Response to NHS Chief Executive’s Open Call for Evidence and Ideas

Respondent ID: 145

Organisation name: NHS Innovations South East

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Submission by
NHS Innovations South East Ltd
Innovation in the NHS: An open call for evidence & ideas

1  Learning from elsewhere about adoption and spread
What can the NHS and NHS Commissioning Board learn from national and international best practice to accelerate the pace and scale of adoption of innovations throughout the NHS?

1.1  NHS Innovations South East depth of experience of NHS Innovation
For the last seven years, NHS Innovations South East (NISE) has been directly engaged at the coal face of innovation in the NHS at all levels. In undertaking this activity, we have found our experiences echoed in a number of places: many of these experiences are embodied in the points below as ‘Exhibits’. In addition, the following papers are examples that we have found insightful in terms of the challenges which have to be addressed:

• Innovation in the public sector, October 2003, Mulgan and Albury

• How to Spread Good Ideas: A systematic review of the literature on diffusion, dissemination and sustainability of innovations in health service delivery and organisation, April 2004, Greenhalgh et al – N.B.: one of the major assumptions of the Greenhalgh paper was a ready supply of innovations that were aligned and relevant to immediate NHS needs: one of our findings is that the need for more focus on making sure that the supply side is present with a “filled pipeline”, and the mechanisms are in place for steady improvement of existing innovations.


2  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?

2.1  Develop an innovation culture in NHS
Accelerated and successful Innovation adoption and diffusion depends on long term culture change in the NHS which will support staff at all decision and implementation levels in taking sensible risks to realise innovation and improvement.

This will require a long term commitment to provide support where it can best be used – at the coal face.

Innovation metrics that provide an indication of individual organisations’ engagement with innovation are an important part of this culture change. In combination with the current outcome metrics (i.e. length of stay, infections, CQC reports etc), this should focus management on more rapid NHS adoption and diffusion of good innovation.
The challenge facing the NHS is one of culture change, the NHS needs to become a continuously improving organisation, the QIPP challenge is only the beginning. The NHS National Commissioning Board needs to signal its commitment to innovation by providing incentives to the adoption (positively and negatively) and also by measuring innovation across all three phases: invent, adopt and diffuse.

The old adage that if you don’t measure, you don’t get applies. Metrics need to be specific, unambiguous and related to the process of innovation, to support the improvement function of the National Commissioning Board. Relying on outcomes, whether financial or quality will not encourage innovation adoption and spread, nor will fluffy high level measures. It is far too easy not to be innovative and meet short term targets / outcomes, especially financial, by alternative means (“slash and burn”).

The Duty to Innovate proposed some measures of innovation (Creating an Innovative Culture, 2009 Gateway 11737, p19): these were a good start but too high level and ambiguous. The current Government attitude to reporting (administration) is to reduce it; however the National Commissioning Board should implement metrics that are transparent and also encourage innovation adoption. It should be possible to design metrics that are relatively easy to collect and that are specific and unambiguous, related to the whole innovation process and that can drive adoption and spread, with pull from end users (patients). One potential method of generating pull in the system could be to publish innovation metrics for NHS organisations, so that patients can exercise choice, and there would be the added benefit of peer pressure between providers. The CQC could be responsible for collection / audit / publishing these metrics in combination with a more user friendly rating of providers.

2.1.1 Exhibit: Metrics
There are two suggestions on how to use metrics to drive innovation adoption and spread:

A: NHS Choices

NHS Choices could be commissioned to include an ‘innovation score / rating’ for providers. This has several benefits to the NHS:

1. Generating customer pull for innovation – patients who are referred have choice over where they are treated. The innovation score of several local providers would enable them to choose a provider who was innovative and provided new / effective / quality treatment.

2. Peer competition – the innovation rating would generate competition between Trusts to be more innovative via their management teams – (you get what you measure, and Trust CEs are competitive)

3. Show case – the innovation rating could be linked to case studies / news items for patients as well as a secure area for NHS staff for implementation.

4. It would also increase web traffic for NHS Choices – which apparently is one of their metrics.

The challenge lies in rating the innovativeness of the organisations. In industry, a measure is percentage of turnover derived from new products that are less than 3/5 years old. In the NHS a
possible metric could be percentage of interventions that involve an innovation introduced in the last 2 years. The data however would not be easy to collect or analyse for this.

Ultimately, innovation is a tool to improve quality and efficiency, and there are already metrics on these for Trusts (e.g. CQUIN, PROMS, etc). So an innovation rating is a precursor to improved quality and efficiency, but would direct and encourage Trusts along the innovation route rather than the slash and burn approach to efficiency and would also provide positive PR and improve staff morale given the challenging financial environment.

On one hand, this is about encouraging a different behaviour by generating a pull from patients and peer pressure (competition), i.e. culture change, and the robustness of the rating is not so important as the change that occurs in culture and the resultant quality / efficiency improvement. On the other hand, patients will expect an effective innovation i.e. one where they experience improved quality or efficiency, so a more robust rating is required.

B: Care Quality Commission (CQC)

Currently the CQC inspects and reports on providers, and reports are published. These can be accessed via NHS Choices, but are not particularly user friendly. It may be possible for the CQC to collect the Innovation ratings / stars and the data be ported through to NHS Choices. This could then be provided with the normal CQC reports and a summary rating to make user friendly. If patients want more information they can drill down into the full CQC reports. This is primarily providing transparency for patients – data on which provider is innovative. There should be easily digestible metrics / scores and behind that detail to support the scores.

2.2 Education in Innovation for NHS Leaders and Staff

NHS staff and leaders need to be educated and made aware of the benefits of innovation, both adoption of innovations and their creation / development. Specialist support and training is also required to assist with innovation adoption as the appropriate skills and expertise are not inherent across the NHS, especially for technological innovations (including software). The NHS is generally risk averse and adoption of innovations in healthcare delivery requires more than just a simple financial case.

