

## A national public health service<sup>1</sup>

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### **Local public health**

The local public health service of the country developed in the mid-nineteenth century following the publication of the famous Report on the Sanitary Condition of the Labouring Population of Great Britain (1842), the chief author of which was Edwin Chadwick (Singer & Underwood 1962). He was convinced of the need for a 'responsible local officer' to protect the public health and suggested the appointment of a district medical officer for this purpose. This doctor, the Medical Officer of Health (MOH), remained the responsible local officer until the post was abolished in 1974.

### *The Medical Officer of Health*

The first MOH, Dr William Henry Duncan, was appointed in Liverpool in 1847 and his duties, specified in the Liverpool Sanitary Act, 1846 (Frazer 1947), referred particularly to infectious disease prevention and the need to improve the sanitary and environmental condition of the Borough. He and other MOsH subsequently appointed throughout the country were primarily infectious disease epidemiologists, although the application of their epidemiological findings required an administrative content to their work. Many of them were also clinicians or closely involved with clinical practice in infectious disease hospitals and workhouse infirmaries, and it was these clinical links which enabled them to develop preventive services relevant to the main disease problems of the day.

At the end of the nineteenth century, when the environmental improvements for which the MOsH were mainly responsible had reduced the death rates from the major infectious diseases (McKeown & Lowe 1974), they observed the continuing high infant mortality rate and appreciated the need to extend prevention into the field of personal health. They pioneered many new services in which they became increasingly involved as medical administrators. Furthermore, most MOH appointments became full-time with little opportunity for clinical involvement and epidemiological work; and in 1948, when the separation of public health from clinical medicine became more complete with the advent of the National Health Service (NHS), their role as clinical epidemiologists almost ceased.

### *Reorganization of the NHS*

The deficiencies of the NHS tripartite structure, both for the prevention of disease and health care provision, became apparent during the first decade of its existence, and discussions began in the early 1960s on unification into a single administrative structure which eventually led to the reorganization of the NHS in 1974. An integral part of the reorganization was the proposal for a new specialty of 'community medicine' first put forward in the Royal Commission on Medical Education (1968): '... the specialty practised by epidemiologists and by administrators of medical services concerned not with the treatment of individual patients but with broad questions of health and disease'. The report directed attention to the need to bring together academic and service staff in the specialty and to encourage links with clinical medicine by joint appointments. It thus set the scene for the recreation of 'public health' as

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two parts of the new specialty – medical administration including health care planning and evaluation, and clinical epidemiology.

The preparations for unification included a working party 'to review the functions of medical administrators in the health services' (DHSS 1972) which, to its credit, specified disease-orientated epidemiology as the first function of the new District Community Physician (DCP). Unfortunately, however, there was no corresponding working party on the functions of clinical epidemiologists in the health services to consider this in detail. Thus it escaped notice that the MOH, with considerable local resources, had not succeeded in encompassing the functions of medical administration of community health services and clinical epidemiology, and a totally unrealistic job description for the DCP evolved. He was expected to be both the local medical administrator of all health services and the local clinical epidemiologist, with almost no resources at his disposal. As reorganization approached, increasing emphasis was placed on management (Unit for the Study of Health Policy 1979); in the final consultative document (DHSS 1971), the Government stated that the essence of the reorganization was the emphasis placed on effective management. It is therefore not surprising that in 1974, when the community health service administrators (MOsH) and the hospital administrators (Regional Hospital Board medical administrators) joined in the new specialty of community medicine, clinical epidemiology as a service function finally disappeared.

#### *Failure of prevention*

At the same time as clinical epidemiology declined as a service function of MOsH, a revival took place in British medical schools and research institutes. Here pioneer clinical epidemiologists demonstrated environmental factors as major causes of many chronic diseases. In the 30 years following the inception of the NHS, they transformed the prospects for prevention of some of the main present-day causes of mortality and morbidity, but realization of these prospects has not been achieved.

This failure of prevention is now widely recognized. A Government enquiry into preventive medicine (DHSS 1977a) attributed the failure mainly to financial obstacles. The subsequent white paper (DHSS 1977b) reaffirmed the Government's determination to place more emphasis on prevention, already evident in a consultative document entitled 'Prevention and health: everybody's business' (DHSS 1976) and recommended to health authorities that 'prevention should remain a major facet of local planning'.

The Royal Commission on the National Health Service (1979) again emphasized prevention: 'We considered that the NHS needed to face its responsibilities in prevention'. However, none of these Government reports considered the main problem in prevention – the lack of an effective public health service in Britain to put it into practice. The Unit for the Study of Health Policy (1979) has directed attention to this and made suggestions for recreating a multidisciplinary public health service with 'Health Promotion Teams' responsible locally for prevention. Walker (1980) and Horner (1980) both stress that prevention of disease is a major function of community medicine which, since the foundation of the specialty, has been eclipsed by its administrative tasks. The recent Government consultative paper on the structure and management of the NHS (DHSS 1979) provides an opportunity to recreate the public health services of the country with a major medical contribution from community physicians.

