Education and debate

Revolutions in public health: 1848, and 1998?

Christopher Hamlin, Sally Sheard

This autumn marks the 150th anniversary of the Public Health Act for England and Wales, the beginning of a commitment to proactive, rather than a reactive, public health. The act began a series of legislative measures extending through the Victorian era and into this century in which the state became guarantor of standards of health and environmental quality and provided means for local units of government to make the structural changes to meet those standards.

That public action can substantially improve the health of the general population now seems obvious, and it also seems obvious that public authorities owe their citizens that improvement. Both were controversial in the 1830s and 1840s. For centuries European governments had reacted to epidemics with decrees. With medical boards to advise them, they set their military forces to protecting borders and ports, whitewashed towns, fumigated dwellings, and burnt bedding. The threat of unusual disease prompted these reactions, and they were relaxed when the epidemics passed.[1] Normal disease—infant mortality of more than 50% in inner city wards, annual mortality of over 30/1000 in some towns—prompted no such reactions.

Unless we are familiar with some of the cities of the developing world, most of us are probably unable to fathom the enormity of the unplanned urbanisation of the 19th century: roughly 3 million people (slightly over 30%) were urban in 1801 in England and Wales, compared with 28.5 million (almost 80%) in 1901. Growth rates in some textile boom towns, like Bradford from 1811 to 1831, exceeded 60% per decade; this despite the fact that towns were acting as a sink for human life. In Liverpool average life expectancy by class ranged from 15 years for the unemployed or poor to 35 years for the well to do.[2–6]

Yet that growth was accompanied, if belatedly, by an urban sanitary revolution. Many of us are its beneficiaries. To facilitate the building of sanitary systems, especially water supplies and sewerage, was the main purpose of the 1848 act, but it also established local and central units of government that would take responsibility for health, at least for those aspects affected by the built environment. It represented a commitment to the long term, to be made not by sanitarian boffins in Whitehall but by more or less ordinary (though usually upper middle class) townsmen who were suddenly to be given powers to obtain 30 year mortgages for these networks of pipes.

Summary points

150 years ago the Public Health Act for England and Wales marked the start of a commitment to proactive, rather than a reactive, public health in which the state became guarantor of standards of health and environmental quality and provided means for local government to meet those standards

The driving force bechind the act, Edwin Chadwick, began inquiries into public health as a means of reducing the costs of public relief

The act that finally emerged was a stripped down version of the original proposal and concentrated on provision of a constant water supply and efficient removal of sewage

Although riddled with compromise one is now struck by the practical wisdom and revolutionary implications of the legislation

The recent green paper on public health, *Our Healthier Nation*, reflects the heritage of this legislation in seeing health improvement as a process involving central government, local communities, and individuals

Acknowledging a need for public health: the great sanitary inquiries

Among the hardest of a historian's jobs is to understand how people move from hope for a different future to practical actions that secure it. In public health, fear had a large part. So too did ambition and perseverance.

Edwin Chadwick was the widely hated architect and enforcer of the new poor law of 1834. Its principle was to make the conditions under which public relief could be given so unpleasant that most would refuse to request it.[7] Ever under pressure to cut costs, Chadwick began to focus on the causes of indigence: prevention was cheaper than relief. By 1838 he was looking mainly at one cause: acute infectious diseases that were fatal to male breadwinners, leaving families dependent on relief. These diseases, Chadwick insisted, had physical causes in poor urban drainage, which left towns

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covered in a residue of filth that contaminated the air in some ill defined way and caused disease.[8]

The focus on physical causes and acute disease was defensible but was also politically adroit, for it diverted attention from the claim of an increasingly vociferous group of medical men, many of them local poor law medical officers, that the harsh policies of the poor law were themselves the cause of much illness. The other half of the vicious circle—that deprivation might itself cause the disease that left so many dependent—Chadwick suppressed: if hardship produced illness, a poor law founded on disincentives to seek relief was counterproductive and morally indefensible.[9 10]

In autumn 1839, as a result of a request made in the House of Lords by the cooperative Bishop of London, Chadwick was charged with documenting the extent of those insanitary conditions and of the disease they presumably caused, and to explore remedies in policy and technology, initially in England and Wales and then in Scotland. Chadwick's superiors were happy to let him get on with the report; they found him impossibly inflexible as a policy administrator.

The grand report finally appeared in summer 1842.[3 10–13] It digested the returns of the vast staff of poor law officials and "eminent" urban medical men who had been persuaded to report on conditions in their towns. Its focus had broadened. It seemed that insanitary conditions caused social as well as biological disease, a psychological degradation that led desperate people to invest their hope in alcohol or, worse, in revolution. A public gift of good sanitation might be the key to a happy, healthy, and docile proletariat—a welcome prospect to a government that expected revolution daily. And it was a route to stability that seemed to interfere with none of the grand structures of incentives that political economists insisted must order society.[10]

Public Health Debates, 1847-8

On the background of legislation
"In consequences of these vast changes in the social condition of the country, large masses of the population were suffering irreparable injury from the want of proper sanitary precautions."
R A Slaney. *Hansard's Parliamentary Debates 3rd series, 96* 1848 Feb 10, 412.

On the epidemiology of sanitation
"'If you trace down the fever districts on a map, and then compare that map with the map of the commissioners of sewers, you will find that wherever the commissioners of sewers have not been, there fever is prevalent; and, on the contrary, wherever they have been, there fever is comparatively absent.'"
Lord Morpeth, quoting Thomas Southwood Smith. *Hansard's Parliamentary Debates 3rd series, 91* 1847 Mar 30, 621.

On the results of sanitation
"By such measures they would be able to change . . . the condition of large bodies of the population of great towns, and to make them contented and cheerful. "By a measure of this nature they would do much to increase the security of property."
R A Slaney. *Hansard's Parliamentary Debates 3rd series, 98* 1848 May 8, 770.

