



Knowledge for Healthcare: sustaining a coherent national approach

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Abstract:

To deliver excellent healthcare, the National Health Service (NHS) needs the right knowledge services and teams, underpinned by the right resources.

Health Education England (HEE) is the strategic lead for NHS knowledge and library services in England. Focused on action to enhance and sustain a coherent national approach, the *Knowledge for Healthcare* strategy 2021-2026 builds on recent achievements and sets priorities. This presentation considers factors critical to success, levers for change and opportunities to maximise the contribution of health librarians, meeting the goals of the NHS in our digital age.

Engaging across the system is key - working with partners to drive policy and maximise investment in knowledge resources. The national team leads an exciting and comprehensive programme of interventions, creating a national resource discovery infrastructure for both novice and expert searchers. Improving access and reducing administrative burden, HEE has initiated transition from legacy Library Management Systems to regionally shared LMS.

Improving patient safety, saving lives, delivering high quality care, rely on informed decision-making by clinicians, managers and patients. Libraries offer a fantastic range of services. HEE is a strong advocate, demonstrating the value proposition for libraries and their positive impact. The Quality and Improvement Outcomes Framework offers employers assurance that staff and learners benefit from high-quality knowledge services.

Mobilising evidence from research alongside learning from experience requires enhanced capacity and capability. HEE recommends increasing the number of qualified librarians especially in embedded roles. Priorities include the education and training of health librarians, developing a diverse and inclusive workforce. HEE is launching a specialist learning academy to offer accredited continuing professional development. Equally it is crucial to upskill health professionals to share 'know-how', adopt and spread innovation. The pandemic has demonstrated the importance of equipping citizens to be health literate, to make best use of health information and health services.

Keywords: Value; Resource discovery; Mobilising evidence; Health literacy; Workforce development

Introduction

It is not enough to have the right healthcare teams with the right skills in the right place. It is also essential that they use the right knowledge and evidence to make informed decisions about patient healthcare. Improving patient safety and delivering high quality and efficient care rely on informed decision-making by clinicians, managers and patients. To achieve excellent healthcare, health services also need the right knowledge services and teams, underpinned by the right resources.

The National Health Service (NHS) in England has 193 autonomous libraries largely based in acute hospitals, but also in mental health and community health services. These deliver knowledge services to trainees and staff. A handful of universities also provide these services to NHS staff as well as to students.

Formed in 2012 to ensure that the NHS workforce has access to “education and training that is truly world class and quality assured”, Health Education England (HEE) also leads on the strategic development of NHS libraries and partially funds them (Department of Health, 2012, p.4). HEE’s national NHS knowledge and library services team is also responsible for procuring core digital knowledge resources on behalf of the workforce and trainees.

The purpose of this paper is to describe our strategic approach to shaping and sustaining the development of these services. Envisaged as a fifteen-year programme of work, Knowledge for Healthcare: a development framework 2015-2020, was published in December 2014 (HEE, 2014). Our second five-year strategy was published in January 2021 (HEE, 2021a). This paper reports on progress in delivering on the ambitions of Knowledge for Healthcare from 2015 (HEE, 2014; HEE, 2021a). It shares reflections on factors critical to the success achieved to date, and lessons learned. Looking ahead, levers for change and opportunities to maximise the contribution of health librarians to the NHS in our digital age are discussed.

Aim of the national strategy

HEE’s aim in publishing the national strategy for NHS knowledge and library services is to:

- Set direction, articulate a clear ambition and establish priorities
- Invite partners to work with us “to transform and optimise healthcare library and knowledge services, harness new technologies, and champion service development and re-configuration”
- Guide investment decisions, nationally and locally
- Encourage the spread and adoption of best practice and ‘new’ models of service delivery (HEE, 2014).

Taking a strategic approach

We completed a thorough review – assessing the political, economic, social and technological environment to determine system drivers of change; researching models of service; listening to healthcare staff, trainees, education leads and library teams (HEE, 2014, p.12).

Using improvement tools

We used quality improvement tools to shape the strategy: using the NHS Change Model (NHS England, 2018) and also driver diagrams to shape, challenge and refresh our thinking.

