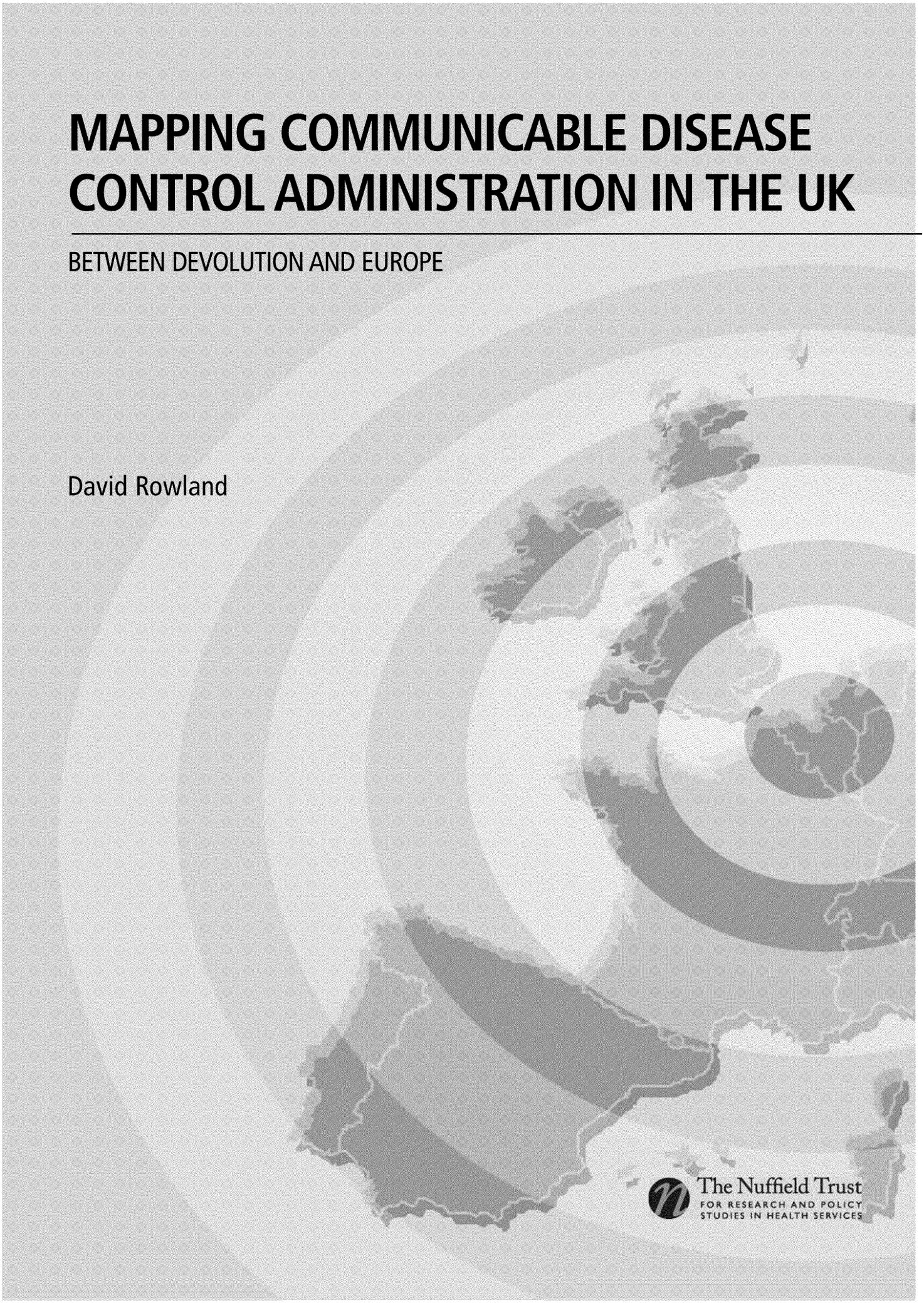
MAPPING COMMUNICABLE DISEASE CONTROL ADMINISTRATION IN THE UK

BETWEEN DEVOLUTION AND EUROPE

David Rowland



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FOREWORD

The Nuffield Trust continues to support research on the Changing Role of the State in Health. This policy theme has been very diverse, encompassing as it does work on devolution of health services across the UK, the increasing influence of European policy on the domestic scene, and social, political and medical changes across the world.

This report by David Rowland examines the UK's public health infrastructure in the round, identifying the structures of public health protection across the four systems and their relationships with the EU and local government. It goes on to raise questions about coordination of the system following devolution and looks at how policy makers have responded to disease control problems in light of the changing nature of the state. Little has been published on this subject, and the full public health map as presented here will be useful for researchers, practitioners and policy makers as public health moves up the political agenda.

The Trust has been supporting research at the UCL Constitution Unit on the impact of devolution on the NHS. The Trust is very pleased to continue its support of this important emerging area of policy, reflected in the changing government systems and emphasis. This report links to the work of Scott Greer on the EU and health this year's Responding to Europe: Government NHS and stakeholder responses to the EU Policy Challenge, and last year's work on the New EU Health Policy and the NHS Systems. Both these papers are available on our website.

Kim Beazor
Chief Operating Officer

EXECUTIVE SUMMARY

Mapping communicable disease control in the UK – between devolution and Europe

The way in which government in the UK protects the human population from disease has undergone radical changes in recent years. This has, in part, been the product of concerns over bio-terrorism as well as new and re-emerging health threats. But it has also been driven by political processes, in particular the devolution of public health powers to Scotland, Wales and Northern Ireland and the creation of new public health institutions by the European Union.

The prevailing view is that an effective disease control system requires a centrally organised system covering the geographical territory and the population that make up a political unit, as well as having competent local practitioners. The general idea here is that a 'clear line of sight' should be available for specialists and decision makers at the centre to direct resources quickly and effectively in order to control a major outbreak of disease. For this to occur, a chain of command needs to exist so that data on local incident can be communicated upwards to the centre and instructions and expert advice passed back down to the periphery, along with the movement of resources to where they are most needed.

But, this idea of centralisation stands in tension with the new public health powers now being exercised by the devolved administrations and the European Union, a situation which can bring benefits but also cause problems. On the one hand, devolution has the potential to cause difficulties for the overall co-ordination of a response to a public health emergency. On the other, because most disease outbreaks have a localised effect there are advantages in making service provision accountable to local political communities, making it clearer who has responsibility. Devolution may also foster innovation in the organisation of disease control systems. At the supranational level, an EU body with the capacity to provide advance warning of emerging health threats and to engineer a co-ordinated response between national governments is of great benefit in the fight against disease.

Disease control administration in the UK has historically been haphazard

This report sets out the current structure for communicable disease control in the context of in the EU and the UK. Chapter 1 sets out the origins of disease control administration in the UK going back to the 19th century and highlights how reform of the system up to the current day has been haphazard and has often led to confusion. Government has reformed other aspects of the NHS without due concern about the impact on those responsible for the control of disease. This chapter also highlights the move away from a localised administrative structure to the development of a national surveillance and response body, partly as a reaction to bio-warfare threats prior to the Second World War, but also in response to a series of inadequately managed outbreaks. It also demonstrates that the UK has never had a single public health law and that communicable disease control has always been administered separately in Scotland from the rest of the UK.

Devolution has affected disease control across the UK

Chapter 2 sets out how, since 2003, the UK has seen major changes to the administration of communicable disease control following devolution, allied to equally radical changes to the NHS. The creation of a national health protection agency (HPA) in England stimulated a wide ranging debate around the extent to which the HPA should provide a service across the entirety of the UK. In the event, while the HPA now provides chemical and radiological protection for the whole of the UK, it only administers communicable disease control in England. The imperatives of devolution meant that Scotland and Wales created their own national centres, which were based on pre-existing structures (Health Protection Scotland and the National Public Health Service Wales) to provide disease surveillance and control for their respective populations. Northern Ireland, with a smaller set of resources at its disposal relies heavily on the English HPA although it too is in the process of establishing a health protection body.

In keeping with recent changes to the four healthcare systems, the re-organisation of the disease control function in the devolved administrations has taken different forms. In England, the HPA has been granted specific powers to control disease and now employs a large proportion of the professionals involved in disease control. The NHS and local authorities who have statutory duties to protect human health are reliant on local health protection units (HPUs) to carry out functions on their behalf, although accountability arrangements on the ground are far from clear. Good working relationships on the ground are essential since all parts of the system need to work together to deal with disease outbreaks. In Scotland, the NHS continues to employ disease control consultants and other public health professionals, with HPS providing assistance and a performance management function. In Wales, the public health functions of the NHS and local authorities are better integrated, but the NPHS employs public health staff directly and co-ordinates all public health policy on a national basis. Northern Ireland is in the process of restructuring its system and the recent review of public administration means that the final outcome is currently unclear. In all four systems the inadequacies of a public health law, devised in the 19th century, causes great difficulties in terms of allocating legal responsibilities for the different administrative functions.

Devolution of public health powers may lead to a fragmentation of the UK's public health objectives

The existence of three different surveillance and control systems answering to different political assemblies requires that adequate mechanisms are put in place in order to ensure that political fragmentation does not undermine the UK's public health objectives. The official inquiry into the SARS outbreak in Canada in 2003 was highly critical of the lack of co-ordination between the different tiers of government during the crisis. In the UK, these mechanisms have been created but are informal and rely on working practices that have developed through the face-to-face meetings and the 'teleworking' of professionals in different parts of the UK. The most significant of these is the quarterly meeting of the UK Health Protection Oversight Group consisting of the Chief Executives of the health protection bodies and government representatives. At the more operational level the so-called five nations group brings together the heads of the disease surveillance and response centres in the UK and Ireland to co-ordinate operational aspects of policy. On a day to day basis a weekly meeting/teleconference draws information from representatives the various national and regional bodies involved in disease control including people from DEFRA and the Food Standards Agency. Somewhat surprisingly, there are no memoranda of understanding between health protection bodies in the UK but the influenza pandemic contingency plans do set out the roles and responsibilities of the various national public health bodies. This culture of collaborative working meant that the UK response to the SARS crisis was well co-ordinated via the SARS Taskforce consisting of representatives from across the UK and included the Republic of Ireland. This met regularly during the crisis and with the assistance of an Expert Advisory Group ensured co-ordinated activity across the UK and the Republic of Ireland.

The EU has significant powers in the field of food safety and animal health, but not human health

Chapter 3 examines how the competencies of the EU institutions with regard to disease control are determined by the existence of a 'market' element. Thus, in the case of animal health and zoonoses as well as food borne illnesses the EU has for a long time required member states to put in place control measures to prevent the spread of disease. This results from the fact that member states are entitled under EU law to prevent goods from entering their borders on public health grounds. In order to facilitate the free movement of agricultural produce, member states of the EU have agreed to harmonise safety measures. European institutions, such as the EU Food Safety Agency and the EU Food and Veterinary Office along with the Commission ensure that these measures are implemented within member states such as the UK. The existence of a supranational regulatory regime in this area lessens the opportunities for the four jurisdictions of the UK to develop different policies with regard to animal health and food safety despite the fact that these competences are currently devolved.

The EU facilitates much needed collaboration between European states in the fight against disease

Outside of the food and agricultural sector, the EU's regulatory powers are much weaker. Since the Maastricht Treaty the EU does have a specific public health competence but this is

restricted to facilitating co-operation between member states. With regard to those infectious diseases which are spread between humans, the EU has no powers to introduce legally binding measures on member states governments. Thus, while the EU has introduced directives to control and prevent disease in animals, no similar legislation exists with regard to humans. Nevertheless, the EU's public health competence has led to increased co-operation between member states in the area of disease surveillance. An important decision (the Network Decision) taken in 1998 by the Council of Ministers and the European Parliament led to the development of an EU Early Warning and Response System (EWRS) and the requirement for member states to exchange surveillance data on specific diseases via a set of formal information networks. As communicable disease policy became intertwined with the security agenda following September 11 2001, the EU developed a new institutional structure, including a Health Security Committee (staffed by representatives from member states) a Health Threats Unit (set up within the European Commission) and the European Centre for Disease Prevention and Control, a dedicated body established to take on a wide range of tasks to facilitate co-operation between public health institutions in member states.

Interestingly these new institutions have focused as much on traditional health threats such as SARS or pandemic influenza as on bio-terrorism. Despite the lack of a strong public health competence, the development of these bodies has provided an invaluable platform for the co-ordination and testing of member states preparedness for a public health emergency involving more than one country. But, the EU does not fulfil any command and control role, since the intergovernmental nature of decision making precludes the existence of a central authority in the EU's structure. Moreover, member states are unwilling to allow their national security decisions to be determined by a supranational body. The success of the EU's role in dealing with a public health emergency thus depends on member states recognising the obvious advantage in co-ordinating their responses and sharing data. The EU's other difficulty has been the lack of clarity about the roles of the various new institutions, as well as how the EU's public health powers link in with the role played by the WHO and its powers under the new International Health Regulations.

Clarity in terms of 'who does what' is essential

A general conclusion of this report is that there is a lack of clarity in terms of who is responsible for which aspect of disease control in the UK, a situation which has been further complicated by the development of multi-level governance in the field of public health. With the UK government now required to implement the new International Health Regulations a perfect opportunity exists to update the public health laws to make them fit for the disease threats of the 21st century. In this respect the words of one commentator in 1929 are still relevant today: 'The necessity for a general overhauling and consolidation of laws was never greater than it is to-day in connection with public health legislation.'[1]

1. B.G Bannington 'English Public Health Administration' 1929 London p.313.

INTRODUCTION

Administering the Control of Communicable Disease

> *'The necessity for a general overhauling and consolidation of laws was never greater than it is today in connection with public health legislation. Three years ago we were told 'that the consolidation of the Public Health Acts was in hand' and there it remains. It seems as if the work involved is so arduous, the fear that, in seeking to improve, much that is good might be lost is so great and the fact that such a task, even if successfully achieved is not very likely to be an asset in party politics, makes such a consummation almost too remote to be hoped for.'*
>
> B.G. Bannington – English Public Health Administration 1929 p.313

Despite the oft quoted statement by the United States Surgeon General in 1967 that scientists and policy makers can "close the book on infectious disease" communicable disease remains an everyday problem for government.[2] In addition to the concern that an influenza pandemic could lead to 50,000 deaths in the UK during an average year it is estimated that 50% of children's GP consultations are for infectious disease and that the annual cost of treating infectious disease is £6 billion in England alone.[3 4] The range of infectious disease – from healthcare associated infections to zoonoses – inevitably requires the attention of large parts of the machinery of government. Yet, the machinery of government in the UK is currently undergoing a period of radical change following the constitutional reforms which have given Scotland, Wales and to some extent Northern Ireland, greater political control over the administration of key policy areas. As European integration continues apace more and more areas of domestic policy are affected by decisions made by the institutions of the European Union, including public health.

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2. Stewart, William H. 1967. *A Mandate for State Action*, presented at the Association of State and Territorial Health Officers, Washington, DC, Dec. 4, 1967.
3. House of Lords Science and Technology Committee – 4th Report *Pandemic Influenza* 16 December 2005 HL Paper 88.
4. Health Protection Agency: *Health Protection in the 21st Century: Understanding the Burden of Disease; preparing for the future*

This report provides an account of the way in which the organisation of communicable disease control in the UK has been affected by devolution and the new public health powers of the European Union. It has been written in order to aid understanding of how this key aspect of public health policy is subject to new pressures and challenges as a result of the changing nature of the state. It seeks to set out the main changes which have occurred in recent years, highlighting some of the problems and opportunities faced by policy makers seeking to navigate this new terrain.

Situating communicable disease control within the context of devolution and 'Europeanisation' is no simple task, since its history is replete with extraordinary scientific achievements but administrative and legal chaos. Since the mid 19th century government has sought to use its powers of coercion and control to protect the public from infectious disease. The wide ranging powers provided to administrative bodies have been key weapons in the fight against public health scourges of all kinds and have, in the main been a demonstrable success. But, the ever changing nature of this type of health threat poses an intractable problem for policy makers, since the cycle of administrative and legal reform is almost always out of sync with the emergence of new diseases and system failures are only observed following large outbreaks. Combined with the fact that public health reforms rarely prove an 'asset in party politics' – leading to the re-organisation of the NHS and local government with more 'voter friendly' objectives in mind – means that the legal and administrative structure for controlling disease has often been out-dated and hideously complex.

A brief review of the history of public health administration suggests that these problems may be endemic. In 1871 the Royal Sanitary Commission 'disclosed an amazing complexity, lopsidedness and inefficiency of both sanitary legislation and administration'.[5] By 1914 one commentator in the *Municipal Journal* had found that 'our existing codes of health laws are neither practically efficient nor sufficient for the purpose originally intended and still expected by the public. The methods of administration are too intricate and confused, the wide differences of opinion as to scope and definition are fatal to direct and speedy action'.[6] Sir Donald Acheson's Review of public health in 1988 found a 'set of measures which have evolved over time and which taken together, have created a system which is complicated and at times unclear, even to those who have to operate it. To others it can be positively baffling.'[7]

In 2003 the House of Lords Committee on Science and Technology passed its own comments on the need for greater clarity in the structure of communicable disease control in England. It found that ' lines of communication and accountability between organisations are complex and unclear' and recommended that the 'Minister of Public Health should publish as a matter of urgency a document outlining roles and responsibilities of all organisations involved in infectious disease services.'[8] In the event the Government declined to act on the recommendation, possibly because the complexity of

5. BG Bannington English Public Health Administration London 1929 p.8.
6. *Municipal Journal* May 29 1914 p.653 quoted in BG Bannington English Public Health Administration London 1929 p.313.
7. Donald Acheson *Public Health in England* HMSO 1988 p.43 para 7.5.
8. House of Lords *Fighting Infection* Para .9.6 -9.7.

the system rendered the production of such a document impossible.

One of the main reasons why this task may have been beyond the Department of Health is the fact that existing public health Acts do not providing a clear statement of which authority is responsible for which aspect of disease control, as the Acheson Review pointed out :

> *'In the main these Acts do not seek to codify the responsibilities of authorities in respect of communicable disease and infection but rather confer certain reserve powers which may be necessary in the control of some notifiable diseases when they occur'*[9]

Added to the traditional problems encountered by those trying to understand the organisation of communicable disease control in the UK. are the twin dynamics of political devolution and Europeanisation. The transfer of public health powers to both the devolved administrations and to the European Union add significantly to the complexity of the current administrative arrangements, since in recent years the locus of power has moved decidedly away from Westminster to the devolved administrations and to Brussels. This adds another set of administrative tiers as well as another set of interest groups and political actors to the organisational structure.

Setting down on paper the current organisational structure of communicable disease control is thus no simple undertaking. In addition to the large number of agencies and government departments involved in disease control, the core structures of the NHS and local government are in almost always in a state of flux. This means that any account provided here will be almost immediately out of date. That said, the task of mapping who is responsible for which aspects of disease control is still important. Not only is the UK government now under an international legal obligation to develop, strengthen and maintain the capacity to respond to public health risks, but, with heightened public concern about SARS and Avian Influenza, the need for transparency in how government organises itself has never been greater.[10] Moreover, understanding the accountability arrangements is crucial in a system which is geared to responding to outbreaks and emergencies. As one commentator and public health practitioner has noted, 'where accountabilities are well described and understood, even if it is agreed that they are shared, there can be good prior planning, adequate investment without duplication and minimisation of risks.'[11]

Within the limitations of the space available this report attempts to describe the changes to the organisation of communicable disease control in the four parts of the United Kingdom following devolution in the late 1990s and the creation of the Health Protection Agency in 2003. The main focus here is on the interaction between the NHS and the new health protection agencies with some discussion of the role played by local government. Unfortunately, due to time and resource constraints the report does not dedicate space to a discussion of important, but hugely complicated aspects of disease control such as port

9. Donald Acheson, *Public Health in England* 1988 HMSO p.44 para 7.11.
10. Fifty Eighth World Health Assembly *Revision of the International Health Regulations* 23 May 2005 WHA58.3 Article 13.
11. Hilary Pickles, *Accountability for health protection in England: how this has been affected by the establishment of the Health Protection Agency*; Communicable Disease and Public Health Vol 7 No 4 December 2004.

health or veterinary public health. Having provided an overview of the basic domestic structure, Chapter 3 deals with the role played by the European Union, looking at how the EU's competencies in this field have developed and how they are currently administered. Before the contemporary structure is discussed, section one of the report deals with the historical background to the current system.

1 HISTORY AND ORIGINS OF DISEASE CONTROL IN THE UK

Origins of public health administration

Protecting the public from communicable disease has not always been a concern of government. As recently as 1837 it was the case that 'central government had nothing to say in regard to public health, and local authorities had but the most indefinite relation to it'.[12] But the advent of three major outbreaks of cholera in British cities in the 1840s and a reform movement headed by Edwin Chadwick and others meant that the need for collective state action could no longer be ignored. The groundbreaking 1848 Public Health Act led to the creation of a General Board of Health which had the power to create local boards of health and were compulsory where the death rate reached 23 per 1000. These local boards of health could also appoint a Medical Officer of Health who had powers to introduce sanitary measures to protect the health of the local population.

The 1875 Public Health Act, which consolidated a range of public health measures, made it compulsory for every urban and rural sanitary authority in England and Wales to make such an appointment. The Chief Medical Officer, who sat at the top of this new administrative structure, advised central government on the introduction of public health interventions and became the representative of the newly registered medical profession. This position was consolidated by the replacement of the General Board of Health with the Local Government Board in 1871 and later the Ministry of Health in 1919.

