NHS Chief Executive Innovation Review

Call for evidence and ideas

NHS Chief Executive Innovation Review

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Description	Sir Ian Carruthers, on behalf of the NHS Chief Executive, has issued a call for evidence on how the adoption and diffusion of innovations can be accelerated across the NHS. This is part of a wider engagement process that will report in November 2011. Sir Ian is keen to hear NHS staff views, and has also written to industry, other government departments, the academic, scientific and voluntary sectors and social care to seek their input.
Cross Ref	N/A
Superseded Docs	N/A
Action Required	NHS staff are invited to contribute and encourage their staff and stakeholders to input
Timing	**By 31 Aug 2011**
Contact Details	Graham Reid Innovation Policy Branch Quarry House Quarry Hill Leeds LS2 7UE
For Recipient's Use	

Contents

Executive summary

The NHS has a long and proud track record of innovation stretching back across its 63-year history. However, whilst the NHS is recognised as a world leader at invention, the spread of those inventions within the NHS has often been too slow, and sometimes even the best of them fail to achieve widespread use.

As UK public services face a tougher financial climate, innovation has a vital role to play to continue improving the quality of care for patients, and support the NHS as a major investor and wealth creator in the UK.

This is why the Plan for Growth[1] announced that the NHS Chief Executive would review how the adoption and diffusion of innovations could be accelerated across the NHS. Working in consultation with industry, academia and a range of other stakeholder, representative and third sector organisations, the NHS Chief Executive will produce a report in November 2011 that will inform the strategic approach to innovation in the modernised NHS.

This could include actions for government, the Department of Health, industry, the National Commissioning Board, the NHS and other sectors.

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[1] *Plan for Growth*, HM Treasury and Department for Business, Innovation and Skills, March 2011 (http://cdn.hm-treasury.gov.uk/2011budget_growth.pdf)

Introduction

Successful organisations continually look ahead and innovate to respond to new needs and challenges – their very survival depends on it. Indeed, many businesses have been affected by the challenging economic climate, but rather than simply retrenching and cutting costs, they are innovating more now more than ever before.[2]

When it comes to invention, the NHS is recognised as a world leader - stretching back across its 63-year history, but we need to do more to accelerate the use of those inventions.

Demands on the health and social care system will rise as society's demographics change and public expectations and values continue to develop. Add to this the development of new pharmaceutical treatments and health technology and productivity savings of £20bn – and it becomes clear that the NHS must develop more integrated, effective and more cost-effective ways of delivering care.

Innovations and new ideas are not just about the future of the NHS and health and social care, they are about the future of our country's economy. The NHS remains a major investor and wealth creator in the UK, and in science and engineering in particular.

This is why the Plan for Growth announced that the NHS Chief Executive would review how the adoption and diffusion of innovations could be accelerated across the NHS.

The challenge is getting the right culture and balance of incentives and levers at a national, regional and local level that can accelerate the systematic adoption and diffusion at pace and scale. As a system, we need to go further and faster to address the significant challenges facing health and social care – now and in the future.

The NHS Life Sciences Innovation Delivery Board is tasked with increasing the uptake of cost effective medicines, medical and diagnostic technologies and improving the relationship between the NHS and the life sciences industry. It is leading a separate, although closely connected, piece of work to produce a report with a focus on life sciences innovation. This open call for evidence and ideas will inform both reports.

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[2] Analyses [source: Booz & Company] show that the majority (68.5%) of top 1000 companies in the world increased their R&D budgets, even if they were not profitable [16.5% still increased R&D spending] or if their net income fell [43.7% of companies whose net income fell increased R&D spending].

What is innovation

For the purposes of this call, innovation is an idea, service or product new to the NHS, or applied in a way that is new to healthcare, which significantly improves the quality of health and care wherever it is applied.

That means the innovations have to be in part new or applied in new ways (rather than simple improvements in performance); have to be taken up (rather than just being a good idea); and have to serve a purpose (significant improvements in quality and/or productivity). This could be an *innovative technology* (such as mobile healthcare apps); *devices* (such as the Oesophageal Doppler) or *care pathways* (from unnecessary length of stays to supportive early discharge using telehealth).

