

THE ROLE OF HEALTH EDUCATION ENGLAND KNOWLEDGE AND LIBRARY SERVICES IN SUPPORTING LEARNING HEALTH SYSTEMS

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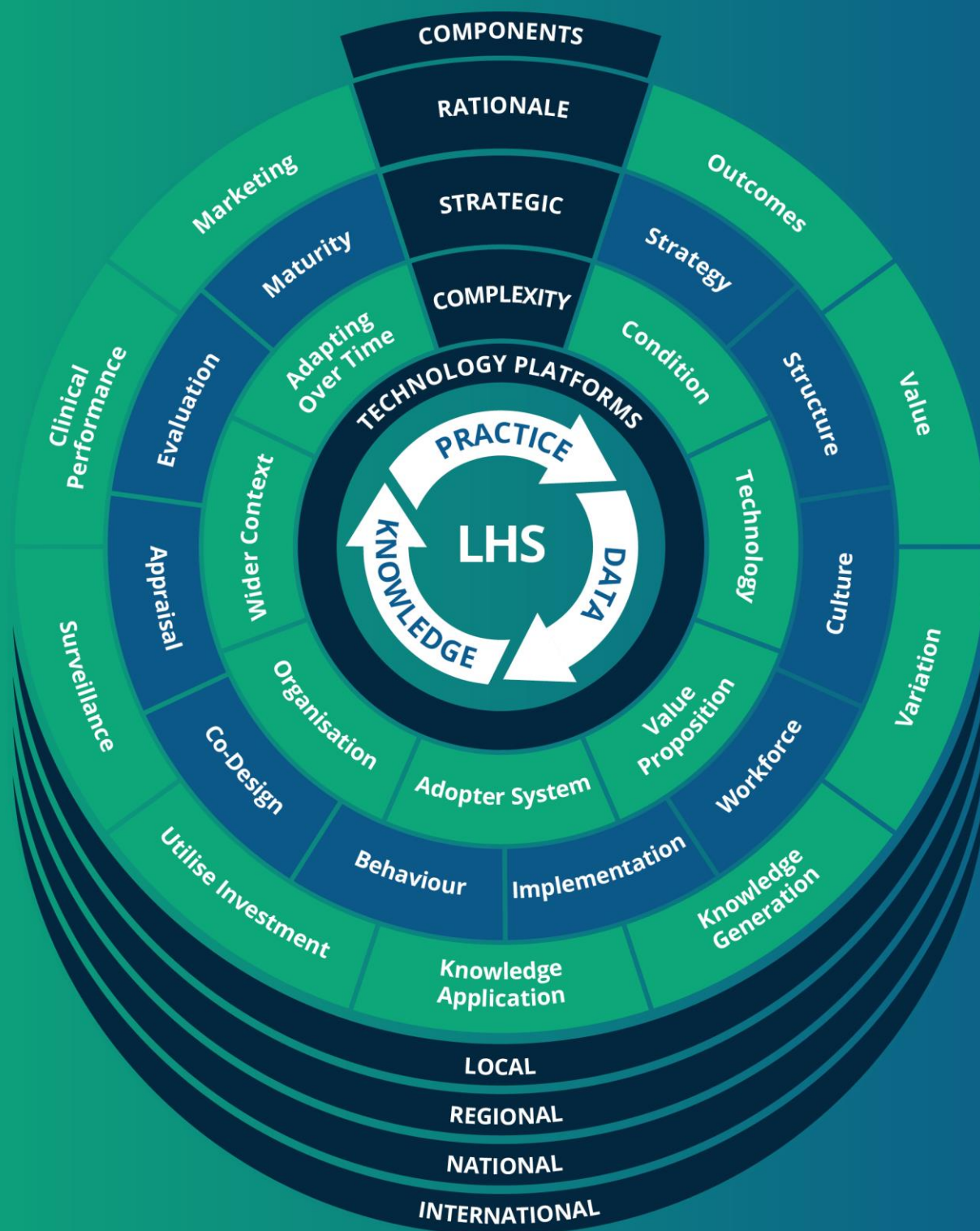


Health Education England

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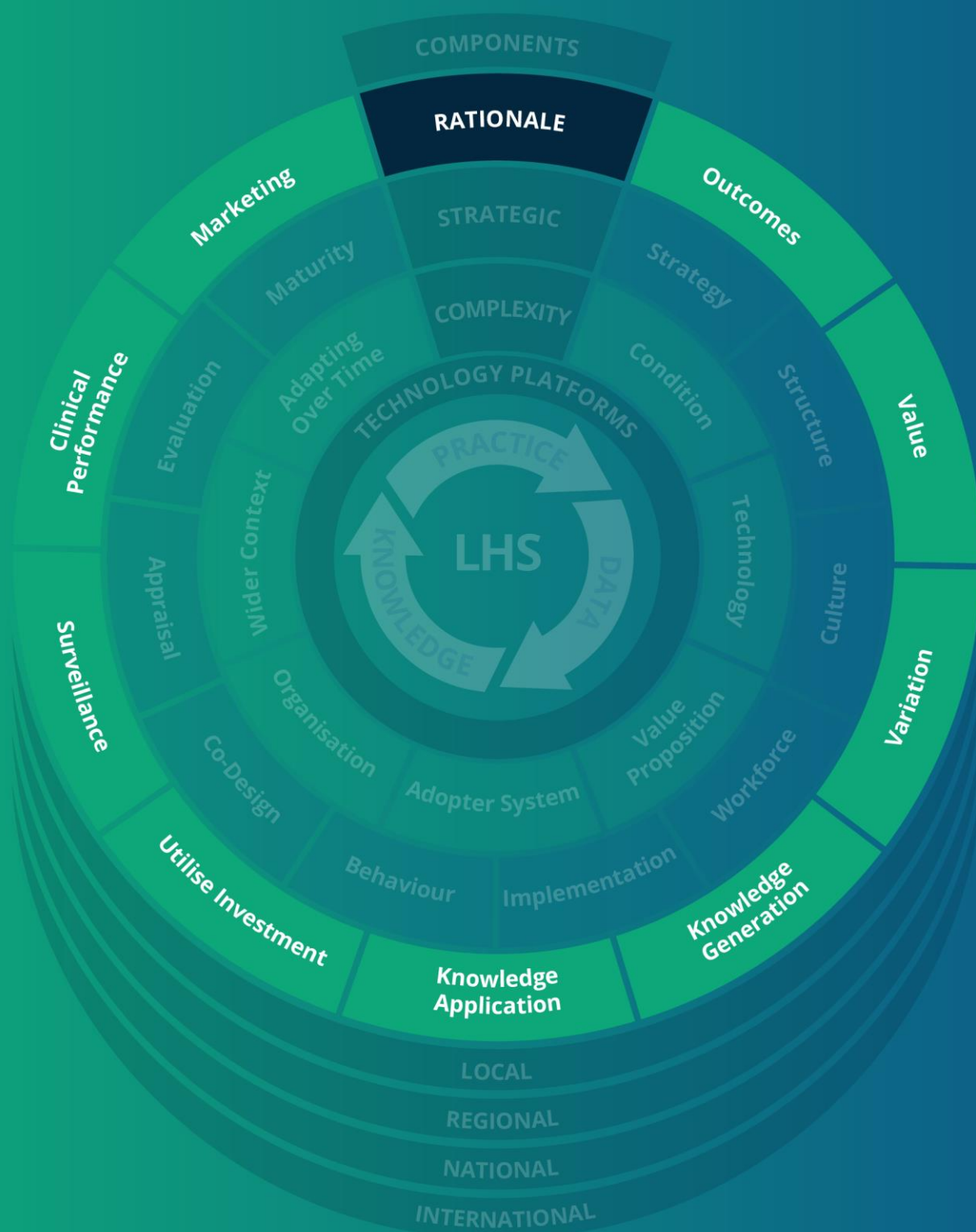
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Mapping Knowledge and Library Services onto a Learning Health System Framework

