



EDITORIALS

Use of tests in UK primary care

Large increases suggest it's time for a rethink

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Both overuse and underuse of healthcare are now seen as markers of an ineffective and inequitable healthcare system.¹ International initiatives such as Right Care in the United Kingdom (www.england.nhs.uk/rightcare/) and Choosing Wisely in the United States (www.choosingwisely.org/) have been developed to reduce unwarranted variation and improve patient care.

It is timely then that in this issue O'Sullivan and colleagues (doi:10.1136/bmj.k4666) investigate temporal trends in the use of tests in UK primary care over a 15 year period (2000–15).² Test use is an integral part of clinical decision making and this large scale study examined more than 260 million tests for more than 11 million patients in primary care. Age and sex adjusted use of tests increased by 8.5% annually (95% confidence interval 7.6% to 9.4%); from 14 869 tests per 10 000 person years in 2000/1 to 49 267 in 2015/16, a 3.3-fold increase. Patients in 2015/16 had on average five tests per year, compared with 1.5 in 2000/1. Test use increased statistically significantly across all age groups, in both sexes, for all test types, and for 40 of the 44 tests specifically studied, showing a substantial increase in test use over time.

Why is this happening? This study was unable to examine the purpose of tests ordered (diagnosis or disease monitoring, for example) or if tests were clinically indicated. However, the exponential increase in certain blood tests, such as for vitamin D, ferritin, and iron, often ordered for patients presenting with non-specific symptoms, could indicate over-testing. Additionally, the use of expensive lumbar spine magnetic resonance imaging has increased by 15% annually, without any clear basis for this increase.²

Over-testing has many drivers—these include health system factors where, in fee-for-service health systems, financial or other incentives might inadvertently promote increased testing.^{3,4} Expanded disease definitions identify more previously healthy people as being unwell; a review of US clinical guidelines reported that for 10 of 16 guidelines studied, disease definitions had been widened.^{3,5} An example is the publication of new diagnostic criteria for chronic kidney disease on the basis of largely laboratory measurements of kidney function and damage.⁶ These new variables result in more than 1 in 8 US adults (14%) having a diagnosis of chronic kidney disease. The

combination of this high rate of diagnosis with the low rate of total kidney failure suggests that many of those with a diagnosis of chronic kidney disease will never progress to symptomatic kidney disease.⁶

Policy drivers such as the UK's system of pay for performance for general practices (Quality and Outcomes Framework) might also influence test rates. Thyroid function tests, included as part of the Quality and Outcomes Framework, saw a 7.1% average annual increase over the study period.² A proportion of people tested will receive a diagnosis of subclinical hypothyroidism,⁷ which is often treated with thyroid hormones, especially when it co-occurs with symptoms potentially attributable to hypothyroidism, such as fatigue and weight gain.⁸ A recent systematic review and meta-analysis of 21 randomised controlled trials, however, reported that thyroid hormone treatment was not statistically significantly associated with improvements in quality of life or thyroid related symptoms for people with subclinical hypothyroidism.⁷ This is an example of overmedicalisation, where a patient might be treated for a laboratory abnormality without clinical benefit but with attendant risks of side effects as well as the practical inconvenience.

Clinicians might also order unnecessary tests from fear of missing a diagnosis or defensive medicine, caused by escalating litigation rates.^{3,9} Many primary care patients present with non-specific symptoms, and trying to differentiate those with serious underlying disease is a real challenge. A systematic review and meta-analysis of 14 randomised controlled trials investigating the effect of diagnostic tests for patients with a low pretest probability of serious illness (presenting with symptoms such as fatigue and low back pain) reported that testing did little to reassure patients, decrease their anxiety, or resolve their symptoms, although tests did reduce further visits to primary care.¹⁰ Qualitative research highlights diagnostic uncertainty in relation to non-specific symptoms as a common reason for inflammatory marker testing, with the aim to reassure.¹¹ However, inconclusive results can paradoxically generate a cycle of uncertainty and anxiety.^{11,12}

Patients might seek tests for reassurance without understanding the limitations of the tests. Cultural and societal beliefs dictate that “prevention is better than cure” and that being proactive

about health can only bring positive effects.³ Patient expectations are shaped by many factors but are influenced by misinformation about the accuracy of tests and the role of screening in healthy people. The promotion of screening by private enterprises and industry with vested interests exacerbates this problem. British general practitioner Iona Heath highlighted some ethical implications of this practise, emphasising “the extent of harm to individuals caused by being labelled as being at risk or as having a disease . . . and the unnecessary fear that this can engender.”¹³ With escalating healthcare expenditure internationally, reducing over-testing represents an evidence based approach to decreasing costs without compromising health.⁴

O’Sullivan and colleagues have shown that test use in UK general practice has increased exponentially. Future research should focus on why, in terms both of clinical indication and reasoning and of patient beliefs and expectations about the purpose and accuracy of tests.

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