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Standards for the communication of patient diagnostic test results on discharge from hospital

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Standards for the communication of patient diagnostic test results on discharge from hospital

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- Given due regard to the need to eliminate discrimination, harassment and victimisation, to advance equality of opportunity, and to foster good relations between people who share a relevant protected characteristic (as cited under the Equality Act 2010) and those who do not share it; and

Given regard to the need to reduce inequalities between patients in access to, and outcomes from healthcare services and to ensure services are provided in an integrated way where this might reduce health inequalities.

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1 Introduction

These generic standards, endorsed by the Academy of Medical Royal Colleges, describe acceptable practice for the communication of patients' diagnostic test results on discharge from hospital. Where possible they have been drawn from published literature.

The standards form part of a wider piece of work to improve communication during handover at the time of discharge from secondary care being undertaken with support from a number of the Patient Safety Collaboratives. Further resources to support this work are available on the discharge area of our website.

Although not mandatory, it is anticipated that improved systems of handover of patients' test results, underpinned by the standards, will be developed by hospitals and primary care organisations. Examples of local systems and practice, metrics and subsequent learning may be shared through the discharge web page accessible via the above link. If your organisation would be interested in sharing examples of your own local practice, please contact us by emailing patientsafety.enquiries@nhs.net.

2 Guiding principles

Three important overarching principles guide this work.

The first is that the clinician who orders the test is responsible for reviewing, acting and communicating the result and actions taken to the General Practitioner and patient even if the patient has been discharged.

The second is that every test result received by a GP practice for a patient should be reviewed and where necessary acted on by a responsible clinician even if this clinician did not order the test.

The third is that patient autonomy should be respected, consideration given to reasonable adjustments for people with learning disabilities and mental health problems and, where appropriate*, families, carers**, care coordinators and key workers should be given the opportunity to participate in the handover process and in all decisions about the patient at discharge. Use of interpreter services should be considered if the patient doesn't speak English.

*The term 'appropriate' in this document in the context of families, carers, care coordinators and key workers being given the opportunity to participate in the handover process and in all decisions about the patient at discharge, includes adherence to the law.
**The term 'carer' in this document includes parents and those who hold parental responsibilities who may not be the biological parent.

3 The standards

These standards have been developed from the three guiding principles outlined in section 1.

Number	
1	**Standard:** Clinicians should ensure all patients (and where appropriate their families, carers, care coordinators and key-workers) understand why their involvement in the safe handover of diagnostic test information at discharge is important, and reassure them that their involvement is valued and welcomed.
2	**Standard:** Clinicians should give sufficient, clear and timely information to all patients (and where appropriate their families, carers, care coordinators and key-workers) about diagnostic tests and test results at discharge. This should include details of any follow-up arrangements and contact details for assistance if there are any concerns or delays.
3	**Standard:** When a patient is discharged, hospital clinical teams should have a process in place to ensure that test results are seen, acted on and communicated to general practitioners and patients in a timely and responsive manner. Responsible consultants leading clinical teams must ensure their team members understand and comply with this local process.
4	**Standard:** When a patient is discharged there should be a mutually agreed standardised system between primary care and secondary care to support the safe and effective hand-over of diagnostic tests and test results, including any outstanding actions where appropriate. Essential information about diagnostic tests and test results should be clearly identifiable and highlighted to avoid important information being overlooked.
5	**Standard:** Where a consultant delegates responsibility to another team member for any tasks around the communication of diagnostic test results to general practitioners, they should ensure that person understands and fulfils the responsibility.
6	**Standard:** Primary care teams should have a system to ensure that any discharge information they receive is seen and acted on in a timely manner by a clinician able to understand the importance of the information and able to take responsibility for taking appropriate action.

Number	
7	**Standard:** Appropriate systems and safety net arrangements should be in place in primary and secondary care to ensure any follow-up diagnostic tests required after discharge are performed and the results are appropriately fed-back to patients.
8	**Standard:** As part of routine quality assurance, provider organisations should monitor compliance with their policies regarding test result communication and follow-up after discharge. Results should be shared with clinicians to facilitate learning and drive care quality improvement.

4 Summary

High quality discharge communication is critical to patient safety. This is particularly the case for patients who are not able to advocate for themselves or who have complex clinical problems that need to be monitored closely. An important part of discharge communication is the timely handover of diagnostic tests ordered or to be ordered including results received and those requiring follow-up. Breakdown in this aspect of communication is common and contributes to unsafe patient care by increasing the risk of missed or delayed diagnosis which may lead to patient dissatisfaction and sub-optimal patient outcomes with potential medico-legal implications.

This document proposes a set of generic standards to underpin the development of robust systems of care, policies and practices for the safe and high quality transfer of information about diagnostic tests and test results at discharge and to encourage continual whole-system learning and improvement.