This report maps the work of NHS Knowledge and Library Services (KLS) Teams, nationally and locally, onto the Learning Health System Framework above. It is based on interviews, workshops and a review of internal and publicly available documents.

Introduction and Rationale for Knowledge and Library Services



Learning has always taken place in the NHS and Health Education England recognises that healthcare is a knowledge intensive business. Its purpose, is to work with partners to:

plan, recruit, educate and train the health workforce

HEE has a central role in delivering knowledge, through education and training, into the health system. This flow of knowledge probably dwarfs all of that currently delivered by Clinical Decision Support Systems and other technology driven initiatives. It also provides the foundation on which new knowledge is interpreted and, in many cases, is the only way that tacit knowledge, such as procedural skills, experience and intuition, can be passed on.

It isn't enough to train clinicians and to provide decision support systems. The ever increasing and progressing healthcare literature, along with limited space in curricula have shifted the focus from rote learning to developing an ability to find, appraise and integrate knowledge as required¹.

Automated decision support systems can be helpful, but often cannot deal with the real-world complexity of healthcare. This calls for knowledge services, information products, tools and techniques delivered 'just in time' and 'just for me'². HEE is the strategic lead for Knowledge and Library Services within the NHS in England. The ambition is that:

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.

By helping staff, learners and patients to use the right knowledge, at the right time, to enable better decision-making, Knowledge and Library Services can help to realise many commonly cited objectives of a LHS (see Figure above):

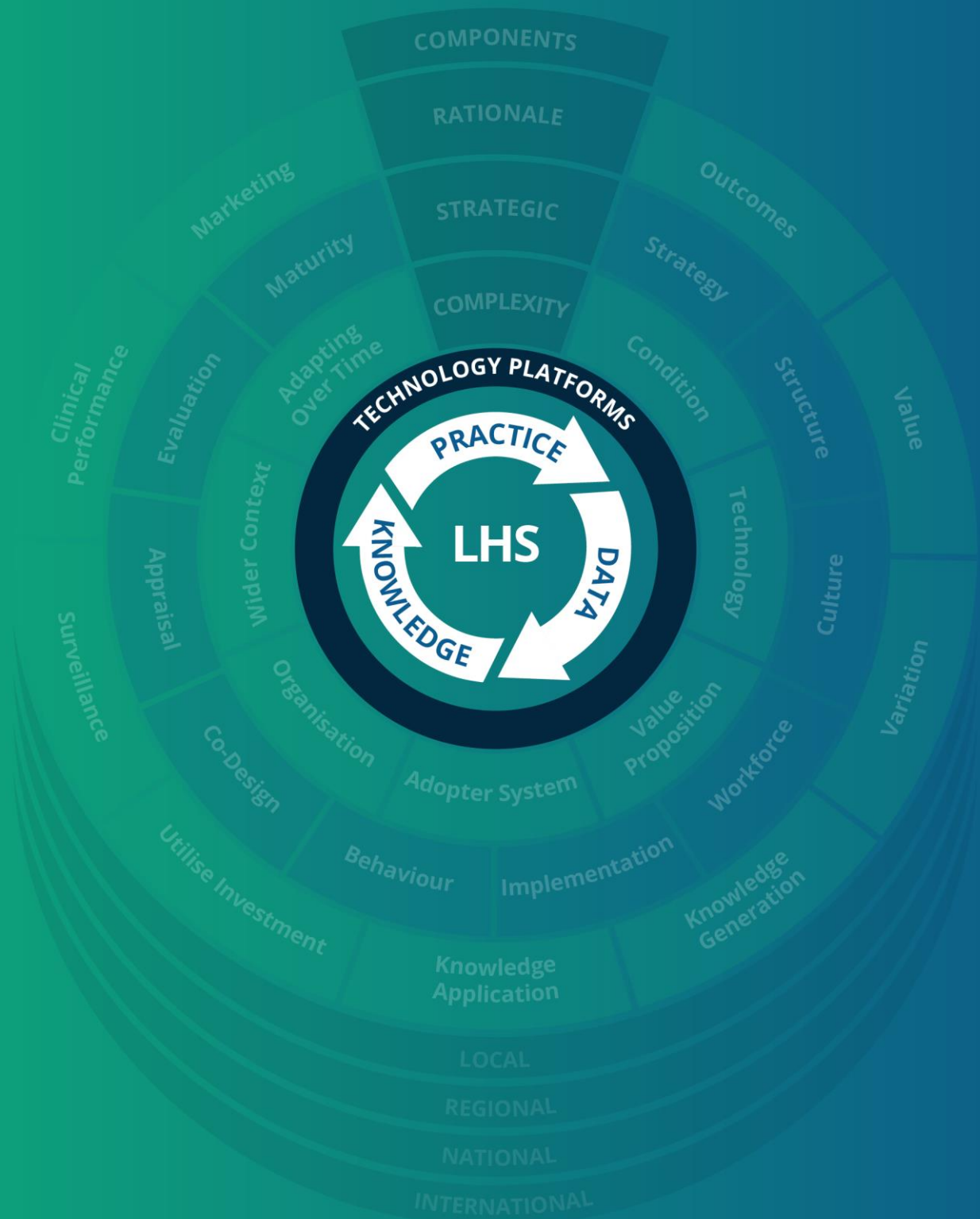
- Outcomes: better knowledge enables better decisions which results in improved outcomes.
- Value: fewer inappropriate investigations and treatments combined with better outcomes should result in better value care.