The Change Model is a helpful organising framework for programmes seeking to adopt a shared approach to achieve transformational, sustainable change. It has eight components, all of which must be addressed effectively: Shared purpose, Motivate and mobilise, Leadership by all, Spread and adoption, Improvement tools, Project and performance management, Measurement and System drivers (NHS England and NHS Improvement, 2021).

We engaged with colleagues through the planning process by using driver diagrams as a strategic planning tool (NHS England and NHS Improvement, 2021). The overarching driver diagram for Knowledge for Healthcare 2021-26 is shown as Figure 2 (HEE, 2021a, p.23).

Shared purpose

Engaging widely, we were able to articulate a shared vision for Knowledge for Healthcare: ‘NHS bodies, their staff, learners, patients and the public use the right knowledge and evidence, at the right time, in the right place’ (HEE, 2014, p.9; HEE, 2021a, p.6).

Guiding principles

From the start we identified guiding “principles and values on which to base decisions, plus design criteria for transforming healthcare library and knowledge services” (HEE, 2014, p. 17). We aimed to empower library teams to make, and take, opportunities to lead and influence service modernisation. Attention to the sustainability of knowledge and library services lies at the heart of these principles: building infrastructure and capacity for the future and developing the digital tools needed to enable effective service delivery. The principles proved “a helpful touchpoint for decisions on ways of working and investment for all NHS organisations that manage knowledge and library services” (HEE, 2021a, pp.61-62).

In 2020 we added a commitment to Sustainability. “Knowledge specialists have a dual role in contributing to the sustainability agenda, within the knowledge service itself and by providing the evidence to underpin policy, commissioning, operational practice and training” (HEE, 2021a, p.63). HEE supports local communities of practice, inviting health libraries to consider changing working practice and their contribution to a low-carbon society.

Refreshing the strategy

Through 2019-20, the team reviewed the strategy, the policy context, the environment and recent research, and engaged with stakeholders. The Long-Term plan, published in 2019, speaks of the “strong scientific tradition of evidence-based decisions about care” (NHS, 2019, p.11) and the need for ready access to decision support (NHS, 2019, p.6). These statements reinforce the rationale for investment in health libraries.

During the first five years, the national team began to focus on evaluation, measurement, project and performance management. As a result, we were able to draw on a wider collection of data as we refreshed the Knowledge for Healthcare strategy for 2021-6.

What did we set out to achieve?

Health libraries offer a fantastic range of services yet we all know there is more to be done to support informed decision-making. In the preface to Knowledge for Healthcare in 2015, Prof Ian Cumming, OBE, Chief Executive of HEE said: “Healthcare library and knowledge services are a powerhouse of education, lifelong learning, research and evidence-based practice. Our ambition is to extend this role so that healthcare knowledge services become business-critical instruments of informed decision-making and innovation“. (HEE, 2014, p.2).

We know that “Evidence does not speak for itself but needs to be mobilised at the right time, and through the right people” (HEE, 2014, p.26). Therefore the focus was on equipping and supporting local teams to deliver proactive knowledge services, providing quick and easy access to evidence, developing our specialist workforce, demonstrating the quality and impact of services and optimising funding (HEE, 2014, p.50).

Turning strategy into action: how did we get on?

A programme manager was appointed for one year following publication to establish a robust programme and project management infrastructure through which the work could be progressed and monitored. This has stood the national team in good stead. Later, regional teams were formed into a single national team and a national lead was appointed. This is now a full-time, permanent post. With the team, this role has been critical in driving the ambition, the pace and delivering and sustaining a coherent national approach over a sustained period.

The national team leads an exciting and comprehensive programme delivered through focused work-streams. Progress since 2014 is summarised in the Appendices of the refreshed strategy (HEE, 2021a, pp.55-57). Here the aim is simply to give a flavour of the work:

Mobilising evidence and organizational knowledge: focused on enabling NHS organisations to Apply evidence, Build know-how, Continue to learn and Drive innovation. We developed practical tools, notably introducing [a self-assessment tool](#) (HEE Knowledge and Library Services, 2022a) for leaders to assess organisational opportunities to make better use of evidence and expanding the [NHS Knowledge Mobilisation Framework](#) (HEE and eLfh, 2018) to share simple knowledge management techniques (Day and Goswami, 2020). The [#AMillionDecisions](#) advocacy campaign (HEE Knowledge and Library Services, 2022b) highlights the positive impact of healthcare librarians.

