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NHS Direct, An Innovation in Social Trust

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NHS DIRECT: AN INNOVATION IN SOCIAL TRUST

Remote access to public healthcare and the health service

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1 Case summary

This case study sets out to map the development of an innovation within the context of the UK public health sector. In this example, the innovation in question is NHS Direct. The case study tracks the origins of NHS Direct and examines the 'critical events' in its development to the current service. Issues such as the pressures, drivers and rationale for its introduction, barriers to its diffusion and uptake and facilitating factors are also considered. The case study is not intended to be evaluative or judgemental of the service, although it does draw on a number of evaluations of NHS Direct, largely to gain information on its sequential development.

The introduction of *NHS Direct* followed extensive debate concerning a wish to combine an old and a new technology (telephone and Clinical Assessment Software – CAS, respectively) in order to deliver healthcare and health service advice to the public. NHS Direct aimed to provide more extensive and cheaper access to healthcare, whilst at the same time alleviating pressure on (hospital-based) Accident and Emergency services and GPs (General Practitioners or 'family doctors'). In essence, NHS Direct is a nurse-led, 24-hour telephone advice service which offers distance-based information (basically, a form of *triage*) to the public and allows them to make better informed decisions on their appropriate subsequent avenue to health care. In this sense, the innovation concerns the ability of CAS to reach appropriate decisions under a wide range of demands, together with issues of public trust, social reflexivity and social empowerment.

At the general level, the introduction of NHS Direct could be said to form part of the Government's policy for modernising the NHS. More specifically, it aimed to improve customer satisfaction and patient safety, at the same time empowering patients to make better informed choices about their own healthcare. The fact that the service has also been found to have a potential to contribute to wider developments in the NHS may also have played a role in its policy background. However, the extent to which these *a posteriori* policy outcomes shaped the decision making process preceding the introduction of NHS Direct, and the extent to which concerns over the need to improve cost effectiveness of the delivery of emergency and GP services formed part of its policy rationale represented elements for investigation in the case study.

2 THE CONTEXT: Innovation in the UK publicly funded National Health Service

The following gives a brief overview of the publicly funded health service within England and introduces the systems of innovation within and supporting this service.

2.1 Structure of the NHS

The National Health Service (NHS) is a major public sector organisation directed by the Department of Health, acting in accordance with the policies of the UK Government. Recently, it has undergone enormous structural change influenced by the 1997 Government White Paper *The new NHS: modern dependable*. This White Paper introduced policies aimed at "modernising" the NHS.

Within its current structure (Figure 1), the Department of Health (DH) forms the strategic headquarters of the NHS, being directly involved in its management and in overseeing its performance. The functions of the Department of Health relate to three areas:

- Managing the total health and social care system
- Developing policy and managing major change
- Overall regulation and inspection of the NHS through public bodies

The executive line of authority runs from the NHS Chief Executive who leads two government executives in Leeds and in Whitehall, to four new Directorates of Health and Social Care. Each directorate is headed by a Director who is in turn supported by small teams of personnel. Directors have both national and local responsibilities within the geographical areas in which they are based and work directly with Strategic Health Authorities in implementing government policy.

Strategic Health Authorities (SHAs), of which, in 2004, there were 28, manage the NHS locally, and act as a bridge between the Department of Health and local NHS services. Their role is to ensure that national priorities are integrated into local health service plans. Thus they are responsible for: developing local health service strategies; monitoring performance of the local health service and its collaborating organisations; and building capacity within the local health service.

A Primary Care Trust (PCT) is an independent, free-standing NHS body separate but accountable to the Strategic Health Authority. Many responsibilities for commissioning hospital and community health services have been moved from the former Health Authorities (abolished as part of the implementation of the 1997 White Paper) to PCTs. Primary care trusts have a leading role in the running of the NHS, and are expected to receive 75% of the NHS budget (as opposed to recent years where they received less than a quarter of the NHS budget, the majority going to hospital services). There are approximately 300 PCTs covering England. Each PCT is responsible for:

- Deciding on the health service needs of the local population and ensuring the continual provision of these services. PCTs are responsible for providing services themselves or through agreement with other healthcare providers, such as dentists, mental health services, Walk-in Centres, NHS Direct, patient transport, casualty, population screening, pharmacies and opticians;
- Improving the health of the community through: working in partnership with the public and other organisations concerned with public health and other community based health and care initiatives, and developing programmes to improve health locally;
- Integrating health and social care locally by ensuring that local NHS organisations work with local authorities. It is also anticipated that PCTs will play a bigger role in commissioning and providing social care and may become Care Trusts responsible for a range of health and social care services

Care trusts are NHS bodies comprising NHS organisations and Local Authorities, which have agreed to work together in both health and social care. Currently there are only a small number in existence and their functions are determined by this partnership.

NHS Trusts are responsible for managing the provision of hospital services. Each, as a self-governing body, has the freedom to employ its own staff, create its own management structure, borrow money within annually agreed limits and make the case for capital development. They receive their income from service agreements negotiated with Strategic Health Authorities with which they are held accountable for their performance under the terms of the agreements. Since the 2000 White Paper, NHS Trusts have had to develop new working relationships with PCTs. All local NHS organisations, PCTs, Care Trusts and NHS Trusts, are now part of a single structure within which they are held accountable to Strategic Health Authorities, which are in turn accountable to the Directors of Health and Social Care, under the Department of Health. However, this structure is still in a state of flux and further changes are expected.

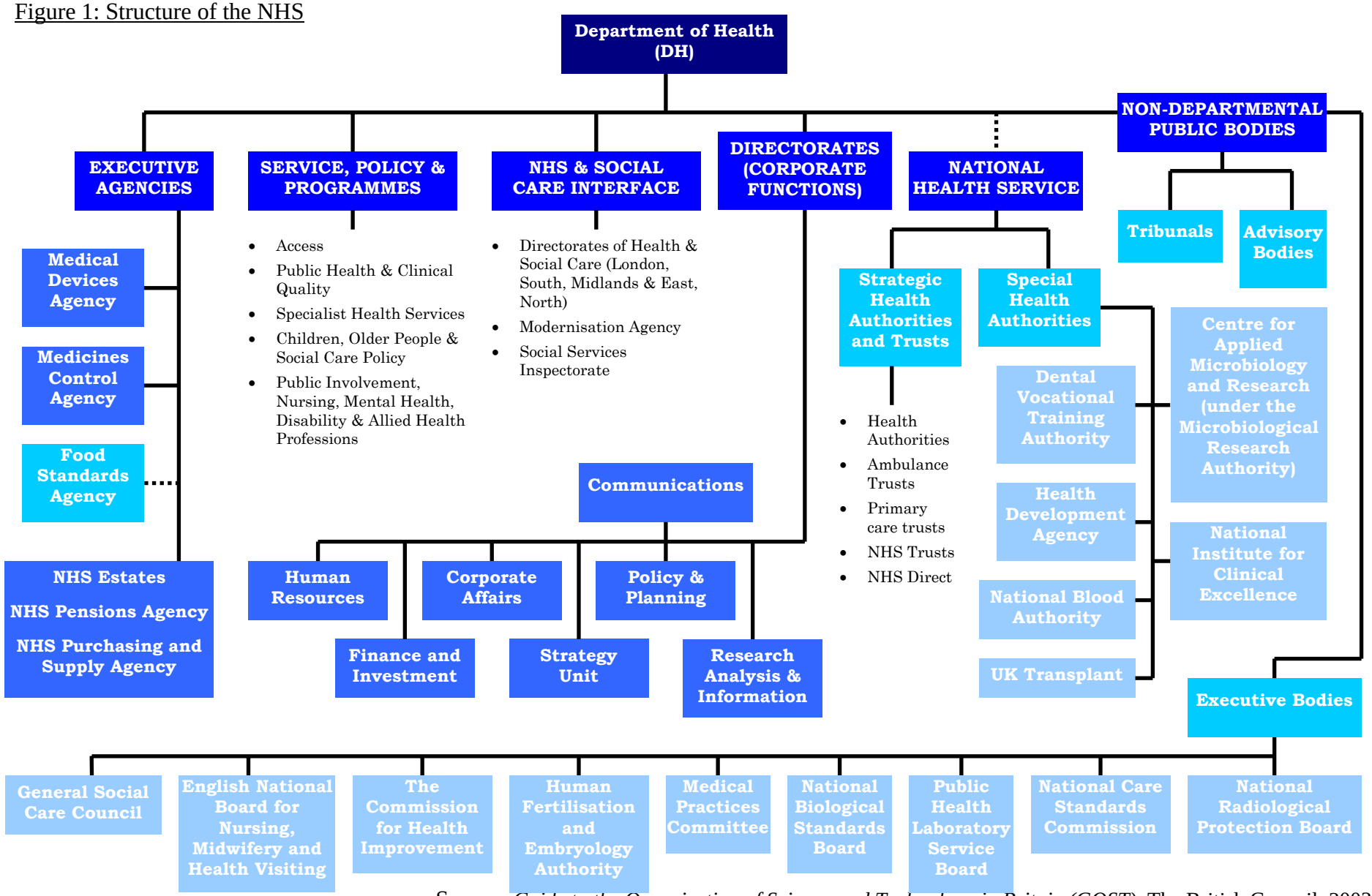
2.2 Success -The Quality Agenda within the NHS

Until fifteen years ago judgement on the quality of care and service provision was mainly seen as a matter for health professionals. However, 1990 saw the introduction of the use of clinical audit as a means of enabling local clinical practitioners to demonstrate more openly how well they were providing services and other health interventions to their local population. Nevertheless, clinicians tended to be reticent about sharing the results of such audits with groups outside their professional group. *The NHS Plan* (2000), in setting out its programme of reform for the modernisation of the NHS, encouraged partnerships, cooperation and learning from mistakes as a package of approaches that could be used to improve the quality of services provided.

Quality is assessed by evidence of: health improvement; fair access to services; effective delivery of health care which is timely and complies with agreed standards; efficiency in terms of minimum waste of NHS resources; favourable patient/carer experience; and appropriate health outcomes. The quality agenda is tackled through a three pronged approach:

- Setting standards through bodies such as the National Institute of Clinical Excellence, through National Service Frameworks, and developing ‘beacon’ (best practice) frameworks;
- Setting up profession-related mechanisms such as professional self regulation, clinical governance, life-long learning and training programmes;
- Monitoring input from organisations such as the National Patient Safety Agency where risk management is addressed through the identification, analysis, and control of risk.

