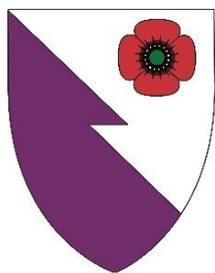


The Royal College of Emergency Medicine

Best Practice Guideline

**Management of Investigation
Results in the Emergency
Department**



July 2017

Summary of recommendations

1. All results of non-radiological investigations performed in the Emergency Department must be reviewed and acted upon by a clinician, in the context of the relevant clinical scenario.
2. All Emergency Departments should have a 'Standard Operating Procedure' for the handling of non-radiological investigation results that incorporates the recommendations below (Radiological investigation results are the subject of a separate Best Practice Guideline).
3. Responsibility for review and actions to be taken must be clearly defined and recorded, to ensure consistency, as must the processes for deferral and handover of this responsibility.
4. The process of review, and action taken as a result must be recorded in an auditable manner, preferably utilising electronic sign-off of results. The record should be available to all members of the clinical team to avoid duplication of activity.
5. The process of review and acting on results must be completed in a timely fashion, 'real-time' for time-critical investigation results, and within 48 hours for non-urgent results.
6. Systems for referral, follow up and further action required following investigation results must be arranged and agreed with the various clinical teams responsible for the patient.
7. There must be programmed activity (as Direct Clinical Care) available within Consultant job plans for reviewing investigation results (radiological and non-radiological).
8. Patients should be kept informed in a sensitive and appropriate manner of the findings of investigation results, and the actions taken as a result and in a manner that is in keeping with the Duty of Candour.

Scope

This guideline covers the responsibilities of Emergency Department clinicians for the review of and actions resulting from non-radiological investigations performed under the auspices of the Emergency Department.

Reason for development

An increasing number of investigations are requested and performed within the Emergency Department (ED) both by ED clinicians and under the auspices of the ED. There are GMC guidelines on responsibilities on requesting clinicians; however pragmatic issues, such as the flexible ED teams and the short patient stay, impact on reviewing and taking action on results of investigations.

Introduction

Non-radiological investigations, such as results of blood tests are quality assured by the laboratory system, and the result made available to clinicians (usually on the hospital Information Technology system). Frequently these systems highlight abnormal results. Most of these systems have the functionality to incorporate a completely electronic auditable trail of the history of requesting, receipt of sample and acknowledgement of test results.

Most systems return the result of the test to the requester and/or the responsible clinician for review and checking. Generally the requesting clinician has responsibility for reviewing and acting upon results (which may include instructing another clinician to act on results). The General Medical Council in its guidance states in explanatory guidelines that when working in multidisciplinary teams organisations should ensure clarity over roles and accountability ⁽³⁾ ensuring that patient safety is paramount, and complying with the 'Duties of a doctor' ⁽⁴⁾. Similarly, the act of delegating assessment of a patient, or referring a patient, also has specific guidance ⁽⁵⁾.

Although some of these test results are available within the time frame of an ED stay; some may not be available for some time after the patient has left the department. In addition, with the advent of protocolled care, some investigations are requested by non-medical staff that may not have clinical responsibility for the further management of the patient. In some cases initial decisions are made by clinicians in the ED about patient care in the absence of definitive results (such as results from swabs or cultures).

It is therefore essential to have a clear set of processes and procedures for the review of and acting upon test results that are received contemporaneously with a patient ED attendance and also with results that arrive after a patient has left the department.

All test results relating to potentially life threatening problems (for example, critical potassium levels, grossly abnormal renal function, abnormal cardiac biomarkers) must be communicated promptly and directly to clinicians caring for patients and all ED's should have clear policies for communicating critical or life threatening results.

Management of results from non-indicated, or redundant investigations (and reducing these) are discussed in a separate RCEM guideline.

A clinical example:

Kevin Murphy was admitted to hospital in 1999 with bone pain, lethargy and vomiting. Three days later he died from complications relating to a parathyroid adenoma and hypercalcaemia. A blood test had been requested that showed high calcium levels and renal failure but the blood results were not acted upon and his diagnosis of primary hyperparathyroidism was missed. This case highlights the need to review and appropriately act on abnormal test results. The ensuing case also highlighted the importance of our "professional duty of candour" when mistakes are made.⁴

There are a number of common quandaries faced by ED clinicians when investigations are requested.