Innovation takes many forms. It can be incremental (building on and improving existing practices), radical (a completely new approach to solving existing problems), or revolutionary/disruptive (an innovation that creates an entirely new and unexpected market e.g. the World Wide Web, mobile phones). Innovation is not limited to the scientific community or the laboratory. It also refers to changes in thinking, products, processes, or organisations.

Innovation is the successful implementation of new ideas, divided into three stages[3]:

➤ invention (or identification) – finding new ways of doing things;
➤ adoption (including prototyping and evaluation) – testing new ways of doing things and putting into practice;
➤ diffusion (or spread) – systematic uptake or copying across the service**.**

The focus is on adoption and diffusion, rather than the 'invention' stage of the innovation process.

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[3] Based on Joseph Schumpeter business cycle.

Importance of innovation

The NHS needs to change because the population is changing, because the NHS needs to be sustainable, and because we want to have the best health service in the world. Given the financial and population pressures the NHS is facing, it is clear that more of the same will not deliver the world class healthcare we all aspire to. Nor will doing more of the same, but for less. We need transformational change, and for that, we will need innovation.

The NHS is full of brilliant people with brilliant ideas. The Health and social care system needs to support them to take those ideas, test them, prototype them and then get them into every day use and benefiting patients as quickly as we can. Front line staff want to provide the best possible care for patients. That means the latest treatment and the latest technologies. Without innovation, staff would still be operating without anaesthetic, and be using saws rather than lasers. And it's also about UK plc. The UK is part of a world economy and needs to stay globally competitive.

Innovation is driven by many motivations: the desire to do good; financial rewards; recognition; pressure and necessity, and it is blocked or diverted by an equally diverse range of factors from disincentives, cultural aversion and availability of resources – both time and money. It can't be commanded, or simply incentivised. In any large public service system there is likely to be an undersupply of innovation. Individual units may be driven to innovate by curiosity, entrepreneurialism and creativity. On the whole, it will be irrational for them to invest scarce resources in ventures which may have only have a low chance of success.

By contrast, innovation is necessary for survival and adaptation from the perspective of the system as a whole. It may well be desirable to have many experiments underway, which individually have a low probability of success. An optimal level of innovation is therefore bound to require some collaboration, with the centre seeking to focus attention on the innovations that have the greatest pay-off for the system as a whole - in exchange for which it commits to sharing risks and costs.

However, merely finding ideas is not enough. It is crucial that best practice, innovative ways of working and new technologies are not only identified and adopted locally, but are shared and spread at scale and pace. If patients are to receive the best possible care and support, NHS staff will also need access to the worlds, best information and evidence, that just hasn't been possible before – but it is now, and NHS Evidence ensures that kind of information is at the fingertips of all 1.3 million NHS staff.

What we already know about the spread of innovation

Systems as large and complex as the NHS become innovative through the interaction of three sets of forces:

- <u>bottom up</u> cultures (patient pressure and professional enthusiasm);
- <u>horizontal pressures</u> and support (peer influence, cooperation, competition and support);
- <u>top down</u> pressures and support (incentives, regulation, targets, training).

Bottom up forces are 'pulling' innovations into use whereas top down are usually 'pushing' teams and organisations. Horizontal forces can be both push and pull. Many public innovations fail to be spread because all three pressures are not mobilised together.

Surveys of sectors that are good at inventing and diffusing innovation rely on these 'pull' and 'push' forces[4], which include:

- the existence of large competing (and occasionally co-operating) players able to take ideas to scale and integrate them, usually highly sensitive to market shifts;
- a wide periphery of start-ups, suppliers and niche operators providing a flow of ideas into the bigger layers, also highly sensitive to the market;
- fluid merger and acquisition activity and the availability of venture capital;
- rewards for successful innovators and adopters; and
- strong networks, often including specialised intermediaries who may be better at spotting the value of potential innovations than the big or small firms that create them.