Figure 1: Structure of the NHS



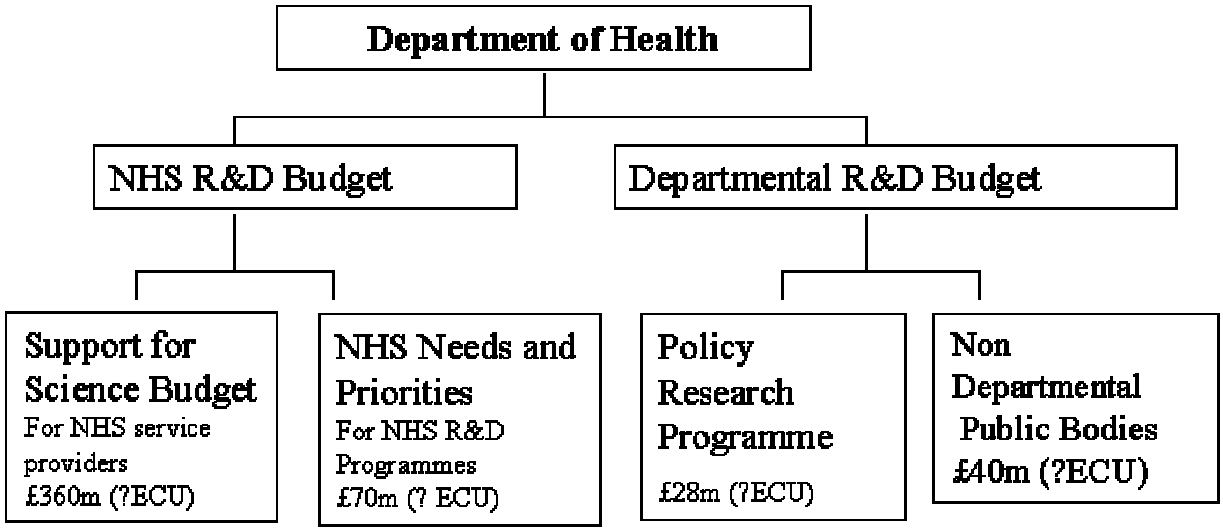
Source: *Guide to the Organisation of Science and Technology in Britain (GOST)*, The British Council, 2003.

2.3 Sources of Funding for Innovation within the NHS

There are three main sources of funding for health-related R&D and innovation in the UK; the commercial, charitable and public sectors. It is estimated that industry spends around £250 million on health and medical research in the UK, the majority of which comes from the pharmaceutical industry. The charitable sector spends around £415 million a year, the largest share originating from the larger charities, particularly the Wellcome Trust. Government support for R&D is provided through the science budgets of the various Governmental departments. Thus, the Department for Education and Skills provides funding for university research infrastructure via the Higher Education Funding Councils for England, Scotland, Wales and the equivalent body in Northern Ireland, while the Office of Science and Technology provides funding for the UK Research Councils for research projects and training.

The Department of Health funds research to meets its policy needs through the Policy Research Programme. It also manages the NHS R&D funding programme which is used to support R&D, of key concern to the NHS, which is undertaken in hospitals, general practice and within other health care providers. The Department of Health also pays for service support costs through the national budget. Research is also funded through non-departmental bodies such as the Public Health Laboratory Service.

Figure 2: Department of Health funding for R&D



2.4 Structure and organisation of the NHS R&D system

The Department of Health oversees the NHS's R&D function at three levels, the local NHS provider level, centrally and for research which is contracted out.

2.4.1 Central structures and functions

The structure through which research supporting the needs of the NHS is currently managed is relatively new due to recent structural changes within the NHS. Heading the

R&D system at a national level is the Director of Research and Development. The Director is supported by a secretariat, the Research and Development Directorate of the Department of Health. This central directorate has responsibility for advancing R&D policy and strategy; producing policy evidence through the management of the Policy Research Programme; co-ordinating, knowledge management; financial management; and for the identification of research priorities with the help of Advisory Committees and Task Forces.

Historically, the Department of Health was split into four Directorates of Health and Social Care (DHSC). Each Directorate is based within and has responsibility for a geographical area namely: the North; Midlands and East of England; London; and the South. Each head of R&D within a Directorate is supported in their role by a small group of staff in: promoting R&D within NHS research providers and in liaison with other organisations such as universities and SHAs; representing the Department of Health in such partnerships; reviewing research performance through annual R&D reports; and gathering other local intelligence to support the R&D function within the Department of Health. At a more local level SHAs are in the process of receiving devolved responsibilities for performance management of research governance.

2.4.2 Local Structures and Functions

The Strategic Health Authorities do not have a dedicated post with responsibility for R&D. However, at unit level within NHS Trusts and Primary Care Trusts, R&D managers or facilitators have the role in monitoring who is doing research within their organisation and with whom they are collaborating. This information is mainly used to ensure that all research has ethical approval before commencing. This structure is currently under review.

2.4.3 Contracted Out Functions

Some functions within the R&D framework are contracted out but still operate under the policy guidance of the Department of Health. These include knowledge management, innovation management, research portfolio management, support for capacity building; and management of research ethics.

2.5 Innovation in the National Health Service

Within the English health service innovation is intimately linked with the R&D system supporting the NHS. However, stimuli for innovation within the NHS arise and are diffused through four different but linked networks. These formal and informal networks relate to:

- Local or individual ‘champions’
- Organisational response to external policy changes
- National programmes
- Regional innovation hubs
- The Modernisation Agency

In the past, and to some degree now, local or individual champions are the main element in the bottom up approach to innovation, typically in cases where a clinician or manager is interested in addressing a specific problem or concern within their working environment. It is unlikely that this informal small scale approach to innovation has much

or any direct funding to support initial development of the idea which may relate to patient care or a management/administration processes. Diffusion of such an innovation is dependent on the individuals in terms of the time and energy they are prepared to put into supporting their idea. It is also dependent on the support they generate from idea champions and collaborators with the resources and power in their local environment. An example of this approach can be found in the case of a local Mental Health Service Users Group which began to develop the initial concept for a new service, a 'Safe House' for people in crisis. The idea was later funded and developed into a three year pilot project (Brennan, 2000). Most innovations stimulated under this model are implemented via a non-commercial route making them freely available if they demonstrate a gain in health care, service provision or health of a specific population.

An example of innovation arising from an external policy stimulus can be found recently within primary health care, where the changes occurring in this area have been fundamental to the reorganisation of the NHS. The development of Primary Care Trusts (PCTs) has drawn on government funds for strategic improvement in the quality of service provision and care. This has given rise to a number of new collaborations and ways of working not previously practised, as well as stimulating a cluster of technological innovations. A regulatory framework is in place to guide such innovations and is administered through national organisations such as the National Institute of Clinical Excellence, National Clinical Assessment Authority, Centre for Health Improvement, National Patient Safety Organisation, or the National Health Service Frameworks. These bodies set national guidelines on standards of care. While this system operates in England and Wales, a different set of organisations is involved in Northern Ireland and Scotland.

The Government, through several departments, is the dominant agency responsible for formally promoting, funding and diffusing innovations, both technical and service-orientated. The Department of Health's concern regarding the payback from investment in NHS R&D strategies led to the publication, in September 2001, of a Science and Innovation Strategy White Paper. This document contained an innovation policy framework based on the exploitation of intellectual property, which was seen as an effective means of identifying and managing innovations that could contribute to improved healthcare, ensure payback to the NHS and also enhance UK prosperity through commercial exploitation. The Director of Research and Development within the Department of Health has overall responsibility for innovation within the NHS.

In promoting this strategy the Department of Health encourages NHS bodies to: participate in schemes funded by other Government departments or organisation such as the Department of Trade and Industry (i.e. with its Biotechnology Exploitation Platform Scheme); work collaboratively with the UK Research Councils and also Regional Development Agencies to ensure that NHS bodies also work with local industry and universities to support incubator development through access to Regional Innovation Funds. In addition the Department of Health supports an NHS Innovation Award.

Intellectual Property (IP) seen as central to innovation policy within the NHS and the Department of Health has contracted out the function of regional innovation to private companies with expertise in this area: 'Regional Innovation Hubs'. These innovation 'push' organisations, within the NHS strategy framework, are directed to facilitate the

interaction between NHS staff and companies, ensuring the former cover their costs when working within such collaborations. In encouraging a culture of innovation within NHS Trusts and Primary Care Trusts, these organisations also aim to promote an awareness of its function within the educational, research, enterprise and commercial sectors, based in their locality, through training and advice on IP management. These Hubs are relatively new structures; by mid-2004, nine of a possible twelve regional innovation companies had been engaged throughout England together with one in Scotland. All are at different stages of development and are differently organised. One particular Hub in the North West of England functions by approaching the NHS R&D Manager within an NHS Trust and identifying medical, nursing and managerial staff with innovative ideas through an innovation audit. The innovations of interest to the Hub are generally tangible (i.e. technical) developments such as diagnostics; therapeutics; software, education and training; protocols and guidelines; and medical devices. In response to the audit, an Innovation Officer from the Regional Innovation Hub writes a report to the NHS Trust recommending ways of protecting and exploiting potential innovations. Individual R&D managers vary in how they respond to this advisory report. In addition, to raise awareness about innovation issues locally, the Innovation hub holds an annual competition directed at NHS staff to identify the best innovations. Entrants typically include nurses, medical practitioners, managers and R&D staff.

These innovation hubs are relatively new, as are some of the bodies and structures of the NHS within which innovations may occur. Therefore, the networks or links between innovation and diffusion are not well established and separate organisations such as the Modernisation Agency were tasked with the dissemination and diffusion of innovations. The Modernisation Agency was established by the Labour Government as one of five regulatory agencies[1] responsible for driving through its 'quality agenda'. The broad objective of the Modernisation Agency is "to help the NHS bring about improvements in services for patients and contribute to national planning and performance improvement strategies". Modernisation managers placed in Strategic Health Authorities have helped to develop these networks, with Sectoral Learning Alliances which also have a role in such processes as encouraging Trust staff to work in new and different ways with the aim of reducing cost, saving time and in delivering improvements to patient care. Their strategy involves the use of a Good Practice Network and Sharing Practice Forums (Walsh, 2002). In broad terms, the Agency aimed to promote the concept of "creativity" and innovation, through development of a culture for organisational learning. In 2005, the Modernisation Agency was due to be dissolved and replaced by a more diffuse set of regional teams, based within Strategic Health Authorities, whose remit remains broadly the same, i.e. to think of innovative approaches to overcome old problems within the health service.

3 THE INNOVATION PROCESS

3.1 The Policy context

Whilst the National Health Service had already seen several decades of change and, some would say, upheaval, the election of a Labour Government in 1997 heralded a further round of policy revisions. In December of that year the new Secretary of State, Frank Dobson issued a White Paper *The new NHS - Modern, Dependable*. This set out Labour's

[1] The other agencies were: the National Institute for Clinical Excellence; the Commission for health Improvement; the National Patient Safety Agency; and the National Clinical Assessment Authority.

initial vision for change to the national NHS structure. Whilst in opposition, Labour had criticised many of the Conservative Government's public sector policies which were based on the belief that the private sector could deliver what the public sector was unable to achieve and that market forces would prevail. However, on coming to power, Labour politicians found themselves having to concede that some of the features of the Conservatives' internal market were worth keeping and, while still denouncing them, they began to build on a number of Conservative initiatives. The three main themes of the Health White Paper focused on: revision of the NHS organisational structure; improved communication within the service; and a drive toward quality (with the creation of the new national supervisory bodies mentioned above). The key changes took forward a number of already ongoing trends. Thus, reliance on the internal market was reduced; competitive regimes became more cooperative – with new phrases such as 'partnership' and 'integration' replacing the jargon of the market. The "quality agenda" also gathered momentum, spawning a raft of initiatives such as 'total quality and continuous quality improvement programmes' reviewing single organisations, collaborative teams in different organisations, external review and accreditation programmes, guidelines and national service frameworks aimed at changing practices. Before long, it appeared to some observers, there were more NHS staff engaged in monitoring activities than actually performing them.