5 The case for change

Poor follow-up of test results has been identified as one of the major processes contributing to unsafe patient care by the World Alliance of Patient Safety and is a particular problem for patients moving between hospital and community settings.[1,2-6] A key issue is poor handover practices, with particular issues identified around the communication and transfer of information about test results to primary care clinicians at the time of discharge.[4-8] Studies have shown that patients are frequently discharged from hospitals with test results still pending, resulting in both primary and secondary care clinicians often being unaware of potentially important test results arriving after discharge, and some of these results require urgent action.[2,4,5,9] Furthermore, a significant proportion of tests recommended by hospital based teams after discharge are never obtained, and this may lead to adverse outcomes for patients.[10,11]

A number of contextual challenges have created an urgent need to address this issue. These include the pressure to reduce in-patient length of stay and to transfer care into the community, increasing the risk of tests requested during a hospital stay

not being completed or reported before discharge.[12,13] In addition, there are an increasing number of patients under the care of flexible hospital teams and a greater involvement of multiple specialist teams, which increases the risk of ambiguity about responsibility for the follow-up of test results and for appropriate action to be taken.[14,15] The ever increasing volume of requests for tests, often disproportional to medical activity, can also contribute to information overload and communication breakdown.[16,17]

6 Scope of work

Diagnostic tests and test-results should form part of well-executed integrated pathways of care. This document focuses on one particular aspect of these care pathways - handover at discharge from hospital in-patient settings to primary care – and is applicable to all specialties.

This document is not intended to replace existing standards and it is anticipated that the relevant guidance it outlines should be adhered to.

The term ‘diagnostic test’ encompasses a comprehensive range of tests - from a simple blood test or imaging investigation to procedures such as endoscopy, the results of a biopsy or physiological diagnostic services such as respiratory and sleep physiology, vascular science and urodynamics.[18] Specific discharge communication issues relating to particular diagnostic tests/procedures have not been explored as our aim is to capture the major issues that apply to all diagnostic tests.

7 The standards with rationale

Standard 1:

Clinicians should ensure all patients (and where appropriate their families, carers, care coordinators and key-workers) understand why their involvement in the safe handover of diagnostic test information at discharge is important, and reassure them that their involvement is valued and welcomed.

Rationale for this standard:
Patients can be partners in ensuring the safety of their healthcare but such involvement needs to be fostered and seen to be valued by healthcare professionals.[19,20] Patients are often able to identify and report adverse events that would not be detected by medical review alone.[21,22] Involving patients at discharge has been shown to be valuable in reducing medication-related readmissions and post-discharge service utilisation; for improving patient outcomes and for supporting patients in understanding how, when, and where to seek help should they need it.[23-25]

Patients often assume functional communication processes between primary and secondary care and that ‘no news is good news’.[26,27] Patients (regardless of social, educational and occupational background) are often reluctant to engage directly with

healthcare professionals to ask questions or to tell them about potential errors and oversights in their care.[19,20] Their reluctance to appear difficult or critical by asking questions or to offend caregivers 'by telling them how to do their job' is a powerful barrier to a patient's involvement in improving the safety of their care. The attitudes and support of health-care professionals can go a long way to make patients more confident. Health care professionals thus hold a pivotal role in 'permitting' patient involvement, i.e. inviting and giving permission for that involvement.

Encouraging patients to get involved does not relieve clinicians of their responsibility but it may add a layer of protection to the test results management system and may be empowering for patients - the risks inherent in the discontinuity of transfer from hospital to the community cannot be nullified but may be ameliorated by a well-informed patient asking for the result of an investigation they were told was not available at the time they returned home or identifying that a test they were told they required after discharge has not been performed.

Standard 2:

Clinicians should give sufficient, clear and timely information to all patients (and where appropriate their families, carers, care coordinators and key-workers) about diagnostic tests and test results at discharge. This should include details of any follow-up arrangements and contact details for assistance if there are any concerns or delays.

Rationale for this standard:
Patients are not always informed about clinically relevant test results, or the need for further tests.[9,28] This poses a risk to the patient, particularly after discharge, while formal results are pending or more tests need to be arranged.

To be fully involved and informed about their care, patients and where appropriate their families, carers and keyworkers, must be given sufficient, clear and timely information about diagnostic tests requested, including important test results received prior to discharge; test results pending at discharge; and follow-up diagnostic tests after discharge.

The format of information must be appropriate to the patient's needs and include support for patients with learning disabilities or where English is not their first language. Understanding should be checked and patients should be given the opportunity and time to ask questions. Where there is a client health record, this should be updated at discharge and include guidance for families, carers and key-workers.[29] Effective communication enables patients to exercise their right to make fully informed choices about investigations, treatment and on-going care that reflect what is important to them.[30]

Where a patient has impaired capacity or is vulnerable for other reasons, health professionals may need to take more proactive measures to protect the person, such as taking active steps to ensure that patients who require follow-up tests after hospital discharge undergo these tests. In these circumstances, it is particularly

important for sufficient information to be shared with families, carers and key-workers.[31,32] Where a patient lacks capacity to consent to the sharing of information about diagnostic test results and related follow-up arrangements then the patient's best interests should be acted upon.[33] Any patient's vulnerability must be mentioned in the discharge communication together with the key information that has been shared with relatives, carers and keyworkers.

Patients also need to be aware of the organisational policy about diagnostic test results. Providing patients with the knowledge and understanding of how test results will be communicated to them before and after they have left hospital will engender expectations and empower patients to feel able to intervene to help keep themselves safe.

