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Developing a generic tool to routinely measure the impact of health libraries

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Abstract

Background: Health libraries contribute to many activities of a health care organisation. Impact assessment needs to capture that range of contributions.

Objectives: To develop and pilot a generic impact questionnaire that: (1) could be used routinely across all English NHS libraries; (2) built on previous impact surveys; and (3) was reliable and robust.

Methods: This collaborative project involved: (1) literature search; (2) analysis of current best practice and baseline survey of use of current tools and requirements; (3) drafting and piloting the questionnaire; and (4) analysis of the results, revision and plans for roll out.

Findings: The framework selected was the International Standard Methods And Procedures For Assessing The Impact Of Libraries (ISO 16439). The baseline survey ($n = 136$ library managers) showed that existing tools were not used, and impact assessment was variable. The generic questionnaire developed used a Critical Incident Technique. Analysis of the findings ($n = 214$ health staff and students), plus comparisons with previous impact studies indicated that the questionnaire should capture the impact for all types of health libraries.

Conclusions: The collaborative project successfully piloted a generic impact questionnaire that, subject to further validation, should apply to many types of health library and information services.

Keywords: evidence-based library and Information practice (EBLIP); evidence-based practice (EBP); impact; information services; libraries, health care; outcome measures; surveys

Key Messages

- The simple generic questionnaire should capture impact of all services offered by a health library.
- More detailed evidence of impact can be gained by teaming the questionnaire with interviews and case study tools.
- Further validation should be carried out.
- National use of the tool will enable routine monitoring of the impact of English health libraries operating within the NHS.
- Central collation of impact data will provide evidence for local, regional and national decision making and advocacy.

Background

Health libraries worldwide need to demonstrate their value and impact to their stakeholders. There

has been increased interest in measuring library impact in recent years, with interest progressing from use and satisfaction to what works (effectiveness) and what makes a difference (impact). The terminology and elements involved with measuring impact can be confusing, but the International Standard for Methods And Procedures

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For Assessing The Impact Of Libraries (ISO, 2014) provides a useful starting point. The standard defines impact as, 'the influence of libraries and their services on individuals and/or on society or the difference or change in an individual or group resulting from the contact with library services'. Impact is part of value 'the importance that stakeholders (funding institutions, politicians, the public, users, staff) attach to libraries and which is related to the perception of actual or potential benefit'. It is important to note that when examining impact or the change made by a library, that the change can be tangible or intangible and it may only be possible for the library to contribute to an impact rather than be solely responsible (e.g., length of stay, patient care).

Urquhart and Turner (2016) provide a useful reflection on some of the issues involved in measuring the value and impact of library services. The quality of studies measuring health library impact and effectiveness has been criticised (Brettle, 2003; Brettle et al., 2010; Wagner & Byrd, 2004; Weightman & Williamson, 2005; Winning & Beverley, 2003) and best practice guidance to improve the quality of health library impact studies was developed with these criticisms in mind (Weightman, Urquhart, Spink & Thomas, 2009). More robust evidence is now available which uses larger samples, independent researchers and the Critical Incident Technique to capture indirect contributions (Brettle, Maden & Payne, 2016; Marshall et al., 2013) or case-control studies (Banks et al., 2007); quasi experimental designs (Esparza, Shi, McLarty, Comegys & Banks, 2013) or randomised controlled trials (RCTs) (McGowan, Hogg, Campbell & Rowan, 2008) to measure direct contributions of health library services, overcoming some of the quality concerns. A wide-ranging systematic review (Perrier et al., 2014) concluded that health librarians positively impact on search skills, clinical decision making and saving time. A systematic scoping review (Brettle & Maden, 2016) concluded, on the basis of evidence from systematic reviews and RCTs, that health librarians clearly demonstrate positive impacts across multiple outcomes. This includes contributions to improving the quality of patient care, patient-centred care, assisting health

professionals with Continuing Professional Development (CPD), demonstrating efficiency and cost-effectiveness, aiding risk management and safety and improving clinical decision making (Brettle & Maden, 2016).

