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The Public Health Act of 1848

The act's qualities of imagination and determination are still needed today

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The 1848 Public Health Act is 150 years old. Its context, origins, content, and compromises are extensively reviewed in this issue by Hamlin and Sheard (p 587).[1] It was an exercise in effective politics, technically remarkably well informed, yet also an imaginative legislative attempt to deal with some still very current issues. How can the best technical public health competence be created in both the essential aspects of the public health discipline—knowledge and action? How can this technical competence be allied to effective combinations of central and local governance and administration? What is the role of law, and enforcement? How can the multisectoral content of public health be addressed? How can communities and individuals best be involved? How can private and corporate influences be brought on board? Above all, how can public health be made to count? These are formidable questions, yet the act shows what can be achieved with imagination and determination. We need to find these same qualities today if public health is to move centre stage.

There is no doubt that it needs to do so. Internationally health is improving, but not enough.[2] Although average life expectancy has been increasing throughout the 20th century, three out of four people in the least developed countries today are dying before the age of 50. Within Europe a great divide has opened between western and eastern European countries[3]: in the Russian Federation average life expectancy for men is now below 60 years—that is, below the age of retirement. And in western Europe too, deep economic and social divisions exist in health: in the United Kingdom a child born today in the highest social class can expect to live five years longer than a child born in the lowest.[4]

Within a UK context, *Our Healthier Nation* clearly identifies the determinants of health—genetic, social, economic, environmental, lifestyle, and health services.[5] The challenge for public health is to affect these influences to promote health. The globalisation of information and economic activity has made these influences more complex and more removed from a purely national frame of reference than was the case in 1848.

Both internationally and nationally public health strategy and leadership are required. Both need to be more effective than hitherto, particularly in creating and sustaining effective actions that result from public health knowledge. Often there has been much analysis, but little change. Internationally, for example, the effectiveness of the World Health Organisation's health for all strategy[6] certainly needs reinforcing. And in the UK the public health function,[7] initially full of promise, has often become preoccupied with NHS management and the cost effectiveness of clinical services. Both are important but have limited impact on public health because health services are probably one of the least powerful of the determinants of health in any society.[8]

Today it is clear that health improvement must be set within an arena much wider than health services—namely, the sustainable development of societies, for which health is a prerequisite as well as one of the most important consequences. Health is therefore intricately related to political, economic, social, environmental, and institutional circumstances.[9] This concept is at the heart of the new global health for all strategy endorsed by the World Health Assembly earlier this year.[10] A new European health for all strategy will be considered by the WHO European Regional Committee in September. Both focus on promoting equity and solidarity for health and unlocking resources and promoting accountability for health consequences across the whole range of societies. The aim is to give a more powerful strategic thrust to health improvement and act as a backcloth to national strategies such as *Our Healthier Nation*.

Public health leadership will be crucial. Promoting education and practice in public health is seen as a key European regional priority and a vital prerequisite for achieving realisable improvements in health. Within the UK the chief medical officer's project to strengthen the public health function[11] has begun to identify ways to achieve this goal. Public health surveillance and information; a strong evidence base; and strengthened education and research are all vital elements.

Yet perhaps something remains missing—namely, coherence and a common sense of purpose among all the many practitioners of public health. A unifying concept is important. One that has been proposed is that of public health management: the concept of mobilising society's resources, including those of the health service, to improving the health of populations.[12] Such a concept provides the necessary multidisciplinary focus and link between all public health practitioners, rather than simply those who are medically trained. It is a functional concept, relevant to all societies, irrespective of their administrative and professional structures.

What of a new public health act? Or a public health commission? On the former there is probably now agreement that in certain areas of public health practice, notably infectious diseases, environmental

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health, and food safety, some legal amendments are necessary, as Kenneth Calman points out in his article (p 596).[13] Beyond that there is as yet no clear sense that new national or even European legislation will help us reach where we want to be—namely, with public health policy and practice that is comprehensive and effective within societies.

Similarly, the idea has been mooted (among others by Sram and Ashton (p 592)[14]) of a commission for public health, independent of government, to advise on all relevant issues and evaluate the public health implications of the policies and actions of all public bodies. It is an appealing notion and may have a role. Yet it is not sufficient.