¹ <https://bestpractice.bmj.com/info/toolkit/discuss-ebm/what-does-evidence-based-actually-mean/>

² <https://www.hee.nhs.uk/our-work/knowledge-for-healthcare>

- Variation: less variation in access to evidence, should result in less unwarranted variation in care.
- Knowledge Generation: greater involvement of knowledge and library specialists in research should ensure that existing evidence drives new studies.
- Knowledge Application: make it easier to apply knowledge at the point of decision.
- Utilise investment: central procurement of many digital knowledge resources can provide a better use of funding.
- Clinical Performance: better informed clinicians are more likely to perform well. Less time spent finding evidence should leave more time to care.

How Knowledge and Library Services enable a Learning Health System



A Learning Health System captures data from practice, generates knowledge from the data and puts the knowledge back into practice to improve care (see figure on previous page). This requires capabilities in digital (data and technology), knowledge management and quality improvement. Knowledge and Library Services are the heart of knowledge management within the NHS.

KLS comprise a central team of 40 people, within HEE, and support around 1,200 librarians and knowledge specialists based in 177 providers and other organisations. They form a learning organisation in their own right, but more importantly, they provide essential knowledge management infrastructure and services. This forms a mesh of knowledge management capability that covers the entire NHS in England and can support the growth of Learning Health Systems at the local, regional and national levels. The following sections outline the scope of this work.

Local Infrastructure

KLS has a local presence within Trusts and increasingly Primary Care Hubs, with the ambition to expand into ICS.

Managing physical libraries and print collections

Traditionally, KLS has been best known for physical libraries, based within hospitals. These have enabled easy access to books, journals and IT, for staff and patients. They have also provided a space for study and for collaborative learning. They have provided access to the stock of a broader network of libraries, through interlibrary loan and document supply systems. These functions are essential to meet the information needs of healthcare professionals and underpin putting knowledge into practice.

Promoting and managing digital knowledge resources

Local KLS teams procure online resources that have been requested, often to meet specific specialist needs of local teams. They also promote the core digital knowledge resources that are more widely used and that have been procured by the national HEE KLS team. They also signpost to resources available through other organisations.

Maintaining repositories and intranet resources

As well as providing knowledge resources within a provider organisation, knowledge management specialists can also help their organisations to generate, collect and curate knowledge locally. They often help IT, Communications and Research departments to build functional intranets and local repositories of guidelines, policies, procedures or other documents. This expertise can make the difference between a dump of unsearchable, out of date files and an easily discoverable resource that staff and patients can use to improve care.

Knowledge Mobilisation Framework

While learning has always taken place in the NHS, it has often been adhoc and not shared beyond those who were in the room. The KLS have co-developed a Knowledge Mobilisation Framework that can be deployed by local teams to scale-up learning³. It includes the following tools with associated e-Learning resources⁴:

Learning Before:

- Self-Assessment: to identify opportunities to make better use of knowledge.
- Peer Assist: a forum for learning from the experience, insights and knowledge of another team or organisation.
- Before Action Review: to clarify the task, purpose and end-state, before commencing a project.
- Appreciative Enquiry: to build upon what we already do well.

Learning During:

- After-action reviews: a short, facilitated, structured meeting, immediately after an activity, to analyse how it went.
- Knowledge Café: a method to encourage productive conversations, solve problems or break down silos and form a community.
- Randomised Coffee Trials: people are randomly matched and invited to meet, to improve relationships, communication and collaboration.
- Communities of Practice: a group comes together to share ideas, develop expertise or solve a problem, with the knowledge generated being captured systematically.
- Action Learning Sets: a supportive environment for a small group to discuss, reflect and find solutions in a common area of interest.
- Knowledge assets: knowledge and experience captured in one place (e.g. lessons learned, case histories, key contacts and best practice).
- Fishbowl: a method for involving the team and experts, to generate knowledge on a challenging topic

³ <https://library.hee.nhs.uk/knowledge-mobilisation/nhs-knowledge-mobilisation-framework-postcards>

⁴ <https://library.hee.nhs.uk/binaries/content/assets/lks/mobilising-knowledge/knowledge-mobilisation-framework/km-framework-postcards-full-set-2019.pdf>

Learning After:

- Knowledge harvesting: a structured approach to understanding and recording the knowledge and experience of people who are leaving or moving roles.
- Retrospect: a structured and facilitated meeting, at the end of a project, to capture knowledge before a team disband.

Use of the framework enables teams on the ground to take a more systematic approach to generating and managing knowledge from experience, which is central to the functioning of a Learning Health System. Local KLS teams promote the framework and associated e-learning resources, but can also directly assist with its use.

Local Services

In addition to infrastructure development, local KLS teams deliver a range of services that can enable a Learning Health System.

Responding to enquiries and requests for information

KLS staff are an important and tangible presence within local providers. They are accessible to healthcare staff and patients and use their expertise to provide an important signposting and guidance role.

Preparing evidence reviews

They undertake literature searches, summaries and synthesis, as well as critical appraisal. This enables a LHS to incorporate evidence developed elsewhere. The extent to which local teams can provide these services and to which staff groups, are determined by local demand and resourcing.

Offering horizon scanning, evidence updates, news and alerts

A local KLS can provide its organisation with the ability to anticipate future trends and shifting evidence, while alerting it to significant events. Many local teams take advantage of a centrally subsidised alerting service called KnowledgeShare.