Sir Edwin Chadwick

NATIONAL PORTRAIT GALLERY

The man who revolutionised public health, Edwin Chadwick (1800-90), had no training in medicine or sanitary engineering or public administration. He trained as a barrister and solicitor, worked as journalist, and absorbed principles of public administration as a disciple of Jeremy Bentham.

As (initially) a junior member of the 1832 royal commission on the poor law, Chadwick transformed policy analysis: he documented conditions far more comprehensively than had his predecessors and, equally, was creative in discovering acceptable solutions to longstanding conflicts. He was the main architect of the new poor law of 1834 and, as its administrator, was said to be the most hated man in England. Issues of poor law administration led him into education and law enforcement as well as public health.

Chadwick's personality was his success and his undoing: he was tenacious in pushing a reform by all available means until action was taken, but he was overbearing and unresponsive to the views of others. He did not negotiate or converse but lectured at people, again and again, until they acted. With no faculty for accommodating differences of opinion, he failed as a practical politician, notwithstanding his ability as a political analyst. After his expulsion from the General Board of Health in 1854 he never again served in public administration.

Among the disease and degradation detailed in the report were sketches of a comprehensive solution. It would involve new technologies, particularly sewers (with egg shaped cross section to encourage self scouring), and new legal and administrative structures that would bring communities the expertise and authority needed to build these works. In spring 1843, at Chadwick's request and with Chadwick as a behind the scenes adviser, Sir Robert Peel's government issued a Royal Commission on the Health of Towns. Its tasks were to document the sanitary situation of 50 of the largest towns in England and Wales (London, recognised as a unique case, was left out) and to work out technical details. Dividing the territory into districts, the commissioners themselves visited towns to interview councillors and improvement commissioners and to administer the lengthy questionnaires that Chadwick supplied. They became convinced that much more could be done and that many towns were far too sanguine about the conditions they tolerated.

From inquiry to legislation

Even more important than the social and technical data it accumulated, the commission succeeded, remarkably quickly and comprehensively, in creating a will to act. An alternative was thinkable. The very exercise of local self scrutiny, in conjunction with a visit from a concerned, authoritative, and yet non-threatening official, allowed such an outlook to blossom. The commissioners often found more than good intentions—local efforts to build sewers, bring in water, regulate building, remove wastes, etc—but these

had been hampered by lack of money, expertise, or legal authority. When towns did act it was usually only to provide partial services: greatest need did not bring forth greatest action. As we reflect on the Victorian achievement in public health, it is easy to overemphasise the opposition of special interests and underemphasise the great gap between acknowledging a problem and solving it. If any specific proposal for change was likely to seem objectionable to someone, there was, none the less, a remarkable willingness to admit that serious problems existed and that change was both needed and possible: without that the changes would not have occurred.

In February 1845 the commission published its second and final report. It reiterated the need for public health reform, asserted in general terms the viability of Chadwick's technical solutions—universal constant water supply, networks of high velocity sewers, recycling of wastes—but gave only the broadest suggestions about what public policies would actually accomplish these ends.

And that, of course, was what vexed the drafters of legislation in the Tory government in the spring and summer of 1845. They were led by Lord Lincoln, member of the royal commission who was in charge of the Office of Woods and Forests, which was made the dumping ground for urban sanitation. There were, even to the iconoclast Chadwick, no clear answers to the problem of what legislative means would best achieve sanitary ends. Chadwick himself was seeking to privatise sanitation, promoting a Towns Improvement Company to raise capital to build the coordinated sanitary systems he had developed. The linkage of capitalism and urban improvement was not new; sanitation required capital, whether it came as shares of water companies or loans to public bodies. Surely, he argued, his efficiencies of system and scale would bring a surer and better return. But he was getting nowhere.

By midsummer Lincoln had a bill ready. It was too late for parliamentary action; he hoped only for comment. That he got, over 100 pages' worth, from the Health of Towns Association, a cross party organisation founded at the end of 1844 to lobby for comprehensive public health legislation.[14 15] The corn law schism of the Tory party and the Irish famine made progress impossible in 1846. A Whig version of the bill, developed by Lincoln's successor, Lord Morpeth, became fouled in detail in 1847. What passed in 1848 was a stripped down version.

Public health was not a party matter, nor was the need for comprehensive sanitary legislation controversial. But there were no models, no good way to choose among several defensible alternatives, and the legislation was necessarily complicated. In practice, everything was negotiable. The comments of the Health of Towns Association on Lord Lincoln's bill, together with parliamentary debates give us a sense of what was bewildering even for the proponents of public health.

It was evident to all that health improvement required effective working together of local and central units of government and experts. Because the focus was water and sewerage, Lincoln would define the administrative unit as a river basin and set up a group of commissioners in each. Because it was also integrated urban improvement, Morpeth would give responsibility to the newly reformed municipal corporation or some similar general unit, allowing that entity jurisdiction over surrounding areas, but only for drainage issues. There was much talk of who should initiate projects for sanitary improvement, who should plan them, who should carry them out, and who should confirm their adequacy. There was also the vexed issue of who should pay—occupiers, on the grounds that they were benefiting from a health giving service, or owners, on the grounds that sanitation was a capital improvement.

A compromise emerges

If central government were to become a guarantor of standards of health (well into 1848 most participants in the parliamentary debate assumed that would be the case), what part of central government should do that? Drawing on the model of prison administration, Lincoln and the Tories saw the Home Office or some other cabinet office as planning the needed works and enforcing standards. Influenced by Chadwick, Morpeth and the Whigs were wary of too much parliamentary accountability in technical matters. As models, they looked to the Privy Council (traditionally responsible for mobilisation against epidemics) or the Poor Law Commission—administrations independent of parliamentary interference.