The 19th century pioneers of public health recognised that the key to successful interventions was information. The 1875 Public Health Act and later the 1899 Infectious Disease notification Act thus required the person in charge of a patient suffering from one of the 'notifiable' diseases to inform the local authority. This provided the basis for further investigations by medical officers into the source of the infection and for the exercise of

12. Sir John Simon, *English Sanitary Institutions* London 1890 p.167 quoted in BG Bannington English Public Health administration p.8.

control powers where necessary to prevent its spread. This relationship between surveillance and field investigation lies at the heart of modern day communicable disease control and was aided by the establishment of one of the first public health laboratories in London in 1891.[13]

Public Health Law

The many and various public health Acts which were introduced in the late 19th century provide the basis for the current day control and investigation powers as set out in the 1984 Public Health (Infectious Diseases) Act which covers England and Wales and the 1967 Public Health Act which covers Northern Ireland. Scotland currently relies on the provisions contained within the 1897 Public Health Act Scotland. A fuller description of the powers contained within these Acts, as well as their deficiencies, is set out in *The State of Communicable Disease Law* published by the Nuffield Trust.[14]

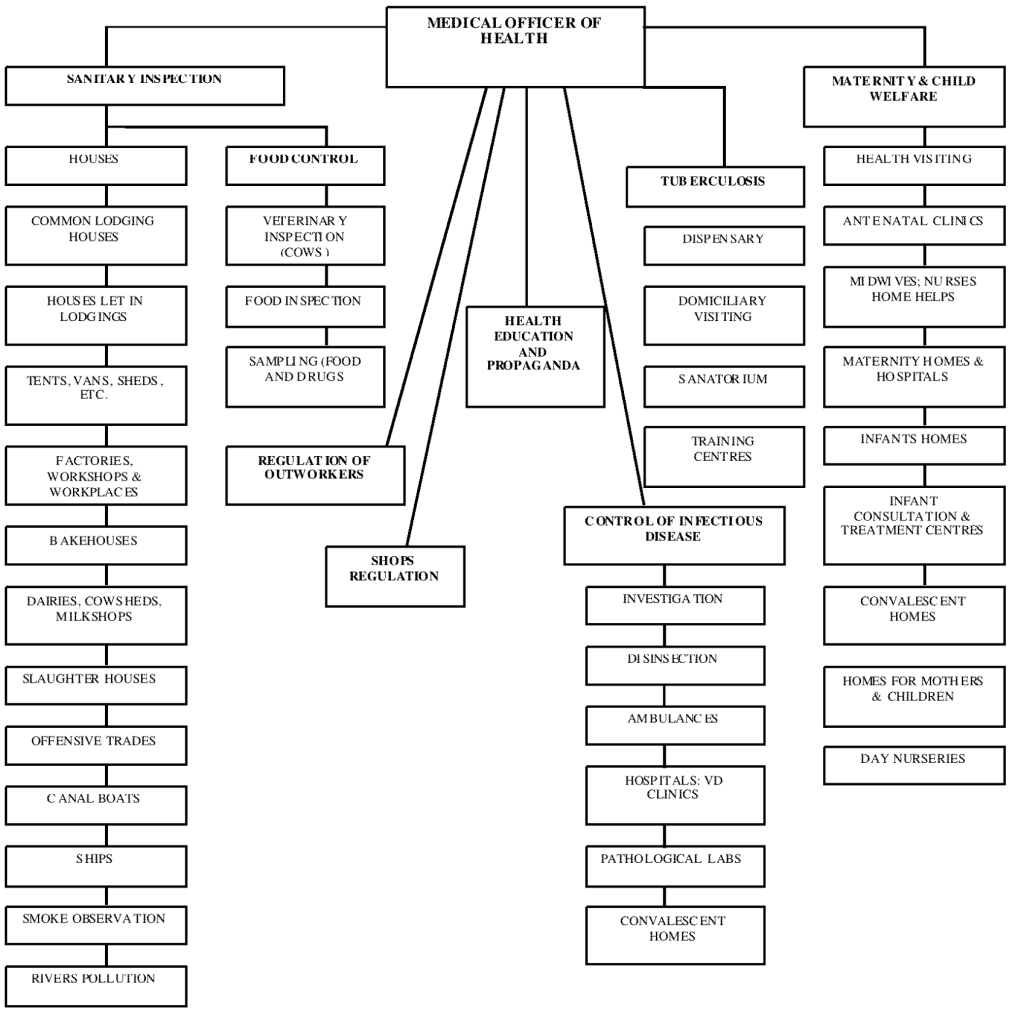
In essence, the Act provides today's local authority officers with similar powers to control disease as those provided to Medical Officers of Health in the 19th century. These include:

> *A requirement to notify:* Medical practitioners must notify a 'proper officer' of the local authority if he or she becomes aware of a notifiable disease, a list of which is provided in the Public Health Act and in the updated 1988 Infectious Disease Notification Regulations.
>
> *Powers of investigation:* These are powers to enable officers to obtain information on outbreaks of disease. They include the powers to enter premises, the power to gain information from private individuals or companies on the source of infection and the power to require an individual to submit to a medical examination.[15]
>
> *Powers of control:* These can be divided into control over individuals and control over premises. The proper officer has powers to place restrictions on the disposal and movement of infected cadavers, on the trade and occupations of those who are infected as well as powers to request that an individual who is infected be detained in hospital. The local authority when required may cleanse and disinfect any premise or, when necessary destroy any articles inside and, following the identification of a notifiable disease, may also prevent the letting of accommodation or the use of accommodation for work purposes unless the premises have been disinfected.[16]

In summary, prior to the creation of a national health service, local authorities were responsible for all aspects of public health ranging from infection control to the abatement of nuisances or environmental hazards. As **Figure 1** shows, it was also local authorities who undertook the treatment of those suffering from disease. The original administration of communicable disease control in the UK thus occurred within one public health department based in a local authority and headed by a Medical Officer of Health. The activities of these public health departments were overseen by the Ministry of Health and the Chief Medical Officer.

13. REO Williams, *History of the PHLS – Microbiology for the Public Health*, PHLS 1985 p.4.
14. Stephen Monaghan, *The State of Communicable Disease Law* The Nuffield Trust 2002.
15. Richard Elson, *Communicable Disease- administration and law* in W.H. Bassett *Clays Handbook of Environmental Health 19th Ed. 2005* p.279.
16. Richard Elson, *Communicable Disease- administration and law* in W.H. Bassett *Clays Handbook of Environmental Health 19th Ed. 2005* p.279.

Figure 1. Diagrammatic representation of the activities of a public health department



Source: B.G. Bannington 'English Public Health Administration' 1929 p.1

The creation of the NHS: background to the current arrangements

The creation of the NHS in 1948 altered this structure and split the responsibilities for public health across three administrative divisions. Local authorities and the MOH retained their responsibilities for communicable disease and environmental health and other non hospital services while hospital boards and executive councils oversaw hospital care and primary care services respectively. Both the General Practitioner Service - which provided immunisation and screening services - and the Hospital boards - with their own medical officers - took over some of the public health functions of the Medical Officers of Health. But the main duty to advise the local authority on all matters affecting the public health of the population remained with the MOH. Put simply, the organisational coherence of the local authority public health department with health care services integrated into public health protection was rent asunder by the 1946 Act as Acheson pointed out:

> *'It is ironic that the year 1948 which is usually viewed without reservation as the date in which a new era dawned for the health of the nation, was the year in which separation of much of the public health function from the rest of the NHS sowed the seeds of a confusion of roles between local authorities and health authorities.'*[17]

Further reorganisation of the NHS led to even greater confusion. The 1972 NHS Act transferred responsibilities for hospital and health service administration to regional and area health authorities while the position of Medical Officer was abolished in the 1974 re-organisation which followed. But while most of the health service responsibilities were transferred to the health authorities the statutory duties contained within the Public Health Acts remained with the local authority. As Monaghan explains, following the changes:

> *'Health authorities were to be responsible for a range of services contributing to the prevention, control and treatment of communicable disease. However, statutory powers for communicable disease control remained unchanged. Therefore, in law, the responsible authority for communicable disease control continued to be the local authority, rather than the health authority [..] guidance advised local authorities to appoint a doctor who would be a community physician of the health authority to be known as the Medical Officer of Environmental Health, as 'proper officer' to enable them to effectively discharge their communicable disease control duties.'*[18]

Local authorities thus maintained the legal responsibility to protect the public from communicable disease, as set out in the public health acts, but in operational terms shared the public health responsibilities with health authorities. The chief focus of local authority environmental health departments was to protect the public from food and water borne infections and to deal with disease outbreaks in these areas. NHS health authorities on the other hand were responsible for 'a range of services contributing to the prevention, control and treatment of infectious disease, including health education, health visiting, immunisation, hospital treatment of cases of infectious disease and other relevant health services.'[19] Yet, although much of the actual work was carried out by the health authority, the powers of investigation and control lay with the local government Medical Officer for Environmental Health or the Chief Environmental Health Officer, who also had to be notified when specific diseases were detected.

The 1988 Acheson Review

This arrangement led to confusion over who was responsible for co-ordinating the response to outbreaks of disease and, following two high profile outbreaks of salmonella and legionella in the mid 1980s, a review of communicable disease control in England took place. The Acheson Review into Public Health in 1988 made two key recommendations. First, that the position of Medical Officer for Environmental Health should be abolished and that a Consultant in Communicable Disease control (CCDC) (or Consultant in Communicable Disease and Environmental Health in Scotland) based in each Health Authority should be appointed. And second, that the CCDC be answerable to a new

17 Donald Acheson, *Public Health in England* HMSO 1988 para 2.3.2.
18 Steve Monaghan, *The State of Communicable Disease Law* The Nuffield Trust 2002.
19 Donald Acheson, *Public Health in England* HMSO 1988 para 2.3.2.

Director of Public Health who would be based in each district and regional health authority. The new Director of Public Health would 'co-ordinate the control of communicable disease' in the region covered by the health authority.

A further recommendation of the Acheson review was that the (CCDC) should become, under appointment by the local authority, one of the 'proper officers' with powers to investigate and control disease under the 1984 Public Health (Infectious Disease) Act. However, it was still assumed that Environmental Health Officers based in local authorities would be responsible for food and water borne disease and that in certain circumstances the Chief Environmental Health Officer would be responsible for investigating outbreaks, utilising the powers provided under the 1984 Act.[20] Similar reforms were introduced in Scotland, Wales and Northern Ireland.

Although no changes to the various public health Acts were made, guidance was issued by the Department of Health and the Department of the Environment in 1993 setting out the public health responsibilities of the NHS. The Guidance contained an important statement on collaboration:

> *'All NHS bodies need to collaborate with each other in the public health interest. Communicable disease control work cannot be effective without collaboration and close working between all parts of the NHS, local authorities and other agencies'*[21]

It also required that health authorities and local authorities draw up joint plans which were to set out 'a clear description of the role and the extent of the responsibilities of each of the organisations and individuals who are involved, on a day to day basis or may be involved when an outbreak occurs.' This involved amongst other things putting in place arrangements for creating an outbreak control team and for informing, when necessary, the Communicable Disease Surveillance Centre of the Public Health Laboratory Service, the Regional Health Authority and the Department of Health. Despite the many changes to the NHS which have occurred since the publication of this document, there has been no further guidance outlining the responsibilities for communicable disease control in the NHS in England. Although NHS bodies in some parts of the country still rely on this circular as the basis for co-ordination at local level, the current NHS has been reformed out of recognition. In this respect, a revised and updated circular detailing responsibilities in the NHS is clearly needed.

Pre-war moves towards the national organisation of the communicable disease control function

Although it is generally the case that most disease outbreaks tend to have a local impact it was recognised early in the 20th century that local field investigation teams would benefit from the provision of a national epidemiological and microbiology service. The scientific advances in fighting disease often occurred as a result of a better understanding of

20. Department of Health and Department of the Environment *Public Health Responsibilities of the NHS and the roles of others* 24 November 1993 Health Service Guidelines 'HSG(93)56 para 23.
21. Department of Health and Department of the Environment *Public Health Responsibilities of the NHS and the roles of others* 24 November 1993 Health Service Guidelines 'HSG(93)56.

microbiology and so the work under taken in laboratories was a crucial weapon in the armoury of government.

As mentioned above the first public health laboratory in London was established in 1891and as early as 1916 local authorities had been required to make arrangements for providing health practitioners with 'scientific reports' on material from patients suspected of suffering from venereal disease. An incomplete survey conducted in 1939 recorded the existence of 32 county council or municipal labs across England and Wales with university departments and hospitals contributing to local microbiological service provision. Yet, overall the distribution of the labs which were used to assist Medical Officers of Health in the identification of different types of disease was considered patchy and uneven across large parts of the country.[22]

The fear of biological and bacteriological warfare on the eve of the Second World War was the impetus behind the creation of a planned network of public health laboratories. Although the 1934-36 Sub Committee on Imperial Defence 'took a very moderate view of the possible dangers of bacteriological warfare' the possibility of disease outbreaks occurring as a result of evacuation and population movement proved enough of a concern for an emergency public health laboratory service (EPHLS) to be established.[23] This centrally co-ordinated network of laboratories covered England and Wales while separate arrangements were made for Scotland and Northern Ireland who continued their reliance on university departments.

But while the low threat of biological attacks on the home population never materialised the establishment of the EPHLS network brought great benefits to both the surveillance and the control of disease. As the official biographer of the PHLS pointed out:

> *'The very fact that the EPHLS did not have to deal with unusual bacteriological problems – as had been feared- meant that they were able to contribute their expertise to the study of infectious diseases then normally prevalent in the country and in doing so demonstrate the great benefit that could flow from a nationally organised laboratory service. The weekly reporting of pertinent laboratory findings to the EPHLS HQ provided information on the prevalence of many infections to an extent otherwise unobtainable. And, the fact that from the first the laboratories had been encouraged to undertake epidemiological investigations demonstrated that the provision of an integrated lab service could add a new dimension to the M.O.H's capacity to unravel problems in the control of communicable diseases.'*[24]

The PHLS in the Post-War period

The success of the EPHLS during the war meant that there was widespread support for the continuation of the service after the war and the 1946 NHS Act included 'provision of a bacteriological service for the control of infectious diseases'. However, it was decided that

22. REO Williams, *Microbiology for the public health: The evolution of the Public Health Laboratory Service, 1939-1980*, London: PHLS, 1985 p.2-4.
23. REO Williams, *Microbiology for the public health: The evolution of the Public Health Laboratory Service, 1939-1980*, London: PHLS, 1985 p.4.
24. REO Williams, *Microbiology for the public health: The evolution of the Public Health Laboratory Service, 1939-1980*, London: PHLS, 1985 p.25.

the Medical Research Council should continue its operation in the immediate post war period. Interestingly, the PHLS was never established as part of the NHS itself although it relied heavily on the NHS infrastructure and shared a common purpose. This lack of integration into the healthcare service was, according to Wilson, to cause the service serious problems.[25]

Nevertheless, the success and usefulness of the PHLS depended on its integration into the local administrative structure. Although there was never any requirement on MOH's to seek the assistance of the PHLS when investigating an outbreak of disease, the basic assumption was that the PHLS was there to serve MOH's and their sanitary inspectors and later CCDCs. This understanding was formalised in an agreement between the PHLS and the Society of Medical Officers in 1951 which stated that the PHLS 'would conduct field work only in support or in concurrence with a Medical Officer of Health'.[26] However, there was never a legal duty on local authorities or health authorities to co-operate with the PHLS in the event of a disease outbreak, nor any powers vested with the Chief Medical Officer to require co-operation as Donald Acheson found whilst Chief Medical Officer in the 1980s.[27]

The other major benefit of the PHLS was its ability to act as a surveillance unit for the whole of England and Wales. In 1980, a decision by the then Department of Health and Social Security (DHSS), substantially increased the capacity of the PHLS through the creation of the Communicable Disease Surveillance Centre (CDSC) based in Colindale North London.[28] This was situated alongside the Central Public Health Laboratory, with its Epidemiological Research Laboratory, later incorporated into CDSC. The main impetus behind the creation of the CDSC by central government was a number of poorly managed outbreaks, notably the accidental smallpox release in London in 1973. In addition with a large financial commitment from the DHSS, the PHLS established Regional Epidemiology Units across England and Wales which were directly accountable to CDSC.

Information on the incidence of disease was published in weekly reports and initially had two main sources. The first, was the legal requirement placed on doctors and other healthcare professionals to notify the proper officer of any individual suffering from one of the diseases listed in the various public health acts. The second, was the laboratory reports of specific pathogens which had been identified in PHLS labs and NHS clinical microbiology labs. This enabled the CDSC to build up a national picture of the prevalence of disease across England and Wales and to direct resources to where they were most needed. Later, CDSC created many other so-called 'enhanced surveillance mechanisms' set up to deal with new disease threats including; Vaccine Preventable Diseases, Legionella, HIV/AIDS, CJD, Health Care Associated Infections and Antimicrovial Resistance and Travel Health.

25. REO Williams, *Microbiology for the public health: The evolution of the Public Health Laboratory Service, 1939-1980*, London: PHLS, 1985 p.55.
26. REO Williams, *Microbiology for the public health: The evolution of the Public Health Laboratory Service, 1939-1980*, London: PHLS, 1985 p.55.
27. Sir Donald Acheson, The BSE Inquiry / Statement No 251 *The inquiry into BSE and variant CJD in the United Kingdom 2000*.
28. Department of Health and Social Security *Co-ordination of epidemiological services for communicable diseases and food poisoning: Communicable Disease Surveillance Centre* Health Circular HC (80)2 February 1980.

The PHLS was established as a specific body within the health protection structure following the PHLS Act in 1960. This established a board which had a specific duty to "provide a bacteriological service for the control of infectious diseases", for which it was accountable to the Secretary of State for Health as well as health ministers in the Welsh Office, offering advice and support in the event of a major outbreak. The board also consisted of a Deputy Chief Medical Officer for England, employed by the Department of Health and up until 1989 a DCMO from Wales. The board was incorporated in the 1977 NHS Act.[29]

By the mid 1990s the basic structure of the PHLS in England and Wales consisted of a network of 49 microbiology laboratories based in NHS hospital Trusts and organised into nine regional groups with devolved budgets. Only those laboratories in NHS Hospital Trusts which performed some public health testing were under the management and control of the PHLS, however, most NHS laboratories which undertook clinical microbiology fed information into the overall network.

Microbiology and surveillance services in Wales and Northern Ireland in the post war period

The Public Health Laboratory Services also included an epidemiological unit in Wales established in 1989. CDSC Cardiff was effectively a Welsh branch of the national CDSC at Colindale although the five PHLS laboratories in Wales, including specialist reference bodies, fed into the overall picture in England. The CDSC was headed by a consultant regional epidemiologist with support from a consultant epidemiologist. The function of the CDSC Wales also included acting as an advisor to the Chief Medical Officer at the Welsh office on the epidemiology and control of communicable disease in Wales. By 2000, following devolution, the specialist reference labs and public health labs in Wales were operating with CDSC Wales as a single managed entity.[30]

Funding for the PHLS which was a non departmental public body came from both the Department of Health and the Welsh Office and, following devolution, the Welsh Assembly Government. The PHLS was thus accountable to both bodies, although it was able to set and determine most aspects of surveillance policy itself.

Although the PHLS was only formally established in England and Wales the organisation developed what became known as an outpost in Northern Ireland. Following a review of the Communicable disease function in 1998 it was decided that there was a need for a central epidemiological surveillance centre outside of the Northern Irish Department of Health Social Services and Public Safety (DHSSPS). This led to the DHSSPS in Belfast entering into a contractual arrangement with the PHLS to provide a surveillance function. Thus in 1999 CDSC-NI was established and led by a regional epidemiologist who reported to CDSC in Colindale.

29. Sir Joseph Smith The BSE Inquiry / Statement No 181 *The inquiry into BSE and variant CJD in the United Kingdom 2000.*
30. AJ Howard *Infection and Communicable Disease control in Wales* Communicable Disease and Public Health Vol 6 No 4 December 2003.

The major benefit of the PHLS was its integrated nature and centralised management structure. This meant that for the large majority of the geographical area of the United Kingdom, including that area with the highest population density a single surveillance body was in operation, fed by a network of laboratories directly under its control. While many of the sources of data, and many of the laboratory facilities, were sometimes loosely networked into the PHLS, the Director of the CDSC was able to ensure that data of national significance was referred upwards. It also allowed the CDSC to co-ordinate a standardised response to disease outbreaks and to provide direct advice to the CMOs of England and Wales and, through them, Ministers about which action to take in an emergency situation.

Microbiology and surveilance services in Scotland in the post war period

In Scotland, the situation was different. During the war years, the public health bacteriology for Scotland was provided largely by the labs in the four Scottish Universities and although the NHS was to cover all the UK it was not proposed that the PHLS should be expanded to cover Scotland. Indeed, the co-ordination of communicable disease control administration in Scotland developed independently from England with few formal links between the PHLS and the Scottish laboratories being established.[31] For a large part of the post war period there was no established body in Scotland to oversee disease surveillance until the Communicable Disease (Scotland) Unit (CDSU) was established in 1969 following an epidemic of typhoid in Aberdeen in 1964. This later became part of the Common Services Agency of the NHS in Scotland.