NHS Innovations South East has developed an on-line innovation awareness tool (OLIA) that is currently rolled out cross the south east. OLIA provides a basic awareness of what innovation is and the benefits of adoption, both to the NHS and patients. It also provides a basic awareness of intellectual property and invention, as when innovations are adopted there are likely to be improvements, which should be captured and not lost. OLIA could be rolled out across the whole of the NHS and also easily developed further. (See Exhibit OLIA)

NHS Innovations South East has recently started supporting NHS trusts with business cases and financial analysis of one particular innovation, as some Trusts have struggled to understand an innovations benefits. This type of service should be provided across the NHS to develop the skills and expertise within NHS organisations. (See Exhibit VitalPAC)

2.2.1 Exhibit: OLIA

OLIA is a unique innovation awareness tool that is ready to be rolled out across the NHS in England now, on a flexible on-line delivery platform designed specifically for NHS Staff. It will contribute to the
development of communities of change champions, moving the innovation culture away from being centrally driven and centrally funded to one of self determination, encouraging an entrepreneurial culture. OLIA will give staff the skills, support, networks and empower them to take action. Staff will appreciate that their ideas have value and can result in innovative products and services, and that innovation adoption can benefit patients and the NHS.

With its broad innovation focus, encompassing acute and primary care environments, OLIA is able to appeal to all levels of staff, regardless of their role within the NHS.

OLIA is based on an e-learning framework, and is designed to be light and enjoyable, rather than a heavy learning experience. OLIA currently has eight modules which can be accessed over the web, either at home or in the office: in future, it will be expanded to include new modules and be tailored to NHS staff in different environments. It is designed to be interactive and can be completed in one sitting of 2 hours or spread over several weeks. Its primary aim is to raise awareness of ideas, how they can be used to benefit patients and the NHS and give some indication of first steps in the innovation cycle. OLIA also makes NHS staff aware of the impact that innovations can have when adopted, for the benefit of patients and the NHS.

2.3 Need for a complete spectrum of Innovations

The NHS National Commissioning Board needs to recognise and accept that small innovations can have a significant impact across NHS as a whole, and engender a culture where these innovations are adopted and diffused, along with aligning levers across the system. A large number of small innovations will ultimately have a big effect, and relying on a few big innovations is a risky approach. (See Exhibit ALERT)

Key message – lots of small innovations will help to embed innovation in NHS culture – a few big ones risks reinforcing a culture of innovations as things that are done to us NHS staff and organisations by the centre (e.g. CfH).

There are innovations that are not adopted because of barriers within the NHS, this includes:

- awareness of the innovation (NHS Evidence should help, but is unlikely to have the capacity to cover small innovations);
- the innovation benefits not being understood or communicated;
- benefits accruing elsewhere in system (perverse incentives i.e. tariff);
- NHS having to change significantly to implement innovation which it is unable or unwilling to do.

An innovation that has failed to be adopted, but which has a significant benefit is COUNT, a medicines management tool. (See Exhibit COUNT)

The whole innovation pathway needs to be supported, from idea to diffusion; innovators are usually the first to adopt an innovation (Rogers). A holistic approach to innovation needs to be taken, enabling small innovations to be adopted and diffused; this requires a culture change and support as well as incentives. All of the variables affecting the rate of adoption of innovations need to be
considered (Rogers p222 ff): levers need to be aligned: communication, awareness, metrics, incentives (positive and negative), adoption skills and expertise, culture – risk taking, acceptance of failures, and time and space (c.f. 3M practice of enabling staff to have time for their personal innovation). The innovative culture needs to become systemic and recognised that it has to become part of the day job.

2.3.1 Exhibit: ALERT™: Acute Life-Threatening Events – Recognition and Treatment

In 1999, Portsmouth Hospitals NHS Trust decided to develop a short (one-day) course to help trainee doctors, junior ward nurses and some allied health professionals recognize and respond better to impending clinical deterioration, the management of simple disorders and other aspects of the delivery of acute care. That course, ALERT® (Acute Life-threatening Events - Recognition and Treatment), has now run successfully at Portsmouth Hospitals since the beginning of 2000 and in approximately 190 other centres in the UK and overseas. Since May 2000, more than 180,000 UK healthcare staff have received ALERT training. The course is aimed at all personnel involved in clinical care but particularly doctors, nurses and some physiotherapists

It is now widely recognized that some in-hospital cardiac arrests, intensive care unit admissions and even deaths are avoidable. Regrettably, patients can show signs of clinical deterioration for many hours, without these necessarily being detected or adequately treated by ward staff. That failure to get the basics right – ensuring that the patient’s airway is not restricted, that their breathing and circulation are not impaired, that their oxygen therapy and fluid balance are right – can seriously undermine acute care. ALERT™ is a one-day focused training course intended to help healthcare professionals, particularly junior medical staff and nursing staff, recognize and respond better to impending clinical deterioration.

The ALERT™ training package has the potential to reduce the number of life-threatening adverse events experienced in hospital settings and their associated costs. The effect of the training package is expected to impact on the number of patients admitted to intensive care units and the risk of mortality experienced in those units. An analysis by York Health Economics Consortium considered the impact of the ALERT training system on ICU admissions.

Due to the high costs associated with critical care and intensive care admissions, even a small reduction in admissions can generate significant savings. If we assume that 50% of eligible staff attend and implement the ALERT programme in their trust and that up to 20% of admissions to intensive care are avoidable, then the potential savings are in excess of £26M per year (Potential life-threatening events avoided: 351; Potential ICU/CCU admissions avoided: 1,634).