Routine measurement of outcomes and impact can demonstrate that a library provides a high quality and valuable service on a continued basis (Dalton, 2012). Furthermore these data can be used for evidence based decision making both within and regarding the library. The UK context and organisational structures provide a unique opportunity and framework for collecting outcome data across health library services with the potential of creating a cumulative large-scale data set of evidence of sustained impact. This evidence could be used at local, regional, national and international levels for planning and benchmarking purposes as well as demonstrating the continued impact of health libraries to stakeholders.

In England, library services that operate within the National Health Service (NHS) are known as the Library and Knowledge Services (LKS) and are aligned with government health policy (NHS England, 2018) via 'Knowledge for Healthcare', (Health Education England, 2014) a national strategy and framework. As well as aligning with government and national health library priorities, LKS need to ensure that they meet the objectives of the local organisations who they serve. These may be, for example, acute hospitals, primary care or community services and all the staff that work or are trained within them. Quality in LKS is ensured via the NHS Library Quality Assurance Framework (LQAF) that provides a set of standards and regular assessments (<http://www.libraryservices.nhs.uk/forlibrarystaff/lqaf/lqaf.html>).

One of the elements of this quality assurance framework is to routinely demonstrate the impact of the library. A toolkit was developed to provide best practice guidance on measuring health library impact (Weightman et al., 2009). Although the tools were later simplified (NHS South Central & National Library for Health, 2009), annual data from the LQAF suggest that measuring impact in NHS health libraries has not been a routine endeavour. Libraries continue to develop their own tools and confusion persists over differences between consumer satisfaction and organisational

impact (Metrics Task & Finish Group, 2016). The implementation of the national 'Knowledge for Healthcare' strategy (Health Education England, 2014) provided an opportunity to address some of these issues, and a number of Task and Finish (T&F) groups were established. This article reports on the work of the Value and Impact (T&F) group in developing a simple, generic questionnaire to routinely measure the impact of LKS. The questionnaire forms part of a wider toolkit (<http://kfh.libraryservices.nhs.uk/value-and-impact-toolkit/>) that health librarians worldwide could use to demonstrate the impact of their services. For English LKS, the tools will become embedded in the agreed national quality assurance framework to enable routine use and assessment.

Objectives

The aim of this project was to develop a questionnaire for routinely measuring the impact of health library services. This was achieved through the following objectives: conducting a literature search to select an appropriate framework and definition for assessing impact; analysing fully compliant LQAF submissions; conducting a baseline survey on the use of the current toolkit; drafting a questionnaire; piloting the questionnaire; revision and roll out of the questionnaire. Overarching considerations in developing the tool were to build on previous work, ensure practicality and usefulness for the intended audience, and maintaining academic rigour to ensure collection of best quality evidence possible.

Methods

The project was undertaken by a Task and Finish (T&F) group (the authors) comprising NHS Library Managers, NHS Librarians, Strategic Library Lead and an Academic Health Information Specialist. A wider reference group (Appendix 1) recruited based on known interest and via local email groups and the wider LIS-Medical JISCMail discussion list provided feedback at each stage of the process and ensured applicability to the target audience. Group members were based in various locations across England. Project work took place via a series of teleconferences and face-to-face meetings, with

documentation stored on a project wiki and in between communication via email. At the first meeting, the International Standard Methods And Procedures For Assessing The Impact Of Libraries ISO 16439 (ISO, 2014) was adopted as an appropriate framework to guide the work.