The CDSU performed a similar epidemiological surveillance function to the CDSC in England and Wales, however, the main difference lay in the fact that the laboratories which provided data on samples were not managed directly by the CDSU but remained part of academic institutions and NHS hospitals as well as private organisations.

The information and statistics division of the Common Service Agency, based in Edinburgh also conducted important epidemiological work and was responsible for commissioning the network of microbiological labs based in NHS Trusts, which also included a range of specialist reference laboratories. Although the Scottish laboratory system was self sufficient in most respects it relied on the PHLS labs in England and Wales for certain highly specialist reference services not provided in Scotland.

In addition to CDSU, the Environmental Health (Scotland) Unit was set up in 1989 by the Scottish Health Department to provide advice on the epidemiological aspects of environmental health hazards to health boards and local authorities and to investigate environmental hazards to health and to conduct epidemiological research. CDSU and the EHSU were merged in 1993 to create Scottish Centre for Infections and Environmental Health (SCIEH).[32]

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31. REO Williams, *Microbiology for the public health: The evolution of the Public Health Laboratory Service, 1939-1980*, London: PHLS, 1985 p.28.
32. The BSE Inquiry: The Report; *The inquiry into BSE and variant CJD in the United Kingdom* Volume 9: Part 2: Scotland para 9.25 2000.

2 RESTRUCTURING THE SYSTEM: CRISES, DEVOLUTION AND THE SECURITY AGENDA

As noted above, the administration of communicable disease control has often been allied to a broader concern about ensuring the security of the human population in times of emergency. Just as the PHLS was first established as an emergency service on the eve of the Second World War, the recent restructuring of communicable disease control in the UK has been determined, in part, by the perceived threat of bio-terrorism following the deliberate release of anthrax in the US following September 11 2001. Although the vast majority of communicable disease outbreaks are local, the fear of a deliberate release of pathogens, which the disease surveillance function is ideally suited to detect, has meant that the everyday disease control function has become integrated into a national system which is geared up to responding to major incidents.

In addition to bio-terrorism, the threat posed by pandemic influenza to the everyday functioning of society has meant that communicable disease control is now integral to both the security agenda as well as for those policy makers charged with contingency planning. This has led to the integration of the communicable disease function into national 'health protection' bodies which cover broader environmental health hazards and bio-terrorism, and has shifted some of the core-executive responsibilities for public health from the Department of Health to the Cabinet Office. Further, the allocation of responsibilities for public health to administrative bodies in case of an emergency is now determined by the recent revisions to the emergency powers legislation contained in the Civil Contingencies Act 2004.

While the national health protection bodies that have been created in England, Scotland and Wales are the most significant organisational changes since the establishment of the PHLS they are just one type of agency set up to fight infection. As in other areas of government activity, the trend towards the creation of non departmental government bodies, packed with

experts and charged with administering a specific aspect of public policy, has come to dominate certain aspects of public health policy. Thus the Food Standards Agency, the Healthcare Commission and the National Patient Safety Agency are but a few of the bodies now populating the disease control landscape. Some of these, such as the Food Standards Agency, have been created in response to a particular failing in the system. Others, such as the Healthcare Commission and other audit bodies, have been allocated a disease control function as part of a broader remit to improve health care quality.

At the same time that these new national agencies have emerged the National Health Service across the different parts of the UK has been radically restructured at local level, often with other non-public health objectives in mind. The integration of the new national centres with the local administration of the communicable disease control function has been one of the more challenging aspects of the recent reforms, with different solutions applied in different parts of the UK. As has been pointed out elsewhere, reform of the healthcare systems in the four nations have taken markedly different paths since devolution and it is interesting to observe the different approaches to communicable disease control.[33]

This chapter sets out how the administration of communicable disease control has been reformed in the UK following the establishment of national health protection bodies, the devolution of power to Scotland and Wales and the reform of the National Health Service. Within the constraints of space, it attempts to describe the key functions and responsibilities of the main bodies explaining how each links up with other parts of the system.

The Food Standards Agency

Before a discussion of the different institutional structures which have emerged since devolution it is interesting to consider the case of the Food Standards Agency which operates across the UK despite the fact that food safety policy is a devolved matter. This agency emerged as a result of a major crisis in confidence in the safety of the food supply in the late 1990s. The 1996 E.coli outbreak in Scotland which killed 21 people took place in the same year that evidence over the mismanagement of the BSE/CJD crisis was beginning to emerge. Both incidents caused great damage, not only to the food industry, but also to the public's faith in government's ability to ensure the safety of food products.

Responsibility for preventing and controlling outbreaks of food borne disease across the UK has rested with local authorities since the 1875 Food and Drugs Safety Act. This situation has continued, with local authority environmental health departments and trading standards officers taking a lead in food law enforcement under the 1990 Food Safety Act. This piece of legislation amongst other things prohibits the act of 'rendering food injurious to health' and sets out the offence of 'selling or possessing for sale food that does not comply with food safety requirements'. In addition a significant amount of food safety law now emanates from the EU as a result of commitments under the EU Treaties. According to recent estimates around 17% of the staff time of Environmental Health Officers is dedicated to food law enforcement.[34]

33. Scott L Greer *Territorial Politics and Health Policy*. Manchester University Press 2004.
34. Source: *Environmental Health Statistics 2002-03* CIPFA Statistical Information Service 2002.

While this basic legal structure still remains in place, the overall administration of the food safety regime was revealed to be flawed by both the BSE crisis and the E.coli outbreak in Scotland. The Whitehall department responsible for overseeing food safety, the Ministry of Agriculture, Fisheries and Food (MAFF) was found to be beset by a conflict of interests; on the one hand it was supposed to promote the food and agricultural industry, while on the other it was also supposed to protect the interests of consumers. At local level, the enforcement of food law was found to be uneven, and in some places ineffective.[35]

The solution to these problems was the establishment of an agency responsible for protecting public health in this area at arms length from government, but reporting now to health rather than agriculture ministers. The Food Standards Agency was established as a non departmental executive body in 2000 following the passing of the Food Standards Act in 1999. Although the FSA is responsible for administering food law in the UK, the enforcement function still remains with local authorities. Due to the concerns over the variability of food law enforcement throughout the UK, the FSA has been given powers to assess and audit how local authorities are enforcing food law. Overall, the agency has set itself the target of reducing food borne illness by 20% between 2001 - 2006. The agency also plays an important link between the EU and local authorities by providing directions on how EU food safety law should be implemented, as well as negotiating in Brussels on food matters on behalf of the UK government.

The Food Standards Agency is accountable to the Secretary of State for Health in England and through the Secretary of State to the UK Parliament. However, because food safety policy is a devolved competence the FSA must also be accountable for its actions to the health ministers in Scotland, Northern Ireland and Wales. This is achieved through the appointment of one board member each by the Welsh Assembly and the Northern Ireland Office and two board members by the Scottish Parliament, with the rest appointed by the Secretary of State for Health. In addition, the FSA Act establishes an executive body in each of the devolved administrations headed by a director. Each director is accountable to the overall Chief Executive of the Agency, as well as to the respective national assemblies.

The aim of these arrangements is to provide co-ordination and coherence of food safety policy across the UK, while permitting accountability and responsiveness to the different national policy communities. Due to the large amount of food legislation emanating from the EU, the opportunities for policy divergence are necessarily limited. Nevertheless the FSA is a novel solution to the problem of disease control in a multi-tiered governance structure.

35. Minister of Agriculture, Fisheries and Food *The Food Standards Agency A Force for Change*. January 1998 Cm 3830.

England

Getting ahead of the curve: the creation of the Health Protection Agency

As noted earlier, the Chief Medical Officer is the main advisor to government on public health and matters relating to the medical profession. Although in many respects this role lacks definition there is a long tradition of CMO's from Sir John Simon to Sir Donald Acheson issuing recommendations to government on the administration of public health. In 1999 the current CMO Liam Donaldson established a review of communicable disease control in England. The strategy document *Getting ahead of the Curve*, which emerged in January 2002, was interpreted by many in light of the deliberate release of anthrax in the US and a ratcheting up of the health security capacity at EU level in October 2001.[36] The document set out a strategy to create 'a modern system to prevent, investigate and control the infectious diseases threat and address health protection more widely' and saw bioterrorism as a particular threat to the UK population.[37]

The review highlighted a number of deficiencies in the current system including problems with the formal reporting of diseases leading to gaps in surveillance, the lack of a formal central point for co-ordination of disease surveillance, the lack of integration between the disease control function and other emergency functions and the inadequacies of the current legal basis for communicable disease control in England.

The main proposal contained within this review was the creation of a 'National Infection Control and Health Protection Agency'. This was to combine the existing functions of the Public Health Laboratory Service and three other national bodies; the National Radiological Protection Board, the Centre for Applied Microbiology and Research and the National Focus for Chemical Incidents. The purpose of this was to address the 'growing concern that the control of infectious diseases is one part of a range of health protection functions which at the moment are fragmented.'[38] Disease control was thus to be subsumed into an organisational structure which took a holistic approach to both environmental and biological health threats.

The Health Protection Agency was initially established as a special health authority on 1st April 2003 and became a non government departmental body on the 1 April 2005 following the passing of the Health Protection Agency Act in 2004. This Act gave the Health Protection Agency wide ranging powers to protect the human population from infectious disease. Section 2 of the Health Protection Agency Act sets out the functions of the HPA with regard to health as follows:

(a) the protection of the community (or any part of the community) against infectious disease and other dangers to health;

(b) the prevention of the spread of infectious disease;

36. *Eurosurveillance* 'BICHAT: an EU initiative to improve preparedness and response to bioterrorism' volume 6 issue 28 11 July 2002.
37. *Getting Ahead of the Curve – A Strategy for infectious diseases (including other aspects of health protection)* A report by the Chief Medical Officer. Department of Health 2002, p.14.
38. *Getting Ahead of the Curve – A Strategy for infectious diseases (including other aspects of health protection)* A report by the Chief Medical Officer. Department of Health 2002, p.133.

(c) the provision of assistance to any other person who exercises functions in relation to the matters mentioned in paragraphs (a) and (b).[39]

However, in realising these functions the HPA as an organisation is given a legal powers to 'do anything which it thinks is (a) appropriate for facilitating, or (b) incidental or conducive to, the exercise of its functions'. These may include commissioning research or providing laboratory services and clinical services but in law there is no stated way in which the HPA must deliver its functions.

The Health Protection Agency is governed by a board which is headed by a Chairman. The board is corporately responsible for meeting the duties set out in the Health Protection Agency Act and operationally the organisation is overseen by the Chief Executive. The work of the HPA is carried out by three centres; the Centre for Radiation, Chemical and Environmental Hazards, the Centre for Emergency Preparedness and Response and the Centre for Infections (CfI) and a large separate division of Regional and Local field investigation teams known as Local and Regional Services (LARS). Each Centre is headed by a director. Although the Centre for Emergency Preparedness and response conducts research and offers advice on public health threats, including infectious disease and is responsible for preparing for emergencies within the Agency, the main locus for communicable disease control in England now lies in the Centre for Infections and Local and Regional Services

The Centre for Infections incorporates the epidemiology, surveillance and response functions undertaken by the Centre for Disease Surveillance and Control (CDSC) and the reference laboratory functions of the PHLS. The centre of the HPA's surveillance network thus remains in Colindale, North London, and it is this part of the HPA that is responsible for co-ordinating responses to lower level national outbreaks including advising the Department of Health on the appropriate policy response. When there are higher level outbreaks, incidents and emergencies the Chief Executive's Office takes over this role, delegating technical responsibilities to LARS and the CfI with the Emergency Preparedness and Response division playing a supporting role.

Internationally, while the Department of Health remains the UK hub in the European Union's Early Warning and Response system (see next section on the European Union) the CfI plays a crucial supportive role and acts itself as the hub for the various European disease surveillance networks and is the designated focal point for the International Health Regulations administered by WHO.

The role played by the FSA and local authorities is also supported at national level by the HPA's Environmental Enteric Diseases Department, based in the CfI in Colindale which helps co-ordinate studies and investigations into food borne disease. Local authorities and the Food Standards Agency also arrange for samples to be tested in the 24 Food, Dairy, Water and Environmental Laboratories provided by the HPA. These are based in NHS trusts and within the HPA structure.

39. Health Protection Agency Act 2004 HMSO.

The organisational structure of the LARS division of the HPA corresponds to the current structure of local government. The regional offices of the Health Protection Agency match each of the nine Government offices of the Regions. Each region has a director, regional management and service functions that include regional epidemiology and microbiology, emergency planning and administrative staff. At sub-regional level the Health Protection Agency employs 39 Health Protection Units. These operate within boundaries which broadly correspond with a county boundary or police authority boundary.

Perhaps the most significant change at local level, was the transfer of the staff responsible for communicable disease control from the NHS to the LARS division of the HPA. Thus, the local health protection teams of the HPA now employ the communicable disease control staff who formerly had been employed by the local health authority. These include community infection control nurses and most importantly CCDCs.[40] The Health Protection Agency thus employs one of the 'proper officers' who is responsible for disease control under the 1984 Public Health (Control of Disease) Act. In addition, the CCDC may also takes on the medical officer responsibilities under the Immigration Act 1971 and the Nationality and Immigration and Asylum Act 2002.

Changes to Microbiology Services in England

Another significant proposals set out in 'Getting Ahead of the Curve' was the transfer of large parts of the PHLS laboratory network to NHS management and control which effectively meant the dissolution of the centrally managed Public Health Laboratory Service network. A constant problem for the PHLS had been the reconciliation of the first line diagnostic role played by hospital laboratories with their public health responsibilities.[41] The rationale behind the changes thus stemmed from the fact that much of the PHLS laboratory work in NHS Trusts was dedicated to clinical microbiology (i.e. the examination of specimens submitted by clinicians as part of diagnosing an individual patient, rather than providing public health or specialist or reference functions).[42]

However, the transfer of PHLS labs to the NHS did not mean that the NHS laboratories would no longer provide a public health function. Instead, NHS labs would be required to 'meet their public health obligations as well as their clinical responsibilities, including the submission of reports of infection for surveillance purposes, contributing to the investigation and management of outbreaks and complying with the required security procedures for microbiology laboratories'.[43]

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40. www.hpa.org.uk.
41. REO Williams, *Microbiology for the public health: The evolution of the Public Health Laboratory Service, 1939-1980*, London: PHLS, 1985 p.82.
42. The definition of reference laboratories is taken here from *'Getting Ahead of the Curve – Action to strengthen the microbiology function in the prevention and control of infectious diseases.'*- Department of Health 2002 p.4: 'Reference laboratories, as part of their function, undertake either detailed testing or common micro-organisms to characterise and fingerprint them or specialist testing for rare organisms: and specialist laboratories cover either events that require rare skills or rare clinical events. There is some overlap between specialist and reference work'.
43. Department of Health 2002 *Getting Ahead of the Curve – Action to strengthen the microbiology function in the prevention and control of infectious diseases* p.5.

What did change, significantly, were the funding arrangements for these labs. Previously the PHLS had funded these labs directly. Currently, funding for the labs comes via Primary Care Trusts and by the regional offices of the HPA that commission laboratory services from NHS trusts. Following the initial establishment of the new system, the Department of Health ensured that the public health labs received the same amount of funding as they had had previously until April 2005. Since then the Department of Health has stated that 'resourcing of NHS laboratories for public health work will be a matter for PCTs'.[44]

Out of the 47 PHLS labs covering England and Wales the HPA remains in control of 9 labs in each of the regions, with two in London. Each of these is overseen by a newly appointed regional microbiologist. At national level the system is overseen by the Chief Inspector of Microbiology based in the Department of Health. The creation of the Health Protection Agency and the dissolution of the Public Health Laboratory Network required a split between England and Wales in terms of responsibility for the laboratory network. But it also meant that important national reference laboratories which were used by the English surveillance system now belong to a separately funded and managed network. Similarly the English reference laboratories which were integral to the Welsh system now come under the control of the HPA. Where there had previously been no major issue in terms of access to these labs by practitioners in either country now funding flows and service level agreements have had to be put in place to straddle the newly created administrative divide. Again, the establishment of an English only surveillance network removed CDSC Wales from the formal organisational structure in England.

'Shifting the Balance of Power' – reforming the structure of the NHS in England

At the same time as the proposals for the HPA were being discussed the NHS Reform Act 2002 was making its way on to the statute book. This piece of legislation sought to put in place the proposals in Shifting the Balance of Power which contained a plan to restructure the NHS by abolishing district health authorities and replacing them with Primary Care Trusts. The legislation also created strategic health authorities. Although the Act did not set out any specific new responsibilities for the NHS in terms of controlling communicable disease it did change the structure of the public health function within the NHS.

At the level directly below the Department of Health and the Chief Medical Officer lie the nine Regional Directors of Public Health (RDPH) based in each of the nine regional offices of government. They are said to be the Department of Health's presence in each of the regions and each RDPH, as an employee of the Department of Health, is managerially accountable for their public health and health protection function to the CMO and through the CMO to ministers. Although there is no statutory duty imposed upon the regional directors, they are 'accountable for ensuring that there are appropriate high quality health protection arrangements (covering infectious diseases and other risks to health) in place, in all locations in their region. They will also be accountable for managing and co-ordinating the health aspects of the Government's response to emergencies and disasters.'[45]

44. Department of Health 2003 *The Government's response to Fighting Infection* – The 4th Report of the House of Lords Select Committee on Science and Technology' para 16.
45. *Shifting the Balance of Power, Next Steps* Appendix C para 18.

The Regional Director of Public Health (RD PH) is required to work closely with each Regional HPA team in order to ensure co-ordination of both the surveillance of communicable disease and the response to any emergency.

Strategic Health Authorities in England

Strategic Health Authorities (created under the 2002 National Health Service Reform Act) sit beneath the Regional Directors of Public Health based in the government offices of the regions, although there is no direct line of accountability to RDPHs. Initially there were 28 of these authorities responsible for the 'performance management' of Primary Care Trusts and NHS Acute Trusts and other NHS bodies. They are in effect responsible for managing the NHS on behalf of the Department of Health and are accountable to the Chief Executive and the DH board. The boundaries of Strategic Health Authorities are currently co-terminous with local authority boundaries. Under the direction of a director of public health SHAs are responsible for facilitating and managing public health networks within their areas, although no actual health protection function for SHAs is set out in *Shifting the Balance of Power* or in primary or secondary legislation. Some duties are set out in secondary legislation where they are charged with 'securing preparation, carrying out and co-ordination of measures conducive to public health', although this function can be exercised 'for the purpose of performance management only.'[46]

In addition, the *UK Influenza Pandemic Contingency Plan* gives SHAs an important co-ordinating role in the event of a major influenza outbreak.[47] They are responsible amongst other things for 'strategic control of any incident that affects or seems likely to affect a number of hospitals or have a significant impact on primary care'; 'ensuring command and control structures are in place across the NHS within its area'; 'ensuring links within the NHS are effective and durable' and 'ensuring local provision for an influenza pandemic'.[48]

Primary Care Trusts in England

The main aim of *Shifting the Balance of Power* was to transfer responsibility for public health from health authorities to Primary Care Trusts and to make PCTs the focal point of public health within the NHS. The abolition of the 95 health authorities and the transfer of functions to 303 PCTs, however, led to a dispersal of the public health workforce across the NHS leading to a shortage in the number of Directors of Public Health and smaller public health teams. This resulted in the 'sharing' of DPHs between PCTs and the development of public health networks between local agencies in order to utilise available resources.[49] The importance of the DPH as a figure within the local NHS was, however, still maintained and the DPH sits on the PCT board. Each Primary Care Trust is headed by a Chief Executive who is ultimately responsible for carrying out the duties imposed on the organisation.

The current legislative status of Primary Care Trusts is provided by the NHS Reform Act 2002. According to the Department of Health guidance *Shifting the Balance of Power – Next*

46. Statutory Instrument 2002 No.2375 TSO The National Health Service (Functions of Strategic Health Authorities and Primary Care Trusts and Administration Arrangements) (England) Regulations 2002.
47. Department of Health *UK Health Departments – UK Influenza Pandemic Contingency Plan October UK* October 2005.
48. Department of Health 2005 *UK Influenza Pandemic Contingency Plan* Para. 6.2.
49. Derek Wanless *Securing Good Health for the Whole Population* HM Treasury February 2004 p.45.

Steps, the duties of PCTs are to improve the health of the community; secure the provision of high quality services and integrate health and social care locally.[50] Most of the day to day functions of PCTs involve commissioning health care services from NHS trusts and other health care providers, a role which is set to be expanded as a result of recent initiatives.

In addition to the role described in the *Next Steps* document further legal duties are set out in a piece of secondary legislation. This requires PCTs to provide facilities for the prevention of illness, to secure preparation carry out and co-ordinate measures conducive to public health, provide health promotion services, and to make available services to enable local authorities to discharge their functions relating to public health.[51] This legislation also places specific duties on PCTs with regard to sexually transmitted disease. Thus, PCTs are required to provide services and facilities for testing 'for, and preventing the spread of, AIDS, HIV and genito-urinary infections and diseases, and for treating and caring for persons with genito-urinary infections or diseases'.[52]

The duties to protect the health of the local population thus still lie with PCTs, and they are under a specific requirement to provide or arrange sexual health services, but the capacity to carry out many of these functions has transferred to the Health Protection Agency, along with a substantial section of the public health team, including the Consultants in Communicable Disease Control. In order to fulfil their public health duties the 303 PCTs must rely upon the services provided by the HPA in the form of 39 local health protection units. 'Memoranda of Understanding' have been established at local level between PCTs and local health protection units to determine who provides which services. The respective roles and functions provided by the HPA and the PCT are set out in **Figure 2**.