The economic analysis assumes that ALERT is adopted across the NHS to a certain level, and this clearly demonstrates that the benefits of a small innovation can have a significant effect across the NHS, let alone for patients. However, an individual NHS organization will only see a small fraction of this cost avoidance and may not adopt because its focus or priority is elsewhere or it does not recognize the significance.

2.3.2 Exhibit: COUNT©

COUNT© is another of those apparently simple ideas that has enormous potential; one that costs very little to implement but could improve patient care, reduce admissions to hospital and save the
NHS a lot of money. A sure-fire winner, you might think? So far, unfortunately, this highly-promising innovation has come to nothing.

Conceived by the pharmacy team at Guildford and Waverley PCT in Surrey, COUNT© was designed for patients in the community who were at risk of hospital admission. The idea was to train the intermediate care staff and other healthcare professionals visiting those patients in their homes to carry-out a simple assessment / medication review. There are many reasons why patients in the community may not get the best out of their prescriptions. The five most common gave rise to the name of the new service...

Confusion – Patients are unsure how much medicine to take or when to take it.
Over-ordering – Patients over-order, resulting in stockpiling, sharing or overuse.
Unable to open – Patients are unable to unscrew lids on bottles or open foil packs.
Not taking medicines – Patients are either forgetting or choosing not to take their medicine.
Too many journeys – Patients have difficulty collecting all the medicines they need.

Under the COUNT© programme, the intermediate-carers making home visits to patients could either assist patients with their problems immediately or, if necessary, refer them to the pharmacy team. A pharmacist would then visit, conduct a full medication review and discuss the medications – and any problems - with the patient and their family / carers. This was intended to

• help the patients get the best out of their medicines;
• reduce unnecessary prescribing (the team estimated that, in their PCT area alone, prescribed medicines worth between £1.5m and £2m were going to waste each year).
• reduce the number of admissions to hospital.

Trials showed that COUNT© was more effective than other ‘medicine management’ schemes in reducing hospital admissions and cutting down levels of ‘wasted’ prescriptions; it’s success probably due in part to the pro-active way in which COUNT© engaged with GP’s who generally gave it their full support. The service was also extremely well-received by patients, intermediate care services and other healthcare professionals and took first place in no fewer than three regional and national innovation competitions (in the Service Innovations category). An evaluation of one pilot scheme, working with just 158 patients, calculated the probable net cost savings of the scheme at £235,000 pa.

NISE worked with the pharmacy team to develop the COUNT© service further; our joint aims being to adapt it to the needs of a broader range of patients and to market the service throughout the NHS. However, two issues arose that prevented the widespread adoption and spread of COUNT©.

Firstly, the pharmacy team were unhappy about taking COUNT© forwards on a semi commercial basis. Several members of the team wanted to use the competition prize money to photocopy their notes and give it to their NHS colleagues. NISE recommendations was to use the prize money to develop a training package that could be sold to NHS colleagues, generating a small revenue to re-invest in upgrades and sustaining COUNT© beyond the initial prize money expenditure and assisting with adoption and spread. This model has been successfully used elsewhere in the NHS (i.e. ALERT). The second issue that arose to stifle COUNT© was that healthcare in Surrey was about to undergo a
major re-organization with all the Primary Care Trusts being merged to form one ‘super PCT’, which meant that all the pharmacists had to re-apply for their jobs. Half the eight-strong pharmacy team at Guildford & Waverley PCT left as a result of this process and though NISE tried to persuade the management team at the new ‘super PCT’ to adopt and support the project, they declined to do so – even though a number of other PCT’s and one SHA had expressed interest in licensing it.

So far, then, COUNT’s enormous potential is unrealized, despite close media attention and government concern. As Earl Howe said in the press release of 8th August at the setting up of a new group to tackle the £300 million being lost every year in the NHS due to medicine wastage, at least half of which is avoidable “We want to look at how patients can make the most of the medicines they take. This isn’t just about saving money – most importantly, it is about making sure that patient stay well and get the best from their medicines”

However, it is not necessarily a failed innovation; its ‘prime mover’ now occupies a senior position in another PCT (outside the South East region) and is interested in developing a similar programme there. The potential benefits - for patients and the NHS – are so great that we can only hope the next COUNT© innovation takes place in a more stable and supportive environment and one that encourages sustainability, even if on a semi commercial basis.

3 Actions at a local level in the NHS

What specific actions 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?

3.1 Working with Clinical Commissioning Groups on Innovation

Clinical Commissioning Groups (CCGs) need to be aware of innovations that can have an impact on their local community, so need awareness of, and access to, horizon scanning services and also the ability to encourage providers to implement particular innovations. The challenge for CCGS will be finding innovations and evaluating their impact; specialist facilitating organisations should be able to assist them.

This is a role which could well be met by an organisation with local awareness and networks (including links into national networks) such as NHS Innovations South East.

3.2 Support at local level for Implementation

Providers need support to implement innovations, particularly in the early stages of culture change and where the NHS does not have the appropriate skills and expertise.

3.2.1 Exhibit: Technology adoption - VitalPAC

**Background**

VitalPAC is a real-time, mobile ‘Track and Trigger’ information system that monitors patient condition and quickly identifies deteriorating patients, and enables healthcare professionals to capture vital signs electronically at the bedside. The system analyses vital signs together with other clinical data and provides risk scores and assessment. This allows clinical staff to identify the acutely
deteriorating patient and escalate any intervention in a timely manner. VitalPAC improves clinical outcomes.

VitalPAC contains a growing number of clinical and operational modules, each of which provides real patient and operational benefits. The modular approach allows VitalPAC to be customised for each customer and provide support to relevant areas of need within the clinical environment. Together with “Patientflow” technology, VitalPAC can support bed management and clinical effectiveness across an organisation.