Patients and the public: initially focused on upskilling library teams to enable them, whether indirectly or directly, to help to ensure access to evidence-based information for patients and the public. Our Development Needs Survey of NHS library staff saw ‘patient and public information’ fall from 9th to 30th place between 2017 and 2019. Data from the former Library Quality Assurance Framework showed 78% of NHS libraries supporting patient and public information in 2018, an increase from 27% in 2014 (Carlyle et al., 2021). The next stage was to raise awareness among healthcare staff of the impact of low levels of health literacy.

Resource Discovery: we have taken great strides to enhance user experience, streamline the delivery of digital knowledge resources and support collaborative procurement. Improving access and reducing the administrative burden, HEE has initiated transition from over 90 legacy Library Management Systems (LMS) to less than ten regionally shared LMS (HEE, 2021a, p.39). Launching the [Knowledge and Library Hub](#) in January 2022 (HEE Knowledge and Library Services, 2022c) as a resource discovery infrastructure for both novice and expert searchers is a groundbreaking advance for the NHS in England. Meanwhile, investment in [BMJ Best Practice](#) (BMJ, 2022) as a national Clinical Decision Support tool, was a significant step. With c7.5m page views in 2021-2, case studies from healthcare staff bring to life the importance of this tool for improved patient safety, education and staff confidence

Quality and Impact: the team has refreshed and promoted our [Value and Impact Toolkit](#), (HEE, 2021b), considered Metrics for Success, developed an Evaluation Framework for the strategy as a whole, and created a new [Quality and Improvement Outcomes Framework](#) (Edwards and Gilroy, 2021; HEE, 2019a). This Framework represents a fundamental shift in

emphasis to focus on outcomes rather than process (HEE, 2021a, p.31). Meanwhile, encouraging the submission of impact [case studies](#) (HEE Knowledge and Library Services, n.d.a) provides a body of content that celebrates the work of local teams and can be used in communications to attract more decision makers to make the best use of the service.

Workforce Planning and Development: the strategy calls for ‘flexible, multi-skilled knowledge specialists’ (HEE, 2014, p.37). We took a systematic approach (Lacey Bryant and Stewart, 2020a; 2020b; 2020c) using the Six Step Model of Workforce Planning and Development, taking into account current and future demand for services (Lacey Bryant and Stewart, 2020a). We have considered new ways of working, the need for upskilling and role redesign and the supply pipeline. The launch of our [Knowledge for Healthcare Learning Academy](#) accredited by CILIP in December 2021(HEE Knowledge and Library Services, 2021a) opens an exciting new chapter. Today’s priorities include addressing workforce supply and developing a diverse, inclusive workforce. These are vital to ensuring the sustainability of NHS knowledge and library services.

Reporting on the metrics

In 2014 we identified several metrics as indicators of our collective success in delivering the strategy (HEE, 2014, p.47). While we have not yet delivered on every metric, there is no doubt that we have made a significant difference, making progress in each area of the strategy (HEE, 2014, p.50). Working with local library teams and with partner organisations “we have improved the quality of NHS knowledge and library services, in England, extended their reach and expanded the range of digital knowledge resources” (HEE, 2021a, p.2).

We aimed to set ambitious targets, which were a stretch but achievable over time. Tasked with monitoring these, we quickly realised that we needed a better understanding of the data available and to become more proficient at defining meaningful measures. Working with colleagues across the system, we continue to persevere to improve the quality of our data.

Increase in evidence of impact

Aim: Increase in use of the refreshed [Value and Impact toolkit](#): (HEE Knowledge and Library Services, 2021b) used by 95% of services.

Progress: We updated the toolkit; by Spring 2019 a survey reported that 75% of libraries were using this. Meanwhile, impact case studies has become the most powerful means of demonstrating the impact and value of services across England (Edwards and Gilroy, 2021). By 2020, HEE had published and promoted 350+ local impact narratives (HEE, 2021a, p.57).