Standard 3:

When a patient is discharged, hospital clinical teams should have a process in place to ensure that test results are seen, acted on and communicated to general practitioners and patients in a timely and responsive manner. Responsible consultants leading clinical teams must ensure their team members understand and comply with this local process.

Rationale for this standard:
A key element of discharge communication to general practitioners and patients is the timely transfer of information about important test results received prior to discharge and test results pending at the point of transfer out of hospital. Best practice recommendations for discharge summaries emphasise the importance of inclusion of a specific field for this information.[34] However, the problem of 'results pending' in discharged patients and confusion about which clinician should be seeking these out and acting on them (including communicating them to colleagues and patients and recording actions in the patient's clinical record) is widespread.[9] Shared electronic results may contribute to blurred lines of responsibility.[35] With the potential for multiple users to view results, it can easily become confusing whose responsibility it is for taking the required action. Specific issues may also arise when multiple teams are involved in a patient's care and this also increases the risk of the responsible clinician not being aware of all the diagnostic tests that may have been ordered for a patient or any actions taken as a result of abnormal test results.[5] Delayed or incomplete information transfer, particularly during the early post-discharge period, may have substantial implications on the continuity of care, patient safety, patient and clinician satisfaction and use of resources.[4]

Whilst it is the acute trusts' responsibility to provide and maintain a reasonable, safe and reliable system to manage diagnostic test results; hospital clinicians have a duty of care to the patient. This includes checking and acting on the results of diagnostic tests, appropriately informing patients of results, and where necessary, ensuring the safe and effective hand-over of these tasks to another clinician.[36,37] This may not be simple - test results often come back when the requesting clinician is not on duty or away on leave, and sometimes after the patient has been discharged. It is important for clinical teams to consider all the challenges and be satisfied that the system in

place in their organisation is adequate to prevent pending results from slipping through the cracks during handovers of care and ensures that the results of all diagnostic test are seen, acted on and communicated to general practitioners and patients at discharge, where appropriate, in a timely and responsive manner.

Electronic results systems should identify who requested the test, who is the consultant responsible for the patient and who has seen the result and signed it off. Sign-off implies that the practitioner has taken any necessary actions associated with the result. Where diagnostic systems are not yet electronic, similar systems for clarifying relative responsibilities should be in place. Increasingly, local health services are developing inter-operability between primary, community and hospital care so that practitioners outside hospital can see hospital test results. This is good practice but must not be allowed to reduce clarity on who is responsible for seeing and acting on a test result.

Policies relating to this standard should include a description of how the organisation handles test results when a short-term staff member requests diagnostic tests and when a clinician is unexpectedly absent for a period of time.

Case vignette 1

An 81 year old man with stage 4 Chronic Kidney disease (CKD), hypertension and gout was admitted for a total knee replacement under the orthopaedic team. On the basis of routine renal biochemistry results and following advice from the nephrology team, he was started on a low dose of an activated vitamin D analogue. He was also taking a diuretic, an angiotensin receptor blocker, aspirin, sodium bicarbonate and a statin drug. Serum calcium was not rechecked during his admission. Although discharge communication included the newly started medication with the recommended dose, no advice was given to the general practitioner about the required frequency of monitoring serum calcium and renal function post discharge and the patient was not made aware of the need for this monitoring. At home, the patient made a slow recovery from his operation and had mobility issues. His daughter rang the surgery and asked a general practitioner to visit her father 4 weeks after discharge, as he looked very unwell, was increasingly confused and was not eating or drinking. The general practitioner arranged for the patient to be re-admitted into hospital. The final diagnosis was stage 2 Acute Kidney Injury (AKI) secondary to iatrogenic hypercalcaemia and dehydration.

Key learning points:

- Poor information transfer from hospital to primary care clinicians occurs commonly and may negatively affect continuity of care and contribute to adverse events. Deficits have been shown to include inaccurate or missing communication.

- Responsibility for the sign-off of all discharge communication remains with the consultant and this should include a review of accuracy. The consultants name and contact details should be clearly identifiable to allow for further contact when required.

- The adding of medications to the patients repeat medication list is an opportunity for general practitioner to check requirements for further testing, for example, by not adding a medication until appropriate checks have been conducted.

- Keeping patients well informed is fundamental to good medical practice and may introduce a layer of protection to the test results management system. Patients, and where appropriate their families, carers and keyworkers, need to be aware at the point of discharge that follow-up tests are required, what the system for follow-up tests is, and how to navigate it including how, when and where to seek help if required.

Standard 4:

When a patient is discharged there should be a mutually agreed standardised system between primary care and secondary care to support the safe and effective hand-over of diagnostic tests and test results, including any outstanding actions where appropriate. Essential information about diagnostic tests and test results should be clearly identifiable and highlighted to avoid important information being overlooked.

