appropriate for the setting is established, what makes a difference? Moving beyond the three Rs, what was the key aspect of this complex intervention and how did it work? Could the study effect sizes be explained simply by the setting and reassessment of personalised, realistic goals by practitioners? This is certainly congruent with evidence from psychology. Were patients who received the intervention more actively involved in their care, more satisfied, and more likely to adhere to medication than those in routine care? This would be congruent with evidence from trials of patient centred care.[10] Addressing these questions is challenging, particularly in the context of a pragmatic trial in primary care. Answers require precise measurement of variables along the causal pathway, relating to patients, practitioners, and the system.[11] These include knowledge, beliefs, and behaviours such as diet, physical activity, adherence to medication, and even participation in consultations. Application of approaches based on greater understanding of these wider mechanisms can be measured in terms of reduction in cardiovascular risk factors such as glycaemia and should not be underestimated.[12]

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The challenge of chronic conditions: WHO responds

The sooner governments act, the better

Education and debate p 990

Chronic conditions are expected to become the main cause of death and disability in the world by 2020,[1] contributing around two thirds of the global burden of disease with enormous healthcare costs for societies and governments.[2–4] These conditions include non-communicable diseases such as diabetes, chest and heart disease, mental health disorders such as depression, and certain communicable diseases such as HIV infection and AIDS. Mental health problems account for nearly a third of the chronic disability affecting the world's population now and comprise five of the top 10 causes of disability.[5] Yet many healthcare providers are ill equipped to manage chronic conditions effectively, and many governments cannot cope with the escalating disease burden and costs.

What can healthcare workers do? Firstly they can make better use of the resources already available, as several papers in this issue of the *BMJ* show. Healthcare providers can do more to engage patients in managing their own conditions and to use treatments properly: we know that most patients who do not adhere to treatment have poorer health outcomes.[6] In developed countries only around half of the people prescribed treatments for chronic conditions actually take their medicines.[7] For instance, hypertension affects 43-50 million adults in the United States, but only 51% of those treated adhere to their prescribed treatment.[8–10] Adherence is worse in poorer countries—in one study in the Gambia only 17% of people diagnosed as having hypertension were even aware that they had the disorder, and 73% of those prescribed treatment had stopped it.[11] The problem is so great that Haines et al have suggested that increasing the effectiveness of interventions to increase adherence to treatments may

Strategies to improve clinical care and outcomes for chronic conditions

- Develop health policies and legislation to support comprehensive care
- Reorganise healthcare finance to facilitate and support evidence based care
- Coordinate care across conditions, healthcare providers, and settings
- Enhance flow of knowledge and information between patients and providers and across providers
- Develop evidence based treatment plans and support their provision in various settings
- Educate and support patients to manage their own conditions as much as possible
- Help patients to adhere to treatment through effective and widely available interventions
- Link health care to other resources in the community
- Monitor and evaluate the quality of services and outcomes

These strategies are based on WHO's review of innovative best practice and affordable healthcare models

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have a far greater impact on health than further improvement in biomedical treatment.[7]

What should policymakers do? The real answer is that they should help to transform health care, moving away from systems focused on episodic care for acute illness. Some governments and healthcare systems are already making the switch. Cheah's paper in this issue describes how Singapore has recognised the growing burden of chronic disease and has begun to redesign its healthcare system to meet people's long term needs (p 990).[12] To help healthcare systems around the world to innovate and change in this way, the World Health Organization has launched a project—"Innovative Care for Chronic Conditions"—to analyse and help to disseminate examples of good, affordable care for people with chronic conditions. The strategies arising so far from WHO's review (see box) will be developed further and published soon, giving concrete recommendations for governments and healthcare systems. A wide range of the world's healthcare leaders and policymakers are being consulted by WHO as part of this project, and we would be pleased to hear from *BMJ* readers too. In the meantime, the policymakers and healthcare leaders who met at WHO headquarters in May 2001 have come to several conclusions. Firstly, it is clear that no nation will escape the burden unless its government and healthcare leaders decide to act: the prevalences of all chronic conditions are growing inexorably and are seriously challenging the capacity and will of governments to provide coordinated systems of care. Secondly, the burden of these conditions falls most heavily on the poor. Thirdly, unidimensional solutions will not solve this complex problem: health status and quality of life will not be improved solely by medication and technical advances; and thus healthcare systems will have to move away from a model of "find it and fix it." Lastly, these solutions cannot be delayed—the sooner governments invest in care for chronic conditions, the better.

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Improving outcomes in depression

The whole process of care needs to be enhanced

Around 450 million people worldwide have mental or psychosocial problems, but most of those who turn to health services for help will not be correctly diagnosed or will not get the right treatment.[1] Even those whose problems are recognised may not receive adequate care. In a World Health Organization study of psychological disorders in general health care carried out in 14 countries around the world patients with major depression were as likely to be treated with sedatives as with antidepressants, although antidepressants were associated with more favourable outcomes at three month follow up. This benefit had dissipated by follow up at 12 months; but patients had only been taking drug treatment for a mean of 11 weeks, with a quarter of them doing so for less than a month.[2] About two thirds of patients whose illnesses were recognised and treated with drugs still had a diagnosis of mental illness at follow up one year later, and in nearly a half the diagnosis was still major depression. Indeed, there are no observational studies of routine care for patients with major depression in the United Kingdom or in the United States that have found most patients to be receiving care consistent with evidence based guidelines.

Improving outcomes for patients with major depression is not as simple as prescribing a new treatment: the whole process of care needs to be enhanced. This requires changes in the organisation and function of healthcare teams, like those already being used to improve outcomes in other chronic diseases.[3] Responsibility for active follow up should be taken by a case manager (for example, a practice nurse); adherence to treatment and patient outcomes should be monitored; treatment plans should be adjusted when patients do not improve; and the case manager and primary care physician should be able to consult and refer to a psychiatrist when necessary.[4 5]

Change is hard work for overtaxed healthcare teams, and many might be tempted to adopt quality improvement strategies that are quick and easy. Such strategies do not usually work, however, as single initiatives. Ineffective interventions include distribution of guidelines;[6] education for doctors and nurses that does not increase their skills or change how the healthcare team works; feedback reports on indicators of quality of care; and stand alone screening programmes. Each of these steps might be useful as part of a comprehensive programme to change the management of

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