Providing/facilitating knowledge management functions

KLS staff are local experts, who can lead or facilitate knowledge management initiatives. For example, they can work with senior leaders and Boards to undertake organisational self-assessments or with teams on the ground to deploy the knowledge mobilisation framework. This can help a LHS to scale in a sustainable way.

Improve the information literacy skills and research confidence of the healthcare workforce

Local knowledge specialists not only provide access to evidence from existing research but also assist researchers with funding bids, literature reviews, etc. They provide

information skills training to find and appraise evidence and also support subsequent knowledge translation to increase the spread and adoption of innovation.

Facilitating shared decision-making and self-care

Local KLS work in partnership to increase public access to evidence-based patient, health and wellbeing information and raise awareness of health and digital literacy, including digital navigation.

Advising and offering knowledge management consultancy

As described above, KLS staff can advise on the development of knowledge management infrastructure and can support the strategic priorities of their organisation. They can be key leaders and facilitators within any local LHS.

They can ensure a systematic approach to knowledge management within the organisation, by helping senior leaders to complete the Knowledge Mobilisation Self-Assessment Tool⁵. This enables them to quickly assess opportunities to make better use of evidence and to optimise knowledge as an asset, underpinning their development as a Learning Health System.

National Infrastructure

Some pieces of KLS infrastructure are so widely used that it makes sense for them to be delivered by the central KLS team at HEE.

Knowledge and Library Services Website (for staff, learners and employers)

The public facing website for KLS contains content relevant to staff, learners and employers, and also to patients and the public⁶. There are extensive resources available to support local KLS staff and their customers. Resources for employers help them to understand what modern KLS are and how they can support their organisation.

Knowledge Hub

The central KLS team maintain the Knowledge & Library Hub, which is an online system that allows NHS staff to search journals, books, databases, NICE Guidance and grey literature. It also provides access to resources that have been procured nationally, such as BMJ Best Practice.

⁵ <https://library.nhs.uk/staff-learners-and-employers/knowledge-as-an-asset/>

⁶ <https://www.hee.nhs.uk/our-work/knowledge-library-services>

The implementation of the Hub as a streamlined, integrated national resource discovery and delivery infrastructure is a significant long-term development for the NHS. It is radically reconfiguring over 90 local library management systems, enabling a single gateway to all nationally and locally procured content, as well as local repositories and 'grey literature'.

There is an ambition to increase the reach of the knowledge hub, but this will depend on various publishers using structured bibliographic databases.

Nationally procured core content

Some content is used across such a wide spread of the NHS, that it is more cost effective for it to be procured once nationally, rather than negotiated separately by each provider. Such content includes:

- Bibliographic Databases
- eBooks
- CPD
- eJournal Bundles
- Guidelines

BMJ Best Practice (BMJBP) is a generalist point of care decision support tool that makes knowledge available to clinicians through a website, App and through integration with the Electronic Health Record (EHR). It also contains information leaflets that can be provided to patients. A national licence has been procured, making it available to anyone working or learning in the English NHS. BMJBP and its roll out is the subject of another report in this series.

National Services

In addition to leading and managing the infrastructure for KLS, the national team provides services and professional advice to organisations across England, and into HEE.

The national KLS team leads the implementation of the national Knowledge for Healthcare strategy, mobilising evidence; sharing knowledge; improving outcomes. The team steers and quality assures NHS knowledge and library services. They work with partners to mobilise knowledge for policy and practice and to improve health and digital literacy skills, providing professional leadership to the system and the specialist workforce.

Health Literacy

The team is working with other organisations to create a sustainable platform to help people engage in building health literacy across 16 hub sites. They are currently testing a series of community-based environments (such as community centres, libraries and prisons). This initiative recognises that health literacy now requires digital literacy and also seeks to build that.

International Advisory

KLS in England is considered to be an international exemplar, as a nationally coordinated service. As such, they have recently advised the Republic of Ireland, Canada and other countries on how they might develop similarly coherent services.

They also benefit from working with international partners, such as through the Mobilising Computable Medical Knowledge for a, and through taking a leadership role in the development of the Topol Review⁷.

Internal Knowledge Management Services

The central Knowledge Management Team provide many of the same services to the national organisation that local KLS teams provide to local providers. These include:

- Evidence reviews and briefings to inform HEE work priorities
- Horizon scanning and alerting services
- Knowledge management support, such as designing the Sharepoint service
- Facilitate communities of practice, knowledge mobilisation including creating opportunities for knowledge sharing
- Managing other internal document repositories
- Identify, commission and collect good practice and case studies
- Enterprise-wide advisory services

The central team does not manage a physical library space.

⁷ <https://topol.hee.nhs.uk/>

Capacity Building

Training

Local KLS teams build capacity within provider organisations by promoting and delivering a wide range of training, such as:

- Information skills
- Digital skills
- Health literacy
- Knowledge mobilisation skills (based on the Knowledge Mobilisation Framework)
- Evidence search
- How to get published
- Critical appraisal skills

The national team are building e-learning supports and many KLS teams are developing training to support spread and adoption of innovation.

Enabling staff to access e-learning

Some local KLS staff are taking on a technology enhanced learning role (e.g. by developing content for training). They also have a role in supporting access to these resources. Getting it to work can be more complex than initially realised, for example, because of digital literacy issues.

Local library staff are often the first point of contact for healthcare staff who are going back into education, who may not have recently used study skills.

CPD in Knowledge Mobilisation for the Healthcare workforce

The central KLS team are developing an introductory course for clinicians, senior managers or researchers, on knowledge mobilisation. It has become clear that learners want a blended approach, with e-learning, but also interaction with a peer group. They are now investigating a digital platform for shared learning.

Influencing

Fostering a learning organisation and overcoming silos

Within local providers, KLS staff provide an important source of capability in support of a LHS. They also maintain tangible infrastructure and provide valuable services. As well as this, they have a less formal role in building interpersonal networks within and between organisations. They gain an understanding of the organisation's strategic priorities and can help groups to align around those. This can result in communities of

practice or less formal but equally valuable connections. They can detect trends and help organisations to respond.