A second wave of organisational change was introduced by the new Secretary of State for Health, Alan Milburn in July 2000 with the publication of *the NHS Plan*. This set out the Government's plans for a radical shake-up to avoid the collapse of the NHS. A largely aspirational document, *the NHS Plan* contained much detail and numerous targets, many beyond the life cycle of the administration, for its four major themes of increasing capacity, setting standards and targets, supervision of the delivery of NHS services, and 'partnership'. One of the key reorganisations outlined in the Plan took place in 2002 when the Area Authorities were replaced, by merger, with 28 Strategic Health Authorities.

The introduction of NHS Direct was high on the priorities for health of the new Labour Government and the first announcement concerning its establishment came with the publication of the Department of Health's White Paper, *The New NHS: modern, dependable.* However, the idea of the service itself stemmed from a recommendation made by Sir Kenneth Calman, the Chief Medical Officer, in his September 1997 report, *Developing Emergency Services in the Community*. In his report, Calman identified the potential benefits to over-stretched ambulance and accident and emergency services from the provision of an, alternative, access to a high quality telephone advice system (NAO, 2002). In short, he proposed that

> "an effective system of emergency care in the community requires: coordination of the provision of emergency care, so that a well-planned and well-managed system of appropriate assistance is accessible to patients 24 hours a day; education of the public, so that individuals can recognise emergencies, deal with them and know where to turn to for professional help; and improved access to help and advice through a telephone helpline". (Department of Health, 1997)

The Chief Medical Officer's report identified a need for further action in six main areas:

> "to set up and evaluate pilot schemes that provide telephone advice lines on immediate care in the event of an emergency; to map emergency services in the community; to analyse how people react to and handle emergencies; to agree and publicise key messages about emergency care; to define a core curriculum for first aid training; and to modernise and standardise first aid kits". (Department of Health, 1997)

Interestingly, the White Paper itself contained only a short paragraph regarding the Government's intention:

> "At home, we will provide easier and faster advice and information through NHS Direct, a new 24 hour telephone advice line staffed by nurses. We will pilot this through three care and advice helplines to begin in March 1998. The whole country will be covered by 2000." (Department of Health, 1997b)

A primary rationale for the launch of NHS Direct, according to the Government, was the fact that ambulance services in the UK were struggling to cope with a huge rise in the number of 999 (emergency service) calls – up by some 50% over the previous decade. It was estimated that around two-thirds of these calls did not necessitate an emergency response from the ambulance services and many were the result of 'nuisance' calls for completely trivial issues. As UK ambulance services are obliged to respond to all emergency calls and to transport the caller to a hospital casualty department, even in cases where it is evident that they have no emergency care needs, this placed a considerable burden on an already over-stretched service. Thus it was foreseen that, if successful, the introduction of a system of immediate care advice lines would help to both "improve the accessibility of appropriate information to patients in the event of a perceived emergency" whilst at the same time, through the appropriate deployment of resources, it could alleviate pressure on other NHS emergency and out-of-hours services.

Where did the original concept arise? According to Dr Sandy Macara of the British Medical Association, NHS Direct represented an important concept, which built on "work pioneered by colleagues in primary care during the past five to ten years, in many parts of the UK". (Department of Health, 1998). In fact, the use of telephone help-lines was far from an original concept: the Health Information Service was a forerunner to NHS Direct in providing information to callers and a number of GP practices were already using forms of clinical assessment software and computer-based triaging systems. For example, the NHS Direct call centre in West London (a second wave site) combined its service with an existing GP out-of-hours cooperative – HARMONI, which was already using the pilot clinical assessment software (TAS) (Mark and Shepherd, 2001). It has also been argued that the service responded to consumerism and technology, offering the NHS similar benefits to those afforded to the banking sector by the introduction of cash machines, by providing a more accessible, convenient and interactive entry.

In March 1998 three pilot schemes were set up with Department of Health funding in Newcastle, Preston and Milton Keynes, catering to approximately 1.3 million people. These schemes were operated by the Northumbria Ambulance Service (in Northumberland, Newcastle and North Tyneside), the Lancashire Ambulance Service (in

Preston, Chorley and South Ribble) and the Two Shires Ambulance Service (in Milton Keynes).

Recognising that the service would involve and impact a large number of stakeholders, the NHS Direct project team set up two consultative groups in order to receive their views. These were the National Advisory Group (which involved a large range of organisations, including voluntary organisations representing particular groups of users) and the Primary Care Implementation Group (which involved the main GP representative organisations). An Advisory Group was set up in July 2000 as a formal consultative structure for NHS Direct Online. Later developments included the condition that NHS Direct Online should report to a Board containing representatives of the health professions and other stakeholder groups, consumer representation on the Management and Editorial Boards, the establishment of a 500 member Public Reference Group, and the opportunity for user feedback via the website.

Between January and April 1999, a second wave of sites had been established, bringing the service to a total of 20 million people. New services were introduced to cover the West Country; Birmingham and the Black Country; West London; Hampshire; Essex; Nottinghamshire; Manchester; West Yorkshire; Hull and East Yorkshire; and Lambeth, Southwark and Lewisham. A third wave of sites was launched between November and December 1999, adding a further 10 million people to the population covered. Third wave sites were: South Yorkshire and South Humber; South West London; Bedfordshire and Hertfordshire; and part of West Kent and Surrey. Extensions were also made to the services in: Lancashire (extended to Merseyside); Birmingham and the Black Country (extended to Solihull); Nottinghamshire (extended to East Midlands); West Country (extended to Dorset); and Essex (extended to cover Barking and Havering).

The service was introduced into Wales in two stages; Mid and South Wales (with a population of 2.2 million) were covered by June 2000 and the service was available to a further 0.7 million people in North Wales by October 2000. A set of fourth wave sites was in place by November of the same year, covering: Bristol; East Anglia; Kent, Surrey and Sussex; North Central London; North East London; Staffordshire; and Thames Valley and Northamptonshire. Thus, just under three years since its initial launch, the service had been extended, through a series of successive waves, to cover the whole of England and Wales, and was available to some 53 million people. NHS 24, a scheme to cover Scotland was announced in December 2000 and was put in place by the end of 2001. This covered a further 5 million people. (Munro, et al., 2001).

During these early development phases, at the request of the Department of Health, a number of evaluations were undertaken by the Medical Care Research Unit, an independent health policy research group at the University of Sheffield. The first, in 1998, examined the early development of the first wave sites, while the second, in 2000, covered the development of the service in its first eighteen months. These two interim reports culminated in a final report of the first wave sites produced in July 2001.

The evaluations' key findings were that:

- Call rates to the service had continued to rise in some, but not all, of the sites examined;

- As of March 2000, in the first wave areas, NHS Direct was used in about 5% of health problems for which people sought unscheduled help or advice;
- Around 90% of callers followed all or most of the advice provided by NHS Direct staff;
- A very low rate of "adverse events" was associated with the use of the service;
- Between January to March 2000, the average cost of a call to the service was about £15;
- There was general support for the principle of NHS Direct by those in related services, although there was a range of concerns over its practical implementation (Munro et al., 2001).

The reviewers stated that NHS Direct was a "well-used and rapidly developing service which is appreciated by callers and, to date, has not been unhelpful to other services". Somewhat cautiously they noted that "Although NHS Direct handles a substantial number of calls in absolute terms, in relation to long-established immediate care services such as general practice, accident and emergency or ambulance services, its contribution is modest at present call rates" and that while much had been achieved in a very short time-frame, there were "a number of areas where critical self-examination or further development is needed" (Munro et al., 2001). Their conclusions were also cautious, emphasising that:

> "in a context of very rapid service development and technological change, the past - and the research findings of the past – can be only a tentative guide to the future. Rising call volumes, a new decision support system, an ever expanding scope of activity and increasing public expectations create a very challenging climate within which NHS Direct must develop" (Munro et al., 2001).

In order for the service to maintain the trust of its users and to develop its full potential the reviewers emphasised the importance of strong clinical governance, vigorous clinical audit, routine monitoring of activity and accessibility indicators and a diverse programme of evaluation.

Against these, understandably, cautious recommendations, it is worth noting that political reaction to the initial impact of the first wave pilots was extremely favourable, perhaps more so than the evaluation findings warranted. This led to strong top-down pressure to accelerate the introduction of the service. In the words of one interviewee, "once ministers had seen that it seemed to be offering a new, politically visible product, immediate roll-out of the full service was demanded". The timescale for roll out was very tight, from August 1998 to April 1999 during which time an entire infrastructure and staff had to be put in place. One consequence of this was that it gave very little time for preparation and did not allow time to identify the "champions" who could drive the new ideas forward at local level. Indeed, the 2002 report on NHS Direct by the Government's expenditure 'watchdog', the National Audit Office notes that "Ministers set the NHS Direct project team very demanding targets to introduce both the national telephone and Online services" going on to state that "given the innovative nature and scale of NHS Direct, it was very significant that both targets were met".

A further review was commissioned from KPMG, between May and September 1999, which in particular was intended to advise on the development of an organisational model for the service.

Further plans and milestones were announced for the service in the NHS Plan (July 2000). These related to a variety of issues and additional services. General aims included:

- "NHS Direct nurses will be in regular contact to help patients manage their medicines and check that older people living alone are alright (sic)".
- Through a single phone call, NHS Direct would "provide a one-stop gateway to healthcare, to give patients more choice about accessing the NHS…. NHS Direct nurses will advise on care at home, going to the local pharmacist, making a routine appointment, arranging for an emergency consultation, calling an ambulance or social services support. If the problem is routine, NHS Direct will offer the option of ordering the prescription and arrange for delivery…"
- "Patients will be helped to navigate the maze of health information through the development of NHS Direct online, Digital TV and NHS Direct information points in key public places" (including information on local NHS dentistry).
- "NHS Direct will help direct patients to NHS dentistry".
- "500 more community mental health staff will be employed to work with general practitioners and primary care teams, with NHS Direct, and in each accident and emergency department to respond to people who need immediate help".

Aims with target dates were:

- "By the end of 2000 NHS Direct… will have gone nationwide. By 2004 it will be providing health information via digital TV as well as via the telephone and internet. By then there will be over 500 NHS Direct [touch screen] information points… in places like shopping centres and railway stations"[2].
- "By 2001, there will be new quality standards and closer integration between NHS Direct and GP out-of-hours healthcare".
- "By 2002 all NHS Direct sites will refer people, where appropriate, to help from their local pharmacy".
- "By 2003 a free and nationally available translation and interpretation service will be available from every NHS premises through NHS Direct".

Thus, by mid-2000 NHS Direct had become much more than a simple 24-hours telephone helpline heralded in the 1997 White Paper and was presented as a much more integrated, and accessible, component of the public healthcare system. Whether all or some of these potential applications and developments had been foreseen in its conceptual stages, or if they had emerged from initial experience with operating the scheme is an interesting point.