Rationale for this standard:
The issue of whether it is the hospital team or the general practitioner that is ultimately responsible for following up and actioning tasks related to diagnostic tests and test results at discharge (including communicating these results to patients) can be contentious. Lack of agreement and unclear lines of responsibility increase the risk of follow-up failure. Traditionally, the requesting clinician/team remains responsible for the follow-up and acting on the results of all tests ordered. However, there is often a lack of consensus and consistency between clinicians, practices and acute trusts as to what is reasonable and practical.

Trusts should agree systems, policies and practices on all aspects of test management at discharge (tests received prior to discharge, test results pending at discharge, and tests to be instigated in the community after discharge) with their local Clinical Commissioning Groups, GP practices and other relevant stakeholders, such as the Local Medical Committee. This should aim to standardise and simplify processes and procedures as much as possible and clarify lines of responsibility and accountability as well as audit procedures. Systems, policies and practices should be agreed for the notification of general practitioners and for the notification of patients and their families, carers and key-workers, as well as the notification of residential and nursing homes where appropriate. Good communication between general practice and hospitals is crucial, particularly when coordinating care for ‘high-risk’ patients at discharge and should include the use of telephone ‘hot-line’ numbers or mobile phones.[37]

Policies relating to this standard should include clear guidance regarding the transfer of responsibility for diagnostic test related tasks from a hospital clinician to primary

care. For example, a requirement for the hand-over to be explicit in the discharge communication on a test-by-test basis and realistic with respect to timing of follow-up tests in the community and a requirement for sufficient clinical information to place transferred tasks into context with time frames for action and risk mitigation plans.[38]

Case vignette 2

A patient was admitted under the care of the local mental health team. In the context of the admission he had an x-ray which was reported as abnormal. The discharge letter made reference to the fact that the abnormal x-ray should be followed up in primary care but this was 'lost' in a paragraph of text pertaining to the patient's mental health condition and was overlooked by the general practitioner. The x-ray results were not appended to the discharge letter and the request for follow-up in primary care was overlooked. The patient was subsequently identified as having a fracture. There was a consequent delay in diagnosis and treatment and a claim ensued.

Key learning points:

- Common communication mishaps at discharge include poor hand-over of the responsibility for the follow-up of a test result to general practitioners. In this case, the hand-over was not clear but lost in a large block of text.

- Where the general practitioner is requested to follow-up or action an abnormal result then this should be explicit and readily identified within the discharge communication. For example, within a dedicated paragraph in bold type or otherwise highlighted.

- Clinical judgment should be used to decide whether additional steps to ensure that the result is followed up or actions are required. For example, a back-up phone call to a member of the primary care team or e-mail to a secure monitored practice account.

- Keeping patients well informed is fundamental to good medical practice. This is especially important if the test result(s) causes clinical concern and needs follow-up. Consideration should be given to reasonable adjustments for people with learning disabilities and mental health problems.

Case vignette 3

A GP receptionist was contacted by a consultant's secretary late one afternoon and was informed that an important fax was about to be sent to the practice that required action that evening. The fax was received by the receptionist late that evening and was passed to the duty doctor who was busy with a fully booked 'emergency' surgery. The letter was a request for the general practitioner to deliver the result of a recent MRI scan for a patient recently discharged from the local hospital. The patient had been told that her general practitioner would be in touch that evening with the result. The duty doctor, who did not know the patient, then had to contact the patient and explain the abnormal findings without much knowledge of the original indication

for the scan, what had been discussed with the patient previously, what she understood to be wrong with her from her earlier test results or what support she had at home from family and friends if she became upset by the news.

Key learning points:

- The transfer of responsibility for the follow-up and actioning (including communication to patients) of diagnostic test results at discharge to primary care clinicians without prior agreement may impact negatively on patient safety, patient experience and quality of care. A system, policies and practices that cover all aspects of test management at discharge to include the follow-up and actioning of diagnostic test results arriving after discharge (including the communication of these results to patients) should be mutually agreed.

- Particularly where the results of complex investigations are involved, it is more appropriate for patients to be told that they will be informed of the results at their next hospital outpatient appointment or that they will be written to directly by the hospital team with an explanatory letter. The patient's general practitioner should receive a copy of this letter for information.

Standard 5:

Where a consultant delegates responsibility to another team member for any tasks around the communication of diagnostic test results to general practitioners, they should ensure that person understands and fulfils the responsibility.

Rationale for this standard:
The discharge summary is one of the most critical documents in medical settings but often the least experienced, most junior clinicians are entirely responsible for its completion with little or no training and supervision. They may not have the knowledge, experience and skills to complete the discharge summary at the level of clarity and synthesis required for effective communication. In addition, junior clinicians may not be aware of what information about diagnostic tests and test results need to be communicated to general practitioners and how this is best communicated, and may not fully appreciate the need for more senior level input.

Consultants leading clinical teams retain the professional responsibility of appropriate delegation and are thus responsible for ensuring that team members are appropriately trained, experienced and supervised for any discharge communication and documentation tasks delegated to them.[36 39]

Case vignette 4

A two year old child was admitted onto the paediatric ward with respiratory distress secondary to a lower respiratory tract infection. The child had a history of a neurogenerative disorder of unknown origin and was known to suffer fits. During the admission the child was seen by several specialist teams. The decision was made to start the child on a ketogenic diet and various baseline tests were requested. Of these, the 25 hydroxy vitamin D result remained pending at discharge. The discharge communication received by the general practitioner was a short narrative story of the in-patient stay with no information on follow-up plans including diagnostic tests pending, follow-up diagnostic tests that may be required to assess the impact of the diet, or guidance on what to do and whom to contact if there were problems.

