approach is likely to include stepped-care, but should emphasise the process of care rather than individual treatment strategies at each step. Instead of focusing on particular interventions and then building a management strategy around these, the strategy should come first. Staff can then be trained accordingly to meet the requirements of that strategy.

We have reservations about the value of 'bolt-on' services, whether these are services provided by graduate mental health workers, or any other professional group, such as the psychological services recommended by Layard.[15] New services need to be accompanied by a change in existing services if they are to be optimally effective. This needs careful planning and an acknowledgement that change in all parts of the system is necessary — however challenging this may be for individual professionals. Many of the components of a chronic disease model for depression are described in the 'enhanced' services for depression by the Care Services Improvement Partnership.[16] However, we would argue that what is described is not an 'enhanced' service, but should be a core service for people suffering from depression.

For many people the reality of depression is that of a chronic relapsing illness, and it deserves to be treated as such. Many of these people's needs are not met by a stepped-care model alone. A chronic disease management model would help to simplify management and ensure patients have ongoing, appropriate, and timely care. We wouldn't be satisfied with anything less than optimal care for patients with diabetes, or asthma. The same should apply to depression.

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How much monitoring?

Variations in practice can alert us that a problem exists, but do not tell us what to do. As practitioners we can be consistent but wrong (as with hormone replacement therapy), or inconsistent but without important impacts (as with choice of antipyretic to treat fever). Although inconsistencies are imperfect markers, they do demand examination in practice. In this issue, Vinker and colleagues[1] show considerable difference in the number of tests ordered by practitioners in Israel over a single year. A fourfold difference was found between locations in the rates of some testing.[1] But are practitioners who are doing more haemoglobin A1c (HbA1c) tests, or those doing fewer tests, practising more appropriately? Those wanting to reduce costs may push for the lower rates, but this should only be acceptable if that were also clinically appropriate. Unfortunately, for many of the common tests examined by Vinker *et al* the poor development of our research base in diagnostics does not give a firm foundation one way or the other.

If diagnostic research is weak, monitoring research is almost non-existent. It is therefore notable that several of the 10 most frequently used

tests were ones which are largely used for monitoring rather than diagnostics: cholesterol, HbA1c, prothrombin time (international normalised ratio [INR]), thyroid-stimulating hormone (TSH), and perhaps at least some of the urea level tests and full blood examinations.[1] Everywhere monitoring tests have become a major element of primary care and laboratory work.

So are we monitoring too much or too little? To be useful, a monitoring test must pass criteria similar to those for a good screening test, such as being sufficiently accurate, simple, and having effective therapeutic means to achieve targets that improve patient outcomes.[2] Unfortunately, we probably cannot fully answer this question at present.

In the few good monitoring studies conducted, there have been surprises. For example, Swan–Ganz catheters for monitoring pulmonary artery pressure have been standard practice in intensive care monitoring for decades, yet a pooled analysis of over 5000 patients in recent randomised trials showed no impact on either mortality or length of stay.[3] On the other hand, B-type natriuretic peptide (BNP), which has become important for the diagnosis of heart failure, may also be useful for monitoring. Two randomised trials showed reductions in hospitalisations from heart failure with BNP monitoring.[4,5] A meta-analysis of trials comparing self-monitoring of INR compared with usual care, showed not only that it was safe, but that it leads to a greater reduction in all cause mortality.[6]

The implications for UK patients are considerable. Chronic conditions account for 80% of GP consultations, and such visits usually involve interpreting a set of monitoring tests, and perhaps ordering some more. While this is a growing trend, the process has accelerated as many of the Quality Indicators for GPs in the UK have involved monitoring, for instance the targets and intervals of blood pressure, cholesterol, HbA1c, lithium, TSH, and forced expiratory volume in 1 second.

The costs of such monitoring and its related activity are substantial. For example, despite weak evidence for the effectiveness of self-monitoring in type 2 diabetes,[7] the costs of monitoring strips alone in 2002 in the UK was a staggering £118 million per year, which is larger than the expenditure on oral hypoglycemic agents.[8] Even when it is ineffective, patients may like the sense of 'success' that comes with monitoring, but may equally be anxious about 'failures', whether these are real or spurious.[9]

Despite our financial and emotional investment in monitoring, many patients are poorly controlled. For example, in a UK study undertaken prior to the new GP contract, only 14% of 21 024 newly diagnosed patients with hypertension met target blood pressure after 12 months,[10] and among treated patients about 40% of INRs were outside target ranges, compared with the ideal of 5%.[11]

The work by Vinker *et al* is a useful trigger to primary care and primary care research to focus attention on monitoring of long-term illnesses. With our ageing population, this will form an increasingly large part of practice. However, without a better understanding and evidence base for appropriate monitoring we may just waste our time and considerable resources needlessly chasing soft 'signals' (of true changes in health state) from the shrill 'noise' of measurement inaccuracy and random fluctuations. There is considerable scope for research and improvement in our use and interpretation of monitoring tests. However, the work needed cannot be done quickly. The required research will involve both the development of appropriate methods for evaluation of monitoring schemes, and the collection of primary data to develop and evaluate such schemes. To paraphrase an ecological mantra: 'The best time to start the study is 20 years ago, the second best time is today'.

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