NHS
England

BUILDING A
KNOWLEDGE ENABLED
NHS FOR THE FUTURE

By putting into practice what we know from research, from data analysis and from experience we will have a bigger impact on health and healthcare than any drug or technology likely to be invented in the next 10 or 20 years – that's the importance of knowledge management to the NHS.[1]

Sir J. A. Muir Gray,
Director of the National Knowledge Service

[1] Knowledge Management in the NHS.
http://www.ksslibraries.nhs.uk/elearning/km/kmf/km_framework/muir_gray/muir_gray.swf
Accessed 05/11/15

Contents

BETTER KNOWLEDGE, BETTER CARE

Executive summary

To inform improvement and transformation in the NHS now and into the future, this report looks back at how the role of Knowledge Management (KM) in the NHS has developed over the past two decades and the drivers which have encouraged this development. It draws on conversations held with some of those who have held KM roles in the NHS and reflects on how KM approaches have been utilised in different areas of the NHS.

The report identifies the successful characteristics of a knowledge-enabled organisation and how and why these can encourage knowledge sharing behaviours. In the context of describing how KM was adopted in the NHS from the business world, it identifies the benefits of a knowledge-enabled organisation and the barriers which have challenged its widespread adoption in the health sector since. Reflecting on past initiatives, and drawing on examples of successful KM in the NHS, this report concludes with recommendations on the best way for KM to support the NHS' future success.

They are grouped around:

- building knowledge sharing and learnig capability
- developing leadership to build a knowledge sharing culture
- building a repository of knowledge and learning success stories
- supporting communities and networks to share knowledge
- utilising technology to share knowledge

Sharing learning and best practice approaches and making decisions based on accessible, up-to-date evidence will enable the NHS to be more efficient and offer the best care. KM approaches can support the sharing and replicating of great ideas and the adoption of innovative approaches to improve care and services.

Jeremy Hunt set out a 25 year vision for the NHS at the Kings Fund in July 2015 which included the following principles:

- continued focus on safety and quality of care
- emphasis on transparency and patient power
- the NHS to be the world's largest learning organisation

Effective knowledge sharing and learning are required for each of these components. Fast adoption of successful methods will see the spread of innovation and create a more efficient, safe and responsive service:

"The world's fifth largest organisation needs to become the world's largest learning organisation. That learning will be as much about efficiency as it is about quality, given the tight financial constraints we face."

"Our focus should be different: not top-down targets but transparency and peer review; learning and self-directed improvement that tap into the basic desire of every doctor, nurse and manager to do a better job for their patients;"[2]

Jeremy Hunt

[2] Jeremy Hunt NHS REFORM IN 21st CENTURY Kings Fund 16 July 2015. https://www.gov.uk/government/speeches/making-healthcare-more-human-centred-and-not-system-centred. Accessed 05/11/15.

What is knowledge management?

"Knowledge has become the key economic resource and the dominant - and perhaps even the only - source of competitive advantage."[3]

Knowledge can be defined as the combination of valuable, contextual, personal experiences and evidence or information – a combination of tacit and explicit knowledge. It has the potential to ensure that the right decision is made, confidently based on learning from past experience: hindsight is 20/20 vision.

KM is regarded as a key component of a successful organisation: knowledge, available to all in an organisation, is a valuable resource which when utilised effectively provides organisations with a competitive edge. Peter Drucker said:

Effective utilisation of KM approaches can potentially bring improvements to many areas:

- **PERFORMANCE:** avoids replicating errors and increases speed of adoption of 'best practice'.
- **CULTURE:** improves networking, collaboration and connections between staff.
- **LEARNING:** develops good practice and access to learning and experience.
- **INNOVATION:** connections encourage disparate ideas to come together.[4]

Re-organisation has been a feature of the NHS in recent years and it directly affects organisational knowledge: subject matter experts leave or move due to the uncertainty and upheaval and are no longer accessible to those who need their expertise; content is often lost as repositories and websites are replaced by new ones.

NHS England has recognised in its Five Year Forward View that there is "no appetite for further structural reorganisation"[5]. It describes a clear change in approach which focuses on sharing and spreading the best solutions on a peer-to-peer basis and in so doing, promotes effective KM behaviours:

"Our goal is to make rapid progress in developing new models of promoting health and wellbeing and providing care that can be replicated much more easily in future years. Achieving this goal involves structured partnership rather than a top-down, compliance-based approach."[6]

The Forward View into Action – Planning for 2015/16

So, now and in the future, in order to bring about the necessary change and improvements, in an era of relative structural stability, the focus needs to be on enabling how individuals, teams, organisations, partners and stakeholders can interact and share their most valuable resource: knowledge.