Existing VitalPAC customers are using the wide capabilities of this technology to inform service redesign and support productivity and efficiency changes.

The Adoption Challenge

The VitalPAC solution developed by The Learning Clinic is a disruptive innovation with the potential to transform local models of healthcare delivery and identify efficiencies / inefficiencies within a provider environment.

Potential customers are frequently challenged with understanding the implications of implementing VitalPAC, often into a lean environment that has already been subjected to improvements in clinical practice and processes. In certain instances, existing technology or partial solutions can create an avoidable barrier to adoption.

Customers are also challenged by understanding whether implementing VitalPAC within their organisation would be cost-effective, affordable and offer value for money.

Role of NHS Innovations South East in support of adoption

NHS Innovations South East (NISE) has been supporting healthcare innovations across the NHS and small business community since 2004. VitalPAC was first designed by The Learning Clinic, in conjunction with Portsmouth Hospitals NHS Trust in 2006. NISE has continued to support Portsmouth staff with their innovations and emerging technologies.

In 2010 NISE was commissioned by the South Central Strategic Health Authority to develop a business case template and cost-benefit tool to assist with the assessment and adoption of VitalPAC into regional NHS provider organisations.

A key driver to the adoption has been to provide potential end users with the means by which any investment can be justified and the development of a detailed appraisal of the cost-benefit and risk profile associated with the technology solution. This is provided independently of any supplier with evidence from existing VitalPAC customers.

NISE currently provides a business case support service to NHS clients seeking to assess the suitability of VitalPAC for their organisation. Different tiers of support are available depending on the specific needs of the customer. This ranges from cost-benefit analysis, including modelling future outcomes, to full business case development. NISE provides a thorough examination of client benefits within their specific environment and provides an independent and objective assessment of the suitability of the technology, cost-effectiveness and value for money.
This new service from NISE can help overcome barriers to adoption by enabling the NHS to understand the benefits of innovations more clearly. However, this type of support is not always as clearly self-funding as in this example.

4 Actions by NHS Partners
What specific actions 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?

4.1 Benefits realisation Programmes
One of the activities which is undertaken by NHS Innovations South East is in working with industrial partners (typically licensees of NHS innovations) to improve their understanding and the alignment of benefits their technologies can provide with the needs of NHS users; and to come up with better programmes to help NHS realise those benefits in practice.

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

5.1 Innovation is a Holistic process challenge
There is no ‘silver bullet’ that will ensure innovations are adopted and diffused. The NHS Commissioning Board needs to take a holistic view of innovation and ensure levers and supporting initiatives are aligned to encourage culture change.

5.2 Orphan Innovations
Some innovations benefit only a very small number of patients. These should not be overlooked or ignored in the current economic climate, as not supporting them will have repercussions in the future. Some are niche and not commercially viable, but need support as the national wellbeing will be reduced without them.

5.2.1 Exhibit: OxCAT
Which comes first – patients or profits? In our experience, an innovation that is good for patients is likely to be profitable too. (Conversely, a healthcare product with no obvious patient benefits would be certain to fail commercially.)

Every so often, however, somebody presents us with an innovation which is hugely important but which offers little profit; an innovation which healthcare technology companies are unlikely to find commercially attractive – or even viable. Take, for example, the Oxford Child Sexual Abuse Examination Skills Trainer, also known as OXCAT. The brainchild of Dr Sue King, an associate specialist in community paediatrics at the Oxford Children’s Hospital, OXCAT consists of a highly-sophisticated and technically-advanced anatomical model, plus supporting DVD, which can be used to train paediatricians and other authorized specialists when using specialist equipment (a colposcope) to investigate suspected cases of pre-pubertal Child Sexual Abuse (CSA).
Individual medical practitioners may take some time to acquire the experience and confidence they ideally need when called upon to make an assessment of pre-pubertal CSA. Assessment is difficult and the stakes are extremely high for everyone concerned. Because the stakes are so high and practical case-experience limited, realistic and effective training is of critical importance. However, much current training still relies on photographic and other illustrations and / or on the use of toys, such as dolls and even teddy bears. Dr King’s idea was to develop instead a highly-realistic anatomical model, suitable for use with a colposcope. The result, OXCAT, was launched a year ago to considerable acclaim from all the agencies involved in the important job of child protection; from paediatricians to police officers, solicitors to social workers. But whilst NISE was able to help Dr King find a company willing to manufacture the OXCAT ‘manikins’ (Pharmabotics Ltd), we were never able to interest a commercial partner in the project at an earlier stage. Even now, in fact, there is no prospect of a long-term deal because

- OXCAT manikins cost a lot to produce;
- Initial demand will be limited (in most cases, one manikin per training centre will suffice);
- There is little prospect of significant repeat business or greatly-increased future demand.

Why, then, should any private sector company have invested a lot of time, money and expertise in developing OXCAT and bringing it to the market? Quite simply, they shouldn’t – and didn’t. However, NISE did. Thanks to our (part) public funding, we were able to support the development of OXCAT from first principles through to production, secure in the knowledge that whilst it may not make a profit, it offers huge benefits for all those involved in the diagnosis, treatment and prosecution of child sexual abuse – not least the young victims themselves. And there are economic benefits too; OXCAT is expected to deliver significant cost-savings to the UK taxpayer, by generating savings in the NHS, and in children’s services and in the criminal justice system.

However, few children who are maltreated ever receive official attention - studies that link self-reports to official statistics for child protection provide direct evidence of under-reporting to agencies (Gilbert et al., 2008). One study found that only five per cent of children who were physically abused and eight per cent of children who were sexually abused had contact with child-protection services (MacMillan et al., 2003, cited in Gilbert et al., 2008).