<u>Factors which need to be taken into account</u>

Innovation is driven by many motivations: the desire to do good; financial rewards; recognition; pressure and necessity, and it is blocked or diverted by an equally diverse range of factors from disincentives to cultural aversion. It can't be commanded, or simply incentivised. The NHS can learn from other sectors to understand how barriers can be overcome:

- <u>Common languages and metrics</u>: in large non-Governmental Organisations (NGOs), rapid adoption of innovations depends on a common language for explaining what makes a new idea good. In large businesses, profit measures such as Return on Invested Capital or Economic Value Added provide this common language. A repeated finding on health innovation is that the key stakeholders – patients, doctors, managers, providers – do not share common languages for success.

- <u>Pressure for change</u>: innovation most often happens when the status quo is not an option, hence the need for leaders to create a sense of urgency; to build coalitions for change; secure short-term wins; and to consolidate, anchor and mainstream change.

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[4] All these features are seen in Silicon Valley, the most successful innovation cluster in the world, which has a tremendous flow of information and ideas backed by a rich mixture of public support, strong institutions such as Stanford University, and highly competitive markets.
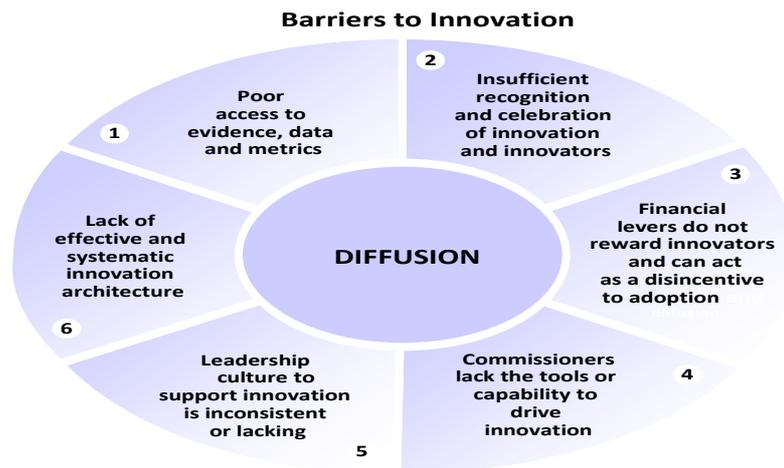
➢ Appropriate rewards*:* for individual units (GPs, NHS & private providers) most innovation involves risks that are greater than the potential perceived rewards, hence the need for some compensating rewards, such as dedicated funding streams, prizes and intellectual property (IP) rights. While a loss is generally felt more strongly than a gain, relatively small non-monetary actions, such as receiving a sincere personal thank-you can be a strong motivator;

➢ Organisational cultures supportive of new ideas: meaning clear signals from leadership that they want to see experimentation, backed up by structures of support that enable this to take place; organisational cultures that support interaction across organisational boundaries (and time for engagement and cross-pollination) as well as protected time for reflection.

➢ People with the capacity & capability to promote change: whether that is producing ideas, or networking to find what else is being tried, or managers who excel at building coalitions and seeing change through.

➢ Effective data: information has a critical role to play in identifying and validating innovations. This ranges from deep personal case studies on the situation an individual faces, to systematic statistical analyses on outcomes, outputs, costs and benefits.

➢ Effective risk management: by its nature, it can be hard to determine the upsides and downsides of an innovation. Systematic approaches can greatly assist in identifying and containing key risks, including the common but often wrong assumption that 'no change' is risk-free. Any organisation should have a portfolio of innovations in progress, from higher risk but potentially higher impact to lower risk and lower impact. In the public sector, a high proportion of riskier ventures have generally been organised through arms length bodies.

In any large public service system there is likely to be an undersupply of innovation. Individual units may be driven to innovate by curiosity, entrepreneurialism and creativity. On the whole, it may seem irrational for them to invest scarce resources in ventures that may have only have a low chance of success.

By contrast, innovation is necessary for survival and adaptation from the perspective of the system as a whole. It may well be desirable to have many experiments underway, which individually have a low probability of success. An optimal level of innovation is therefore bound to require some collaboration, with the centre seeking to direct innovations to areas that have the greatest pay-off for the system as a whole - in exchange for which it commits to sharing risks and costs.