The three pilot schemes had utilised three different forms of clinical decision support system namely TAS (Lancashire), Centramax (Milton Keynes) and PHA (North East). Two of these were US systems and the third was a UK system. Shortly after the launch of

[2] By the end of 2001, 150 NHS Direct information kiosks had been established (NHS Modernisation Board).

the pilot schemes, the two US companies merged. Due to timing constraints, it had not been possible to procure a nation-wide system, thus local procurement had been undertaken by the lead NHS Trust for each pilot site. Guidance on the need for such systems was provided by the NHS project team and the final system selection had to satisfy the project team that it could meet the job requirements. All three systems were also used by the second wave sites. According to one interviewee, this allowed the various algorithms to be modified according to local conditions and resulted in a set of well-tested systems. Moreover, the experience gained through the use of three separate systems provided a valuable input to the decision making process for the national system. It also appears that the Centramax system had already been used in the US with "more than 1 million patient contacts and no resulting litigation so far" (Royal College of General Practitioners, 1999).

In 2000 the Department of Health announced that a new "NHS Clinical Assessment System", costing some £70 million over a seven year contract period, would replace the three original systems already in use in 2001 (although the original April deadline was not met until August of that year due to the need to allow for better planning of the roll-out). The choice of the national system followed a bidding process with the evaluation being conducted by a team of key interested stakeholders, including a medical director and GP adviser from NHS Direct sites, an academic, a representative of the NHS Purchasing and Supply Agency, and consultancy support (NAO, 2002). The final short-listed suppliers were subjected to trials involving 'dummy' and 'live' calls and the eventual winner, AXA Assistance (UK) Ltd, was tested using over 1,000 'live' calls in one of the a call centres. The NAO review reported that the sites it had surveyed were generally favourable towards the new system and a number of improvements had been experienced, including a reduction in call length, although some concern was noted over the tendency of the new system to err on the side of caution in its advice.

The process of change and acceptance was very rapid. The 2001/02 National Audit Office review of NHS Direct in England noted that, in addition to responding to strong political demands and pressures, as noted above, in just five years, NHS Direct had "established an impressive track record for customer satisfaction and patient safety, empowering patients to make better informed choices about their own healthcare". The NAO review also clearly identified the potential of the service to contribute to wider developments in the NHS. The overall findings of the review are presented below.

NHS Direct Issues	Main NAO finding
Implementation and delivery	Piloting was used effectively, but in future more formal evaluations might precede roll-out. A wide range of stakeholders was consulted during development, although some elements of the consultation were curtailed due to the need to deliver on a tight timetable. A national computerised decision support system is central to the operation of the NHS Direct telephone service, and procurement of this was well managed. There are three potential ways in which NHS Direct can build on successful implementation: • strengthening senior management to: provide further direction, prioritisation and management across all projects; draw up business and strategic plans covering developments over 3-5 years;

	• support this with a staffing strategy, based on staff recruitment and retention factors, in order to minimise the impact of recruitment on other areas of the NHS, and to benefit from the advantages of calls networking; • develop more specific and measurable objectives for the telephone and Online service, and to build a performance management framework.
Impact on the public	While customer satisfaction is high, NHS Direct needs to reduce the time taken for callers to speak to a nurse. Evidence suggests that NHS Direct is operating safely. Advice given by NHS Direct staff can vary in similar circumstances and generally errs on the side of caution. NHS Direct has defined national clinical standards for nurses working in the service and is taking steps to ensure they are met. The public generally comply with the advice they are given. NHS Direct has met its current target for awareness of the service among the population. There is scope for some social groups to make greater use of NHS Direct.
Impact on the NHS	NHS Direct has not yet had a visible effect on demand for NHS services overall. Integration with providers of GP services outside normal working hours is already yielding reductions in workload for GPs. Integration with urgent and emergency services is planned to help reduce their workload and re-direct patients to more appropriate forms of care. Early results indicate that initiatives to integrate NHS Direct with pharmacy and emergency dental services are resulting in improved access to these services. NHS Direct has involved itself in a number of useful initiatives at local level in response to approaches from other healthcare providers. NHS Direct is off-setting some of its running costs by encouraging more appropriate use of NHS services.

Source: NAO 2002.

Some formative ideas on the development of a more comprehensive strategy for the service were set out in an August 2000 joint report from the Northumberland Health Authority, Leeds Community Mental Health Services Teaching NHS Trust and the West Yorkshire NHS Direct site. The report set out ideas on a service vision, mapping NHS Direct's contribution, where relevant, to the objectives of the accountability agreements of local health economies. It also addressed the issue of a performance development framework (NAO 2002). The first business plan for the entire service, for 2001-02, was presented to ministers in August 2001.

A major factor in deciding the success, or otherwise, of NHS Direct was its impact on the public and its ability to generate a high degree of customer satisfaction whilst at the same time delivering a safe and effective service. Overall, the NAO review found that customer satisfaction was high. At the same time, NHS Direct performance measures were generally achieving their targets and action was being taken to address those which required improvement, such as reducing the number of call abandoned prior to completion and increasing the length of time callers spent talking to a nurse adviser. Two causes of failure to meet performance targets were learning curve problems associated with the introduction of the national CAS system (AXA) and staff recruitment shortfalls. However, solutions were foreseen in the networking of all sites by April 2002, which allowed the spread of workload from areas of high demand to those with lower demand, and the procurement of an automated staff rostering tool (NAO, 2002). On the issue of

patient safety, an analysis of caller records at the NHS Direct Hampshire site by the University of Southampton's Health Care Research Unit came to the conclusion that the service was operating safely (NAO, 2002). A report by the Consumers Association in August 2000 found that there had been some instances of inconsistent or wrong advice being given to patients. While no comparative evidence on the number of mistakes by NHS Direct nurses versus GPs was available, NHS Direct proved no cheaper than GP consultations and resulted in more patient referrals. On the other hand, studies revealed that fears that NHS Direct would add to rather than reduce GPs' workloads had not been realised and it may have impacted the increase in demand for out-of-hours primary care.

An interesting feature of NHS Direct has been the way in which it has integrated with complementary initiatives from other healthcare providers at the local level. The 2002 NAO review cites a number of examples:

Validation of in-patient waiting lists on behalf of acute hospitals in several areas of the country.
Reminding patients about outpatients clinic appointments in the North West, reducing non-attenders by 5-7%.
Checking patient transport bookings for a district general hospital in the West Country, reducing bookings by 18%.
Providing direct telephone support to prison nursing staff in West Yorkshire.
Carrying out telephone assessments of patients prior to elective surgery at a hospital in the Manchester area instead of them having to attend the hospital.
Joint working with social services and voluntary organisations to provide robust support to child protection initiatives in North London.

Source: NAO, 2002

This linkage with complementary initiatives was demonstrated to have made a number of useful contributions and further scope for broader application was evident, without any constraints to the capacity of existing NHS Direct functions.

Other examples also exist, such as the Urgent Needs Assessment Service (UNAS), a computerised streaming service based on the NHS Direct service which was run as a pilot at North Tyneside general Hospital. The system separates in-patients with minor ailments from those with more serious complaints and directs patients rapidly to the correct level of care, with a beneficial effect on waiting times (NHS Modernisation Board, 2002). Likewise, elements of NHS Direct have been applied to other contexts: for example, it was announced in 2001 that the NHS Clinical Assessment Software would be introduced into all NHS walk-in centres and ambulance services with the aim of improving patient referral to the most appropriate part of the system (Anon,.2002).

The system was extended to include an internet-based delivery mode in December 1999 when NHS Direct Online was introduced. The Online service offered a simple questionnaire which aimed to assist people in knowing what they should do, either treat themselves, phone the NHS Direct service, or call 999.

Digital TV pilots were introduced the following year. By 2002, four years after its initial introduction, the service had dealt with over 10 million calls providing healthcare advice

and information; between October 2000 and October 2001, an average of 100,000 people called the service each week. This was, however, just a beginning; in a follow-up to the NHS Plan (2000), the Government announced the aim of "extending the capacity of NHS Direct from 7.5 million callers per year to 30 million… NHS Direct will, for example, handle all out-of-hours calls to GPs and will take up to 1 million low priority ambulance calls" (Secretary of State for Health, 2002). An earlier document (NHS, 2001) had set 2004 as the target date by when NHS Direct would "triage all out-of-hours calls". Numbers of callers to NHS Direct increased steadily to over 500,000 a month by the end of 2003 and an equal number logged on to NHS Direct Online which was expanded in November 2001 to offer a new health encyclopaedia with information on common conditions.

In 2003further expansion was announced, NHS Direct would:

- provide a single access point to NHS out of hours services, working with other NHS providers to ease the burden on GPs and emergency services;
- handle all low priority '999' ambulance calls, freeing up ambulances to deal with more urgent cases, from 2005 onwards;
- establish a new national NHS Direct digital TV service by 2004;
- offer the public a personal health organiser on NHS Direct Online for securely storing key health information about themselves by the end of 2003;
- become a separate national organisation as a special health authority, independent of the Department of Health, with funding devolved from Whitehall direct to PCTs from 2004.
- Additional functions were added, for example patient reporting of adverse drug reactions (Department of Health, 2003);.

While the organisations providing NHS Direct sometimes became part of their local Primary Care Trust, in recognition of their key and growing role, in April 2004 NHS Direct was established as a Special Health Authority with responsibility for all staff.

By 2004, steady growth in use of NHS Direct was still being reported, with the number of calls reaching 6.4 million per year (up from 1.7 million in 2000), although well short of the projected target of 30 million noted above. In addition, according to the *NHS Improvement Plan*, the NHS Direct website (http://www.nhsdirect.co.uk) recorded 6.5 million hits in 2003 (Department of Health, 2003). The *Improvement Plan* also announced that

> "Emergency/unscheduled care will be expanded and increasingly provided in a range of settings… This will include the development of minor injury units, NHS Walk-in Centres, ambulance services, out-of-hours primary care services, NHS Direct/Online and pharmacists" (Department of Health, 2003).

No details on the forms that these developments were planned to take were provided, however.

By 2006, it was estimated that NHS Direct would be dealing with 25 million calls per year. Extensions to the service were also proposed by ministers: it was suggested that it

might help with the streaming of patients in busy accident and emergency departments, offer E111 (medical health cover) for overseas healthcare and manage the out-of-hours administration of GPs appointments.

According to recent documents, NHS Direct now represents a "substantial national service handling over half-a-million telephone calls and half-a-million internet visitor sessions every month".

3.2 The service context

NHS Direct provides four categories of information relating to:

- Advice on which action should be taken in response to specific symptoms of illness;
- Particular health conditions;
- Local healthcare services, such as doctors, dentists or late night opening pharmacies;
- Self help and support organisations.

Essentially, NHS Direct provides telephone callers with a nurse who uses computer-generated protocols to take a brief history and responds to on-screen prompts to give sound advice on the best management of the patient. Initially, the caller is dealt with by a call-handler, who takes baseline details and will pass them on to a nurse if appropriate (i.e. if the caller is seeking non-critical general information). The objective is for the consultation to close with the patient being either given self-care advice or a referral for further care, which might include a 999 (emergency services) call, referral to an accident and emergency department, referral to their own general practitioner, or referral to an out-of-hours service. A follow-up call to the patient might also be scheduled, in the immediate or longer term future.

Nurses may have access to patient records and the system allows the development of a patient database which may be used to track previous contacts, and while previous presentations may be compared, the presentation data are not coded or structured – thus each consultation proceeds through the same symptom list although cues from previous presentations may hasten the decision to refer to a 999 call.

