BMJ

BMJ 2013;347:f4247 doi: 10.1136/bmj.f4247 (Published 2 July 2013)

EDITORIALS

Too much medicine; too little care

Time to wind back the harms of overdiagnosis and overtreatment

Paul Glasziou *professor* [1], Ray Moynihan *senior research fellow* [1], Tessa Richards *analysis editor* [2], Fiona Godlee *editor in chief* [2]

[1]Bond University, Robina, QLD 4226, Australia; [2]*BMJ*, London WC1H 9JR, UK

> "Too much testing of well people and not enough care for the sick worsens health inequalities and drains professionalism, harming both those who need treatment and those who don't." Margaret McCartney.[1]

A growing frustration in clinical medicine is that we are now so busy managing the proliferation of risk factors, "incidentalomas," and the worried well that we lack the time to care properly for those who are seriously ill. As the definitions of common conditions such as diabetes and kidney disease have expanded and the categories and boundaries of mental disorders have grown, our time and attention for the most worryingly ill, disturbed, and vulnerable patients has shrunk. Too much medicine is harming both the sick and well.

Much of the growth in apparent illness has escaped public attention. One striking example is the tripling of the incidence of thyroid cancer in the United States, Australia, and elsewhere between 1975 and 2012,[2 3] during which time the death rate did not change. This dramatic rise is best explained by increased testing and improved diagnostic tools, rather than a real change in cancer incidence. It has been described as an epidemic of diagnosis rather than a true epidemic. Similar "epidemics" have occurred in conditions where there has been active screening, such as breast cancer and prostate cancer.[4 5]

But perhaps the most important expansion in illness has been where disease definitions have changed and the dividing line between normal and abnormal has shifted. This has occurred with hypertension, diabetes, osteoporosis, high cholesterol, obesity, and cognitive impairment. Small changes in the boundaries can greatly expand the proportion of the population labelled as having disease (box).[6]

Of course, some newly diagnosed and treated "patients" will benefit, but others will experience the adverse effects of unneeded treatment and the anxiety and stigma caused by disease labels. Given the consequences and costs for healthcare and the impact on patients, there has been far too little discussion and debate of the pros and cons of how we detect and define disease.

To further the debate, this issue of the *BMJ* includes the first in an intermittent series of Analysis articles looking at the risks and harms of overdiagnosis in a broad range of common conditions.[7] The article by Weiner and colleagues on pulmonary embolism (doi:10.1136/bmj.f3368) shows how the introduction of a new diagnostic technology, computed tomography pulmonary angiography, has been associated with an 80% rise in the detection of pulmonary emboli, many of which, the authors argue, don't need to be found. The series, together with the Preventing Overdiagnosis conference in September (www.preventingoverdiagnosis.net), is part of the *BMJ*'s Too Much Medicine campaign (www.bmj.com/too-much-medicine). Future articles will look at chronic kidney disease, dementia, attention deficit hyperactivity disorder, chronic obstructive pulmonary disease, depression, and thyroid cancer, and we welcome suggestions for other conditions to cover.

The series aims to promote understanding of how and why the apparent prevalence of disease has changed; the consequences for clinicians, patients, and policy makers; and how we might better deal with the risks and harms of overdiagnosis. Articles will also look at the limitations of the evidence for overdiagnosis and the research and policy agenda.

A key question is how disease definitions are changed and by whom. Currently, there are no agreed standards for the constitution of panels that review or alter the definitions of diseases, including the mix of expertise represented and the methods to manage conflicts of interest. Nor are there clear criteria for when it is reasonable to change disease definitions. Such criteria should be sensitive to the need to balance potential health gains against the potential downsides of labelling, testing, and treating many more people. The recent controversy over the changes from DSM-IV (fourth edition of the *Diagnostic and Statistical Manual of Mental Disorder*s) to DSM-5 illustrates the case for debating internationally agreed processes.[8]

Meanwhile, what can clinicians do to minimise overdiagnosis? Besides maintaining healthy levels of scepticism about changing thresholds for defining disease and the use of "more sensitive" tests are strategies that may help.

trichards@bmj.com

Signs of overdiagnosis and questions to ask

"Red flags" for possible overdiagnosis

- The incidence is increasing while mortality stays the same
- Labelling of a risk factor or biomarker to sound like a disease
- Shift in diagnostic definitions or thresholds with no clear evidence that benefits are greater than harms

Some questions we might ask

- Is this a risk factor or a symptomatic condition? Do the "labels" reflect that distinction?
- Who has set the thresholds? Based on what evidence of benefits and harms?
- Does this new test detect more or earlier "disease"? Do we understand the natural course of disease in those extra cases?