Commissioning a Patient Led NHS – further reform to the system in England

Since the passing of the NHS Reform Act the NHS has seen a further round of re-organisation, with as yet unknown implications for public health and communicable disease control

In July 2005 the Chief Executive of the NHS issued a document entitled Commissioning a patient led NHS which set out plans to re-organise yet again the main public health institutions within the NHS, primary care trusts and Strategic Health Authorities.[53] The purpose of the re-organisation, which is currently underway, is to make the NHS a more effective commissioner of services for patients by strengthening the capacity of PCTs to purchase more appropriate services for their local populations. In order to streamline this commissioning role the number of PCTs has recently been reduced from 303 to 152 and the number of Strategic Health Authorities has been cut from 28 to 10.[54]

Although there have been no statutory changes to the role of these bodies, this re-organisation increases the co-terminosity between the NHS and other government bodies.

50. Department of Health *Shifting the Balance of Power: The Next Steps* p.8.
51. The National Health Service (Functions of Strategic Health Authorities and Primary Care Trusts and Administration Arrangements) (England) Regulations 2002.
52. The National Health Service (Functions of Strategic Health Authorities and Primary Care Trusts and Administration Arrangements) (England) Regulations 2002 para 8 (5)
53. Department of Health, *Commissioning a Patient-Led NHS*, 28 July 2005
54. Department of Health press release *NHS organisations to strengthen patient services* Tuesday 16 May 2006 Ref: 2006/0182

In particular the 10 Strategic health authorities are now almost co-terminous with the nine Government offices of the Regions where the Department of Health's nine Regional Directors of Public Health currently reside. In addition, more than 70% of PCTs will now mirror Local Authority boundaries which should also aid joint working between the NHS and local government.

Figure 2: Memorandum of Understanding – PCTs and the HPA local and regional Units

Services provided by HPA to PCTs	Services arranged by the PCT
Provide Medical Advice and Proper Officer Functions to the Local Authority under various Public Health Acts	Appoint a Immunisation co-ordinator and arrange immunisation delivery services
The CCDC will support the investigation and management of outbreaks in hospitals.	Monitoring of vaccination coverage
Work with the PCTs on policies and procedures relating to communicable disease control.	Implementation of influenza immunisation programme
Lead the investigation and management of outbreaks in community settings such as in residential homes, schools prisons etc	Maintain an infection control service with infection control and communicable disease control nurses
Conduct surveillance and monitor local rates of infection.	TB diagnosis treatment and control services
Public Health investigation and management of individual cases of communicable disease	Commission microbiology services from NHS Trusts
Identification and protection of contacts of communicable disease	HIV/STI diagnosis prevention and treatment services
Lead – with support from the PCT – the investigation and management of suspected communicable disease control outbreaks affecting the community.	Hospital Control of Infection and isolation facilities
Support the public health input into the investigation and management of incidents involving suspected acute exposure to chemical, radiological and nuclear hazards	The Public Health role of Health Visitors and School Nurses
With the assistance of the HPA Emergency Response Division, the Local HPU will support the DPH in the public health investigation and management of suspected deliberate release of chemical, biological, radiological or nuclear agents.	Access to specialist clincial infectious disease expertise
Contribute to public health emergency planning.	Antenatal Screening for disease
Provide local leadership of national health protection programmes	Hospital and medical treatment and facilities for vicitims of major incidents, including decontamination
Assist with the co-ordination, support and monitoring of communicable disease screening programmes.	Appropriate protective equipment for staff who may be exposed to accidental or deliberate release of suspected chemical, biological or radiation hazards
Co-ordinate and support the activities of PCT immunisation co-ordinators across the area	
Contribute to formal and informal training of personnel in health protection issues	

Source: Taken from 'Memorandum of Understanding between the Health Protection Agency and Primary Care Trusts.'

However, the reforms were not introduced with public health objectives in mind and while there may be benefits in terms of organisational coherence between the NHS and other public health partners there are fears that public health and the disease control aspect of it are being sidelined further. Not only has the public health workforce remained static, despite the large increase in most medical personnel in England, but the overall percentage of NHS resources dedicated to public health has declined.[55] This has led the Chief Medical Officer to warn against raiding public health budgets to fund other aspects of the NHS.

Healthcare associated infections in England

Following the passing of the Health Act in 2006 all NHS bodies in England are now placed under a legal duty to protect patients, staff and others from Health Care Associated Infections (HCAI).[56] This duty involves the implementation of a 'Code of Practice' which sets out a number of requirements relating to the prevention and control of infections in healthcare settings.[57] These include the appointment of a Director of Infection Prevention and Control (DIPC) within all NHS bodies. This person, supported by an Infection Control Team, is directly answerable to the Chief Executive of the Trust for the oversight of all infection control policies and their implementation. As well as requiring NHS bodies to have in place a series of protocols to prevent and then deal with outbreaks, the code also mandates the notification to the HPA of any 'serious untoward incident.'

Failure to observe the code, however, does not make anyone in the Trust liable to criminal or civil proceedings. Instead it is enforced by the regulatory body the Healthcare Commission which was established under the 2003 Health and Social Care Act and which inspects NHS bodies. The Healthcare Commission has powers to intervene if a 'significant failing' at a particular Trust is identified and to refer individual hospital trusts to the Secretary of State if it believes that 'special measures' are required. If any failings are detected by the Healthcare Commission in a Foundation Trust – which are independent from the Secretary of State – any directions to the Trust are delivered by the independent regulator Monitor.

The main focus of the Act is on provider units but the code also applies to PCTs. The code, however, does not apply to independent healthcare service providers. Instead any NHS body which commissions services from the independent sector are required to satisfy themselves 'that contractors have appropriate systems in place to keep patients, staff and visitors safe from HCAI, so far as reasonably practicable.'

A clear line of sight? Administrative coherence at national and local level

As was noted above, a major issue for the PHLS was the fact that it was established as a distinct body separate from the NHS structure which made integration into the day to day disease control function problematic. The establishment of the Health Protection Agency as a separate body from the NHS appears to have caused similar problems. Combined with the fact that the current public health legislation was designed for a 19th century system in which local authorities were the chief administrators of disease control powers means that responsibility for controlling disease now lies in a number of different parts of the system.

55. Department of Health, Chief Medical Officer, Sir Liam Donaldson, Annual Report 21 July 2006.
56. HMSO The Health Act 2006.
57. Department of Health The Health Act 2006 – Code of Practice for the Prevention and Control of Health Care Associated Infections.

Despite the new powers granted to the HPA under the 2004 Act the local authority is still responsible for protecting the public from infectious disease under the 1984 Public Health Act. The CCDC is still appointed by the local authority as one of the 'proper officers' but the fact that he or she is employed by the Health Protection Agency means that, as before, the health protection function is exercised at some distance from the body with a statutory duty to protect the population from disease. While the HPA has been granted significant powers to control disease, this is different from being legally responsible for ensuring that public health is protected. Similarly, the NHS, and in particular PCTs, are charged with protecting the public health but they too are reliant on professionals employed in a separate organisation to fulfil this duty. From the other perspective, in the event of an outbreak the HPA Local and Regional Services division are reliant on staff in local authorities and the NHS to aid the local HPU in the event of an outbreak.

The original idea from the 1988 Acheson report was that the CCDC would be accountable to the Director of Public Health of the local NHS body, with the DPH having access to this specialist resource within the organisation. However, this line of accountability is now severed and the expertise lies at arms length. The current government has argued that situating the CCDC outside of the NHS structure 'is an improvement on the previous position; when such consultants were in effect single-handed practitioners, each based in a local national health service body, which could offer them relatively little specialist support.'[58] The HPA certainly provides better back-up and a more accessible source of expertise for CCDCs. But some PCTs and local authorities are confused by a chain of command which appears to operate alongside, rather than within the administrative structure of the NHS, and by the fact that the new structure is underpinned by a set of non-legally binding agreements with no funding flows attached.

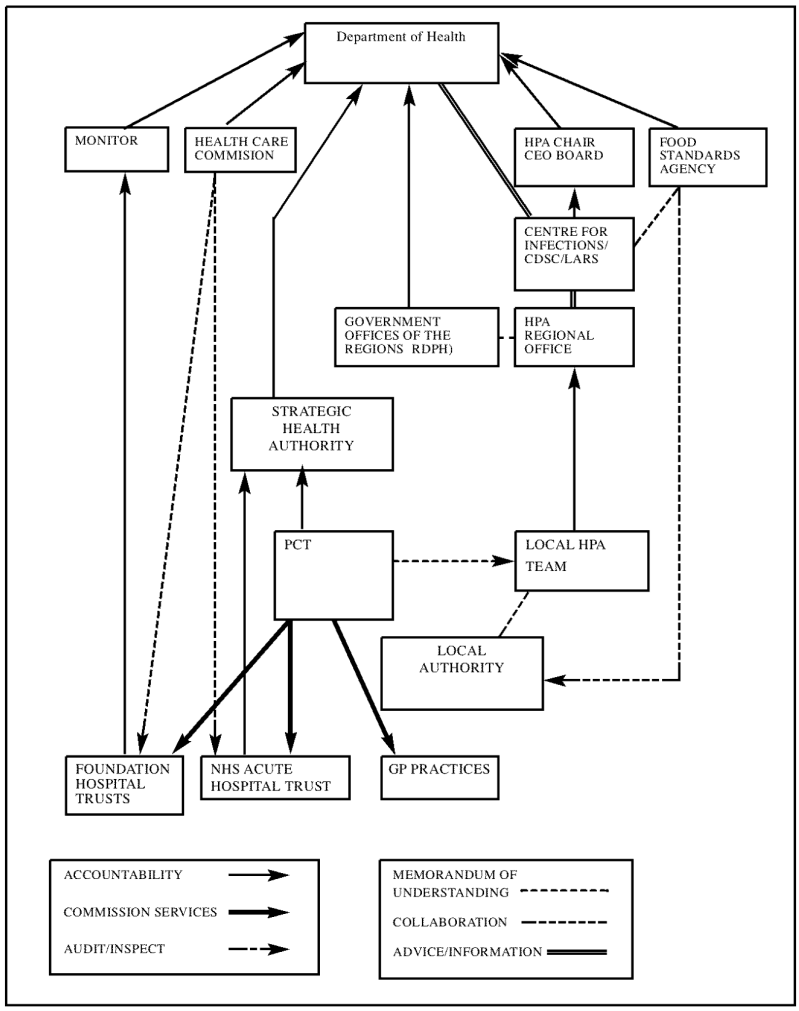
The potential for administrative fracture at local level was envisaged by the drafters of the Health Protection Agency Act. Section 5 (1) of the Act requires that; 'in the exercise of its functions the Agency must co-operate with other bodies which exercise functions relating to health or any other matter in relation to which the Agency also exercises functions'. Although the 1993 guidance has not been updated to take into account of the new allocation of responsibilities within the health service, NHS bodies in some areas have continued to establish joint plans with local authorities and other relevant agencies to ensure clarity about 'who does what' in advance of an outbreak. However, anecdotal evidence suggests that these joint plans occur in some areas but not others, with some being established between the PCT and the HPA but not including the local authority.

In addition to these problems at local level, the overall organisation of the disease control function in England has become increasingly fragmented over the past decade, with a move away from a command and control structure to a system in which non-departmental government bodies have taken over some of the responsibilities of the Secretary of State for Health. As **Figure 3** demonstrates, the disease control function in England is performed by a multiplicity of different bodies, with different parts of the system linking up in different ways.[59] While the complexity of the modern day threat from communicable disease may

58. Melanie Johnson, Minister for Public Health *Hansard* 14 Mar 2005 : Column 136W.
59. NB This diagram does not include other bodies such as the Health and Safety Executive, the Meat Hygiene Service, the Egg Marketing Inspectorate, the Veterinary Laboratory Agency, the State Veterinary Service or the Drinking Water Regulator all of which play an important role in controlling communicable disease.

well necessitate such institutional complexity, questions have been raised as to whether the current structure provides the Chief Medical Officer with the 'clear line of sight' which he sought in *Getting Ahead of the Curve*.[60]

Figure 3: Diagrammatic representation of the disease control function in England



60. Hilary Pickles 'Accountability for health protection in England: how this has been affected by the establishment of the Health Protection Agency' *Communicable Disease and Public Health* Vol 7 No 4 December 2004.

Scotland

Public Health Law in Scotland

As noted above, the organisation of communicable disease control has never been undertaken on a UK wide basis. The original public health legislation of the late 19th century was a jigsaw of different powers applying to different parts of the country. Because of the different legal structure and administrative system in Scotland, specific powers were developed for Scottish local authorities which differed from those in the rest of the United Kingdom. These were brought together in the 1897 Public Health (Scotland) Act which provides the basis for current day public health interventions in Scotland. However, as in England the Scottish Executive has recently cast doubt on the suitability of this legal basis in confronting the new and re-emerging infectious diseases of the 21st century:

> *'The [1897] Act does not now reflect subsequent institutional changes, such as the role of the NHS in public health, and there is a lack of clarity about the respective responsibilities of local authorities and NHS boards. Powers are inadequate to respond swiftly and comprehensively to recent and emerging problems such as bio-terrorism, SARS including, for example the absence of provisions for quarantine. The present arrangements for notification of diseases also require review.'* [61]

The main differences between the English and Scottish public health acts relate to the types of diseases that must be notified as well as to the powers of control.[62] (see Box 1). With regard to the exercise of control powers, which are broadly similar across the UK, the system in England, Wales and Northern Ireland allows the powers to be applied to those who are suffering from a 'notifiable disease', while in Scotland the powers can be applied to a person who is thought to be suffering from 'any infectious disease.'[63]

Box 1: Differences in notifiable diseases across the UK

Diseases which must be notified in England and Wales but not in Scotland	Diseases which must be notified in Scotland but not in England and Wales
Acute encephalitis	Chickenpox
Cerebrospinal fever	Continued fever
Enteric Fever	Erysipelas
Leprosy	Legionellosis
Viral meningococcal septicaemia	Lyme disease
Ophthalmia neonator	Puerperal fever
Yellow Fever	Rabies
	Toxoplasmosis
	Typhoid fever

61. *Health Protection Scotland* Scottish Executive Health Department 29 October 2004.
62. HMSO Statutory Instruments: 1989 No 2250 (S149); 1988 No 1550 (S155); 1988 No.156.
63. Public Health (Scotland) Act 1897 Section 45; Public Health (Control of Disease) Act 1984 Section 11.

Controlling infectious disease was a Scottish responsibility long before devolution in 1998. The development of a separate national surveillance and laboratory system is a more obvious example of how disease control policy and administration has diverged within the United Kingdom in the post war period. With the advent of devolution in 1998 and, in particular, the full transfer of public health powers to the Scottish Executive, a more distinctly Scottish approach to public health administration has developed and both the structure of the NHS and the disease control function have been re-organised.

The creation of Health Protection Scotland

The opportunity to create an integrated UK wide system of communicable disease control did emerge at the time that the Health Protection Agency was proposed. Indeed, the jurisdiction of the Health Protection Agency was a major area of controversy in the policy community, between those who argued that a rationally organised system would encompass all of the United Kingdom and those who saw benefits to the development of distinct national systems. Since the HPA was set up as a UK wide body with regard to radiological protection and chemical incidents, some argued that it made no sense not to extend its co-ordination of the disease control function to Scotland and Wales, since diseases did not respect administrative boundaries.[64] Others were also worried that the development of distinct national systems, allied to political devolution would lead to greater fragmentation in the approach to both surveillance and prevention and control policies.[65]

When the organisation of communicable disease control and health protection was reviewed in Scotland in 2002 the consultation document raised a number of options including transferring the functions of the Scottish Centre for Infections and Environmental Health (SCIEH) as well as the national reference laboratories and even health protection staff working in health boards to the HPA.[66] However, the results of the consultation made clear that a separate Scottish health protection organisation (Health Protection Scotland) should be established, while the HPA's role would be confined to providing the functions previously undertaken by the National Radiological Protection Board and the National Focus on Chemical Incidents, as well as the Scottish Poisons Information Bureau.

As in England, the decision to bolster the national co-ordination of the disease control function in Scotland was motivated by a change in approach to dealing with a wide range of health threats. Thus, infectious disease became just one part of an approach to health protection which encompassed all types of health threats ranging from climate change to household injuries.[67] But, it was also the product of a wider structural change in the administration of communicable disease control in the UK and the EU, including the creation of both the HPA and the European Centre for Disease Control. As these new organisations gained in stature and importance there was a need for Scotland to boost its capacity to link into these newly emerging networks.

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64. Earl Howe Lords *Hansard* 3 March 2004: Column GC259.
65. Professor Nicoll House of Lords Select Committee on Science and Technology Report: *Fighting Infections: 2002 Minutes of Evidence* Tuesday 17 December 2002 Question 277.
66. *Health Protection in Scotland – A consultation paper* Scottish Executive/NHS Scotland 2002.
67. *Health Protection in Scotland – A Consultation Paper* 2002 page 4

A review of the health protection function in Scotland also revealed 'question-marks over the impact on current services on the levels of ill health due to infections and hazards and over ability to deal with new threats'. The new organisation was thus established to play 'a key co-ordinating role in the public health management of incidents and outbreaks affecting the country as a whole or large parts of it.'[68]

'Health Protection Scotland' (HPS) was established in November 2004 by the Scottish Executive and the Scottish Centre for Infection and Environmental Health (SCIEH) moved into this new body. No new legislation was introduced to create HPS: this means that unlike the Health Protection Agency it is given no additional powers or duties with regard to infectious disease. It is currently a division of NHS National Services Scotland, and is established as a special health board.

Unlike in England and Wales, Health Protection Scotland does not employ local health protection teams. Instead, the role of the HPS is to work with NHS Boards locally to ensure the effectiveness of their health protection services 'lending operational support to local health protection organisations'. According to the Scottish Executive, 'this activity will not be discretionary on the part of the NHS Board'.[69]

A typical Public Health department within a health board consists of the Director of Public Health, Consultants in Public Health Medicine, (CPHM) Public Health Specialists and other administrative support staff. Most boards have designated consultants in public health medicine with special expertise in communicable disease and environmental health, with other specialist staff participating in out of hours cover. Each health board is also required to have a designated immunisation co-ordinator, whose job it is to ensure the take –up of vaccines in those groups which are targeted. The role of HPS is thus to provide professional organisational support to these health professionals, assist local authorities and NHS boards in the establishment of Health Protection networks, which are aimed at facilitating the transfer of best practice arrangements, and ensure that information systems and local surveillance schemes are up to date and operational.

Thus HPS facilitates, sets and audit standards to ensure that NHS Boards have systems in place to deliver necessary health protection services and reports on these issues to the Scottish Executive and the newly created Scottish Health Protection Advisory Group. This Group was established to 'advise the Chief Medical Officer and National Services Scotland on matters relating to health protection and on the effectiveness and efficiency of the health protection function in Scotland and to support the establishment and ongoing corporate development of Health Protection Scotland"[70] The Group includes representatives from NHS boards, local authorities, HPS, other national organisations with an interest in health protection, and relevant professional and staff bodies.

The main central function of HPS is one of co-ordination of health protection, facilitating the response to disease outbreaks as well as conducting surveillance through the collection

68. *Health Protection Scotland* Scottish Executive Health Department 29 October 2004
69. *Health Protection Scotland* Scottish Executive Health Department 29 October 2004. http://www.nes.scot.nhs.uk/docs/posts/spr/SpR711104/SCIEHinfo.pdf
70. *Health Protection Scotland* Scottish Executive Health Department 29 October 2004

and publication of data. Under the new system 'the main lines of accountability between NHS boards and NHS National Services Scotland to the Scottish Executive Health Department will not be affected by the new health protection arrangements'.[71] In this sense, HPS is similar to the UK Food Standards Agency which audits local authority enforcement of food safety regulations. The main difference, however, is that the FSA is a statutory body which has powers to intervene if local authorities are not performing. The creation of Health Protection Scotland, therefore, does nothing to alter the statutory basis or legal accountability structure for communicable disease control in the way that happened in England with the creation of the Health Protection Agency.

Microbiology and Surveillance in Scotland

A key recommendation of the 2002 review was that the epidemiological work carried out by the surveillance elements of the Information and Statistics Division of the Common Services Agency and the commissioning of the Scottish National reference labs by the CSA should be brought under the control of Health Protection Scotland. Scotland currently now has 8 reference labs based in NHS Scotland hospitals which feed information back to HPS and local consultants in public health. Some of these labs duplicate the specialities in England and Wales, although for the identification and detection of certain organisms, particularly for those relating to healthcare associated infections, Scotland still relies on labs in England and Wales.

With regard to public health microbiology, the Scottish Executive concluded that there was no need to change the existing organisational arrangements which left microbiology labs within acute hospitals under the management control of NHS Boards.[72] There was a major debate at the time of the review about whether leaving microbiology labs out of the new national body would cause problems. This was mainly due to the fact that there was no standardisation of operating procedures within the 16 hospitals and to the acknowledged fact that microbiology labs had other competing priorities, such as clinical diagnosis. But, there was also concern about the upheaval that could be caused as a result of any movement to a national centre. The solution was to enter into formalised agreements with the NHS boards based around the standardisation of operating procedures and improved quality of data.[73] As a result, the Scottish system retained the model of a commissioned network of laboratories which has also recently been adopted in England, while the Welsh system stayed with the model that had developed under the PHLS.