The 25 hydroxy vitamin D result became available a few days after discharge, indicating that the child was severely deficient. However, the result was only viewed, and acted on at a hospital out-patient appointment three months later leading to delayed recognition and treatment.

Key learning points:

- High quality, complete discharge communication is particularly important in highly vulnerable patients, including children, who are not able to advocate for themselves or who have rare or complex clinical problems that need to be monitored closely.

- Clinicians may sometimes be more focused on producing a summary of the salient features of a hospitalisation than producing a document to help another clinician safely contribute to the future care of the patient. It is vital to recognise that discharge communication is a ‘hand-over’ - a specialised form of communication - and significant education and training may be required to achieve competency.

- Many patients are frequently discharged from hospital with pending diagnostic tests, in some cases these tests are abnormal and could change the patient’s care but might not be followed up in a timely manner. This may reflect confusion about which clinician should be seeking these out and taking action, particularly when multiple specialist teams are involved in the care of the patient. As a general principle, the clinician who requests the test is responsible for reviewing, acting on and communicating the result and actions taken to the general practitioner and patient and/or families, carer and key-worker, even if the patient has been discharged.

- The involvement of patients and, where appropriate, their families, carers and key-workers, in the follow-up of pending diagnostic tests should be encouraged by educating them about the test, its importance, when the result will be available, how to obtain the result and what to do after that. This may add a layer of protection to the test results management system and empower patients.

Standard 6:

Primary care teams should have a system to ensure that any discharge information they receive is seen and acted on in a timely manner by a clinician able to understand the importance of the information and able to take responsibility for taking appropriate action.

Rationale for this standard:
Robust systems need to be in place to ensure that incoming communications are received by general practice in a timely manner. For example, if electronic discharge summaries are received into a generic practice e-mail account, this account needs to be monitored with appropriate frequency.

The importance of incoming discharge information can only be assessed by a person with an understanding of the clinical conditions involved. Only then can judgments be made about appropriate further action. Ideally, each discharge communication would be actioned by the doctor most closely involved with that patient's care but problems exist with identifying this doctor both in hospital and within the general practice. These problems are compounded by periods of absence and when short-term locums work in the practice. Ambiguous responsibility increases the risk that a task will not be actioned appropriately and in a timely manner. [2,3] It is therefore vital that the GP practice has a system for dealing properly with communications and a culture of actively sharing information that is of particular importance.

Standard 7:

Appropriate systems and safety net arrangements should be in place in primary and secondary care to ensure any follow-up diagnostic tests required after discharge are performed and the results are appropriately fed-back to patients.

Rationale for this standard:
Evidence suggests that non-completion of recommended tests after hospital discharge is common.[10] This may be related to sub-optimal dissemination and poor quality discharge summaries, and may be associated with an increased risk of re-hospitalisation.[11,40-42] In addition, if the health system is difficult for patients to navigate, some patients may become frustrated and give up trying to complete recommended follow-up tests.[9] Thus, where changes to care or receipt of test results from secondary care require follow-up investigations, robust systems with safety net arrangements need to be in place to ensure these are carried out and the results are conveyed appropriately to patients.

These systems may be entirely based on the timely receipt of a sufficiently comprehensive and accurate discharge summary; may incorporate direct communication between hospital and primary care clinicians by telephone; and could

involve a single clinician being the point of continuity across this interface. Irrespective of the system in place and in line with standards 1 and 2, it is important for patients to clearly know at the point of discharge that further tests are required and what they need to do for those tests to take place (including how, when and where to seek help if required). In this regard, 'patient navigators' who co-ordinate and facilitate care have been used to help patients successfully complete follow-up diagnostic tests, although the current evidence base is largely in the area of cancer screening in out-patient settings.[10,43,44]

Standard 8:

As part of routine quality assurance, provider organisations should monitor compliance with their policies regarding test result communication and follow-up after discharge. Results should be shared with clinicians to facilitate learning and drive care quality improvement.

Rationale for this standard:
Errors relating to missed or delayed follow-up of test results at discharge are a significant cause of adverse events that harm patients.[1-6] Thus, knowledge of and compliance with established test management policies should be regularly audited within local clinical governance systems and amended where appropriate to ensure they are fit for purpose. System-wide metrics should be identified which are consistent for both primary and secondary care.[45] Clinical audit can be a positive way of generating change but is more effective if staff buy-in to the process and if they have an active role in it.[46]

In addition, mechanisms should be in place for provider organisations to share learning from any clinical incidents resulting from failures in the communication of test results on discharge from hospital. This includes patient or carer complaints and serious untoward incidents. Such failures should prompt primary and secondary care staff to review and refine their policies on communication of diagnostic test and test results on discharge on a continuing basis.