Ultimately the objective is to make the public health function count at all levels of societal governance and influence, public and private. This implies making the public health function more comprehensive and coordinated, better focused, more skilful, and above all more effective. Some ideas are worth considering: firstly, separating public health practice from NHS management; secondly, linking public health practitioners to structures such as local government that are properly multisectoral and rooted in communities; thirdly, requiring the production of public health reports which are regular, comprehensive, and biased towards action by politicians, professionals, and the public alike; and, finally, protecting again the independence of public health practitioners.

Two new public health technologies will be of great importance. Strategic health programming should provide the local unity and inclusiveness of purpose required to achieve multisectoral change. Health impact assessments will promote the inclusion of health in policy thinking, as well as accountability for health consequences.

Perhaps, however, the most powerful influences for health lie with the public themselves. Informing them about health determinants, risk and uncertainty, and options for policy and action may be the most constructive role that public health practitioners can play. Such a view puts public health back where it belongs—and where the 1848 act positioned it: technically expert, but rooted in functioning democracies at both central and local levels.

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From public health to the health of the public

Modern public health problems will not be solved by anything as simple as sewers

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"I have … been taken to see the worst parts of the worst towns in England … but never did I see anything which could compare with Merthyr … one of the most strongly marked cases of the evil so frequently observed, of allowing a village to grow into a town, without providing the means of civic organisation. It is the story of laissez-faire carried out to its legitimate conclusion."[1] So said P H Holland writing to the General Board of Health on 15 December 1853. The priority was for clean drinking water and sewage disposal "before the cholera returns." Holland hoped that the yet to be appointed officer of health would agree, since he believed that "the labour of such (an) officer will do much to remove the ignorance which has permitted such evils to arise, to arouse the apathy which allows their continuance and to overcome the opposition which impedes their removal. Such officers would show the fearful amount of suffering disease and death … . They would prove that the losses occasioned by avoidable sickness and its consequences reduce a well paid population to poverty and render it more difficult to live with comfort in Merthyr on high wages than on the low wages of even Dorsetshire."

Holland was appealing for the application of the permissive powers of the 1848 Public Health Act. The remedy was sanitary engineering by local government; the key, public health advocacy based on locally collected quantitative evidence. It worked, and through the success of sanitary engineering the profession of public health rose to respectability. From sanitation, public health moved into food and housing, tackling malnutrition and tuberculosis, then health care for pregnant women and children.[2] With the introduction of the NHS, however, public health doctors, left behind in local government, fell into the doldrums.

Social care became the province of social workers, the environment of environmental health officers, and the doctors changed their name. But social medicine, then community medicine, failed to describe a distinctive and convincing role in the minds of the public or medical profession. When public health doctors were directed into administering services, even their

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traditional function of communicable disease control deteriorated.[3] Within the corporate management structure of health authorities frankness with the public was discouraged and advocacy muted.[4] Public health has now regained its traditional name, but all that that has achieved in many people's eyes is to narrow down "public health" to a medical subspecialty concerned with health care, not prevention.

The renaissance of public health was announced 10 years ago[3–5]—prematurely, but the window of opportunity has now opened.[6] The issue 150 years on from Chadwick is that relative inequalities in health persist.[7] Merthyr still has the worst health in Wales.[8] These inequalities are rooted in the socioeconomic structure of society,[9] mediated by environmental and social factors. Consequently, there are no simple modern day equivalents to drains and sewers. The answers have to come by coordinating the health impact of housing, transport, urban and rural planning, pollution control, food and water safety, and waste disposal, etc, as well as the NHS.[2 7]

The opportunity now exists to make the structural changes that will sustain the momentum for the new public health initiative.[7] In his 1997 Rock Carling fellowship lecture Walter Holland concluded that the creation of a National Commission of Public Health, though a neat and appealing option, was untenable.[2] The realistic option was to strengthen the public health function within existing structures. What, therefore, might be done? Local authorities, health authorities, and other key agencies could be made to work together on health. Chief environmental health officers and directors of public health should each be required to be public health advocates, reporting regularly and systematically on all aspects of the public's health and the environment. The independence of their roles could once again be protected. Routinely collected data on health and the environment (such as air quality) must be recast in the context of public health surveillance, providing information for action.[10]

Yet all this laudable activity still assumes that "public health" is essentially a professional activity, doing things to people's health. But in the new information age it is the public themselves who will drive the agenda. The one thing that will sustain the momentum is providing open access to individuals to comparative information about their own health, environment, and health care.