Local administration in Scotland

In formal terms, as in England, the statutory responsibility for enforcing the Public Health Act 1897 remains with local authorities. Similarly, the medical officer to whom diseases are notifiable, and who has the power to take action, sits in the NHS body known in Scotland

71. *Health Protection Scotland* – Brochure. http://www.hps.scot.nhs.uk/interim/documents/HPS%20Brochure%20(Text).pdf
72. *Health Protection in Scotland – A consultation paper*, Scottish Executive/NHS Scotland 2002.
73. Dr Roland Salmon House of Lord Select Committee on Science and Technology Report: *Fighting Infections: Minutes of Evidence* 20 March 2003.

as the NHS Board (LHB). Under Section 14 of the NHS (Scotland) Act 1978 any medical practitioner is eligible to be designated in writing by Health Boards to "exercise such functions on behalf of local authorities as may be assigned to him by or under any enactment and such other functions as local authorities may, with the agreement of the health board, assign to him." In practice, the Designated Medical Officer is the Director of Public Health of the NHS Board.

The Director of Public Health may further delegate these responsibilities to consultants in public health medicine, usually in consultation with the local authority. Again, as is the case in England 'in managing outbreaks of communicable disease, the DMO has dual accountability to both the local authority and the Health Board for discharge of the range of statutory duties.'[74] Interaction between local authorities and health boards is thus a central aspect of communicable disease control in Scotland and has been so since the 1978 NHS (Scotland) Act. According to Section 13 of the Act: "In exercising their respective functions, Health Boards, local authorities and education authorities shall co-operate with one another to secure and advance the health of the people of Scotland."

Joining up between local authorities and local NHS bodies in Scotland is easier, due in part to its smaller geographical size. Following the NHS Reform (Scotland) Act 2004 there are currently 14 unified NHS Boards operating in Scotland although coterminosity with the 32 unitary local authority boundaries is not complete. Unlike the English NHS, there are fewer administrative tiers and health boards are directly accountable to the Scottish Executive Health Department for assessing the overall health needs within their geographic areas and for arranging for those needs to be met.

At a local level, the key interaction between local health boards and local authority environmental health officers is most often concerned with the investigation of outbreaks of food and water-borne disease. Following a number of high profile outbreaks of food poisoning in Scotland, a set of guidance for their investigation was issued by the Food Standards Agency and the Scottish Executive Health Department. This sets out the roles and responsibilities of NHS boards and local authorities in the event of an outbreak and requires collaboration and the establishment of a joint outbreak control team chaired by the NHS Board.[75]

As has been noted elsewhere, the devolution of power to Scotland has seen a re-organisation of the NHS which has been substantially different from that which has occurred in England over the past eight years. Unlike the reforms in England which have sought to enhance the split between commissioners (PCTs) and providers of healthcare services (NHS hospital trusts) Scotland has attempted to bring about greater integration between health care commissioning and provision. Thus, under the NHS Reform Act (Scotland) 2004 free standing NHS hospital Trusts were abolished and Health Boards are now responsible for directly managing 'operating divisions' which deliver primary care and acute hospital services. Moreover, unlike in England, the status of the local NHS body responsible for public health– the health board – remains unchanged.

74. Scottish Executive (2001) Review of the Public Health Function in Scotland para 124.
75. Food Standards Agency and the Scottish Executive Health Department – *Guidance on the Investigation and Control of outbreaks of Foodborne disease in Scotland* 2002.

Healthcare associated infections in Scotland

The Scottish Executive has introduced measures to combat healthcare associated infections in hospital settings. The abolition of free standing NHS acute hospitals and the creation of 'operating divisions' under the control of health boards means that the responsibilities for enforcing these standards lies with the health board rather than the executive board of the NHS Acute Trust as is the case in England. Scotland also differs from England in that the standards for controlling infection in hospitals do not have a legislative basis but are instead published and overseen by NHS Quality Improvement Scotland, which is established as a special health board.

The *Standards for Healthcare Associated Infection (HAI) Infection Control* devised in 2001 are similar to those in England and requires that NHS Boards ensure that hospitals have in place an infection control plan which is operated by an infection control team staffed by infection control doctors and nurses. It also requires that a senior manager is appointed and responsible for all aspects of infection control that arrangements for collaboration with the local Consultant in Public Health Medicine are in place, and that surveillance and audit of infections in hospitals takes place according to the national requirements.

Wales

The creation of the National Public Health Service Wales

The legislative provisions for communicable disease control in Wales come under the same 1984 Public Health Act as England, but the powers granted to the Secretary of State for Health in England under the Act are transferred to the Welsh Assembly Government.[76] While the National Assembly for Wales does not currently have the power to introduce primary legislation (this is still undertaken by the Westminster Parliament) it does have powers to make regulations under the various powers which have been devolved.

Thus under Section 13 of the 1984 Public Health Act the Welsh Assembly Government has the power to make regulations 'with a view to the treatment of persons affected with any epidemic, endemic or infectious disease and for preventing the spread of disease' and may also make regulations 'relating to the notification of disease or to notifiable disease'.[77] In formal terms, therefore, the Welsh Assembly Government has some power to develop a different mechanism for controlling disease from England, although the basic control powers as set out in the 1984 Act still apply.

The effects of devolution on infectious disease policy have perhaps been more keenly felt in Wales than in any other part of the UK. This is because, as noted above Wales was previously covered by part of the Public Health Laboratory Service the central co-ordination of which took place at the Communicable Disease Surveillance Unit (CDSU) in Colindale, North London. The publication in 2002 of *Getting Ahead of the Curve* announced the creation of the Health Protection Agency and signalled the end of the PHLS. Although the general idea was supported in Wales, the proposals had not been developed in collaboration with Cardiff.[78] Initially this caused problems in Wales due to the fact that the PHLS was co-funded and co-sponsored by the Welsh Assembly Government. As in Scotland, this left Welsh policy makers with a decision as to whether to become part of the new Health Protection Agency or to develop their own system of administration.

Prior to the publication of the CMO's review of communicable disease control in England, the Welsh Assembly Government had already set out plans to reform various aspects of the NHS in Wales, including the creation of a National Public Health Service for Wales. (NPHS). In the 2001 document *Structural Change in the NHS in Wales* it was stated that:

> *'A national body is needed to support public health practice, wherever it is undertaken, to promote advocacy, to provide public health leadership and act as a hub for public health professional networking nationally and internationally. This should have a key role in promoting multi professional training/working, collating evidence from research and information sources.'*[79]

However, although no decision about the exact role and function of this new body had been taken by the time Getting Ahead of the Curve was published, the decision to establish

76. HMSO Statutory Instruments 1999 No. 672 The National Assembly for Wales (Transfer of Functions) Order 1999.
77. HMSO Public Health (Control of Disease) Act 1984 Section 13(1); 13 (2).
78. North West Health Authority Minutes of Meeting Tuesday 26 Feb 2002 item 11.
79. Jane Hutt AM *Improving Health in Wales – Structural Change in the NHS in Wales* 19 July 2001

the Health Protection Agency led to the Welsh Health Minister to announce that Consultants in Communicable Disease Control – and other parts of field investigation team – should become part of the NPHS.

In addition, while the policy of both the Welsh Assembly and of the Welsh Office before, had been to encourage the laboratories in NHS trusts to become part of the PHLS network, the plan in England was heading in the opposite direction with the management of the microbiology laboratory network transferring back to NHS Trusts. As a result, a further decision was taken to incorporate the Welsh part of the PHLS network into the NPHS thus drawing together both field services and surveillance into one organisation.

Unlike the Health Protection Agency and Health Protection Scotland, the NPHS, which became operational in April 2003, has additional functions other than health protection and communicable disease control. It is charged with providing advice and support on everything from dental public health to health inequalities and the wider determinants of public health. However, like Scotland and England, the national centre also provides support to local authorities with regard to environmental health matters.[80]

NPHS Wales is established as a part of Velindre NHS Trust. The National Director of NPHS is appointed by the NHS Trust, in partnership with the Welsh Assembly Government and is accountable to the Chief Executive of the Trust for the operational and financial performance of the NPHS. The Chief Executive is in turn accountable to the Welsh Assembly Government for the delivery of the NPHS service.

In addition, the National Director of the NPHS is professionally accountable to the Chief Medical Officer for Wales and is required to demonstrate that the services have been delivered to recognised professional standards and in accordance with the policies of the National Assembly for Wales. The NPHS operates within a Service Level Agreement agreed between Velindre NHS Trust and the Welsh Assembly Government Office of the Chief Medical Officer (OCMO).

The Infection and Communicable Disease Service is housed within the NPHS and is headed by a Director who is accountable to the overall director of the Service. A key aspect of this is the Communicable Disease Surveillance Centre (CDSC) which undertakes surveillance of communicable disease and infection in Wales and contributes to the surveillance of disease in England. In particular the CDSC in Wales provides the Zoonosis Surveillance Reference unit for England and Wales. It also has responsibility for monitoring the rates of immunisation across Wales and provides a co-ordinating role by providing local health protection teams with assistance in large scale outbreaks.

Microbiology services in Wales

The Health Protection Agency Act in 2004 did provide the possibility for the HPA to undertake the surveillance function for Wales and the other devolved regions, however, the transfer of the PHLS labs to the NHS meant that Wales would become dependent on a

80. National Public Health Service for Wales NPHS Prospectus.

much looser network than previous and public health professionals saw much to gain in integrating the 6 existing public health labs into the NPHS.

As the head of the Welsh CDSC at the time told the House of Lords:

> *'In Wales we have made a conscious decision via the Assembly Government to retain the existing public health laboratory service network. That is based on the fact that we think that it is a successful exposition of a successful concept. […] it allows for a degree of rationalisation of service provision; it is an efficient mechanism for arriving at standardisation and standardised operating procedures[…] It provides a ready surge capacity, which means that we have been able to manage in-house the bulk of work on infectious disease outbreaks and problems within Wales over the last 10-12 years.'*[81]

The debates around what *Getting Ahead of the Curve* would mean for Wales thus occurred within the context of the restructuring of the Welsh NHS as the current director of the Infection and Communicable Disease Service in Wales points out:

> *'the various discussions and debates that took place following the publication of* Getting Ahead of the Curve *focused on the need to build on the well-developed collaborative nature of public health services in the Principality and to take advantages of the opportunities provided by the new organisational structures to develop a comprehensive managed health protection service that was firmly embedded in the NPHSW and the NHS.'*[82]

The current surveillance structure in Wales thus differs little from the integrated structure which existed under the PHLS. Public health microbiology units are provided from eight sites often based in hospitals. Some of these labs also carry out Food Water and environmental microbiology functions which serve local authorities, the Food Standards Agency and central government. In addition three epidemiologists based in CDSC Wales cover the three Welsh regions.

The surveillance of disease between England and Wales is by no means completely severed as a result of the new organisations. Good professional and working relationships exist between the two countries and both are linked by a mutual interdependence. For example, the NPHS conducts surveillance of zoonoses for England and Wales.

NHS reconfiguration in Wales – NHS Reform and Health care Professions Bill 2002

NPHS Wales operates within the structure of a reorganised NHS in Wales. The plan outlined in *Structural Change in the NHS in Wales* included the abolition of the five regional health authorities which had previously commissioned and provided NHS services. Under the NHS Reform and Healthcare Professions Act 2002 the Welsh Assembly was empowered to create a new type of NHS organisation in Wales, known as the local health board (LHB).

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81. Dr Roland Salmon House of Lord Select Committee on Science and Technology Report: *Fighting Infections: Minutes of Evidence* 20 March 2003.
82. AJ Howard *Infection and Communicable Disease control in Wales* Communicable Disease and Public Health Vol 6 No 4 December 2003.

In place of the five regional health authorities 22 local health boards were created, each coterminous with the boundaries of the unitary local authorities. The public health aspects of the regional health authorities were similar to those of health authorities in England – i.e. the requirement to appoint a director of public health and consultants in communicable disease control. As in England, these responsibilities were transferred to the new local bodies under the reforms, but the actual provision of most aspects of the public health function and the communicable disease control functions were transferred to the NPHS.

The NPHS operates out of the three regional offices in the South and East, Mid and West and North of Wales with each office headed by a Regional Director accountable to the National Director of the Service. Under the terms of the SLA with the Welsh Assembly Government the NPHS is required to provide each LHB with a Director of Public Health. These offices therefore directly employ a number of local public health directors – usually consultants in public health medicine – who are allocated to individual health boards. They are supported by public health teams that are also employed directly by the NPHS.

The Infection and Communicable Disease Service also operates out of the regional offices of the NPHS and employs five local health protection teams, although their direct line management is to the Director of Infection and Communicable Disease. Each of the five teams includes Consultants in Communicable Disease Control (CCDC), public health nurses and other public health specialists and are each designated responsibility for between three and six of the 22 LHBs.

As in England the Consultants in Communicable Disease Control employed directly by the National Public Health Service Wales operate as the proper officers under the 1984 Public Health Act and also provide proper officer functions for port health authorities as well as arranging where necessary the medical examination of immigrants under the 1971 Immigration Act. The NPHS has a 'memoranda of understanding' with each LHB outlining how they will assist in fulfilling their statutory functions, including specific deliverables. Under this agreement the LHBs are required to provide the local public health team with accomodation and general support.[83]

Joining up at local level in Wales

An important aspect of LHBs is their relationship with local authorities. As in the rest of the UK, under the 1984 Public Health Act the local authority is still the body with statutory responsibility for exercising the various powers for controlling and preventing communicable disease. With the proper officer designated to operate these functions now employed by a national organisation rather than the local NHS body, as was the case prior to the reforms, the accountability mechanism is thus further complicated. However, a key reason for the creation of LHBs in their current manifestation was to enhance their relationship with local authorities. Thus the board of a LHB consists of over 20 members, four of whom must be nominated by the local authorities. This allows for the possibility of greater joined up working between local authorities and the NHS in environmental health and communicable disease matters. In addition the NPHS is also tasked with supporting

83. Dr Cerilan Rogers head of NPHS Wales quoted in 'At your service' *Environmental Health Journal* June 2003.

local authorities in fulfilling their statutory and non-statutory functions in relation to health and of supporting their provision of environmental health services through environmental public health teams.

Healthcare associated infections in Wales

The body responsible for assessing whether healthcare providers are adhering to national infection control standards in Wales is the Healthcare Inspectorate Wales (HIW). This body was established in 2004 under the Health and Social Care Act 2003 and has powers to inspect NHS bodies in Wales.

Under the Healthcare Associated Infections Strategy for Wales, developed by the Welsh Healthcare Associated Infection sub-group (WHSAIG) NHS Trusts are required to meet a set of standards for infection control.[84] The inspection of these standards is undertaken by the Healthcare Inspectorate in Wales. In addition, in accordance with circular WHC 2003 (43) each Trust is to set local priority targets for measurable infection reduction target and to conduct surveillance of hospital acquired infections.

84. Welsh Assembly Government *Healthcare Associated Infections - A Strategy for Hospitals in Wales* 2004.

Northern Ireland

The 1967 Public Health (Northern Ireland) Act contains similar powers to those found in the Public Health Act for the rest of the UK with one crucial difference. The powers to control the spread of disease are given not, to local authorities as is the case in the rest of the UK, but to the chief administrative medical officers of the Health and Social Services Board (HSSBs) who are now Directors of Public Health. HSSBs in Northern Ireland are the equivalent to health boards in Wales and Scotland or PCTs in England in the sense that they are responsible for ensuring the availability of health services in a given region. In all other respects the disease control powers and the diseases which are notifiable in Northern Ireland are the same as in England and Wales.

The situation with regard to devolution in Northern Ireland has always been more complicated than in Scotland and Wales and, due to the recent collapse of the political process, the Northern Ireland Secretary suspended devolution in 2002 . The legislative and executive powers which were transferred to the Northern Ireland Assembly under the 1999 Northern Ireland Act, including public health policy, are currently exercised by the Westminster Parliament via the Northern Ireland Office. The Northern Ireland Health minister is a Parliamentary under Secretary of State at the Northern Ireland Office. However, a distinct public health policy community does exist and Northern Ireland has its own Chief Medical Officer. The operational responsibility for health and communicable disease control lies with the Department of Health Social Services and Public Safety and policy is developed to meet the specific needs of the Northern Irish population.

The current structure for disease control is the product of a review of communicable disease control by the then Chief Medical Officer in 1998. Included among the review's recommendations was that the Department of Health, Social Services and Public Safety (DHSSPS) should establish a Regional Communicable Disease Epidemiology Unit, independent of but reporting to the DHSSPS, to assist it in fulfilling its role in the control of communicable diseases. This role had previously been undertaken within the department. However, the lack of capacity and resources within the Northern Irish public health community meant that it was necessary to 'buy in' expertise from the PHLS to provide this function. Effectively the PHLS established an outpost of CDSC in Northern Ireland based in Belfast City Hospital, where the current Public Health Laboratory for Northern Ireland operates. The head of the CDSC-NI was an employee of the PHLS and reported to CDSC in Colindale but was also accountable to the DHSSPS and the Chief Medical Officer. This situation continued when CDSC in London was subsumed into the new Health Protection Agency and the CDSC-NI is now operated by the HPA. This arrangement provides greater possibilities for the integration of disease surveillance systems and the sharing of data between Northern Ireland and England.

The DHSSPS receives advice on policy matters through the CDSC-NI as well as through the Regional Advisory Committee on Communicable Disease Control which has as its remit to advise the Department, via the CMO on matters relating to Communicable Disease Control. This committee on which the CDSC- NI is represented is a multi agency committee and monitors developments in existing and newly emerging diseases.

At a local level, the NHS in Northern Ireland is separated into commissioners of services in the form of health boards and providers in the form of health and social service trusts. The prevention and investigation of communicable diseases are carried out by the 4 Health and Social Services Boards. Each of these boards has a director of public health who is responsible for the surveillance, investigation, prevention and control of communicable diseases in their geographical area. The statutory duties imposed on the DPHs under the 1967 Act are delegated to the Consultants in Communicable Disease control or the Consultant in Public Health Medicine. CDSC NI provides 24 hour advice and support to the 4 DPHs and the CMO and provides practical support and resources to the HSSBs in the event of an outbreak. The fact that CDSC-NI is a part of the HPA allows it to draw on HPA expertise in the case of a large outbreak.

The Review of Public Administration in Northern Ireland

Northern Ireland is currently undergoing a radical shake up of its system of public administration following a recent 'Review of Public Administration'. This review covered all aspects of government in Northern Ireland and had particularly significant consequences for the NHS and hence the disease control function. The Minister for Health and Social Services announced on 22 November 2005 that the current four Health and Social Services Boards would be abolished and replaced with a new Strategic Health and Social Services Authority responsible for commissioning healthcare services. In addition the current 19 health and social services trust will be replaced by six Trusts, including one ambulance Trust. Some of the operational functions of the DHPSS will transfer to the new strategic health authority.

The question that remains unanswered is the position of public health and disease control within this new structure. Although it is assumed that the new strategic authority will contain a significant public health focus, as noted above the 1967 Public Health (Northern Ireland) Act charges Health and Social Service boards with the powers to control infectious disease. With their abolition the exact location of the officers charged with these powers becomes unclear and will require a revision in some form to the existing public health legislation.

The location of the CDSC-NI within this new structure is also under review. This is mainly due to a prior review of the public health function in Northern Ireland in 2004 which found that 'it is generally acknowledged that a stronger regional approach to certain areas, such as emergency planning, and a consolidated overall approach to health protection in Northern Ireland would be positive steps in terms of more coordinated and streamlined organisation.'[85]

The CMO established a Health Protection implementation group to consider how this recommendation could be best achieved. In essence, the plan is to develop in Northern Ireland a similar body to those that exist in the rest of the UK, pulling together communicable disease control into a body consisting of other aspects of health protection, including environmental health and emergency planning. However, the implementation group notes the lack of capacity within Northern Ireland and its necessary dependence on other parts of the UK structure:

85. Department of Health Social Services and Public Safety Northern Ireland *Review of the Public Health Function in Northern Ireland* Final Report 6 December 2004.

'Northern Ireland should seek to develop as self sufficient a health protection service as possible internally but will not be in a position to provide or sustain all aspects of specialist health protection within the region. External partnerships and arrangements will be a critical part of the service and will ensure that NI is kept abreast of health protection developments in GB.'[86]

It is envisaged that any new body will be a 'single specialised entity at regional level, based on the existing CDCS-NI regional function' and will maintain links with the HPA but have 'the flexibility to develop partnerships with other agencies in Scotland and Northern Ireland'.[87] The location of the proposed new body within the system is currently under consideration.

Healthcare associated infections in Northern Ireland

As in the rest of the UK the mechanism for preventing HCAI is through the enforcement of standards. The Health and Personal Social Services (Quality, Improvement and Regulation) (Northern Ireland) Order 2003 makes provision for the Department to prepare and publish statements of minimum standards.

The Department of Health Social Services and Public Safety in Northern Ireland has issued a number of 'Control Assurance Standards' one of which deals specifically with infection control in hospital settings. This contains 16 criteria against which hospital and other health care providers will be assessed. They include the requirement to have an infection control team in place, a set of policies and procedures to deal with outbreaks and adequate microbiological laboratory support to assist the infection control team which includes a consultant microbiologist and the local CCDC. Surveillance and control of hospital acquired infection is the responsibility of the Infection Control Doctor, who is usually a consultant microbiologist, with the assistance of Infection Control Nurses. Each Trust is also required to have in place an infection control committee.