---

[3] Peter Drucker Post-Capitalist Society. New York, Harper Business 1993
[4] NHS Connecting for Health: Knowledge Management
[5] P28 Five Year Forward View. October 2014. NHS England, Public Health England, Monitor, Health Education England, Care Quality Commission, NHS Trust Development Authority.
[6] The Forward View into Action – Planning for 2015/16. December 2014.NHS England, Public Health England, Monitor, Health Education England, Care Quality Commission, NHS Trust Development Authority.

Overview of knowledge management in the NHS

"We have managed money and buildings and people and energy. Now we need to manage the most precious commodity of the 21st century – knowledge and know-how."and peer review; learning and self-directed improvement that tap into the basic desire of every doctor, nurse and manager to do a better job for their patients;"

Sir J A Muir Gray[7]

Sir Muir Gray's 1998 article highlighted the increasing need for someone to manage knowledge in the NHS; advances in technology had resulted in magnified volumes of information which could no longer be effectively dealt with by individuals alone. He identified this role as the Chief Knowledge Officer (CKO); someone who would take overall responsibility for ensuring that timely, relevant knowledge - 'the most precious resource of all' – was utilised to inform all decisions, ultimately ensuring the best outcomes for patients and carers.

In the late 1990's, the focus in the NHS was on the management of library resources and ensuring a coordinated approach to accessing information resources across all healthcare organisations. A Health Services Guideline[8], published in 1997 for Library & Information Services stated that there was a need for all trusts and health authorities to develop a library and information strategy because:

"Access to the health knowledge base is essential to the delivery of high quality health care"

From then onwards, the focus would be on ensuring region-wide coordination and funding of available resources; the management of explicit knowledge – evidence - rather than the effective sharing of experience, insight and expertise – tacit knowledge. However, the emerging role of the CKOs and library and knowledge services would begin to see promotion of knowledge sharing behaviours too.

For example, the NHS Executive report: 'Information for Health – an Information Strategy for the Modern NHS 1998-2005' published in September 1998, recommended the development of a national electronic library for health (NeLH) in response to the constantly growing knowledge base:

"In relation to the professional knowledge base, NHS professionals cannot possibly retain in their heads all current and emerging knowledge about the work they do."[9]

[7] Where's the Chief Knowledge Officer? Sir J A Muir Gray, BMJ Vol 317, September 1998
[8] NHS Executive. Health Service Guidelines 97(47) November 1997
[9] Section 3.53, Information for Health: an Information Strategy for the Modern NHS 1998-2005 NHS Executive September 1998

In parallel, support began to develop for KM services. The National Knowledge Service was established in 2003 by the Department of Health to support the delivery of high quality information to staff and patients and to develop a strategic approach to NHS knowledge and information services. The KM Specialist Library was developed as part of the National Library for Health (successor to the NeLH) and provided KM support and examples of good KM practice, relevant to health care settings.

By the time that the World Class Commissioning (WCC) programme was launched by the DH in 2007 there was an awareness of the need for KM skills in front-line services. The WCC programme identified the need to "manage knowledge" as one of its 11 organisational competencies[10], and primary care trusts (PCTs) were required to demonstrate that they were basing their decisions on sound knowledge and evidence. As a result, a number of KM initiatives to increase skills and expertise were developed to support the strategic health authorities (SHAs) and PCTs.

Chief knowledge officers in the NHS

A major review by Professor Peter Hill of NHS Health Library Services in England was published in 2008.

Sir Muir Gray, in his introduction to the Hill report, stated that complex healthcare could not be addressed by introducing more complex bureaucratic structures and, instead, the coordination of complex health demands should be based on knowledge:

"A new type of authority will be highly influential in 21st century healthcare – sapiential authority, that is, authority derived from knowledge……Library services play a vital part in any knowledge economy."[11]

Within the report, Professor Hill acknowledged the key role of knowledge in the NHS and referred to the development of CKOs in other organisations, and the important role they play:

"The success of organisations in this economy depends on the ability of their leaders to create a culture and style where knowledge is valued, nurtured and used."[12]

[10] https://www.rcn.org.uk/__data/assets/pdf_file/0018/270801/1.7.2_World_class_commissioning.pdf. Accessed 05/11/15
[11] Authority in the NHS. Report of a National review of NHS Health Library Services in England: From knowledge to health in the 21st Century. Professor Peter Hill, March 2008
[12] Section 2.17 Hill Report

He went on to say:

"In the changing, and sometimes fast-paced, environment of health care, on occasions health professionals sometimes need instant access to the best possible evidence."[13]

This statement clearly echoes this definition of KM:

"…the right knowledge to the right people at the right time …to be translated into action to improve the organisational performance."[14]

Nine years after Sir Muir Gray proposed a role for CKOs in the NHS, Peter Hill's recommendation to introduce CKOs to the NHS was intended to ensure that knowledge strategy became central to the organisational strategy:

"The KM strategy needs to be aligned with organisational strategy, and needs to address, amongst other things, developing the organisational culture."[15]

Within the Hill report, the CKO was identified as a senior manager, responsible for steering development of a KM strategy, including library services, and ensuring that it was aligned with the organisation's strategy. The team knowledge officer (TKO) was intended to disseminate the skills for the effective use of evidence at a team level; to facilitate knowledge sharing; and to connect with others in the NHS and beyond to share best practice in the use of knowledge and experience. A member of the organisation's library team was envisaged as the ideal candidate for the TKO role.