Finally, in a campaign concerned mostly with improving public health through public works there was a question of what place medicine—a local medical officer of health—would have in sanitary reform.[10 16]

What emerged was a compromise. It was not, either at the time or in retrospect, an ideal law, or even probably the best that parliament in 1848 could have passed. Pressure on parliamentary time made it more important that the law was unobjectionable than that it was effective. Smoke prevention and insanitary burial

BAL/BIRMINGHAM MUSEUMS AND ART GALLERY

Adequate sanitation led on to other environmental changes—green spaces, better ventilation, and even better road surfaces. Detail from *Work* by Ford Madox Brown

Public Health Debates, 1847-8

Support for the bill
"I can assure hon. Members . . . if they read the accounts of the loss and waste of health, and life, and happiness and strength, which are going on—not within the portion of society possessed of the means of ease, or persons in the sphere in which we generally move, but persons whose lot is cast in hardships and privations—hardworking mechanics and labourers, living in toil and suffering—if hon. Members had the opportunities of ascertaining the sufferings of those persons from the want of sanitary regulations, they would not object."
Lord Morpeth. *Hansard's Parliamentary Debates 3rd series, 93* 1847 Jun 18, 738-9.

Opposition to the bill
"The people were clever enough to manage their own affairs" "There was a mania now for sanitary measures. In fact, there was an insanity in sanity."
A Muntz. *Hansard's Parliamentary Debates 3rd series, 93* 1847 Jun 18, 750.

grounds, both seen as important health problems, were jettisoned. Metropolitan London was left out, as it would require special legislation because of its size. Scotland and Ireland were left out, although it was appreciated that they suffered the same problems, because their laws and institutions for dealing with disease and welfare were too dissimilar from those in England. Following the precedent of Liverpool, which had hired Dr William Duncan as its medical officer of health through a private act, the 1848 act made such an appointment optional, though what such an officer was to do remained vague.[10 17]

To retain some independence from parliamentary interference, Morpeth bargained away most of the provisions to guarantee health. In the bill that finally passed, groups of ratepayers (at least 10%) could request a local board of health. If an inspector agreed that this was practicable the General Board of Health—initially Chadwick, Morpeth, and the evangelical social reformer Lord Ashley (soon to succeed as the seventh Lord Shaftesbury)—would set one up. Where mortality exceeded 23/1000 the General Board of Health could impose a board, but it was reluctant to do so without substantial local enthusiasm. For a town, the main benefit of adopting the act was that it acquired, far more cheaply and easily than by the alternative means of a private act of parliament, the legal powers to make itself healthier.

Partly because of Chadwick's reputation as a rigid enforcer of the poor law and partly because the great towns would tolerate no intermediary between themselves and parliament, many viewed the bill as punitive. Their concern was not mainly with the objectives of sanitary reform but with arbitrariness, inequity in rating, and unaccountability. Objections were directed as much against the technocratic approach of the Francophile Chadwick (who, everyone knew, would be the main person in charge) as at likely changes in local power relations. The critics were quite as afraid of what their neighbours would do with new powers as they were of a distant and dictatorial central government.

Under such pressures, the bills that Morpeth introduced in 1847 and 1848 changed in tone from forcing to facilitating. Unexpectedly, public health legislation had evolved into an instrument of local democracy. The new local boards of health had the opportunity to undertake a wide range of infrastructural reforms that would improve health but also make a community more attractive, efficient, and comfortable. They had strong powers to act summarily against nuisances. Long term loans allowed them to plan public works systematically instead of building them piecemeal out of annual income. In the name of efficiency and to protect ratepayers, their plans were subject to the General Board of Health's approval, and thus to Chadwick's sometimes heterodox views on sanitary technology. They could not discharge their surveyor, the executive officer the act obliged them to appoint, without permission of the general board—an unacceptable condition for some. In practice, however, they were free to follow their own agendas of health improvement. By 1854, when Chadwick was pushed out of power, over 300 towns had petitioned to adopt the Public Health Act, and it had been applied in 182. The board had sanctioned over a million pounds of loans for sanitary improvement.[18]

Not all adopting towns acted quickly or well in the pursuit of health. Chadwick's successors often found themselves cajoling, embarrassing, or threatening towns that persisted in tolerating unhealthy conditions. In the next half century the legislation of 1848 was much amended. Local governments acquired broader powers but also greater obligations. Local officials, including medical officers of health, became obligatory and their duties and qualifications more precisely defined. Particularly after passage of the great consolidating Public Health Act of 1875, much of what had been permissive became imperative.[19–21]

Building on the foundation of 1848

Historians' assessments of the Public Health Act of 1848 have changed over the years. A generation ago it was a courageous if flawed and tragic episode in the growth of comprehensive state responsibility. Now, in an age of devolution and of public participation in health improvement, one is struck by the practical wisdom and revolutionary implications of legislation so riddled with compromise. *Our Healthier Nation*, the government's recent green paper on public health, reflects the heritage of Victorian public health legislation in seeing health improvement as an ongoing process involving central government, local communities, and individuals.

In matters of environmental health and the fight against many epidemic infectious diseases, the legislative tradition that the act of 1848 began was a successful, if gradual, working out of the dynamics of that interaction. If central government could not create health, it could enforce standards and could, through legal, financial, and technical structures, facilitate and guide the local self determination that would improve health. In the years after 1848 sanitation served as a mobilising motif for a whole series of changes. After 1858 the local boards of health simply became "local boards," responsible for local government in general. Yet a close link between local government and responsibility for health remained. Nudged on by Chadwick, and by the epidemiologists, planners, and engineers who were his successors, local boards achieved not only the set of environmental technologies that we now regard as adequate sanitation—good water and safe and effective means of disposing of wastes—but other environmental changes such as green spaces, better

ventilation of dwellings and streets, and even better road surfaces. Had one asked a medical practitioner in the 1830s whether these changes would benefit health, the answer would have been yes; yet the prospect of communities throughout the nation taking steps to make them universal public services would have seemed remote if not ludicrous. In the late 1830s one of Chadwick's friends asked who would pay for all this sewering and watering: however laudable, such changes were inconceivable.

