short term follow up. The impacts of current patterns of use must await further studies. When women and men make their sexual and reproductive choices, and when physicians give their advice, they are interested in all potential consequences, not only breast cancer. Case-control studies cannot provide data on more than one outcome, and we must therefore wait for a systematic review of cohort studies comparing all relevant health effects of oral contraceptives with those of alternative forms of contraception. The results of this review have put one piece of the family planning puzzle into place, but many other pieces remain missing.

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1 Collaborative Group on Hormonal Factors in Breast Cancer. Breast cancer and hormonal contraceptives: collaborative reanalysis of individual data on 53 297 women with and 100 239 women without breast cancer from 54 epidemiological studies. *Lancet* 1996;347:1713-27.
2 Hemminki E, Sihvo S. A review of postmenopausal hormone therapy recommendations: potential for selection bias. *Obstet Gynecol* 1993;82:1021-8.
3 Dillner L. Controversy rages over new contraceptive data. *BMJ* 1995;311:1117-8.
4 Rimpelä A, Rimpelä M, Kosunen E. Use of oral contraceptives by adolescents and its consequences in Finland 1981-91. *BMJ* 1992;305:1053-7.
5 Gissler M, Rasimus A, Ritvanen A, Toukomaa H. *Reproduction and its trends.* SVT Health 1996;2:19.
6 Ranstam J, Olsson H. Oral contraceptive use among young women in southern Sweden. *J Epidemiol Community Health* 1993;47:32-5.
7 McPherson K. Breast cancer and hormonal supplements in postmenopausal women. *BMJ* 1995;311:699-700.

Guidelines for managing raised blood pressure

Evidence based or evidence burdened?

See p 93

Randomised controlled trials have consistently shown that lowering blood pressure by about 10-12 mm Hg systolic and 5-6 mm Hg diastolic reduces the relative risk of stroke by about 40% and of coronary disease by about 15%.[1] This relative reduction in risk is similar whatever the blood pressure before treatment and the absolute risk of cardiovascular disease. Moreover, the reduction in risk occurs surprisingly quickly; the average time from the start of treatment to a significant impact on major cardiovascular outcomes is only about two and a half years.

This convincing evidence of a large and rapid relative benefit from treatment has led national and international bodies to recommend that a substantial proportion of adults be considered for long term drug treatment. In 1993 at least one international and three national guidelines on managing raised blood pressure were published.[2-5] All were based on the same data, yet when Fahey and Peters (p 93) applied the various guidelines to a typical population of patients treated for hypertension in British general practice, only about a third of the patients met the treatment criteria of all four guidelines.[6]

The authors of all of these guidelines (including one of us, who played a role in the New Zealand guidelines) did their best to make them evidence based. However, we would suggest that the guidelines overemphasise clinically inappropriate relative measures of the benefits of treating raised blood pressure.

The movement towards evidence based medicine was in part stimulated by the observation of substantial variations in medical practice; Fahey and Peters have now shown similar variations in current guidelines for managing raised blood pressure. Evidence based medicine is "the conscientious, explicit, and judicious use of current best evidence in making decisions about the care of individual patients"[7] and involves integrating the best external evidence with individual clinical expertise. The best evidence is defined as clinically relevant research, "especially patient centred clinical research into the accuracy and precision of diagnostic tests, the power of prognostic markers, and the efficacy and safety of therapeutic, rehabilitative, and preventive regimens."[7] Evidence based decisions should also be mindful of competing claims on resources. We would suggest that guidelines should provide the necessary evidence based data to empower clinicians to make informed decisions. One of the most helpful tools that integrates the evidence with clinical expertise is the use of "numbers needed to treat to prevent an unwanted event or cause an unwanted side effect."[8 9]

Calculating the number needed to treat requires the integration of external evidence (on the accuracy of diagnosis, the absolute risk before treatment, and the relative benefit of intervention) with clinical expertise in the form of judgment on the applicability of the external evidence to specific patients. We think that clinicians practising evidence based medicine should also explicitly consider the resource implications of their decisions (the cost effectiveness) at least at the level of their individual practice.