Scoping

To provide context on best practice regarding impact, in Summer 2015, team members undertook a search of the literature within Library and Information Science Abstracts (LISA) as well as key health care databases including Medline, CINAHL and EMBASE. A range of free text and keyword terms relating to the measurement and assessment of impact and demonstration of value were used including Value, Impact, Evaluat* and Return on Investment. Although preference was given to studies and articles relating to medical and health librarianship, additional publications relating to the evaluation and demonstration of value and impact within other library sectors, specifically public and academic, were incorporated where relevant. The initial literature search was supplemented by the following methods; scanning a bibliography from a recent systematic scoping review (Brette & Maden, 2016); scanning references of included publications and handsearching Health Information and Libraries Journal and Journal of the Medical Library Association to ensure that articles relating to the evaluation of specific core services including clinical librarians, information skills training and literature search services were also identified.

Regional LKS Leads were requested to share returns from Section 1.3C of the Library Quality Assurance Framework (LQAF) – Impact, which were judged to be 'fully compliant' and therefore demonstrated best practice; 25 submissions, from 3 regions were received and analysed by the T&F group and previous toolkits and tools that had been made available via the NHS library networks were collated.

Baseline survey

A baseline survey (Appendix 2) was developed by the T&F group to determine how impact data were

currently collected, to identify best practice and what was needed from a refreshed toolkit. The survey was distributed to library managers ($n = 215$) via SurveyMonkey online software. Results were analysed using simple descriptive statistics.

Generic survey development

The questionnaire (Appendix 3) was developed using the results of the scoping stages and baseline survey at a face-to-face meeting of the T&F group. To ensure consistency with previous measures (and comparability with previous studies), evidence tables from a systematic scoping review (Brettell & Maden, 2016) were used to extract each outcome concept previously measured. This was performed as a group exercise; one team member read outcomes from evidence tables, one wrote the outcomes onto sticky notes and 3 members grouped outcomes on flipcharts. The whole group discussed and removed duplications and themed to produce a core set of outcomes repeatedly measured in the literature. These were then compared with the group's remit to ensure that it was relevant to a broad range of libraries and NHS priorities. We removed many outcomes that applied only to acute hospital settings to keep the questionnaire brief and general. To select an appropriate format, baseline survey feedback and the questionnaires of previous high quality, studies (Brettell et al., 2016; Dalton, 2012; Marshall et al., 2013) were examined and discussed. One team member arranged the outcomes into a set of simple questions and responses that reflected the format of the above tools and incorporated feedback from the baseline survey. The draft survey was circulated to the T&F and the reference group (Appendix 1) to provide initial face validity of the tool. Following minor changes to wording, and removal of duplicate concepts, the questions were transferred to an online survey tool (SurveyMonkey). A question was added to solicit feedback on the survey itself from the library users responding to the questionnaire.

Generic survey pilot

The main focus of the pilot was to test the acceptability of the questionnaire and the feasibility of its routine use. The survey was

piloted on 10 library services from the T&F and reference group members (Appendix 1) over a one week period in February 2016. To capture the range of methods and purposes that libraries may use to distribute surveys, pilot libraries were free to distribute the survey how they wished. In practice, this included sending to those who had requested a literature search, using iPads to capture those using the library as a study space, leaving hard copies in the library and emailing questionnaires to all library service users from that week. Those using the paper copy method manually added their responses to SurveyMonkey. Because of the varied and sometimes opportunistic sampling methods used, it is not possible to ascertain how many questionnaires were distributed, except from two sites who maintained records. Analysis of the responses was undertaken using simple descriptive statistics, and the concepts in the questionnaire were compared with established tools (Brettell et al., 2016; Grad et al., 2008; Marshall et al., 2013; Turner, 2009) to verify that the tool is able to provide ongoing, comparable evidence of health library impact.

Revision and roll out

Data from the pilot study were analysed by the T&F Group. This included feedback around feasibility and practicalities of administering and analysing the questionnaire. Minor revisions to the questionnaire were made, and the questionnaire was once more circulated to the T&F and reference groups for final comments. The survey was incorporated into the wider toolkit (<http://kfh.libraryservices.nhs.uk/value-and-impact-toolkit/>), and the whole toolkit was launched by regional presentations, a blog, articles in the CILIP Update newsletter and a workshop at the UK national Health Libraries Group conference in September 2016.