Statistics

A study by the NSPCC which directly surveyed young adults in the UK (18-24 years old) found that as many as 16 per cent had experienced serious maltreatment by parents during their childhood (Cawson, 2002). In addition one per cent of children aged under 16 experienced sexual abuse by a parent or carer and a further three per cent by another relative; 11 per cent experienced sexual abuse by people known but unrelated to them; five per cent experienced sexual abuse by an adult stranger or someone they had just met (Cawson, 2000).

In high-income countries 4-16 per cent of children are physically abused, one in ten is neglected or emotionally abused, and 5-10 per cent of girls and up to five per cent of boys are exposed to penetrative sexual abuse (Gilbert, et al., 2008).

In 2008, 34,000 children in the UK became the subject of a child protection plan (this represents 27 children per 10,000 of the population aged under 18). Of these, 45 per cent became the subject of a
plan under the category of neglect, 25 per cent under emotional abuse, and 15 per cent under physical abuse (DCSF, 2008).

References:


Information about your organisation

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<th>Organisation:</th>
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Do you want to be kept in touch with the next steps in this process?  Yes
Do you want to be included in a wider community of interest?  Yes

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

11. Private sector (including life sciences sector)

NHS Innovations South East (NISE) was set up in 2004 to provide an innovation management service to NHS organisation in the south east (South Central and South East Coast SHA regions), providing Intellectual Property (IP) and innovation management services to member Trusts. The primary objective of the organisation is to improve patient healthcare, using IP as a tool to facilitate adoption and diffusion of innovations from NHS staff. It is a company limited by guarantee with four founding NHS Trusts each having a non-executive on the board, representing the regional NHS community. Historically NISE has been part funded by the Department of Health and The Department of Business Innovation and Skills (BIS), and was set up in response to the Baker Report and also fulfils policy initiatives such as the Treasury Wider Markets Initiative and BIS Market Access for healthcare SMEs.

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What can the NHS and NHS Commissioning Board learn from national and international best practice to accelerate the pace and scale of adoption of innovations throughout the NHS?

1.1 NHS Innovations South East depth of experience of NHS Innovation

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- **Exhibit**: How to Spread Good Ideas: A systematic review of the literature on diffusion, dissemination and sustainability of innovations in health service delivery and organisation, April 2004, Greenhalgh et al. N.B.: one of the major assumptions of the Greenhalgh paper was a ready supply of innovations that were aligned and relevant to immediate NHS needs: one of our findings is that the need for more focus on making sure that the supply side is present with a “filled pipeline”, and the mechanisms are in place for steady improvement of existing innovations.

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The old adage that if you don’t measure, you don’t get applies. Metrics need to be specific, unambiguous and related to the process of innovation, to support the improvement function of the National Commissioning Board. Relying on outcomes, whether financial or quality will not encourage innovation adoption and spread, nor will fluffy high level measures. It is far too easy not to be innovative and meet short term targets / outcomes, especially financial, by alternative means (slash and burn). The Duty to Innovate proposed some measures of innovation (Creating an Innovative Culture, 2009 Gateway 11737, p19): these were a good start but too high level and ambiguous. The current Government attitude to reporting (administration) is to reduce it; however the National Commissioning Board should implement metrics that are transparent and also encourage innovation adoption. It should be possible to design metrics that are relatively easy to collect and that are specific and unambiguous, related to the whole innovation process and that can drive adoption and spread, with pull from end users (patients). One potential method of generating pull in the system could be to publish innovation metrics for NHS organisations, so that patients can exercise choice, and there would be the added benefit of peer pressure between providers. The CQC could be responsible for collection / audit / publishing these metrics in combination with a more user friendly rating of providers.

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On one hand, this is about encouraging a different behaviour by generating a pull from patients and peer pressure (competition), i.e. culture change, and the robustness of the rating is not so important as the change that occurs in culture and the resultant quality / efficiency improvement. On the other hand, patients will expect an effective innovation i.e. one where they experience improved quality or efficiency, so a more robust rating is required.

B: Care Quality Commission (CQC)

Currently the CQC inspects and reports on providers, and reports are published. These can be accessed via NHS Choices, but are not particularly user friendly. It may be possible for the CQC to collect the Innovation ratings / stars and the data be ported through to NHS Choices. This could then be provided with the normal CQC reports and a summary rating to make user friendly. If patients want more information they can drill down into the full CQC reports. This is primarily
providing transparency for patients “data on which provider is innovative. There should be easily digestible metrics / scores and behind that detail to support the scores.

2.2 Education in Innovation for NHS Leaders and Staff

NHS staff and leaders need to be educated and made aware of the benefits of innovation, both adoption of innovations and their creation / development. Specialist support and training is also required to assist with innovation adoption as the appropriate skills and expertise are not inherent across the NHS, especially for technological innovations (including software). The NHS is generally risk averse and adoption of innovations in healthcare delivery requires more than just a simple financial case.

NHS Innovations South East has developed an on-line innovation awareness tool (OLIA) that is currently rolled out across the south east. OLIA provides a basic awareness of what innovation is and the benefits of adoption, both to the NHS and patients. It also provides a basic awareness of intellectual property and invention, as when innovations are adopted there are likely to be improvements, which should be captured and not lost. OLIA could be rolled out across the whole of the NHS and also easily developed further. (See Exhibit OLIA)

NHS Innovations South East has recently started supporting NHS trusts with business cases and financial analysis of one particular innovation, as some Trusts have struggled to understand an innovations benefits. This type of service should be provided across the NHS to develop the skills and expertise within NHS organisations. (See Exhibit VitalPAC)

2.2.1 Exhibit: OLIA

OLIA is a unique innovation awareness tool that is ready to be rolled out across the NHS in England now, on a flexible on-line delivery platform designed specifically for NHS Staff. It will contribute to the development of communities of change champions, moving the innovation culture away from being centrally driven and centrally funded to one of self determination, encouraging an entrepreneurial culture. OLIA will give staff the skills, support, networks and empower them to take action. Staff will appreciate that their ideas have value and can result in innovative products and services, and that innovation adoption can benefit patients and the NHS.