The history taking (this example is based on that used by the Milton Keynes NHS Direct centre) involves following a series of prompts. Notes on symptoms are classified along the following set of features:

- Onset
- Location
- Description of symptoms
- Precipitating factors
- Associated factors – improved by, made worse by
- Activity allowed with the symptoms
- Associated fever
- Weight variation
- Current medication
- Past care

- Advice received so far

(Royal College of General Practitioners, 1999)

All responses are recorded in free-text format, whilst symptoms are recorded from a pre-defined list.

Following entry of the history, the nurse is able to access a list of 1,000 protocols and follow the suggested advice with the patient or their representative. The final advice cannot be down graded by the nurse but may be upgraded, thus the system errs on the side of caution. For example, referral to a GP may be altered to referral to an A and E department, whereas referral to a GP may not be downgraded to self-care. Advice screen text may be highlighted and copied into patient records. Local customization of the systems is also possible, within a set of national guidelines.

Voice recordings of calls are also made. These may be reviewed by supervisors/senior nurses at the request of nurses who are concerned about some element of the advice they have given. They may also be used to clarify any discrepancies that arise with the advice or the outcome of the patient's response to the advice.

8 NHS Direct as a gateway to out-of hours healthcare

Source: Independent review of GP out-of-hours services in England (2000). Raising standards for patients – new partnerships in out-of-hours care

4 DISCUSSION

NHS Direct represents the integration of a process, an organisational and a technical innovation. It results from the combination of a telephone advisory service, staffed by trained nurses who have access to the latest computer-based Clinical Assessment Software. The nurses may also be co-located and active in Primary Care Centres and on home visits, thereby maintaining their levels of expertise in tasks for which they originally trained. The primary challenge faced by the innovation was to shift from the traditional face-to-face form of healthcare delivery via hospital accident and emergency departments and GPs, to a telephone-based form of which was expected to deliver extremely reliable assessments and diagnoses whilst overcoming public reluctance to adopt a completely new approach. This system, moreover, had to integrate with and meet the needs of existing primary care delivery systems. Thus, it is no coincidence that, in 2001, over half of the NHS Direct sites were provided by NHS Ambulance Trusts, which already possessed much of the necessary infrastructure.

That NHS Direct represented a major innovation is evidenced by its use as the subject of a number of academic studies. One major facet of its innovativeness, in the views of some researchers, is that its introduction represented a response to the development of a

new form of patient – one who is proactive and confident and wishes to exert more control over their healthcare. Indeed, it may be argued that NHS Direct is also shaping its audience to act more proactively and to share a greater proportion of their decision making burden:

> "If patients are participating in their healthcare then the service is partially created by them and their responses to it. This means NHS Direct will be constantly unfolding and hence cannot be managed and planned in traditional ways – it needs to become *a learning organisation* (authors' emphasis). (Hanlon, et al., 2003)

During its programme of interviews with those involved with both Health sector and the UK public sector more broadly, the UK PUBLIN team investigated a number of issues concerning the innovation concept and process. The general findings of these studies provide a broader, generic, framework of innovation in the public sector against which the study of one particular innovation, in this case NHS Direct, may be analysed.

4.1 Generic NHSs/Public Sector issues

4.1.1 Innovation: Definitions & Interpretation

The concept of innovation was defined for the purposes of this study as "deliberate change of behaviour at the level of institutions that includes a new or improved service, process, technology, or administrative tool". The project recognised that at a broad level the process of innovation in the public sector could diverge from that which operates in the private sector. Indeed, this formed a major rationale and goal of the PUBLIN study. However, a detailed treatment of the differences and similarities between innovation in the public and private sectors lies outside the remit of this specific case study report, although a tabulated synopsis of these differences is presented in Annex 1.

The notion of innovation, as defined above, appears to be recognised by employees within the UK public sector. However, it may be applied in the context of many activities. Firstly, when used by 'front-line' employees at the 'ground' or operational level' a number of findings emerged:

- The term "innovation" is often not employed; frequently it is subsumed in the more general context of "modernisation" or "change".
- The process of innovation itself may not be recognised or it is only seen in relation to the development or invention of 'new technology' or, less frequently, in the context of problem-solving. Thus, innovation may be categorised simply as an example of "good practice".
- Apart from the instances above, innovation is rarely encountered as a step change in practice or processes and it is often an incremental phenomenon.
- Frequently, innovation is viewed as a process of adopting top-down guidelines, or of meeting targets.

Secondly, at the strategic or management level within the public sector, the perception of innovation reflects two broad categories of change: Organisational and technical/technological. The first covers both major changes in governance relations and processes and the formation of new agencies, etc., and new roles, responsibilities and

new ways of operating. In this second context, the need for an enhanced knowledge management capacity and the role of training is highlighted. In the public sector the potential for, and implications of the second category - technical and technological change - may be enormous. Some of these changes can be systemic (such as the move to implement a system of electronic patient records) whilst others may be more specific, such as the development of new practices (especially in terms of treatments, nursing, but also in terms of patient management, etc.), the development of new pharmaceuticals, clinical practices, techniques, and medical devices, etc.

A key finding is that, whatever its form, innovation is far from a neutral process and in addition to its impacts on its immediate environment (e.g. better levels of patient care, more effective treatments, reduction of waiting times, etc.) it frequently forms the driver for further organisational or process change and innovation.

Lastly, the diffusion or roll-out of new innovations forms a major management issue in the public sector, irrespective of whether they are top-down or bottom-up generated. Thus, employees in public sector management spend considerable effort on identifying, codifying and spreading good practice.

4.1.2 Barriers to innovation

The UK public sector appears to offer a surprisingly large number of barriers to innovation. Ten major types of barrier were identified. The presentation below is oriented in particular towards the UK public health system.

1. *Size and complexity:* In common with the situation in many other countries, the UK public health sector is an extremely complex organisation, composed of multiple-tiered interlinked systems with: huge staff numbers (1.3 million in the NHS in 2004, Department of Health, 2005); a large range of occupations, encompassing GPs, doctors, nurses, health visitors, dentists, opticians, pharmacists, therapists, technical staff, allied health professionals, ambulance staff, managers, support staff, administrators and infrastructure support; and with many organisational arrangements (e.g. for primary care, secondary care, performance management, support, emergency services, etc.) and many service processes. Further rigidity is added to the system by the lack of "patient information connectivity" between the various actors in the system. Whilst this situation will be alleviated with the introduction of a fully electronic patients' records system, which will allow a greatly increased level of access to patient medical data by NHS services, implementation of the required IT systems has been hindered by a number of problems and its target date remains uncertain.

2. *Heritage and legacy:* Public sector organisations are prone to entrenched practice and procedures – that which has worked in the past is seen as good practice and there is frequently an attitude of "if it ain't broke, don't fix it". However, at the broader system level or in different institutional settings, it may be evident that established practice and procedures may not be working as effectively as desired. This problem is compounded by the difficulties of demonstrating the potential beneficial impacts of innovation and change (see point 6 below).

3. *'Professionalised' resistance:* Several factors tend to operate within the UK health system, which comprises a number of distinct and well-established professional communities, with their own communities of practice, rationales, and perspectives. These communities, which may be GPs, nurses, midwives, clinicians, a whole range of administrative and support staff, tend to adhere to their established roles, and associated policy agendas. The term "empires" has also been used to describe these groupings, although is perhaps a little pejorative. Thus groups such as clinicians and the ambulance service, for example, form what has been described as a "disconnected hierarchy", the latter having almost "quasi-military" operating structures and procedures. Similarly, parts of the health system may operate according to varying command and control structures. The shift towards a customer or consumer focused orientation may also engender a certain degree of reticence to embrace change and innovation, particularly on the part of those who are more committed to a professionally-driven delivery system. Finally, another professionalised barrier is represented by problems of the non-ownership of ideas and resistance to disseminate "good ideas" that may be appropriated by others. At the technical level, this translates to problems over the ownership of IP.

4. *Risk aversion:* Allied to the professionalised resistance outlined above is the fully understandable inherent resistance of the medical professions to undertake changes which may result in an increased probability of risk to the patients in their care. Paradoxically, this is counter balanced by a reported tendency for the clinical professions to embrace innovation in the search for improved medical procedures and treatments. At a more general level, i.e. including management practice in the equation, there is also a reported resistance to 'out of the box' thinking, partly explained by the factors described above.

5. *High public/political profile and accountability:* The health sector has a very high public and political profile, thus both public service managers and politicians are very wary of enacting changes that may result in negative outcomes, particularly if these get into the popular media, as many recent events unfortunately have. Against this is the argument that large scale, radical (and, therefore, high-risk) policy changes are more attractive to politicians who are anxious to leave a legacy of their political careers rather than introducing a series of incremental but low-profile policy changes. Within the sector itself, our interviews detected a tendency towards a plus blame culture, with its associated high levels of accountability. Added to this is the risk of litigation in the event of adverse impacts, although it was also noted that in the US, which has a much litigious culture, innovation and change are more widely embraced.

6. *Consultation and unclear outcomes:* As in all bureaucratic systems, but particularly in the health system where there is a huge range of stakeholder involvement as noted above, there is a strong requirement to consult and review any planned changes and modifications and to attempt to identify all the potential consequences of such actions. The complexity of the system also militates against the ability to gain a clear picture of all the eventual effects of these actions – thus innovations will frequently require piloting at a reduced scale and careful evaluation prior to any large-scale roll-out.

7. *Pace and scale of change*: As may be seen in the policy background to this case study (Section XX), the NHS has been the subject of a large number of often radical changes, particularly over the last two decades. Many of these changes and restructuring have been at a very large scale, affecting either the entire system (i.e. administrative changes such as the introduction of SHAs and PCTs) or entire communities of practice (i.e. the introduction of new GP contracts). The pace of change has also been dramatic and this has led to an environment of shifting targets and the absence of adequate opportunity to reflect upon and assess the consequences of many of the innovations that have been introduced. Given the requirements for consultation and appraisal of effects outlined in 6 above, this has led to the creation of a vicious circle of uncertainty.

8. *Absence of resources for innovation*: Although there has been a clear political imperative driving change and innovation, manifested and directed to some extent by the Modernisation Agency, a lack of dedicated budgets specifically allocated to innovation at the Trust level has, it was reported, hindered the realisation of innovative projects at the ground level. Naturally, the overall picture is somewhat patchy, and certain areas, such as surgery will attract greater levels of investment than lower profile areas, such as mental health.

9. *Absence of capacity for organisational learning*: Despite the efforts of the Modernisation Agency at disseminating good practice there is a recognised absence of structures and mechanisms within the public health system for the enhancement of organisational learning. Indeed, one of the rationales for the introduction of the Modernisation Agency was to improve this aspect of the NHS. Whilst there are a number of initiatives aimed at promulgating the diffusion of good practice, many are viewed as short-lived. In addition, following point 8 above, the frequent reorganisations undergone by the NHS promote a lack of corporate memory.

10. *Public resistance to change*: Last but not least amongst the barriers to innovation is a postulated general resistance of the public to reorganisation and changes in the way healthcare is delivered. In fact, this is possibly an over-generalisation and while some sectors of the public may resist changes to their accepted ways of interfacing with the healthcare system, others are much more likely to embrace new ways of operating. Several factors may operate here such as age (although the emergence of the "silver surfers", i.e. senior citizens who regularly make use of the internet, opposes this argument), ethnic background, personal wealth, etc.

