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Quality standards

Consultation summary report: Acute kidney injury

Quality Standards Advisory Committee post-consultation meeting: 14 December 2022

1. Introduction

The updated draft quality standard for acute kidney injury was made available on the NICE website for a 4-week public consultation period between 21 October and 18 November 2022. 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 15 organisations, which included service providers, 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 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 2 & 3.

1. 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. Are local systems and structures in place to collect data for the proposed quality measures? If not, how feasible would it be to be for these to be put in place?

3. Do you think each of the statements in this draft quality standard would be achievable by local services given the net resources needed to deliver them? Please describe any resource requirements that you think would be necessary for any statement. Please describe any potential cost savings or opportunities for disinvestment.

Stakeholders were also invited to respond to the following statement-specific questions:

4. For draft quality statement 1: Will the process measures help to provide a pragmatic focus for quality improvement for this statement? If not, please say why and suggest alternatives.

5. For draft quality statement 5: The timeframe for this statement is based on the Renal Association guideline and the Royal College of GPs toolkit. Is a maximum timeframe of 3 months appropriate? If not, please suggest an alternative timeframe and identify a source.

1. General comments

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

* There was general support for the updated quality standard and the areas included.
* Some concern about the removal of statements from the current quality standard, in particular:
  + statement 2 on identifying acute kidney injury (AKI) in people with no obvious acute illness
  + statement 4 on having a urine dipstick test to help identify the cause.
* Support for the inclusion of people with diabetes who are at increased risk of acute kidney injury.
* The quality standard should include a simple AKI bundle to support quality improvement for acute admissions, in particular for less severe cases of AKI.

### Consultation comments on data collection

* Some of the data is already collected in primary and secondary care, however, it is not always available electronically, which could make measurement difficult.
* Data collection in secondary care will be dependent on the maturity of electronic patient records and clinical coding.

### Consultation comments on resource impact

* It was suggested that the quality standard will require more resource in primary care and there was some concern that this may not be achievable given current pressures on the system. It was suggested that there may be scope for clinical pharmacists to provide support in primary care, but this would require pathways to be in place to avoid having to involve a GP.
* Increasing reviews of people in secondary care is also likely to require additional funding and training.
* The resource impact will be determined by close collaboration between primary and secondary care.
* Although the QS is likely to have a resource impact in the short to medium term it was suggested that it may be cost saving in the longer term if it can reduce hospital admissions and length of stay.

1. Summary of consultation feedback by draft statement
   1. Draft statement 1

People having a medication review who are at risk of acute kidney injury are given information and advice on maintaining kidney health. [2014, updated 2023]

### Consultation comments

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

General

* More emphasis on the need for a detailed discussion with a healthcare professional is needed throughout to avoid people just being given a leaflet.
* Support for integrating self-management advice within a medicines review.
* Suggestion that this is already in place for people on the chronic kidney disease (CKD) register having an annual medication or face to face review.

Statement

* Should include a focus on medicines optimisation at the risk assessment and counselling stage.
* Some people with AKI will have frailty and may not have capacity. Should the statement include families and carers and care homes who may manage the person’s medication?

Measures

* May be difficult to identify those at risk of AKI from primary care systems.
* The denominator for the process measures should be available from GP systems but a new data field may be needed to identify those given advice.
* The rationale for the focus on long-term oral non-steroidal anti-inflammatory drugs is unclear given that many other drugs are associated with AKI.
* Suggestion to focus on the Kidney Failure Risk Equation (KFRE) to identify people at risk of progressive kidney disease (and therefore AKI) who should have a medication review.
* Difficult to measure as it will depend on where the medication review takes place and how it is documented and if the data can be collated.
* Suggested that community pharmacies could have access to GP systems so that they can record medication reviews.

Definitions

* Should include awareness raising of risk in relation to periods of extreme heat.
* Does the definition of risk factors in the NICE Clinical Knowledge Summary include symptoms in children?

Equality and diversity considerations

* There should be more emphasis on raising awareness of AKI among vulnerable groups including ethnic minorities, socio-economically deprived, people with a learning disability, mental health problem or another disability and their families and carers.

### Consultation question 4

Stakeholders made the following comments in relation to consultation question 4:

Will the process measures help to provide a pragmatic focus for quality improvement for this statement? If not, please say why and suggest alternatives.

* Some agreement that the measures will help to improve the identification of people at risk of AKI.
* Ideally it should also include people whose kidney function is declining towards eGFR less than 60 ml/min/1.73 m2.
* It should also include risk factors for children, particularly in relation to diabetes.
* The accuracy of heart failure coding may be a problem.
* Patient-reported confidence in managing their health and medication may be helpful.

### Issues for consideration

#### For discussion:

* Are the proposed measures helpful? Any others that we could include?
* Do we need to include medicines optimisation?
* Any amendments needed to definitions?
* Any additional equality considerations that we should add?

#### For decision:

* Should this statement progress to the final quality standard?
  1. Draft statement 2

People in hospital who are at risk of acute kidney injury have their serum creatinine level monitored. [2014, updated 2023]

### Consultation comments

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

General

* The statement is achievable and is likely to be current practice. Some concern that it may not be a priority for quality improvement.
* Concern that statement may not be effective because it is difficult to identify people at risk in hospital, especially in non-medical wards.

Measures

* It may be challenging to identify the denominator for people at risk of acute kidney injury as data may not be sufficient to identify comorbidities.
* It would be possible to measure length of hospital stay; however, this may be inaccurate due to poor coding of AKI.

Definitions

* People in hospital who are at risk of acute kidney injury
  + Further clarification on risk factors for children is needed as microscopic haematuria is too insensitive.
  + It was suggested that it would be preferable to identify drug classes grouped by analgesic, antimicrobials, antiepileptics etc rather than giving selected examples of drugs that could exacerbate AKI. Currently nephrotoxic antimicrobials are excluded. A reference to Think Kidney may help with this.
* Monitoring serum creatinine level
  + Daily measurement of serum creatinine for those at risk is not feasible and frequency should be individualised.
  + More emphasis needed on the importance of using the enzymatic assay.
  + Definition of how to detect AKI should be based on the NHSE patient safety alert and AKI algorithm.
  + Clarify that it is clinical teams rather than laboratories that detect AKI as laboratories do not have access to urine output.
  + Clarify if babies are included. Neonates born at extremely low birth weight are at increased risk.