What is a Chief Knowledge Officer?

"CKOs are becoming the driving force behind the KM initiatives within today's organisations… CKOs are moving organisations towards improvements in efficiency, effectiveness and significant cost reduction."[16]

Chief knowledge officers in large organisations were responsible for managing "effectively what they know about what they do."[17] They are responsible for the development of a KM strategy which was closely aligned to the business objectives of the organisation. TTheirrole focusses on increasing the organisation's intellectual capital by levering employees' tacit and explicit knowledge. The development of a more knowledge-enabled workforce, through knowledge capture and re-use, ultimately leads to overall organisational improvement.

[13] Section 3.11, Hill Report
[14] O'Dell C and Grayson CJ (1998), If only we knew what we know: identification and transfer of best practices Free Press
[15] Section 10.4, Hill Report
[16] M. M. Nadeem. Maximising Return on Investment (ROI) in a Global Market: Chief Knowledge Officer (CKO) Adding Value by Connecting People, Technology and Processes. The Second International Conference on Innovations in Information Technology (IIT'05)
[17] Bill Kaplan. Creating Long-Term Value as Chief Knowledge Officer. KM Review Vol 10 Issue 4 September/October 2007

Blending knowledge from evidence and knowledge from experience

KM skills were increasingly becoming a widespread part of the NHS library and information professional's skillset. The National Service Framework for Quality Improvement for NHS Funded Library Services in England (2008) reflected the Hill report's recommendation for skills' development in the library services. Outcome 1.2 of the Library Quality Assurance Framework (LQAF), managing knowledge, refers to sharing of best practice as well as the access to resources:

"Knowledge is derived from three sources: research, data and the body of experience of patients and health professionals. Knowledge management is concerned with mobilising the knowledge base of health care in a form that health professionals can use and apply."[18]

The 2012 revision of the LQAF subsequently included a new section on KM criteria:

"Members of the library and knowledge services team have an active role in the creation, capture, sharing and adoption of knowledge across the organisations served."[19]

The Darzi report: High Quality Care for All - NHS Next Stage Review Final Report[20] was also published in 2008. It included, as part of its recommendations, a renewed focus on quality improvement, and emphasised the importance of all clinicians using the evidence base to inform their practice.

Lord Darzi recommended the introduction of NHS Evidence to ensure easy access for all NHS staff to authoritative evidence.

Following the publication of the Darzi report, the NLH moved from the NHS Institute for Innovation and Improvement to the newly formed NHS Evidence. Within the NLH KM Specialist Library there had been a focus on KM approaches and how to share knowledge and expertise; NHS Evidence was focussed on ensuring access to clinical and non-clinical evidence.

Although the NHS Evidence focus was on availability of evidence, there remained a drive to develop knowledge sharing behaviours and ensure KM was part of the core NHS business. The concept of CKOs was widely adopted in the SHAs following 2008 and their development was supported by the NLH initially and by the NHS Institute for Innovation and Improvement, as the owners of the NLH, who developed role profiles and defined responsibilities for CKOs and TKOs.

Between 2008 and 2010, various working groups and conferences took place for CKOs. CKO events included people who had not previously been directly connected with health libraries but had a real appetite for mobilising the evidence base and sharing learning and experience. During 2009, regional CKO meetings and networks were introduced, with some regions reporting up to 70% of their NHS organisations having a CKO in post.

[18] Outcome 1.2, National Service Framework
[19] M. Section 5.4, NHS Library Quality Assurance Framework (LQAF) England version 2.2, NHS SHALL 2012
[20] High Quality Care for All NHS Next Stage Review Final Report Department of Health report prepared by Lord Darzi (2008)

CKOs received support from SHAs and local library services which helped to raise their profile. In some regions, the appointment of a CKO became a Trust requirement. During this period, there was a drive to harness both knowledge from evidence and knowledge from experience.

KM teams existed in other NHS organisations, including NHS Connecting for Health, the NHS Institute and within service improvement teams of some SHAs. Although primarily focussed on supporting their organisations with KM initiatives, many of their KM approaches and tools and techniques were adopted by the wider NHS.