The benefits of these changes go far beyond the original purpose of preventing what were later understood to be faecal-oral diseases and are almost impossible to measure. Chadwick, however guilty he may have been of dehumanising those who lacked basic sanitation, was surely right in understanding that comfort and convenience can be foundations of concepts of dignity and agency, and that they are among the structural changes that can give people the sense of power to act, individually or communally, to improve their health.[22 23]

Although the green paper *Our Healthier Nation* makes clear that improvements in public health are invariably public achievements in the broadest sense and although it outlines some problems such as cancer and heart disease that need addressing, it gives us little help in figuring out how public action will make the next revolution in public health happen.[24-28] As with sanitary engineering in the 19th century, improvements in health may come from public action in areas not recognisably medical—education, transport, law enforcement, and environmental management.

We are, then, in much the same fix as Chadwick and Lords Lincoln and Morpeth in the middle 1840s. The public participation and political processes that there must be do not guarantee any successful outcome. We cannot mine the 1848 experiment for lessons or models to apply to contemporary problems. Mostly what we get from it is confidence that great consequences can grow from small pieces of legislation and that communities and nations can transform themselves for better health, investing prodigious amounts of money and energy in doing so, but that they do not do so automatically and necessarily. The range of moral, legal, political, technical, and financial problems they faced was staggering, as are those we now face. The creation of an environment in which those problems can be overcome requires legislation that is both creative and courageous. If we are as lucky as the Victorians were in this respect we will be fortunate indeed.

Foci of public health in the 1840s

A comprehensive concern with public health did not everywhere have its origin in urban sanitation. That focus was uniquely English. Elsewhere, during the same period institutions of public health were driven by other issues and took quite different forms:

- Central Europe—Quarantine, medical police
- France—Statistical analysis of mortality, recognition of mortality associated with prostitution and occupation
- Scotland—Improvement of poor relief
- Ireland—Coordination and expansion of provision of infirmaries and fever hospitals for a mobile population

Public Health Debates, 1847-8

On health as justice

"not as a matter of compassion, but as one of justice—whether the poor man's property—his health, his strength, his sinews, his power to labour—the poor man's only property—were not to be protected as well as the property of the rich. If they did not protect that property, did they do the poor man justice?"
R A Slaney. *Hansard's Parliamentary Debates 3rd series, 96* 1848 Feb 10, 413.

On the duties of the state

"in matters that are physical and material, matters which concern the health and life of large masses of our population who are pent up and crowded in towns and cities, in the case of evils which cannot be remedied otherwise than by some superintending, intervening, central authority—it would, I think, be a waste of words to attempt to prove that authority not only has a right, but that it is its duty, to interfere."
Lord Morpeth. *Hansard's Parliamentary Debates 3rd series, 91* 1847 Mar 30, 623.

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Millennium report to Sir Edwin Chadwick

Iqbal Sram, John Ashton

To mark the 150th anniversary of the 1848 Public Health Act, Iqbal Sram and John Ashton write a memo to Edwin Chadwick, the architect of the 1848 act, on the state of the public health at the end of the millennium

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I will not cease from mental strife,
Nor shall my sword sleep in my hand
Till we have built Jerusalem
In England's green and pleasant land

William Blake

Dear Sir Edwin,

We live in a world which you would have envied. You played a dominant role in laying the foundations of this world. A clean and secure water supply for the population at large, coupled with the separate disposal of their sewage and waste, were the central planks of your crusade to protect public health in your day. However, Sir Edwin, we enter a caution here. The harmonious world referred to is, in essence, the "first world." The insanitary conditions which you were determined to eradicate still persist over large parts of the globe.

It will not have escaped your notice that it is 150 years since the enactment of the 1848 Public Health Act (An Act for promoting the Public Health), for you were its chief architect.[1] You subscribed to the contemporary laissez faire doctrines in the management of economic affairs, having worked closely with the economist Nassau Senior in the reform of the poor laws, which dated back to Elizabethan times.[2] In the social policy arena you battled hard and successfully against those who wished to extend and entrench that approach to a wide range of public policy areas. Your energy and determination secured support for state intervention for public health protection from the major perceived health hazards of the day,[3] in particular the acute infectious diseases. You attributed these to insanitary conditions due to poor and sometimes non-existent drainage and disposal of urban waste and sewage.

It is said that in this context you were mainly concerned with the plight of the ablebodied urban poor. Because you were convinced that many deaths among the urban inhabitants were avoidable,[3] you started by identifying the problem and its size and its cause.[4] The next stage was to find a workable solution. Here you were greatly assisted by the civil engineers of the day.[3] You then proceeded to build support for your evidence based proposals. Although the provisions of the 1848 act fell short of your expectations, its historic significance was clear. The idea that the state can act in an enabling capacity could now be tested.[5 6]

Monumental legacy

Sir Edwin, your legacy is monumental. Your claim that the major threats to human health originate from the environment now enjoys widespread professional and popular support. Although the world and the public health challenges have changed since 1848, the foundations that you laid continue to guide today's practitioners. It is disappointing to report that in spite of your leadership, we still have disproportionate levels of ill health in our cities.[7] Like the towns in your day, our cities are hazardous places in which to live. Inequalities in health experience and outcomes persist and are associated with avoidable deaths.[8] In the 1990s nearly 90 000 people die each year before they reach their 65th birthday. Of these, more than 25 000 die of heart disease, stroke, and related illnesses and 32 000 die of cancer (fig 1).[9] Differences in health associated with social class exist not only for mortality but also for morbidity (figs 2, 3).[9] In your day, Sir Edwin, the excess deaths occurred mainly among the labouring classes in the towns. Today these chiefly occur among social classes IV and V—the partly skilled and unskilled occupations—of the registrar general's classification system. (You are of course familiar with this system as you had many interesting debates with its designer, William Farr.[11])

You must be wondering if there are any modern day policy and structural innovations that might be deployed to meet today's public health challenges. The

Summary points

The state has a key role in promoting and protecting public health

Public health today faces a number of challenges posed by globalisation and must develop appropriate responses