All the guidelines referred to above deal appropriately with the evidence from randomised controlled trials by examining overviews of the data, which have generally provided estimates of relative risks and benefits of treatment.[1 10] However, we suggest that, for them to guide evidence based clinical care, they need to include information on the absolute risks and benefits of interventions, as recently reported by Mulrow *et al.*[11] Although all the guidelines acknowledge the importance of the pretreatment prognosis in determining the absolute benefits of treatment, only one of the guidelines provides the necessary information to enable clinicians to estimate the expected event rate for patients and the appropriate numbers needed to treat.[2] Moreover, although all of the guidelines mentioned the importance of cost effectiveness, none provided doctors with the information needed to estimate the absolute (rather than relative) cost effectiveness of a treatment. Given that the absolute benefits and risks of treatment (however weighted by the values and resources of patients, practitioners, or payers) are crucial for making informed decisions,[12] we suggest that the current guidelines have failed to provide all the evidence necessary for clinical decision making.

All four guidelines suggest threshold levels of diastolic blood pressure above which treatment should be started in all middle aged patients if the levels are sustained after non-pharmacological treatment. Three different threshold levels are recommended: 90 mm Hg,[3] 95 mm Hg,[5] and 100 mm Hg.[2 4] Three of the guidelines do not provide any explicit information, such as the number needed to treat or its precursors, to justify the threshold levels for treatment.

If we combine estimates of prognosis, based on data from cohort studies,[13 14] with estimates of the relative benefits of a reduction in diastolic blood pressure of 5-6 mm Hg, based on data from trials,[1] it is possible to calculate numbers needed to treat that are relevant to individual patients. For example, for a 60 year old male smoker with a pretreatment diastolic blood pressure of 90 mm Hg, a ratio of total cholesterol to high density lipoprotein cholesterol of 6.5, and a normal electrocardiogram, the number needed to treat for one year (to prevent one major cardiovascular event) would be 75. In comparison, it would be 320 for a non-smoking 50 year old woman with a considerably higher diastolic blood pressure (100 mm Hg), a

ratio of total cholesterol to high density lipoprotein cholesterol of 5, and a normal electrocardiogram. These differences in the number needed to treat reflect the major influence of cardiovascular risk factors other than raised blood pressure on prognosis [12-14] and therefore on the absolute benefits of treatment.

Developers of guidelines, ourselves included, have been overburdened by evidence which gives undue emphasis to the relative risks of raised blood pressure and the relative benefits of reducing blood pressure. We think it is time to consider basing guidelines explicitly on clinically more useful absolute measures of the effects of treatment. Indeed, we suggest that the clinical credibility and success of the guidelines process depends on it.

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1 MacMahon S, Rogers A. The effects of antihypertensive treatment on vascular disease: re-appraisal of the evidence in 1993. *Journal of Vascular Medicine and Biology*1993;4:265-71.
2 Jackson R, Barham P, Maling T, MacMahon S, Bills J, Birch B, *et al.* The management of raised blood pressure in New Zealand. *BMJ* 1993;**307**:107-10.
3 Joint National Committee on Detection Evaluation and Treatment of High Blood Pressure. The fifth report of the Joint National Committee on Detection, Evaluation, and Treatment of High Blood Pressure (JNC V). *Arch Intern Med* 1993;**153**:154-83.
4 Sever P, Beevers G, Bulpitt C, Lever A, Ramsay L, Reid J, *et al.* Management guidelines in essential hypertension: report of the second working party of the British Hypertension Society. *BMJ* 1993;**306**:983-7.
5 Subcommittee of WHOASH Mild Hypertension Liaison Committee. Summary of the World Health Organisation-International Society of Hypertension guidelines for the management of mild hypertension. *BMJ* 1993;**307**:1541-6.
6 Fahey TP, Peters TJ. What constitues controlled hypertension? Patient based comparison of hypertension guidelines. *BMJ* 1996; **313**: 93-6.
7 Sackett DL, Rosenberg WMC, Gray JAM, Haynes RB, Richardson WS. Evidence based medicine: what it is and what it isn't. *BMJ* 1996;**312**:71-2.
8 Laupacis A, Wells G, Richardson S, Tugwell P. Users' guides to the medical literature. V. How to use an article about prognosis. *JAMA* 1994;**272**:234-7.
9 Cook RJ, Sackett DL. The number needed to treat: a clinically useful measure of treatment effect. *BMJ* 1995;**310**:452-4.
10 Collins R, Peto R, MacMahon S, Herbert P, Fiebach NH, Eberlein KA, *et al.* Blood pressure, stroke, and coronary heart disease. Part 2: short-term reductions in blood pressure: overview of randomised drug trials. *Lancet* 1990;**335**:827-38.
11 Mulrow CD, Cornell JA, Herrera CR, Kadri A, Farnett L, Aguilar C. Hypertension in the elderly. Implications and generalizability of randomised trials. *JAMA* 1994;**272**:1932-8.
12 Alderman MH. Blood pressure management: individualised treatment based on absolute risk and the potential for benefit. *Ann Intern Med* 1993;**119**:329-35.
13 Anderson KM, Wilson PWF, Odell PW, Kannel WB. An updated coronary risk profile. A statement for health professionals. *Circulation* 1991;**83**:356-62.
14 Wolf PA, D'Agostino RB, Belanger AJ, Kannel WB. Probability of stroke: a risk profile from the Framingham study. *Stroke* 1991;**22**:312-8.