Innovation in the NHS

Spread of innovations in large disaggregated organisations is notoriously difficult. Previous research conducted highlights a number of reasons for this:

The NHS innovation strategy, first articulated in High Quality Care for All (HQCfA published June 2008), addresses some of these barriers. The approach uses central funding to stimulate innovation in the NHS by a variety of means including: Regional Innovation Funds, series of Challenge Prizes, Academic Health Science Centres, Health Innovation and Education Clusters, the Commissioning for Quality and Innovation (CQUIN) payment framework and showcasing innovation through the Healthcare Innovation Expo. For more detail, see section on 'Innovation Initiatives'.

Healthcare innovation occurs across different sectors (public, private and voluntary sectors) that can act as both suppliers and demanders of innovation. Using market mechanisms to stimulate innovation in the public sector needs to work across all of these sectors.   History tells us that a centralist approach just doesn't work – few innovations now grow entirely within one sector and few innovations grow entirely within one organisation.

Events such as the Healthcare Innovation Expo, and the establishment of NHS Evidence, shows that there is an appetite in the NHS for some central co-ordinated activity, but that role should ideally be strategic and outcome, rather than process focussed.

Research of US innovations showed that whereas in the 1970s most developed within single companies, and without public support, by the mid-2000s most involved cross-firm collaboration and federal support.

Innovation Initiatives in the NHS

Research conducted with hundreds of people and organisations (within and outside the NHS) concluded that whilst the NHS was recognised as 'world class' at invention, it has often been too slow to systematically adopt, diffuse and commercialise those inventions.

However, merely finding ideas is not enough. It is crucial that best practice, innovative ways of working and new technologies are not only identified and adopted locally, but are shared and spread at scale and pace. A series of initiatives have been implemented which aim to tackle this problem:

➢ Regional Innovation Funds aimed at front-line staff and organisations to support innovation and help with the development and universal diffusion of best practice across the NHS. This is the first time that the NHS has had a dedicated pot of money (£20m in 2009/10, £20m in 2010/11 & £20m in 2011/12) of this kind to spend on the development and diffusion of new and innovative ideas. Though monetarily small, regional innovation funds have high symbolic value – encouraging and validating innovation at the frontline. There have been over 2,000 applications totalling in excess of £250m and just under 300 projects – significantly oversubscribing the available funds.

➢ NHS Evidence a world-leading on-line portal managed by the National Institute of Health and Clinical Excellence (NICE) that empowers staff with the world's best evidence and best practice information at the touch of a button. NHS Evidence provides the UK's first accreditation scheme to encourage high standards in the production of information and provide assurances about quality. Since launching in April 2009, up to 1.2 million searches are carried out a month.

➢ A legal duty for SHAs to promote and encourage innovation. The purpose of which is to create the right context and reinforce the right leadership behaviors to stimulate innovation in frontline organisations in driving the promotion of innovation locally. An independent report from the Kings Fund and Innovation Unit plc reported the legal duty has helped to embed innovation as 'core business' for the NHS, specifically at board level and putting in place enabling infrastructure for innovation. SHAs have published Annual Innovation Reports which set out how they are creating the conditions for innovation to flourish locally.

➢ The Department of Health has hosted two (2009 & 2011) Healthcare Innovation Expo events – the largest event of its kind in Europe: in 2011, almost 8,500 people registered to attend. The Expo brings together, key people and organisations from the public, private, scientific, academic and voluntary sectors (including attendees from 52 countries) and acts as a showcase for new ideas and innovative thinking in the world of healthcare and a platform to accelerate the adoption and diffusion of innovation across the NHS and support the UK growth agenda.