Firstly, patient may require clinical assessment to judge whether the further investigation is required (to confirm or investigate cause of an abnormal result), or the timing of this investigation; however this is after the patient has been discharged by the ED clinical team, and is no longer under the care of that team.

Secondly, when further investigation is clearly required the responsibility for ensuring that the most appropriate investigation is arranged, and the patient appropriately followed-up may cause logistical issues.

Investigations are of no use if the results are not appropriately considered and acted upon. In many instances it is clear the responsibility for outstanding results lies with the requesting ED clinical team (for example, urine culture results). It is sometimes less clear, for example, in cases of 'incidentalomas'; incidental findings of unclear significance. With increasing utilisation of investigations, this is increasingly an issue.

Lastly, while positive test results are usually more concerning than negative ones, it is important that automatic 'endorsement' of negative tests does not occur; otherwise the potential to reduce 'over treatment' is lost.

These examples do not include the common situation where tests are requested on patients within (or shortly after) the ED setting, and the IT systems may reveal these as having been requested under the ED team erroneously. It is important to ensure that IT systems can manage requesting accurately.

Ensuring patient needs are met

When investigations highlight the need for further action, it is important that the patients get the follow up that they need. It is also important that the reporting systems, communication systems, and procedures for arranging appropriate follow up are robust, and clear to all those involved.

It is important that clinicians follow GMC guidance as it applies to ordering tests, and delegation of resulting actions.

It is generally considered unsafe to delegate reviewing results to another clinician without prior agreement and systems in place to ensure this happens (e.g. review of bloods test ordered within predefined parameters at triage by staff under the auspices of a Consultant is often delegated to staff managing the patient). It is however, appropriate to delegate actions arising from review of patients, and is consistent with GMC advice; this would require prior agreement. It requires robust, clear, simple procedures to be in place.

Both Emergency Departments and Primary Care have significant pressures, and face difficulties in management of the administrative burden arising from this.

There are potential barriers to when it involves investigations performed by ED clinicians. This is particularly true when investigation results reveal findings unrelated to the reason for performing the test in the first place (commonly called 'incidental-omas'), or when the required follow up is needed after a delay (e.g. some lung nodules may require repeat CT in one year).

Firstly, few departments have outpatient facilities to enable follow up. Secondly, the ED often lacks full details of the patient history which may affect follow up and clinical management decisions (for example, has this been investigated in the past, does the patient have contra-indications to further investigations). Thirdly, there is a lack of an prior and ongoing relationship with the patient, which will affect communication and may affect clinical management, as the patient will need information and involvement in their on-going care (for example, there may be a need for extensive, sensitive and timely communication, such as when there is a need to investigate for possible carcinoma). Fourthly, ED clinicians may not have the correct training for investigation of many 'incidental-omas' especially when the investigations is complex or controversial (e.g. incidental adrenal adenoma), whereby ordering further investigation may contravene GMC guidance above. Lastly, there may be organisational barriers, often related to commissioning (for example 2-week wait clinics are not accessible to ED clinicians in some organisations).

These barriers need to be addressed, and need strategic level discussions between commissioners and providers of care to resolve; both with agreeing pathways and responsibilities, and with establishing automation to systems (e.g. with automated system for 6 week check chest x-rays) Currently, many clinicians and departments are using ad-hoc arrangements, often with duplication; this is inefficient and reflects redundancy that, if eliminated, could represent a cost saving. More importantly, it does not assist with

interdisciplinary team working, and most importantly may affect patient care if patient do not receive the investigations they require.

The recommendations

It is important that patients receive the investigations that are required, that these are reviewed, and that any resultant action is completed. It is also important that this is performed in a timely fashion (for time-critical investigations (e.g. ECG, troponin results, amylase etc., this should be real-time). For most investigations, a time frame of 48 hours would seem appropriate (for example culture results), certainly greater than a week is inappropriate.

It is important that patients are kept informed of the results of the investigations; when these are unexpected it is important that this is done sensitively.

Results that are not in keeping with the clinical care provided should be managed in line with the professional duty of candour set out in the document developed jointly between the GMC and the Nursing and Midwifery Council, Openness and Honesty When Things Go Wrong.⁵

When patients are no longer under the care of the Emergency Department, it is essential that processes are agreed that ensure the handover of ongoing clinical care and further investigations occurs, and that there are clear responsibilities. These systems must be traceable. This will involve discussion with non-ED clinical teams, including primary care. Many of the processes and pathways will be predictable, and a Standard Operating Procedure (SOP) delineating these elements is strongly recommended. A clear SOP has the advantages of ensuring lines of responsibility are clear and that there is an auditable trail with a consistent response to results.