For example, the NHS Connecting for Health KM team, subsequently the Department of Health Informatics Directorate (DHID) KM team developed learning resources, including a KM framework and postcards. These resources are still available via the successor organisation, the Health & Social Care Information Centre (HSCIC). One KM approach which was effective in supporting the NHS KM community to share knowledge and good practice was the NHS Connecting for Health eSpace online community which closed in 2012 after nine years.

The NHS Institute for Innovation and Improvement which was established in 2005 and incorporated legacy organisations including the Modernisation Agency, focussed on ensuring KM approaches, such as knowledge sharing and continuous learning, were incorporated into the service improvement programmes developed by the NHS Institute.

KM in the NHS following the 2012 reorganisation

Following the general election in May 2010 a major restructure of the NHS followed from the Health & Social Care Act 2012. One side effect was that the momentum and focus on CKOs diminished substantially. Although there are still some organisations with a CKO role, there is now no national coordination or support.

New national organisations including Health Education England (HEE) and Public Health England (PHE) have taken a proactive approach to KM. The vision of the CKO's directorate of PHE, for example, states:

" In our capacity as leader for informatics for public health, PHE will furnish public health workers across the system with the knowledge, skills and tools to make the right decision at the right time based on the best available evidence. "[21]

Library & Knowledge Services (LKS) moved from the now defunct SHAs to HEE. Their framework for the development of library and knowledge services in NHS England was published in December 2014. Their vision states:

" NHS bodies, their staff, learners, patients and the public use the right knowledge and evidence, at the right time, in the right place, enabling high quality decision-making, learning, research and innovation to achieve excellent healthcare and health improvement."[22]

Following the Department of Health's 2010 review of its arms' length bodies (ALB), the NHS Institute for Innovation and Improvement was removed as an ALB. A new organisation, NHS Improving Quality, part of NHS England, was created in 2013 incorporating the NHS Institute and other former NHS improvement organisations with a remit to develop NHS capability for:

" Rapid sharing and spread of improvement knowledge and expertise, both implicit and explicit."[23]

NHS Improving Quality's Knowledge & Intelligence Strategy, delivered in 2014, aimed to support colleagues across the health and social care system, including staff in NHS Improving Quality and NHS England, and to equip them with effective knowledge management tools.[24]

[22] Knowledge for Healthcare: A Development Framework for NHS Library & Knowledge Services in England 2015-2020. Published by Health education England December 2014
[23] NHS Improving Quality: Our Strategic Intent. Published March 2013
[24] Knowledge & Intelligence Strategy for NHS Improving Quality: Growing Knowledge. Produced April 2014

Great Ormond Street and Ferrari pit stops; learning from other industries

In 2003, surgeons at Great Ormond Street Hospital were watching a Formula One race on television, following a long morning performing heart surgery. They realised that the pit changeovers bore striking similarities to the patient handover from theatre to the intensive care unit (ICU) following surgery: a team of professionals with clear roles working together to complete a complex task as quickly and as safely as possible.

A professional interest in sharing knowledge led to the theatre team observing the Formula One pit changeover team in action and subsequently reviewing the processes with the help of a human factors expert.

Following a detailed study of the synchronised tasks undertaken during a pit changeover, the theatre team undertook a process akin to a learning cycle process: an observational study comparing the hospital handover team with the Formula One changeover team approach; development of a straightforward, reliable easily trainable handover protocol for use in the hospital; trials of the new procedures and then a post-event review.

Elements of the Formula One changeover process were adopted in the protocol: defined in-charge team member; clear allocation of tasks; defined sequence of tasks; and clear communication channels. This orchestrated process ensured a systematic transfer from the operating theatre to the ICU with a time-effective changeover of equipment, patient information and operation details.

The theatre team observed and learnt from the Formula One team 'in situ' and then combined this situated learning with their own contextual expertise to create an innovative approach, focussed on safety and speed. Unlike the Formula One team which has a very low staff turnover, staff rotation at Great Ormond Street hospital results in high turnover, so rather than rehearse the tasks as the Formula One team do, the hospital created a checklist for the handover protocol, used for each theatre admission.

Between 2003 and 2005, fifty post-surgery patient handovers were assessed. Reductions in technical errors, omissions in information handover and duration of handover were all noted. The introduction of a handover protocol, which encapsulated a formalised checklist of processes, led to improvements in all aspects of the patient handover.

Challenges facing KM adoption in the NHS

KM – whether narrowly defined as mobilising the evidence base, or more broadly defined as covering learning and experience - can be seen as an ever present activity of the NHS for the last two decades. However, it has not delivered the rewards expected in terms of efficiency and quality. That experience tells us there are several challenges to successful knowledge sharing behaviour which need to be addressed if the NHS is to benefit from KM in the future:

Reorganisation

Reorganisation increases the challenge facing the adoption of knowledge sharing behaviours in the NHS: it leads to a loss of corporate memory with previously known subject matter experts no longer in their roles, legacy websites closed down, loss of trust amongst employees - essential to knowledge sharing - due to upheaval and uncertainty, and robs momentum from knowledge initiatives.