HEE – NICE Knowledge Mobilisation Round-table discussions

At a national level, the KLS team is a leading player in the effort to establish a national LHS. HEE led the development of a Concordat with Arms Length Bodies (ALBs) to maximise investment in digital knowledge resource and optimise the use of evidence. Along with NICE, the Chief Knowledge Officer team convenes regular ALB Knowledge Mobilisation Meetings. This is attended by most interested ALBs and other interested parties and is evolving into an important system coordination forum.

Regional Consultancy

Local and central KLS teams have an important role in advising organisations on their Knowledge and Library needs and on service redesign. They have helped with newly merged organisations and are now deeply involved in discussions about what this should look like for Integrated Care Systems (ICS).

They also assist organisations by sitting on interview or procurement panels and on project steering groups.

Knowledge and Library Services as a LHS

As well as supporting Learning Health Systems, KLS seeks to be a learning system in its own right. It does this by learning from published evidence, but also by focusing on its own performance to drive improvement in the following ways:

- **Quality and Improvement Framework**

This is a self-assessment framework to drive KLS improvement. Outcomes are evaluated across six domains:

- NHS organisations enable their workforce to freely access proactive KLS
- All decision making underpinned by high quality evidence
- KLS staff identify the needs of the workforce
- All NHS organisations have KLS teams with the right skills mix
- KLS teams use evidence from research, innovation and good practice
- KLS teams demonstrate that they make a positive impact on healthcare

2020 -2021 provided a validated national baseline. The framework helps organisations to stretch their ability to maximise knowledge and evidence,

setting development goals for their NHS knowledge and library services to meet changing priorities through the 21st century. A detailed report goes to the service manager with a summary available to share with the organisation's leadership.

Service improvement planning for knowledge and library services is an integral element of the self-assessment and is a requirement of the NHS Education Contract, aimed at strengthening knowledge and library service provision for the NHS workforce. Monitoring of ongoing service improvement plans is managed by the HEE quality team as part of the HEE Provider Annual Self-Assessment working with the national KLS team.

- **Evaluation Framework**
Enables measurement of the contribution of KLS against the Knowledge for Healthcare Strategy, using a range of indicators.
- **Value and Impact Toolkit**
Enables local services to demonstrate the value or impact that they deliver, using a range of methods and metrics.
- **Annual Statistical Returns**
All local services must report annually on a range of staffing and activity measures. There is also a toolkit that services can use to gain insights from the data that they have collected.
- **Innovation Awards**
Awards are made to projects that show novel innovation that has been successfully evaluated.
- **Collaboration Toolkit**
This toolkit has been developed to help local services that are engaged in mergers, alliances or amalgamations.

In addition to the above tools, frameworks and resources, HEE have also established a Knowledge for Healthcare Learning Academy to deliver CPD opportunities to the KLS

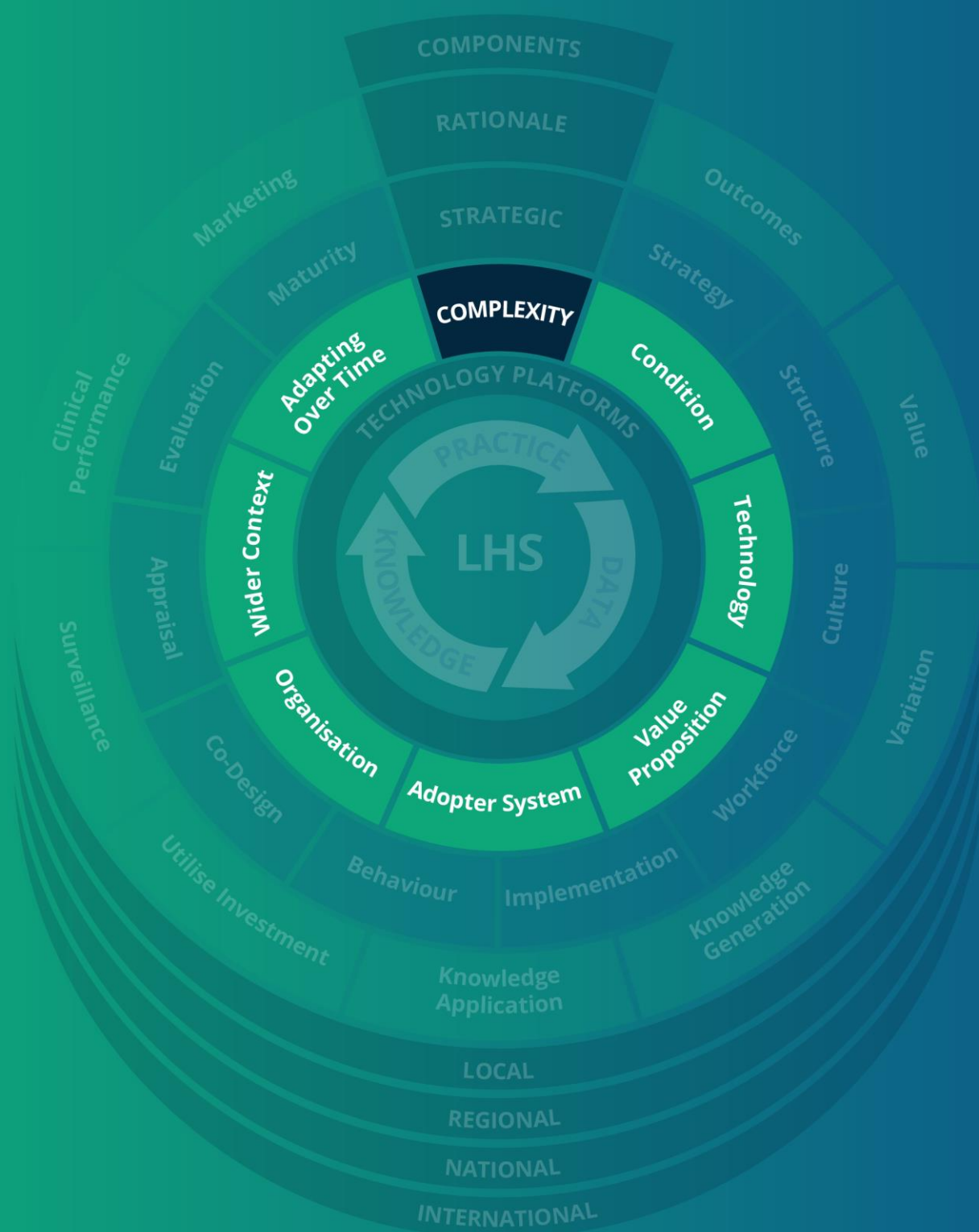
workforce. This is complemented by a close relationship with CILIP, the library and information association. All short courses offered by the Learning Academy have been mapped to the CILIP Professional Knowledge and Skills Base, an international sector skills standard for the information, knowledge, library and data profession⁸ and are accredited by CILIP. The ambition is to extend the scope of the Academy to enable healthcare professionals to gain skills in KM and mobilising evidence.

