.
26	Baxter Healthcare	2	While blood or blood products are out of scope, we believe that under the definition parenteral nutrition is in scope and as this requires specific knowledge. Baxter would like NICE to consider including training on prescribing and administering parenteral nutrition.
27	British Association for Parenteral and Enteral Nutrition (BAPEN)	3	The definition of "expert" will be open to a wide range of interpretation. For regular review of fluid regimes, in and out of conventional working hours, 7 days a week by "experts" again will be a difficult standard for Trusts to attain
28	Baxter Healthcare	3	Baxter would like NICE to include more detail to the definition of "Expert". Baxter would ask NICE for more clarity on which HCP should be the Expert to be included. Baxter would like NICE to consider that the Expert should have core competencies to manage chronic as well as acute

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			illness, as fluid mismanagement in chronic illness is just as critical. It is unclear whether the Expert is additional to the prescriber or can be the prescriber as well.
29	College of Emergency Medicine	3	A valuable resource, but in contrast to the NICE e-learning module on AKI it only caters for the needs of those prescribing IV fluid therapy and not for those delivering it (i.e. nursing staff).
30	College of Emergency Medicine	3	The measure proposed in this statement is a composite of various elements. To be truly meaningful, the elements need to be measured separately (i.e. in the way the draft already specifies for statement 4): Proportion of adults receiving IV fluids who a. have any identifiable IV fluid plan in the notes b. have their plan given by an 'expert' c. have their plan reviewed by an 'expert' after 24h d. have a 24h (rather than ad hoc) prescription for fluids and electrolytes e. have evidence of arrangements for appropriate blood test monitoring f. have evidence of arrangements for appropriate reassessment In addition, the statement lacks detail about how patients are enrolled: Are we talking about all patients on IV fluids or just a 'representative' sample? Are we looking at patients at one particular time, or patient episodes? My suggestion would be to look at a sample (i.e. a few entire wards, in a rotating fashion) in a particular 24h period. NB: It would be nice to see (maybe as additional material on the NICE website) at least one example of a suggested sample fluid management plan.
31	College of Emergency Medicine	3	Despite asserting that errors in prescribing are particularly likely in emergency departments (amongst other areas), neither CG 174 nor the draft quality standard contains any practical guidance pertaining specifically to EDs. For example, it is difficult to understand how the recommendation regarding IV fluid management plans (with their emphasis on 24h prescribing)

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			should be implemented in EDs.
32	College of Emergency Medicine	3	Proportion of patients who receive IV fluids for longer than 24 hours and who receive fluids containing more than 120mmol/L of chloride for whom there is evidence of serum chloride monitoring regarding patients requiring fluid resuscitation: a) evidence of at least one 500mL bolus over less than 15min b) evidence that no more than 2L given as fluid boluses without expert review c) evidence that no colloid was used as initial resuscitation fluid (2L) d) evidence that only crystalloid containing 139-154mmol/L sodium was used evidence of appropriate reassessment after fluid bolus(es)
33	College of Physicians	3	Adults receiving intravenous (IV) fluid therapy in hospital have an IV fluid management plan, given by and reviewed by an expert, which includes the fluid and electrolyte prescription for the next 24 hours and monitoring. Instead of using the term ‘expert’ we would suggest that the statement says ‘healthcare professional with the appropriate core competencies’ as described in the definition on page 15 (also below). In our view, an expert is someone with more than core competencies and implies significant experience and skills built up over time with relevant clinical practice/exposure. Page 15 - Expert: A healthcare professional who has core competencies to diagnose and manage acute illness. In this context this will include a senior clinician and prescriber of IV fluid therapy.
34	College of Emergency Medicine	4	As indicated above, I think statement 4 requires a complete rethink. However, should a decision be taken to retain the standard, separation of the identification and reporting elements into two different statements would be helpful.
35	College of Emergency Medicine	4	Regarding ‘(a) Evidence of local arrangements to ensure that adults who receive IV fluid therapy in hospital are assessed within appropriate timescales for consequences of fluid mismanagement.’: I don’t believe this is useful as a separate measure but should be subsumed in statement 3 about

