LRI Emergency Department

Managing Diagnostic Test Results

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Managing Diagnostic Test Results

UHL Emergency Department Guideline
Trust Ref C33/2017.

1. Acting on results (review and endorsement).
2. Informing patients of results

To enable optimal clinical management of patients, test results must be reviewed and endorsed in a systematic and timely way (endorsement is taken to indicate that responsibility for clinical management has been accepted).

1+ 2a: Outline how your team ensures diagnostic results are reviewed, endorsed and communicated to the patient for:

i) Acute care results (including timeframes):

Urine bedside dipstick testing and urinary beta-HCG testing.

Role	Responsibility
HCA/ED Nurse	To perform urine analysis and urine pregnancy testing as indicated by patient's clinical presentation and to place the results of these tests in the allocated areas of the ED notes. To ask a clinician if there is uncertainty as to whether these tests should be performed. To communicate abnormal results to a clinician prior to discarding the sample in order to assess whether the specimen needs to be sent for MC+S. To communicate positive pregnancy test results to a clinician.
Clinician	To review the results of urine analysis and bedside pregnancy testing and take appropriate action if results are abnormal. Results are then communicated verbally to the patient by the assessing doctor. Results are communicated while the patient is in the department.

Near patient testing (Venous/Arterial Blood Gas)

Role	Responsibility

HCA/ED nurse	To perform near patient testing for FBC and VBG based on departmental blood testing guidelines. (Appendix A). To be trained on how to use the analyser and to run bloods on them accordingly. To mount the results on the pink results sheet and then sign and date the form to show who has run the test. This person then has the responsibility to immediately show the results to a clinician in order for them to be interpreted.
Clinician	To review near patient testing and to assess whether the bloods are: i) Normal, ii) Abnormal but requiring no immediate action, iii) Abnormal and requiring immediate action due to the patient being in immediate danger. The Clinician then has the responsibility to

	ensure that appropriate action is taken. The Clinician must sign the pink results form to show that they have seen and interpreted the blood results. In some cases, the Clinician will be the person processing the bloods. This may be the case in ER patients, paediatrics and arterial blood gases. In this instance, the Clinician has the responsibility to ensure that they are trained how to use the near patient testing analysers and run bloods on them accordingly. They then have the responsibility of mounting the test on the pink results form and signing to say that they have both processed and interpreted the results. The Clinician has the responsibility to ensure that any seriously abnormal results that place the patient in immediate danger are acted on. Results are communicated whilst the patient is in the department.

Biochemical and Haematological laboratory Bloods

Role	Responsibility
HCA/ED nurse	To perform laboratory blood testing as per the departmental blood testing guidelines based on the patient's presenting complaint. To label the bloods at the bedside. (See appendix A). To send these bloods promptly to the ED hot lab.
Clinician	The Clinician may in some circumstances also perform biochemical or haematological blood testing based on departmental guidelines and clinical assessment, in which case they have the same responsibility to send the bloods promptly and document which bloods have been done in the clinical notes. Patients who are discharged home must have their blood results reviewed prior to their discharge, or arrangements made to review the results after the patient has gone home with the ability to contact patients should results come back abnormal. At

	present, there is no system in place for formally reviewing blood results that may require longer than 4 hours processing time. A note should be made in the GP letter that such bloods have been done and their results are outstanding should the patient be discharged home. If blood results are considered vital to the patient's immediate management, patients can be placed on the Emergency Decisions Unit or on CSSU on an awaiting results pathway for the results to be reviewed. Blood results are communicated verbally to the patient by the assessing Clinician. Blood results may not always be reviewed in the emergency department if the patient is being admitted. A decision not to review the bloods in the ED is made on the basis that it is unlikely to change the patient's management in ED and is thought to be safe to defer to the receiving specialities. The biochemistry and haematology laboratories phone through highly abnormal blood results to the department. These calls usually come through to the tracker who will then ask a clinician to take the call. This clinician then has the responsibility to act accordingly. The abnormal results should be noted on nerve centre.