The auditing of these standards is undertaken by the Northern Ireland Health & Personal Social Services Regulation & Improvement Authority (HPSSRIA) which was established as a non departmental public body by the DHPSS in 2005. It has overall responsibility for monitoring and inspecting the availability and quality of health and social care services in Northern Ireland and encouraging improvements in the quality of those services.

86. *Review of the Public Health Function in Northern Ireland* – Health Protection Implementation Sub-Group – Interim Report – January 2006.
87. *Review of the Public Health Function in Northern Ireland* – Health Protection Implementation Sub-Group – Interim Report – January 2006.

Preventing fragmentation: co-ordination of the disease control function across the UK

A multi-tiered governance structure in the area of health policy has the potential to cause significant problems for the co-ordination of a national response to a major public health incident since most public health specialists argue for a high degree of centralisation. An effective disease control system depends heavily on a centrally organised system covering the geographical territory and the population that make up a political unit. The general idea here is that a 'clear line of sight' should be available for specialists and decision makers at the centre to direct resources quickly and effectively in order to control a major outbreak of disease. For this to occur a chain of command needs to exist so that information can be communicated upwards to the centre and instructions and resources passed back down to the periphery. The trend towards the nationalisation of the communicable disease control function and the establishment of the Public Health Laboratory Service in the post war period was an implicit recognition of the benefits of centralisation.

Federal systems, such as in Canada, Australia and the US, pose particular problems for the co-ordination of disease control since the constitutional settlement is often unclear as to which level of government is responsible for which aspect of health protection. As a result the relationship between the centre and the periphery can impede an effective response to a public health emergency. As Wilson points out:

> *'the response to an outbreak could involve issues of national security, emergency response, environmental protection, and food and water safety. Powers over these areas may be differentially allocated across the various orders of government. Such a scenario could produce conflict or confusion when attempting to determine which order of government has the ultimate authority over the management of the outbreak. This in turn may contribute to a failure to adequately manage an outbreak and to the spread of the outbreak across borders within a country, and potentially into other countries'.*[88]

The official inquiry into the SARS outbreak in Canada (where Toronto was the epicentre of the incident) highlighted the problems caused by a lack of communication and co-ordination between the branches of the federal and the provincial government. In particular the report found that 'a lack of co-operation prevented the timely transmission from the Ontario Public Health branch of vital SARS information needed by Ottawa to fulfil its national and international obligations. Underlying the problem was a lack of pre-existing protocols, agreements, and other machinery to ensure the seamless flow of necessary information and analysis.'[89]

Although the UK is not organised as a federation, many of these problems potentially apply following the devolution of power to Scotland and Wales in 1998. Under the terms of the devolution settlement responsibilities for key areas of infectious disease control - public health, animal health and food safety - are now devolved to the home nations. On paper at least, this provides the possibility for divergence and fragmentation. The Chief Medical

88. Wilson K, Mc Dougall C, Upshur R *The New International Health Regulations and the Federalism Dilemma* – Public Library of Science Medicine Med 3(1): e1. January 2006.
89. The Honourable Mr. Justice Archie Campbell *The SARS Commission Interim Report: SARS and Public Health in Ontario*, April 15, 2004

Officers in each of the home countries, as well as elected politicians are responsible for ensuring the safety and well being of the populations which they serve and are thus accountable to their respective national assemblies. This means it is possible for important public health decisions to be taken in one part of the UK which are inconsistent with the rest. The recent foot and mouth outbreak showed how the new accountability structures can lead to tensions between ministers answering to different constituencies.[90]

The need for a UK wide approach to infectious disease is generally agreed in the area of food safety. The Food Standards Agency operating both as a UK wide body and with different branches in each of the 4 devolved administrations is an example of an institutional innovation with the capacity to develop a unified approach to disease control whilst being responsive to the particular interests of different policy communities. One of the criticisms of the structure of the HPA was that the remit of the Agency was UK wide in some instances but not in the area of infectious disease. However, as the current director of the CDSC in Wales informed the House of Lords in 2003 the current devolution settlement also has advantages in terms of effective disease control responses:

> *'We have always had a system in the UK where different levels of administration have been appropriate for different kinds of problems. For example it would be perfectly appropriate for a health authority in the past and its local authority to deal with a localised outbreak of salmonellosis from a food outlet for example. There are a number of communicable disease problems that are efficiently dealt with at the devolved administration/regional level. I quite accept that there will be problems too large for us to deal with, which may be UK wide.[…] responsibly applied diversity in arrangement, as we see in the States of the US, can foster innovation.'*[91]

Yet potential problems exist, for example in the area of disease surveillance. Although the UK has never had a single national surveillance system or even a UK wide public health Act the impact of devolution has led to the development of greater fragmentation across the UK. In particular the split between the Welsh surveillance network and the English system, brought about by the dissolution of the 50 year old Public Health Laboratory Service, introduced a new fracture into the UK wide system of disease monitoring and control. The potential for greater co-ordination under the umbrella of the HPA was ruled out due to the political and organisational imperatives of the new constitutional settlement.

Yet most working within the system seem optimistic that the current arrangements do not hold too many problems. As the current clinical director of Health Protection Scotland told the House of Lords 'technically we do not see any great problems in ensuring that the data, once received by a surveillance centre, is shared within the UK.'[92] In addition the UK is now required to submit data to the European disease surveillance networks in a format which is standardised across the EU. So greater integration of disease surveillance functions within the EU actually helps to overcome some of the potential problems of fragmentation caused by devolution.

90. See House of Lords Constitution Select Committee Second Report: *Devolution: Inter-Institutional Relations in the United Kingdom* HL 28 16 January 2003 Chapter 1.
91. Dr Roland Salmon House of Lord Select Committee on Science and Technology Report: *Fighting Infections: Minutes of Evidence* 20 March 2003 Question 700.
92. Dr Martin Donaghy House of Lord Select Committee on Science and Technology Report: *Fighting Infections: Minutes of Evidence* 20 March 2003.

With four different surveillance systems operating across the UK it is surprising to find that there is no memorandum of understanding between the national centres. However, there are other more informal collaborative mechanisms which provide a good mechanism for co-ordinating approaches to disease surveillance and control. In particular, the 'five nations group' which was set up in the 1990s to mitigate any potential problems caused by fragmentation. Meetings between the heads and senior staff of the disease surveillance centres in the United Kingdom (CfI, HPS, CDSC Wales and CDSC-NI) and from the Republic of Ireland take place on a regular basis either as face to face meetings or via teleconferences. A further collaborative mechanism is the Pan Celtic Group which involves officials from Scotland, Wales and Northern Ireland collaborating on the surveillance of hospital acquired infections. These meetings are also attended by English microbiologists.

More recently, the chief executives of the various health protection bodies (HPA, NPHS and HPS) have begun to meet quarterly to discuss wider issues of health protection, including communicable disease. Along with representatives from the health departments the group (known as the UK Health Protection Oversight Group) aims to ensure that there is a co-ordination of approaches across and between the different parts of the UK in dealing with health threats. The group receives information on infections from the five nations group, reports every six months to the Chief Medical Officers of the UK and co-ordinates operations with regard to international bodies such as the WHO and the ECDC.

Finally, and perhaps most importantly, weekly infection update meetings are convened by the Centre for Infections at HPA which receive input by telephone from representatives of both the national and the regional centres. This allows for regular information sharing and the opportunity to compile a national picture of disease across the UK, as well as providing a good model for joint working in the case of a big outbreak . This mechanism also draws in information from other important bodies such as the Food Standards Agency and representatives from DEFRA who deal with animal health.

This level of collaboration meant that the response to major public health incidents such as the SARS outbreak in 2003 was well co-ordinated across the UK. When the threat of SARS to the UK became imminent the UK SARS Taskforce was convened (and subsequently chaired) by the HPA. The Taskforce consisted of representatives from all the UK health departments, the health protection bodies and the NHS and included representatives from the Republic of Ireland.[93] It was supported by the SARS Expert Advisory Group which gave advice on strategic issues.[94]

In anticipation of the next major disease outbreak the UK pandemic 'flu plans agreed between all the national health departments set out clear statements of responsibility for each national health protection agency. Thus, as is often the case in intergovernmental relations in the UK the informal networks between professionals and officials are able to transcend some of the constitutional divides brought about by devolution.

93. Minutes – Health Protection Agency *Expert Advisory Group on SARS* 26th September 2003 London para 3.0.
94. N.L. Goddard, V.C. Delpech, J.M.Watson, M.Regan, A Nicoll *Lessons learned from SARS: The experience of the Health Protection Agency, England. Public Health* (2006)120, 27-32.

3 THE ROLE OF THE EUROPEAN UNION IN COMMUNICABLE DISEASE CONTROL

The European Union has for a long time played an important role in communicable disease control in member states. A large part of the EU's involvement has been in the area of veterinary public health and food safety law as well as in the health and safety of workers. More recently, with the inclusion of a specific, but limited public health function into the EU Treaty framework a new set of institutions and networks are being developed to counteract the threat of global pandemics and the spread of infectious disease made more likely by the increase in cross border movement of people and trade. While the EU Treaty guarantees the free movement of goods, services, people and capital across its borders, communicable disease experts are talking about an associated fifth freedom: the free movement of micro organisms around the EU.

As was mentioned in the previous section many aspects of communicable disease control in the UK are affected by the directives and regulations which come out of Brussels. Thus, food law and animal health law in the UK are substantially determined by EU regulations and the EU sets minimum standards for drinking water quality.[95] Those aspects of health protection where the EU has traditionally been less involved are in those areas of traditional infectious diseases as discussed in the first section of this report. This is in part because most EU powers arise out of the need to regulate and govern a single market in goods and services. Yet, as discussed in Box 2, the rules which govern the single market are now also beginning to be applied to healthcare services, a fact which may bring forward greater regulation in the area of healthcare associated infections.

Where there is no single market element involved in a policy domain, member states are generally free to act as they choose. As a result the EU has the power to introduce laws to eradicate TB in animals but not in humans. Nevertheless, the threat of an influenza pandemic and the more recent problems caused by SARS and Avian Influenza have led to

95. See Council Directive 98/83/EC of 3 November 1998 on the quality of water intended for human consumption

some significant developments in the surveillance and prevention of infectious disease across the EU. This has been accompanied by greater co-operation between health ministers in order to counteract various threats to health including bioterrorism. As a result the EU has put in place emergency response plans to deal with pandemics and has created the capacity for outbreak action teams to help both member states and third countries.

This chapter provides a brief overview of the main institutions which are involved in communicable disease control across Europe and concludes with a discussion about both the importance of clarity in administrative structures at the supranational level and the limitations of what can be achieved within an inter-governmental organisation such as the EU.

Box 2: Healthcare associated infections and the single market

A typical feature of EU policy making is the idea of 'spill over'. This idea intends to capture the process where the EU single market rules extend over time to more and more policy areas. As a result of a number of recent decisions by the European Court of Justice, this process is currently happening to health policy. Although the only specific treaty provisions governing public health are those outlined above in Article 152 healthcare services are increasingly being subsumed under the broader provisions on free movement of goods and services.

The upshot of this development is that the policy dynamic in Brussels is now aiming at the creation of an EU wide market in health care services, allowing both patients to move more freely across boundaries to receive care, as well as permitting national healthcare operators to establish in other EU member states. However, this raises important concerns about guaranteeing patient safety, particularly where there are currently no EU standards to govern hospital hygiene. As the Commission has recently pointed out 'when patients do seek healthcare in other Member States, it is essential to ensure that the well-being and safety of the patient is properly protected'.[96]

The EU has for a long time been involved in developing networks to track the prevalence of nosocomial infections. The HELICs networks, which conducts surveillance of infections in hospitals and other healthcare settings has been established since 1974. It aims to ensure standardisation of data collection methods as well as to transmit best practice ideas. In addition the Commission funds the Improving Patient Safety in Europe (IPSE) programme which monitors how member states are dealing with this disease.

The Commission is currently consulting member states and the public on proposals to 'develop guidance on minimum requirements for isolation facilities in health care institutions and recommendations on other aspects of physical infrastructure (e.g. hand hygiene facilities, minimum space between beds, and ratio of infection control doctors/nurses to acute beds)'.[97]

It will also seek to introduce "structure indicators" these are 'resources in personnel and material reserved to combat HCAI (possibly defined as a percentage of the total care budget related to the population or number of patients)'.

The harmonisation of hygiene and infection protection protocols in European dentistry is also under discussion.[98]

Although there is currently no indication that any of these measures will be binding, the 50,000 deaths which are attributable to HCAI each year in Europe could become a significant impediment to the free movement of patients if mandatory regulations are not introduced. Just as food hygiene controls are central to the efficient functioning of the single market in food stuffs, so mandatory hospital hygiene rules could help facilitate a new EU-wide healthcare market

96. European Commission *Public consultation on strategies for improving patient safety by prevention and control of healthcare-associated infections* December 2005.
97. European Commission *Public consultation on strategies for improving patient safety by prevention and control of healthcare-associated infections* December 2005.
98. See Conference held by Chief Dental Officer at UK Presidency 2005 - *Creating a United European Agenda.*

Background to co-operation in the field of communicable disease control in Europe

A common complaint amongst the public health community is that the chief focus of EU health policy is on infectious disease rather than the socio-economic determinants of health. And this is true; the involvement of the EU in attempts to control and prevent disease has been more significant than in other public health interventions. This is partly explained by the fact that member states are unwilling to transfer powers to the EU on general matters of public health policy, whilst seeing advantages in co-operating on non-controversial and often technical policy areas such as communicable disease. Nevertheless, even though communicable disease has a priority within the Brussels policy community, political support has been limited to funding surveillance rather than developing the capacity for concerted action in this field.

As in other aspects of European integration the co-operation between communicable disease specialists predates the development of public health institutions within the European Union. In 1976, the PHLS organised the first of a series of meetings of the Heads of Public Health Microbiological Services in Europe and the 1980s saw the emergence of collaboration between European countries on a wide range of infectious diseases.[99] However, in the absence of a clear EU public health competence it was the World Health Organisation European region which provided the mechanism by which data on communicable disease was shared. Following the signing of 'Health for All' in 1984 the WHO established a number of collaborating centres based in public health institutes across Europe to co-ordinate surveillance of disease in such things as food borne infections, rabies, travel-associated legionellosis and AIDS/HIV. The EU's role was limited during this period to funding some of these collaborating centres as well as specific EU health promotion programmes such as 'Europe against AIDS and Europe against Cancer.[100]

These early attempts at co-ordination were assisted by technological developments which made the sharing of data and information easier and less costly, however, without political support the surveillance system was found to be fragmented and incomplete.[101] As one commentator in the early 1990s noted, 'WHO has the mandate to undertake surveillance of communicable disease throughout Europe but has little funding and no legislative power. The EC has both funds and legislative power, but currently has no mandate in public health and surveillance'.[102]

The EU's public health competence

This situation was somewhat rectified by the amendment of the EU Treaty in 1992 to include two new articles which form the current legal basis for the EU's public health

99. REO Williams, *Microbiology for the public health: The evolution of the Public Health Laboratory Service, 1939-1980*, London: PHLS, 1985 p.165
100. TD Healy *The surveillance of communicable disease in the European Community* Communicable Disease Review No.7 Vol 2 19 June 1992.
101. TD Healy *The surveillance of communicable disease in the European Community* Communicable Disease Review No.7 Vol 2 19 June 1992.
102. TD Healy *The surveillance of communicable disease in the European Community* Communicable Disease Review No.7 Vol 2 19 June 1992.

competence. The then Article 3 stated that the EU would 'contribute to the attainment of a high level of health protection', and this was supplemented by Article 129 which set out the type of activity the EU could engage in order to protect human health. Under this Article the EU could protect health by 'encouraging co-operation' between member states and by 'lending support' and the Commission could 'take any useful initiative to promote such co-ordination'. The chief focus of the EU in this regard was directed towards "the prevention of diseases, in particular the major health scourges, including drug dependence, by promoting research into their causes and their transmission, as well as health information and education".

Crucially, Article 129 lacked any regulatory powers. This meant that the EU could not issue any pieces of legislation which would legally bind the member states in this area. In the field of human to human disease at least this meant that the main area of EU wide co-operation would be in the surveillance of disease but not the prevention or control of disease outbreaks.

The initial fruits of this new competence appeared in 1995 with the creation of the European Programme for Intervention Epidemiology Training (EPIET) which is still in place. Using EU and member state funding, the scheme seeks to overcome differences in professional approaches to intervention epidemiology across the member states by providing opportunities for public health professionals to undertake training and experience in the public health institutes of other member states. In doing so the EU gains additional capacity in terms of trained personnel to deal with outbreaks whilst fostering a commitment to standardisation of professional practices.[103]

The main impetus for an extension of the EU powers with regard to infectious disease was the BSE/CJD crisis which emerged in the UK 1996. This led to a greater focus on the role which could be played by the EU in protecting health at the Amsterdam summit in 1997. As a result Article 129 (now Article 152) was revised, and although the text shifted from a sole focus on the prevention of disease per se to include broader public health issues, the new text did allow the EU to introduce legally binding "measures in the veterinary and phyto sanitary fields which have as their direct objective the protection of human health". Moreover, the new Article 152 also permitted standards to be introduced for safety in the use of blood and organs and substances of human origin.

Despite these new developments – which still provide the basis for EU action in the area of public health – the EU still lacks regulatory powers with regard to the transmission of human to human disease. However, in recognition of the growing importance of public health, as well as the increased importance of food safety and zoonoses, the EU created a specialist directorate within the Commission to administer these provisions. Previously, public health had been situated in eight of the 23 Directorate Generals of the Commission. Created in 1999 the directorate for Health and Consumer Protection or DG SANCO as it is more commonly known, takes the lead on public health issues in the EU. As we shall see DG SANCO's remit also includes food safety and veterinary public health which means that it plays a significant role in the functioning of the EU's common agricultural policy. While

103. http://www.epiet.org/description/index.html.

some public health commentators bemoaned the fact that the new Commissioner quickly became known as the EU minister for food safety, the Commission's broad remit means that it is one of the few executive bodies anywhere in the world which straddles the sectoral divide between animal health and human health – a competency which is proving increasingly important in co-ordinating a response to the current avian 'flu outbreaks.

Strengthening the networks

Following the ratification of the Amsterdam Treaty in 1998 and the establishment of DG SANCO a discussion took place within the EU as to the best mechanism for co-ordinating European wide action in the surveillance of communicable disease. Given the specialised public health institutes which existed in some, although not all member states, it was decided that a decentralised network for exchanging information on disease outbreaks should be established. This network would sit on top of the existing European public health infrastructure, utilising the laboratory and epidemiological capacity which already existed. It would build on the surveillance networks which had been established across the EU and other European countries by the WHO and national governments, by providing additional funding and co-ordination at EU level. This decision was taken by European Ministers and the European Parliament in 1998 and the surveillance networks went live in 1999.[104]

The communicable diseases network consists of two pillars. The first involves surveillance networks which are designated to cover specific diseases. The 1998 decision sets out the category of communicable diseases which are to be placed progressively under EU-wide surveillance. The Commission has the power to add specific diseases to this list as new health threats emerge. These disease surveillance networks are 'the main vehicle for linking national surveillance institutes or other structures designated by the Member States on specific diseases and health related issues'.[105] The networks are, however, more than just a mechanism for swapping data files but act as a mechanism for policy co-ordination. Thus, through the networks, member states are required to inform the other member states of any measures which it intends to adopt for the control of a communicable disease. Box 3 sets out the communicable disease networks currently running in the EU as well as the various sponsored EU programmes.

National public health institutes or other scientific bodies such as universities operate these networks between themselves. Funding for the maintenance of the networks comes from the EU Public Health Programme. Members of the networks involve national reference laboratories and epidemiologists and are open to non-EU member states. The Health Protection Agency in England, for example, operates the ENTER-NET network which collects data on gastrointestinal infections – this scheme extends internationally to Australia Japan and South Africa as well as some EEA countries.

The second pillar of the network is an early warning and response system (EWRS) which is used to alert public health authorities in Member States and the Commission to outbreaks

104. Decision No 2119/98/EC of the European Parliament and of the Council *setting up a network for the epidemiological surveillance and control of communicable diseases in the Community* 24 September 1998
105. European Commission *Communicable Diseases - European networks* MEMO/03/155 Brussels, 23 July 2003.

with greater than national dimensions, so that coordinated EU action can take place. Commission Decision 2000/57/EC on the EWRS makes it clear that all events which could lead to outbreaks of EU wide significance should be reported under the EWRS irrespective of whether or not a disease-specific network at EU level has been set up. The EWRS is a secure internet based system that links the designated authorities in Member States and the Commission. The system allows for immediate exchange of views on risk assessment and risk management and when first established was overseen by the Commission.

Article 7 of the 1998 Decision established a Network committee which acts as a regulatory committee for the operation of the surveillance networks. Chaired by a representative from DG Sanco the committee is made up of national representatives and may issue opinions on recommendations from the Commission relating to the operation of the networks– such as the diseases which are to be placed under surveillance. These Commission recommendations become legally binding.