➢ Innovative Technology Adoption Procurement Programme (iTAPP) aims to raise NHS productivity by increasing the utilisation of innovative medical technology, increasing investment in UK businesses (including SMEs), and increasing exports for UK based

manufacturers. Based on manufacturers' claims, the potential net benefit to the NHS exceeds £5bn annually. These benefits arise from prevention; reduced referrals; reduced admissions; reduced length of stay; and productivity. The Department of Health is working with Strategic Health Authority Innovation Leads, who are leading the selection of high impact technologies for wide adoption across their provider landscape. Implementation of technologies is being supported by the NHS Technology Adoption Centre (NTAC) under arrangements commissioned by the Department of Health. So far, seven SHAs have made a total of 17 technology selections, covering 12 of the technologies identified by iTAPP.

➢ Design-led innovation Following the success of Design Bugs Out, a partnership has been established between the Department of Health and the Design Council to deliver a new range of design-led innovations to address specific challenges facing the NHS. The portfolio of projects being developed by the partnership is aimed at changing, improving and saving lives, and saving money, specifically: Design for patient dignity; Design for the diagnosis of dementia and Design for carers. We are also working on a further project to reduce violence in A&E.

➢ Innovation Challenge' prizes have been established to recognise and reward ideas which tackle some of the biggest health and social care challenges facing the NHS now and in the future, and ensure a focus on improving quality of healthcare and productivity. The scale of ambition represented by the Challenge Prize programme has added to the collective effect of the other national innovation initiatives in demonstrating a clear and strong commitment to innovation.

The first round of the NHS Innovation Challenge Prizes was launched in December 2010. The Secretary of State recently awarded three of the most promising and interesting applications received and recommended by an Expert Panel. The prizes ranged from £35,000 to £100,000. The successful applications covered:
➢ Medicines – reducing waste, Increasing benefits;
➢ Increasing independence for those with kidney failure; and
➢ Earlier cancer diagnosis.

The next round of Challenge Prizes is currently open to applications and will close on 14th August 2011.

➢ Health Innovation and Education Clusters (HIECs) 17 HIECs are up and running to support health care providers, higher educational institutions and industry to work together at a regional level and local level to drive innovation and improvements in patient care, and raise the quality of healthcare education and training.

➢ Academic Health Science Centres (AHSCs) The establishment of five AHSCs will help to foster world-class partnerships between research, teaching and patient care organisations so that developments in research can be more rapidly translated into benefits in patient care in the NHS and across the world. For example, research conducted by AHSCs includes:
➢ Interactive operations via video link: Doctors from around the world took part in a surgical masterclass at Hammersmith Hospital thanks to new technology that allowed them to have a conversation with surgeons while they operated. The technology meant delegates could interact with surgeons and discuss the latest surgical techniques while watching scenes from the operating room.

> ➢ A major new international trial has launched into the new 'Red Heart Pill'. It contains low-dose aspirin, a statin and two blood pressure-lowering medicines in a single polypill and is expected to be substantially cheaper than existing medications to combat cardiovascular problems.

➢ NHS Global as announced in the Plan for Growth, is being developed to offer support and advice to NHS organisations wishing to compete in the global market. NHS Global seeks to grow the NHS' international activity, both commercially and philanthropically. Our aim is to;
> ➢ build and grow the NHS brand and reputation overseas,
> ➢ compete in the international healthcare market and exploit the commercial value of the NHS' technologies, products and knowledge
> ➢ strengthen philanthropic activity overseas.

➢ Commissioning for Quality and Innovation (CQUIN) To ensure innovation forms part of commissioning discussions and allow local innovation goals (agreed between commissioners and providers) to be linked to provider income.

Tell us what you think

Innovation – especially in a system as big as the NHS – demands excellent people with excellent ideas. The NHS has both of these, but whilst the NHS is recognised as a world leader at invention, it is less successful at diffusing those inventions - spreading their use at pace and scale. Diffusion of innovation within the NHS has often been slow, and sometimes even the best ideas fail to achieve widespread use. Diffusion of new ideas in large, disaggregated organisations like the NHS is notoriously difficult, but now more than ever before, innovation has a vital role to play if we are to continue to improve outcomes for patients and deliver value for money services. Much has of course already been achieved, but more need needs to done to systematically identify and spread the very best ideas. Innovation must be encouraged and nurtured by everyone in the NHS.