Findings

The findings from the scoping part of the project were incorporated into the development and pilot of the survey and are noted above. This section will highlight the results from the baseline, pilot and initial roll out of the tool and demonstrate the comparison with previous tools.

Baseline survey

The survey was returned by 136 library managers, a response rate of 63% representing all regions of England, and 10 different sectors (including primary care, mental health, acute, public health and community) suggesting that the results were representative of the population of interest. The vast majority (96%) reported that they do collect impact data; 63% routinely collect data about literature searches and 61% routinely collect data about information skills training. Data collected on an occasional basis included 38% on the whole library service, 35% for current awareness services, 46% on use of specific resources and only 14% on services such as research support. The most frequently used method of collecting impact data was a locally developed questionnaire (83%), whereas the survey available on the existing toolkit was never used by the majority of respondents (64%) and if it was it was adapted (23%). Impact data were used for evaluating and modifying services (85%), publicity and marketing (75%) and for justification and business cases (57%). Almost 15% did not use the data they collected. In brief, these results suggested an interest and value in collecting impact data but duplication of effort in recreating tools for local use which is likely to lead to less rigour (and therefore confidence in the results) and an inability to compare evidence of impact across libraries or build up an evidence base at a national level. Free text questions on suggested changes and possible uses of a standard questionnaire indicated the need for a short, easy to deliver, generic questionnaire with core questions for benchmarking and the possibility of customisation. Respondents also wanted the questionnaire to be made available online and to be downloadable into Microsoft Excel for sorting and analysis.

Survey development and pilot

The survey (Appendix 3) sought to be brief and applicable across a range of services and sectors. Building on best evidence (Weightman et al., 2009), it made use of the Critical Incident Technique (which asks for responses regarding a particular use of the library services), and used outcomes and a format that could be compared

with recent impact studies. There were 214 survey respondents; 22% medical or dental professionals, 23% nursing staff, 22% students and 10% allied health professionals, indicating a reasonable representation of the target audience. For those libraries who maintained records of the pilot, the response rate was 33% and 39%. The types of library service used by respondents included: current awareness ($n = 35$), literature searches ($n = 103$), supply of articles ($n = 109$), training or e-learning ($n = 57$), access to electronic resources ($n = 55$) clinical librarian or outreach ($n = 18$), study space ($n = 109$), IT facilities ($n = 76$), journal club ($n = 9$). There was an option for other, but most of the responses could be slotted into the services listed above, so no additional services were added. The information or knowledge and skills resulting from one library encounter were used for multiple purposes and had both immediate and potential future impacts.

Question 2 sought to determine how the information was used or may be used in the future. However, caution should be used when using these results to report the impact of library services as the main focus of the pilot was on testing the acceptability of the questionnaire and the feasibility of its use. The highest direct impact was for personal or professional development, although there was a direct impact on patient care in over a third of incidents and a direct impact on patient information in over a quarter. There was potential for patient care related future impacts in over a quarter of the incidents (Table 1).

Question 3 sought to determine whether the information had any cognitive impacts or impact on the service user themselves. The largest personal impact was gaining new knowledge (88%). Less than half noted that the incident saved them time (Table 2).

Question 4 sought to determine the immediate and future impact of the library services on a range of outcomes. The table shows the wide range of impacts that the library can contribute to, of relevance to both patient care and other health service objectives. The largest immediate impacts were personal and professional development and more informed decision making while improved quality of patient care was high for both immediate and longer term impact (Table 3).