Public health should focus on promoting sustainable economic and social development of individuals and communities

Urgent action should be taken in the short term to narrow the health inequalities; priority should be given to measures to raise low incomes

An independent public health commission should be established to monitor the effects of public policies on health and to offer proactive and independent advice on public health to government and other public bodies

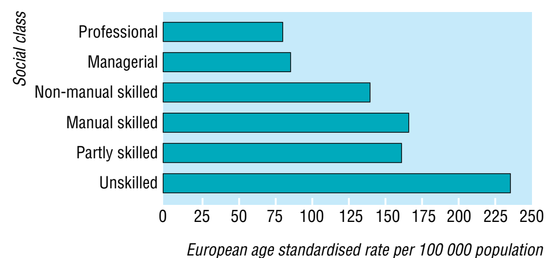

Fig 1 Mortality from coronary heart disease in men aged 20-64, England and Wales 1991-3[10]

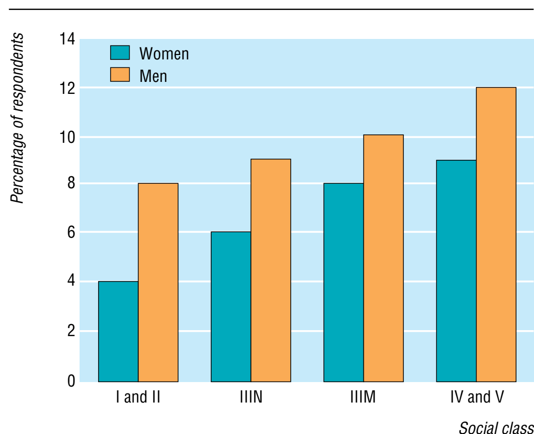

Fig 2 Population survey of diastolic blood pressure >95 mm Hg, England, 1991[12]

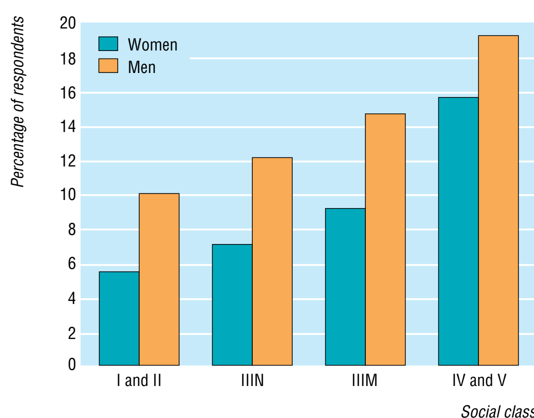

Fig 3 People aged 40-65 with forced expiratory volume more than 2 SD below predicted value, Great Britain[13]

current government's public health strategy is outlined in the green paper *Our Healthier Nation*.[9] The green paper's focus on the environment as a key factor associated with health would have appealed to you.

The current holistic model of the environment, with its insistence that attention be directed at economic and social dimensions, in addition to the physical factors of your day, enables us to make public health policy more relevant to the population's health.[14] The model obliges public health professionals to allow and enable the population to participate in key decisions relevant to their health and in addition encourages empowerment of the population. The role of professionals in public affairs,[5] to which you attached great importance, is maintained, but in a more democratic form.

Factors affecting health (as given in *Our Healthier Nation*[9])

Fixed:
- Genes
- Sex
- Ageing

Social and economic:
- Poverty
- Employment
- Social exclusion

Environment:
- Air quality
- Housing
- Water quality
- Social environment

Lifestyle:
- Diet
- Physical activity
- Smoking
- Alcohol
- Sexual behaviour
- Drugs

Access to services:
- Education
- NHS
- Social services
- Transport
- Leisure

Income inequalities

It is well known that you were not persuaded that low income or no income was an important determinant of health.[15] However, the current evidence points to a strong association between low income and ill health (fig 4).[16] The shareout of work and reward from paid work among the population is uneven, with some sections experiencing work related stress due to excessive working hours while others are excluded from the labour market, hence from society.[18] Income inequality grew greatly in the 1980s in Britain, largely because of discretionary changes to the tax and benefit system.[18] The major change has been a switch from taxes on income to taxes on spending. These tax changes are regressive in that they impose a larger tax burden on low income families.[19] You would have noted that these changes are the outcome of legislative intervention and not due to the operation of Adam Smith's invisible hand.[8 19]

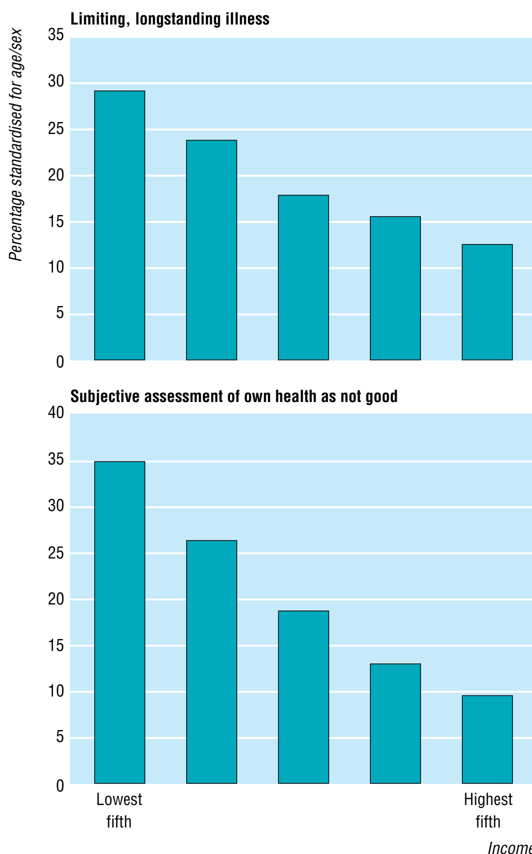

Fig 4 Limiting, longstanding illness (top) and subjective assessment of own health as not good (bottom) in Great Britain divided into fifths of income[17]