These elements create a learning system within KLS and effectively close the learning loop:

Practice into Data into Knowledge into Practice

⁸ <https://library.hee.nhs.uk/learning-academy/professional-knowledge-and-skills-base>

Sources of complexity



The Knowledge and Library Service, both nationally and locally, forms part of a complex system. It is important to understand that complexity in order to maximise the impact that KLS can have. The NASSS Framework⁹ proposes seven domains of complexity (see diagram above) and these have been explored through interviews, workshops and documents relating to KLS.

The Conditions or Topics Covered

As described above, users access KLS for knowledge relating to the entire range of medical conditions and for assistance on all aspects of running health systems. Organisational priorities vary from place to place and between professional and patient groups. The teams supported by KLS face co-morbidities, polypharmacy, urban-rural and coastal-inland populations, deprivation and differing levels of health and digital literacy. It is not always possible to predict user requirements, so services must be well structured, accessible and also responsive. This involves a significant amount of complexity.

The Technology

Most of the services provided by KLS Teams are online or at least mediated through technology. KLS procures a range of digital resources. Many of these are standalone, externally provided and do not add significant complexity to the operation. Concerns about cyber security can result in resources being blocked and HEE provides a list of sites which should not be block listed by IT departments. Connections with local CIO teams are not always as strong as they could be.

Local KLS teams often play an important role in designing digital services such as intranets and local knowledge repositories, but this can be inconsistent. The central KLS team has rolled out the national Knowledge Hub, which represents a major bespoke project requiring integration with and cooperation from other organisations.

Adopters

There are 177 Knowledge and Library Services. According to the 2018-19 Activity Statistics, 63% of these provide clinical librarian or other embedded and outreach roles.

⁹ <https://www.jmir.org/2017/11/e367/>

Together they handled 1.3M enquiries, conducted 32,500 expert searches and trained 59,500 staff in information skills. There were 622,600 registered library members and 334,000 staff registered to use NHS digital resources. KLS users include clinical and non-clinical staff and have broadened, from mainly secondary care to the wider NHS.

According to a survey, in support of the Knowledge for Healthcare strategy, many NHS staff are:

- Time poor
- Overloaded by information
- Struggling to find specialised information
- Frustrated by technical issues
- Unaware of the benefits of NHS knowledge services
- Unaware that all staff and learners can use the services
- Reliant on colleagues and networks for information

KLS faces the challenge of presenting a coherent identity to different users, during a period when it has been reinventing itself from a predominantly physical library service into a digital infrastructure and advisory service.

Despite this, there is increasing demand for existing services and for an approach that sees knowledge and library specialists embedded ever more closely in clinical and management teams.

Value Proposition

Recent research commissioned by HEE, estimated that the NHS in England was spending £55 million on knowledge services and that this was generating an economic benefit of £132 million¹⁰, excluding impacts on the quality of patient outcomes and experience, operational efficiency and workforce development.

KLS staff aim to deliver decision ready knowledge to those who need it. They can often search and synthesise knowledge more quickly and thoroughly than clinicians could by themselves. As discussed, they can also improve the value provided by digital infrastructure projects, such as intranets and repositories, that have impacts on the entire organisation.

¹⁰ <https://www.hee.nhs.uk/our-work/library-knowledge-services/value-proposition-gift-time>

There is scope to improve value. 75% of NHS investment in digital knowledge resources takes place at trust level. Most of this funding comes from the education tariff. National negotiation with publishers could achieve better value. There is a need for a pool of centrally funded resources (such as BMJBP and other digital knowledge resources) and much money has been wasted through duplicative local procurement.

Organisations

Traditionally, Knowledge and Library Services have been based in large provider organisations. While these remain important centres, KLS is also positioning itself to serve other parts of the system such as Primary Care Hubs. The development of Integrated Care Systems introduces a new organisational layer, between local providers and the national system. This complexity is increased further by the transformation of HEE into a new NHS England organisation, which already contains some knowledge and library capability.

Historical funding routes may not reflect the modern functions of local KLS teams and may even prevent them from developing new, high value, capabilities. 55% of funding for NHS Knowledge and Library Services comes from HEE, mostly via the education tariff. This varies between provider organisations according to local priorities and cannot be ring fenced. As a result, healthcare staff and learners experience significant variation in services. The Education Contract simply specifies that trusts must provide a proactive, high-quality knowledge and library service available to all staff and learners.