### Issues for consideration

#### For discussion:

* Is this a priority for quality improvement?
* Is it measurable?
* Do the definitions need to be amended?

#### For decision:

* Should this statement progress to the final quality standard?
  1. Draft statement 3

### People with an acute kidney injury warning stage 2 or 3 test result have a clinical review within the locally agreed timeframe. [new 2023]

### Consultation comments

Stakeholders made the following comments in relation to draft statement 3:

Statement

* ‘A clinical review within the locally agreed timeframe’ is meaningless.
* Concern that wording will introduce variability depending on local implementation. A national timeframe is important.
* Should include ongoing clinical review and not just the initial response.

Measures

* The process measures will require e-alerts to be in place and clinical review to be recorded.
* This will be difficult to measure in primary care because the result may come through after hours or at the weekend or bank holiday. Who takes responsibility for the result if it arrives out of hours? How will this be mitigated?
* 6 hour reviews in primary care seem unachievable and would place a significant burden on out of hours services. It may lead to inappropriate anxiety and hospital attendance.

Definitions

* AKI warning stage 2 or 3 test result
  + Should include the NHSE AKI algorithm definition of AKI stage 3 for people under 18.
* Clinical review
  + Should include alternative ways of identifying the true renal function e.g. Cystatin C which is particularly relevant for some paediatric cases.
  + Will this include checking for false positives, in particular, in the community – if not, how will this be done?
* Locally agreed timeframe
  + It is important to note the development of Same Day Emergency Care and Hospital at home as alternatives to immediate admission.

### Issues for consideration

#### For discussion:

* Is the statement helpful/realistic?
* Is it measurable?
* Should we focus on a particular setting or population?

#### For decision:

* Should this statement progress to the final quality standard?
  1. Draft statement 4

### People with acute kidney injury who meet the criteria for renal replacement therapy are referred immediately to a nephrologist or critical care specialist. [2014]

### Consultation comments

Stakeholders made the following comments in relation to draft statement 4:

General

* Support for the statement and it is still a priority for improvement.
* The statement should be achievable and is the expected standard of care.
* There is variability in resources and access to renal replacement therapy which will limit the ability to meet this standard.

Statement

* Should include review and response times as well as referral.

Measures

* The data may not currently be recorded and would need to be collated by nephrologists.
* Measures are achievable.

Definitions

* Criteria for renal replacement therapy
  + Does it need to be clearer that renal replacement therapy may not be suitable due to comorbidities and frailty?

### Issues for consideration

#### For discussion:

* Do we need to make it clearer that RRT may not be suitable in some circumstances?

#### For decision:

* Should this statement progress to the final quality standard?
  1. Draft statement 5

### People discharged from hospital after acute kidney injury have a clinical review within 3 months of discharge. [new 2023]

### Consultation comments

Stakeholders made the following comments in relation to draft statement 5:

General

* There was some support for the statement and the importance of including it as an area for quality improvement.
* The statement is likely to have a resource impact as there will be an increased demand for nephrology review.
* Will require close local agreement and implementation between primary and secondary care.
* Post-discharge follow-up needs to be tailored according to individual clinical and social needs and should take into account shared decision making and use a personalised care approach
* It may also be helpful to signpost to other advice on transfer of care at discharge such as the [Royal College of Physicians guide on medication safety at hospital discharge](https://www.rcp.ac.uk/projects/outputs/medication-safety-hospital-discharge-improvement-guide-and-resource).

Statement

* The statement includes children and young people, but the RCGP toolkit used as source guidance is for adults only.
* Some concern that 3 months is too long and statement should also include structured communication and agreed initial follow up times on discharge/transfer from hospital.
* It should be a clinical and biochemical review (including eGFR and urine ACR).
* Should focus on AKI stage 2 or 3 in order to be achievable.

Measures

* The data may not currently be recorded and it may be challenging to collect.

Audience descriptors

* Is it possible to make it clearer who should take responsibility for follow-up review depending on stage and recovery?
* Local systems may need to change so that community pharmacists can record medication reviews on GP systems to avoid duplication.

Definitions

* Within 3 months of discharge
  + It should be clearer that the RCGP toolkit indicates that people with diabetes should be reviewed earlier.

### Consultation question 5

Stakeholders made the following comments in relation to consultation question 5:

The timeframe for this statement is based on the Renal Association guideline and the Royal College of GPs toolkit. Is a maximum timeframe of 3 months appropriate? If not, please suggest an alternative timeframe and identify a source.

* Some support for the timeframe but also concern to ensure that it does not have a negative impact on people who need to be reviewed much earlier and more frequently following discharge.
* 3 months is aspirational but may not be achievable given existing resources in primary care. Better to build it into other existing reviews for people with long term conditions. Suggested revision to ‘review ideally within 3 months or within 6 months for people having an annual health check or long-term condition review’.

### Issues for consideration

#### For discussion:

* Should the statement include children and young people?
* Should the focus be on AKI stage 2 or 3 only?
* Is the timeframe appropriate?
* Is it measurable?

#### For decision:

* Should this statement progress to the final quality standard?

1. Suggestions for additional statements

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

* Identifying the risk of AKI in the community.
* Identifying acute kidney injury (AKI) in people with no obvious acute illness (statement 2 in the current quality standard)
* Urine dipstick test to help identify the cause (statement 4 in the current quality standard)
* Discussion with a nephrologist (statement 5 in the current quality standard)

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# Appendix 1: Response log for key stakeholders

Responses from key stakeholders and action taken:

* **Association of Clinical Biochemists:** Comments received.
* **British Association of Paediatric Nephrologists:** Comments received.
* **Faculty of Intensive Care Medicine:** Extended deadline offered but comments were not received.
* **Intensive Care Society:** Extended deadline offered but comments were not received.
* **Royal College of GPs:** Comments received.
* **Royal College of Physicians:** Comments received.
* **Society of Acute Medicine**: Comments received.
* **UK Kidney Association**: Comments received.

