A 54-year-old woman sees a primary care physician with the results of blood tests done at her local pharmacy. All were normal except that her cholesterol level was found to be “marginally high” when checked against the normal values for the local laboratory. Should the physician prescribe a lipid-lowering agent? Would the benefit of this prescription be to the patient or to society?

The case described above represents a possible conflict between the responsibilities to the individual person and the wider responsibilities physicians have to the larger population. Even if there are possible benefits for the individual, how does this balance relate to improving the health of the whole community (see box)?

**METHODS**

We take readers through a process of making clinical decisions. We are an interdisciplinary team from public health, general practice, ethics, and public policy. This article is based on clinical experience and material gathered for a variety of courses written for universities in the United Kingdom, Australia, and the United States.

In the first part, we used the above case scenario to explore the process by which physicians can judge the benefit of a treatment to an individual patient. In this second part, we consider how physicians can judge the benefit of this treatment to society as a whole.

**Questions that arise in judging benefits to the individual and the community**

**Judging the benefit to the individual**

- How much is the possible benefit?
- What is the cost, and on whom does it fall?
- Does the benefit outweigh the cost?

**Judging the benefit to the community**

- How much is the possible benefit to the population?
- What are alternative uses of resources for a similar or greater benefit?
- How does one make the choice?

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**Summary points**

- Many apparently simple clinical decisions may have wider implications for the community
- Analyzing the cost-benefit of decisions needs to take in many diverse factors
- Tensions can exist between primary care and public health types of evidence and actions
- Although pharmaceutical solutions tend to dominate current medical practice, other solutions may be more effective
- “Ordinary people” may find it hard to take part in those decisions that affect them as individuals and as part of a community

**JUDGING THE (PUBLIC HEALTH) BENEFIT TO THE COMMUNITY**

How much is the possible benefit to the population?

Rose forcefully put the case that more benefit will be gained by shifting the mean value of the entire population (in this case, cholesterol level) than by case finding and treating persons who have high values. Among the women who might benefit from the treatment, maybe only half will actually take it. Extending the calculation of the number needed to treat to take this into account produces a new statistic, the disease impact number, which is the number of people with the “disease” (here high cholesterol levels) among whom 1 event will be prevented. This reduces the possible benefit and provides the information that a policy of treating women with high cholesterol levels would result in preventing 1 coronary event among more than 6,000 women with high cholesterol levels (27,000 for 1 life saved) (table). An extension to the population as a whole through the population impact number takes into account the proportion of the population with high cholesterol levels (here estimated as 25%) and gives figures of needing 26,667 women to prevent 1 coronary event, or 110,351 women to prevent 1 death.

For each general practitioner with a list of 2,000 people, the annual cost of prescribing statins alone depends on the age structure of the people on the list, the first-line drug chosen, and the level of possible risk at which the decision is taken to treat. If all people thought to “need” medication at the level determined by the UK National Service Framework (14% of the population)
were treated, then the drug bill for each physician has been calculated at between £31,000 and £52,000 ($44,020 and $73,840). The cost of drug treatment per coronary event prevented would be between £27,699 and £33,661 ($39,333 and $47,799), depending on the drug chosen. Although these figures are totals that include both men and women and have not allowed for reduced compliance with medication, the figures indicate the magnitude of cost associated with prescribing medication. If the level of treatment of cholesterol was set at the level of coronary heart disease risk (CHD) treated in the Air Force/Texas Coronary Atherosclerosis Prevention Study, then the drug bill for statins at the primary care level would be even higher. The organizational implications of screening and then treating all men and women who have high cholesterol levels is also considerable, and on a national level, the total costs begin to look daunting. As Yeo and Yeo state:

If every patient who needs a statin for CHD prevention is treated, the annual national drugs bill [in the United Kingdom] for statins could approach £1 billion [$1.4 billion for the population of the United Kingdom, or about $6.7 billion for a population the size of the United States].

Alternative uses of resources for a similar or greater benefit

In terms of population benefits, more is gained from a policy of treating people who have already had a heart attack—secondary prevention requires fewer people to be treated to save 1 life (the baseline risk is much higher because 1 event considerably increases the risk of a second one). There are alternative ways of preventing heart disease, such as treating hypertension, following a low-fat diet, stopping smoking, and using aspirin and β-blockers in secondary prevention, that may be more cost-effective than the use of statins. Women who adhere to lifestyle guidelines involving diet, exercise, and abstinence from smoking have a low risk of CHD. According to Stampfer et al (1993), eighty-two percent of coronary events in the study cohort [82,129 women] could be attributed to lack of adherence to this low-risk pattern (nonsmoking, moderate exercising, etc).

Other ways of spending the annual £1 billion ($6.7 billion in the United States) might have a greater effect on the overall health of the public than prescribing statins. The role of the nation’s diet seems crucial because eating more fresh fruit and vegetables is associated with a lower risk of CHD and stroke. Translating this to general effects of diet and CHD has been attempted, and there has even been some suggestion of using differential taxation to stimulate the consumption of fruit and vegetables. Similarly, a wealth of evidence details the health benefits of regular exercise at all ages. Recent evidence points to a specific decrease of CHD risk with increasing physical activity as long as it is vigorous and accumulative.