Investigation and screening should be selective and targeted. Guidelines are not diktat, and doctors should not order tests if they do not think they will aid patient management. Performance incentives can perversely encourage overtesting and overtreatment.[9] Unexpected abnormal findings should be considered within the context of the full clinical picture, and in most cases repeated or otherwise verified before a diagnosis is made or treatment considered. The approach advocated by Allen Frances, the former chair of DSM-IV, of a stepped process of problem formulation, watchful waiting, minimal interventions, counselling, and, finally, a definitive diagnosis if needed has much merit.[10]

Unfortunately, a diagnostic label is sometimes needed for reimbursement or referral. If such a label is necessary, it should be chosen carefully and be subject to reconfirmation and later review. Use the terms "raised blood pressure" not "hypertension," "reduced bone thickness" not "osteoporosis," and "reduced kidney function" not "chronic kidney disease" when talking with patients.

Finally, we need to get better at sharing uncertainty with patients and the public about disease definitions and boundaries, the risks and benefits of testing, and the consequences of different management and treatment options so that decision making can be shared. Lay versions of the papers in this new series of *BMJ* articles are being produced by Consumer Reports to aid this.

Although we hope that this new series will stimulate debate about the growth in unhelpful diagnosis and unnecessary treatment, more is needed. With the inexorable expansion in medical technologies, including imaging, biomarkers, genome sequencing, and the "selling of sickness" for commercial gain,[11] action is needed on many fronts, including education and training, research, policy reform, and advocacy. With the economic crisis and the challenge of providing universal care for all, it's time to find ways to safely and fairly wind back the harms of too much medicine.

Competing interests: We have read and understood the BMJ Group policy on declaration of interests and declare the following interests: PG and RM are members of the scientific committee organising the preventing overdiagnosis conference.

Provenance and peer review: Commissioned; not externally peer reviewed.

1 McCartney M. The patient paradox: why sexed up medicine is bad for your health. Pinter and Martin, 2012
2 Davies L, Welch HG. Increasing incidence of thyroid cancer in the United States, 1973-2002. *JAMA* 2006;295:2164-7.
3 Australian Institute of Health and Welfare. Cancer survival and prevalence in Australia: period estimates from 1982 to 2010. 2012. www.aihw.gov.au/WorkArea/DownloadAsset.aspx?id=10737422721.
4 Welch HG, Black WC. Overdiagnosis in cancer. *J Natl Cancer Inst* 2010;102:605-13.
5 Morrell S, Barratt A, Irwig L, Howard K, Biesheuvel C, Armstrong B. Estimates of overdiagnosis of invasive breast cancer associated with screening mammography. *Cancer Causes Control* 2010;21:275-82.
6 Schwartz LM, Woloshin S. Changing disease definitions: implications for disease prevalence. Analysis of the third national health and nutrition examination survey, 1988-1994. *Effect Clin Pract* 1999;2:76-85.
7 Weiner RS, Schwartz L, Wooloshin S. When a test is too good: how CT pulmonary angiograms find pulmonary emboli that do not need to be found. *BMJ* 2013;347:f3368.
8 Gornall J. DSM -5: a fatal diagnosis? *BMJ* 2013;346:f3256.
9 Heath I, Hippisley-Cox J, Smeeth L. Measuring performance and missing the point? *BMJ* 2007;335:1075-6.
10 Frances A. Saving normal: an insider's revolt against out-of-control psychiatric diagnosis, DSM-5, big pharma, and the medicalization of ordinary life. William Morrow, 2013.
11 Tiefer L, Witzak K, Heath I. A call to challenge the "Selling of Sickness." *BMJ* 2013;346:f2809

Cite this as: *BMJ* 2013;346:f4247