KM and business goals

As a public sector organisation, the N HS faces some specific barriers to the widespread adoption of KM. These include an expectation that the organisation performs in accordance with national health policies, rather than internal goals. This can make it particularly difficult to align internal KM measures - which ideally need to be people-focussed - with national measures. Similarly, unlike a private sector organisation which is focussed on quantifiable profit goals, the NHS is focussed on more intangible goals such as public satisfaction and it is therefore harder to quantify a return on investment for a KM spend.

There are few examples of successful KM initiatives in public sector organisations and the lack of case studies has resulted in a lack of practical guidance on how best to implement KM in the NHS.[25]

Culture

There is an ongoing challenge of encouraging knowledge sharing across a diverse range of NHS organisations and professional groups, each with its own distinct culture and trust networks. This inevitably makes it challenging to adopt a widespread culture of sharing behaviour. There tends to be less support for evidence usage in the service once training is completed. Medicine is about 'hard' science where right and wrong is clearly defined – it is not as responsive to new, human-centred approaches.

Equally, target driven cultures and top down initiatives that fail to engage staff are not conducive to creating a knowledge sharing and learning culture.

" Our focus should be different: not top-down targets but transparency and peer review."[26]

Jeremy Hunt

[25] Lessons from the business sector for successful knowledge management in health care: A systematic review
Anita Kothari, Nina Hovanec, Robyn Hastie and Shannon Sibbald BMC Health Services Research 2011, 11:173
http://www.biomedcentral.com/1472-6963/11/173
[26] Jeremy Hunt NHS REFORM IN 21st CENTURY Kings Fund 16 July 2015

Introduction of change

The adoption of the CKO role failed to achieve sustainability despite good initial uptake. Effective change requires discussion and co-production with staff rather than 'top-down' implementation. One challenge for the future is how to effectively introduce and sustain a knowledge sharing culture and its incumbent roles for the long term.

Technology

Technology remains a barrier to knowledge sharing in the NHS due to lack of budget, capability and appetite for technology. Although successful KM now relies more on people-centric initiatives, rather than the technology-centric approaches of the early 1990's KM, technology is still recognised as a key enabler for widespread sharing of KM initiatives.

Focus on explicit knowledge

Evidence-based health care has ensured that the focus within the NHS has been weighted towards explicit knowledge, such as journals and reports, rather than tacit knowledge, such as experience-based best practice. As a result, NHS staff have tended to associate KM with information and data and not appreciated the value of shared expertise.

University College London Hospitals and after action reviews (AARs)

"By ensuring that the experiences of staff are valued, AARs can inform and guide future action to improve patient safety and care." [32]

Gerard Cronin and Steven Andrews

University College London Hospitals (UCLH) NHS Foundation Trust had a clear ambition to build a learning culture for its staff. They identified after action reviews (AARs) as an effective means to encourage the continuous learning environment required to bring about changes in healthcare.

The AAR training programme was pioneered in 2008, and by 2009 four hundred staff had been trained as AAR facilitators to carry out reviews in a variety of situations. Since the launch, staff from more than ten other NHS organisations have requested information about the AAR model.

The AAR process is built around four questions:
• What was expected to happen?
• What actually happened?
• Why is there a difference between these?
• What has been learned?

However, it is the shared narratives of what happened, provided in answer to these questions, which is of importance, rather than the final outcomes. An understanding of how the process works is essential and the facilitator is crucial to ensuring that the participants understand what is expected of them and the stages of the review. Participants should agree significant insights and learning points during the review and this will encourage them to collectively learn from the reflection.

During a visit to UCLH in June 2013, the Health Secretary, Jeremy Hunt, praised UCLH for outstanding patient safety. The Chief Executive, Sir Robert Naylor, acknowledged the role of education and training in achieving this result:

"…this direction was influenced strongly by governors and driven by clinical leaders. This is supported by a programme of education and training, including the surgical safety checklist and after action reviews." [33]

Sir Robert Naylor

[32] After Action Reviews: a New Model for Learning Gerard Cronin & Steven Andrews. Emergency Nurse, June 2009 vol 17 no. 3
[33] https://www.uclh.nhs.uk/News/Pages/HealthsecretarypraisesUCLHforoutsandingpatientsafety.aspx Accessed 5/11/2015.

The NHS as a knowledge-enabled organisation - why now?

The importance of learning from mistakes and sharing knowledge has been reinforced in several recent reports, undertaken in response to failings in patient care. Professor Don Berwick's review, following the publication of the Francis Report into the breakdown of care at Mid Staffordshire Hospitals, identified the importance for the NHS to learn continuously:

" The NHS should continually and forever reduce patient harm by embracing wholeheartedly an ethic of learning.