Increase in quality of services

Aim: Increase proportion of library and knowledge services over 90% compliant within the NHS Library Quality Assurance Framework: target of 98%.

Progress: We delivered improvement from 81% to 92% of libraries reaching this standard. We have since designed and implemented a [Quality and Improvement Outcomes Framework](#) (HEE Knowledge and Library Services, 2021b) emphasising service improvement.

Increase in use of libraries and digital resources

Aim: Increase the number of NHS staff using NHS-funded knowledge resources and services: by 10%.

Progress: Libraries reported a 30% increase between 2014 and 2019, with registered users of NHS knowledge and library services rising to 622,616 from 480,000 (HEE, 2021a, p.54).

Aim: Increase proportion of staff in medical and dental; nursing and midwifery; allied health; scientific and technical; using NHS-funded knowledge resources and services: by 20%.

Progress: Lack of detail in data reporting undermined our ability to report on this metric. 139K users were registered by library teams as ‘Other’ rather than by staff group. From this limited data (HEE, 2014, p8; HEE, 2021a, p.54) we could determine:

- the numbers of ‘medics’, dentists, nurses and midwives registered to use NHS libraries was stable between 2014 and 2019; thus the % reduced rather than increased.
- there was significant growth in the number of allied health professionals registered (up 22K) and of scientific and technical staff (up 19K)
- by 2019 the number of students registered increased from 79K to 86K.

Improvements in service offer

Aim: Increase the proportion of knowledge services with clinical/outreach librarians: to 80%

Progress: We saw minimal change, from 58% to 63% of services offering an embedded role in 2019. However, HEE is now supporting a vanguard of embedded posts in primary and community care, intended to amplify the value of this model of service delivery.

Aim: Increase in production and use of nationally-produced horizon scanning bulletins: 25% increase in Year 1; 10% in years 2 and 3.

Progress: While we did not meet this target, we have effected a discount for subscriptions by individual trusts to [KnowledgeShare](#) ([KnowledgeShare, 2022](#)) a bespoke software system, as a cost-effective means to significantly extend the reach of tailored current awareness alerts.

Improvements in Knowledge Services workforce development

Aim: Define core and specialist competencies, setting ambitious targets for its use.

Progress: with CILIP, we issued a health version of the [Professional Knowledge and Skills Base](#) (PKSB) in 2019 (HEE Knowledge and Library Services, 2021c). The PKSB has since been updated, expanding content on knowledge management, digital and data management. Individuals use this to identify strengths and prioritise development needs. It can also be used by teams. We published a [Healthcare Sector Guide](#) to the PKSB in June 2021 (CILIP).

Aim: Double the amount of investment in national, collaborative procurement of e-resources.

Progress: HEE doubled its investment in digital knowledge resources on behalf of the NHS.

Reflecting on the experience of the pandemic

“As the world has responded to the most significant health crisis of modern times, the dissemination, interpretation and application of evidence, knowledge and insight has led the fight against covid-19.” Through the pandemic “the role of knowledge in the NHS has come to the fore (Lacey Bryant, 2021a). The dedication and expertise of librarians has gained a higher profile. Professor Chris Whitty, Chief Medical Officer for England, commented: “The role of library and information professionals in the NHS, government and the academic sector during the pandemic has been superb, and a clear demonstration of how information and data should underpin decision making at all levels” (cited in Wood, 2021).

The pandemic showed the importance of equipping citizens to make best use of health information and health services. The HEE team stepped in to facilitate healthcare staff to find reliable [Coronavirus information](#) (HEE Knowledge and Library Services, 2021d) that they can be confident to share with patients, families and clients (Carlyle and Robertson, 2021).

The national team is keen to avoid duplication of effort by hard-pressed staff at this time, and when speed of dissemination is so vital. Accordingly, we established both a bank of [Coronavirus literature searches](#) (HEE Knowledge and Library Services, 2021e) and a collection of [Covid-19 current awareness bulletins](#) that librarians were willing to share (HEE Knowledge and Library Services, 2021f; Edwards et al., 2020). This experience has fostered a greater appetite for collaboration amongst participants (McClaren, 2020).

