Royal Cornwall Hospital, Truro, UK

Cite this as: *BMJ* 2022;378:o2052
http://dx.doi.org/10.1136/bmj.o2052
Published: 18 August 2022

Scan first, ask questions later?

Giles Maskell *consultant radiologist*

Taking stock after two years of the covid-19 pandemic, it comes as no surprise to discover that demand for medical imaging is higher than ever. Historical under provision of imaging by the NHS has made this more or less inevitable, but changes in clinical practice have also contributed.

In the past, the process of medical diagnosis followed a clear formula. Taking a careful history was followed by the conduct of a full examination—these were the precise words we were taught to use—and then, if necessary, some "special tests" were carried out to confirm or refute the diagnosis suggested from the history and examination. For better or for worse, things have changed. "Get a scan and then I'll see the patient" has become a familiar injunction. A variety of innovations in practice designed to speed up diagnostic pathways, including the growth of remote consultations, mean that a diminishing proportion of the patients passing through the computed tomography scanner have benefited from the "careful history and full examination" preliminaries.

Up until now, guidelines for the appropriate use of medical imaging outside screening programmes have largely been based on the presence or absence of clinical findings. If a certain finding is present, the test is indicated, if not then it probably isn't. This has gradually been changing, particularly in conditions for which the clinical findings are notoriously unreliable or non-specific. Although physicians still appear to value the contribution of examination to patient assessment, increasingly the decision to perform imaging is made on the basis of other factors.[1]

Wholesale adoption of the scan-first-ask-questions-later approach has a number of important implications. The first is a requirement for a huge increase in testing capacity. No one involved in the care of NHS patients can fail to be aware that NHS imaging services are unable to cope with current levels of demand. The recognition of this in the Richards report is welcome, but it will be years before the actions so far taken in response deliver the required expansion.[2]

Secondly, while imaging remains a scarce resource in the NHS, the decision to image patients at low risk carries the opportunity cost of disadvantaging patients with other conditions whose need may be greater or more acute. There is only one place at the front of the queue—the promotion of any one group of patients can only mean others dropping further back. It is simply not credible to claim to be giving priority simultaneously to patients with stroke, with trauma, with heart disease, with suspected cancer and so on, without somebody losing out.

A third consequence is that a re-appraisal of the meaning of the test result is required. A positive result in a patient at low risk does not have the same meaning as a positive result in a high risk individual and conversely, a negative result in a patient with relevant symptoms and signs does not provide the same level of reassurance as it would in a patient with a very small chance of having the disease in question. The result of any diagnostic test must be interpreted in the light of the prevalence of the condition in the population undergoing testing.[3]

This is not another lament for the loss of clinical skills, still less an attempt to turn back the clock on changes in practice which are surely irreversible. Departure from the traditional diagnostic paradigm—history, examination, tests—is now an established trend, the implications of which deserve further consideration.

Competing interests: none declared.

Provenance and peer review: not commissioned, not peer reviewed.

1 Elder AT, McManus IC, Patrick A, Nair K, Vaughan L, Dacre J. The value of the physical examination in clinical practice: an international survey. *Clin Med (Lond)* 2017;17:-8. doi: 10.7861/clinmedicine.17-6-490 pmid: 29196348

2 NHS England. Diagnostics: Recovery and renewal—Report of the Independent Review of Diagnostic Services for NHS England. 2020. https://www.england.nhs.uk/publication/diagnostics-recovery-and-renewal-report-of-the-independent-review-of-diagnostic-services-for-nhs-england/

3 Martijn JL. Bours, Bayes' rule in diagnosis. *J Clin Epidemiol* 2020;131:-60.