

Limiting patient harm due to Acute Kidney Injury: A Patient Safety Initiative

Acute Kidney Injury (AKI) is the term used when a person suffers from a sudden reduction in their kidney function. The name suggests an actual physical injury to the kidneys but this is misleading, in fact AKI usually occurs as a complication of another illness, such as infection. It is essential that AKI is detected early and treated quickly. Without prompt treatment, toxins can build up in the body, which affect the ability of other organs to work properly. If the kidneys shut down completely then dialysis may be needed and patients may even die. A team at South Tees Hospitals NHS Foundation Trust in Middlesbrough developed a programme to raise awareness of AKI and to recognise and treat the condition promptly. Since the programme started there has been a sustained reduction in AKI cases within the surgical wards at Middlesbrough. Now this successful programme has shared the pathway and been consulted by 9 other NHS trusts, who have been made aware of our AKI project through their links to CRAB clinical informatics (Imperial, Frimley Park, Wexham Park, North Devon, St Helen's, Lincoln, Yeovil, Bartholomew's, The Royal London and Southend). The South Tees Team has been shortlisted for a national Patient Safety Award.

In the UK, up to 100,000 deaths each year in hospital are associated with AKI. Up to 30% of AKI cases associated with death could be prevented with the right care.

Outcomes

Clinician and Nursing AKI guidelines were developed to ensure consistent AKI care across all wards.

An AKI teaching package and patient experience video were developed to raise awareness of AKI and the new guidelines. The team delivered AKI training to multidisciplinary healthcare professionals via 54 small group AKI workshops, to empower staff to promptly address AKI within their own clinical areas.

An Advanced AKI Nurse Practitioner was appointed and trained to support AKI care outside of the Renal Unit.

AKI incidence across the hospital was tracked by an independent clinical informatics team (CRAB Clinical Informatics Limited).

- AKI guidelines were developed and linked to an AKI detection system that rapidly highlights possible AKI cases.
- An independent clinical informatics team determined that prior to the AKI Programme, the Trust's AKI incidence was similar to national levels
- By the end of the AKI intervention in July 2016, AKI incidence on surgical wards had fallen by 36%.
- Other adverse patient outcomes (eg. cardiac arrest) also reduced following the AKI intervention, which may indicate earlier AKI detection enabled identification of deteriorating patients and also led to effective changes to patient care.
- In addition to the reduction in patient harm, South Tees NHS Foundation Trust estimates the AKI programme has saved the Trust £533,000 per year.
- The AKI guidelines were endorsed by the Regional Renal Network to extend such consistent AKI care across other Trusts in the region

Impact

- A total of 272 health care staff at South Tees received AKI training via small-group interactive AKI "workshops".

"The dedicated work and enthusiasm of a huge range of staff has improved AKI awareness, detection and management within the Trust"

Dr Jonathan Murray, Consultant Nephrologist and AKI Lead for South Tees Renal Unit.

Background summary

Acute Kidney Injury (AKI) normally happens as a complication of another serious illness and is not the result of a physical blow to the kidneys (as the name might suggest). The main role of the kidneys is to filter and clean the blood. If the kidneys are not working correctly then abnormal levels of chemicals and fluid can build up and adversely affect other organs. If the kidneys fail, support from a dialysis machine may be needed, or it may lead to death. AKI therefore needs to be detected early and treated promptly. In 2009, the NCEPOD AKI report (Adding insult to injury) alerted Trusts across the country that there were widespread deficiencies in AKI care. AKI in hospital is associated with poor outcomes including increased patient mortality, increased length of stay and treatment costs. Reports have also shown that AKI is common in patients admitted to hospital and also those who develop further illness during their hospital stay. However, if recognised early, AKI can often be treated effectively with simple interventions by a patient's own clinical team.

South Tees Hospitals NHS Foundation Trust participated in the original NCEPOD study and realised they faced a number of challenges common to all AKI intervention programmes:

- They did not know the true incidence of AKI, particularly among surgical inpatients.
- They were not aware of which risk factors contributed most to AKI incidence.
- AKI awareness across all clinical departments was limited.
- There was inconsistency in the detection and treatment of AKI across different wards.

To address these issues:

A National AKI electronic alerting system was incorporated within the Trust pathology system.

A 12-month intensive Trust-wide AKI awareness campaign was delivered.

Clinician AKI guidelines were developed and endorsed by the Regional Renal Network to unify AKI care across all wards. A teaching package was also developed to highlight harm caused by AKI and to ensure that training was consistent.

An Advanced Nurse Practitioner (ANP) for AKI was appointed to further help unify practice.

A Clinical Quality Assurance Platform was implemented to enable patient level co-morbidities to be tracked, including AKI incidence across different clinical areas within the Trust.

As a result of this work:

A total of 272 multidisciplinary health care staff were trained via AKI workshops. The incidence of AKI on surgical wards in South Tees NHS Foundation Trust was measured by an independent clinical informatics team that collects clinically important data across many hospital Trusts. Their results showed that AKI incidence across surgical wards fell by 36% at the time of the AKI Awareness Programme and remains reduced at this level 8 months after the AKI Programme finished. Now, the South Tees team have been helping other Trusts across the country to adopt the AKI programme. This Patient Safety Collaborative programme has currently been rolled out to 7 other Trusts across the North East and National adoption and spread of the programme could significantly reduce patient harm and NHS costs due to AKI. The ability to reduce potential patient harm from AKI has led to the team being shortlisted for a national Patient Safety Award.

Benefits

- To patients: Reduced risk of harm from AKI whilst in hospital. Reduced stay in hospital.
- To Clinicians and Trusts: Consistent AKI care across all hospital departments. More rapid detection and treatment of AKI. Improved patient health outcomes. Reduced length of hospital stay and reduced treatment costs.

Next steps and plans for the future

Commonly AKI commonly starts in the community so the team is now focusing on strategies to support Primary Care to reduce AKI in the community and to harmonise AKI aftercare between hospital and community services.

Contacts

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