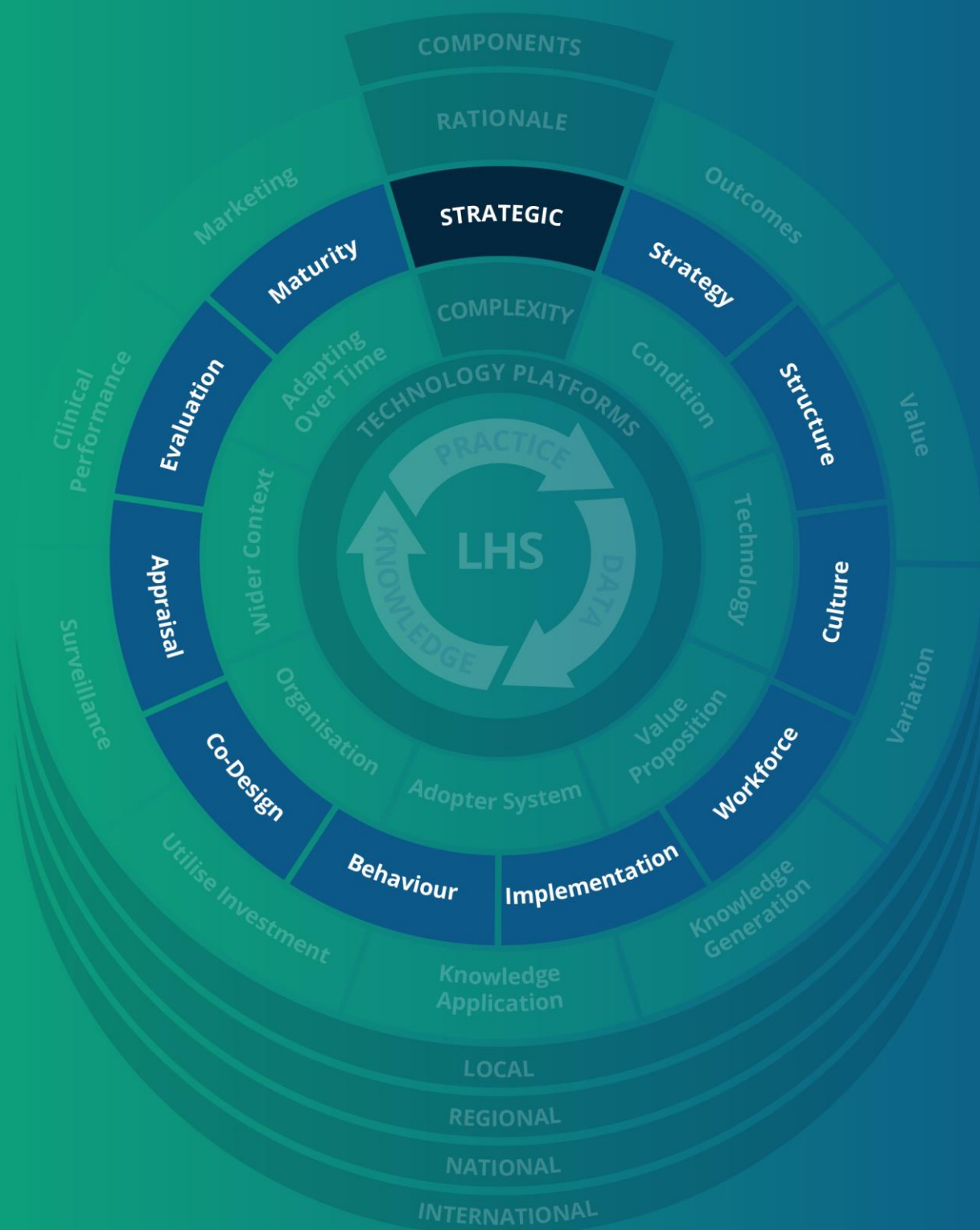
Wider context and adaptation over time

As discussed, the wider context is changing considerably. As well as increasing digital maturity across the system and the transition of HEE into NHS England, the duty to promote “the use in the health service of evidence obtained from research” is moving from the Secretary of State and CCGs¹¹ to the Integrated Care Boards (ICB)¹².

¹¹ *Health and Social Care Act 2012*. <https://www.legislation.gov.uk/ukpga/2012/7/contents/enacted>

¹² *Health and Care Act 2022*. <https://bills.parliament.uk/bills/3022>

Strategic approaches to change



This section examines strategic approaches to change that are likely to be important as Knowledge and Library Services seek to support Learning Health Systems within the NHS (see diagram above).

Strategy

Knowledge for Healthcare¹³ sets the strategic direction for Knowledge and Library Services in the English NHS, from 2021-2026. This builds upon a previous strategy, covering the period 2015-2020¹⁴. Knowledge for Healthcare recognises KLS role as part of a broad ecosystem bringing knowledge, research and evidence to the workforce. It outlines the new and emerging roles for KLS as well as an approach for realising its aims, through targeted interventions.

As part of an ecosystem, KLS must be aligned with the strategic direction of its partner organisations. At the local level, KLS staff must be engaged in ongoing conversations with users and local senior management, to understand, shape and meet organisational priorities. This will need to be a more dynamic relationship, as KLS increasingly delivers responsive support and advice to local organisations, moving beyond the library and becoming more embedded in clinical, management and digital teams.

There is a need for KLS to support the development of Integrated Care Systems, so that they can realise the opportunities to coordinate and improve care across providers. ICSs present a chance to reimagine KLS at a new organisational level. Integrated Care Systems will need to take a strategic view of knowledge and library services. Even more than providers, they are in a knowledge intensive business.

At the national level, KLS is strategically aligned with the workforce, education and training focus of HEE and is part of its Innovation Strategy. KLS will soon find itself nested within NHS England and is already demonstrating how it contributes to its' strategic objectives. Beyond that, it has a role in delivering national strategy, such as the Long Term Plan.

KLS has also recognised the need for strategic engagement with other national organisations, such as the ALBs. In some cases, KLS is driving the agenda, such as on the need to promote knowledge-driven, rather than just data-driven healthcare. One manifestation of this has been the establishment of the HEE-NICE Knowledge

¹³ <https://www.hee.nhs.uk/our-work/knowledge-for-healthcare>

¹⁴ https://www.hee.nhs.uk/sites/default/files/documents/Knowledge_for_healthcare_a_development_framework_2014.pdf

Mobilisation Roundtable, which has expanded to include other organisations such as NHS England, CQC, NHS Digital, NIHR and NHS HSA. This is evolving into the go to, system level forum for collaboration on knowledge management.

Organisational Structures

The strategic changes underway, including the transition into NHS England and the development of ICSs will be reflected in imminent changes to the organisational structures around KLS at every level.

The central KLS team sits within the HEE Innovation and Transformation Directorate. Reporting arrangements within the new NHS England are still under discussion.

Locally, KLS teams often report to Medical/Clinical Education, Organisational Development, the Nursing Director, Research or even HR. They also have a reporting arrangement with the national KLS team. Increasingly, relationships with the centre will be managed through ICSs. The ICSs will need time to build their capabilities and the Education Contract will remain with providers until ICSs have the necessary capability.

Integrated Care Systems will require Knowledge and Library Services and ultimately, these might be organised at that level, rather than within each individual provider. This could avoid duplication, reduce unwarranted variation and improve coverage for staff and learners who are not based in large providers. More immediately, ICSs will be in a position to consider variations in funding and access to KLS across their patch.