This is not to downplay the challenges. At times some library staff have been relocated, some reassigned. Teams have needed to adapt the workplace; some people have worked remotely throughout. This has disadvantages, not least diminishing opportunities for networking.

What have we learned?

Implementation of HEEs Knowledge for Healthcare strategy to date indicates factors that we believe critical to success in sustaining the development of NHS knowledge and library services, plus several areas in which we could improve to better enable and maintain progress.

Strategic approach: From experience we strongly advocate the value of a systematic, strategic approach to shaping a sustainable future for health libraries. Combined with senior national leadership, this gives local library teams “the authority to initiate local strategic conversations” about their role that might not otherwise be possible. An integrated approach to system-wide change is important, building engagement and support for the strategic direction and nurturing partnerships to facilitate activity. Exemplified through the health literacy workstream (Carlyle et al., 2021), this is evident across the entirety of the work.

Improvement tools: using improvement tools has paid dividends for the team – providing a structured approach to articulating our aim and objectives, building consensus around the specific interventions needed to help deliver improvement and communicating strategy.

A compelling vision: a shared purpose, which attracted universal ‘buy in’, has motivated and mobilised colleagues ‘on the ground’ to get behind the work required to improve NHS knowledge and library services.

Engagement: vision, together with clear principles, can activate a high level of discretionary effort. The way in which health librarians share their expertise and enthusiasm to drive Knowledge for Healthcare is striking. Between 2015 and 2020 more than a half of qualified librarians and knowledge specialists in the NHS were directly involved in project or advisory groups. At November 2021, amidst the pandemic, a third were actively involved (194).

Partnership working: HEE operates as part of a broad ecosystem bringing knowledge, research and evidence to the workforce (HEE, 2021a, p.8). Our partnerships are central to success. We work jointly with other NHS bodies, particularly NICE, the National Institute for Health and Care Excellence. Teams draw on each other’s knowledge and skills, and talk over challenges. Meanwhile, the national team has been structured with regional-facing teams, charged to strengthen working relationships across the library community (HEE, 2014, p.10).

Programme management: while the discipline of project and performance management does not enthuse everyone, the creation of a clear plan and regular monitoring of progress has ensured focus, and facilitated the team to address issues before they become problems. It also creates opportunities to thank everyone involved and to pause to celebrate achievements.

Measurement: struggling to apply all the metrics initially agreed, we formed a project group to propose Principles for Good metrics (Fricker and Parker, 2016). Learning the importance of defining metrics that are Meaningful, Actionable, Reproducible and Comparable, we have gained confidence that we are establishing better foundations for measurement in future.

Data quality: we found challenges to achieving optimum data quality to inform ongoing planning. Library teams do not always appreciate the value of providing accurate data that can be aggregated at national level. As an example in 2019, 139K users were registered by library teams as ‘Other’ rather than by staff group (in comparison with 24K in 2014). The consequent inability to track trends in usage by occupational group represents a lost opportunity for meaningful discussion with the relevant Heads of Profession in the NHS.

Incentives: we learned to consider ways to attract commitment and to achieve compliance. Within the health literacy workstream we found that the opportunity to get involved in shaping interventions through project work offered a means of professional development and enabled participants to broaden their networks. Alongside this, in 2017 we amended the former Library and Quality Assurance Framework so that the patient and public information’ criterion became a compulsory requirement on which services needed to evidence activity. By 2018, 77% were fully compliant (compared with 38% in 2016) (Carlyle et al., 2021).

Levers for change

We recognise the imperative to maintain a national approach to deliver the strategy. National leadership of a central team has enabled the team to build consensus on strategic direction and future vision, attracting a high level of engagement while overcoming the fragmentation inherent within former regional approaches.