# Appendix 2: Quality standard consultation comments table – registered stakeholders

| **ID** | **Organisation name** | **Statement or question number** | **Comments** |
| --- | --- | --- | --- |
| 1 | Diabetes UK | General | We welcome the explicit mention of people with diabetes within this updated quality standard given the condition increases a person’s risk of acute kidney injury. This is also needed to align the quality standard with the clinical guidance ‘Acute kidney injury: prevention, detection and management’ [NG148], which rightly includes people with diabetes. |
| 2 | Kidney Care UK | General | Kidney Care UK, the UKs leading kidney patient support charity, welcome the opportunity to respond to this consultation on the draft quality standards for Acute Kidney Injury (AKI). These quality standards are important as we continue to push for early identification of AKI to enable timely, efficient and effective treatment and advice to avoid and delay later stage AKI. As members of the original AKI guidelines group in 2013 and Quality Standards group in 2014 subsequently we have some awareness of the NICE work in this area.  We offer free co-produced patient information (with kidney specialists) on Acute Kidney Injury both for adults and children and on Keeping your Kidneys safe https://www.kidneycareuk.org/order-or-download-booklets/  We note that the of the six statements from the 2014 Quality Standards, one remains unchanged, two have been changed and the remaining three replaced. The 2023 updated draft standards include five statements – and we note that from the 2014 Standards -statements 2, 4 and 5 have been removed.  In particular we are concerned at the removal of the necessity to perform a urine dipstick test as soon as AKI is suspected or detected – to which there is no reference within the 2023 updated draft standard. – They are widely recognised as allowing qualitative or semi quantitative analysis within one minute. We are also concerned at the removal of Statement 4 - the requirement for people who ‘present with an illness with no clear acute component and 1 or more indications or risk factors’ for AKI to be assessed for this condition. |
| 3 | NHSE | General | I have led the response to this consultation from the AMR Programme Regional Antimicrobial Stewardship Leads and we have no specific comments to make, noting the changes to the proposed Quality Standard have removed the Statement that had impacted on the diagnosis of UTI. So we are happy and no comments to return for inclusion in the response from NHS England. |
| 4 | Royal College of Paediatrics and Child Health | General | This commenter agrees with the draft consultation including 5 statements regarding AKI. |
| 5 | Royal College of Paediatrics and Child Health | General | This commenter has no specific changes or comments. |
| 6 | Royal College of Physicians | General | We strongly support the updating of quality standards for Acute Kidney Injury, which remains a significant contributor of morbidity and mortality.  The standards are focussed, and appropriately cover managing risk, acute management and follow up.  The challenges in implementation will be with accurate identification of at risk patients in secondary care. It may be appropriate to separate secondary care into acute care, and long term condition care.  The follow up standard will require close local agreement between primary and secondary care to be reliably implemented. |
| 7 | Royal College of Physicians of Edinburgh (RCPE) | General | The Royal College of Physicians of Edinburgh (RCPE) is pleased to be able to respond to this consultation. The responses below are based on the collated views of RCPE Fellows with significant clinical experience within nephrology. |
| 8 | Sheffield Teaching Hospitals | General | Clear, comprehensive, well structured |
| 9 | Society for Acute Medicine | General | The detail in the draft guideline is obviously required to give direction to service providers. To achieve quality improvement at all our clinical coalfaces, the guidelines need to translate into something tangible for all our clinicians in AMUs/AAUs/EDs and hospital wards.  In the past local written guidelines have generally been overly complicated for our junior doctors/ANPs/Pas. On any busy medical take any junior may see 3 or 4 AKI 1’s (Cr rise of >26) and fail to respond appropriately- as they avoid looking up complex algorithms.  It is often the less severe AKIs that are mis managed and cause avoidable harm to patients.  I previously discussed this with x at SAM- nothing in AKI bundles has achieved what SEPSIS 6 did for the management of septic patients. The SEPSIS 6 bundle succeeded in spreading virally from students to middle grades as it was so simple - compromises made on detail were justified by the basics being done well. This guideline needs to result in a simple bundle that keeps patients with AKI safe-and answers the point raised in question 4.  For example, in the last 10 years I have taught my juniors a 7 point bundle called “ROUND UP 26”(slide from Foundation Training presentation attached below)- if the Cr jumps by 26 I ask them to incorporate the ROUND UP points into their management plans as below. It is simple and I am often pleased to see them continue to use it through their training years.  Just a thought for a pragmatic QIP approach to AKI management for acute admissions |
| 10 | UK Clinical Pharmacy Association | General | We have no comments to make. |
| 11 | Kidney Care UK | Question 1 | We appreciate the aim of the quality standard in helping to increase prevention, early detection, and management of AKI and welcome some of the increased detail in relation to Data Sources attached to each of the statements. We know that a greater emphasis on public awareness on kidney health helps people to better understand the steps they need to take and as an organisation this has been one of our major focuses. Once detected accurate and timely information is critical and we welcome the continued reference to Kidney Care UKs literature. |
| 12 | NHSE | Question 1 | The quality standard does go a long way to reflect the key areas for quality improvement. I think the point about inequality needs to be pushed further for example awareness raising efforts to be increased in vulnerable ethnic groups, deprived patients, those with LDA (fluid intake challenges), mental health and other disabilities and with their carers and families. Also, there could be media awareness raising during periods of extreme heat. In addition, many patients are not aware of the risk of easily obtainable OTC drugs. |
| 13 | Royal College of Physicians | Question 1 | The quality standard highlights the key areas for quality improvement. However, the detail under standard 2 is considerable, as the clinical review has multiple facets, and should include ongoing clinical review not just the initial response. There is further work to be done on how AKI alerts are used alongside NEWS2. |
| 14 | Royal College of Physicians of Edinburgh (RCPE) | Question 1 | The RCPE considers that the draft quality standard is generally appropriate and covers the important aspects of Acute kidney injury (AKI). |
| 15 | Sheffield Teaching Hospitals | Question 1 | Yes |