4.1.3 Drivers and facilitators for innovation

A number of counters to the resistance noted above may also be discerned. We categorise these as drivers for (i.e. pressures) and facilitators (i.e. factors which aid the uptake and dissemination) of innovation in the public health system.

1. *Political push*: Clearly, as noted above, the raft of changes introduced to the UK public health sector over recent years has been strongly driven by political ideologies, albeit ones that have shifted when faced with operational and financial realities (such as labour's adoption of a "watered down" market driven model for the NHS. Three major trends may be identified: a drive towards the improvement of standards, offering greater patient choice and better delivery of services; a

focus upon target setting, which has engendered mixed levels of support; and, what may be termed "disruptive policy making", i.e. the belief that an ongoing process of change and restructuring will stimulate the creation of new ideas, new operating practices and new approaches to problem solving. Alongside the first two of these trends is the concomitant need for improved systems of review, evaluation and impact assessment (see point 2).

2. *Growth of a culture of review*: A range of assessment practices have developed over the years in the public health sector, ranging from evidence based guidance, health technology assessment, and clinical audit through to broader scale review activities (see above). The development of these techniques could, at least in theory, both alleviate the problems associated with assessing the potential impacts of innovations and with promoting a culture of organisational learning.

3. *Input of major resources*: There has been a political recognition that change requires the allocation of substantial resources. For example, the introduction of the NHS IT system for the administration of electronic patient records represents one of the UK's and possibly the world's biggest IT programmes. Likewise, the management of change has also demanded increased resources but has been accompanied by claims that the NHS has become top heavy with administrators at the expense of those staff who actually deliver its services.

4. *Support mechanisms for innovation*: Allied to the allocation of resources is the provision of actual structures designed to promote, stimulate or disseminate innovation. Two major actors (or groups of actors) may be identified in this regard. Firstly, the Innovation Hubs were set up, as described above, as "innovation push" organisations essentially aiming to capitalise on the IP generated by NHS organisations and individuals. However, these are perceived as having a highly technology-based focus with regard to innovations. In addition, technical innovation in the health sector is often driven by the suppliers of equipment (vehicles, devices, telecommunications) and services rather than originating from within the public sector itself. The second "innovation champion" is the Modernisation Agency. Tasked with promoting and assisting the process change, at all levels, and with the dissemination of good practice and innovation, the Agency was able to offer support and advice but few resources. In addition, it also looked at external sources, such as US models, for what it termed "directed creativity" and organisational innovation examples. It is not clear how it is operating since its diffusion to the regional level.

5. *Capacity for innovation*: It was reported that many staff in the public health system were characterised by having a high level of expertise, exhibiting a high level for creativity and problem solving, thus providing an environment in which innovation should both be generated and accepted. This can also be coupled to a very strong motivation for service toward the public, careers in many branches of the health service being highly vocational[3].

6. *Competition drivers?*: This set of drivers is rather questionable as it is based on the belief that a shift towards a competitive framework for healthcare delivery

[3] As is also the case in the education system.

(such as through the establishment of Foundation hospitals) will: incentivise staff (and management) and improve patient choice and drive resources (as money follows patients).

Several of the barriers and drivers/facilitators described above are clearly opposing in their effects and impacts. The case study therefore provides a useful context against which these tensions may be examined in more detail.

4.1.4 Management of Innovation

Finally, before proceeding to the analysis of NHS Direct itself, it is worth briefly noting the main points that emerged concerning the management of the innovation process within the UK public health sector.

It was stated that innovation, using the broad definition set out at the start of this case study, tends to be mostly top-down and centrally driven, particularly as regards larger scale and systemic innovations. However, there is a strong tendency for these to be adapted to a more appropriate form at the local and/or regional levels. In addition, there is a high prevalence of bottom-up innovation (from the "grass-roots") but this is often diffuse and difficult to track.

As noted under the drivers and facilitators above, there is an established process of experimentation and learning in the health service. This is, perhaps under ideal conditions, managed in a three level approach:

- The process is led, developed and or guided by Modernisation Agency staff
- The process is interpreted (to the regional context) and diffused by Strategic Health Authorities
- It is then developed and adapted by Trusts and local initiatives.

Attempts have been made to improve organisational learning and there is encouragement for networking and the exchange of experience across many levels of the health service systems, through the use of fora, associations, etc. Nevertheless, there is a recognised need to raise the profile of innovation and its associated benefits into the training arena in order to develop a culture for innovation and "culture of trust".

4.2 NHS DIRECT ISSUES

This section brings together the evidence collected on NHS Direct and uses the above sets of barriers and drivers as a framework for the analysis of the service as an example of an innovation.

4.2.1 Barriers to innovation

The first barrier noted above was the **size and complexity** of the UK public health system. It could be argued that this barrier was surmounted through the gradual, phased, introduction of NHS Direct through successive waves of pilot sites, expanding from the original three over a period of just over three years to cover the entire country with a network of regional sites. The regional and local nature of the service was also significant as it allowed development to proceed according to the prevailing local conditions and introduced a degree of flexibility to what could have been a monolithic structure.

Heritage and legacy issues were overcome by the fact that the service was driven by a strong political pressure. The Government and health ministers were very supportive and keen for NHS Direct to succeed, partly driven by existing pressures on accident and emergency services and the need to be seen to be doing something in response. This strong top-down pressure was translated at the regional level by the use of "local champions" - proactive and forward thinking mangers and executives, with strong visions of what the service could deliver. Evidence from the interviews suggests that much ground work had to be undertaken in order to prepare local stakeholders for the introduction of the service and to ensure their support. Because the regional NHS Direct sites were brand new organisations, each was able to completely define its own culture (but obviously, still within broad NHS frameworks). This allowed Chief Executives to set new parameters as there were no pre-existing policies, procedures or boundaries and offered the freedom and opportunity for the organisation to be exploratory, thereby facilitating further innovation and development. It also made the organisation and staff more receptive to new ideas. The second wave sites explored a number of new areas, such as the opportunities for chronic disease management, telemetry, etc., while some services really explored the boundaries of the system and developed new areas and new innovations. However, this does not imply that the service lacked a clear set of objectives: the goals for NHS Direct were fully understood by all those involved in it.

Allied to the issue of heritage and legacy is that of **professional resistance**. Many groups and individuals in the NHS were quick to point out the potential obstacles and drawbacks of the new service and NHS Direct generated a lot of scepticism. Particular issues included concerns over patients' safety, the ability to carry out triage at a distance with no visual reference, and a belief that A&E presentations would increase as the NHSD used it as a default response (whilst some believe that this has happened, it is not possible to examine under controlled conditions). There was also the major issue of recruitment and the belief that NHS Direct would "cream off" the most skilled A&E nurses. Again these concerns were overcome or deflected through the proselytising activities of local managers and executives to all stakeholders combined with the integration of the system with on-going local and regional services. According to the NAO (1999):

> "In 2002, NHS Direct employed approximately 0.4% of all full-time equivalent qualified nurses in the NHS, with 20% of its nursing workforce coming from outside the NHS. Sites took a range of measures to minimise the impact of recruitment on other parts of the NHS, including nurses working part-time for NHS Direct and the NHS. It was also seen as an opportunity to encourage back into the workforce nurses who had left the NHS, particularly those who had left due to an acquired physical disability."

Professional resistance was also exacerbated by the fact that that the NHS suffers from a strong ethos of compartmentalisation and internal competitiveness. In the early days of one of the second wave sites it was reported that the local management team felt quite vulnerable and faced some hostility from other regional stakeholders. Again, the engagement and involvement of stakeholders was seen as key to overcoming this problem. For example, if nurses were being displaced through local Hospital Trust mergers, the regional NHS Direct offered to take them on. However, local NHS Direct

managers had to guard against the perception that the service could provide a convenient place for other parts of the NHS to which under-performing staff could be transferred.

A further way to overcome professional resistance was to demonstrate that the service was actually having an impact on the demands for GP and emergency services. However, in the early phases, notably the launch of the second wave sites, there was no evidence, other than anecdotal, for success or failure as the 3 pilot studies had not yet received an evaluation. Thus there no clear messages with regard to what worked and what did not. To complicate matters further, each of the pilots was operating under different conditions and procedures and there was a lack of dissemination of their results. This variation continued through into the second wave of sites and beyond (for example, regional NHS Direct services still differ even in the grading structures of the nurses they employ). As more information has emerged (for example, from the MCRU and NAO evaluations), it seems clear that many of the early concerns have been removed, although the reaction from GPs with regard to NHS Direct is still highly inconsistent; some view it highly positively, while others are equally negative. To give specific examples, the NAO (1999) study found that NHS Direct can reduce demands on health services provided outside normal working hours and that the service was off-setting around half of its running costs by encouraging more appropriate use of NHS services, and also apparently adding value by reassuring callers and saving them unnecessary anxiety.

Barriers are still present, for example, some remain convinced that the pool of potential cases has been broadened by the introduction of NHS Direct as it provides more opportunities for people to present to A&E and other NHS primary care services. To some extent this is seen as a consequence of the removal of the 'gatekeeper' role of GPs. Moreover, the system is open to abuse – cases have been reported of patients claiming that they have received NHS Direct advice to go to A&E, whilst the service has also attracted "serial" callers, although some of these have been displaced from making calls to other NHS services[4].

Finally, it may be argued that by adhering to the notion of patient empowerment, NHS Direct has reduced the traditional professional barriers promoted by a small number of GPs and also removed the concern felt by some patients that they did not want to present to A&E departments with, in their view, what may have been trivial conditions. Indeed, improving patient access to healthcare formed one of the key goals for the introduction of the service – whether or not these barriers were identified as a hindrance to such access during the development of the NHS Direct concept is not clear, however.

As noted above, the NHS can be particularly rigid in terms of its career structures and paths. As a result, employees tend to be **risk-averse** and also protective of their professional boundaries. Thus, it may be hard for employees to recognise or to seize opportunities. The colleagues of one interviewee questioned her motives for joining NHS Direct and regarded her choice with some suspicion. It was even suggested that she undertake career counselling! In this context, it is paradoxical that NHS Direct was also

[4] For example, "At least one caller has NHS Direct as one of their five Friends and Family numbers. Staff recognise at least one regular caller by voice… A&E departments that run a phone line encounter a similar problem. One local woman, who now phones NHS Direct, regularly telephoned [her local] A&E department 178 times in three months. She now has an alternative" (Royal College of General Practitioners, 1999).

seen as a potential competitor to A&E nurse recruitment. With regard to the more specific issue of risk to patients, at the local level, safeguards assumed major importance. For example, the clinical assessment software had a tendency to err on the side of caution in the advice provided and nurse advisers would also tend to opt for the more cautious recommendation. Software algorithms also underwent several iterations and were adjusted to respond to local conditions. Regularised collection of patient information is also carried out, both to gauge participants' reactions data and for safety checking (all calls are logged and recorded). Overall performance of the system is monitored using "mystery shoppers" who make controlled calls and test the system. Around 1 in 20 patients are also audited, although regional practices may vary.

