



How Manchester's Acute Kidney Injury Team (MAKIT) is Driving Improvement

As far back as 2009, a NCEPOD (National Confidential Enquiry into Patient Outcomes and Death) study¹ identified significant deficiencies in the management of Acute Kidney Injury (AKI) in the NHS. By 2014, there was little evidence of improvement.

Central Manchester University Hospitals NHS Foundation Trust (CMFT), one of the leading tertiary care centres in the country, which took part in the original NCEPOD study, was determined to reduce the impact of AKI on its patients. An audit into the management of 50 of the most severe cases of AKI at Manchester Royal Infirmary showed a lack of reliable systems and processes for detecting and managing the condition. In nearly half of cases (49%), AKI had been missed and for 60% of patients, appropriate fluid management had not been initiated.

Processes of care for AKI were not systematic and outcomes were variable. Diagnosis and treatment relied on the individual clinician's ability to recognise a significant rise in serum creatinine - the key indicator of AKI. There was little integrated working between nurses, doctors and pharmacists and there were often delays in the review of blood tests that would identify AKI, as well as delays in implementing management procedures.

AKI Improvement Programme

Recognising the need for urgent, robust action, The Trust formed the Manchester Acute Kidney Team (MAKIT) to lead an AKI improvement programme. The team consisted of three nephrologists, an intensivist, an acute physician, two renal clinical nurse specialists, a renal matron, a biochemist, a renal pharmacist and an IT business intelligence developer. The steering committee, chaired by the Director of Clinical Effectiveness, reported directly to the Board to provide the appropriate level of visibility and support. The aim was to improve AKI care and outcomes within the Trust by the end of 2015.

Goals

The Manchester Royal Infirmary set out to reduce incidence of hospital-acquired AKI by 20%. It believed the key to this was to improve:

1. Prevention: through adequate fluid management; drug management and timely blood tests.
2. Early detection: using a locally developed bespoke AKI electronic alert and reliable notification systems.
3. Treatment: including developing an AKI checklist to support clinicians; introducing pharmacist-led drug reviews; implementing a 24-hour response and improving education and training around AKI.

¹ Adding Insult to Injury: Thursday 11 June 2009

The Trust was aiming for a 95% success rate in clinicians recognising AKI and conducting medication reviews: a 90% success rate in providing appropriate fluid management; and 80% adherence to the new 10-point AKI checklist. As well as reducing hospital-acquired AKI, they believed this would enable them to:

- reduce cases of AKI by 10%
- reduce the time to recovery by 20%
- reduce the need for dialysis/haemofiltration by 10%
- reduce length of stay (LOS) of AKI patients by 10%
- reduce deaths of patients with AKI by 10%

What They Did

Improve prevention of AKI

This meant increasing awareness about AKI risk factors, ensuring prompt blood tests in suspected cases and taking the appropriate action (such as discontinuing potentially exacerbating medications). The hospital created and implemented an education and awareness programme and developed a set of risk assessment tools

Introduce a reliable early detection system

AKI is said to have occurred when there is a greater than 50% rise in serum creatinine from a baseline value. The hospital developed an electronic alert (e-alert) system that uses a computer algorithm to automatically detect such a rise. The system generates a report showing all new patients with AKI, including which stage of AKI they are at and the patient's location within the hospital. Used in conjunction with the National AKI algorithm, this supported staff to detect new AKI cases and prompted an AKI specialist nurse to visit the ward to talk to the doctors, nurses and pharmacists about the patient's treatment plan.

Consistent prompt and appropriate treatment

The hospital identified 10 key factors that it regards as crucial in delivering effective treatment of AKI. These range from ascertaining baseline creatinine through to performing a renal and bladder ultrasound scan. It created a simple checklist, which would ensure consistency in the management of AKI irrespective of location, time of the day, staffing levels or the grades or knowledge of the caring staff. The checklist was tested using Plan-Do-Study-Act (PDSA) cycles and piloted in one ward before being introduced hospital-wide.

Discontinue using potentially toxic medications for patients with AKI

Once they receive an electronic AKI alert, hospital pharmacists promptly instigate a medication review and stop any potentially toxic medication that could lead to an exacerbation of symptoms.

Improving AKI awareness and education

The hospital carried out targeted education sessions for various groups of clinicians to improve their knowledge and understanding of AKI.

Outcomes

The Manchester Royal Infirmary has achieved or exceeded its goals in all but two of its target areas.

One hundred per cent of AKI patients are now diagnosed within 24-hours and 95% receive a documented drug review. The average time to recovery is down by a third and length of stay is down by 22% (against a target of 10%). The hospital has seen an 11% reduction in the number of deaths of patients with AKI.

Work is on-going to deliver further improvements, including in the two areas where the hospital has yet to achieve its target. The proportion of AKI patients who have received a documented fluid assessment currently stands at 90%, against a target of 95%. The proportion of AKI patients requiring dialysis/haemofiltration has not yet shown any change.

Acute Kidney Nurse, Prasanna Hanumapura, who was part of the MAKIT team said: "I found it amazing how getting such basic aspects of care right can make such a huge difference; this feeds my desire to keep going."

Dr Leonard Ebah, consultant nephrologist and Trust AKI programme lead reflects that "The key to such a massive improvement programme is getting the unwavering support and commitment of the Trust executives, once they start referring to it as "our" AKI programme, you are half-way there."

Contact

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