Management of Investigation Results in the Emergency Department

Authors

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Introduction

The ED is a high-volume requestor of both pathology and radiology. These requests maybe made by numerous grades of doctors, nurses and advanced care providers for patients in the emergency department. Most of these patients will initially be under the care of the ED, however referrals to in-patient specialty teams are often diverted to the ED for a number of reasons e.g. the ED acting as single point of entry to the hospital for any episode of urgent or emergency care, or patient diversion to the ED due to lack of in-patient specialty capacity. There is increasing pressure for Emergency Departments to not only have safe systems in place to ensure that no fracture or abnormal result is missed, but also to be able to provide assurance (often electronically) with regard to all reports (pathology, radiology) having been seen, irrespective of whether the result / report is abnormal or not; this can be very time consuming.

Standards

1. Patients must be kept informed in a sensitive and appropriate manner of the findings of investigation results, the actions taken as a result, and in a manner that is in keeping with the principles of Duty of Candour.
2. All Emergency Departments must have a 'Standard Operating Procedure' for the handling of investigation results (radiological and non-radiological) that covers the following issues for those patients under the care of the Emergency Department, or discharged from the Emergency Department:
    a. The process of review and action taken must be identifiable and traceable, and completed in a timely fashion. This must be 'real-time' for time critical investigation results, and within 72 hours for non-urgent results.
    b. Responsibility for review and actions resulting from the results / report review must be clearly defined and recorded, to ensure consistency, as should the processes for referral and handover of this responsibility.
    c. The systems in place for referral follow up and further action required.
    d. 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 must be available to all members of the clinical team to avoid duplication of activity.
    e. Mechanisms for informing the patient of the action taken.

Standards

1. Emergency Departments must ensure systems are in place to allow radiology and pathology teams to provide verbal reports (urgent or critical) rapidly and in a consistent manner throughout the whole 24hr period.

2. For patients who are admitted under a non-ED team, then the responsibility for reviewing and subsequent actions arising from radiology reports rests with the team caring for that patient or the discharging team.

3. There must be programmed activity (as Direct Clinical Care) available within Consultant job plans for reviewing investigation results (radiological and non-radiological)

4. All reports of abnormal radiological investigations requested by the Emergency Department team must be reviewed by a clinician, taking the clinical scenario into account, and necessary actions that may be required.

5. Patients in whom a radiological investigation was requested whilst in the Emergency Department but at the time was in the care of a specialty team, then follow-up of any abnormal result must be by that specialty team. The processes for this must be robust to avoid failure to action (see examples below).

Recommendations

1. All results of non-radiological investigations performed in the Emergency Department should be reviewed and acted upon by a clinician, in the context of the relevant clinical scenario, generally in ‘real-time’. There are some exceptions to this, see discharge to GP guidance.

2. The Emergency Department and the Radiology Departments are encouraged to hold regular meetings to review requesting protocols, timeliness of reporting and volumes and trends of requests particularly regarding non-plain film X-rays.

Background

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, misinterpretation of the result is uncommon; of greater concern is discharging a patient without realising there is an outstanding result. 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. Pathology results (e.g. biochemistry, haematology) tend to be reported within a 1-2 hour timeframe, whilst the patient is in the ED. Abnormal pathology results tend to be easily recognised in-view of well-defined clinical ranges and tend to be reported quickly. Exceptions to rapid reporting for pathology for commonly ordered ED pathology tests include urine, blood and swab cultures results.

Radiology results (e.g. X-rays) require clinician interpretation and can be subject to misinterpretation by the clinician (e.g. missed fracture) and this is particularly important when in-experienced clinicians are being relied upon to interpret X-rays. 'Hot reporting' of some types (e.g. appendicular skeleton) X-ray films 09-17:00 Monday to Friday by trained radiologists or radiographers is the norm in some departments, but not all and the reporting of other types of X-ray films e.g. Chest X-rays are often not part of his process. The result is that a radiology report could be available whilst the patient is still in the ED, within 10 minutes of having had the X-ray taken or it could be 10 days before the report is available. Those ED patients having specialist radiological investigations e.g. CT scans whilst in the ED, generally tend to have a report available either whilst the patient remains in the ED or whilst the patient is being cared for by an in-patient specialty team.

Pathology reports tend to arrive in 'real time' whilst radiology reports have the potential to arrive both in 'real time' via 'Hot Reporting' mechanisms but also some days later (after the patient has been discharged or admitted) and these reports might either be verbal, written or via email and may involve an element of duplication. A further level of complexity may be added by reports being sent to the location (e.g. ED) that the patient was in when they had their investigation rather to the requesting consultant (e.g. a stroke physician).

Lastly, Radiology reports can have addenda added (often by Radiology Consultant review) after the patient has been discharged. Often these are significant findings that require immediate action (common examples include small subarachnoid bleed, cervical spine fractures), significant findings requiring urgent action (common examples are lung tumours, bowel wall abnormalities), and 'incidental' findings requiring non-urgent action (for example adrenal adenomas, small lung nodules).

Few Emergency Departments have access to outpatient clinics and national guidance around communication of diagnostic tests to primary care focuses on those patients discharged from hospital wards without any specific mention of Emergency Departments [2]. Whilst it is entirely appropriate that the ED follows up a patient with a 'missed fracture'; for non-urgent conditions it is reasonable to ask primary care to take on the responsibility of organising any further non-specialist tests that arise as a result of their patient attending an emergency department. See Appendix 1 for features of Fail-Safe Result Notification System.

Appendix 1

Fail-Safe Result Notification System [3]

Principles and recommendations of a Fail-Safe Result notification System

1. Prompt notification of all imaging reports by the imaging department.
2. Prompt review, acknowledgement and action on all imaging reports by the referrers.
3. A system to facilitate identification and action of reports which have not yet been read, acknowledged or acted upon.

A collaborative approach to alerts and notification of imaging reports

1. A safe and effective result notification system requires a concerted effort from all involved, using an electronic system supported by human interactions.
2. Alerts should be in place in three imaging categories: new cancer diagnoses or new recurrences, critical findings that time-critical, and significant addenda that may alter clinical management.
3. It is the responsibility of the healthcare organisations to adopt a fail-safe system that enables identification of reports that have not been reviewed and acted upon [or plan to act] and embed a mechanism to follow up these reports.
4. Every imaging referral [or through a pre-agreed system] must include a valid contact detail to which an urgent communication can be made if required, including an out of hours contact.
5. A Results Coordination Team should help ensure reports are returned to the correct clinical team, verbally inform the referrers that critical reports are available for immediate review and escalate imaging alerts that have not been reviewed and acted upon [or plan to act]. The aim of the Result Coordination Team is to ensure that no patient suffers adversely because of delayed or miscommunicated radiology reports. The Results Coordination Team should be primarily focused on patient outcomes and not merely concerned with institutional compliance around alert and acknowledgement systems.

References

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