Patient Safety Alert

Stage Three: Directive

Standardising the early indentification of Acute Kidney Injury

9 June 2014 (updated 30 January 2015)

Alert reference number:	NHS/PSA/D/2014/010
Alert stage:	Three - Directive

Frequently Asked Questions

I have heard that a new E-Alert system for AKI will be installed in the NHS. Is this what the safety alert relates to?

Yes, although there has been some uncertainty around terminology. NHS England has issued a Stage 3 Alert: Directive which is recommending the wide scale introduction and uptake of an automated computer software algorithm to detect AKI. The current NHS England Safety notice requires hospitals to install the approved algorithm in their laboratory software (LIMS, laboratory information management system). When AKI is detected, a test result will be generated. The results field in this new test will contain the AKI stage (1, 2 or 3 with 3 being the most severe).

This result will then require communication to clinicians. How the communication of the result occurs (the alert) can be developed locally depending on resources and systems available. The result can be reported like any other test to results reporting systems or can be used to trigger an alert once it has reached a clinical system that supports alerting. As a minimum, the AKI stage will be displayed by the results reporting system. Read codes to enable reporting to GP systems via PMIP in subsequent phases are currently being agreed. There are currently no plans to procure new software for primary or secondary care to support e-alerting and the nature of any alert will depend on locally available resources.

Why do we need an algorithm for AKI detection?

AKI is a major patient safety issue facing the NHS. AKI is a sudden decline in kidney function and when this happens in the context of acute illness it is associated with significant harm to patients. In part this reflects the high rates of morbidity and mortality associated with AKI; in part it reflects the silent nature of AKI, which means it is often poorly recognised by patients and clinicians alike. The NCEPOD report into AKI (National Confidential Enquiry into Patient Outcomes and Death) and patient safety reports collated via NHS England both highlight how these failures to recognise AKI lead to patient harm. Integrating an algorithm into biochemistry laboratory software is a means of systematically identifying cases of AKI on a hospital wide basis and alerting the responsible clinicians.

How was the NHS England algorithm derived?

The 2012 UK Consensus Conference on AKI (http://old.rcpe.ac.uk/clinical-standards/standards/uk-consensus-statement-on-management-of-acute-kidney-injury-nov-2012.pdf) stated that 'detection algorithms should be based on an agreed definition of AKI derived from the KDIGO classification'. To address the practical considerations of designing an algorithm for use in clinical practice, a meeting was organised by the Association for Clinical Biochemistry in June 2013 that was attended by clinical biochemists, nephrologists and providers of laboratory software systems. From this, an algorithm was derived (http://www.acb.org.uk/docs/appendix-a-algorithm) based on the KDIGO classification. This algorithm has subsequently been ratified by a multi-speciality meeting convened by the Renal Association and a separate meeting convened by the British Association of Paediatric Nephrologists including paediatric nephrologists and biochemists.

Will the algorithm apply to all patients?

Yes, with a small number of exceptions. In the first phase of implementation, the algorithm will be applied to blood tests from hospital settings only. There will be the option (configurable locally) to exclude certain locations within the hospital; this will be mainly for hospitals with renal units on site to prevent blood tests from patients with end stage renal failure on dialysis being wrongly classified as AKI.

It is increasingly recognised that a significant proportion of AKI arises in the community, so it is envisaged that the algorithm will subsequently be rolled out to include blood tests taken in primary care. However, prior to this additional work is required to prepare for its introduction in primary care which is the reason this will occur in a later phase.

Why is there a need for everyone to use a standardised algorithm?

Some hospitals have developed their own solutions to automated AKI detection and there are many examples of good practice around the country. However, these systems have been developed ad hoc and this has led to variations in how the diagnostic criteria for AKI are applied; currently patients identified by one hospital's detection system may not be identified by another's. This situation is clearly not ideal and working with a single, centrally approved algorithm will address the current inequalities. This is in line with the stated aims of the NHS England Pathology Framework (http://www.england.nhs.uk/ourwork/qual-clin-lead/npp/). A standardised approach will also empower uptake in the many acute hospitals that currently have no system for detecting AKI.

Standardisation will also bring benefits in terms of audit and data collection, and will allow all hospitals to describe and track changes over time in patients identified by the AKI algorithm. Data collated centrally by the Renal Registry will allow this process to occur on a national basis.

Having the algorithm located in your hospital's LIMS will also allow subsequent role out to primary care to occur easily. This cannot usually occur if an AKI algorithm is located in a hospital specific software system.

What do I do if my hospital already has a system for AKI detection in place?

Whilst not detracting from work that has already been done, it is important that you ensure that your detection system is standardised to the NHS England algorithm and is working to the same rules and outputs. In the majority of cases, this will be achieved by having the NHS England algorithm installed in your LIMS; modifications to bring existing AKI detection systems into line with the required specifications may not be possible. Any proposed alternative solutions will be required to demonstrate delivery of all of the following specifications on an individual system basis (conforms exactly to NHS England algorithm, can successfully transmit data to the Renal Registry, has the capability to send AKI test results to all commercially available primary care systems) and will also be outside plans to quality assure local laboratory performance using standardised data sets within UKAS laboratory accreditation assessments.

There may a transition period whilst you switch over to the NHS England algorithm. During the transition process, you may choose to continue to run your existing alert system in clinical practice whilst running the NHS England algorithm in suppressed mode in your LIMS.

How do I install the NHS AKI algorithm?

Contact your LIMS supplier with a copy of the NHS England patient safety notice. You should expect your Trust to pay a reasonable upgrade cost in line with your LIMS software maintenance contract.

What do I do if my LIMS supplier says they can't provide the algorithm?

All of the major LIMS providers have given an assurance that they will have the algorithm ready to install on commercially available LIMS by July 2014. However, if the LIMS suppliers say that can't provide the algorithm, please contact us at aki@renalregistry.nhs.uk

What should the Trust do if it is unable to meet all the requirements of NHS/PSA/D/2014/010 by 9 March 2015?

1) The Trust will need to report one of - "action ongoing", "assessing relevance" or "action not required" to the Central Alerting System.

2) The Trust may find it useful to have developed an action plan and risk register detailing plans to deliver completion within a realistic time frame in case of questions from bodies such as CQC.

Does this system replace the need for telephoning service users alerting them to rising serum creatinine results?

No. The algorithm will not in itself generate an alert. Hospitals will have to decide how this result is communicated to clinicians; this will depend on local arrangements for results reporting. You need to discuss with your service users how they should review their test reports and the role that the laboratory will have in assisting communication.

My existing laboratory service cannot guarantee to telephone all AKI results due to lack of manpower, what should I do?

There needs to be clear communication with service users about roles and responsibilities for reporting positive AKI test results. It is recommended that this takes place at the level of Medical Director within a Trust or the Senior Partner within GP practices. Where the laboratory service is required to telephone AKI detection results but lacks the resources, the problem needs to be brought to the attention of commissioners of the laboratory service.

How do I test the AKI algorithm prior to using it in routine laboratory practice?

A test script is currently being developed and is available by emailing aki@renalregistry.nhs.uk. This should be kept as evidence of validation for UKAS laboratory accreditation assessments.

Where can I access more information?

We have produced a 'Best Practice Guide' that is available alongside this leaflet to help guide implementation of the NHS England AKI algorithm. Further information is also available at the NHS England website www.england.nhs.uk/akiprogramme. If you have further questions you can contact us at aki@renalregistry.nhs.uk

We are also planning a series of learning events. For more information on how to register for any events please visit www.england.nhs.uk/akiprogramme.

How can I feedback any problems that I have experienced?

Please email us at aki@renalregistry.nhs.uk