#### **Proposals for local public health**

This paper proposes that each of the new health authority districts should appoint a clinical epidemiologist as the local responsible person for the prevention of disease and that this doctor should not have responsibility for health service administration. The District Clinical Epidemiologist and the District Administrative Medical Officer would therefore be separate appointments with their separate functions and responsibilities, although both of these doctors would be members of the local District Department of Community Medicine (Figure 1).



The clinical epidemiologist would be expected to have an active interest in clinical medicine and could be appointed from existing community physicians or clinicians who have had appropriate training and experience in the epidemiology of disease. The post would be a full-time appointment with varying clinical, teaching or other epidemiological commitments according to the needs of the District and, if appropriate, more than one could be appointed; but the District would be required to nominate one of them as the locally responsible person for disease prevention. The clinical epidemiologist would be of consultant status and would have the same relationship to the District Health Authority and its chief officers as all the other consultants employed by the Authority. However, he would be more closely associated with the work of the Authority and with the Local Authority because he would provide them with information about the health of the District on which the priorities for services would be based.

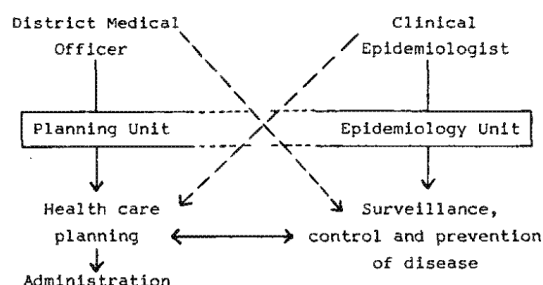


Figure 1. District department of community medicine

#### *Duties of District Clinical Epidemiologist*

There would be four main duties, similar to those specified for the first Medical Officer of Health, Dr Duncan (Frazer 1947): first, surveillance of disease; second, disease investigation including nomination as the legal 'proper officer' to the local authority for notifiable infectious disease and food poisoning; third, disease control; fourth, monitoring the environment, both physical and social. These duties would require a supporting staff which should include nurses and environmental health officers seconded to the unit, scientific staff, and secretarial and clerical staff. Such epidemiology units already exist in some districts (Rowland 1977) and could be established with little cost in other districts by redeployment of area staff. The work of the District Clinical Epidemiologist would be closely associated with that of the District Medical Officer in the local Department of Community Medicine; indeed, the district epidemiology units should also be the district planning units supporting the District Medical Officer's functions of health care planning and evaluation (Figure 1).

#### **Need for a national public health service**

The need for national support and coordination for medical officers for environmental health in communicable disease epidemiology has been accepted, and in 1977 the Communicable Disease Surveillance Centre (CDSC) of the Public Health Laboratory Service was established to meet this need (Galbraith & Young 1980). It is perhaps less apparent that a local generalist epidemiologist would require similar support and coordination in non-infectious disease (Galbraith 1968).

The organizational features of CDSC are so far unique in British public health and could be applied to other units for disease control. First, it is a national unit without executive powers, legal responsibility for disease control remaining local; second, it is part of the NHS with a medical staff of community physicians with the same status as their locally-based colleagues; third, it is a service unit with a national responsibility for communicable disease surveillance

and control and a commitment to support local community physicians; fourth, it has the ability to deploy staff to meet local needs for disease control.

#### *Toxicology and drug-induced disease*

In 1900 a large outbreak of over 2000 cases of peripheral neuritis took place in Manchester and Salford, with a smaller number of cases elsewhere in the North West and in Staffordshire, which was traced to arsenical contamination of the beer of certain breweries which had purchased contaminated brewing sugar from a single manufacturer. This outbreak became apparent because it was mainly localized to Manchester; for example, in one hospital, Manchester Workhouse Infirmary, in November, 23% of the inpatients in the acute wards were suffering from the disease (Reynolds 1900). Subsequent epidemiological studies led to the identification of the cause and its removal but as Dr Tattersall, the Medical Officer of Health for Salford, pointed out in his evidence to the Royal Commission on Arsenical Poisoning (1901), notification of the disease would have permitted earlier detection of the outbreak and had it not been for the concentration of cases in one locality, it might have escaped recognition for much longer. Regrettably, despite the lessons of this outbreak, no surveillance system for chemically-induced disease was established.

Toxic chemicals like pathogenic microorganisms may now be distributed nationally and internationally for similar reasons, so that the pattern of chemically induced disease has also changed. This was illustrated by the outbreak of peripheral neuritis and congenital malformations due to the drug thalidomide, which escaped early recognition because of the wide geographical distribution of cases of peripheral neuritis and the absence of any mechanism of reporting (Knightley *et al.* 1979). This problem has been met, not by extending the role of the existing public health services as Dr Tattersall suggested in 1900, but by the creation of separate national units with specific monitoring responsibilities outside, and with no direct relationship to, the NHS specialty of community medicine. The departments with responsibilities in this field have been described by Semple & Johnston (1979), and Waldron (1978) has drawn attention to the complexity of the services available and has suggested the creation of a toxicological 'CDSC': that is, a unit within the NHS with an epidemiological staff of specialist community physicians with service functions of surveillance of chemically induced disease, monitoring the environment and with the duty and capability of advising and assisting local community physicians when required. Such a toxicological 'CDSC' would need to be laboratory-based, like its communicable disease counterpart, and could readily be created as was CDSC by amalgamating functions of existing units. For example, the National Poisons Centre could provide the core for such a development to which functions and staff from other units concerned with toxicology and drug-induced disease could be added.