Microbiological tests (Blood cultures, Urine, Wound, CSF MC+S)

HCA/ED nurse	The HCA or ED nurse has the responsibility to send samples for microbiological testing when requested by a doctor or indicated on the department's guidelines for blood tests and trust sepsis policy. These samples extend usually to blood cultures, urine MC+S and wound swabs, although in some cases virology tests may be required. Staff performing these tests must observe trust policy related to sample collection. Samples should be labelled at the bedside. COVID swabs: Patients being admitted are swabbed for COVID according to current Trust Policy using LumiraDx antigen detection immunoassay and PCR where indicated. The Lumira results are flagged on nerve centre. PCR results are not usually available in the department and are reviewed by the admitting teams.

Clinician	In some circumstances, the Clinician will also send samples for microbiological testing, in which case they should observe the same trust policies for sample collection. In the children's department, there is a procedure in place for reviewing the MC+S results of urine samples sent on children with suspected urinary tract infection. It is the responsibility of the clinician assessing a child with suspected UTI to enter the child's details into the 'UTI' folder in order to be able to chase their MC+S results once the patient has been discharged home. The middle grade or consultant working in the children's department in the morning then has the daily task of checking the 'UTI folder' and reviewing the results of the MC+S sent. This individual is responsible for taking further action dependent on the results found. There is an internal protocol for the action to be taken. As patients traverse the Emergency Department within a matter of hours, it is not possible for ED staff to chase all microbiological tests that are sent. It is therefore agreed that patients who are admitted should have their microbiological testing reviewed as an inpatient. Microbiology phone through 'highly significant' results to the department via COTW if the patient has been discharged and then ED has the responsibility to act on this.

Radiological tests (Plain films, USS, CT, MRI)

ED nurse	ED nurses (both adult and paediatric) may request limb radiographs at triage if clinically indicated and the nurse has been approved to do so. This nurse does not carry the responsibility for reviewing the films as this is done once the patient has been formally seen by a Clinician.
Assessment Clinician	The assessment bay Clinician may request appropriate radiological investigations (CT, USS, Plain films, MRI) if clinically indicated. This is to try and expedite patient care in order to improve quality and meet the four hour target. In this situation, it is the role of the Clinician who later formally sees the patient to review these images.
'Seeing' Clinician	The Clinician who formally sees the patient has the responsibility to request and review radiological investigations. In the case of plain films, these are usually performed during the patient's stay in ED and therefore are available for review immediately. The patient is managed according to the clinician's interpretation of the plain films and the results of these are communicated to the patient verbally. In the case of CT, MRI and USS, a report is produced by the radiology department and then reviewed by the Clinician seeing the patient. It is this Clinician's responsibility to act accordingly on these results and communicate the results to the patient. Patients can be placed on the Emergency Decisions Unit or CSSU to await the results of such investigations, if deemed safe to do so, in order to improve patient flow and experience. In this circumstance, the responsibility for reviewing the investigations and conferring the results to the patient lies with the EDU /CSSU team. This is clearly communicated via the awaiting results pathway. In other instances, when it is clear that a patient will be admitted and a senior clinician is happy to immediately interpret the imaging (i.e. CT head scan), the patient can be moved to the ward based on this clinician's interpretation and it is the responsibility of the inpatient teams to review and act on the formal report.