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Providing spectacles in developing countries

Millions endure poor vision for want of affordable glasses

Imagine the scenario. You are an indigenous teacher or civil servant stationed in a small rural community in a tropical country. Almost by definition you are over the age of 40 as your government has not recruited any public employees for several years on the advice of the World Bank and International Monetary Fund. You are a worried man. Your second daughter, always the intelligent one among your children, has begun to perform poorly in school. Her teacher says she makes too many mistakes when copying her lessons from the blackboard. Your wife is also distraught. Her mother, who recently underwent a cataract operation at great expense (your own), does not see well enough to return to her village. And worse, your own eyes seem to be failing and you can no longer study in the evenings for that professional diploma that would bring a promotion at work. Your distress is heightened by the knowledge that even if you travelled the 350 miles to the capital during your annual holiday the waiting list to see the ophthalmologist is over four months long and the price of the three pairs of glasses at the optician's shop well beyond your reach. Affordable glasses accessible in every community would transform this scenario.

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In 1990 the World Health Organisation undertook a nationwide survey of blindness and visual handicap in the Republic of Benin, west Africa.[1] Among the findings was the startling number of people needing spectacles—580 000 from a population estimated at 4.5 million, that is, 12.8 %. At that time there were only five Beninois ophthalmologists, all of whom worked in the two major cities, both on the south coast, 20 miles apart. Opticians were equally rare. Therefore access to a specialist who could prescribe spectacles was limited and even then the price of glasses might exceed three months' average salary.

Benin is a small country. There are 20 francophone nations in Africa south of the Sahara, with a population estimated at 161 million (1994). Therefore, probably over 20 million people in these countries alone need a pair of glasses. Serving this population in 1994 were 216 ophthalmologists (1:745 000 people).[2] Most of the population live in rural areas, but the ophthalmologists work almost exclusively in the major cities. The situation in English speaking Africa may be better, but that in the Portuguese speaking countries (Angola, Mozambique) is even worse.

Three sections of any community need spectacles: children who have hypermetropic squints or who develop myopia; adults with presbyopia; and those (usually elderly people) who have been operated on for cataract (intracapsular cataract extraction without a lens implant is still the commonest technique in rural areas of developing countries and likely to remain so in the immediate future). Presbyopia accounts for up to two thirds of all these refractive errors.

What solutions exist or can be envisaged to remedy this mismatch between the huge unmet need for affordable spectacles and the lack of eye care personnel? Ophthalmologists and opticians must let go their restrictive practices and allow the sale of spectacles outside their control. If it is possible in Britain to buy reading glasses in a supermarket, why not in Africa? Inexpensive spherical corrections for myopia and presbyopia can be imported from several Asian countries at a cost of US$2-3 a pair and can already be found in some African towns. Such spectacles should routinely be made available for purchase in all general health clinics and hospitals. Most people live within reach of a government or mission health centre. The sale of glasses could also generate useful income. Why could not spectacles be included on the World Health Organisation's list of essential drugs? For millions of people they are as necessary as antibiotics or antimalarial drugs.

School teachers should be made aware that any underperforming child should have a sight test. They could themselves be taught to screen schoolchildren for refractive errors.[3] The simple pinhole test can distinguish those with a refractive error from those with other ocular disease. The success of adult literacy classes also depends on the availability of reading glasses for those aged over 40.

If importation of ready made spectacles is not possible, then an optical workshop to produce spherical corrections at low cost could be started within the country.[4] Christoffel Blindenmission, a non-governmental organisation involved in blindness prevention programmes, has particular skill in this field.* All hospitals undertaking cataract surgery should have stocks of standard +10.00 and +11.00 glasses and their provision should be an integral part of each cataract patient's care. For those patients who are literate or need near vision for their work +13.00 or +14.00 glasses should also be available.

Ophthalmologists must also understand that prescribing spectacles with an astigmatic correction will necessitate the patient finding the money to pay up to 10 times the price of a simple spherical correction. Tinted lenses, bifocals or trifocals, or varilux additions also hugely increase the cost. It is not unusual to encounter a patient who has faithfully carried such a prescription in his wallet for several years, unable to get it dispensed because of the cost. For most of these people a spherical correction costing a few dollars could satisfy their needs.

Up to half the children in institutions for the blind in Africa can be made to read normal or large print with the help of spectacles or an inexpensive stand magnifier.[5] Such low vision aids would allow these children to be educated in normal schools and avoid their need to learn braille. At present, however, low vision services are in their infancy in most developing countries.

Many of the problems of the developing world are genuinely difficult to solve: this one is not.

