Example 1: Using QI methods to improve recognition and response to AKI Warning Stage Test Results in primary care

The following table outlines factors to consider when developing a protocol to respond to AKI Warning Stage Test results in primary care. QI tools may support a safe and reliable system for improvement in management of test results. Steps for consideration include:

1. Use table below to conduct an audit of the timeliness in response to AKI Warning Stage Test Results (see also Scottish Patient Safety Programme for Primary Care)
2. Conduct AKI case note reviews
3. Informed by the audit and case note reviews, use the Systems Thinking (STEW) template as a framework to identify key learning needs
4. Discuss the findings at joint practice meetings to create a plan of action

Think Safety: Ensuring safe and reliable systems for managing tests

	Measure	Rationale	Suggested Actions
Ordering Kidney Function Tests	Are ALL the individual blood test(s) requested by the clinician clearly recorded?	When a clinician makes a decision to test kidney function, the reason should be clearly communicated to the appropriate personnel. As necessary, this includes communication to: a) the laboratory; b) the practice team; and c) out of hours services	Provide information about the clinical context and why the sample was taken: ○ Episode of Acute illness: ○ Significant co-morbidities especially CKD and stage of CKD, heart failure. ○ Poor oral intake/urine output ○ Recent increase dose in ACEi, ARB or diuretic ○ Routine Long-term condition monitoring
Obtaining a sample	Are ALL the individual blood test(s) taken clearly recorded	Errors relating to test implementation may include tests not carried out, specimens improperly collected and specimens lost. Potential for false positive tests and spurious hyperkalaemia needs to be acknowledged	Ensure patient details are clearly recorded Document any difficulties collecting the sample: avoid clench fist, or shaking sample Document time sample taken will help determine length of storage and potential spurious hyperkalaemia Check and document if patient had heavy protein (meat) meal within 12 hours of sample
Management of AKI Warning Stage Test Results to Primary Care	Were ALL the test(s) results forwarded to a practice clinician within timely manner	See Royal College of Pathologists guidance Rapid Communication to GP < 2 hours (usually by telephone) for AKI Stage 2 and 3. Communication from lab to GP/OOH service <24 hours if AKI Stage 1 and K> 6.0 mmol/L	Ensure systems (both in and out of hours) of communication in place to manage AKI Warning Stage Tests results in timely manner System for dealing with interruptive communication from labs as well as use of monitored email systems
Clinical Review of AKI Warning	Was the AKI Warning Stage Test Result reviewed and	Need to ensure AKI Warning Stage Test result is place in clinical	Ensure all members of clinical team have copies of Think Kidneys Guidance including Tables 1 and 2.

Stage Test Results in Primary Care	documented by a clinician within appropriate time frame	context (see Table 1 Think Kidneys Guidance)	Develop systems to enable clinician to review previous results and observe trend in serum creatinine results
Action and documentation of AKI Warning Stage Test Results	Have the decisions for ALL test results been 'actioned' by the practice, including the patient being informed if required?	Reconciliation should be done on a regular basis to ensure all abnormal results are returned to the practice in a timely manner to ensure prompt action. This enables practices to see how reliable the laboratory system is in processing and returning blood test results: information they can feedback to and discuss with the laboratory.	Ensure systems to communicate results between In and Out of Hours services Seek consent to Enriched Summary Record/Key Information Summary for patients at high risk of AKI In addition to audit and feedback data, for practice teams to learn from conducting cases note reviews (see templates)

Scottish Patient Safety Programme in Primary Care
https://ihub.scot/media/1733/background-and-rationale.pdf

Royal College of Pathologists Guidance
https://www.rcpath.org/resourceLibrary/the-communication-of-critical-and-unexpected-pathology-results-pdf.html

Think Kidneys AKI Guidance for primary care
https://www.thinkkidneys.nhs.uk/aki/wp-content/uploads/sites/2/2016/10/RespondingtoAKI-Warning-Stage-Test-Results-for-Adults-in-Primary-Care.pdf

Table 1: Recommended Response Times to AKI Warning Stage Test Results
https://www.thinkkidneys.nhs.uk/aki/wp-content/uploads/sites/2/2016/02/Table-1-Primary-Care-190117.pdf

Table 2: Recognising and Responding to AKI
https://www.thinkkidneys.nhs.uk/aki/wp-content/uploads/sites/2/2016/03/Recognising-and-Responding-to-Acute-Kidney-Injury-in-Primary-Care-Table-2.pdf