Table 1 Use of information

How did you use (or might you use) the information, knowledge or skills from that use of library sources or responses	Have used No of responses from 212 (% answering question)	Probably will use No of responses from 212 (% answering question)
Personal or professional development	176 (83%)	33 (16%)
Research	99 (47%)	35 (17%)
Teaching or presentations	98 (46%)	52 (25%)
Sharing information or advising colleagues	98 (46%)	44 (21%)
Direct patient care	77 (36%)	47 (22%)
Developing guidelines, guidance, pathways, policies	61 (29%)	38 (18%)
Patient information, advising or educating patients and families	54 (25%)	38 (18%)
Audit	44 (21%)	39 (18%)
Organisational/Service development/ business planning	38 (18%)	38 (18%)
Legal or ethical questions	36 (17%)	27 (13%)
Publication	35 (17%)	41 (19%)
Commissioning or contracting	8 (4%)	32 (15%)

Table 2 Personal impact

Did your use of library services or resources on this occasion help to	206 responses
Gain new knowledge	181 (88%)
Confirm prior knowledge or refresh your memory	129 (63%)
Update skills	98 (48%)
Save my time	92 (45%)
Generate new ideas	85 (41%)
Improve my confidence	84 (40%)
Gain new skills	79 (37%)

Tables 4–6 compare the questionnaire with items on the original toolkit (Weightman et al., 2009) and other studies that measure the impact of health libraries (Brettle et al., 2016; Grad et al., 2008; Marshall et al., 2013; Turner, 2009). The purpose of this is to highlight the extent to which the concepts in the survey map (and can be compared with) existing tools, as well as where compromises have been made. These have been selected as they also seek to measure the health library contribution to overall organisational objectives (Brettle et al., 2016; Turner, 2009) or they have been well validated (Grad et al., 2008; Marshall et al., 2013). Comparisons in italics are where the concept is similar and can be pragmatically mapped rather than a direct comparison. Two outcomes appear

Table 3 Service impact

Did your use of library services contribute to any of the following impacts?	Immediate contribution 203 responses	Probable future contribution
Contributed to personal or professional development	150 (74%)	52 (26%)
More informed decision making	91 (45%)	63 (31%)
Improved quality of patient care	73 (36%)	70 (34%)
Facilitated collaborative working	50 (25%)	45 (22%)
Changed service development or delivery	38 (19%)	56 (28%)
Reduced risk or improve safety	35 (17%)	57 (28%)
Saved money or contribute to financial effectiveness	33 (16%)	60 (30%)

to be unique to this questionnaire and cannot be mapped; these are gain new skills (37%) and generate new ideas (41%), these are likely to have appeared in other questionnaires as they were generated from the original impact mapping process as part of the development explained above. Given that a considerable number of respondents believed there was an impact in these areas, it appears to be worth keeping them in the questionnaire.

Table 4 Use of information comparison

KfH (Generic survey)	Brettle et al. (2016)	Turner (2009) (included validation of original toolkit) (Weightman et al., 2009)
Personal or professional development 176 (83%)	<i>Range of outcomes related to CPD</i>	CPD related or personal interest
Direct patient care 77 (36%)	<i>Range of outcomes related to direct patient care</i>	<i>Direct patient care and immediate impact better informed clinical decisions/ contributed to higher quality of care</i>
Patient information, advising or educating patients and families 54 (25%)	Advice to patient or carer	Future impact: Advice to patient/carers
Research 99 (47%)	Support research	Personal research or Funded research
Publication 35 (17%)	<i>Support research</i>	<i>Continuing professional development related</i>
Sharing information or advising colleagues 98 (46%)	<i>Supervision and leadership of staff</i>	<i>Will share information with colleagues</i>
Developing guidelines, guidance, pathways, policies 61 (29%)	Revision of care pathway or protocol	Clinical governance/guideline development
Audit 44 (21%)	Evaluation or audit	Audit
Impact on teaching or Presentations 98 (46%)	<i>Delivering/supporting education or training of staff</i>	<i>Teaching/supervision</i>
Organisational/Service development/ business planning 38 (18%)	Service development or delivery	Service development or planning
Legal or ethical questions 36 (17%)	Legal or ethical issues	Legal/ethical issues
Commissioning or contracting 8 (4%)	Commissioning/decommissioning services	

For the use of information concepts, the questionnaire maps well to concepts in both the original toolkit (Turner, 2009; Weightman et al., 2009) and the higher level categories of the clinical librarian questionnaire (Brettle et al., 2016) confirming that the questionnaire has achieved one of the aims of the group, that of updating and refreshing the toolkit.