| 16 | University Hospital of Derby and Burton Foundation Trust /National Clinical Advisor for Acute Kidney Injury, NHSE&I | Question 1 | 1. Question 1 Does this draft quality standard accurately reflect the key areas for quality improvement?               It does in general, except for QS1 from 2014, which I suggest some modification |
| 17 | Kidney Care UK | Question 2 | Timely and accurate monitoring of clinical interventions is hugely important to assessing the success of these quality standards and the impact which they are having on early detection as well as reducing the instances and severity of AKI. Primary and Secondary Healthcare Care settings should be collecting this information already |
| 18 | NHSE | Question 2 | The quality statement 2 should be achievable but again I would also suggest increasing awareness and professional curiosity in all vulnerable groups especially during periods of extreme heat. As someone with a primary care background I am not able to comment on whether serum creatinine is easily monitored in secondary care. |
| 19 | Royal College of Physicians | Question 2 | Collecting data in secondary care will be dependent on the maturity of electronic patient records, and to some degree clinical coding. This is required to identify at risk groups, and clinical response. |
| 20 | Royal College of Physicians of Edinburgh (RCPE) | Question 2 | Our Fellows expressed the view that there are not currently local systems in place to collect these data. With regard to statement 1, the denominator can be collated from GP systems but there will not be a way to establish who was given advice; a new field may be relatively simple to implement. With regard to statement 2, Fellows considered this may be difficult to measure as establishing who is at risk of kidney disease could be challenging. Information from SMR01 would be insufficient to establish co-morbidities. Measuring length of stay in patients with AKI could be extracted from SMR01 (HES equivalent) providing that AKI has been coded. Some Fellows referred here to their previous work showing that AKI is not well coded. For statement 3, Fellows pointed out that not all hospitals in Scotland have AKI e-alerts. Information on who receives clinical review would need to be recorded. For statement 4, this information is not routinely collected in Scotland at present and would need to be collated by nephrologists. Finally, with regard to statement 5, again these data are not currently collected and may be challenging to gather. |
| 21 | Sheffield Teaching Hospitals | Question 2 | Yes for some of the data, however not electronically for several of the statements, which would make it difficult to measure/audit in a timely manner. Our trust is currently developing a new electronic patient record which will hopefully make much of this more feasible. We are reviewing this. |
| 22 | Diabetes UK | Question 3 | There is a need for significant investment in the NHS workforce, better allocation of resources and opportunities for education to achieve the ambitions of this quality standard. This investment is necessary to deliver a high standard of care and will also be cost-saving in the long term, due to the prevention of further disease and lower instances of re-admission that would occur as a result of earlier interventions. |
| 23 | Kidney Care UK | Question 3 | Local intervention is critical – but having the resources to act, and especially in relation to action required following an AKI diagnosis, is crucial to the outcomes achievable. Monitoring of performance in this area should be an ongoing process to ensure that gaps are identified and that local delivery matches the aim of the quality standards. |
| 24 | NHSE | Question 3 | * There would need to be additional capacity in primary care to perform the enhanced review of patients who are at risk of AKI and the clinical review following AKI warning stage 2 or 3 as this is not something that is currently done as BAU. This cohort of patients within a practice is likely to be a significant number which is growing. These clinical reviews would however not necessarily require a doctor and it is likely that a clinical pharmacist would be best placed to undertake these in primary care. They would therefore need to work collaboration with secondary care and also pathways would need to consider the ability of the CP to escalate without needing to go back to the GP.   Commissioning arrangement would need to take into consideration the additional capacity required, who would delivery this and at what level eg practice/place/PCN. A robust pathway would need to be developed with support from all stakeholders. Potential cost savings would be unlikely in the short medium term due to identification of unmet need, additional consultations required and medication as well as referral to secondary care with interventions. Patients are likely to live longer with identification and upstream management, but it has yet to be determined whether this would be offset by patients living a healthier, more independent life. The proactive management of AKI may have longer term returns by reducing hospital admission and LOS. |
| 25 | Royal College of Physicians | Question 3 | Daily measurement of serum creatinine for at risk patients in hospital is not feasible. Most adult inpatients in hospital are at risk of AKI. Many are in hospital for prolonged periods of time. Perhaps the term ‘frequent’ should be used rather than daily and then this can be tailored to the individual patient.  The resource issue for both standard 1 and 5 will be determined by close collaboration between primary and secondary care.  Equality of resources and access for renal replacement therapy (critical care and nephrology) may constrain the ability to deliver standard 4, particularly when renal services are not on site 7 days per week, and/or critical care capacity is constrained. |
| 26 | Royal College of Physicians of Edinburgh (RCPE) | Question 3 | Fellows consider that statement 1 would require delivery by primary care who are already overstretched and therefore further staffing resource would be required. They consider that statement 2 should be achievable and is likely happening already in the majority of cases. With regard to statement 3, again this should be achievable but will be more challenging in locations without e-alerts. Statement 4 should be achievable and should be the expected standard of care. Statement 5 may place very heavy strain on current nephrology services and further staffing and clinic resource would certainly be required. |
| 27 | Sheffield Teaching Hospitals | Question 3 | Statement 1 – should target pharmacists in community & hospitals, Statement 2 – this should mostly happen by default and systems in place, Statement 3 – guidance on the suggested timeframe would be useful – in trust recommendations would be influenced by potassium level/acidosis/fluid overload (complications assoc. with the AKI stage) and NEWS2 scores (features of a sick/deteriorating patient). Depending on who undertakes the review (medical/nursing staff) investment may be required, our AKI service has few personnel and current roles are restricted, we need investment. Statement 4 – this occurs however currently there is no existing method to monitor/record the time frame. Statement 5 – depending on the severity or recovery of the AKI by discharge will influence whether GP or nephrology are required to review the patient, from discussions with Medical Director of GPs in our region, I believe they would want education/funding to support delivery of this. |