" The NHS should become a learning organisation. Its leaders should create and support the capability for learning, and therefore change, at scale, within the NHS."[27]

The importance of learning for continuous improvement has also been recommended in recent reports. The Rose Review, published in June 2015, defines the skills that NHS staff need in order to effectively carry out the recommendations proposed by reports such as the Five Year Forward View, and to make the proposals a reality. In addition to emphasising the importance of learning and leadership development, the Rose review acknowledges the importance of peer learning and developing experience-based knowledge:

" Recommendation 17: Create NHS wide comment boards. Website and supporting technology to be designed and implemented to share best practice."[28]

In parallel to a need to change and improve, the NHS is currently facing its greatest financial challenges, and increased efficiency – doing better with less money – is essential. Sharing of best practice approaches can ensure that the most efficient method is used, and can also enable improved approaches to be adopted at pace and scale.

The Five Year Forward View report acknowledged that continuous reorganisation and restructure was not the answer. Instead, there is an opportunity to develop the connections and sharing culture conducive to knowledge sharing, and which can support the NHS in its quest to develop as a learning organisation. In order to support the vision of an integrated health and care system, connections must be encouraged and collaboration developed across the health, social care, and voluntary sectors and this includes connections to patients and public.

[27] p5. A Promise to Learn – A Commitment to Act; Improving the Safety of Patients in England. The National Advisory Group Report (chaired by Professor Don Berwick) August 2013
[28] Better Leadership for Tomorrow: NHS Leadership Review. Lord Rose. June 2015

Developments in web-enabled healthcare can help promote a knowledge sharing culture. Forums and social media are increasingly being used to share experiences, lessons and case studies throughout the NHS. These can help individuals share and create tacit, contextual, experience-based knowledge resources. Web-based knowledge resources are also beneficial to supporting patients take control of their healthcare.

NHS Improving Quality's White Paper[29] acknowledges that the NHS needs to take a different approach to change. It describes a vision where the individual has the power to create change as a bottom-up approach; to build networks to share knowledge and experience; and to identify the importance of tacit knowledge, best practice that contains contextual expertise, as a valuable component of performance improvement.

All these aspects align with KM approaches and will help to support adoption of KM measures as a means to create sustained change in the NHS. Now – more than ever – to build a learning organisation, a knowledge sharing culture, mobilise the evidence base and utilise the power of connections through networks and social media the NHS must adopt a systematic approach to knowledge.

---

[29] The New Era of Thinking and Practice in Change and Transformation: A Call to Action for Leaders of Health and Care. H. Bevan and S. Fairman. NHS Improving Quality, July 2014

NHS Scotland and Knowledge into Action

The problem facing effective utilisation of evidence in healthcare is clear:

"It can take 17 years or more to translate research into frontline practice"[34]

NHS Scotland's Knowledge into Action strategy aimed to address this issue by developing its knowledge services into a network of knowledge brokers. The aim was to help front-line practitioners to apply knowledge, and for knowledge to become an intrinsic part of healthcare improvement.

Knowledge into Action provided an opportunity to integrate the library services with knowledge translation, quality improvement and other drivers such as safety. In order to ensure the skills required to put knowledge into action were in place, the Knowledge Broker Networks Capability Framework was developed. Skills such as entrepreneurial problem solving and adopting the role of service connector were included in the Framework.

The step change required to applying available knowledge was making it useable – making it applicable to the local context and incorporating local experience. This involved framing the issue and identifying the problem prior to searching for the evidence base. Then, in order to transfer the evidence into relevant knowledge, it had to be delivered to the front-line NHS staff in an accessible format and shared with others so that a best practice approach could be more widely adopted.

An example of a successful Knowledge into Action approach was the development of the National Sepsis Collaborative. A community of practice collaborated on the development of a mobile app utilising actionable knowledge. This project – the National Early Warning Score (NEWS) Sepsis Screening Tool - won the Scottish Health Awards Innovation Award in 2014 and was shortlisted for the British Medical Journal Awards in 2015.

---

[34] Balas EA, Boren SA. Managing clinical knowledge for health care improvement. In: Bemmel J, McCray AT, editors. Yearbook of Medical Informatics 2000: Patient-Centered Systems. Stuttgart, Germany: Schattauer Verlagsgesellschaft mbH; 2000:65-70.

Recommendations for a knowledge enabled NHS

There are success stories of KM in the NHS to build on. Equally, based on the experience of the past two decades, there are lessons to learn to achieve the vision of a knowledge-enabled NHS. However, there is an urgent and ongoing need to address these challenges if KM is to act as an effective enabler of healthcare improvement and transformation.

Recent reviews highlight the need to learn from the past, share knowledge and ensure continuous learning in the NHS. There is a strategic focus, identified in the Five Year Forward View and elsewhere, to become a learning organisation which effectively captures and shares past experiences and adopts learning into best practice for the future.