Nationally we have invested energy in creating [levers for change](#) that might be used by local stakeholders as well as the national team to influence decision-makers (Lacey Bryant, 2021b). The following illustrate the three main approaches we are taking:

Policy: HEE has issued a series of policy recommendations to guide the delivery of NHS Knowledge and Library Services. These include: an [NHS Library and Knowledge Services in England Policy](#) (HEE, 2016) and our [Library and Knowledge Staff Ratios Policy](#) (HEE, 2019b). HEE introduced policy recommendations on [Learning Space](#) (HEE, 2020a) early in the pandemic concerned by the risk that the efficiency with which library teams adapted to remote working, might obscure the important benefits of a physical library. The policy was championed by Postgraduate Medical Deans and has been used successfully by library managers needing to regain space temporarily lost to them.

Regulations: We have worked with colleagues so that the [Education Contract](#) (HEE, 2021c) between HEE and each hospital providing placements for healthcare students reinforces the importance of our policy statements, and sets out requirements on promotion of the clinical decision support tool, submission of information returns and in relation to funding levels.

Generating evidence: HEE commissioned a ground-breaking health economics study of the value proposition for NHS knowledge and library services. The [Gift of Time](#) presents a powerful case, identifying the benefits of these services and of specialist roles embedded within healthcare teams (HEE, 2020b). The findings suggest that NHS library teams already deliver a net economic benefit of £77m per annum - without taking into account the value of improvement to patient care, safety and operational efficiencies (HEE, 2020b).

With an eye to the future, HEE sponsored the CILIP research report on the impact of AI, machine learning, automation and robotics on the information profession. The findings inform our planning to enable the NHS knowledge services workforce of today and tomorrow to thrive in the digital era. In [response](#), (HEE, 2021d) we have commissioned CPD led by [Library Carpentry](#) (2022), and are collaborating on the development of a healthcare data science programme. Computational sense, digital skills, algorithmic literacy will be essential if the profession is to help meet the goals of the NHS in our digital age.

What we are planning for the future?

The primary drivers identified to achieve our overall goal are published in Knowledge for Healthcare 2021-2026 (HEE, 2021a, p.23):

Figure 2. Overarching driver diagram, Knowledge for Healthcare 2021-26



We continue to focus on advocacy to influence decision-makers, using evidence and data persuasively, and to collaborate with partners. We assure the quality of NHS libraries and continue to reach to employers, promoting the Gift of Time (HEE, 2020b) to encourage further recruitment and role redesign to increase the number of qualified librarians, especially in embedded roles (HEE, 2019b). For staff and students across the NHS in England, we will be working with local teams to extend service provision, improve efficiency, streamline services and promote the benefits of NHS knowledge services while also strengthening the digital infrastructure and promoting digital knowledge resources procured nationally.

Building capability, confidence and capacity is essential if we are to fully deliver on our objectives. This involves: upskilling health professionals to share 'know-how', adopt and spread innovation and better mobilise evidence from research; equipping healthcare staff, information providers and citizens to improve levels of health literacy; and ensure health knowledge specialists are trained to embrace new technologies to meet information needs. We want to get better at using data from knowledge services, including digital services to drive service improvement, and at using evidence and metrics to inform decision-making.

We recognise the importance of funding. HEE is committed to achieving equitable and sustainable funding for NHS library services, irrespective of the setting in which staff are based. Long recognised as a complex issue (NHS, Executive 1997), the introduction of a fair formula for the distribution of HEE education tariff, based on workforce and trainee numbers, is high on our list of aspirations. Additionally, we want to encourage employers to further invest in these services so that the NHS can maximise the expertise of knowledge specialists.

Finally, we see the need for a coherent approach to knowledge interoperability. We believe that this decade offers significant opportunities to work with partners on a concerted, system-wide effort to enable interoperability to better mobilise computable knowledge, and move knowledge into practice. This requires strategic leadership and coordination.

Conclusion

Focused on action to enhance and sustain a coherent national approach, the *Knowledge for Healthcare* strategy embodies a long-term and complex programme of work aiming to deliver HEE's vision for NHS knowledge and library services.

Service improvement is all about the people. We want to continue to value, celebrate and sustain our professional community for it is this, the expertise and commitment of knowledge specialists and library teams, that will sustain the coherent national approach to delivering Knowledge for Healthcare: mobilising evidence, sharing knowledge, improving outcomes.

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