| 28 | Kidney Care UK | Statement 1 | We agree completely that better education delivered in ‘primary care settings, outpatient settings and on discharge from hospital’ helps to reduce the number of people developing acute kidney injury.  While the numerator here has changed to the ‘number of people given information’ from the previous 2014 ‘documented discussion with their healthcare professional’ and indeed the Service provider sections substitutes the phrase ‘in a discussion with their healthcare professional’ with ‘to be given information and advice’ - we would not want this to in any way lessen the number of these important healthcare professional led discussions which take place with patients – the provision of detailed information leaflets are important but so too is a detailed discussion with a healthcare professional. We welcome the clarification within the Definition of terms which refers to health care professionals discussing – but would urge this to be clarified within the Rationale and Quality Measures.  We welcome the widening of information on the data source for this statement, including the recording on patients records and inclusion of an at risk survey. |
| 29 | NHSE | Statement 1 | Primary care has already established as BAU to maintain a register of patients with chronic kidney disease and undertakes annual medication and if necessary, face to face reviews on these patients. This should also include advice about what actions patients can take to reduce deterioration of renal function and what medications to avoid (especially those can be purchased OTC) |
| 30 | Renal GIRFT | Statement 1 | Medicines Optimisation is a crucial intervention at every stage of the AKI Pathway, not just at the risk assessment and counselling stage. I think this was in the discussion we had but apologies if it was not clear. This statement should reflect this. Eg “Medicines optimisation and review is required when conducting AKI risk assessments and counselling patients on maintaining kidney health, early during an AKI episode and at the time of AKI follow-up consultations where risks and benefits medicines discontinued during the AKI episode should be re-evaluated.” We now understand that patients with AKI on heart failure medicines who have these medicines stopped during an AKI episode are frequently re-admitted with decompensated heart failure because the therapy has not been re-introduced. |
| 31 | Royal College of Paediatrics and Child Health | Statement 1 | * Risk factor for at risk of AKI in children symptoms or signs of nephritis (such as oedema or haematuria). This should be either: * Persistent proteinuria of any degree * Macroscopic haematuria   Microscopic haematuria occurs up to 1% of childhood population so by itself would be too insensitive to be a risk factor. |
| 32 | Royal College of Physicians | Statement 1 | We welcome the integration of medicines review for patients at risk of AKI alongside full medicines review and self-management. |
| 33 | Royal College of Physicians of Edinburgh (RCPE) | Statement 1 | The RCPE considers that establishing who is at risk of AKI may be difficult from primary care systems and that implementing a risk score in primary care systems (the recently NICE approved 4 variable Kidney Failure Risk Equation (KFRE), which will identify patients at risk of progressive kidney disease and also by virtue of this an increased risk of AKI) may be the best way to deal with who should receive a medication review. We understand this work is underway in NHS England and we believe that this statement requires primary care input. |
| 34 | UK Kidney Association (UKKA) | Statement 1 | This statement may be hard to measure because it depends where the review takes place and how it is documented. For instance, it may be measurable in a GP surgery (GP, nurse practitioner). Could community pharmacies have access to SystmOne or EMIS and record medication reviews to make them visible? In secondary care it could be undertaken in any location in the hospital by any doctor, pharmacist or nurse practitioner (who collates the data)? |
| 35 | UK Kidney Association (UKKA) | Statement 1 | This statement may be hard to measure because a significant proportion of patients with AKI in secondary care have frailty and may not have capacity. Should this statement include carers or family members who maybe manage the patient’s medication and welfare? |
| 36 | University Hospital of Derby and Burton Foundation Trust /National Clinical Advisor for Acute Kidney Injury, NHSE&I | Statement 1 | As we go into ICS, prevention becomes extremely important. We know that 2/3rd of hospital admitted AKI originate in Community (C-AKI). However, recognition of risk is poor. There are nearly 600,000 episodes of hospital admitted AKI, out of which 400,000 originate in community. Recognising the risk is the first step to reduce the incidence of C-AKI. The 2014 QS states discussing the risk with patient, but, the main issue is that risk itself isn’t identified. The evidence for this is the incidence of C-AKI hasn’t changed  I would suggest modifying QS1   1. People who are particularly at risk of developing AKI in community are identified, and should have the risk discussed with them, include those who have any of the following ……. |
| 37 | NHSE | Statement 1 – Question 4 | The process measures in draft quality statement 1 should improve identification of patients at risk of AKI and those with AKI offering supportive measures to reduce further AKI and hopefully the burden on secondary care. However, to really have an impact there also needs to be more support for patients who are moving towards the threshold of an eGFR of 60 rather than waiting until they reach it. For the whole population an awareness raising campaign every so often (especially when there are environmental factors) would be useful. Also nursing home and care homes need to be aware of the risks as well as carers and families of those with LDA etc. |
| 38 | Diabetes UK | Statement 1- Question 4 | * Statement 1 could be improved by considering the specific needs of children more closely. This is because acute kidney injury is an independent risk factor for morbidity and mortality amongst children and is common amongst children hospitalised with diabetic ketoacidosis. * There should be more done to help increase awareness amongst healthcare professionals and parents/carers in order to facilitate an earlier diagnosis of type 1 diabetes and reduce the risk of acute kidney injury at onset. This could include a signpost to our ‘4Ts’ campaign for diabetes to inform people of the signs of undiagnosed type 1 diabetes in a clear and well-established way. * Reference: [www.diabetes.org.uk/the4Ts](https://www.diabetes.org.uk/the4Ts?_gl=1*1lrp1d9*_ga*OTU4MTQyOTI5LjE2NDg3MTQ3NDI.*_ga_J1HFNSGEX6*MTY2ODUzODcyNy40NDkuMS4xNjY4NTM4NzU5LjI4LjAuMA..) |
