

Identifying AKI deterioration rates in an acute hospital setting; a comparative study.

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Introduction

Acute Kidney Injury (AKI) still has a high prevalence across the United Kingdom and a higher association with mortality. It was identified within an acute hospital setting that there was a lack of information regarding the deterioration of AKI among the inpatient population.

Method

Using 'in house' data collection obtained from daily reviews of every triggered AKI alert from the hospital pathology laboratory using the NHS England algorithm for standardising the early identification of AKI (NHS England, 2014). The Acute Kidney Injury Nurse Specialist from the period of 2017 to current has kept a record of AKI alerts from inpatient, outpatient and primary care trust bloods. Organising them into community or hospital acquired AKI alongside of admitting speciality.

Using this historic data collection and expanding the existing data into an Excel 'IF' function; a formula was created that was able to identify inpatient only deterioration based on an individual hospital number to count deterioration of AKI stage 1-2, 1-3 and 2-3 per patient, per initial AKI stage on a monthly bases.

Results

On average the trust has approximately 400-600 inpatient AKI alerts a month. From the time period of April 2017 to March 2018 the average of all AKI deterioration was 15% with 22% of hospital acquired (HA) AKIs deteriorating compared to 14% of community acquired (CA). For the time period of April 2018 to March 2019 the average of overall deterioration remained at 15% with a decrease in HA AKI deterioration to 20% and an increase of CA deterioration to 16% (Table 1).

The data further broken down into deterioration per stage shows that there is a higher rate of deterioration from 2-3 (for both HA and CA) AKI alerts comparatively over the two years with a peak of 28% for HA in 2018-19. Whereas stage 1-2 deterioration, patients were more likely to deteriorate if the AKI was HA compared to CA with between 18-20% of stage 1's deteriorating to stage 2. Finally, there was a similar average of deterioration for stage 1-2 for both HA and CA AKI 1's at an average of 4% (Table 2).

Conclusion

These initial results show the rate of AKI deterioration increased between 2017-18 and 2018-19. With a higher percentage of deterioration among the HA AKI in comparison to CA which is not unexpected. It identifies that there is a higher rate of deterioration among stage 2-3 regardless of HA/CA status as well as identifying that a similar percentage of patents deteriorated from stage 1-3 across both years. The reason for individual deterioration is unknown, and though it can be expected that there will always be a certain percentage of deterioration, that cannot be halted. The reason for this percentage of deterioration across this time period is not thus far identified. Current deterioration continues to be monitored and will be compared to current results April 2020.