With its broad innovation focus, encompassing acute and primary care environments, OLIA is able to appeal to all levels of staff, regardless of their role within the NHS.

OLIA is based on an e-learning framework, and is designed to be light and enjoyable, rather than a heavy learning experience. OLIA currently has eight modules which can be accessed over the web, either at home or in the office: in future, it will be expanded to include new modules and be tailored to NHS staff in different environments. It is designed to be interactive and can be completed in one sitting of 2 hours or spread over several weeks. Its primary aim is to raise awareness of ideas, how they can be used to benefit patients and the NHS and give some indication of first steps in the innovation cycle. OLIA also makes NHS staff aware of the impact that innovations can have when adopted, for the benefit of patients and the NHS.

2.3 Need for a complete spectrum of Innovations

The NHS National Commissioning Board needs to recognise and accept that small innovations can have a significant impact across NHS as a whole, and engender a culture where these innovations are adopted and diffused, along with aligning levers across the system. A large number of small innovations will ultimately have a big effect, and relying on a few big innovations is a risky approach. (See Exhibit ALERT)

Key message “lots of small innovations will help to embed Innovation in NHS culture “a few big ones risks reinforcing a culture of Innovations as things that are done to us NHS staff and organisations by the centre (e.g. CfH).

There are innovations that are not adopted because of barriers within the NHS, this includes:

• awareness of the innovation (NHS Evidence should help, but is unlikely to have the capacity to cover small innovations);
• the innovation benefits not being understood or communicated;
• benefits accruing elsewhere in system (perverse incentives i.e. tariff);
NHS having to change significantly to implement innovation which it is unable or unwilling to do.

An innovation that has failed to be adopted, but which has a significant benefit is COUNT, a medicines management tool. (See Exhibit COUNT)
The whole innovation pathway needs to be supported, from idea to diffusion; innovators are usually the first to adopt an innovation (Rogers). A holistic approach to innovation needs to be taken, enabling small innovations to be adopted and diffused; this requires a culture change and support as well as incentives. All of the variables affecting the rate of adoption of innovations need to be considered (Rogers p222 ff): levers need to be aligned: communication, awareness, metrics, incentives (positive and negative), adoption skills and expertise, culture “risk taking, acceptance of failures, and time and space (c.f. 3M practice of enabling staff to have time for their personal innovation). The innovative culture needs to become systemic and recognised that it has to become part of the day job.

2.3.1 Exhibit: ALERT®: Acute Life-Threatening Events “Recognition and Treatment
In 1999, Portsmouth Hospitals NHS Trust decided to develop a short (one-day) course to help trainee doctors, junior ward nurses and some allied health professionals recognize and respond better to impending clinical deterioration, the management of simple disorders and other aspects of the delivery of acute care. That course, ALERT® (Acute Life-Threatening Events - Recognition and Treatment), has now run successfully at Portsmouth Hospitals since the beginning of 2000 and in approximately 190 other centres in the UK and overseas. Since May 2000, more than 180,000 UK healthcare staff have received ALERT training. The course is aimed at all personnel involved in clinical care but particularly doctors, nurses and some physiotherapists

It is now widely recognized that some in-hospital cardiac arrests, intensive care unit admissions and even deaths are avoidable. Regrettably, patients can show signs of clinical deterioration for many hours, without these necessarily being detected or adequately treated by ward staff. That failure to get the basics right “ensuring that the patient’s airway is not restricted, that their breathing and circulation are not impaired, that their oxygen therapy and fluid balance are right” can seriously undermine acute care. ALERT® is a one-day focused training course intended to help healthcare professionals, particularly junior medical staff and nursing staff, recognize and respond better to impending clinical deterioration.

The ALERT® training package has the potential to reduce the number of life-threatening adverse events experienced in hospital settings and their associated costs. The effect of the training package is expected to impact on the number of patients admitted to intensive care units and the risk of mortality experienced in those units. An analysis by York Health Economics Consortium considered the impact of the ALERT training system on ICU admissions. Due to the high costs associated with critical care and intensive care admissions, even a small reduction in admissions can generate significant savings. If we assume that 50% of eligible staff attend and implement the ALERT programme in their trust and that up to 20% of admissions to intensive care are avoidable, then the potential savings are in excess of Â£26M per year (Potential life-threatening events avoided: 351; Potential ICU/CCU admissions avoided: 1,634).

The economic analysis assumes that ALERT is adopted across the NHS to a certain level, and this clearly demonstrates that the benefits of a small innovation can have a significant effect across the NHS, let alone for patients. However, an individual NHS organization will only see a small fraction of this cost avoidance and may not adopt because its focus or priority is elsewhere or it does not recognize the significance.

2.3.2 Exhibit: COUNT©
COUNT© is another of those apparently simple ideas that has enormous potential; one that costs very little to implement but could improve patient care, reduce admissions to hospital and save the NHS a lot of money. A sure-fire winner, you might think? So far, unfortunately, this highly-promising innovation has come to nothing.

Conceived by the pharmacy team at Guildford and Waverley PCT in Surrey, COUNT© was
designed for patients in the community who were at risk of hospital admission. The idea was to train the intermediate care staff and other healthcare professionals visiting those patients in their homes to carry-out a simple assessment / medication review. There are many reasons why patients in the community may not get the best out of their prescriptions. The five most common gave rise to the name of the new service:

Confusion: Patients are unsure how much medicine to take or when to take it.
Over-ordering: Patients over-order, resulting in stockpiling, sharing or overuse.
Unable to open: Patients are unable to unscrew lids on bottles or open foil packs.
Not taking medicines: Patients are either forgetting or choosing not to take their medicine.
Too many journeys: Patients have difficulty collecting all the medicines they need.