| 39 | Diabetes UK | Statement 1- Question 4 | We would also note that to deliver the improvements sought by Statement 1 the backlog of routine appointments within the health system needs to be addressed. Many people with diabetes have faced increased difficulties receiving their routine health checks and will not have had an annual review in recent years, so it is vital that services are supported to recover from the disruption of the pandemic. |
| 40 | Kidney Care UK | Statement 1- Question 4 | For Draft Quality Statement 1 we are concerned that ‘giving information’ may be seen as different from having a discussion with a healthcare professional. Information is important and leaflets are detailed patient-centred leaflets are critical but we would not wish this revised standard to in any diminish the requirement for a patient who is at risk of AKI to have a discussion with a medical professional. |
| 41 | Royal College of Physicians | Statement 1- Question 4 | The challenge with standard one, is how maintaining kidney health advice is given and received. Patient reported confidence in managing their health and medication, including during acute illness may be appropriate. The accuracy of heart failure coding may be an issue. |
| 42 | Royal College of Physicians of Edinburgh (RCPE) | Statement 1- Question 4 | The RCPE considers that the process measures will help provide a pragmatic focus for quality improvement. |
| 43 | Sheffield Teaching Hospitals | Statement 1- Question 4 | Yes, however the capacity to measure this I think will be challenging. I do not think existing measures in place – event will have to be recorded in patient records, however identification of such patients would require planning – primary care likely need investment. |
| 44 | Association of Clinical Biochemistry & Laboratory Medicine | Statement 2 | PAGE 11: Clinical laboratories should use creatinine assays that are specific (for example, enzymatic assays) and zero-biased compared with isotope dilution mass spectrometry (IDMS). [NICE’s guideline on chronic kidney disease, recommendation 1.1.2]  I suggest more emphasis should be placed on laboratories using the enzymatic assay (instead of Jaffe). Particularly as recommended by NICE for many years and that the AKI Taskforce will be recommending laboratories use enzymatic creatinine assay (switch by 2025 or at least have a business case), and in turn the new Renal Service Transformation Programme (RSTP) will be giving the same recommendation. Also, with KFRE being now recommended and this requiring enzymatic creatinine there is more than ever a drive to make the change.  PAGE 11: Clinical laboratories should detect acute kidney injury, in line with the (p)RIFLE (paediatric Risk, Injury, Failure, Loss, End stage renal disease), AKIN (Acute Kidney Injury Network) or KDIGO (Kidney Disease: Improving Global Outcomes) definitions, by using any of the following criteria:  • a rise in serum creatinine of 26 micromol/litre or greater within 48 hours  • a 50% or greater rise in serum creatinine known or presumed to have occurred within the past 7 days (see also the NHS England endorsed algorithm for early identification of acute kidney injury)  • a fall in urine output to less than 0.5 ml/kg/hour for more than 6 hours in adults and more than 8 hours in children and young people  • a 25% or greater fall in eGFR in children and young people within the past 7 days.  [NICE’s guideline on acute kidney injury, recommendation 1.3.1]  Laboratories in England should be following the NHS England 2014 patient safety alert and the NHSE AKI algorithm (attached). Laboratories only issue AKI stage reports based on the creatinine alone, not on eGFR or urine output- so having the RIFLE/AKIN/KIDGO criteria here, and them talking about eGFR/urine output is irrelevant. Instead, I would suggest you copy and paste from page 16 the whole section of Definitions of terms used in this quality statement - Acute kidney injury (AKI) warning stage 2 or 3 test result. As this is far more appropriate information for page 11 which is a section about the laboratory using creatinine results to report AKI- as the page 16 section has about the NHSE AKI algorithm integrated into the LIMS and provides the definitions using creatinine. Though for page 11 you would need to add in the definitions for AKI 1 too (1.5x the baseline or increase of >26 umol/L in 48hrs) so have all the stages. Also note in the NHSE AKI algorithm there is extra definition of AKI 3 that can be applied for <18yrs olds which is 3x upper limit of the reference range. |
| 45 | British Association of Paediatric Nephrologists (BAPN) | Statement 2 | p10  Risk factor for at risk of AKI in children  symptoms or signs of nephritis (such as oedema or haematuria)  Sure to this should be either:  - Persistent proteinuria of any degree  - Macroscopic haematuria  Microscopic haematuria occurs up to 1% of childhood population so by itself would be too insensitive to be a risk factor |
| 46 | British Association of Paediatric Nephrologists (BAPN) | Statement 2 | (p11)  “Clinical laboratories should detect acute kidney injury” would be better being written as  “Clinical teams should detect acute kidney injury” as urine output is not known to laboratories  Clinical laboratories can only use creatinine changes to detect AKI |
| 47 | Diabetes UK | Statement 2 | * We agree with this statement but are concerned about how effective it may be in practice because our insights tells us that identifying people with diabetes in hospital in the first place is an area of concern. * A questionnaire sent to trusts as part of a GIRFT report on diabetes revealed that fewer than half who responded had a system in place to do this, and some staff were only aware that an inpatient had diabetes when a problem occurred. * Reference: <https://www.gettingitrightfirsttime.co.uk/wp-content/uploads/2020/11/GIRFT-diabetes-report.pdf> |
| 48 | Institute of Biomedical Science | Statement 2 | On page 10 under the statement *“Additionally, people with acute illness in hospital are at risk of acute kidney injury if any of the following are likely or present.:”* it uses examples of drugs that could exacerbate kidney injury. Should the guidance reflect all of drug classes and group this by analgesic, antimicrobials, antiepileptic’s, etc. rather than the selected examples, *(such as non‑steroidal anti‑inflammatory drugs [NSAIDs], aminoglycosides, angiotensin‑converting enzyme [ACE] inhibitors, angiotensin II receptor antagonists [ARBs] and diuretics)* which omits nephrotoxic antimicrobials? Possible by reference to thinkkidney? |
| 49 | Kidney Care UK | Statement 2 | We note the removal of monitoring urine output from this statement. Again we welcome the widening of information in relation to the data source for this statement.  We welcome the clarification in relation to children within the definition of terms as monitoring of serum creatinine levels in new borns, not just children presenting with acute illness, can lead to early detection of acute kidney injury. Neonates born at extremely low birth weight (ELBW) are at an increased risk. |
| 50 | Renal GIRFT | Statement 2 | Only comment is that this is so obvious it hardly needs saying, I would drop this one if it were up to me. |
| 51 | Royal College of Paediatrics and Child Health | Statement 2 | ‘Clinical laboratories should detect acute kidney injury’ would be better written as ‘Clinical teams should detect acute kidney injury’ as urine output is not known to laboratories. Clinical laboratories can only use creatinine changes to detect AKI. |