In the United Kingdom, pragmatic guidelines exist for individualized treatment, such as the Sheffield tables. More systematically, the National Service Framework (NSF) for Coronary Heart Disease attempts to standardize the prevention and treatment of CHD on evidence-based research. Pittard, quoted in Greener, makes the point that the NSF is unlikely to address the socio-economic determinants of CHD:

Lower socio-economic groups have 3 times the rate of CHD. But we could be in danger of treating the worried well...those who need the test (for raised cholesterol) won’t have it. We’ll miss the highest risk group.

The tendency for those who need preventive care the least to seek it the most is one of the weaknesses of taking a 1-at-a-time approach to patient care. There are 3 levels of thinking and action: treating individuals purely as individuals, treating them as members of a group, and treating communities without specific attention to the individuals within them. For physicians, the distinction is between acting in the public interest on a succession of persons versus intervening on communities—as with radio and television advertisements and community campaigns. Trying to prove the effectiveness of community-wide or public health interventions is much more complex than attempting to discover whether a particular medicine does what it claims to do. Certainly when databases are searched to accumulate evidence for the value of community interventions, rigorous evidence from randomized controlled trials is often not available. The vested interests of drug companies are naturally focused on pharmaceutical solutions to common problems, and public health interventions cannot be expected to produce results within the short time scales of randomized controlled trials of drugs. As Garattini and Liberati put it:

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Measuring the community benefit of prescribing lipid-lowering agents

<table>
<thead>
<tr>
<th>Variable</th>
<th>Any CHD event</th>
<th>Death from CHD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline risk</td>
<td>1/1,000/yr</td>
<td>2.5/10,000/yr</td>
</tr>
<tr>
<td>% Reduction in risk</td>
<td>30</td>
<td>29</td>
</tr>
<tr>
<td>Disease impact number*</td>
<td>6,667</td>
<td>27,586</td>
</tr>
<tr>
<td>Population impact number†</td>
<td>26,667</td>
<td>110,351</td>
</tr>
</tbody>
</table>

CHD = coronary heart disease.
*The number of people with the “disease” (here high cholesterol) among whom 1 event will be prevented, assuming 50% compliance.
†The number of people in the population (here women of this age) among whom 1 event will be prevented, assuming 25% of women have “high” cholesterol levels.
It is unfortunate that the industrialized countries, especially in Europe, have delegated the control of drug trials to pharmaceutical companies. We are not suggesting that the industry is wicked... nevertheless, delegating this responsibility places clear limitations on research, and these seem to be growing.

Certainly the large amount of money spent on medication to reduce cholesterol levels is not matched by spending on community-based or public health initiatives that may well have a similar or greater effect.

How does one make the choice? And who should make the choice? What mechanisms are there for including the population at risk, for example, in making the decision about the best way to spend “their” money? The use of “citizen juries” or health impact assessment to examine the outcome of health-related policy and the forthcoming Primary Care Trusts in the United Kingdom could be mechanisms for including the public in policy deliberations. In this article, we have exposed some of the tensions between the physician’s duty to individual patients and public health responsibilities. However, in outlining some of these tensions, we have become aware of several issues.

Do physicians have a dual responsibility, both to the individual patient they are seeing and to the wider population? Physicians historically seem to have developed a more complete allegiance to individuals, possibly at the expense of other individuals and even when the pursuit of the best for each person may result in an erosion of care for everyone, ultimately including that individual person.

The nature and scope of this discussion have been technical. How are ordinary members of the public to become involved in issues and decisions such as those outlined?

Whereas we have spoken of “public” health, the voice and presence of members of the public have been largely absent. This raises the issue of participation in important decisions that are often taken behind closed doors by “experts.” There is always a danger that proper moral and political dimensions to discussions about public health decisions will be lost when issues are construed as only technical. The ethical ramifications of being an agent for both individuals and society deserve to be developed more and will be explored in further publications.

The debate about public health measures and decisions in developed countries such as the United States or the
United Kingdom may be parochial. Should this kind of discussion be framed within a discussion about global health? There are profound issues of justice and responsibility here, as well as about the nature and extent of the “public” realm. Does this include only citizens of the developed countries?

Lying behind these and other points are basic questions of the nature and identity of clinicians and public health practitioners; the scope of their responsibility; and the need for them to have a proper, articulated sense of accountability to the individuals and communities they claim to serve. If public health awareness and decision making are to justify the adjective “public,” public health practitioners need to think more carefully about how the individuals and groups who comprise the public sphere are to participate in its processes more effectively. At present, the evidence that weighs with clinicians and epidemiologists in decision making is largely opaque to the laity in whose interests it is amassed and used.

RETURNING TO THE CLINICAL SCENARIO

What should be done about the woman mentioned at the beginning of this article and her “high” cholesterol? In these 2 articles, we have tried to open up the debate and to suggest a variety of ways of considering the situation.

We hope that they have made readers think that the simple application of guidelines or protocols cannot produce the answers and that more questions need to be considered. For patients, as individuals, various concerns and deliberations need to be made. For us all, as members of a wider community and as part of a global community, the answers are not straightforward. Clearly, unless both public and personal dimensions of practice can be brought into a more creative, realistic focus, both the public and individuals may lose out or be diminished.

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References