Table 5 shows how the questionnaire maps to 'personal impact' which equates to the cognitive approaches of other questionnaires (Grad et al., 2008; Marshall et al., 2013), as well as seeking to capture time saved (an important outcome to consider) (Urquhart & Hepworth, 1995).

Table 6 focuses on service impact/organisational impact shows that the questionnaire again maps well to the questionnaires that examines wider outcomes (Brettle et al., 2016; Turner, 2009) but

at the expense of more specific impacts, such as those relevant to acute or direct patient care.

Revision and roll out

The main change to the questionnaire following the pilot was a change to the wording to make it explicit that information needed was in relation to one specific incident (or use), rather than general use of library services. Over 95% respondents found that the questions made sense and were easy to answer. The pilot also proved useful in assessing the feasibility of managing the data via SurveyMonkey so that results could be analysed at local and national levels.

Feedback from the roll out has been used to enhance the toolkit, including a Frequently Asked Questions section and a contact us link on each page.

Table 5 Cognitive/individual impacts comparison

KfH (Generic survey)	Turner (2009)/original toolkit (Weightman et al., 2009)	Value (Marshall et al., 2013)	IAM (Grad et al., 2008)
Confirm prior knowledge or refresh memory 129 (61%)	Refreshed your memory of detail/facts	Refreshed memory <i>Substantiated prior knowledge</i>	Confirm I did (will do) the right thing
Gain new knowledge 181 (85%)	Provided new knowledge	Provided new knowledge	Learned something new
Generate new ideas 85 (40%)			
Update skills 98 (46%)			<i>I recalled something</i>
Gain new skills 79 (37%)			
Improve my confidence 84 (40%)			<i>I was reassured</i>
Save my time 92 (43%)	Saved time	Having the information saved me time	

Table 6 Impact comparison

KfH (Generic survey)	Brettell et al. (2016)	Turner, 2009;/Original Toolkit (Weightman et al., 2009)	Value (Marshall et al., 2013)
Contributed to personal or professional development 150 (74%)	<i>Range of specific outcomes relating to CPD – 6 possible outcomes listed</i>	<i>Continuing professional development related (in use of information only not impact)</i>	
More informed decision making 91 (45%)	<i>Diagnosis or Choice or assessment or test or Choice of intervention</i>	<i>Choice of diagnostic tests or Choice of drug therapies or choice of proposed drug therapies or Choice of non-drug therapies</i>	<i>Resulted in better informed clinical decision – 8 possible changes to patient care listed</i>
Improved quality of patient care 73 (36%)	Improved quality of care or improved patient care experience		Contributed to higher quality clinical care
Facilitated collaborative working 50 (25%)	<i>Increased patient involvement/ shared decision making</i>	<i>Advice to colleagues or advice to patient/carers or working with other health and social care providers</i>	
Reduced risk or improve safety 35 (17%)	<i>Improve patient or staff safety or risk management</i>	<i>Minimisation of risks of treatment</i>	<i>Range of adverse events avoided (13 were listed)</i>
Changed service development or delivery 38 (19%)	Service development/delivery	<i>Revision of clinical pathway or clinical guidelines or Changes to service delivery or practice</i>	
Saved money or contribute to financial effectiveness 33 (16%)	<i>Value for money/cost effective service or avoidance of referral, readmission, clinical tests or hospitalisation</i>		<i>Saved me time</i>

Discussion

The T&F group set out to develop a simple, generic questionnaire that could be used to capture the wide-ranging impacts of health libraries operating within the UK NHS. This was not an easy task and library literature of the last twenty years has been grappling with the concepts of how library *value* and thus impact is measured. The ‘scoping’ part of the process ensured that the T&F incorporated these concepts and issues into the questionnaire development. These include the concept that information has an ‘intrinsic value’ (it contributes to a person being informed) or that it has ‘contributory value’ (that the information service provides the information that is connected to an application or a decision used by an informed person) (Urquhart & Hepworth, 1995). The ACA model of information (Acquisition, Cognition and Application) (Saracevic & Kantor, 1997) that captures the impact of an individual piece of information or service on the individual was developed into an extensively validated tool (the