Measures to reduce income inequality

Strengthening individuals:
- Stress management
- Smoking cessation
- Counselling for people who become unemployed

Strengthening communities[30]:
- Social control of illegal activity
- Socialisation of the young as participating members of the community
- Providing first employment
- Improving access to formal and informal health care
- Social support for health maintenance
- Allowing the exercise of political power to direct resources to that community
- Limiting duration and intensity of experimentation with dangerous and destructive activity

Improving access to essential facilities and services:
- Needs based and driven provision
- Make equity the determining factor for provision
- Remove financial and geographical barriers to access and uptake

Encouraging macroeconomic and cultural change:
- Reduce income differentials at population level
- Sustain high levels of employment
- Improve working conditions
- Create conditions for social cohesion and stability

Low income, however it is defined, has been attributed to unemployment, lone parenthood, low wages combined with high outgoings, and self employment.[20 21] Various policy options have been proposed to dislodge the observed income inequalities. A useful distinction is drawn between measures to tackle the causes of low income and its consequences.[8] Thus some writers feel that the most effective way to reduce poverty associated with low income is to create more employment opportunities in the economy.[22 23] These writers have concentrated on the supply side of the national economy and have proposed measures to enhance the job prospects of those seeking paid employment: improving the skills of those who are unemployed through education and training. It should be added that the case for active management of demand in the economy is being made by a number of eminent economists.[24 25] The current government's "new deal" programme is an attempt to improve the supply side economic variables.[26] The expectation is that this will improve the employability of the unemployed sections of the population. Other writers have proposed measures that would reduce the "disincentives" of taking up paid employment at the low wage end of the labour market.[8] The proponents of these measures argue that at the very least they will arrest the widening of income related health inequalities.

The current evidence suggests that there would be 42 000 fewer deaths each year in England and Wales for people aged 16-74 if the death rates of people with manual jobs were the same as those for people with non-manual occupations.[27] It is also estimated that if the whole population experienced the same death rate as the non-manual classes there would be 700 fewer stillbirths and 1500 fewer deaths in the first year of life in England and Wales.[28]

These particular health inequalities are unlikely to be reduced unless the incomes of those at the lower end of the population income distribution curve are raised.[8] However, some other measures to accelerate this process have also been proposed.[29] These fall into four areas: strengthening individuals, strengthening communities, improving access to essential facilities and services, and encouraging macroeconomic and cultural change (box).

The case for the widespread use of these measures as instruments of public policy to reduce health inequalities is compelling.[8] We feel that the lawyer in you would strongly say that the burden of proof is on those who feel that inaction or a different course of action here is the most appropriate policy stance.

Housing and environment

Sir Edwin, you would be disappointed to learn that today about 4.5 million people in England alone live in houses which are unfit for habitation by statutory standards.[31] On balance these figures are likely to understate the magnitude of the problem. Forty per cent of all fatal accidents in Britain occur in the home. Home related accidents are the most common cause of death in children over 1 year, and almost half of all accidental deaths in the home are due to architectural features in and around the home.[32] People living in high rise buildings are more prone to serious accidents, such as falling from windows and balconies.[33] The industrial building techniques of the 1960s and the 1970s have left a legacy that is likely to cause problems for years to come. The buildings of this type are particularly prone to infestation by cockroaches.[34] Although statistics are less helpful in establishing a clear link between housing and stress related illness, there are good grounds for believing that poor sound insulation between neighbouring homes, a lack of privacy, and overcrowding can all contribute to mental health problems.[35] In your day you made use of the skills of talented civil engineers and design engineers to help you meet the public health challenges you set yourself.[1] You will be pleased to learn that we are beginning to turn to our architects and builders to help us address these problems.[36] We suspect that more could be done in this area.

The green paper leaves no doubt that the major determinants of health today are, as ever, environmental. The biomedical model of disease causation has distorted public health priorities in recent years. Its limitations were apparent to you, although the *Lancet* and Royal College of Physicians strongly disagreed with your analysis at the time.[3] However, your preference for the environmental model created some difficulties for you. The main one was that the necessary public health capability and capacity were lacking at the time to give effect to your model and plans. Your energy was therefore directed to improving the then deficient capacity and capability.

You will not be surprised to learn that we are still preoccupied with the issues of public health capacity and capability. The present public health challenge is to operate effectively in an arena dominated by large corporations that function at the supranational level. The labour markets show unstable tendencies. Structural and other changes in these two areas can have

profound implications for public health. Furthermore, as discussed in a recent workshop on a future public health act, a number of health hazards today have international dimensions. Modern national environments thus can be influenced by acts or omissions of various actors whose actions and motives cannot always be predicated with ease or accuracy. These changes require the public health response to be timely, multidimensional, and multilateral—and frequently international. Sir Edwin, your example of driving through change and of being able to create new tailormade structures in difficult circumstances to manage this change is comforting in that it inspires us to face today's challenges with confidence and optimism.[5]

Another anniversary

This year, 1998, also marks another significant anniversary, the 50th anniversary of the National Health Service. The NHS and the rest of the modern welfare state, which evolved and developed from some of the structures you helped set up, were given their present rationale and coherence by Sir William Beveridge. Beveridge directed his attack at five social evils—want, ignorance, idleness, squalor, and disease.[37] While these still pose problems, there is a growing consensus that a public health strategy based on the Beveridge parameters cannot be the route map for the next millennium The current feeling is that the core theme of the new agenda should aim to promote the sustainable economic and social development of communities and individuals. The dividends would be the improvement of social capital, resulting in improved individual and collective safety, security, and quality of life.[38]

Legal measures

Sir Edwin, since the 1848 act many legislative measures have been enacted to protect public health. Indeed there are at least 50 acts of parliament which directly relate to public health.[39–42] The enormous number of statutory instruments is further evidence of legislative intervention in the public health field. A legal source with potential public health implications which did not exist in your day is European Union law. The legal basis of the union's current competence in public health issues is to be found in articles 3 (0) and 129 of the Treaty of Maastricht as amended by article 152 of the Treaty of Amsterdam.[43]