The administrative resources and IT should be robust and support the SOP. It is preferable not to have multiple systems (e.g. paper based and IT based reporting working contemporaneously).

Anecdotal experience suggests that for a medium sized ED, this equates to about 4 hours work per day. As this involves named patient record, it is Direct Clinical Care (non-patient facing), and needs to have provision in the senior teams work plans.

Lastly, it is important that the review process is not taken as sole evidence that action has been taken, there needs to be a process of tracing of actions resulting from review of investigation results.

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Review

Usually within three years or sooner if important information becomes available.

Conflicts of Interest

None declared

Disclaimers

The College recognises that patients, their situations, Emergency Departments and staff all vary. This guideline cannot cover all possible scenarios. The ultimate responsibility for the interpretation and application of this guideline, the use of current information and a patient's overall care and wellbeing resides with the treating clinician.

Research Recommendations

None

Audit standards

Audit of compliance against the key recommendation summary is suggested.

Key words for search

Investigation, investigation results, patient safety

Appendix 1: Example SOP

STANDARD OPERATING PROCEDURE FOR ENDORSEMENT OF RESULTS- V2 April 2015

- This SOP aims to standardise the clinical responses to radiology and pathology reports in the best interests of our patients to ensure that the process is safe, timely and robust.
- This SOP is guidance only and does not cover all eventualities- individual Consultant discretion is advocated.
- All results are to be endorsed within **5 days of report**.
- Endorsement activity is to be incorporated into direct clinical time (DCC) 7 days a week.
- An audit trail for appraisal purposes will be generated
- **Upon activation of the pooled ED inbox, endorsement will be the daily responsibility (including weekends) of the duty ED Consultant during times designated by the Consultant body on both sites. Outside these times, endorsement will be incorporated as clinical pressures allow.**
- An administration pooled inbox has been set up. XXX will co-ordinate the administration of endorsement XXX site. A separate SOP exists for the ED administration team to enable process in absence of XXXX.
- Where actions are required administratively please forward to XXX inbox

<p><u>Abnormal results</u></p> <ol style="list-style-type: none"> 1. No change to clinical pathway (treated appropriately) 2. Change to clinical pathway 	<p>No action- Consultant discretion- EPR narrative to describe reasoning OR letter to GP, consideration copy to patient</p> <p>Phone call to patient by clinician, recorded in EPR. Letter to patient and GP If no contact possible, letter to patient with copy to GP. Notification to doctor with copy to mentor. Clinical Governance review to be arranged (DATIX completion)</p>
<p><u>Repeat test required (non-urgent)</u></p>	<p>Letter to GP with copy of ED discharge summary and radiology report whether the patient is discharged by ED or admitted by IP team.</p>
<p><u>Microbiology results</u></p> <p>No change to clinical pathway (sensitive) No action</p> <p>Change to clinical pathway (not sensitive) Phone call to patient to see GP/ return to ED</p>	<p><i>Microbiology endorses and reviews all positive blood cultures and therefore these can be auto endorsed.</i></p> <p>For all other results cross check sensitivities with EPR dc summary:</p>
<p><u>MDT fax referral- "this does not constitute a referral"</u></p>	<p>Letter to GP, copy to relevant speciality</p>
<p><u>CXR abnormality</u></p> <ol style="list-style-type: none"> 1. Current in-patient 2. Discharged patient 	<p>Send to in-patient lead consultant through EPR. Contact in-patient Consultant/ SpR to ensure FU.</p> <p>Letter to GP for consideration of appropriate FU through 2 week wait process. Phone call to GP practice to ensure FU</p>
<p><u>Patient does not have registered GP, does not live within Oxfordshire/ Visitor/ Out of Area</u></p>	<p>Letter direct to patient</p>
<p><u>Report consistent with NAI</u></p>	<p>Review of patient notes mandatory, ensure "safeguarding" alert activated on EPR</p>
<p><u>No Fixed Abode</u></p>	<p>Look for mobile contact, pragmatic solution as presents. If the patient is XXXX based, letter to XXXXX may well be reasonable.</p>
<p><u>Incidentalomas</u></p> <ol style="list-style-type: none"> 1. Current in-patient 2. ED discharged patient 	<p>Send to lead consultant of in-patient speciality</p> <p>Letter to GP</p>

References

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