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This editorial is dedicated to the memory of the late Dr Joseph Taylor, who championed the concept of optical workshops and affordable spectacles throughout Africa.

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Community care for elderly people

Will improve only when there are national standards and explicit funding

For an elderly person discharged from hospital in Britain, gaining access to continuing health care is like queuing for a car parking place in a multistorey car park on a Saturday afternoon. A "one in, one out policy" operates; you can never be sure how long you will have to wait; when you do get a place it is usually furthest away from where you want to be; and, if you miscalculate your length of stay against the amount paid, you will incur a hefty fine.

This picture will sound familiar to most community practitioners, but earlier this year the Clinical Standards Advisory Group gave further credence to professional concerns and made explicit the deficiencies in the community care of older people.[1] Its report, *Community Health Care for Elderly People,* used the care of people discharged from hospital after treatment for fractured femur as a tracer condition for identifying the range, level, and quality of community health services for older people. It reinforces deficiencies in the community care of older people identified by others.[2–4] Despite the existence of a joint policy statement on discharging elderly people from the Royal College of Nursing, the British Geriatrics Society, and the Association of Directors of Social Services,[4] the report again finds poor coordination of discharge plans, lack of interagency collaboration, lack of attention to the rehabilitation needs of older people, and inequities in provision.

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The advisory group found unacceptable variations in service provision according to where people live and the kind of accommodation they occupy. Such inequity has been identified before,[5] but again the report confirms that decisions about care are based on "who pays" rather than the needs of the individual. As a result there are important gaps in care. Primary health care teams have felt the impact of shorter lengths of stay in secondary care (the Clinical Standards Advisory Group found an average length of stay of 7.8-10.2 days). While most older people welcome a short hospital stay, many experience unacceptable care deficiencies on discharge because of limited health and social care budgets. The rhetoric of "the money following the patient" has long been exposed as hollow as older people with increasingly acute needs are cared for in community settings without a corresponding increase in resources. Indeed, many community facilities (such as community hospitals) are placed under increasing threat of closure as health authority budgets fail to meet acute care demands.

The report declares that no health district was capable of making a satisfactory distinction between health and social care needs. This finding comes as no surprise: people's needs cannot be so neatly compartmentalised. For example, access to regular meals (defined as social care and therefore means tested) has an obvious impact on an individual's overall health status and quality of life. It is disappointing that the government's response, published within the report, simply repeats calls for greater collaboration between health and social care services rather than recognising the need for their integration. The divide between health and social care needs has enabled health care consistently to evade its responsibility for the continuing care of older people.[6]

The Clinical Standards Advisory group calls for national standards for care, national eligibility criteria, local rehabilitation services, and a separation in payments between "health" costs and "bed and board." While organisations such as the Royal College of Nursing have made similar requests,[5] these have largely gone unnoticed. Undoubtedly, there is considerable fear of implementing such proposals because of the perceived costs to the health service. It seems to be easier to continue with local bickering about who should pay for care rather than take the risk of implementing a national standards framework and costing mechanism. Such resistance may be based on the wrong assumption that an increasingly aged population will result in increased costs to the state.

If almost all that this report says has been said before, why should we welcome it? Firstly, the report is timely because of the work of the Royal Commission into the funding of long term care. Secondly, the report has been largely welcomed by the government, and a government level action plan is included in the report. Although the recent white papers in the NHS[7] and the "Better services for vulnerable people" initiative all discuss many of the issues raised by this report, the rhetoric of rights and responsibilities continues to prevail at a government level, in the absence of specific action. What is needed is specific action—for the problems are not about to disappear easily. As a society we have several choices about how to express our commitment to the development of services for older people. The only ethical choice is one that treats them as citizens of equal value by appropriately and effectively meeting their health and social care needs.

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The end of triglycerides in cardiovascular risk assessment?

Rumours of death are greatly exaggerated

Although serum triglyceride concentrations are often measured in clinical practice, Garber and Avins[1] plausibly argued in the *BMJ* in 1994 that their use in screening for cardiovascular risk was "experimental." In particular, they argued that there was no evidence that triglycerides values identified those who benefited from further evaluation or treatment and that there was more evidence for measuring high density lipoprotein cholesterol concentrations. Since then the importance of low density lipoprotein cholesterol has been emphasised by landmark trials of statins (WOSCOPS, 4S) in the primary and secondary prevention of coronary heart disease, and cheaper and simpler "direct" assays have emerged for high density lipoprotein cholesterol. Both these events might have been expected to hasten the demise of triglycerides—but clinicians continue to request triglyceride assays together with measurements of total cholesterol in patients at risk of cardiovascular disease.

