All together now: why social deprivation matters to everyone

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Inequalities in health in the United Kingdom are widening as a result of economic policy. By focusing on specific diseases, health policy fails to address why less prosperous groups die earlier from most major categories of death. By concentrating on actions which can be taken by individuals and local communities health policy ignores actions which require the support and involvement of society as a whole. Clinicians see the consequences of health and economic policy in their everyday practice and could contribute more effectively to public debate. There is a crying need to improve public and professional understanding of the links between health, education, and economic policy and the consequences for everyone of the increasing social and economic exclusion of a substantial proportion of the population.

"Alcoholics, drug addicts, rioters, vandals and criminals, the obese, the handicapped, the mentally ill, the poor, the homeless, the unemployed and the hungry, whether close at hand or in the Third World—all these are seen as problem groups, different and separate from the rest of their society," wrote the late Geoffrey Rose.¹ Writing on the epidemiology and prevention of health and social problems, Rose likened these problems to the tips of icebergs, commenting that the visible tip could be neither understood nor properly controlled if it were seen as the whole problem.

The visible tip of the iceberg, or prevalence, is a function of its total mass, which is determined by the population average. Rose argued that a population strategy to sink the iceberg rather than to attack its tip is necessary whenever risk is widely diffused throughout a population.²

We are familiar and comfortable with this argument in relation to variables such as blood pressure,³ cholesterol,⁴ and alcohol.⁵ Less familiar is the iceberg effect which determines the higher prevalence of depression and other mental health problems in areas of socioeconomic deprivation.¹ The general prac-

itioner in such an area knows he or she is hard worked but, without epidemiology, may not appreciate the extent to which that workload is socially patterned.^{6,7} Clinical initiatives such as the "Defeat depression" campaign^{8,9} can help to identify and treat the tip of the iceberg but do not address the fundamental problem.

General practice in deprived areas

"When sorrows come, they come not single spies but in battalions." Hamlet's predicament is that of primary care in deprived areas, where health and social problems within families are characterised by their number, severity, and complexity. Consultation rates are higher and consultation times shorter.^{10,11} Within each consultation there is a crowded potential agenda of the presenting complaint, the patient's understanding and way of coping, other continuing problems, and opportunities for health promotion.¹² Deprivation payments recognise the difficulty of reaching health promotion targets in these areas but do not address the basic problem.^{13,14}

The inverse care law is not a relic from the past.¹⁵ It represents the continuing truth that progress is most difficult in areas where patients and their doctors are hard pressed. The recent review of evidence for effective NHS interventions in such areas is doubly perverse¹⁶: firstly, because evidence based medicine from randomised controlled trials is least likely to emerge from areas of socioeconomic deprivation, and, secondly, because in these areas health is not something that the NHS can readily produce. Rose argued that the primary determinants of disease are economic and social, and therefore, that its remedies must also be economic and social.¹ "Medicine and politics cannot and should not be kept apart."

A tale of two cities

This issue is illuminated by a comparison of mortality rates in Scotland's two largest cities. Coronary mortality rates are over 40% higher in Glasgow than in Edinburgh for men and women.¹⁷ Comparing risk factors shows that cholesterol concentrations are higher in Edinburgh, as is the prevalence of type A personality behaviour.^{18,19} Edinburgh people are slightly taller and thinner and have slightly lower blood pressures and alcohol intakes. There is no difference in exercise but substantial differences in smoking behaviour and differences in the consumption of fruit and vegetables.

On this basis there is good reason for health policy to target coronary heart disease and to base prevention initiatives on diet and smoking.²⁰ This, however, is only a partial explanation of and solution to the problem of higher coronary mortality in Glasgow.¹⁹

The difference in coronary mortality is part of a difference in mortality from all major causes of death.²¹ By focusing on specific diseases health policy does not address the fundamental question of why some groups of people die earlier from most major categories of death. It is age of death, not cause, that counts.

Why are the 690 000 citizens of Glasgow likely to die four years earlier than the 430 000 citizens of Edinburgh?¹⁷ For the same reason that people in the most deprived areas of Glasgow die 10 years earlier

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The citizens of Edinburgh live on average four years longer than those of Glasgow...

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... But even among Glaswegians, those in the poorest areas die 10 years earlier than their more affluent neighbours

than people in its affluent suburbs.^{22 23} Comparing rich with rich and poor with poor shows little difference between the cities. It is not that there is no poverty in Edinburgh or affluence in Glasgow. It is that the cities reflect greatly contrasting balances of affluence and poverty within their populations. Comparison of their mortality rates provides an unusual window on a social phenomenon, which is usually hidden from view by the convention of reporting official data for opaque, heterogeneous aggregates such as health or local authority districts.²¹

Why do Glaswegians die earlier?