| 52 | Royal College of Physicians | Statement 2 | See above, daily creatinine measurement is not appropriate for all patients at risk of AKI in hospital, this should be more individualised. |
| 53 | Royal College of Physicians of Edinburgh (RCPE) | Statement 2 | Again the RCPE considers that in practice it is difficult to easily identify who these high-risk patients are, especially in non-medical wards. A risk score here may be useful to prompt appropriate actions. Most hospitals in England do have an automatic e alert system identifying AKI stages 1,2 and 3 and this should prompt clinicians in non medical wards but this does not identify those at risk such as the elderly with cardiovascular disease and on multiple medications. |
| 54 | UK Kidney Association (UKKA) | Statement 2 | This will be achievable as there are e-alerting systems being rolled out in secondary care settings. |
| 55 | Association of Clinical Biochemistry & Laboratory Medicine | Statement 3 | PAGE 16: Definitions of terms used in this quality statement Acute kidney injury (AKI) warning stage 2 or 3 test result-  Note in the NHSE AKI algorithm there is an definition of AKI 3 for <18yrs old which is 3x upper limit of the reference range. |
| 56 | British Association of Paediatric Nephrologists (BAPN) | Statement 3 | (p12)  “a clinical review within the locally agreed timeframe” is meaningless. Why should it be different in a tertiary hospital or a DGH?  As a national body it should just set the standard as stated in P17 |
| 57 | British Association of Paediatric Nephrologists (BAPN) | Statement 3 | 1.5.16 (p17)  When eGFR-derived equations are solely based on serum creatinine, the clinicians should seek alternative ways of identifying the true renal function, eg. by using Cystatin C that has been shown to outperform creatinine as an indicator of true GFR and to add information about the occurrence of acute kidney injury in some cases.  This is particularly of interest in a specific paediatric population: patients with spina bifida, neuromuscular disease, anorexia nervosa, or liver cirrhosis. In these cases, serum creatinine is completely unusable because of the abnormal muscle mass in these children who are often wheelchair bound. |
| 58 | Kidney Care UK | Statement 3 | * Whilst we appreciate that the new Statement 3 has the aim of a people receiving an early clinical review we are concerned that 2014’s Statement 5 – now removed – referred more precisely to having’ the management of their condition discussed with a nephrologist as soon as possible, and within 24 hours of detection, if they are at risk of intrinsic renal disease or have stage 3 acute kidney injury or a renal transplant.’ The new Statement 3’s reference to a clinical review within ‘6 hours’ for Stage 3 is arguably more precise however we prefer reference were made to ‘as soon as possible’ as the adaptable and flexible nature of this statement leaves concern that the patient experience may vary depending on local implementation. |
| 59 | Kidney Care UK | Statement 3 | This new statement is important – and while we appreciate that the quality measures are referred to as being adaptable and flexible we would not wish this to result in any diminishment in the importance of receiving a timely clinical review following an acute kidney injury warning stage 2 or 3 test result or any regional disparity in patient experience |
| 60 | Renal GIRFT | Statement 3 | Maybe this should be to national guidelines, as determined by the new NSS |
| 61 | Royal College of Paediatrics and Child Health | Statement 3 | ‘A clinical review within the locally agreed timeframe’ is meaningless. Why should it be different in a tertiary hospital or a DGH. As a national body it should just set the standard as stated in page 17. |
| 62 | Royal College of Paediatrics and Child Health | Statement 3 | Page 17  When eGFR-derived equations are solely based on serum creatinine, the clinicians should seek alternative ways of identifying the true renal function, eg. by using Cystatin C that has been shown to outperform creatinine as an indicator of true GFR and to add information about the occurrence of acute kidney injury in some cases. This is particularly of interest in a specific paediatric population: patients with spina bifida, neuromuscular disease, anorexia nervosa, or liver cirrhosis. In these cases, serum creatinine is completely unusable because of the abnormal muscle mass in these children who are often wheelchair bound. |
| 63 | Royal College of Physicians | Statement 3 | 6-hour reviews in primary care seem unachievable – this would place a significant burden on out of hours services as most primary care bloods will reach the hospitals in the afternoon, so results released towards the end of the day. This results in patients being contacted ‘for assessment’ by the out of hours services, who will not know the patient of context. It will precipitate inappropriate anxiety and hospital attendance.  The detail of the clinical review for patients in hospital as outlined in Think Kidneys is important and will highlight a number of areas for quality improvement. Ongoing review should also be included, not just an initial review.  It is also important to note the development of Same Day Emergency Care and Hospital at home, which may be appropriate for assessment and management rather than hospital admission in some patients with AKI. |
| 64 | Royal College of Physicians of Edinburgh (RCPE) | Statement 3 | Fellows consider this requires the implementation of e-alerts for AKI which is not currently the case in Scotland. |
| 65 | UK Kidney Association (UKKA) | Statement 3 | (c, d)  This statement may be hard to measure because how will this be managed if the result comes through after hours or on a bank holiday or at a weekend. How will this be mitigated and who takes responsibility for the result if out of hours (lab, GP, secondary care)? |
| 66 | UK Kidney Association (UKKA) | Statement 3 | There are e-alerting systems in hospital settings. Is there a system in place of alerting when there is an AKI in the community? There are many false positive e-alerts, who will sign off and check if this is a true alert? |
| 67 | Kidney Care UK | Statement 4 | Immediate referral to specialist services for those who need renal replacement therapy is vital to ensure delays are avoided and the best possible outcomes attained.  It is important for the processes to remain in place to sure the immediacy of this process under often challenging circumstances at local level. |
| 68 | Renal GIRFT | Statement 4 | No comment |
| 69 | Royal College of Physicians | Statement 4 | It is important to include review and response times, as well as referral times. If the patient requires RRT, then the standard should include when they receive the opinion of the team able to provide that.  This will require hospital transfers for many patients of they require RRT, and this is acknowledged. |
| 70 | Royal College of Physicians of Edinburgh (RCPE) | Statement 4 | The RCPE welcomes this extremely important statement, with the caution of appropriateness of acute kidney replacement therapy to avoid unnecessary patient and family stress in those situations where it is deemed unsuitable given other comorbidities and frailty |
