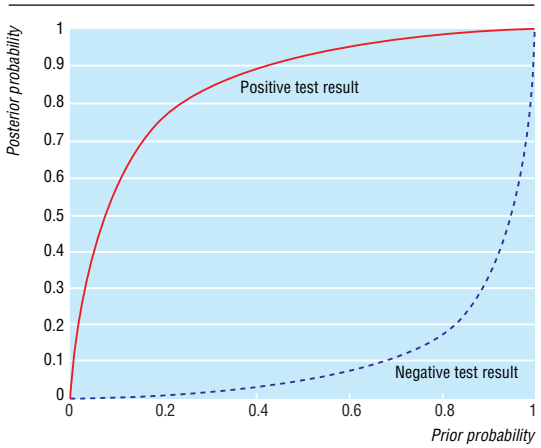

Fig 4 Influence of prior clinical probability on the probability of a disease after a negative or positive test result. Test sensitivity and specificity are 95% and 92% respectively

32.85% (fig 3). Thus, in these circumstances a negative result from magnetic resonance angiography cannot be used to exclude the diagnosis. The delay in diagnosis occurred because insufficient weight was given to the clinical findings and too much weight to the magnetic resonance angiography result. For case 2, however, once the misdiagnosis of meningitis was discarded, appropriate weight was given to the clinical probability of aneurysm, and intra-arterial digital subtraction angiography was undertaken immediately despite the negative result from magnetic resonance angiography.

We have avoided using the terms positive and negative predictive values. The positive predictive value is the probability a disease is present given a positive test result. The negative predictive value is the probability a disease is absent given a negative result. The probability that a disease is present given a negative result is therefore 1 – negative predictive value. The term posterior probability avoids this potential confusion and simply refers to how likely a patient is to have a disease given the result of a diagnostic test. We could have calculated posterior odds rather than posterior probability, but we have avoided the use of odds and likelihood ratios because they require the conversion of probabilities to odds. As clinical likelihood, sensitivity, and specificity are all usually expressed as probabilities rather than odds, we prefer the more intuitive posterior probability to express the post-test likelihood of a disease.

Fig 4 shows how the probability of a disease after a diagnostic test is critically dependent on the prior clinical probability. For example, a small reduction in the prior clinical probability of an intracranial aneurysm from 90% to 50% reduces the probability of aneurysm given a negative result from magnetic resonance angiography from 33% to 5%. Such a reduction may not be enough to rule out the diagnosis with certainty, but it might be enough to question it. The reliance of posterior probability on prior clinical suspicion is daunting since even small errors in the estimation of clinical suspicion can substantially affect the final decision about whether a disease is present. Methods to quantify clinical suspicion are described elsewhere.[13 14] Doctors' diagnostic opinions can differ because some are better than others in their ability to correctly estimate the prior clinical probability of a disease, in their knowledge of test sensitivity and specificity, or in their intuitive ability with Bayesian statistics.

The formulas in fig 3 provide a simple and convenient method for calculating the probability of a disease based on both the prior clinical probability and the result of a diagnostic test.

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Corrections and clarifications

Minerva

Minerva was perhaps a bit too keen to report a study on doctors committing suicide (17 March). She cited the article as appearing in the *Journal of Epidemiology and Community Health*, but unfortunately at that point the article had not been published. She failed to realise she was working from prepublication proofs, not a reprint. The paper has now been published—in volume 55, pp 296-300. Thanks to the reader who alerted us to this error.

ABC of hypertension: Blood pressure measurement: Part 1—Sphygmomanometry: factors common to all techniques

The caption to the diagram on p 981 of this article by Gareth Beevers and colleagues (21 April, pp 981-5) wrongly described the blood pressure pattern as normal. It should have read: "Example of ambulatory blood pressure pattern plotted by the DABL® Program showing a marked variability of blood pressure."