Under the COUNT© programme, the intermediate-carers making home visits to patients could either assist patients with their problems immediately or, if necessary, refer them to the pharmacy team. A pharmacist would then visit, conduct a full medication review and discuss the medications and any problems - with the patient and their family / carers. This was intended to help the patients get the best out of their medicines;
 reduce unnecessary prescribing (the team estimated that, in their PCT area alone, prescribed medicines worth between Â£1.5m and Â£2m were going to waste each year).
reduce the number of admissions to hospital.

Trials showed that COUNT© was more effective than other medicine management™ schemes in reducing hospital admissions and cutting down levels of wasted™ prescriptions; it™s success probably due in part to the pro-active way in which COUNT© engaged with GPs™ who generally gave it their full support. The service was also extremely well-received by patients, intermediate care services and other healthcare professionals and took first place in no fewer than three regional and national innovation competitions (in the Service Innovations category). An evaluation of one pilot scheme, working with just 158 patients, calculated the probable net cost savings of the scheme at Â£235,000 pa.

NISE worked with the pharmacy team to develop the COUNT© service further; our joint aims being to adapt it to the needs of a broader range of patients and to market the service throughout the NHS. However, two issues arose that prevented the widespread adoption and spread of COUNT©.

Firstly, the pharmacy team were unhappy about taking COUNT© forwards on a semi commercial basis. Several members of the team wanted to use the competition prize money to photocopy their notes and give it to their NHS colleagues. NISE recommendations was to use the prize money to develop a training package that could be sold to NHS colleagues, generating a small revenue to re-invest in upgrades and sustaining COUNT© beyond the initial prize money expenditure and assisting with adoption and spread. This model has been successfully used elsewhere in the NHS (i.e. ALERT). The second issue that arose to stifle COUNT© was that healthcare in Surrey was about to undergo a major re-organization with all the Primary Care Trusts being merged to form one super PCT™, which meant that all the pharmacists had to re-apply for their jobs. Half the eight-strong pharmacy team at Guildford & Waverley PCT left as a result of this process and though NISE tried to persuade the management team at the new super PCT™ to adopt and support the project, they declined to do so even though a number of other PCT™s and one SHA had expressed interest in licensing it.

So far, then, COUNT™s enormous potential is unrealized, despite close media attention and government concern. As Earl Howe said in the press release of 8th August at the setting up of a new group to tackle the Â£300 million being lost every year in the NHS due to medicine wastage, at least half of which is avoidable. We want to look at how patients can make the most of the medicines they take. This isn™t just about saving money; most importantly, it is about making sure that patient stay well and get the best from their medicines.
However, it is not necessarily a failed innovation; its “prime mover” now occupies a senior position in another PCT (outside the South East region) and is interested in developing a similar programme there. The potential benefits - for patients and the NHS “are so great that we can only hope the next COUNT® innovation takes place in a more stable and supportive environment and one that encourages sustainability, even if on a semi commercial basis.

4.1 Benefits realisation Programmes
One of the activities which is undertaken by NHS Innovations South East is in working with industrial partners (typically licensees of NHS innovations) to improve their understanding and the alignment of benefits their technologies can provide with the needs of NHS users; and to come up with better programmes to help NHS realise those benefits in practice.

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

5.1 Innovation is a Holistic process challenge
There is no “silver bullet” that will ensure innovations are adopted and diffused. The NHS Commissioning Board needs to take a holistic view of innovation and ensure levers and supporting initiatives are aligned to encourage culture change.

5.2 Orphan Innovations
Some innovations benefit only a very small number of patients. These should not be overlooked or ignored in the current economic climate, as not supporting them will have repercussions in the future. Some are niche and not commercially viable, but need support as the national wellbeing will be reduced without them.

5.2.1 Exhibit: OxCAT
Which comes first “patients or profits? In our experience, an innovation that is good for patients is likely to be profitable too. (Conversely, a healthcare product with no obvious patient benefits would be certain to fail commercially.)

Every so often, however, somebody presents us with an innovation which is hugely important but which offers little profit; an innovation which healthcare technology companies are unlikely to find commercially attractive “ or even viable. Take, for example, the Oxford Child Sexual Abuse Examination Skills Trainer, also known as OXCAT. The brainchild of Dr Sue King, an associate specialist in community paediatrics at the Oxford Children’s Hospital, OXCAT consists of a highly-sophisticated and technically-advanced anatomical model, plus supporting DVD, which can be used to train paediatricians and other authorized specialists when using specialist equipment (a colposcope) to investigate suspected cases of pre-pubertal Child Sexual Abuse (CSA).

Individual medical practitioners may take some time to acquire the experience and confidence they ideally need when called upon to make an assessment of pre-pubertal CSA. Assessment is difficult and the stakes are extremely high for everyone concerned. Because the stakes are so high and practical case-experience limited, realistic and effective training is of critical importance. However, much current training still relies on photographic and other illustrations and / or on the use of toys, such as dolls and even teddy bears. Dr King’s idea was to develop instead a highly-realistic anatomical model, suitable for use with a colposcope. The result, OXCAT, was launched a year ago to considerable acclaim from all the agencies involved in the important job of child protection; from paediatricians to police officers, solicitors to social workers. But whilst NISE was able to help Dr King find a company willing to manufacture the OXCAT “manikins” (Pharmabotics Ltd), we were never able to interest a commercial partner in the project at an earlier stage. Even now, in fact, there is no prospect of a long-term deal because OXCAT manikins cost a lot to produce;

Initial demand will be limited (in most cases, one manikin per training centre will suffice);

There is little prospect of significant repeat business or greatly-increased future demand.

