

# A Collaborative Quality Improvement Project to Improve Management of Primary Care AKI (PC-AKI) using E-alerts and an Educational Outreach Programme (PEEP Study)

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## Abstract

### Introduction:

Acute Kidney Injury (AKI) is associated with high financial cost, mortality and increased length of hospital stay(1). 60% of all patients have established AKI when admitted to hospital(2). Community Acquired AKI (CA-AKI) is acquired within the community but diagnosed in hospital whereas primary care AKI (PC-AKI) is acquired and diagnosed in the community. Primary care AKI (PC-AKI) is less common but still impacts on long term patient mortality(3). We aimed to improve the recognition and management of AKI (CA-AKI and PC-AKI) in the Salford community.

### Aims:

- 1) Reduce CA-AKI detected at SRFT
- 2) Reduce the mean number of hours between PC-AKI and repeat blood test or admission to hospital.

### Method:

Baseline incidence of CA-AKI and PC-AKI was collected between January and October 2015. A 2x2 factorial design was constructed using 2 interventions; an educational AKI outreach programme into GP practices and an AKI e-alert to accompany blood tests taken in the community. All patients in Salford CCG were included. Dialysis patients and patients <18 years old were excluded. Intervention period 1<sup>st</sup> October 2015 to 31<sup>st</sup> September 2016.

### Results:

Educational outreach visits were well received. Average learner score was 9.1/10 and 100% would welcome a repeat visit. A total of 0.08% of all primary care creatinine blood tests demonstrated AKI. There was no reduction in CA-AKI or appreciable change in response time for either of the interventions alone or in combination for all AKI. After excluding AKI 1 results, GP practices who received e-alerts accompanying blood tests for AKI2 and AKI3 and underwent AKI education showed a significant reduction in mean response time to a repeat blood test or hospital admission (figure 1). Educational outreach or the e-alert alone did not alter response times. The project did not result in an increased number of blood tests performed which would have resulted in an unintended adverse consequence.

### Discussion:

When combined with educational outreach, AKI e-alerts reduce PC-AKI response times to a repeat blood test or hospital admission in this study population for only AKI stages 2 and 3. They did not impact on CA-AKI. The characteristics of PC-AKI cases identified by the algorithm requires further attention. It is possible that the algorithm operates differently due to less frequent phlebotomy in

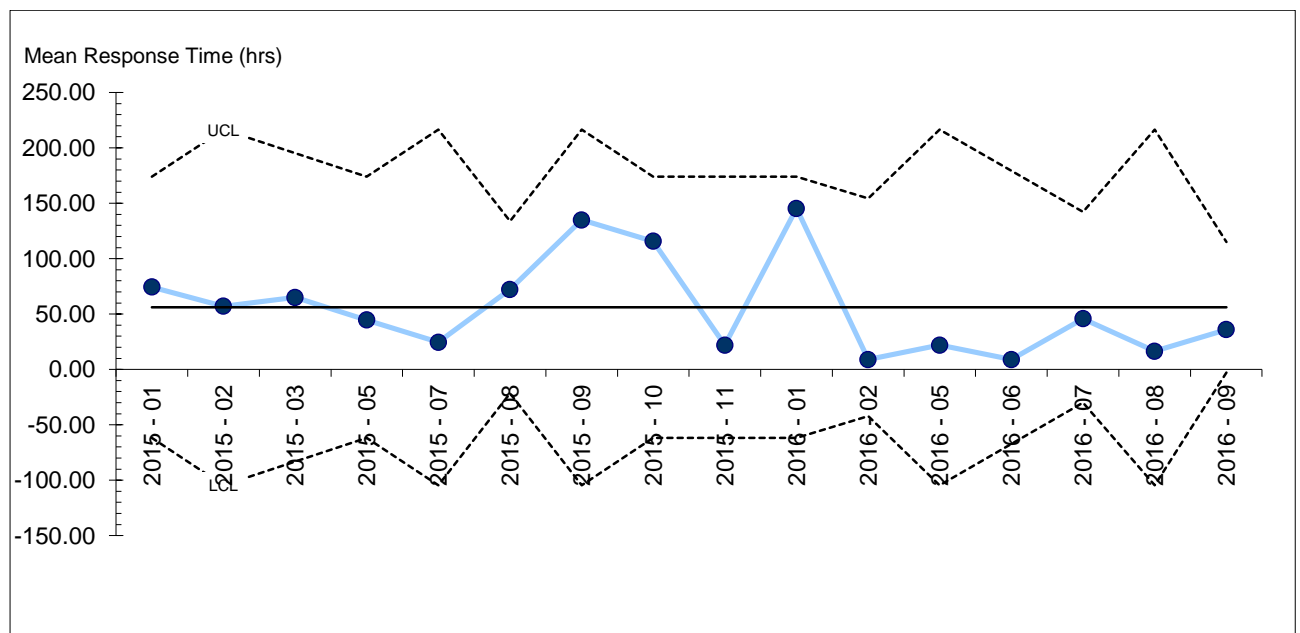
the community and different indications of blood testing compared to secondary care. Education outreach was well received but did not have an impact on reducing the incidence of CA-AKI and the response to PC-AKI on its own but only in combination with the e-alert.

**Conclusion:**

The combination of educational outreach and AKI e-alerts into the community improves the management of severe PC-AKI (stages 2 and 3). AKI education and interaction with secondary care was welcomed. Unfortunately CA-AKI has remained unaffected despite the interventions in this study population. Structural changes in the management of the unwell patient in primary care are likely to be required to address this issue. Integrated approach between community and secondary care clinicians is needed to improve detection and “detection to intervention” time for CA-AKI. Using the AKI score and alert to trigger medicines management and incorporating AKI assessment into sepsis risk calculators are potential future developments.

**Figure:**

Figure 1: X-bar Chart demonstrating mean time to repeat blood test following AKI2 or AKI3 in primary care. Interventions: Education started 1<sup>st</sup> October 15, E-alert commenced March 16. 15 GP practices were in this cohort, a total of 50 AKI 2&3s were included.



**References:**

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