Reviewer's report

Title: The science of clinical practice: disease diagnosis or patient prognosis? Evidence about "what is likely to happen" should shape clinical practice

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Reviewer: Andrew Vickers

Reviewer's report:

I am very sympathetic to the authors' overall position. However, I do not think that they make their case well. First, I find the structure of the article to be questionable. In place of a linear argument, the authors give a number of examples, each followed by a brief discussion. The examples seem to follow no particular order, and the discussion following each example tends to be somewhat general, rather than sticking strictly to the case in question. The text after the chronic fatigue example is illustrative in this respect, incorporating the sickness role, patient understandings of risk, breast cancer screening, patient-reported outcomes, COPD, cure vs. care, outcomes data vs. "gut reactions" and the existing implicit use of a prognostic framework by clinicians.

Second, the authors fail to distinguish between rather different aspects of the problem. I was particularly worried by their statement that the argument of my own paper is “the diagnostic model is inappropriate for many chronic diseases because it ignores their underlying variability and concerns the hunt for one arbitrary disease state in each sick person.” I barely recognize this characterization. If there was one key point of the paper, it was that many of what we currently call diseases (e.g. hypertension, early stage prostate cancer) cause no symptoms and are merely risk factors for some future event such as a heart attack or advanced cancer. Moreover, in my paper I tease apart several features that distinguish the diagnostic from prognostic paradigm, namely presence of a lesion, treatment effectiveness, symptoms, patient preference and the degree to which the course of treatment is similar for all patients or open to discussion. Now the authors do discuss different aspects of why diagnosis if problematic (e.g. prostate cancer, because it doesn’t dictate a treatment; chronic fatigue, because of a lack of distinct pathology). But these aren’t presented in a clear and logical framework, it is just a series of thought pieces.

In summary, I agree with the authors' conclusion but not their arguments. In my view, the article needs to be drastically restructured with the arguments more systematically presented

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.
Declaration of competing interests:

I declare that I have no competing interests