#### *Accidents*

Home accidents, road accidents and occupational accidents also present similar epidemiological and control problems as other short, latent-period diseases; but the existing specialized units concerned with these problems have no service functions in the NHS and are remote from local community medicine departments. These deficiencies could be remedied by linking these specialized units with a 'CDSC' for accident surveillance and prevention.

#### *Chronic disease epidemiology*

Chronic disease epidemiology has never been developed locally as part of the public health service and work in this field has been carried out by academic and research units. The importance of local epidemiology in chronic disease has been apparent for many years in relation to local environmental hazards, for example the localization of mesothelioma of the pleura and peritoneum in East London near the former site of an asbestos factory (Newhouse & Thompson 1965); the association of bladder cancer with local rubber and cable industries (Case 1966); and the high incidence of nasal cancer in woodworkers in High Wycombe (Acheson *et al.* 1968). More recently, Barker and his colleagues have shown local variations in

the prevalence of gallstones (Barker *et al.* 1979) and Paget's disease of bone (Barker *et al.* 1980), ably demonstrating the value of both local and national epidemiology in the study of chronic disease.

Units for the study and surveillance of chronic disease and for health education, a major means of prevention, have been created nationally to meet the need for a national approach for the investigation and control of these diseases. However, these units have no service functions in the NHS, local community physicians do not have ready access to advice on chronic disease epidemiology, and local efforts to monitor and prevent these diseases lack coordination. There is thus a need for a chronic disease 'CDSC' similar to the acute disease units already suggested.

### Proposals for a national public health service

Preventive services at national level in Britain are at present inadequately coordinated and are the responsibility of a multiplicity of government departments, semiautonomous bodies and research units, most of which have no relationships with the local health services. This lack of coordination and the consequent absence of a strong central voice in public health are partly responsible for the present failure of preventive medicine. The creation of national epidemiological units within the NHS based on the CDSC model, to which academic and research units and other national bodies concerned with prevention could be linked, would provide the national coordination that is required. This group of national units should be administered by an Authority – a National Prevention Board – within the NHS (Figure 2), with specific responsibility nationally for the prevention of disease, which would give prevention a new emphasis.

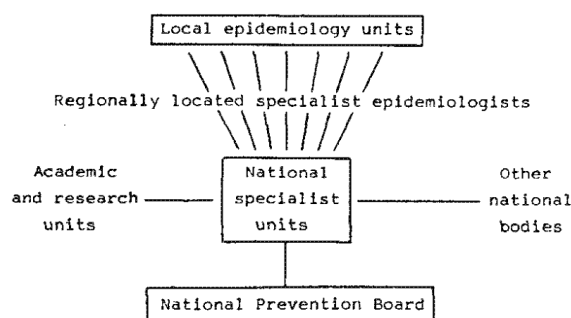


Figure 2. A national public health service

The Public Health Laboratory Service (PHLS) proposals to deploy epidemiologists in various parts of the country to facilitate support for community physicians in communicable disease epidemiology (Galbraith & Young 1980) could be applied to other fields. Thus specialist advice and assistance for the local district clinical epidemiologists could be provided through the central coordinating units in three ways: first, by specialist epidemiologists within the units either located centrally or regionally; second, by specialist epidemiologists in academic or research units with NHS sessions in the national units; third, by local clinical epidemiologists with special expertise which could be made available nationally through the central units (Figure 2). Similar patterns of deployment of special expertise have existed in microbiology in the PHLS for many years; they have functioned well and it is appropriate to apply them to community medicine.

Finally, it is important to emphasize that the District Clinical Epidemiologist would have full legal responsibility for disease control, the central units providing him with specialist support and coordination. Funding of these clinical epidemiologists and their units should be local, although joint local and national funding should be considered because this would have



the advantage of ensuring that the budgets of these units did not suffer because of the more pressing local needs of curative medicine.

### Summary

The development of the British public health services is briefly reviewed and it is suggested that two types of epidemiologist (Community Physician) are necessary in each locality: one concerned with medical administration and health care planning – the medical administrator, and the other with the prevention of disease – the clinical epidemiologist.

A new national public health service is proposed to revive disease prevention with four main features:

- (1) A District Clinical Epidemiologist who is a member of the district department of community medicine with responsibility for prevention but with no district administrative duties.
- (2) A District Epidemiology Unit comprising other appropriate staff.
- (3) National specialist epidemiology units within the NHS with service roles to support and coordinate the District Clinical Epidemiologists.
- (4) A national authority within the NHS with responsibility for prevention and for administering the national specialist units.

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