Extreme poverty: an obligation ignored

Breaking the cycle between poverty and ill health needs multisectoral action

The world's biggest killer and the greatest cause of ill health and suffering across the globe is listed almost at the end of the International Classification of Diseases. It is given code Z59.5—extreme poverty.[1]

Extreme poverty is defined as a level of income or expenditure below which people cannot afford a minimum, nutritionally adequate diet and essential non-food requirements.[2] The effects of poverty on health are never more clearly expressed than in poor communities of the developing world. The absence of safe water, environmental sanitation, adequate diet, secure housing, basic education, income generating opportunities, and access to health care act in obvious and direct ways to produce ill health, particularly from infectious disease, malnutrition, and reproductive hazards.[3]

Today the number of people in extreme poverty is estimated at 1.1 billion—a fifth of the world's population. The wealthiest fifth of the world's population now controls 85% of global gross national product and 85% of world trade, leaving the poorest quintile with 1.4% of gross national product and 0.9% of world trade.[4] This extraordinary gap continues to widen, to an extent that human poverty has now become institutionalised on an unprecedented scale.

In real terms, poverty is the principal cause of the 12.2 million deaths a year in children under 5; 4.1 million of these deaths arise from acute lower respiratory tract infections and a further 3 million from diarrhoea and dysentery.[1] Malnutrition is estimated to be an underlying cause in 30% of child deaths and is overtly expressed as growth retardation in 230 million children and severe wasting in 50 million children.[1] In adults, poverty accounts for much of the annual 2.7 million deaths from tuberculosis and 2 million deaths from malaria.[1] Maternal mortality is strongly associated with high fertility and lack of access to health services and causes a further 500 000 deaths a year, with their associated impact on surviving offspring.[1] The scale and persistence of these problems, despite global immunisation levels of around 80% and a gradual improvement in life expectancy in most countries,[1] is a blunt reminder of an obligation ignored.

At country level, the World Health Organisation has traditionally been obliged to operate strictly within the health sector and through the highly centralised administrations and rigid bureaucratic systems that characterise most poor countries. But poverty alleviation requires a multifaceted approach, generated by the community itself and integrating inputs from different sectors such as public works, housing, agriculture, and education. It also requires long term commitment to community development through social organisation, needs assessment, political engagement, skills training, and resource mobilisation. Such a process may require support for up to 20 years to become sustainable. To respond to these new operational requirements, WHO established the Division of Intensified Cooperation with Countries in 1989, to focus on health policy development, systems planning and management, and health care financing. Most importantly it undertakes to coordinate and manage external aid flows for health in some countries. On an annual budget of $18m it works closely with more than 30 of the world's poorest countries

In developing its long term strategy to combat poverty, the new division recognised that non-governmental organisations, both national and international, had a long record of successful experience. It therefore organised a series of consultations with groups of non-governmental organisations to inform its planning process and strengthen its operational links with these agencies. The third of these meetings was cosponsored by the Irish government and took place last month in Maynooth, Ireland. It was attended by a range of non-governmental organisations operating in sub-Saharan Africa: Concern Worldwide, Médecins Sans Frontières, Medicus Mundi International, Oxfam, Save the Children, Trocaire, World Council of Churches, and several other international and national agencies.

The meeting focused on the role of non-governmental organisations in stimulating community based health initiatives, on the need to think and act multisectorally, and the importance of long term commitment by donors. It closed on the need to engage world attention at the end of the