There is demand in the system to adopt a culture of collaboration, to develop new models of integrated and joined up health and care that cut across organisational and sector boundaries.

A knowledge sharing culture needs to be explicitly encouraged to ensure development of optimum healthcare knowledge: the merging of contextual, local knowledge and experience, with evidence-based resources.

Characteristics of a successful KM organisation

To drive forwards a systematic approach, it is important to know what excellent looks like. The KNOW Network's[30] MAKE awards - Most Admired Knowledge Enterprises - utilises a framework of eight knowledge performance dimensions which are known to promote effective KM behaviours:
- creating and sustaining a knowledge-driven culture
- developing knowledge workers through senior management leadership
- creating and delivering knowledge-based products/services/solutions
- maximizing enterprise intellectual capital
- creating and sustaining an environment for collaborative knowledge sharing
- creating and sustaining a learning organisation
- creating value based on stakeholder knowledge
- tansforming enterprise knowledge into shareholder/stakeholder value.

Recommendations to promote knowledge sharing within the NHS need to include these successful enablers of KM in the private sector:[31]

- **INDIVIDUAL MEASURES:** training, workshops, seminar series.
- **TECHNOLOGY:** repository for knowledge resources. Platform for discussion forums.
- **FRAMEWORKS:** maps of KM processes and mapping of knowledge maturity.
- **CULTURE:** trusting and open, shared values. Strong management support.
- **MEASURED VALUE:** examples of benefits of KM to the business.
- **COMMUNITIES:** virtual or face-to-face, objectives aligned to the business goals.
- **APPROACH:** KM measures introduced and supported by champions.

[30] http://www.knowledgebusiness.com/knowledgebusiness/templates/home.aspx?siteId=1&menuItemId=25 Accessed 3/11/2015.

[31] Lessons from the business sector for successful knowledge management in health care: A systematic review Anita Kothari, Nina Hovanec, Robyn Hastie and Shannon Sibbald BMC Health Services Research 2011, 11:173 http://www.biomedcentral.com/1472-6963/11/173

The following recommendations support the development of these successful characteristics in a knowledge enabled NHS capable of addressing today's challenges.

Develop knowledge sharing and learning capabilities:

- Promote skills and practical examples of how to share and how to learn from the evidence and from the expertise.
- Include KM skills as part of the NHS staff skillset: build connections with organisational development, and develop a focus on culture and behaviours. Knowledge owners' role needs to be as 'connectors' between evidence and clinicians.
- Provide support for KM enthusiasts within the business rather than establishing a KM 'structure'.
- Demonstrate KM's links to learning; KM is often associated with data and information by staff. Use the right language which staff can relate to: show them 'what's in it for me?' Illustrate the benefits of KM for healthcare through storytelling and case studies.

Encourage leaders to support a knowledge sharing culture and behaviours:

- Encourage senior management support: promote appreciation of the value of tacit knowledge which helps to build collective knowledge capital.
- Embed KM activities in the delivery of improvement programmes. These programmes have the 'pull' from NHS staff and there is an opportunity to embed KM activities into improvement and transformation programmes.
- Promote connected leadership which values sharing expertise across organisations and sectors rather than competitive silo working or enforcing approaches from the top.

Collect and promote examples of the value of KM to the NHS:

- Collate evidence to demonstrate the value of KM to strategic drivers such as safety and efficiency; this will resonate with policy leaders.
- Provide examples of why KM is important in the NHS: staff can recognise its value and KM can get on an equal footing with business strategy.
- Support research into return on investment (ROI) evidence and research into the value to the NHS of KM and evidence services.

Develop communities to facilitate sharing of best practice and KM skills:

- Establish a national network of health and care KM enthusiasts and encourage sharing across professional groups.
- Create connections with KM experts in other industries.

Utilise technology to enable widespread and accessible sharing of best practice:

- Create a national repository of NHS KM resources; best practice examples of good sharing and learning approaches.
- Technology needs to be utilised as it is a key facilitator of KM. Small-scale solutions such as wikis and blogs encourage collaboration and creation of new knowledge.