Several other bodies with public health related functions have been created in recent years. The main ones are the Health and Safety Commission, the Environment Agency and the (to be enacted) Food Standards Agency. In addition, the statutory regulation of other areas of socioeconomic life enhance public health protection—examples are consumer protection legislation and road traffic legislation. Although the effectiveness of these measures in protecting public health has not been systematically evaluated, they seem to be essential in establishing and maintaining the minimum standards for environmental and public safety.[44] There is a view that public health legislation should be rationalised in the shape of a new public health act. However, given the multifaceted nature of public health and a large number of potential actors, agents, and institutions with a legitimate interest in public health it would be difficult to create a single body for this task. A better way to procure a pivotal role for public health would be to ensure that the public health resources and values are located within the various bodies (at various tiers) that are responsible for public health. This option is likely to require an increase in public health capacity and an improved capability. The chief medical officer's recent review of the public health function provides an opportunity for movement on this front.[45]

Since your time the role of the state in public affairs has grown in spite of the desire of many with power and the motives to reduce the size and scope of this role.[46] The state has the power to influence and sometimes determine the social and economic circumstances of the day.[19 25] These can have a great bearing on public health. Public health thus needs protection from acts or omissions of government and non-government bodies. The current arrangements for public health protection have sometimes been found to be wanting.

Complex structures

Sir Edwin, it is well known that you were no respecter of tradition, particularly if it prevented effective action. Your great motto was that structure should follow function.[47] We feel that many public health problems which emerge today are complex. They tend to get into the public domain very quickly, and they often require a swift but well considered response. We therefore propose that the government give serious consideration to the setting up of a standing body, independent of government, which would among other things advise it on all issues concerning public health in the United Kingdom. In addition, we propose that this body be charged with the duty to evaluate the public health implications of the policies and actions of all major public bodies (including central government). In this call we enjoy widespread support. We aim to win support for a standing and independent public health commission, as its time has come. The proposed commission would resemble your General Board of Health[3] in some ways, the fundamental difference being its complete independence of the state.

Sir Edwin, your courage and energy helped give the public health movement the firm foundations that have enabled it successfully to negotiate many difficult hurdles. We thank you for an inestimable legacy. What you started has to continue, for social reform is a process, not an event.

Participants in the NHS Executive North West's workshop on a future public health act, held in London in May 1998, were Maggi Morris, Gabriel Scally, Sally Sheard, Maria Duggan, Steven Watkins, John Ashton, Richard Smith, Clara Mackay, Naomi Fulop, John Pickstone, David Hunter, Howard Price, John Carrier, Martin Carraher, Rona Cruickshank, John Murray, Swapna Prabu, and Iqbal Sram.

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Personal paper

The 1848 Public Health Act and its relevance to improving public health in England now

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Editorials by Alderslade, Palmer
Recent advances p 584
Education and debate pp 587, 592

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I keep copies of all major acts of parliament relevant to health and health care. I have consulted them from time to time over the past seven years. However, it is the 1848 public health act (An Act for Promoting Public Health) that I have looked at most regularly. Why does this act fascinate me, and why did I wish to see further reflection on its background and consequences? The answers lie in an understanding of the context of the act and its consequences. This is not because of the act's specific contents—though the regulations on slaughterhouses and the selling of meat are fascinating—but because of the general issues the act raises:

- The principles of improving the public health
- The role of the state in improving the health of the people
- The organisation of public health at all levels in England and Wales
- The consequences of the act and the manner in which it raised the profile of public health
- The links to current issues in health and health cre.

The purpose of the act was to promote the public's health and to ensure "more effective provision … for improving sanitary conditions of towns and populace places in England and Wales." Such clarity of purpose is impressive. The background to the act was a remarkable piece of work on mortality and morbidity rates across the country. The work established clear inequalities in health and recognised that some fundamental issues, such as poverty, had to be addressed. In this sense the act is similar to the response to many other public health issues—most changes have occurred because of a failure in the systems or as a response to a crisis. Planning ahead on the basis of evidence and projections seems

Summary points

The 1848 act identified all the major public health issues of the time and established a structure for dealing with them

Public health became the responsibility of local people

Though health has improved immeasurably since 1848 some problems remain; the act's approach remains relevant today

much more difficult. I will now discuss each of the general issues raised by the 1848 act.

Principles of improving public health

The 1848 act was written before the sciences of bacteriology and pathology were fully established and diagnostic criteria set. The comprehensiveness of the act, however, is impressive. The act included the organisation of public health and all major issues at the time—for example, poverty, housing, water, sewerage, the environment, safety, and food. It set out who was accountable and the penalties involved. It emphasised strong local involvement. If it was weak, it was perhaps on air quality, and on its failure to tackle rural issues in favour of "towns and populous places"—issues which were, and remain, problems. It does not specifically mention research (though data collection is emphasised), nor does it raise general educational issues, both of which would feature strongly in any current thinking.

Role of the state

The role of the state is a fundamental public health issue. Should the state intervene with laws and bylaws, or should information be provided and individuals have choice and be allowed to make up their own minds? How far should the state go to protect the health of its citizens? The 1848 act took the view that as many of the problems affected the population as a whole, water, or sewerage, then health improvement was the responsibility of national and local government, and "inspectors of nuisances" would be appointed to deal with problems.

Could this be done now? Would the vested interests of the blood or tripe boilers mean that legislation would be delayed? The process of legislation is one in which an idea for improving health or health care is championed by an individual or group and is translated into a clear policy which then provides the framework for the parliamentary draftsman. The process is carried out openly with debate, discussion, and where appropriate amendment, before the final act is given royal assent. It can require great courage and perseverance to take this process through to a conclusion in the light of opposition from groups or individuals.

It still leaves open to question the "nanny state" and how far government can go in legislating for improved health and protection of health. Those who drafted the 1848 act had no such doubts, though they were concerned mainly with public health and health protection, rather than with the health of individuals.