Box 3: EU Networks and Programmes in Communicable Disease Surveillance

Basic Surveillance Network (BSN)

European Antimicrobial Resistance Surveillance System (EARSS)

European Influenza Surveillance Scheme (EISS)

European Laboratory Working Group on Diphtheria (ELWGD)

European Network for Diagnostics of Imported Viral Diseases (ENIVD)

International surveillance network for the enteric infections (ENTER-NET)

European Programme for Intervention Epidemiology Training (EPIET)

Scientific Evaluation on the Use of Antimicrobial Agents in Human Therapy (ESAC)

European Surveillance of Sexually Transmitted Infections (ESSTI)

European Union Invasive Bacterial Infections Surveillance (EU IBIS)

European bulletin on communicable disease (EUROSURVEILLANCE)

European Centre for the Epidemiological Monitoring of AIDS (EUROHIV)

Surveillance of tuberculosis in Europe(EUROTB)

Surveillance Community Network for Vaccine Preventable Infectious Diseases (EUVAC)

The European Working Group for Legionella Infections (EWGLI)

Hospitals in Europe Link for Infection Control through Surveillance (HELICS)

Inventory of Resources for Infectious Diseases in Europe (IRIDE)

(Source: DG Sanco)

Responding to new health threats: the Health Security Committee and the European Centre for Disease Prevention and Control

The strengthening of European wide surveillance networks were being undertaken just as public and political concern about infectious disease was increasing following September 11th and the anthrax releases in the US in late 2001. As in the UK, the security agenda gave fresh impetus to the strengthening of public health or health protection institutions at a supranational level, yet it also influenced the type of capacity which was being developed. The EU initially began to establish mechanisms for co-ordinating its response to terrorism, in particular bio-terrorism, however, this revealed the lack of a centralised resource to offer independent scientific advice and co-ordination in response to a major incident. This led to the swift establishment of a European Centre for Disease Control to provide technical assistance and support.

Bio-terrorism and health security in the EU

The immediate response of the EU following the anthrax outbreaks in the US was for the heads of government of the EU member states to request the Commission to develop an action programme of co-operation and preparedness and response to biological and chemical agent threats. This programme focused on developing a set of mechanisms for consultation between member states governments and the Commission in the event of a crisis. On 26 October 2001, the Commission and representatives from national health ministries established the Health Security Committee. This comprises of high level representatives of the national health ministries and, although it does not have a legislative base in the way that the Network committee does, it is a potentially important co-ordinating committee for responding to public health emergencies.

The Health Security Committee is set up with the intention of 'exchanging information on health related threats, sharing information and experience on health related threats, sharing information and experience on preparedness and response plans and crisis management strategies, communicating rapidly in case of health related crises, advising on preparedness and response as well as on co-ordination of emergency planning at EU-level, sharing and co-ordinating health-related crisis response by Member states and the Commission and facilitating and supporting co-ordination and co-operation efforts and initiatives undertaken at EU level'.[106]

A second aspect of the response in organisational terms was the establishment of a dedicated rapid alert system for bio-terrorist incidents which has been functioning since June 2002. This system, known as RAS-BICHAT links the members of the Health Security Committee and contact points designated by its members to provide round the clock coverage and urgent recall in an emergency. However, due to the sensitivity of the information distributed via this network this is a separate exchange from the surveillance networks established for specific diseases.

106. Communication from the Commission to the Council and the European Parliament on Co-operation in the European Union on preparedness and response to biological and chemical agent attacks (Health Security) Brussels 2.6.2003 COM (2003) 320 final.

In September 2003 the Commission established within DG Sanco a specific Health Threats Unit which was set up to strengthen the EU's capability to prepare and respond to public health threats including bio-terrorism. The Health Threats Unit takes the lead on developing the EU's approach to public health emergencies and does so with the Health Security Committee. Thus far DG Sanco and the Health Security Committee have established a task force on bio-terrorism and emergency planning, made up of member state planners and have developed guidance on emergency guidance for member states.[107]

Interestingly, in recent years as the interest in bioterrorism in the EU has waned the main work conducted by DG Sanco and the Health Security Committee has been in the area of conventional disease threats such as SARS, avian influenza and pandemic influenza rather than in the area of bio-terrorism. For example, the HSC and the Commission (along with the ECDC and WHO Europe) have undertaken an assessment of influenza pandemic preparedness plans in member states, as well as setting out how the EU intends to respond to this threat.[108]

The EU has also developed specific facilities to co-ordinate a response to a major public health incident. A crisis room and communication facility was initially established in Luxembourg and this was developed into a dedicated Health Emergency Operations Facility which is operated by the Health Threats Unit. This includes the IT systems for the operation of the EWRS and the RAS BICHAT system and video-conferencing.

European Centre for Disease Prevention and Control (ECDC)

Although the events of September 11 and its aftermath were probably crucial in fast tracking the creation of the ECDC, a central EU resource for the co-ordination of disease surveillance had longed been called for by communicable disease specialists. Indeed, the need for an enhanced structure for co-ordinating the response to disease outbreaks had become apparent following a study into how member states co-ordinated their response to disease outbreaks which affected more than one country.[109] This found 'the commitment to provide expert and financial resources to assist in international outbreaks at EU level to be inadequate' and that member states often failed to inform other countries that certain organisms had been identified.[110] Concerns were also raised about the lack of clarity about who was responsible for managing investigations into outbreaks across member states.[111] Following this, a consensus emerged amongst the heads of national communicable disease surveillance centres that an EU disease centre of some sort should be established to provide technical support to the currently existing networks.[112]

107. Communication from the Commission 'on strengthening co-ordination on generic preparedness planning for public health emergencies at EU level' Brussels 28.11.2005 COM (2005) 605 final.
108. Communication from the Commission 'on Pandemic Influenza Preparedness and Response Planning in the European Community' Brussels 28.11.2005 COM (2005) 607 final.
109. Laura MacLehouse *et al Communicable disease outbreaks involving more than one country: systems approach to evaluating the response* BMJ 2001: 323: 861-3.
110. Laura MacLehouse *et al Communicable disease outbreaks involving more than one country: systems approach to evaluating the response* BMJ 2001: 323: 861-3.
111. Laura MacLehose *et al Responding to the Challenge of Communicable Disease in Europe* Science Vol 295 15 March 2002.
112. F van Loock, ON Gill, S Wallyn, A Nicoll, J-C Desencios, P Leinikki R*oles and functions of a European Union Public Health Centre for Communicable Diseases and other threats to health* Eurosurveillance Vol 7 issue 5 May 2002 pp78-84.

The SARS emergency in 2003 proved to be the final catalyst for the creation of the ECDC. The European networks which were in place failed to respond adequately and 'information about possible cases of SARS or European travel restrictions were often communicated with delays of 48 hours or more'.[113] The success of the response relied heavily on the co-ordinating and information exchange role played by the WHO in Geneva which superseded the often cumbersome workings of the EWRS. In addition with the inclusion of 10 new member states into the surveillance networks it became clear that there was a need for better central co-ordination.

There were a number of suggestions put forward as to the best model for the centre. Some commentators believed that it should be modelled on the US Centers for Disease Control which has central laboratory facilities a large staff, a vast budget (a large proportion of which it distributes to States as grants) and the capacity to dispatch independent epidemiological field investigation teams anywhere in the world.[114] Others, however, pointed out that such a model would draw staff away from national centres and would not receive sufficient political support to provide the necessary funding to make such a large operation viable.[115] In addition, while the networks had demonstrated some problems it was also considered by some that the most efficient use of resources was to build on what was already in place and provide the necessary manpower and central co-ordination to make them work more effectively.[116]

In the event the Commission's proposal for the creation of the ECDC in July 2003 tended towards the latter idea. Recognising the achievement of the networks the proposal for the new centre formalised the existing system of ad hoc surveillance networks whilst adding centralised co-ordination and support. Perhaps acknowledging the pressing need for a specialist centre, the Commission's proposal was swiftly turned into a regulation in 2004 and the ECDC became operational in 2005. Importantly the regulation, in keeping with the general limitations of Article 152 does not confer any regulatory powers on the Centre, which would allow it to determine national policies for epidemiological surveillance or control of communicable disease.

One aspect of the centre's capacity which has been found to be problematic has been the lack of laboratory facilities and the subsequent reliance on labs in member states. According to one commentator ' the ECDC's preliminary budget for 2005-2007 does not include funds for lab activities within the centre itself, nor will there be sufficient funds to pay for more than limited services at national laboratories', and not only will this impair its capacity to respond to disease outbreaks it could also curtail the centre's independence from other scientific institutes.[117]

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113. S Ragnar Norby *Alert to a European Epidemic* Nature 29 September 2004 doi: 10.1038/431507a
114. S Ragnar Norby *Alert to a European Epidemic* Nature 29 September 2004 doi: 10.1038/431507a ;M Tibayrenc,. 1997. European Centres for disease control. Nature, 389; 2 October, 433.
115. Lyle R Petersen and Mike Catchpole *Surveillance for infectious diseases in the European Union* BMJ Volume 323 13 October 2001.
116. Laura MacLehouse *et al Communicable disease outbreaks involving more than one country: systems approach to evaluating the response* BMJ 2001: 323: 861-3
117. S. Ragnar Norrby *Alert to a European Epidemic* Nature : 29 September 2004 doi:10.1038/431507a.

The accountability arrangements for the ECDC are provided via a Management Board. This is composed by one member from each member state, two members designated by the European Parliament and three members by the European Commission. The budget for the Centre in 2005 is €4.8 million, rising to €15.3 million in 2006 with a projection that it will reach €90 million in 2010. The staffing levels are expected to increase from a core staff of 30 to potentially 300 by 2013.[118] The scope and activities of the centre will only be extended following a thorough and independent review, due to be carried out in 2007. While the ECDC is a significant achievement in European health policy terms when compared with the US Centre for Disease Control with a budget of $6.2billion and the UK HPA which has an operating income of £203 million the relative lack of political commitment to public health within the EU becomes apparent.[119] The success of the ECDC thus relies on the network of disease control professionals based in member states, however, these can only be significantly strengthened by the existence of this new institution.

The work of the ECDC

The functions of the ECDC as set down in the regulation can be divided into four areas: Surveillance and data collection, preparedness response and emergency planning, scientific opinion and technical assistance and training.

Surveillance and data collection

Under Article 5(1) of the regulation setting up the ECDC it is responsible for supporting the existing DSNs.[120] For each disease that is covered by the networks the centre will either receive and analyse the surveillance data directly from member states or make arrangements under a contract with a third party to carry out this task.[121] A key task of the new centre is to review and rationalize the DSNS through an independent review of their performance something which has been lacking due to the fact that the Network Committee has not been convened for two years. The ECDC must also incorporate the new member states into the networks. Under Article 11 (1) the centre is also required to collect and publish any data, including data on vaccination coverage across the EU.

In addition, the Centre is required to forward to the European Parliament, the Council and the Commission an annual evaluation of the current and emerging threats to health in the Community and is required to publish a weekly bulletin of disease prevalence across the EU a function which has been carried out by the English Health Protection Agency in the form of the publication *Eurosurveillance* but will transfer to ECDC in 2007.

Preparedness response

As noted above, the second pillar of the Community Network is the Early Warning and

118. See European Public Health Association http://www.epha.org/a/1898
119. See US Centre for Disease Control website http://www.cdc.gov/fmo/PDFs/FY06AppropFactsheet.pdf and the Health Protection Agency website: http://www.hpa.org.uk/hpa/funding.htm
120. Regulation (EC) No 851/2004 of the European Parliament and the of the Council of 21 April 2004 *establishing a European centre for disease prevention and control* 30 April 2004 L 142/1
121. European Centre for Disease Prevention and Control Management Board *Programme of work for 2005-2006* Memo from the Commission to the Management Board MB2/9.

Response System. This system which involves the rapid exchange of information on outbreaks of communicable disease which could affect member states was previously operated by the Commission. Under Article 8 (1) of the regulation the Centre takes over responsibility for running this system and is also required to support the Commission "by ensuring with the Member States the capacity to respond in a coordinated manner." (Article 8(1)). The Centre is again responsible for ensuring that data from this system is analysed and that the EWRS is linked up to the many other EU alert systems such as animal health, food and feed and civil protection. The Centre is responsible for offering advice to member states and the Commission as to which measures to introduce in response to such events.

As well as identifying existing threats the Centre the centre should also develop the capacity to scan for potential threats. Under Article 10 the Centre is mandated to establish procedures and to collect and analyse data with the intention of identifying emerging health threats. This is to be done in co-operation with member states and with other international organisations such as the WHO. One area which is not being transferred to the Centre is the operation of the rapid alert system for deliberate releases of biological, chemical and radio-nuclear agents (RAS-BICHAT). This will remain under the operational control of the Commission.

Scientific opinion and studies

A key purpose of the Centre was the establishment of an independent source of advice to member states and the commission on potential health threats. It is required to provide such advice under Article 6 and 7 and may do so through establishing independent scientific panels and by setting up a system to locate expertise at Member state and international level.

Technical assistance and training – Outbreak Investigation Teams

A key objective of the centre under Article 9 of the regulation is to ensure that there are a sufficient number of trained communicable disease specialists at the disposal of both the Commission and the member states, in order that there is sufficient capacity to control disease outbreaks. One mechanism by which this is to be achieved is through providing support for the EPIET training programme.

While a significant proportion of the work carried out by the Centre is focused on data analysis, maintaining networks and producing scientific advice the Centre does have a role in terms of providing an active response to disease outbreaks. The regulation states 'that the Centre shall, on request from the Commission, the Member States, third countries and international organisations (in particular the WHO) provide scientific or technical assistance, mobilise and coordinate investigation teams'.

In some cases the staffing required to establish an Outbreak Assistance Team may be contained within the ECDC. More often than not though, it will be necessary to draw upon professionals operating within national public health institutes or universities. Help with an outbreak investigation can be provided following a request from an EU Member state directly or through the Commission, or following a request from a third country or an international partner such as the (WHO).[122] Since the formation of ECDC this has taken

122. *ECDC Standard Operating Procedures for the Mobilization of Outbreak Assistance Teams* (OAT) ECDC Advisory Forum AF4/13/12 4th meeting 17 November 2005,

place during the avian influenza outbreaks near the EU with ECDC providing staff to support WHO led outbreak teams in Azerbaijan, Iraq and Turkey.

Alternatively the ECDC can offer to assist a member state or third country when there is 'a high potential for spread to neighbouring countries, severe diseases or diseases with limited treatment, diseases which require infection control measures, suddenly emerging or re-emerging diseases' in which two or more MS are affected or the affected country has limited capacity in outbreak investigation and response or the origin of the disease is unknown.In these situations, the ECDC will contact the MS(s) immediately to suggest a request for assistance.[123]

In addition, in the case of outbreaks of illness of unknown origin which may spread within or to the Community, the Centre is empowered to act on its own initiative until the source of the outbreak is known and then in cooperation with the relevant competent authorities at national or Community level as appropriate.

123. *ECDC Standard Operating Procedures for the Mobilization of Outbreak Assistance Teams* (OAT) ECDC Advisory Forum AF4/13/12 4th meeting 17 November 2005.

Box 4: Planning for a pandemic

The key test of the EU's recently enhanced health protection function is its ability to co-ordinate a response to the predicted influenza pandemic. In recent months the EU has introduced a number of measures to help prepare member states for this health threat. Overseen by DG Sanco the EU has used disease control powers from both the agricultural and the public health sectors. These include the following:

The Avian Influenza directive: The recently proposed Avian Influenza directive extends the requirement for member states to introduce control measures for low pathogenic as well as high pathogenic avian influenza in domestic poultry. The previous EU directive on Avian Influenza had previously focused only on the highly pathogenic variant of the disease. Control measures can include both vaccination of poultry as well as slaughter, although the former is only being permitted on a pilot basis at present.

Joint meetings: DG Sanco has also recently convened two meetings between both Chief Medical Officers and Chief Veterinary Officers in an attempt to encourage co-ordination and a joined up response between the veterinary and public health sectors on zoonoses.

Preparedness plans: In 2005, the Commission wrote to all health ministers asking them to provide information around their plans for the state of preparedness in their country. Collaboration with WHO Europe, whose region extends beyond the current borders of the EU meant that the survey included a large number of non- EU countries.

The results of the initial exercise in March 2005 found that 31 of the 52 countries in the WHO European region, which includes all European Union (EU) countries had a preparedness plan. When the exercise was repeated again in October 2005 46 had a completed plan or final draft, and these included all 25 EU countries.[124] As a result, joint assessment visits with the WHO and ECDC have taken place in EU Member States and other European countries in an attempt to help countries develop their response. In addition the Commission has conducted a simulation exercise to test communications and preparedness plans between the Commission agencies and the Member States.[125]

The Public Health Preparedness and Response Planning Group (PRPG): a group of national specialists with expertise in emergency planning which works under the Health Security Committee also plays a central role in exchanging information and providing advice to member states on contingency planning.

Outbreak Action Teams: The ECDC is drawing up procedures for mobilising such teams which can be dispatched to participate in outbreak investigation inside and outside the Community whilst working in tandem with the WHO and other international agencies.

Public Private Partnerships for Vaccinations: Because of the lack of capacity in producing vaccines the Commission has agreed to develop a public private partnership between public bodies and the vaccine industry to deliver an influenza vaccine to the EU population in the shortest period of time.

124. Olaf Horstick, Reinhard Kaiser, Massimo Ciotti, Caroline Brown, Denis Coulombier, Angus Nicoll, Franz Karcher, Bernardus Ganter. *Europe makes progress in preparing for influenza pandemic, but further work needed Eurosurveillance* 17 November 2005 Volume 10 Issue 11.
125. Communication from the Commission *on Pandemic Influenza Preparedness and Response Planning in the European Community* Brussels 28.11.2005 COM (2005) 607 final.

Zoonoses and food safety

Unlike the area of human to human infectious disease mentioned above, the EU is able to exercise significant regulatory powers when it comes to preventing the spread of disease to humans via animals or animal products.

As with most aspects of EU law the primary purpose of the health and safety legislation is to ensure that barriers to trade, in the form of national rules, are eliminated. As one of the regulations governing Food Safety in the EU makes clear 'when Member States adopt measures governing food, these differences may impede the free movement of food, create unequal conditions of competition, and may thereby directly affect the functioning of the internal market'.[126]

An important requirement of the single market, therefore, is that member states transfer to the EU some responsibility for ensuring the safety of food products entering their borders. As the Commission White Paper on Food Safety points out the facts of the internal market 'demands that all aspects of food safety are addressed at EU level'.[127] However, as the recent 'Spanish Eggs' example demonstrates (see **Box 5**), this can cause problems for communicable disease practitioners who find it more difficult to prevent harmful products entering the UK from EU member states than from outside the EU bloc.

The counterbalance to free trade in food and animal products is thus a set of rules aimed at ensuring the safety of food. Much of the EU's powers in this respect come from the Treaty provisions governing the single market and the common agricultural policy, as well as Article 153 which gives the EU powers to introduce measures to ensure consumer protection. Food safety and animal health legislation is proposed and enforced by DG Sanco as described above.

Following such high profile incidents such as the BSE crisis and the discovery of dioxins in animal feed the EU has recognised the need to enhance consumer confidence in the EU food safety regime. This led to the publication by the Commission of a White Paper on Food Safety in 2001 and the recent adoption of a set of harmonisation directives and regulations aimed at ensuring that all foodstuffs which are traded across the EU are produced according to the same set of standards. The aim is to ensure that any food that is produced according to EU wide standards can be sold in any EU member state legally and without impediment.

The White Paper led to four new regulations – directly applicable in member states – and one new directive which member states must implement through national legislation.[128] These introduce general requirements regarding food safety in member states and place a legal duty on the food industry to ensure amongst other things that food is safe and that

126. Regulation (EC) No 178/2002 of the European Parliament and of the Council of 28 January2002 laying down the general principles and requirements of food law, establishing the European Food Safety Authorityand laying down procedures in matters of food safety.
127. *White Paper on Food Safety* Commission of the European Communities Brussels, 12 January 2000 COM (1999) 719 final.
128. These are Regulation 178/2002, Regulation 852/2004, Regulation 853/2004, Regulation 854/2004 and Directive 2002/99. . . . . For more details see: Richard Elson *Overview of changes to European Food safety and hygiene legislation* Eurosurveillance Volume 8 issue 50 8 December 2004.

systems are in place to ensure that the food can be traced throughout the food chain. Businesses must also withdraw any food that is unsafe from the market and inform the relevant authorities of such an action.

The regulations also introduce specific food hygiene requirements for all primary producers of food including food hygiene training. Specific hygiene requirements and animal welfare rules have also been introduced for the production and sale of foods of animal origin. The rules also specify the microbiological criteria expected for certain foods. In order to ensure that these rules are observed the EU has set out how official controls should be organised, including the work of official veterinarians. According to Elson, these new EU rules which came into effect in January 2006 'introduce clearer legal principles to prevent, eliminate or control the contamination of food with pathogens with the aim of reducing or preventing the occurrence of food borne infections'.[129]

The revisions to the EU food safety regime also led to the creation of two new EU bodies. The first is a regulatory committee known as the Standing Committee on the Food Chain and Animal Health (SCoFAH). This committee of EU food safety and veterinary experts makes recommendations to the Commission on the technical aspects of food safety and animal health, which can then be adopted by the Commission to become EU law. The creation of this committee brought together a number of already existing regulatory committees looking at veterinary public health and is a highly significant body, meeting weekly in Brussels when necessary, coming to decisions and disseminating these back to Member states for enactment.

The European Food Safety Authority

The second institution created as a result of the reform of EU food safety rules was the European Food Safety Authority. The European Food Safety Authority (EFSA) is not an enforcement body, and should therefore be distinguished from the Food Standards Agency in the UK. Instead it acts as a source of independent scientific advice in the framing of EU food standards law. Its main purpose is to use its scientific expertise to provide a risk assessment of various developments in food and feed safety. How these risks are managed is left to politically responsible institutions in the EU to sort out as well as member states.

