South West Academic Health Science Network

NHS

The use of High Sensitivity Troponin

Modelling the use of High Sensitivity Troponin in the diagnostic pathway for Acute Coronary Syndrome.

The South West AHSN in collaboration with PenCLAHRC are investigating the role of High Sensitivity Troponin in the diagnostic pathway for Acute Coronary Syndrome (ACS) in line with NICE Diagnostic Guidance DG15. The project aims to understand the variation in practice across the area using modelling and simulation.

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Challenge identified and actions taken:

Chest pain suggestive of Acute Coronary Syndrome (ACS) is the most common cause of emergency hospital admissions in the UK, accounting for 6% of all emergency attendances.

In some patients, the underlying cause is an evolving acute myocardial infarction (AMI) which, if missed, may have fatal consequences, making accurate diagnosis critical. However, less than 35% of all patients with chest pain are diagnosed with ACS. This means that a significant number of patients are admitted and undergo unnecessary diagnostic procedures that could be avoided if AMI could be excluded at an earlier stage. This has substantial cost implications for the NHS.

This research focuses on understanding the variation in practice of the use of High Sensitivity Troponin across the South West region by modelling the implications of implementing a consistent approach. This involves working with multiple teams in each hospital to describe current patient pathways and use modelling and simulation to demonstrate the likely implications for patients and staff that will result from the implementation of the new technology.

This work will ensure the South West is well placed to deliver early, consistent and effective uptake of what is likely to be a high impact intervention.

Impacts/Outcomes

- Prototype computer model built and tested.
- Detailed data sets received from four of the seven acute trusts in the South West geography.
- Modelling of the data sets completed for one Trust.

> "Analysing patient pathways is an important process in highlighting a variety of changes."

Plans for the future

The next steps for this project include:

- Completing the modelling for all the trusts involved in the project.
- Using the output from the model to hold facilitated meetings with each trust to explore service changes and improvements that can be made to optimise patient pathways in their hospital.

Tips for adoption

Using computer modelling to analyse patient pathways and to anticipate changes to pathways can be an important tool to facilitate those changes that need to be made by teams on the frontline of care. It allows teams to work through 'what if' scenarios and test the impact of a variety of changes without having to disrupt current workflows. It also prepares teams for the implementation of change.

Which national clinical or policy priorities does this example address?

- NICE DG15: Myocardial infarction (acute): Early rule out using high-sensitivity troponin tests (Elecsys Troponin T high-sensitive, ARCHITECT STAT High Sensitive Troponin-I and AccuTnI+3 assays).

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