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			management plans, as routine monitoring and assessment as part of the management plan should capture and prevent consequences of mismanagement.
36	College of Emergency Medicine	4	It will be feasible to collect the data required for statements 1-3 (caveat: please see specific comments below) but it will be extremely labour intensive or downright impossible to collect truly meaningful data for statement 4. As outlined in my comments to question 1 above, such effort would not add enough value to make it worthwhile.
37	British Association for Parenteral and Enteral Nutrition (BAPEN)	4	BAPEN agrees with this statement, although the definition and agreement as to what would constitute a critical incident will be variable, given the lack of consensus in this area of medicine. The Trust lead would need to be explicit as to what was required to achieve this standard.
38	British Association for Parenteral and Enteral Nutrition (BAPEN)	4	The coupling of number of patients assessed for adverse consequences with a second figure of the number of patients who sustained adverse consequences seems logical. However, realistically, the percentage of patients assessed for adverse consequences should be 100% and this assessment should be made each time their fluid prescription is reviewed and renewed. Recording that this had been done could be very cumbersome and might simply become a box ticking exercise. Although the decision about whether an adverse consequence constituted a critical incident might be a matter for debate, at least the assessment of the number of critical incidents thought to be related to inappropriate iv fluid prescribing would be practical. Some points of detail relating to the table on page 21 a) hyperchloraemia should be included as this is associated with acidosis – this is a common adverse event is excess 0.9% saline is used. b) Urea/creatinine ratio may also be a useful biochemical marker of dehydration.
39	Baxter Healthcare	4	Baxter would like NICE to consider whether the requirement to report as critical incidents IF no other cause can be identified could still result in an under reporting of fluid mismanagement.
40	Baxter Healthcare	4	Baxter would like NICE to define “appropriate timescales” more specifically. Would NICE consider providing a specific timescale?
41	Baxter Healthcare	4	Baxter considers that in answer to Question 3, yes, having two separate Quality Standards would aid clarity

ID	Stakeholder	Statement No	Comments[1]
42	College of Emergency Medicine	4	Only partially. A specific statement on fluid resuscitation (one of the key recommendations) is lacking completely. Statement 4 (which relates to the key recommendation about assessment and monitoring) puts the emphasis on taking action when things have gone wrong; it would be far better to base the standard on the requirement for daily monitoring. I think there should also be a statement on the importance of following a protocol for IV fluid therapy.
43	College of Emergency Medicine	4	All of the ten separate measures are fraught with issues of reliable and meaningful data collection and should be completely revised.
44	College of Emergency Medicine	4	• We suggest that this statement is split into two components relating to 1) assessment and 2) reporting - as discussed in the linked text. • For assessment of patients receiving IV fluids the suggested assessment of hypovolaemia should be amended to make it more precise. Inevitably, patients who are hypovolaemic and are started on IV fluids for this reason will remain hypovolaemic for some period (hours) even while IV fluids are being administered. The process of correcting hypovolaemia is not instantaneous (eg diabetic ketoacidosis – where the deficit may take many hours to fully correct) and there may be specific reasons to correct hypovolaemia cautiously eg patient at high risk of developing heart failure. • The data collection process to identify the assessment of patients with fluid overload should also be made clearer. Extending the assessment period to 6 hours post infusion seems arbitrary and in any case would require a clearly documented time that the IVI was stopped (this is not often the case, in practice). Our experts would suggest that the main focus should be on assessment and decisions taken while the IVI is running. Overall, there are many problems with making the assessment of failure to give enough IV fluids or too much. This includes; who is making the assessment? How valid and how subjective it is? Signs of raised JVP (RHF) and oedema (presence of low albumin) can be misleading and misinterpreted and the abrupt development of breathlessness may be misinterpreted as LVF by

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			the inexperienced. We believe that there should be much more effort made to capture the assessment of a senior clinical decision maker who i) identifies fluid overload or dehydration and ii) makes a link with the IV administration plan and iii) as a consequence makes a clear change to the IV infusion regimen.

Stakeholders who submitted comments at consultation

1 Baxter Healthcare

2 British Association for Parenteral and Enteral Nutrition (BAPEN)

3 College of Emergency Medicine

4 College of Physicians

5 Department of Health

6 NHS England

7 Royal College of Nursing

8 Royal Pharmaceutical Society