Case vignette 5

A 65 year old man was admitted as an emergency feeling generally unwell and lethargic with lower urinary tract symptoms. His medical history included Type 2 Diabetes Mellitus, Chronic Kidney Disease (CKD) stage 3AA2, Hypertension and Benign Prostatic Hypertrophy. His regular medications included an ace inhibitor and an oral hypoglycaemic agent. A diagnosis of Acute Kidney Injury (AKI) stage 2 secondary to urosepsis was made. He responded well to treatment and was deemed fit for discharge on day seven.

The hospital team recognised that this patient was at high risk of recurrent AKI and progression of CKD and that it was crucial for the discharge communication to include information on the severity of AKI; which medications had been stopped and would need re-starting once renal function improved or stabilised; and the follow up

diagnostic tests that needed to be performed in the community and their timing and frequency. The diagnosis of AKI was explained to the patient together with the requirement and rationale for further monitoring. Advice was also given on the steps to take if he became acutely unwell again. The aim was to facilitate seamless clinical ownership, patient empowerment and safe, high quality care.

All this information was included in the electronic discharge summary that was sent to primary care by EDT (Electronic Data Transfer) and received by the practice the same day. The administrative team allocated the discharge summary to the most appropriate (available) clinician (last general practitioner who saw patient as per this practice's policy). The general practitioner reviewed this discharge communication at the end of his morning surgery and was able to add important "read codes" to the patient's records including a brief summary of events. He was also able to send an electronic "task" to arrange a repeat blood test with the health care assistant in two weeks followed by an appointment to see him for a review in four weeks. The ace inhibitor and oral hypoglycaemic agent were recommenced once renal function improved and stabilised.

8 Recommendations for further work

It is recognised that there are particular issues for patients attending accident and emergency and ambulatory emergency care departments who are not admitted; and those attending for day-case, ward or outpatient procedures. Problems in the transfer of information about diagnostic tests and test-results in these settings also pose serious risks to patient safety.[2,47,48] Although the principles described here may also be applicable in these settings, the scope of this document is for hospital discharge only.

We recommend that further guidance be developed, with input from the relevant specialty teams, to cover the issues specific to these other care pathways. The Academy of Medical Royal Colleges may identify an appropriate organisation to lead this work.

Information Technology (IT) systems are an enabler, a way of sharing diagnostic test related information across organisational and professional boundaries to the benefit of patients and users. This is a complex area encompassing shared records and patient access to diagnostic test results in long-term condition management and one that is being addressed by several digital strategies.[49,50] On-going collaboration between clinicians and IT system providers is, however, required to develop standard templates for discharge that take into account specific issues relating to the communication of diagnostic tests and test results including a mechanism for highlighting any actions that the GP practice is to take. There is also an important role for IT in ensuring safer and more systematic processes for test result management by hospital clinicians at discharge. Although IT is not the entire answer, when designed in collaboration with clinicians and diagnostic services, IT tools may help solve specific problems, for example, the follow-up of test-results pending at discharge.[51-56]

We recommend that this important area is the focus of a separate piece of work. The Professional Records Standards Body (PRSB) is developing standards for diagnostic test results and pending requests in discharge summaries and should lead this work to ensure it meets the needs of patients and clinicians.

It is recognised that diagnostic services have a key role to play. There are inherent risks associated with delayed reporting of diagnostic tests including inappropriate discharge and incomplete discharge communication. Timeframes for formal reporting of specific tests need to relate to clinical urgency. This issue is already under review.[57] Patients may also be harmed by delays in appropriate management due to clinical teams not having read or acted upon the report of a diagnostic test they had requested in a timely manner.[58] More rapid communication or raised awareness of potentially life-threatening test results or test results that may be of immediate clinical significance may mitigate this risk. For pathology and radiology, having a system in place to communicate such test results is an explicit requirement of ISO 15189:2012, clause 5.9.1 and ISAS standards CL1C7 and CL3C5 respectively.[59,60] The Royal College of Radiologists has also produced guidance outlining standards for the communication of critical, urgent and unexpected significant radiological findings.[61]

Although guidelines are in place for pathology and radiology, all diagnostic services should have policies for the rapid communication of test results according to previously agreed criteria. The Academy of Medical Royal Colleges may identify an appropriate organisation to lead this work.

Guidance for patients on the communication of tests and test results at discharge is also required. The Institute for Healthcare Improvement have developed an Always Event to improve patient involvement in the discharge process. Details are available on the Always Event website. ThinkSAFE is also leading work on information required for patients at the time of discharge, details can be found on the ThinkSAFE website.