DFR process	A large cohort of patients receive radiological tests, which are subsequently interpreted by ED staff and the patient sent home. The DFR process is a safety net process in place to ensure that patients who are sent home with significant abnormalities following radiological reporting of their film have their notes reviewed and recalled if clinically appropriate. It is the responsibility of ED admin staff to filter the radiology reports (discarding reports that say 'no fracture seen'). Acute and Emergency Nurse Practitioners are allocated on a daily basis to review the DFR reports and to take appropriate action. Missed x-rays are noted in the department's DFR spreadsheet and regular audit will be undertaken. See DFR SOP for a fuller account of the DFR process

ECGs

Role	Responsibility
HCA/ED nurse/	To perform ECGs promptly on patients presenting with conditions where an ECG is required. To ensure that patient identifying details (sticker or name, DOB and S Number) are placed on the ECG. To take the ECG to a clinician who is competent to initially assess ECGs and get the ECG reviewed.
Clinician	To only sign off ECGs if clinically competent. To review the ECG (with any previous ECGs if clinically relevant). To ensure that appropriate action is taken in the case of an ECG representing a life-threatening condition (STEMI, arrhythmia, severe electrolyte disturbance). This initial ECG review usually occurs in the assessment area and is primarily to look for potentially life-threatening conditions and is not intended as a full interpretation, which must be made by the doctor who sees the patient. It is the role of the Clinician to communicate the ECG findings to the patient.
Clinician seeing the patient	To review the ECG more fully, combined with the clinical presentation of the patient to assess for subtle abnormalities or significant findings. It is the role of this clinician to communicate these results to the patient whilst in the department.

1b) Outline arrangements for reviewing and acting on results when the Consultant is on planned leave and in the event of an unplanned absence.

The Emergency Department, unlike most other specialities does not have consultant-specific led care. In addition, diagnostic tests are usually available within the time-frame of the patient being in the department. The processes in place for acting on results are not consultant dependant and therefore no specific provision needs to be made if an individual consultant is on leave, either planned or unplanned.

1c) Outline any problems the speciality team has encountered over the last 12 months in relation to acting on results and any subsequent changes to working practice.

The Emergency Department continues to be crowded with long waits for inpatient beds and a lack of speciality ownership of referred patients, despite this being policy. As such, some results may not be reviewed in a timely way.

Appendix A:

ROUTINE BLOODS for ADULT PATIENTS in Asessment

Indications for Venous Blood Gas:

EWS >3
Suspected sepsis
Unwell type 1 diabetic
Suspected carbon monoxide poisoning
Abdominal pain in over 60s
Suspected hyperkalaemia

Condition	Routine Bloods	PRN bloods
WARFARIN	INR	
SOB	FBC, U+E,	Discuss with clinician first if patient <40. Discuss d-dimer with clinician.
Cardiac sounding Chest pain	FBC, U+E, Troponin,	Discuss with clinician first if patient under 40
Pleuritic chest pain	FBC, U+E,	Discuss with clinician first if patient under 40 Discuss d-dimer with clinician.
Abdominal Pain	FBC, U+E, LFT, Amylase,	G+S and bone if over 60 or unstable
PV Bleed	FBC, U+E, G+S	Beta HCG
PR bleed	FBC, U+E, G+S, Coag	
Vomiting blood	FBC, U+E, LFT, Coag, G+S,	
Anaemia	FBC, U+E, COAG, G+S	
Flank pain	FBC, U+E, LFT, Amylase	G+S if over 60
Diarrhoea and Vomiting	FBC, U+E	Discuss with clinician first if patient under 40
Overdose	As per Toxbase	
Jaundice	FBC, U+E, LFT, COAG, AMYLASE	
Collapse ? cause	FBC, U+E	CK if on floor for > 2 hours

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Dizzy or 'unwell'	FBC, U+E	Discuss with clinician first if available
TIA/CVA	FBC, U+E, COAG,	

	Cholesterol,	
Headache	FBC, U+E, PV if over 50	Discuss with clinician first if available
BM >10	FBC, U+E, Glucose, VBG, blood ketones	
Fever or ?sepsis	FBC, U+E, cultures, VBG, LFT, CRP	Malaria if appropriate
# NOF	FBC, U+E, G+S	
Hot, painful joint	FBC, U+E, CRP, culture, urate	
?DVT	FBC, U+E, D-dimer	
'High Potassium'	VBG, U+E	

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