The problem of clinical risk and the perception that uncertainty can be equated with professional failure has been addressed through a cultural shift by encouraging nurse advisers who were concerned about a call or that they might have made a mistake or error of judgement to approach their line manager for advice. The recorded call can be reviewed and any appropriate follow-up action taken. In the early days of the service, it was relatively common for nurses to ask for such advice as they may have been lacking confidence in themselves or the CAS. This process also led to considerable feedback to the CAS algorithms and all the systems underwent considerable readjustment. Thus risk aversion was overcome with the implementation of strong feedback loops at the local level. At the next level, the provision of wrong advice and the incidence of "adverse incidents" (i.e. adverse patient health reactions or death) is closely monitored, often by local GP groups or policy evaluators. The major system-wide evaluations have also examined this aspect closely, the NAO study noting that "NHS Direct has a good safety record with few adverse incidents" (NAO, 1999).

At the highest level of the system, risk was minimised through the gradual introduction of the scheme via a series of pilots. However, once ministers had seen that it seemed to be offering a new, politically visible product, immediate roll-out of the full service was demanded. This resulted in a very tight timescale for the second wave, from August 1998 to April 1999. During this period the entire infrastructure, buildings, staff, strategy, etc. for each new site had to be put in place. With such little time for preparation, it was difficult to identify the "champions" who could drive the new ideas forward. It was reported by one interviewee that, in the course of visiting regional GPs to inform them of the forthcoming service, many were highly negative as they erroneously thought that they were being sold a service from outside the NHS. This may heave been due to either a lack of clear advance information from the Department of Health or a failure for this information to get through to GPs. Either way, it held a strong lesson for the need to precede an innovation with clear information.

The fact that ministers had embraced the idea of NHS Direct and were pressing for its rapid introduction shifted the onus of risk to the top of the political ladder, although it is clear that local Chief Executives and managers did not feel absolved from the risk of failure! Indeed, during the study it was noted that politicians tend to see greater political opportunities in **'**high risk' actions than in mundane incremental changes. This upward shift of responsibility also helped to circumvent the barrier of the high level of **public profile and accountability** associated with health policy decisions and actions, whilst the checks, balances and feedback loops introduced at the local level demonstrated that the accountability issue was being addressed by the new service.

The Senior Medical Officer launched a **consultation** paper on "Developing emergency services in the community" in 1996. However, the NAO evaluation (NAO, 2002) noted that although a wide range of stakeholders had been consulted regarding the new service, the consultation exercise had been curtailed due to the constraints of the timetable for roll-out. Nevertheless, strong ongoing consultative arrangements have been put in place in order to respond to the views of stakeholders. Consultation with stakeholders is also a major feature at the local level of delivery and coupled with the strong feedback loops already described is intended to ensure that external views and requirements are addressed. In addition, the pilot approach to some extent mitigated the absence of the full pre-launch consultation. The piloting approach and the emphasis on early evaluation of the first wave sites can be viewed as a means of overcoming the lack of clarity of the eventual outcomes, although the acceleration of the launch of the second wave sites before the full implications and impacts of the first wave somewhat militated against the ability to learn from the initial experience. In part, this was offset, certainly in the early stages, by the system tending to be more responsive to change as a consequence of the exploratory nature of the regional systems and the absence of the need to follow specific procedural models or guidelines.

Although the **pace and scale of change** in the NHS was viewed as a barrier to innovation in the health sector, NHS Direct itself represented a radical change of operation and procedures which was launched and extended to full national coverage within an extremely tight timescale. In the words of the NAO (1999) report, "Ministers decided that implementation would proceed alongside piloting and were concerned with how rather than whether the service would be implemented. Short lines of communication between the project team and those implementing the service at the local level enabled lessons to be learnt quickly as the projects progressed".

That it was as successful as it appears to have been appears to be a consequence of the various drivers and facilitators identified above. Similarly, although a **lack of dedicated budgets** was found to hinder innovation in the health sector, this factor did not apply to NHS Direct which was furnished with adequate resources.

The general **absence of a capacity for organisational learning** was also identified as a barrier to innovation within the health service. As has been noted above, however, NHS Direct in many ways "broke the mould" by operating at the local level, with flexible remits (including more flexible working hours, job sharing, etc.) and the promotion of a culture of feedback and responsiveness to local needs. It should be noted that the service did operate within a guiding framework of terms and conditions and had a set of clear goals. Thus its responsiveness to change did not lead to instability – evidence of the need for change was clearly weighed and required a strong rationale. Some issues surround the extension of the service to the national context – in many cases the regional/local nature of NHS Direct forms one of its strengths in terms of developing a good relationship with the caller. By operating on a national basis, in order to apportion regional demand fluctuations (i.e. callers in Yorkshire being dealt with by a nurse in London) some elements of local responsiveness (local knowledge, establishing patient rapport, linguistic aspects, etc.) may be sacrificed.

The final driver, that of **public resistance** to change in the traditional mode of healthcare delivery was not, in the event realised at a general level. The NAO (1999) report noted that "Public satisfaction with NHS Direct was consistently very high at over 90%", and further studies have endorsed this level of acceptance. However, coverage of the population is not homogeneous – while mothers and young people represent major users of the service, other groups such as the elderly, those with communication disabilities and those whose first language is not English tend to be under-represented. Thus efforts have been made to ensure that these groups are not disadvantaged, for example through the introduction of translation services and access routes for those with hearing impediments (Munro et al, 2001).

4.2.2 Drivers and facilitators

Many of the drivers and facilitators for innovation in the health system identified at the general level can also be found operating in the context of NHS Direct. Thus, factors such as: strong political push; a culture of review; and the input of major resources have already been seen to play a role in the development of the service and as an aid to overcoming a number of inherent barriers to innovation. A small number of additional factors require further brief discussion.

As a support mechanism for innovation, the role of the Modernisation Agency *vis a vis* the implementation of NHS Direct is hard to quantify. It could be surmised that the Agency's general promotion of a culture of organisational learning and for the dissemination of innovation has had a positive effect on the NHS culture which has become more responsive to change, but with the lack of discrete evidence, this has to remain a hypothesis. It is clear, however, that the local NHS Direct services were highly responsive organisations and very open to innovation. Thus their capacity for innovation was generally high. The open remit of the NHS Direct sites and their senior management encouraged local problem solving and the generation of new ideas. There are also numerous instances of NHS Direct staff having devised new applications and several sites formed linkages with complementary NHS services. Examples of new applications (what might be termed spin-off innovations) include inputs to epidemiological studies: the logging of calls under the NHS Direct system has allowed the incidence of infectious and other diseases, such as the spread of outbreaks of mumps or measles to be tracked more effectively. Thus, NHS Direct-generated information has begun to feed into epidemiological studies (for example, the Wakefield Health Intelligence Unit uses NHS Direct calls data). In other areas, NHS Direct sites also assist with emergency help lines that are set up in response to disease outbreaks or health scares, such as those concerning hepatitis. This shifts the burden from hospitals which normally have to deal with such services. Further developments include the use of NHS Direct to arrange GP out-of-hours cover (as was planned) and also more speculative investigations into how the service might assist in telemedicine applications and provide alternative ways into measuring health, and chronic disease management. The latter is believed to have a good future potential through operating as a pro-active service carrying out regular telephone checks on patients with chronic disease problems.

The following Table summarises the generic barriers, drivers and facilitators for innovation in the public health service and their relationship to the context of NHS Direct.

Barriers to innovation	NHS Direct features
Size and complexity of system	• Introduced as pilot sites • Responsive to local/regional needs and conditions
Heritage and legacy	• Strong political pressure • Use of local "champions" • Encouragement of local problem solving and "open remit"
Professional resistance	• Integration with local systems • Demonstration of benefits wrt demand reduction • Customer empowerment
Risk aversion	• Top-down initiative (and upward shift of responsibility) • Pilot introduction • Strong element of safety checking • Strong feedback loops at local level • Hands-on, local amendment of software protocols
Public profile and accountability	• Responsibility assumed by Ministers • Strong feedback loops and consultative arrangements
Need for consultation coupled with unclear outcomes	• Little advance consultation, but good ongoing consultative arrangements • Piloting of sites • Evaluations of first wave sites but limited time for dissemination
Pace and scale of change	• NHS Direct was, in itself, a large-scale and radical introduction • Introduction of service was itself extremely rapid
Lack of dedicated budgets	• NHS Direct was fully supported with adequate funding
Absence of capability for organisational learning	• Strong feedback loops at local level
Public resistance	• Apparent overall high public acceptance • Some population groups not apparently reached

Drivers and facilitators for innovation	NHS Direct features
Political push	• Very strong – Ministerial control and Senior Medical Officer-driven concept
Culture of review	• Evaluation formed major element of NHS Direct delivery
Input of major resources	• Large financial support for NHS Direct implementation
Support mechanisms for innovation	• Modernisation agency role unclear • Local systems very open to innovation
Capacity for innovation	• Open remit of NHS Direct sites encouraged local problem solving and new initiatives • Many instances of new applications and linkages with complementary services
Competitive drivers	• Regional system encouraged positive competition?

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Annex 1

4.2.2.1 Factors & Issues in Innovation	**Organisation of Innovation in the Public (Health) Sector**	**Organisation of Innovation in the Private Sector**
Innovation process (stakeholder mix)	Complex matrix of stakeholders with differential access to power/resources (stakeholders include policy-makers, regulatory agencies, health managers, practitioners and professional associations, trade unions, funding bodies, charities patients, and patients' organisations)	Producer has the key role (but collaboration is frequently important) (Stakeholder mix includes suppliers, producers, complementary innovators and service providers, clients)
Barriers to innovation	Disciplinary boundaries & disputes Resistance from trade and professional associations Disciplinary boundaries Activity in the private sector Potential for IP infractions Funding – competition for (and lack of) resources Absence of political will/support Lack of agreement with respect to 'problems', approaches and solutions Skills gaps and shortages	Lack of investment and funding Lack of skills Lack of access to complementary assets Lack of appropriate market intelligence
Incentives systems (individual level)	Reputation & career enhancement Professional recognition Professional fulfilment Potential for spin-off businesses Increased funding for innovative institutions	Career development Job security via enhanced company competitiveness and profitability Imposed requirement Bonuses
Regulation	Centralised Much activity is state controlled (in order to protect the public interest) Much mandatory regulation Protection mechanisms reduce state exposure to litigation	Some activities regulated by the state Some industries 'self-regulated' Avoidance of regulation via the migration of innovation activity to low regulation regimes
IP regimes	Knowledge sharing common and encouraged (?) Much relevant information in the public domain Benefits derived from dissemination rather than protection of knowledge Common exploitation	Knowledge and 'know how' (in relation to products and processes) as key assets to be protected Various instruments deployed (including patents, copyright, trade secrets, non-disclosure agreements, trademarks, licensing agreements, and design rights) Some 'physical' protections deployed (e.g., firmware) Restricted exploitation
Nature of the market	Bureaucratically controlled Demand (and expectations?) 'managed' by state agencies Some rationing	Operation of 'free' market (but subject to the specificities of individual selection environments and the influence of advertising etc.)
Investment and funding	State controlled Allocation in accordance with national and regional priorities (negotiated with various stakeholders) Sourced from the public purse	Investment decisions based upon perceptions relating to market environments and demand Sourced internally or from the private sector
Organisation of Innovation: Control and management structures	Various layers of formalised control (from central to regional to local) Many innovation intermediary agencies (R&D Managers at regional and trust level High levels of accountability (state agencies and funding bodies/charities) Autonomy of innovating units and individuals generally low (but some professional autonomy) Much 'local' and non-formalised innovation?	Wide variety – from formalised R&D activities to ad hoc innovation and product development Relatively high levels of autonomy
Public/private boundaries	Partnership and collaboration to leverage access to private sector knowledge and expertise (?)	Partnerships sought to leverage access to public funding (?)
Forms of innovation	Product Process Delivery	Product Process Delivery