9 References:

1. World Alliance for Patient Safety. Summary of the Evidence on Patient Safety: Implications for Research. Geneva: World Health Organization, 2008.
2. Callen J, Georgiou A, Li J et al. The safety implications of missed test results for hospitalized patients: a systematic review. *BMJ Qual Saf* 2011; 20: 194-199
3. Callen J, Westbrook JI, Georgiou et al. Failure to follow-up Test Results for Ambulatory Patients: A systematic review. *J Gen Intern Med* 2011; 27(10): 1334-48
4. Kripalani S LeFevre F, Phillips CO et al. Deficits in Communication and Information between Hospital-Based and Primary Care Physicians. *JAMA* 2007; 297: 831-841
5. Roy CL, Poon EG, Karson AS et al. Patient Safety Concerns arising from test results that return after hospital discharge. *Annals of Internal Medicine* 2005; 143(2): 121-128
6. Walz SE, Smith M, Cox E et al. Pending Laboratory Tests and the Hospital Discharge Summary in Patients Discharged to Sub-Acute Care. *J Gen Intern Med* 2010; 26(4): 393-8
7. Were MC, Xiaochun L, Kesteron J et al. Adequacy of hospital discharge summaries in documenting tests with pending results and outpatient follow-up providers. *J Gen Intern Med* 2009; 24(9): 1002-6.
8. Ong MS, Magrabi F, Jones G et al. Last orders: Follow-up of tests ordered on the day of discharge. *Arch Intern Med* 2012; 172(17): 1347-49
9. Clinical Excellence Commission Patient Safety Team Clinical Focus Report (2011): Diagnostic tests – how access and follow-up affect patient outcomes. (Last accessed 20th July 2015)
10. Moore C, McGinn T, Halm Tying up loose ends: discharging patients with unresolved medical issues. *Arch Intern Med.* 2007; 167(12): 1305.
11. Moore C, Wisnivesky J, Williams S et al. Medical errors relating to the discontinuity of care from an inpatient to an outpatient setting. *J Gen Intern Med* 2003; 18(8): 646-651
12. Greenes DS, Fleisher GR, Kohane I. Potential impact of a computerized system to report late-arriving laboratory results in the emergency department. *Pediatr Emerg Care* 2000; 16: 313e15.
13. Platzer P, Hauswirth N, Jaindl M, et al. Delayed or missed diagnosis of cervical spine injuries. *J Trauma* 2006; 61:150e5
14. BMA Junior Doctors Committee, 2004: Safe handover, safe patients: Guidance on clinical handover for clinicians and managers.
15. The Royal College of Surgeons of England, 2007: Safe handover: Guidance from the Working Time Directive working party.
16. Fryer AF, Smellie WSA. Managing demand for laboratory tests: a laboratory tool-kit. *J Clin Pathol* 2013; 66: 62-72
17. Campbell CA, Horvath AR. Harmonization of critical result management in laboratory medicine. *Clinica Chimica Acta.* 2014; 432:135-147
18. NHS Diagnostics: The NHS Atlas of Variation in Diagnostic Services. November 2013.
19. Hrisos S, Thomson R (2013) Seeing It from Both Sides: Do Approaches to Involving Patients in Improving Their Safety Risk Damaging the Trust between Patients and Healthcare Professionals? An Interview Study. PLoS ONE 8(11): e80759 doi:10.1371/journal.pone.0080759
20. The Health Foundation (2013) Evidence scan: involving patients in improving safety.
21. Weissman JS, Schneider EC, Weingart SN et al. Comparing patient-reported hospital adverse events with the medical record review: do patients know something that hospitals do not? *Ann Intern Med*. 2005; 149(2): 100–8.
22. Weingart SN, Pagovich O, Sands DZ, et al. What can hospitalized patients tell us about adverse events? Learning from the patient-reported incidents. *J Gen Intern Med.* 2005; 20(9): 830–6.
23. Jack BW, Chetty VK, Anthony D, Greenwald JL, Sanchez GM, Johnson AE, et al. A Reengineered Hospital Discharge Program to Decrease Re-hospitalization. A Randomized Trial. *Annals of internal medicine*. 2009; 150(3): 178-87.
24. Walker PC, Bernstein SJ, Jones J, et al. Impact of a pharmacist-facilitated hospital discharge program: A quasi-experimental study. *Archives of internal medicine.* 2009; 169(21): 2003-10.
25. Hesselink, Gijs, et al. "Improving patient handovers from hospital to primary care: a systematic review." *Annals of internal medicine.* 157.6 (2012): 417-428.
26. Hansen, Luke O., et al. "Interventions to reduce 30-day re-hospitalization: a systematic review." *Annals of internal medicine.* 155.8 (2011): 520-528.
27. Cunningham DR, McNab D, Bovis P. Quality and safety issues highlighted by patients in the handling of laboratory test results by general practices - a qualitative study. *BMC Health Serv Res* 2014; 14:206