BETTER KNOWLEDGE, BETTER CARE

References

Andrews S, Cronin G, (2009) After Action Reviews: a New Model for Learning
Emergency Nurse Vol 17 no. 3

Berwick D, (2003) Disseminating Innovations in Health Care
JAMA April 16 2003 Vol 289 no 15

Bevan H, Fairman S, (2014) The New Era of Thinking and Practice in Change and Transformation: A Call to Action for Leaders of Health and Care
NHS Improving Quality

Borchert M, Haines A, Kuruvilla S, (2004) Bridging the Implementation Gap between Knowledge and Action for Health
Bulletin of the World Health Organisation October 2004 82 (10)

Catchpole K, De Leval M, Elliott M, Goldman A, McEwan A, McDonald C, McQuillan A, Pigott N, (2007) Patient handover from surgery to intensive care: using Formula 1 pit-stop and aviation models to improve safety and quality
Pediatric Anesthesia Vol 17 pp470-478

Collison C, (2009) The HeAARt of the Learning Hospital
https://chriscollison.wordpress.com/category/aar/
Accessed 4/11/2015

Conville P, Martinez-Solano L, Nicolini D, Powell J, (2008) Managing knowledge in the healthcare sector. A review
International Journal of Management Review Vol 10 Issue 3 pp 245-263

Cooke R, (2004) Surrey and Sussex NHS Healthcare NHS Trust Knowledge Management Strategy

Darzi, A, (2008) High Quality Care for All NHS Next Stage Review
Final Report Department of Health report

Drucker P, (1993) Post-Capitalist Society
New York, Harper Business 1993

Fraser V, Gray J, Toth B, Turner A, (2002) A First Class Knowledge Service: Developing the National Electronic Library for Health
Health Information & Libraries Journal 19 pp133-145

Grayson C, O'Dell C, (1998) If only we knew what we know: identification and transfer of best practices
Free Press

Grove A, (2005) Efficiency in the Health Care Industries - A View from the Outside
JAMA Vol 294 no 4

Haines C, Murphy P, Sale S, Solomonides T, Ward R, (2009) Developing a Culture of Knowledge Sharing across the NHS that Stimulates the Application of HI Research and Best Practice
Briefing paper prepared for the UK Faculty of Health Informatics

Hastie R, Hovanec N, Kothari A, Sibbald S, (2011), Lessons from the business sector for successful knowledge management in health care: A systematic review
BMC Health Services Research 2011, 11:173
http://www.biomedcentral.com/1472-6963/11/173

Health Education England (2014) Knowledge for Healthcare: A Development Framework for NHS Library & Knowledge Services in England 2015-2020

Health Secretary Praises UCLH for 'Outstanding' Patient Safety
https://www.uclh.nhs.uk/News/Pages/HealthsecretarypraisesUCLHforoutsandingpatientsafety.aspx
Accessed 5/11/2015

Hill P, (2008) Report of a National review of NHS Health Library Services in England: From knowledge to health in the 21st Century

Kaplan B, (2007) Creating Long-Term Value as Chief Knowledge Officer
KM Review Vol 10 Issue 4 September / October 2007

Nadeem M, (2005), Maximising Return on Investment (ROI) in a Global Market: Chief Knowledge Officer (CKO) Adding Value by Connecting People, Technology and Processes.
The Second International Conference on Innovations in Information Technology (IIT'05)

NHS England, Public Health England, Monitor, Health Education England, Care Quality Commission, NHS Trust Development Authority (2014) Five Year Forward View
Gray J, (1998) Where's the Chief Knowledge Officer?
BMJ Vol 317

NHS Executive, (1998) Information for Health: an Information Strategy for the Modern NHS 1998-2005

NHS Improving Quality, (2013) Our Strategic Intent

NHS Improving Quality, (2014) Knowledge & Intelligence Strategy: Growing Knowledge

NHS Institute for Innovation and Improvement, (**2008)**
Key Context Documents for CKO and TKO Roles
The Role of the Chief Knowledge Officer in an NHS Organisation
The Role of the Team Knowledge Officer in NHS Organisations

NHS SHALL, (2012) NHS Library Quality Assurance Framework (LQAF) England version 2.2,

National Advisory Group on the Safety of Patients in England, (2013) A promise to learn– a commitment to act: Improving the Safety of Patients in England

Public Health England, (2013) Knowledge Strategy: Harnessing the Power of Information to Improve the Public's Health

Rose, S, (2015) Better Leadership for Tomorrow: NHS Leadership Review

Secretary of State for Health, (2000) The NHS Plan: a Plan for Investment, a Plan for Reform

Thain A, Wales A, (2013) Developing Knowledge Brokers to get Knowledge into Practice for Healthcare Quality
International Society for Quality in Healthcare 2013 Presentation

The KNOW Network
http://www.knowledgebusiness.com/ knowledgebusiness/templates/home. aspx?siteId=1&menuItemId=25
Accessed 3/11/2015.

Video: Professor Martin Elliott describing Great Ormond Street heart surgeons and the Ferrari Formula One team.
http://www.ksslibraries.nhs.uk/elearning/km/p_ assist/peer_assist/prof_elliott/prof_elliott_bswf
Accessed 4/11/2015

Wales A, (2014) Translating Knowledge into Action to Improve Quality of Care: Route map for Knowledge Management in Scotland's Health & Social Services
Health Information & Libraries Journal vol 31 issue 1 pp79-83

Acknowledgements