In order to ensure that the EFSA is seen as independent and objective it is established as a Community body with its own legal personality, funded from the Community budget but operating independently of the Community institutions. It is not therefore managed by the Commission but by an Executive Director, who in turn is answerable to a Management Board. Its eight expert panels are staffed by world class scientists.

The EFSA also plays an important role in the monitoring of zoonoses throughout the EU. In contrast with the lack of regulatory powers possessed by the EU with regard to the spread of human to human disease when it comes to zoonoses there is a legal duty on national governments to prevent the spread of disease. Member states are required in the

129. Richard Elson *Overview of changes to European Food safety and hygiene legislation* Eurosurveillance Volume 8 issue 50 8 December 2004 See Directive 2003/99/

first place to monitor the prevalence of particular pathogens and following this to adhere to targets to reduce them. The EU has powers to fund member states in introducing control measures. The main target of this legislation is salmonella, and certification of salmonella status is compulsory for trade between member states.[130]

Under this legislation the EFSA is assigned a task to collate, assess and report data on zoonoses, zoonotic agents and antimicrobial resistance. Because zoonoses are diseases which transmit from animals to man this can cause some confusion with the role played by ECDC especially since a large number of threats to human health can be classified as zoonoses. Close working with the ECDC which is tasked with linking up with the EFSA as part of its disease surveillance function is thus vital. EFSA is also charged with establishing scientific networks amongst similar national bodies across the EU in order to facilitate greater understanding of the threats to food and feed safety.

The EU Food and Veterinary Office

As noted above and elsewhere, the responsibility for enforcing food safety in member states lies with national regulatory bodies such as the Food Standards Agency, The Meat Hygiene Inspectorate and local authorities. However, just as the FSA monitors how local authorities implement food law in the UK, the European Commission now has significant powers to ensure that national authorities implement EU food standards and have sufficient control powers in place. The responsibility for ensuring that EU food safety laws are enforced by member states lies with the Food and Veterinary Office (FVO) which is a part of the DG SANCO. Again, due to the importance of agriculture within the European single market this is a highly operational part of the Commission and has strong legislative authority.

The FVO has had powers to conduct audits of national authorities for some time but these were recently enhanced when a new system came into place in January 2006 following the passing of a new regulation in January 2004.[131] The new directive permits intervention in the organisation of a Member State's communicable disease control system 'where the Commission has proof that a Member State's control system is inadequate' and 'will allow the Commission to take interim measures to ensure the protection of human health, animal health, animal welfare and the environment'.[132]

The FVO also visits third countries to check on the operation of official control and certification systems – and to monitor the animal health situation – so that it can verify that imported animals, plants and products meet EU standards. It also has responsibility for monitoring checks at ports and other points of entry.

130. *Eurosurveillance* New EU 'zoonoses package' of legislation to combat foodborne diseases 2 October 2003 volume 7 issue 40.
131. Regulation (EC) No 882/2004 of the European Parliament and of the Council of 29 April 2004 on official controls performed to ensure the verification of compliance with feed and food law, animal health and animal welfare rules.
132. European Commission Press Release "*New controls will enhance enforcement*" says Commissioner Byrne as Parliament backs new law' IP/04/317 09/03/2004.

EU surveillance of food safety hazards and animal disease

Underpinning the effectiveness of these institutions are a set of surveillance networks managed by DG Sanco designed to exchange information on animal disease outbreaks or contamination of the food supply.

The first of these is a rapid alert system for the notification of a direct or indirect risk to human health from food or feed. This is known as the Rapid Alert System for Food and Feed (RASFF).

Alert notifications are sent when the food or feed presenting the risk is on the market and when immediate action is required. Alerts are triggered by the Member State that detects the problem and has initiated the relevant measures, such as withdrawal/recall. The notification aims at giving all the members of the network the information to verify whether the concerned product is on their market, so that they can take the necessary measures.[133]

In addition for animal disease more generally the European Commission operates the Animal Disease Notification System which requires that detailed information on each outbreak in a Member State of an infectious disease in animals is sent by the Member States to the European Commission and the data published weekly.[134]

Box 5: The Health, Trade, Trade off: The UK and 'Spanish Eggs'

The potential hazards in transferring responsibility for health protection to a supranational organisation became evident recently when the Health Protection Agency and the Food Standards Agency discovered that eggs arriving to the UK from Spain contained salmonella.

In 2004 the Health Protection Agency issued a press release stating that it had 'investigated over 80 outbreaks of these strains of salmonella in the past two years, with at least 2,000 confirmed cases, and our evidence shows that the use by the catering trade of Spanish eggs is a major source of this infection'.[135]

Yet despite clear evidence that the source of the problem was an imported food, the UK health protection agencies could not ban the product. As a government agriculture minister pointed out in the House of Lords:

'Despite evidence of contaminated eggs coming into the UK from Spain, we cannot apply a blanket ban on imports because it would constitute a barrier to internal EU trade that would place the UK in contravention of the European treaty.'[136]

The issue was finally resolved within the UK through concerted action between the HPA and the FSA. Warnings were issued to the catering industry about the dangers of using Spanish eggs and a reduction in the use of eggs sourced outside the UK occurred. Collaborative work also took place with the Spanish Authorities in order to destroy the salmonella at source. No ban on the importation of the eggs was introduced.[137]

In addition to the difficulties caused to the UK health protection community as a result of free trade laws, the event also highlighted the differences in standards of disease control across the EU, with European consumers (in this case Spanish consumers) still facing very different health risks despite attempts to harmonise food safety measures.

133. http://europa.eu.int/comm/food/food/rapidalert/leaflet.pdf
134. Council Directive 82/894/EC.
135. Joint Health Protection Agency and Food Standards Agency Press Release *Agencies step up action on salmonella outbreaks linked to Spanish eggs* 14 October 2004.
136. Lord Whitty Hansard 18 Nov 2004 : Column WA223.
137. Health Protection Agency Press Release: *National multi-Agency Outbreak Control Team successful in reducing Salmonella Enteritidis infection in England & Wales* 20 October 2005.

Conclusion: Administrative complexity at multinational level

A key aspect of communicable disease control administration is a clearly identifiable focal point from which political authority can be exercised. In this respect the success of the disease control initiatives introduced at EU level will always be limited by the fact that in matters relating to national security member states are reluctant to cede any aspect of their sovereignty to transnational authorities such as the European Commission or the ECDC. As a recent assessment of the EU's preparedness for influenza pandemic found: 'The EC cannot tell Member States what countermeasures they should implement, only recommend what measures can be taken'.[138] The institutional structure of the EU is thus not conducive to command and control decision making in the event of a public health emergency since the policy of member states governments will rarely, if ever, be determined by multi-national institutions. The result of this is that the role played by the European Commission and other EU bodies in the area of disease control will remain undefined and unstable, subject to the process of intergovernmental decision making which provides the basis for its legitimacy.

In the absence of a centralised authority, the most that can be achieved at present at EU level is for the EU to act as a conduit for greater collaboration between member states on communicable disease control policy. And, given the commitment to increasing trade liberalisation within the EU, member states governments have a strong incentive to support this form of co-operation. Although threats to public health have always been to some extent internationalised the increase in global trade, and in particular intra EU trade has made governments aware that the effectiveness of the disease control measures put in place by their trading partners are a matter of their concern. Being forewarned of emerging health threats is also vital in a world in which pathogens move freely and rapidly across borders. A sophisticated surveillance system linking up all member states of the EU and beyond combined with the regular testing of national emergency plans are the welcome fruits of the EU's unique public health competence.

The EU mandate to assist member states and to foster collaboration is thus a potentially vital weapon in the armoury of national health departments. However, as is the case with all aspects of disease control administration the need for clarity in terms of who is responsible for what extends to the supranational level. In this respect, the current institutional structure of the EU poses a number of major difficulties which could undermine the achievements which have been made thus far. In the first place, institutional complexity allied to a lack of transparency may prevent national agencies from being able to interact effectively with the EU. As in the UK system, there is no readily available document which sets out the respective roles and responsibilities of the Health Security Committee, the other EU Committees (such as the Network Committee) the EWRS, DG Sanco's Health Threats Unit and the ECDC. The minutes and membership of the Health Security Committee are difficult to access and the websites of both ECDC and DG Sanco are unlikely to provide much satisfaction for those seeking a clear overview of how the main institutions interact and how important decisions are taken. This

138. Health Protection Agency *Exercise Common Ground – A pandemic influenza exercise for the European Union* Serial 5.0 Final Report 27 March 2006 p.18.

situation is made even less satisfactory when an overlap occurs between these bodies and the parts of the Commission (such as FVO) and the EFSA which deal with animal health and food safety.

The recent EU-wide pandemic influenza exercise that examined the role of the EU during an influenza pandemic, supports the view that accountability arrangements need to be rationalised. This exercise found that 'many member states considered that there was a need to clarify and communicate, clear and well defined roles and responsibilities during a crisis'. Moreover, an academic review of the preparedness of the EU's institutions found that 'there is a serious question about how, in practice, all these structures will operate alongside other EU agencies and national institutions. Command and control structures and procedures within the EU need to be clear to all. The perceived duplication and multiplication of roles and responsibilities is confusing – an in an emergency risks resulting in chaos'.[139] The newness of many of these new institutions maybe the cause of some of these difficulties, but the need to incorporate both the security and public health concerns of 25 member states within a complex institutional structure may always produce some level of administrative dissonance.

The second aspect that requires greater clarification is the division of responsibilities between the EU and the WHO European region in the management of an international incident. Although this study has confined itself to the emerging administrative and legal structure within the EU the new international health regulations provide a further set of legal duties which are binding on all signatories. The International Health regulations,(IHR) unlike EU enactments in the field of public health are incorporated into domestic law and require changes to national disease control systems. Like the EU the WHO operates a disease surveillance network known as the Global Outbreak and Response Network (GOARN) which operates in a similar fashion to the EU's disease surveillance networks and the EWRS. Although there is significant collaboration between the WHO European region and the ECDC, and a memorandum of understanding between the Commission and the WHO region, under the IHR it is the WHO who is responsible for co-ordinating a response to a global public health emergency. The potential overlap between the two bodies and the resulting confusion was identified by the recent pandemic 'flu exercise mentioned above. A key recommendation of the 2006 review was that:

'Member states, EEA States and Switzerland should be given further explanation as to the roles and organisations such as ECDC and WHO Europe and WHO headquarters to enable them to make co-ordinated and informed decisions.[..]. There should be greater clarity on the role of the WHO in relation to ECDC and EC and also between WHO Headquarters and WHO Europe.'[140]

A final area which will need to be addressed at some point in the future is the disproportionate focus of the EU's powers on animal rather than human health. As has been shown the EU has significant powers to eradicate disease in animals but not humans. In

139. Sandra Mounier-Jack, Richard Coker *Pandemic Influenza: are Europe's institutions prepared?* European Journal of Public Health Vol 16, No.2 119-121 2006.
140. Health Protection Agency *Exercise Common Ground – A pandemic Influenza Exercise for the European Union* Serial 5.0 Final Report 27 March 2006 p.25.

part, this can be explained by the imperatives of the free market and the reluctance of member states to subject their health care systems to outside interference. But, since the objective of all policy intervention in this area is to protect and promote human well being it is increasingly anomalous, for example, that new entrants to the EU are required to invest heavily in their veterinary structures while leaving their public health systems untouched. Yet the failures of public health infrastructure in one member state are equally the concern of all EU members, from the technical perspective of health protection as well as those concerned with the distribution of health inequalities.[141]

141. For an account of these issues see: Professor Angus Nicoll *Differences and Inequalities in Europe in the Experience of Human Infectious Diseases* Speech at the ECDC 20th July 2006.

CONCLUSION

This report has set out the overall organisation of communicable disease control in the United Kingdom after devolution and in light of the developing public health powers of the European Union. Since the 19th century, the administration of disease control has developed incrementally, with reforms often the product of crises or a response to the emergence of new health threats. This lack of system planning has led to confusion over who does what, particularly as other parts of the NHS have been reformed with other non-public health objectives in mind. Added to this is a set of public health laws which are out-dated and unsuitable for the demands of the 21st century. Therefore, despite the huge advances which have been made in eradicating infectious disease difficulties in co-ordination have remained a constant theme in this area of policy.

Other studies for the Nuffield Trust have revealed that the changing nature of the state in the UK has impacted upon the organisation of the NHS.[142] Both devolution and the increased involvement of the European Union in health policy have posed new challenges for policy makers. In particular, the exercise of public health powers by devolved governments and by the EU has the potential to exacerbate some of the underlying co-ordination problems in disease control. But the changing political environment for health policy also offers new opportunities to develop new ways of working and to pool resources and expertise to counter new health threats.

The purpose of this report was not to provide policy recommendations about how the control of disease in the UK can be improved; others have done that in some depth.[143] Rather, it has provided an account of the major components of communicable disease control strategy in the UK and has situated this policy within the new political context. It has highlighted the challenges posed by devolution and 'Europeanisation' for policy makers and has produced a number of policy relevant insights.

142. Scott Greer *Divergence and Devolution* The Nuffield Trust 2001; The New EU Health Policy and the NHS Systems, The Nuffield Trust 2005; Scott Greer *Responding to Europe: government, NHS and stakeholder responses to the EU health challenge* The Nuffield Trust 2006.
143. House of Lords Science and Technology Committee Fourth Report: *Fighting Infection* 18 July 2003 CMND: HL 138; House of Lords Science and Technology Committee Fourth Report 'Pandemic Influenza' 16 December 2005 CMND HL 88.

Chapter 1 provided a historical overview of the centralising process that has marked communicable disease control. The disease control function evolved from being a mainly local responsibility in the 19th century to a national concern by the mid 20th century. The trend towards nationalisation in the post war period extended to disease control administration with the creation of the Public Health Laboratory Service, (PHLS) which acted as central repository for information and co-ordination, although the responsibility for enforcing public health law still lay at a local level. However, as with many other issues, more or less distinctive legal and administrative structures were in place across the UK prior to devolution with Scotland in particular remaining outside the PHLS network.

Chapter 2 set out in detail how the current arrangements for disease control operate across the UK. How does communicable disease control work in light of widespread public service reform and the increasing complexity of governance in the UK? Both the NHS and the organisation of communicable disease control have been radically reformed in each of the four parts of the UK. The decision, by the English Department of Health in 2002, to abolish the PHLS and establish the Health Protection Agency had particular consequences for Wales and Northern Ireland, both of which were part of the PHLS structure. It also caused a re-think in Scotland about how best to organise their system of disease control in the light of new health threats.

As a result, national health protection bodies have been created in 3 out of the 4 parts of the UK but the four systems have taken different approaches to the crucial matter of integrating these new agencies into the operational aspects of the NHS. In England and Wales disease control consultants are employed by the HPA and NPHS respectively while in Scotland they remain within the NHS. Instead Health Protection Scotland performance manages and provides assistance to the NHS field investigation teams. In particular, accountability arrangements at local level in England have become especially complicated as a result of the reform process.

The organisation of surveillance systems within the 4 parts of the UK have also changed following devolution and the creation of national health protection bodies. The public health laboratories which carry out much of the data work are now no longer managed by the central public health body in England, but by the NHS. This situation is similar in Scotland and Northern Ireland, although Wales with a greater focus on an integrated system has maintained a network of laboratories under the control of the National Public Health Service Wales. In the same way that there is no UK wide public health law there are also differences in the types of diseases which must be legally notified to the authorities between Scotland and the rest of the UK.

Interestingly, UK wide bodies have been established in other parts of the disease control apparatus, most notably in the case of the Food Standards Agency. Despite the fact that food safety policy, like public health is devolved, the organisational structure of the FSA permits it to co-ordinate policy on a UK wide basis but allows it to remain accountable to political representatives in the devolved administrations.

Chapter 3 set out the developments in public health policy in the European Union and discussed the EU's unique public health competence. While public health practitioners in

member states were beginning to share information about diseases from the late 1970s onwards it took a legal basis with the Maastricht Treaty to provide a formal basis for co-operation in this area. Since then the EU's public health competence has led to the central co-ordination of an important set of surveillance networks and the creation of a European Centre for Disease Control (ECDC). Compared to national organisations and the US CDC these new bodies remain poorly resourced, but they are innovations which have the potential to greatly assist member states in their fight against global health threats. In particular the EU now plays a vital role in co-ordinating a response to the threat of pandemic influenza and bio-terrorism.

As with most aspects of EU public policy the regulation of a single market in goods and services tends to dominate the agenda and this is the case with public health. Thus food safety and veterinary public health policy are heavily regulated by the European Union with an institutional apparatus being developed accordingly. The EU Food and Veterinary Office and the European Food Safety Authority ensure that food safety standards are met across the member states, thus permitting free trade in agricultural produce and foodstuffs while also protecting consumers.

The inclusion of healthcare services within the scope of the EU's internal market raises interesting questions about the future role that the EU will play with regard to healthcare associated infections. With the European Commission promoting greater patient mobility across the need to ensure patient safety may lead to greater EU regulation of hospital hygiene standards.

In addition to these findings a number of general themes emerge:

1) The devolution of public health policy in the UK has led to new organisational boundaries and new administrative innovations

As previous work on the impact of devolution on the UK NHS has shown, a change in constitutional arrangements can have a significant impact upon the delivery of health care and this also applies to public health. The imperatives of devolution have meant that new institutional and organisational boundaries within the disease control structure have started to emerge. Although the issues around co-ordination should not be overstated, the new constitutional arrangements are still uncharted waters for public health policy makers. As is the case with most aspects of intergovernmental relations, the informal face to face meetings between officials ensure that policy co-ordination is maintained despite any new divisions. However, devolution also requires professionals to be answerable to new political constituencies who may, over time, develop divergent policy objectives. Interestingly, as the EU becomes more involved in public health policy, with a greater focus on the harmonisation of infection control standards, the opportunities for policy divergence across the UK lessens.

Political devolution has also provided opportunities for new forms of public health administration to develop across the UK. Although the post war structure was sensitive to the individual needs of the four parts of the UK the restructuring that has taken place since devolution reflects the influence of the ideas and interests of groups circulating in Belfast,

Cardiff and Edinburgh. This has led to innovation and the opportunity for each part of the UK to observe and learn from the different models introduced in the post devolution era.

2) The importance of the European Union

The term Europeanization refers to the fact that membership of the European Union is likely to affect all aspects of public policy within member states. This is clearly the case with regard to public health policy. Not only does membership of the European Union provide an opportunity for the UK to pool expertise and resources with other European countries but it provides a crucial mechanism for collaboration and co-ordination in the area of international public health. However, since the goal of the European Union is to reduce the importance of national boundaries membership can also impact negatively on the ability of member states to prevent pathogens entering their populations.

As noted throughout the report membership of the European Union affects the various aspects of disease control in different ways. Thus policies designed to prevent the human to human transmission of disease are less Europeanised than say veterinary public health, including food safety. The challenge for the public health community is to engage with the EU seriously and to recognise that the policy making arena no longer resides exclusively in Whitehall or in the capitals of the devolved administrations.

But the EU is not the only European wide body involved in this aspect of public health. The World Health Organisation (WHO) also has a legal mandate to offer assistance and co-ordinate national responses to public health emergencies under the International Health Regulations. Clarifying the respective responsibilities and tasks of the European Commission, the ECDC and WHO in this area is vital for ensuring that the benefits of supra-national governance are maximised.

3) There is a need to give greater priority to the administration of public health within the current health reform process

A further insight from history is that administrative dissonance maybe endemic to the administration of communicable disease control. The administrative and legal complexities of the system have regularly led to confusion amongst those charged with protecting the public's health. The 19th century calls for greater simplicity in the organisation of the system have been echoed by official inquiries right up to the present day.

In England, in particular, the current reform of the NHS has been driven with the objectives of patient choice and waiting list reduction in mind, a fact which has left the main public health body within the NHS, the Primary Care Trust, unclear about its public health function. The fact that Department of Health guidance setting out who does what in the administration of disease control was last issued in 1993, demonstrates the extent to which the current reform process has over looked this crucial area of policy. The creation of the Health Protection Agency in England sought to insulate the disease control function from the structural changes occurring in the NHS, but there is a feeling that greater clarity in terms of 'who does what' at local level is still needed. Similarly, the long awaited review and updating of public health law is also required in order to provide a legal framework fit for the circumstances of the 21st century.

4) The importance of the security agenda

Although many of the drivers behind the current administration of disease control health are due to the changing nature of the state the impact of the current security agenda should not be under-estimated. It is no coincidence that the creation of health protection bodies across the UK and the ratcheting up of co-operation between EU member states have occurred post September 11 2001 However, it should be remembered that security concerns have often dove-tailed with public health concerns. Thus, the creation of the public health laboratory service in 1939 was a response to the perceived threat of bio-terrorism and it was this service which lay at the heart of the many advances in public health protection in the post war era.

There are legitimate fears that everyday public health resources may be being directed towards emergency planning and disaster response but the current security climate may also provide a new opportunity structure for the public health community to push forward and consolidate its own agenda. It is interesting to note how the origins of the PHLS were quickly forgotten as the threat of bio-terrorism receded and how the new institutional structures can be easily adapted to address more traditional disease threats. In particular, the emerging institutional apparatus within the EU is being used as much to enact policies on bio-terrorism as it is on pandemic 'flu.