28. Casalino LP, Dunham D, Marshall HC. Frequency of failure to inform patients of clinically significant outpatient test results. *Arch Intern Med.* 2009; 169(12): 1123-1129
29. Royal College of Paediatrics and Child Health (2015) Facing the future: Together for Child Health
30. NICE (2012): Quality standard for patient experience in adult NHS services (QS15)
31. Royal College of Psychiatrists (2015) Carers and confidentiality in Mental health
32. Royal College of General Practitioners (2014) Involving and supporting carers and familiies
33. Office of the Public Guardian. The Mental Capacity Act: Making decisions – a guide for people who work in health and social care (2009). Accessed via www.publicguardian.gov.uk/docs/opg-603- 0409.pdf
34. Academy of Medical Colleges 2013. Standards for the clinical structure and content of patient records.
35. British Medical Association (2010). Acting upon test results in an electronic world.
36. General Medical Council (2014): Guidance for doctors acting as responsible consultants or clinicians.
37. British Medical Association (2015): Joint statements from the General Practitioners' and Consultants committee on duty of care to patients regarding communication of investigation results
38. Jones CD, Vin MB, O'Donnell CM et al. A failure to communicate: Qualitative exploration of care co-ordination between hospitalists and primary care providers around patient hospitalizations. J Gen Med 2015 Apr: 30(4): 417-24
39. General Medical Council (2013): Good Medical Practice - Delegation and referral.
40. Raval AN, Marchiori GE, Arnold JM. Improving the continuity of care following discharge of patients hospitalized with heart failure: is the discharge summary adequate? *Can J Cardiol* 2003; 19: 365-370.
41. Wilson S, Ruscoe W, Chapman M, Miller R. General practitioner–hospital Communications : a review of discharge summaries. *J Qual Clin Pract* 2001; 21: 104-108.
42. Fair JF. Hospital discharge and death communications. *Br J Hosp Med.*1989; 42: 59-61.
43. Scott M, Allen S, Bamford A, Waishe M, Ingham-Clark C. Influence of a nurse practitioner on Non-attendance rate for barium enema. Journal of the Royal Society of Medicine 2002: 95: 448-449.
44. Paskett ED, Harrop JP, Wells K. Patient navigation: An update on the state of the Science. Ca Cancer J Clin. 2011; 61: 237-249
45. King's Fund (2015): Acute Hospitals and Integrated care
46. NICE (2007): How to change practice – Understand, identify and overcome barriers to change
47. Greenes DS, Fleisher GR, Kohane I. Potential impact of a computerized system to report late-arriving laboratory results in the emergency department. *Pediatr Emerg Care* 2000; 16: 313e15.
48. Kachalia A, Gandhi TK, Puopolo AL, et al. Missed and delayed diagnoses in the emergency department: a study of closed malpractice claims from 4 liability insurers. *Ann Intern Med* 2007; 49: 196e205.
49. NHS Pathology programme (2014): Digital First: Clinical Transformation through pathology innovation.
50. HM Government, Personalised Health and Care 2020 (2014). Using data and technology to transform outcomes for patients and citizens.
51. Singh, H., Thomas, E.J., Mani, S et al. Timely follow-up of abnormal results in an outpatient in setting: Are Electronic Medical Records Achieving Their Potential? *Arch Internal Medicine* 2009; 169 (17): 1578-1586.
52. Poon EG, Wang SJ, Gandhi TK, et al. Design and implementation of a comprehensive outpatient Results Manager. *J Biomed Inform* 2003; 36:80–91.
53. Poon EG, El-Kareh R, Roy C, et al. Impact of automated alerts on follow-up of post-discharge microbiology results: A cluster randomized controlled trial. *J Gen Intern Med* 2012; 27: 1243–50.
54. Schiff GD, Klass D, Peterson J, et al. Linking laboratory and pharmacy: Opportunities for reducing errors and improving care. *Arch Intern Med 2003*; 163: 893–900.
55. Dalal AJ, Roy CL, Poon EG et al. Impact of an automated email notification system for results of tests pending at discharge: A cluster randomized controlled trial. J Am Inform Assoc 2014 May; 21(3): 473-480.
56. Dalal AK, Schnipper JL, Poon EG, et al. Design and implementation of an automated email notification system for results of tests pending at discharge. J Am Med Inform Assoc 2012; 19:523–528.
57. NHS Services, Seven Days a Week (2013): Clinical Standards.
58. NHS National Patient Safety Agency Safer Practice Notice 16 (2007). Early identification of failure to act on radiological imaging reports.

59. ISO 15189: 2012; Medical Laboratories – requirements for quality and competence
60. The Imaging Services Accreditation Scheme Standard (2013): statements, rationale and criteria.
61. The Royal College of Radiologists (2012): Standards for the communication of critical, urgent and unexpected significant radiological findings. Second Edition.
62. Picker Institute. (2011): Always Events - Creating an Optimal Patient Experience at http://alwaysevents.pickerinstitute.org/.
63. Supporting Patients and Healthcare Staff to Improve Patient Safety: Developing an Implementation Package for ThinkSAFE. Institute of Health and Society, Newcastle University at http://www.thinksafe.care/

Appendix A Contributors

The following organisations and individuals contributed to the creation of these standards:

Chair	Berenice Lopez
NHS England	Celia Ingham-Clark, Joan Russell, Jo Martin, Joanne McDonell
BMA	Andrew Green
RCGP	Janice Allister
Patient and lay representatives	Jean Goffin, Tony Alcock
RCP	Mark Temple
AMSPAR	Myra Upton
Acute Kidney Injury Programme	Rajib Pal
Primary Care Patient Safety Expert Group - membership includes general practitioners, primary care nurses, community pharmacist and representation from Royal College of General Practitioners, British Medical Association, Association of Medical Secretaries, practice managers, administrators and receptionists, patient representatives, Care Quality Commission and NHS England.	Martyn Diaper - chair