| 71 | UK Kidney Association (UKKA) | Statement 4 | Measuring this will be achievable as this should be already happening clinically. |
| 72 | Diabetes UK | Statement 5 | * The toolkit developed by the RCGP signposted to in Table 3 is guidance for adults only and does not include children, whereas this draft quality standard is for both adults and children. * The toolkit also recommends adults with diabetes are reviewed earlier so we would welcome this being made clearer in the quality statement as busy healthcare professionals have limited time to click through links when checking the guidance. |
| 73 | Kidney Care UK | Statement 5 | Timely follow-up clinical reviews in primary or secondary care are important for people discharged from hospital after acute kidney injury. They help to reinforce the steps which people need to take to remain healthy while improving outcomes and preventing hospital readmission.  It may be necessary for people in these circumstances to undergo a number of such reviews and it may also be necessary, depending on the severity of duration and other contributing factors, for this review to take place earlier than 3 months. |
| 74 | Renal GIRFT | Statement 5 | The timing of follow-up is aligned with the draft text of the new NSS, but it should be a clinical and biochemical review at three months (ie with an eGFR and a urine ACR), not just clinical. |
| 75 | Royal College of GPs | Statement 5 | It is important that post-discharge follow-up needs to be tailored according to the patients individual clinical and social needs and take into account shared decision making and used a personalised care approach. As per the RCGP guidance. |
| 76 | Royal College of Physicians | Statement 5 | As above, a greater emphasis on structured communication and agreed follow up times initially on discharge/transfer from hospital (also noting about SDEC and hospital at home as above) rather than just the 3 months review for ongoing care and risk management. This detail is provided in the RCGP more detailed guidance, and joint similar guidance would be beneficial. |
| 77 | Royal College of Physicians of Edinburgh (RCPE) | Statement 5 | Some Fellows expressed the view that personally they would wish to see these patients being reviewed at least once by nephrology after discharge but that renal services in Scotland are not resourced to deliver this service. They consider that it would place huge strain on clinics. This is current practice in many English hospitals and does add a significant burden to many hospitals with low numbers of nephrologist per million population. It is critical that a focus on equalising manpower throughout the UK renal services is required as management of AKI is not considered in the service models which focus on the numbers of patients with chronic kidney disease. However it is acknowledged that this is important given the % of patients who progress to chronic kidney disease after an AKI event. |
| 78 | UK Kidney Association (UKKA) | Statement 5 | This statement Is appropriate and as per RCGP toolkit. Review can happen in primary or secondary care. |
| 79 | UK Kidney Association (UKKA) | Statement 5 | Would it be useful to specify who takes responsibility depending upon the stage and recovery? For instance using the RCGP guidance on post discharge care, those with no significant risk factors managed in the community and those with poor recovery and significant risk factors managed in secondary care? Or could there be a system where it is managed in the community but there is a process for access to a HOT clinic and escalation for further investigations as required. |
| 80 | UK Kidney Association (UKKA) | Statement 5 | Local systems may need to be changed to allow community pharmacists access to GP systems to record medication review and avoid duplication. |
| 81 | Kidney Care UK | Statement 5- Question 5 | Depending on the particular severity or duration of the case it may be necessary for a clinical review, or indeed a series of clinical reviews, to take place much earlier than the 3 months contained within this statement. We would not wish this new statement to in any way remove the ability of healthcare professionals to schedule a clinical review based upon the needs of their patient and adequate resources will need to be made available locally to ensure that this is possible. The issue becomes less about resources when you consider that some patients at higher risk would benefit from an earlier assessment to avoid rehospitalisation and indeed further health complications. |
| 82 | NHSE | Statement 5- Question 5 | The draft quality statement of a review of a patient admitted/identified as AKI 3/12 after discharge is aspirational but whether it is achievable is another matter. Primary care is on its knees and has zero additional capacity. Even a separate commissioned pathway requires a work force and there are so many pulls on our work force at the moment that it does seem unrealistic. Some integrated working in at risk groups such as LDA would assist in building capacity (for example doing these reviews as part of the AHC (annual health check) or reviewing patients with comorbidities in ‘one stop shops’. Patients are already managed by condition and within silos and for this proposal to be effective it needs to be built into other pieces of work and patient reviews that are already taking place. Therefore, the standard might take a ‘pragmatic view’ and say that patients should ideally be reviewed within 3/12 or within 6/12 where an AHC or chronic/long term condition is also due to be reviewed. |
| 83 | Royal College of Physicians | Statement 5- Question 5 | The 3-month time frame for ongoing management is appropriate, however earlier follow up will be required following an acute episode, to ensure full recovery. Particularly as patients may be discharged from hospital while they are still recovering.  Some consideration should be given to more specific advice on transfer of care information at discharge in line with RCPs work in this area including patient resources. |
| 84 | Royal College of Physicians of Edinburgh (RCPE) | Statement 5- Question 5 | Fellows expressed the view that the timeframe was reasonable but that including any AKI is not achievable. It was suggested that it may be more appropriate for Stage 2 or Stage 3 to be mentioned specifically in the statement. |
| 85 | Sheffield Teaching Hospitals | Statement 5- Question 5 | Aware of the NIHR and RCGP AKI discharge toolkit – earlier review will be required, as acknowledged in the report comments depending on the stage of CKD on discharge. |

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.

## Registered stakeholders who submitted comments at consultation

* Association for Clinical Biochemistry & Laboratory Medicine (no comments)
* British Association of Paediatric Nephrologists
* Diabetes UK
* Institute of Biomedical Science
* Kidney Care UK
* NHS England
* Renal GIRFT
* Royal College of Paediatrics and Child Health
* Royal College of Physicians
* Royal College of Physicians of Edinburgh
* Sheffield Teaching Hospitals
* Society for Acute Medicine
* UK Clinical Pharmacy Association
* UK Kidney Association
* University Hospitals of Derby and Burton NHS Foundation Trust

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