This requires a fundamental change to the way people currently work. At the heart of this is strong leadership – both clinical and managerial at all levels in the system. It will require all leaders to identify and tackle the behaviours and cultures that stand in the way of innovation. We will need to:

- look at system incentives to ensure they are aligned to support and encourage innovation;
- create 'pull' for new ideas from patients and the NHS, rather than relying on the traditional top down 'push';
- reward those individuals and organisations that adopt best practice and new ideas, and ask those organisations that don't to explain why;
- experiment more and be less risk averse;
- take a longer term view on investments; and
- ensure staff are supported to introduce new ideas and technologies.

The NHS can learn much from other sectors and from other countries. We would like to hear your views, your ideas and your recommendations. This could include actions for government, the Department of Health, industry, the National Commissioning Board, the NHS, or other sectors. In responding, you might wish to think about:

Learning from elsewhere about adoption and spread

What can the NHS and NHS Commissioning Board learn from local, national and international best practice to accelerate the pace and scale of adoption of innovations in the NHS? [Please include relevant examples, published papers or other evidence you have found useful.]

Actions at national level in the NHS

What specific actions do you think national NHS bodies, such as the NHS National Commissioning Board, need to take to encourage and stimulate the successful and rapid adoption and spread of innovations throughout the NHS?

Actions at local level in the NHS

What <u>specific actions</u> do you think local NHS bodies, such as providers and Clinical Commissioning Groups, need to take to encourage and stimulate the successful and rapid adoption and spread of innovations throughout the NHS?

Actions by NHS partners

What <u>specific actions</u> do you believe others, such as industry, academia, patient groups or local authorities, could take to accelerate adoption and spread, and what might encourage them to do so?

Any other comments

Do you have any further comments about accelerating the adoption and spread of innovation in healthcare?

Submitting your views

Thank you for contributing to this call for evidence.

Please complete the online form on the DH website at: www.dh.gov.uk/innovationreview

Or email your response to: health.innovation@dh.gsi.gov.uk

Or, send your views in writing to:

NHS Chief Executive Innovation Review Team
Department of Health
Room 2N16
Quarry House
Quarry Hill
Leeds
LS2 7UE

Confidentiality of information

Your response will be managed in accordance with the Department of Health's *Information Charter.*

Information we receive, including personal information, may be published or disclosed in accordance with the access to information regimes (primarily the Freedom of Information Act 2000 (FOIA), the Data Protection Act 1998 (DPA) and the Environmental Information Regulations 2004).

If you want the information that you provide to be treated as confidential, please be aware that, under the FOIA, there is a statutory Code of Practice with which public authorities must comply and which deals, amongst other things, with obligations of confidence. In view of this, it would be helpful if you could explain to us why you regard the information you have provided as confidential. If we receive a request for disclosure of the information we will take full account of your explanation, but we cannot give an assurance that confidentiality can be maintained in all circumstances. An automatic confidentiality disclaimer generated by your IT system will not, of itself, be regarded as binding on the Department.

The Department will process your personal data in accordance with the DPA and in most circumstances this will mean that your personal data will not be disclosed to third parties.

Contact details of you and your organisation

We would like to be able to follow up interesting comments and case studies and would be grateful if you can give your contact details below.

Organisation: _____

Contact (completed by:)_____

 (email)_____ **(telephone)**_____

Do you want to be kept in touch with the next steps in this process? **Yes/No**

Do you want to be included in a wider community of interest ? **Yes/No**

Information about your organisation

If you are responding on behalf of an organisation, please could you indicate which best describes the role of your organisation.

Name of your organisation: _____

Please choose the description below that best fits your organisation's main role:

1. NHS Trust / NHS Foundation Trust
2. PCT / clinical commissioners
3. SHA
4. General Practice / Community services
5. NHS other
6. Social care sector
7. Independent healthcare sector
8. Royal College
9. National / Local Government
10. Voluntary/charitable sector
11. Private sector (including life sciences sector)
12. Academic Institutions
13. Representative body
14. Public/Patient
15. Other