On taking a longitudinal view it is apparent that the differences in disease specific and all cause mortality between the cities have been determined early in life.¹⁷ The cities differ little in the rates at which mortality increases with age. The important factor is the difference in death rates which have been established by early adulthood in successive generations of citizens for at least the past 60 years. In detecting the health problems of people in middle age we are seeing in part the long term consequences of the circumstances in which they were born and brought up as children.

This pattern fits the Barker hypothesis,²⁴ and, indeed, the hypothesis is important, but its biomedical focus is misleading. At some stage the single strands of explanation linking factors in early life to coronary heart disease, bronchitis, diabetes, and other diseases must be woven together in a more coherent explanation of why short people have short lives.

Implications for public policy

In a *Panorama* programme on poverty and ill health in Glasgow (BBC1, 13 February 1995), a government health minister suggested that the problem of inequalities in health was "too complex" to permit simple solutions. It is not, however, as complex as all that. While detailed explanations of social variations may require research, the broad picture is beyond dispute. By lacking an economic component the government's health policies have failed to address inequalities in health. At the same time the Government's economic policies have widened those inequalities.

The explanation underlying both failures is a refusal to recognise the relation between economic policy and health. Ministers denied that unemployment affected

health until research evidence made this assertion untenable.²⁵ A former minister of health, as chancellor of the exchequer, proposed an increase in value added tax on fuel.²⁶ The tax is still imposed on fuel. From the Black report onwards, ministers have consistently refused to recognise explanations of inequalities in health which are beyond the influence of individual behaviour.²⁷

The relation between income and mortality is continuous and does not flatten off above "a poverty line."²⁸ On average the differences in life expectancy between high income and middle income groups are as large as those between middle income and low income groups. Association does not prove causation but two recent "natural experiments" support a causal interpretation of the relation between income and life expectancy.

Firstly, within the European Union the largest recent increases in life expectancy occurred in societies which moved towards more equitable distributions of income.^{29 30} Secondly, there is the effect of recent economic policy in the United Kingdom.

THE UK EXPERIENCE

During the 1980s, particularly the latter half, income distribution in the UK widened substantially. The top 10% of earners were 60% better off at the end of the decade, while the bottom 10% stood still.^{31 32 33} At the same time the difference in mortality between rich and poor has widened^{34 35 36} within every age and sex group,³⁷ not because mortality rates in poor people are increasing (they are going down, except possibly in young men) but because mortality rates in affluent groups have fallen faster.³⁸

As a result of the redistribution of wealth within the UK a substantial minority of people has been excluded from the general prosperity which most enjoy.³⁹ Dying before your time is the ultimate social exclusion, but there are many less dramatic ways in which exclusion affects health, principally by putting people under stress, from difficulties in everyday living, and from the lack of hope and prospects. In young men we see rising suicide rates^{40 41} and increased levels of crime, drug misuse, and violence.⁴² Young mothers suffer high levels of mental stress and anxiety,⁴³ which in turn may affect the development of young children.^{44 45} Most worrying of all, the proportion of children being brought up in households dependent on income support, below the official poverty line, has tripled in the past decade.^{33 46 47 48}

Need for a population strategy

Rose's argument now poses a simple solution.¹ Where risk is distributed continuously throughout a population a population strategy is required to address the problem. Abolishing inequalities in health is a tall order, but a more immediate task is to reverse current trends.

Encouraging healthy individual lifestyles and empowering deprived communities are important, but the main solution to the problem lies in affluent areas.⁴⁹ Are people who gained economically during the 1980s prepared to forego further gains, or even to sustain personal financial loss, to help reverse the trends?

Tolstoy observed that there is little political mileage in policies to reduce personal advantage. "I sit on a man's back, choking him and making him carry me, and yet assure myself and others that I am very sorry for him and wish to ease his lot by all possible means—except by getting off his back." (*What then must we do?*) Dying prematurely gives rise to private grief, not public outrage.

There are two sets of reasons, however, why public opinion could and should be harnessed to address the

Social exclusion should be a bigger issue

problem of inequalities in health. Neither reason is obviously connected with health; both are concerned with the consequences of social and economic exclusion.³⁹

The consequences of exclusion

A negative impetus for change comes from consequences of economic exclusion that affect affluent groups directly. Begging is an example. When Margaret Thatcher reinterpreted the parable of the Good Samaritan for the benefit of the General Assembly of the Church of Scotland she emphasised the importance of the Good Samaritan having enough personal wealth to make charitable donations possible. A consequence of her policies has been to turn the Samaritan's dilemma into an everyday experience. Why, in one of the richest countries in the world, should the *Big Issue* (a weekly magazine sold by homeless people) be needed?