Why, then, should any private sector company have invested a lot of time, money and expertise in developing OXCAT and bringing it to the market? Quite simply, they shouldn’t and
didn’t. However, NISE did. Thanks to our (part) public funding, we were able to support the development of OXCAT from first principles through to production, secure in the knowledge that whilst it may not make a profit, it offers huge benefits for all those involved in the diagnosis, treatment and prosecution of child sexual abuse – not least the young victims themselves. And there are economic benefits too; OXCAT is expected to deliver significant cost-savings to the UK taxpayer, by generating savings in the NHS, and in children’s services and in the criminal justice system.

However, few children who are maltreated ever receive official attention - studies that link self-reports to official statistics for child protection provide direct evidence of under-reporting to agencies (Gilbert et al., 2008). One study found that only five per cent of children who were physically abused and eight per cent of children who were sexually abused had contact with child-protection services (MacMillan et al., 2003, cited in Gilbert et al., 2008).

Statistics

A study by the NSPCC which directly surveyed young adults in the UK (18-24 years old) found that as many as 16 per cent had experienced serious maltreatment by parents during their childhood (Cawson, 2002). In addition one per cent of children aged under 16 experienced sexual abuse by a parent or carer and a further three per cent by another relative; 11 per cent experienced sexual abuse by people known but unrelated to them; five per cent experienced sexual abuse by an adult stranger or someone they had just met (Cawson, 2000). In high-income countries 4-16 per cent of children are physically abused, one in ten is neglected or emotionally abused, and 5-10 per cent of girls and up to five per cent of boys are exposed to penetrative sexual abuse (Gilbert, et al., 2008).

In 2008, 34,000 children in the UK became the subject of a child protection plan (this represents 27 children per 10,000 of the population aged under 18). Of these, 45 per cent became the subject of a plan under the category of neglect, 25 per cent under emotional abuse, and 15 per cent under physical abuse (DCSF, 2008).

References:

DCSF, 2008. Statistical first release “referrals, assessments and children and young people who are the subject of a child protection plan, England” year ending 31 March 2008.London: DCSF

We would like to be able to follow up interesting comments and case studies. Can we contact you for this purpose?

Yes

Do you want to be kept in touch with the next steps in this process?

Yes

Do you want to be included in a wider community of interest?

Yes

What specific actions 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?
3.1 Working with Clinical Commissioning Groups on Innovation

Clinical Commissioning Groups (CCGs) need to be aware of innovations that can have an impact on their local community, so need awareness of, and access to, horizon scanning services and also the ability to encourage providers to implement particular innovations. The challenge for CCGS will be finding innovations and evaluating their impact; specialist facilitating organisations should be able to assist them. This is a role which could well be met by an organisation with local awareness and networks (including links into national networks) such as NHS Innovations South East.

3.2 Support at local level for Implementation

Providers need support to implement innovations, particularly in the early stages of culture change and where the NHS does not have the appropriate skills and expertise.

3.2.1 Exhibit: Technology adoption - VitalPAC

**Background**

VitalPAC is a real-time, mobile “Track and Trigger” information system that monitors patient condition and quickly identifies deteriorating patients, and enables healthcare professionals to capture vital signs electronically at the bedside. The system analyses vital signs together with other clinical data and provides risk scores and assessment. This allows clinical staff to identify the acutely deteriorating patient and escalate any intervention in a timely manner. VitalPAC improves clinical outcomes.

VitalPAC contains a growing number of clinical and operational modules, each of which provides real patient and operational benefits. The modular approach allows VitalPAC to be customised for each customer and provide support to relevant areas of need within the clinical environment. Together with “Patientflowâ€” technology, VitalPAC can support bed management and clinical effectiveness across an organisation.

Existing VitalPAC customers are using the wide capabilities of this technology to inform service redesign and support productivity and efficiency changes.

**The Adoption Challenge**

The VitalPAC solution developed by The Learning Clinic is a disruptive innovation with the potential to transform local models of healthcare delivery and identify efficiencies / inefficiencies within a provider environment.

Potential customers are frequently challenged with understanding the implications of implementing VitalPAC, often into a lean environment that has already been subjected to improvements in clinical practice and processes. In certain instances, existing technology or partial solutions can create an avoidable barrier to adoption.

Customers are also challenged by understanding whether implementing VitalPAC within their organisation would be cost-effective, affordable and offer value for money.

**Role of NHS Innovations South East in support of adoption**

NHS Innovations South East (NISE) has been supporting healthcare innovations across the NHS and small business community since 2004. VitalPAC was first designed by The Learning Clinic, in conjunction with Portsmouth Hospitals NHS Trust in 2006. NISE has continued to support Portsmouth staff with their innovations and emerging technologies.

In 2010 NISE was commissioned by the South Central Strategic Health Authority to develop a business case template and cost-benefit tool to assist with the assessment and adoption of VitalPAC into regional NHS provider organisations.

A key driver to the adoption has been to provide potential end users with the means by which any investment can be justified and the development of a detailed appraisal of the cost-benefit and risk profile associated with the technology solution. This is provided independently of any supplier with evidence from existing VitalPAC customers.

NISE currently provides a business case support service to NHS clients seeking to assess the suitability of VitalPAC for their organisation. Different tiers of support are available depending on the specific needs of the customer. This ranges from cost-benefit analysis, including modelling...
future outcomes, to full business case development. NISE provides a thorough examination of client benefits within their specific environment and provides an independent and objective assessment of the suitability of the technology, cost-effectiveness and value for money.

This new service from NISE can help overcome barriers to adoption by enabling the NHS to understand the benefits of innovations more clearly. However, this type of support is not always as clearly self funding as in this example.