There are currently 15 pilots embedding knowledge specialists with primary care, training hubs. The training and education infrastructure is expanding to cover these groups and there are plans for a total of 42 training hubs, that will be aligned with ICSs.

Workforce

At the heart of a Learning Health System is a multidisciplinary team bringing together the right people, skills, specialisms and subject matter expertise.

The Knowledge for Healthcare strategy highlights the importance of developing the right Knowledge and Library Services workforce. The organisational changes described mean that KLS teams will cover larger footprints, aligned with ICSs and will be expected to deliver knowledge to the Board and the bedside and beyond large provider organisations.

Technology is also changing the role. Most KLS staff hold degrees in information science or knowledge management related disciplines and professional registration with CILIP, the library and information association, is encouraged, to guide continuing professional development.

The national KLS team provides a tailored training offer for the system, through virtual and blended learning delivered via the Knowledge for Healthcare Learning Academy. Developing leadership capabilities becomes increasingly important when working across such complex organisational structures.

As knowledge specialists increasingly become embedded in clinical and management teams, the traditional customer service role within physical libraries may become less visible.

KLS will seek to skill up the wider NHS workforce, by developing learning resources for staff in information skills and knowledge mobilisation.

Cultural

Culture has always been critical to effective knowledge mobilisation¹⁵. This will be especially important within a LHS. The fundamental strategic and organisational changes described above will be mediated by the culture within new and existing organisations.

Embedding a knowledge management culture across the organisation is critical for sustained application of knowledge management. A culture where connections and knowledge activities are encouraged, and knowledge is valued and actively used, will support the establishment and application of the knowledge management system within the organisation. The organisation shall demonstrate that organisational culture has been addressed as a means to support the knowledge management system. Some options for addressing the culture are discussed in BS ISO 30401:2018¹⁶

The Knowledge Management Systems Requirements International Standard recognises this with a full annex outlining the importance of developing a knowledge management culture which "acknowledges the value of individual and shared knowledge, as it benefits the organisation."

At the local level, large hospital providers will have their autonomy challenged, small primary care providers will be given access to new knowledge services, but will be expected to collaborate in unfamiliar ways. Organisations as well as individuals will be

¹⁵

<https://www.hee.nhs.uk/sites/default/files/documents/HEE%20LKS%20Staff%20Ratio%20Policy%20January%202020.pdf>

¹⁶ <https://www.iso.org/standard/68683.html> Annex C " BS ISO 30401:2018 Section 4.5 pg 7

expected to learn. The central KLS team will find itself within a new organisation and will need to develop relationships with other new organisations such as ICSs.

The visible manifestations of culture will change rapidly with changes in organisational structure and new shared ways of thinking will evolve with new relationships, but deeper unconscious assumptions will take much longer to change. Each of these will be required to achieve a true Learning Health System.

Behaviour Change

The purpose of getting the right knowledge, to the right people, at the right time, is so that those people can make better decisions. Knowledge can change the behaviour of individuals and organisations, but it is only one component in doing so. More knowledge is not always the answer to changing behaviour. This has implications for deciding when KLS input is appropriate. If the issue driving an unhelpful behaviour within the system is, for example, a lack of resources, then improving KLS may not be the solution, although it may assist with evidence-based prioritisation. Large scale behaviour change should be driven by a scientific approach¹⁷.

Co-Design

There is a need to design Knowledge and Library Services that meet the needs of their users. The complex environments within which they operate and the range of potential activities make it unlikely that a one size fits all service model would be appropriate at the provider or ICS level. Each service must therefore be co-designed on an ongoing basis.

There are many co-design tools available¹⁸¹⁹ and the following principles will be important in meeting the needs of a Knowledge and Library Service²⁰:

- Democracy: Include representatives of all stakeholders who will be affected by the new system.
- Mutual Learning: Participants will learn from each other and from themselves as they reflect on the work.

¹⁷ <https://implementationscience.biomedcentral.com/articles/10.1186/1748-5908-6-42>

¹⁸ <https://qualitysafety.bmj.com/content/qhc/25/7/509.full.pdf>

¹⁹ <https://dl.acm.org/doi/10.1145/1900441.1900476>

²⁰ <https://www.jmir.org/2020/4/e13780/>

- Capture Tacit and Latent Knowledge: Tacit needs are conscious but not expressed, while latent needs are subconscious and cannot be expressed in words.
- Collective Creativity: Stakeholders can work together creatively in a way that encourages the development of values and embeds them in the product.

Evaluation

As described in the section on “KLS as a Learning Health System”, the Knowledge and Library Service has invested significant effort in evaluation of efficacy and cost effectiveness at the local level, through the following tools:

- Quality and Improvement Framework
- Evaluation Framework
- Value and Impact Toolkit
- Annual Statistical Returns

It has also invested in research showing the overarching return on investment from KLS nation-wide.

Conclusion

HEE is best known for training the NHS workforce, but through its leadership and development of Knowledge and Library Services, it also helps to ensure that the workforce always has the knowledge that it needs to make decisions.

A Learning Health System captures data from practice, generates knowledge from the data and puts the knowledge back into practice, to improve care. This requires capabilities in digital (data and technology), knowledge management and quality improvement. This report has outlined how Knowledge and Library Services are the heart of knowledge management within the NHS and how that position can be leveraged to support local, regional and national Learning Health Systems.

In supporting Learning Health Systems, KLS can help organisations to achieve better outcomes for patients, improve value, reduce variation, improve knowledge generation, more effectively apply existing knowledge and boost clinical performance. This can be achieved through the provision of a mix of local and national infrastructure and services, capacity building, influencing, regional consultancy and international advisory. KLS can achieve its own continuous improvement by becoming a learning system in its own right.

KLS can achieve this by addressing its strategic alignment, organisational structures, workforce, culture, approach to behaviour change and by co-designing its services and employing continuous evaluation.

Applying the LHS framework to the work of KLS, showed how the framework could be used to understand services that support or enable LHSs as well as whole LHSs. These insights resulted in some amendments to the framework, which have recently been published²¹.

²¹ <https://onlinelibrary.wiley.com/doi/full/10.1002/lrh2.10315>

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