	Interface Organisational Accountability	Interface Organisational
Drivers for innovation	Targets Legislation and regulation Response to contingency Public demand – response to concerns and fears Technological development in relevant and associated spheres Professional reputation Health and service improvements Efficient use of public resources	Market capture Increased Profitability Increased competitiveness Productivity and efficiency Compliance (with regulation and statutory requirements) Technological development Enhanced profile and market visibility
Values	Communitarianism, collectivism and public service Innovation for the public good Universal coverage Value for money and efficient use of public resources	Private profit, ownership and advantage Competition Individualism Provision of choice Selective coverage
Sources and nature of demand	Public sector (public and collective consumption - mediated by state agencies) Expressed via state agencies (derived from consultation and negotiation with various stakeholders)	Private (and public) sector Mediated via private and public sector consumption patterns Innovation driven by perceived and anticipated needs
Acceptance (at various levels)	Role of state agencies (including standards bodies) Role of professionals and experts (frequently organised in professional associations) Inputs from patients and user groups Some innovation is imposed	Mediated by market mechanisms Delivery of requisite functionality at an attractive price Partially a function of promotion, publicity and advertising Influenced by fashion Presentation of acceptable risk (but perceptions influenced by media, public and professional discourses)
Competitive environment	Relatively low level competition (?) Few areas of state monopoly but a majority of treatments are designed in and delivered by the public sector (?) Some competition from the private sector (development of diagnostic procedures, drugs and therapies) Some competition from alternative solutions to perceived problems	High levels of competition (but barriers to entry can be significant)
Dependencies (funding, collaboration and complementary innovation)	Support from state agencies is required commonly (especially for use of public funding) Requisite capabilities frequently available in-house	Innovation funded from company resources or sought from the private sector Collaboration is common (for the delivery of complementary assets & innovations, and the sharing of risk) Partnership with the public sector for testing, validation and licensing
Innovation practice Nature of networks, feedback loops, evaluation mechanisms, criteria for success		
Diffusion mechanisms	Via professional and bureaucratic networks Adoption is frequently obligatory or imposed	Advertising and awareness-raising required Professional networks
Political interests and pressures	Targets Management of public opinion (and expectations) Expediency The establishment of priorities Competition for resources	
Public interest, expectation and concern	Obligations to respond to fears and perceptions of risk Response to statutory obligations with respect to delivery of healthcare, education or social welfare	Obligation not an issue – responding to commercial opportunities that flow from fears, risks, needs and desires
Rewards from innovation (can exist at many levels)	Improved healthcare and service delivery Reduced expenditure (for clients/patients) Political capital Kudos and reputation (for practitioners/innovators)	
'Risk' and Conseqeunces	Use of public funding implies that innovation failure bears	Failure accepted as a component of

of failure	a heavy cost for innovators, administrators and politicians Some effort to off-load risk to private sector partners (as with design of large information management and payment systems?)	'normal' business Well-established processes for evaluation of risk Risk spread via innovation partnerships and collaborative work

5 On the PUBLIN case studies

The following general presentation is based on the PUBLIN guideline report for case study researchers. See also the introduction to the case study summary report.

The overall aim of this PUBLIN study has been to gain insights into the processes of innovation and the associated policy learning in the public sector. These should contribute to the development of a theory (or theories) of innovation in the public sector, and contribute usefully to policy analysis. Within this study framework, the aims of Work Packages 4 and 5 (the case studies) have been *to understand the interplay between policy learning and innovation at the policy level, and innovation at the service level within the public sectors under study.*

More specifically, the objectives of each Work Package are:

1. To understand the innovation processes present within national public health systems/social service systems.

2. To understand the learning processes underlying policy development in publicly regulated health/social service sectors.

5.1.1 Innovation

Green, Howells and Miles (2001), in their investigation of service innovation in the European Union, provide a suitable definition of the term innovation which denotes a process where organisations are

> *"doing something new i.e. introducing a new practice or process, creating a new product (good or service), or adopting a new pattern of intra – or inter-organisational relationships (including the delivery of goods and services)".*

What is clear from Green, Howells and Miles' definition of innovation is that the emphasis is on novelty. *As they go on to say,*

> *"innovation is not merely synonymous with change. Ongoing change is a feature of most… organisations. For example the recruitment of new workers constitutes change but is an innovative step only where such workers are introduced in order to import new knowledge or carry out novel tasks".*

Change then, is endemic: organisations grow or decline in size, the communities served, the incumbents of specific positions, and so on. Innovation is also a common phenomenon, and is even more prominent as we enter the "knowledge-based economy".

An innovation can contain a combination of some or all of the following elements:

- New characteristics or design of service products and production processes *(Technological element)*

- New or altered ways of delivering services or interacting with clients or solving tasks *(Delivery element)*

- New or altered ways in organising or administrating activities within supplier organisations *(Organisational element)*

- New or improved ways of interacting with other organisations and knowledge bases *(System interaction element)*

- *New world views, rationalities and missions and strategies*. (Conceptual element)

5.1.2 Case study statements

In an effort to define a common methodological framework within which to study innovation in the public sector, several research orientation statements were put forward and related policy questions suggested.

These give a '*problem driven view'* of the issue under study. It should be strongly emphasised that this list was only intended to be indicative of what propositions might be tested and it was revised during the course of the PUBLIN study.

For instance, the following statements were added to the ones listed in the table below:

Entrepreneurs played a central role in the innovation process

- Was there a single identifiable entrepreneur or champion?
- Was the entrepreneurs assigned to the task?
- Had the entrepreneurs control of the project?
- What was the key quality of the entrepreneurs? (management, an establish figure, position, technical competence, access to policy makers, media etc)
- Incentives

There was no interaction between policy and service level (feedback)

- To what extent was the policy learning a result of local innovation?
- Are local variations accepted, promoted or suppressed?
- To what extent does the innovation reflect power struggles at the local and central level?
- Was there dissemination of the lessons learned, and was this facilitated by specific policy instruments?
- Where there evaluation criteria? (When?)
- Who where the stakeholders that defined the selection criteria? Did problems arise due to the composition of this group of stakeholders?
- How did the interaction and/or the interests of the stakeholders influence the selection of the indicators used?

Policy recommendations

Based on your experience from case studies, give concrete policy recommendations.

1. Preset also policy recommendations given by the respondents

2. Are the any examples of “good practice”?

The case study reports all try to comment upon these statements.

Moreover, all participants were also asked to use a comparable design for the case study itself and for the case study report.

Service Innovation		Policy Learning	
Statements	**Questions**	**Statements**	**Questions**
Initiation		**Initiation**	
Public sector innovation at the service level is problem driven	What was the primary rationale for the innovation under study? Were there supporting rationales? Was the innovation developed proactively or reactively? Where did (recognition of) the need for the innovation originate?	Public policy learning innovation is problem driven.	How can specific problem-orientated policy innovations be transformed into more general forms of policy learning? Is policy learning largely a reactive or proactive process?
Performance targets are a driver for innovation. Performance targets are a facilitator for innovation.	What are the most appropriate incentives and drivers for innovation in the public sector system under study? Be aware that it may be a driver and not a facilitator	Policies directed at performance measurement are a driver for policy innovation Policies directed at performance measurement are a facilitator of policy innovation	What are the most appropriate incentives and drivers for innovation in the public sector system under study? Be aware that it may be a driver and not a facilitator
This innovation is "top-down" (i.e. policy-led) as opposed to "bottom-up" (i.e. practice-led).	Does the location of the pressure for the introduction of an innovation impact its diffusion and development? Each country case should describe to what extent it is a top-down or a bottom-up innovation	This innovation is "top-down" (i.e. policy-led) as opposed to "bottom-up" (i.e. practice-led).	Does the location of the pressure for the introduction of an innovation impact its diffusion and development? Each country case should describe to what extent it is a top-down or a bottom-up innovation
Design and Development		**Design and Development**	
This innovation is developed through imitation of private sector practice.	Where did the innovation arise? Does it have models outside or inside the public sector?	This innovation is developed through imitation of private sector practice.	Where did the innovation arise? Does it have models outside or inside the public sector?
The choices and features of this innovation is influenced by underlying organisational politics, dominant values and belief systems	To what extent have the choices and features been driven by conflicts (specify: power, funding, belief systems … etc) between different stakeholders? How did the introduction of the innovation overcome the resistance to change at the service level?	The choices and features of this innovation is º influenced by underlying politics, dominant values and belief systems	To what extent have the choices and features been driven by conflicts (specify: power, funding, belief systems … etc) between different stakeholders? How did the introduction of innovations overcome the resistance to change at the policy level?
The end user was involved in the innovation process	What was the role of the end user? Were they involved in order to improve the design features or to increase	The end user organization was involved in the innovation process	What was the role of the end user organisation? Were they involved in order to improve

	acceptance of the innovation and/or for other reasons? If they were not involved, explain why.		the design features or to increase acceptance of the innovation and/or for other reasons? If they were not involved, explain why.
Selection, Diffusion and Utilisation		**Selection and Deployment**	
The diffusion of the innovation required effective 1. networking, 2. competence building and 3. alternative thinking		The selection and deployment of the innovation required an environment that encouraged effective 1. networking, 2. competence building and 3. alternative thinking	
The diffusion of this innovation required co-ordination between different governmental institutions and/or departments	How can inter-governmental roadblocks be by-passed? To what extent does intra-governmental co-ordination depend on direct political interaction? To what extent does intra-governmental co-ordination depend on stimulus from a crisis situation? Does fragmentation of government create a barrier?	The most challenging public policy innovation takes place at the intra-governmental (inter-functional) level.	How can inter-governmental roadblocks be by-passed? To what extent does intra-governmental co-ordination depend on direct political interaction? To what extent does intra-governmental co-ordination depend on stimulus from a crisis situation? Does fragmentation of government create a barrier?
Evaluation and Learning		**Evaluation and Learning**	
Evaluation played a critical role in the innovation process Research institutions played a critical role in the innovation process Interaction with other institutions/firms played a critical role in the innovation process	Did the innovation meet the expectation of the stakeholders at various stages of the innovation process? Did the innovation have unintended consequences (e.g shifting bottlenecks)? Did the innovation induce other innovations? Is there evidence of policy learning and any associated structure? Had lessons been drawn from earlier innovation processes?	Evaluation played a critical role in the innovation process Research institutions played a critical role in the innovation process Interaction with other institutions/firms played a critical role in the innovation process	Did the innovation meet the expectation of the stakeholders at various stages of the innovation process? Did the innovation have unintended consequences (e.g shifting bottlenecks)? Did the innovation induce other innovations? Is there evidence of policy learning and any associated structure? Had lessons been drawn from earlier innovation processes?