Editorials

Advocating for patients through laboratory tests:

what do GPs' use of blood tests for suspected cancer tell us?

In this issue of the *BJGP*, Ben Cranfield and colleagues describe the frequency with which common blood tests were ordered by GPs prior to their patients receiving a diagnosis of cancer.[1] Data from the National Cancer Diagnosis Audit (NCDA) provided a nationally representative selection of patients in England diagnosed with cancer in 2018, and included detailed data collected from GP records. The NCDA provided information not only on the types of blood tests, but also patients' symptoms and the time course to obtain a diagnosis.

MAIN FINDINGS

Of the 39 752 patients included in the audit, less than half (41%) had blood tests done prior to diagnosis. Use of blood tests varied greatly depending on type of cancer. For example, patients with leukaemia (84%), myeloma (76%), or pancreatic cancers (71%) were far more likely to have blood tests than those with vulval cancer (8%), breast cancer (4%), or melanoma (2%). This provides strong evidence that GPs were judiciously considering the most appropriate diagnostic test for their patient with suspected (but at this point still undiagnosed) cancer. A greater proportion of patients presented with non-alarm (non-specific) symptoms ($n = 16\,487$, 41%) than alarm symptoms ($n = 13\,778$, 35%), as defined by the National Institute for Health and Care Excellence (NICE). Moreover, blood tests were nearly three times more likely to be used in those with non-alarm symptoms than those with alarm symptoms.

These findings also provide interesting insights into daily practice constraints GPs experience and their decision-making processes around patients with suspected cancer. Blood tests are clearly used as adjuncts to initial clinical assessment to provide some diagnostic clarity, as demonstrated by nearly half of the patients who presented with non-alarm symptoms. Laboratory tests may also have helped GPs justify referral under the 'rapid 2-week wait' or other diagnostic pathways, particularly for those patients who may not have fully met referral criteria.

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REASONS WHY BLOOD TESTS ARE BEING USED

Cranfield *et al*'s results also provide valuable insight into how GPs operate when they have very few diagnostic tools at their disposal. For example, GPs in the UK have far less access to advanced imaging than their counterparts in many other countries.[2,3] Imaging and/or endoscopy are often needed to further investigate cases of suspected cancer, or to identify other conditions when cancer has been excluded. Limited access to diagnostic tests 'ties GPs' hands', with the only options to refer to secondary care colleagues to pursue diagnostic workup, or perhaps to one of the new rapid diagnostic centres in England and Wales. Restricting GPs' access to modern diagnostic testing services perhaps also assumes they would overuse (or use inappropriately) such tests if they were to be given wider access, and overwhelm an already resource-constrained health service. However, Cranfield *et al*'s article provides evidence to the contrary, noting that blood tests were used nine times more frequently in patients with pancreatic cancer than those with vulval cancer, illustrating that even when a diagnostic test is readily available (such as blood tests), GPs don't use a 'one size fits all' approach, rather they demonstrate thoughtful laboratory stewardship with appropriate ordering according to the circumstance. The recently announced plans to widen GP access to imaging services is welcomed, though long overdue;[4] however, this comes at a time when provision of imaging services is critically low, with a current 29% deficit of radiologists in England and Wales.[5]

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EVIDENCE BASE FOR ROUTINE BLOOD TESTS

Some of the common blood tests that GPs used in the NCDA (for example, full blood counts, electrolytes, and liver function tests) have evidence for value in evaluating patients with suspected cancer.[1] The 'red flags' of anaemia or elevated bilirubin for cancer are well known, and there is increasing evidence for association of thrombocytosis with cancer.[6–9] Some patients in the NCDA also had tests ordered with particular cancers in mind, such as cancer antigen 125 or prostate specific antigen. However, what if GPs were to use a far broader panel of blood tests for patients with suspected cancer? A recent Danish study reported that applying artificial intelligence to a panel of 25 blood tests, which are routinely used prior to referral for suspected cancer workup in Denmark, was valuable for determining risk of cancer.[10] The diagnostic value of this (admittedly fairly large) panel of blood tests had an area under the curve of 0.86 for cancer diagnosis in the subsequent 90 days. While this diagnostic accuracy is far from perfect, it perhaps raises the question about whether GPs in the UK should be allowed to use a wider panel of blood tests than they currently do as part of routine evaluation of patients with suspected cancer. Furthermore, understanding the benefits (and costs) of current practice, compared with extended panels of tests, will

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become even more pressing when results emerge from the large trials of multicancer early detection tests underway in the UK and elsewhere.[11]

As Sir Mike Richards noted in his Independent Review of Diagnostic Services for NHS England, there is a *'need for radical investment and reform of diagnostic services'*.[3] Supporting GPs' ability to provide modern primary care for their patients is dependent on them having access to more than just simple blood tests, but rather a range of community-based diagnostic services, taking advantage of new diagnostic technologies where appropriate. We suspect GPs and their patients will welcome such reform.

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Provenance
Commissioned; not externally peer reviewed.

Competing interests
The authors have declared no competing interests.

DOI: https://doi.org/10.3399/bjgp23X731757

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