Personal safety is now a major concern. "If you listen hard in Scotland this weekend you will hear the sound of fear . . . the contented classes can look forward to a future under constant threat from the depredations of a growing underclass. These are the unskilled, unwaged, unmotivated members of society who can see no way out from poverty other than to burgle and rob their more prosperous neighbours."⁴⁰ To see the future, we need only look to the United States, where inequalities are wider and one half of society is frightened by the other.⁴¹

A more positive impetus for change is that self interest may be perceived as self defeating. The advantages of living in a cohesive society may outweigh those of living in a free market. People may value investment in public services such as health and education more than increases in disposable income. They may want to be shareholders in their communities rather than in privatised utilities, receiving dividends in kind rather than cash.

A good example is education. It is wasteful to have large numbers of children born and brought up to fail in the educational and economic system.⁵¹ If children's brains don't get "wired" in the preschool period—by good nutrition, frequent stimulation, and a supportive environment—they are less able to concentrate and more likely to miss out, first on educational and later on economic opportunity.⁵² At the age of 8 the best predictors of subsequent offending are hyperactivity, impulsivity and attention deficit, marital discord between parents, harsh or erratic parenting, and socioeconomic deprivation.⁴²

In the United States, as part of Lyndon Johnson's

Great Society programme, the High/Scope Perry preschool project randomised children living in poverty to a high quality, active learning preschool programme or a no programme group.⁵⁴ At the age of 27 those who had received the preschool programme had higher average earnings, a higher percentage of home owners, a higher proportion completing school, a lower percentage receiving social services, and fewer arrests. A dollar spent at preschool age earns \$7 for the economy later on.⁵⁵ We need to see the value to society of investing in human capital.⁵²

Inequalities in health cannot be addressed satisfactorily by focusing directly on disadvantaged groups. Important though such initiatives are, solutions require a broader approach in which people from all sections of the community are involved either directly or as taxpayers or supporters of particular policies. As in 1945, we have to decide the sort of society in which we want our children to grow up. If we share the resources of our country more fairly, we shall have a more cohesive society and reduce inequalities in health. It will not happen the other way round.

What is to be done?

Doctors have three potential tasks. Firstly, we should raise the level of debate about the health and social problems that are a consequence of economic policy. Geoffrey Rose has shown the way.

Secondly, we should draw attention to the relation between health and education, particularly to factors that influence whether children are emotionally and intellectually prepared for school. Health and education are necessary for economic progress—not simply something we can only afford when economic progress is made. Thirdly, we should take a moral lead as educators and advocates on the issue of social exclusion. Not only do we see its consequences every day in clinical practice, but we are the main professional group from the prosperous end of the social spectrum with intimate knowledge and experience of what is happening at the other.

Sigerist wrote, "The social causes of illness are just as important as the physical ones. The medical officer of health and the practitioners of a distressed area are the natural advocates of the people. They well know the factors that paralyse all their efforts. They are not only scientists but also responsible citizens, and if they did not raise their voice, who else should?"⁵⁶

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Grand Rounds—Hammersmith Hospital

A physiology classic revisited after 60 years

Goldblatt's "one kidney, one clipped" model of renovascular hypertension in a human

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Hypertension affects 10-15% of the population. Most cases (over 90%) are essential hypertension. Renovascular causes are the most common cause of secondary hypertension. In the first third of this century, Harry Goldblatt worked on the theory that all cases of raised blood pressure were secondary to renal ischaemia. He produced his classic work on renovascular hypertension in the early 1930s, based on animal experiments. The "one kidney, one clipped" model is unusual in clinical practice. It is compared to hypertension secondary to bilateral renal artery stenosis. We present an unusual sequence of events that recreates the classic model combined with a brief review of the revascularisation options.

Case report

A 47 year old woman presented to the accident and emergency department of this hospital complaining of six weeks of lethargy and a recently discovered large lump in her abdomen. In the past she had had migraine, which was treated with sumatriptan, and untreated labile hypertension. She was a non-smoker who drank alcohol occasionally. She had no relevant family medical history and no significant risk factors for vascular disease.

On examination, she was pale, thin, and afebrile, with a regular pulse of 80 beats/min, blood pressure 110/80 mm Hg, normal heart sounds, and a clear chest. A large mass was found in the left upper abdominal quadrant, which was painless, lobulated, and palpable

4-6 cm below the left costal margin. The rest of the clinical examination was unremarkable.

The investigations included a mild normochromic normocytic anaemia with a haemoglobin concentration of 96 g/l. The urea, creatinine, and electrolyte concentrations were normal. Ultrasound scans and computed tomograms showed a mixed density solid mass measuring 8 cm×9 cm×9 cm arising on the middle and lower thirds of the left kidney and extending anteriorly and inferiorly (fig 1). The patient was given a blood transfusion and then underwent a radical left nephrectomy and en bloc lymphadenectomy, with the unusual approach of combined thoracotomy and

Fig 1—Computed tomogram showing solid mass arising on middle and lower thirds of left kidney and extending anteriorly and inferiorly