Garber and Avins conceded the biological plausibility of a causal role for triglycerides in coronary heart disease but argued that an association (causal or otherwise) had never been proved. They highlighted the biological variability in fasting serum triglyceride concentrations

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and the failure of many investigators to control for confounding by high density lipoprotein cholesterol (which has a strong inverse correlation with serum triglycerides). In 1994 the best evidence for an independent contribution from triglycerides to coronary risk was six year data from the PROCAM study, an observational follow up of 4559 middle aged men, which showed the highest cardiovascular risk in patients with both an LDL:HDL ratio greater than 5 and a serum triglyceride concentration greater than 2.3 mmol/l.[2] These findings were dismissed by Gabber and Avins on account of "gaps and contradictions in published research." However, eight year data from the PROCAM study have now shown a significant and independent association between serum triglyceride concentrations and the incidence of major coronary events.[3]

Recent data from other studies controlling for high density lipoprotein cholesterol have tended to support a clinically relevant interaction between cholesterol and triglycerides in assessing the risk of coronary heart disease. In a carefully performed prospective case-control study (266 cases, 308 controls) based on a cohort from the Physicians' Health Study, serum triglyceride concentrations were a strong and independent predictor of outcome over seven years of follow up, independently of high density lipoprotein cholesterol.[4] Further evidence comes from a meta-analysis incorporating data from eight population based prospective studies in over 28 000 patients (about 80% male) and controlling for high density lipoprotein cholesterol. This analysis showed that for every 1 mmol/l increase in serum triglyceride concentration the relative risk of coronary heart disease increased by 14% in men and 37% in women.[5]

Understanding of the role of triglycerides in atherogenesis continues to increase. Most studies have focused on fasting triglyceride concentrations, but recent evidence suggests that circulating lipoprotein particles in the postprandial state may be particularly harmful.[6] Triglycerides are recognised to be associated with atherogenesis via several mechanisms, including effects on endothelial function, macrophage loading, thrombogenesis, and low density lipoprotein particle size (smaller, denser, and more atherogenic).[7] The triad of raised triglycerides, small dense low density lipoprotein, and reduced high density lipoprotein cholesterol comprises the atherogenic lipoprotein phenotype and is the commonest lipoprotein pattern seen in patients with myocardial infarction.[8] Indeed, hypertriglyceridaemic individuals are at increased risk of type 2 diabetes, consistent with the key role of insulin resistance in both conditions.[9]

While the case for a causal role for serum triglycerides in the pathogenesis of coronary heart disease now seems stronger than in 1994, is there any new evidence that patients will benefit from interventions to lower serum triglyceride concentrations? There are no published randomised controlled trials that address this question. The best studies available are those based on angiographic measures of atheroma progression. The validity of such surrogate markers has been reinforced by the congruence of the results of studies using such measures (MAAS, REGRESS)[10] with the results of large, statin based outcome studies.

The BECAIT study[11] was an angiographic study in which 92 young male dyslipidaemic survivors of myocardial infarction were randomised to bezafibrate or placebo. Mean serum triglyceride concentrations fell by 31% and high density lipoprotein cholesterol concentrations increased by 9% in the treatment group (no change occurred in low density lipoprotein cholesterol). Patients randomised to bezafibrate had a slower rate of progression of focal coronary atherosclerosis and fewer coronary events (3 *v* 11) after five years. The effect size was similar to that observed in statin based angiographic studies, despite the different observed effects on lipid profiles.

Large primary prevention studies with fibrates are now in progress in dyslipidaemic patients with type 2 diabetes (DIAS, FIELD), which may extend these promising results. Furthermore, additional evidence from both angiographic and intervention studies indicates that patients with both a high LDL:HDL ratio and high serum triglyceride concentrations benefit most from treatment.[8 12]

A useful screening test should be safe, convenient, inexpensive, and able to discriminate between those who do and those who do not benefit from further evaluation or treatment. Few would dispute that serum triglyceride assays meet the first three criteria. Evidence from prospective observational studies now confirms the independent predictive value of triglycerides in assessing cardiovascular risk. In addition, accumulating evidence from clinical trials indicates that patients with a high LDL:HDL ratio and triglyceride values above 2.3 mmol/l stand to benefit most from treatment.

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