IAM model) (Grad et al., 2008) and (as shown in Table 5) demonstrates the (mainly) cognitive impacts on the individual as well as the likely educational or developmental impact of the library (see Figure 1). The extended model (Reasons Interactions Results (RIR) (Saracevic & Kantor, 1997) incorporates the concept that a users’ value of information depends on their use of that information and is shown in the uses of information in Table 4. The RIR model also proposes that assessments should capture the results of the use of the information (whether it was useful and whether it saved them time or money). Previous studies Weightman et al., 2009; Marshall et al., 2013; Urquhart & Hepworth, 1995) used this kind of approach, incorporating questions on satisfaction, relevance and time saved; however, this means that the impact captured relates only to the service user, rather than the wider impact of the library service. The concepts of satisfaction and relevance are process rather than outcome measures and were not included in the questionnaire as the T&F wanted the tool to be outcome rather than process driven.

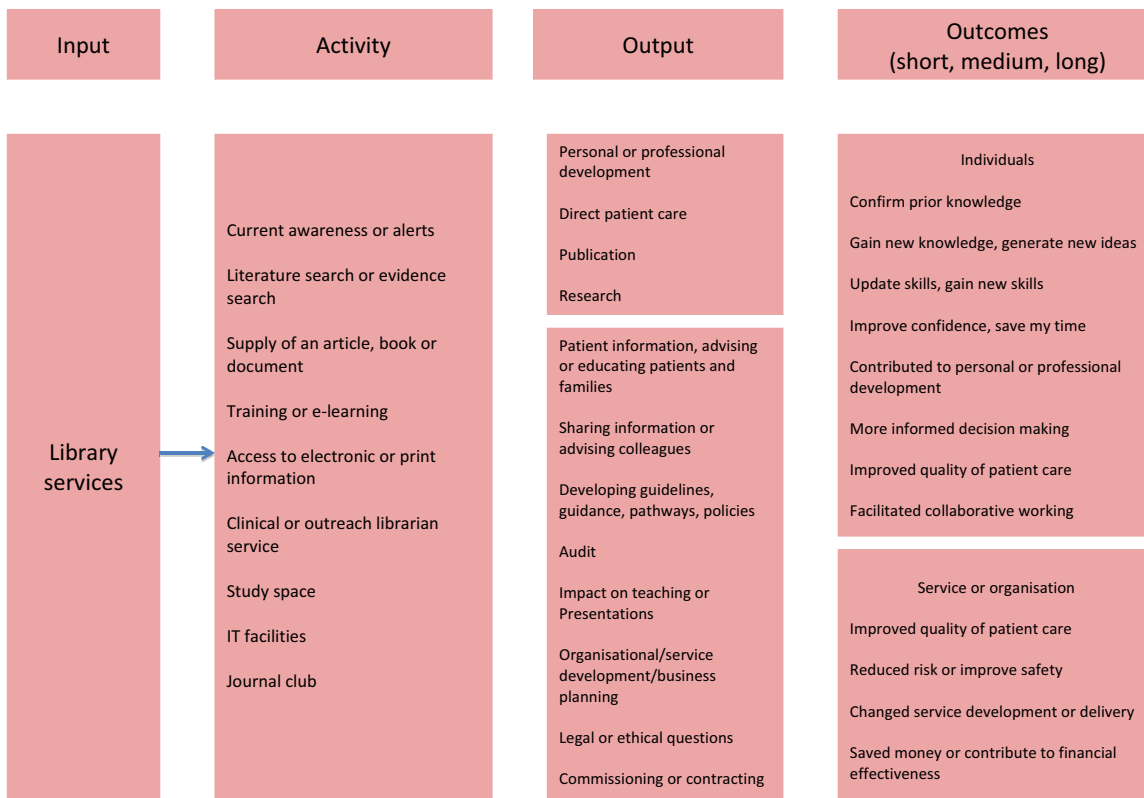


Figure 1 Logic model – impact of health libraries on individuals, services and organisations