Organisation of public health

One of the most fascinating aspects of the 1848 act was its focus on organisation. National and local boards of health were to be set up that would be accountable to and funded by the Treasury in relation to visits and inspections. Superintending inspectors and officers of health could be appointed. Individual towns and cities could call for inspection if mortality was too high. There was a power to summon witnesses. A report would be published and submitted to the Privy Council. Subsequent finance, if required, would be raised through local rates. The contemporary relevance of these will be discussed later.

Dinner at a cheap lodging house in mid-19th century London—predating legislation on food safety

Consequences of the act

Perhaps the most important issues for me were the consequences of the act. The fact that the national and local boards of health could call for action to improve health meant that local people became involved in thinking about the health of their people, and the 19th century public health movement was formed. In Durham, for example, the city council, the cathedral, the university, and the medical profession petitioned for an inspection because local mortality was too high. A superintending inspector visited, summoned witnesses, and reported. This process was replicated up and down the country. Public health had arrived and was seen to be the responsibility of local people and their elected representatives. We could make this happen again.

Links to current issues

Most of the principles outlined above apply at present. The appointment of a minister for public health provides top level political input. The development of health improvement plans, health action zones, and healthy living centres and the creation of a strategy for health (set out in *Our Healthier Nation*[1]) provides the framework for action. This encourages health authorities, local government, trade unions, employers, voluntary bodies, universities, local groups, etc to become fully involved. Interestingly, the 1848 act heavily involved the church and church wardens, and religious organisations remain a relatively untapped resource for improving health.

Improving health is a multidisciplinary task, and all professionals need to participate. Health is not just about living longer, but about a better quality of life and wellbeing. I have wondered at times whether renaming my department the Department of Health and Happiness would send a signal about the relation between health and feeling better and improving the common weal.

The future

What then has changed over the past 150 years, and do we need a new act to continue to improve health in England? Health has improved immeasurably in all

variables studied. Life span, mortality, disappearance of diseases, and quality of life have all improved considerably. Yet problems remain. Mortality in young men is still too high. There is still excess winter mortality—not so marked in other northern countries. Inequalities in health exist, and may even have become more marked. The role of women still needs strengthening. Mental health needs greater priority. Environmental problems, though different, are a continuing cause for concern.

So how can we continue to improve health in England? For the past six years I have published as part of the chief medical officer's annual report on the state of the public health a series of principles that set the tone for assessing health issues and my response to new problems. These principles have been expanded recently in a book.[2] How do they relate to current health issues?

Health for all

All citizens in the country need to be treated equally. This is an issue of social justice. The inequalities in health reflect a need to consider issues such as poverty, unemployment, housing, and the environment. No simple solutions exist—a range of policies is required.

A strategy for health

The Health of the Nation strategy and the recent strategy set out in *Our Healthier Nation*[1] provide the vehicle for setting out a strategic approach, across government, to improving health. Through four key areas, and national targets which can be monitored on a regular basis, this approach allows a range of interests to be worked on with a common agenda. This partnership approach is critical. The chief medical officer's project to strengthen the public health function, which has been in progress for the past year, has begun to identify ways in which this strategic view can be put into practice. There is a need for both capacity and capability and for a multidisciplinary organisation that could bring together in a powerful coalition all those concerned with improving the health of the people of England. The 1848 act had a board of health—a high level committee to oversee the changes proposed. Perhaps something similar would be useful now.

In terms of the NHS, the development of National Service Frameworks will provide some of the strategic input into providing a service to the whole community with equality of access and of quality of care. The cancer service framework, for example, shows how this might be done and what the difficulties are.[3]

Involvement of the public and patients

The involvement of the public and patients is central to improving health and health care. This was not a major feature of the 1848 act, other than at local authority level. We need to explore better ways of ensuring full public participation. Over the past few years this involvement has grown, and this is to be welcomed. Those who have responsibility for health and health care must ensure that they communicate effectively with the public on a whole range of issues—in particular, on risk and uncertainty.

Intelligence and surveillance

Public health cannot continue to improve unless the facilities exist for ensuring that we know what is happening and what is changing. These can range from the collection of statistics on cancer registration to "horizon scanning" for new approaches to treatment. Infectious disease surveillance provides an excellent example of a national system that is able to identify outbreaks and new organisms emerging. Part of our intelligence and surveillance strategy is to assess the impact on health of policies from all government departments and to consider the longer term consequences of new developments in areas of legislation unrelated to health.

Need for strong evidence base

Strong evidence is now at the heart of the process of improving health and is to be widely welcomed. The difficulties related to evidence based decisions are *(a)* generating the evidence and *(b)* taking action on the basis of the evidence both in the community and by the professions. Much evidence on how to improve health and the quality of care already exists. The potential to make things better exists. It is the implementation which is often lacking.

Importance of education, research, and ethical considerations

Many of the improvements listed above could occur if the professions and the public recognised the importance of education and the role of learning in changing attitudes and behaviour. The purpose of medical education,[4] and the changes which have been introduced over the past few years, has been to improve the quality of care provided. In a similar way the public understanding of science has helped the public to recognise some of the complexities of clinical practice.

Research is fundamental to improving health, and investment in new methods of care and understanding of disease mechanisms must continue. The NHS research and development programme, the research councils, and the medical research charities provide a remarkable resource to develop the research agenda.

Ethical issues will remain central to improving health, and the value base which is adopted sets the overall framework for decision making. New methods of treatment and investigation raise new moral dilemmas, and each new method requires careful and public consideration.

Conclusion

So do we need a new public health act? Much of what has been discussed above needs no legislative framework; it requires the implementation of what is already known. In some areas—notably, in the field of infectious disease—there is a clearer case for legislation. Across government, legislation on the environment and food safety are under way and will bring a sharper focus to health issues. The potential for improvement is considerable, and much can be done if all concerned work to a shared agenda to improve health.

Competing interest: None declared.

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