

## EDITORIAL

# Communicating echocardiography results to patients: a future role for the clinical scientist?

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Clinical scientists (cardiac physiologists, sonographers, echocardiographers) perform most of the echocardiograms requested in the USA, the UK, Australia and many countries in Europe. Clinical scientists do not usually communicate the results of echocardiography directly to their patients. Instead they produce a report to inform the requesting clinician who then talks to the patient. In contrast, radiologists and radiographers may already communicate results directly to their patient following national professional guidelines (1) within local hospital protocols. Should practice within echocardiography now change?

## Experience from radiography

Referring physicians prefer to give results to the patient themselves particularly if these are abnormal (2) and think that a radiologist should only communicate the result of the scan when the findings are normal and should stress that he or she is not the physician in charge of the case.

Patients by contrast want to receive results in the quickest way possible (3) with 91–99% valuing an immediate result from the radiologist (4, 5) although many also want to discuss the results later with their referring physician (5). There is little difference in preference whether the result is normal or abnormal (4, 5). When they receive immediate results patients are even more willing to do so again. Before computerized tomographic or magnetic resonance imaging (4) 81% wanted to hear results from the radiologist and later this increased to 91%. Furthermore, 48% of patients reported a reduction in anxiety after receiving immediate results, with no change in 37% of patients although there was an increase in anxiety in 15% (4).

## Echocardiography

If the echocardiogram is performed by the cardiologist in charge of the case there is no concern about communication. However, when performed by a clinical scientist, the nature of the communication depends on the setting of the echocardiogram. If the echocardiogram is a part of one-stop visit to a cardiologist then the results will be discussed with the cardiologist almost immediately.

By contrast, when an echocardiogram is the sole reason for the hospital visit, there may be a substantial delay before the patient sees their referring physician. Furthermore, many physicians and general practitioners feel unqualified to interpret echocardiogram reports (6). Additionally, not being given information about the result can be disquieting for patients who may assume that the clinical scientist is hiding 'bad news' and induce unnecessary anxiety while waiting for the results of the medical investigation (7). Withholding information might also be seen as contrary to the principles of 'equity and excellence' (8). When patients have access to their medical records and test results, they report greater satisfaction with their care, increased trust in staff, personal empowerment and increased understanding of their medical condition (2, 9). Our own pilot investigation within an echocardiography outpatient department showed that 19 of 20 patients wanted their results to be communicated directly after the echocardiogram by the clinical scientist, rather than waiting to receive the results from their doctor at a later appointment.

Giving results if requested can be done at two levels. At the first, there can be a simple reassurance that the study is normal. If it is abnormal, the aim is to defuse anxiety that something is being hidden while at the same time not giving inappropriate information. Individual departments

will want to agree a form of words imparting the sense that 'the study is not quite normal but it is only a small part of the jigsaw and your doctor needs to look at all the other information'. There should be provision for immediate discussion of significantly abnormal results with a clinician involved with the case. At the second level the results can be discussed more fully within the clinical context.

The first level is appropriate for a suitably qualified and experienced clinical scientist with appropriate communications skills. The second level is not usually appropriate even for an imaging cardiologist if not in charge of the case. However in the UK, the modernizing scientific careers program has led to significant changes to the training and career path for clinical scientists, with a wider clinical knowledge base and the development of clinical skills resulting in expansion of the job role to include scientist-led clinics (10). This includes the need to discuss results following an echocardiogram within a structured scientist-led clinic. Research within our own hospital has demonstrated that scientist-led heart valve clinics are safe and popular with patients as they provide a 'one-stop' service and can reduce waiting times (10). In these circumstances, the clinical scientist is acting as a delegate of the cardiologist on overall charge of the service and has taken on roles normally regarded as clinical. Therefore, it is clearly important that patients understand the role of clinical scientist, and also that a scientist is not clinically trained. Interestingly, in our survey we found that 90% of patients interviewed were not aware of the clinical scientist profession, and thought that the clinical scientist was a cardiologist or nurse.

## Conclusion: the way forward

We suggest that clinical scientists or imaging cardiologists not in charge of the case should give results of an echocardiogram if the patient asks. It must be made clear that the clinical scientist is not a physician and is giving an interim technical result that does not supplant the clinical interpretation subsequently given by the cardiologist or other physician. Simple reassurance that a test is normal is easy to communicate but individual hospitals should agree generic forms of words to be used if the result is equivocal and needs further discussion or if it is clearly abnormal. More far-reaching discussion of the results of echocardiography should be made with the clinician in charge of the case but may become appropriate by clinical

scientists as their career develops. It would be appropriate for national echocardiography societies and patient-groups to provide guidance on communication.

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## References

- 1 Society and College of Radiographers & British Medical Ultrasound Society 2015 Guidelines for professional ultrasound practice. Revision 1, December 2015. London, UK: BMUS & SOR. (available at: [https://www.bmus.org/static/uploads/resources/GUIDELINES\\_FOR\\_PROFESSIONAL\\_ULTRASOUND\\_PRACTICE.pdf](https://www.bmus.org/static/uploads/resources/GUIDELINES_FOR_PROFESSIONAL_ULTRASOUND_PRACTICE.pdf)).
- 2 Davis Giardina T, Menon S, Parrish DE, Sittig DF & Singh H 2014 Patient access to medical records and healthcare outcomes: a systematic review. *Journal of the American Medical Informatics Association* **21** 737–741. (doi:10.1136/amiajnl-2013-002239)
- 3 Kuhlman M, Meyer M & Krupinski EA 2012 Direct reporting of results to patients: the future of radiology? *Academic Radiology* **19** 646–650. (doi:10.1016/j.acra.2012.02.020)
- 4 Pahade J, Couto C, Davis RB, Patel P, Siewert B & Rosen MP 2012 Reviewing imaging examination results with a radiologist immediately after study completion: patient preferences and assessment of feasibility in an academic department. *American Journal of Roentgenology* **199** 844–851. (doi:10.2214/AJR.11.8064)
- 5 Schreiber MH, Leonard M Jr & Rieniets CY 1995 Disclosure of imaging findings to patients directly by radiologists: survey of patients' preferences. *American Journal of Roentgenology* **165** 467–469. (doi:10.2214/ajr.165.2.7618577)
- 6 Mair FS & Bundred PE 1996 The diagnosis and management of heart failure: GP opinions. *British Journal of Cardiology* **3** 121–125.
- 7 Brocken P, Prins JB, Dekhuijzen PN & van der Heijden HF 2012 The faster the better? – a systematic review on distress in the diagnostic phase of suspected cancer, and the influence of rapid diagnostic pathways. *Psycho-Oncology* **21** 1–10. (doi:10.1002/pon.1929)
- 8 Department of Health 2010 Equity and excellence: liberating the NHS. London, UK: Department of Health. (available at: <https://www.gov.uk/government/publications/liberating-the-nhs-white-paper>)
- 9 Jilka SR, Callahan R, Sevdalis N, Mayer EK & Darzi A 2015 'Nothing about me without me': an interpretative review of patient accessible electronic health records. *Journal of Medical Internet Research* **17** 161. (doi:10.2196/jmir.4446)
- 10 Chambers JB, Lloyd G, Rimington HM, Parkin D, Hayes AM, Baldrock-Apps G & Topham A 2012 The case for a specialist multidisciplinary valve clinic. *Journal of Heart Valve Disease* **21** 1–4.

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