This is in line with more recent discussions relating to impact, where the focus has shifted towards outcomes and the measurement of the contributions of the library to a wide range of stakeholders (Brettle et al., 2016). In academic libraries where there is a longer culture of ongoing library assessment, it has been suggested (Oakleaf, 2010) that libraries need to define outcomes relevant to their institution and assess the extent to which they are met. Table 6 shows this outcome focus and has been arranged to highlight (in descending order) the personal/patient outcomes to the wider service and organisational outcomes and the extent to which the outcomes map to studies which focussed on organisational outcomes (Brettle et al., 2016; Turner, 2009). Oakleaf (2010) notes the need to ensure that this mapping to outcomes needs to be short enough to successfully communicate to stakeholders. The T&F were very mindful of this (due to baseline feedback) and also sought to ensure that the tool was short enough for libraries to use frequently and for busy clinicians to complete. This does have a downside, however, and Table 6 also shows that the questionnaire will not identify specific impacts on direct patient care or where money could potentially be saved unlike other tools where specific impacts were articulated (Brettle et al., 2016; Marshall et al., 2013). Furthermore this may create tension in formal validation of the properties of the questionnaire. The trade-off between having a simple generic questionnaire that could be widely used versus one that captured many impacts was debated at length within the T&F group. The final decision was to keep to the remit and views received in the baseline survey regarding simplicity. Only one respondent to the pilot suggested adding more questions on direct patient care. If libraries wish to measure specific impacts on patient care or money saved, additional questions could be added, using outcomes from other well-established questionnaires (Brettle et al., 2016; Marshall et al., 2013). These have been added to the toolkit as suggestions. Alternatively, the questionnaire is designed as part of a suite of tools that includes an interview schedule and a case study template. These qualitative methods are more suited to gaining detailed information regarding specific impacts.

Matthews (2015) notes the importance of an outcomes based approach while acknowledging the complication of assessing value from various stakeholder perspectives. Using the International Standard (ISO, 2014) ensured that a range of stakeholders were taken into account when developing the questionnaire. Matthews (2015) explains how logic models can be used as a framework to understand how libraries contribute to a wide range of outcomes. Figure 1 demonstrates this approach using the concepts and outcomes used in the KfH questionnaire to show how the health library can impact on individuals, services and the wider health organisation. A more detailed questionnaire would have enabled a more specific breakdown of specific short, medium and long term impacts on individual stakeholder groups, but combining the questionnaire with other methods is likely to provide this more detailed evidence as required.

The above discussion shows that the questionnaire captures the elements of interest to the population who will be using it (and its results). However, tools measuring impact should also be valid and reliable. There are many debates regarding validity (does the tool measure what you think it measures) (Robson, 2013) and the best means of establishing this (Long & Johnson, 2000; Newton & Shaw, 2014) and these usually involve establishing content, criterion-related and construct validity (Long & Johnson, 2000). These validation methods were beyond the remit of the T&F group but are an essential step in developing a rigorous tool. Face validity (an initial means of establishing content validity, when experts decide whether the test is reasonable) has been considered. For example, the items on the questionnaire were derived by examining the outcomes from previous studies, then refined by a group of experts (both the T&F and the wider reference group) prior to testing on the intended audience. All outcomes were ticked by more than 10% respondents suggesting that these outcomes are all relevant and should remain within the questionnaire. Pilot respondents were offered an opportunity to comment on the questionnaire, resulting in a minor change in wording to clarify that feedback was wanted on one specific instance of library service use rather than general feedback.

For questions where an option of 'other' was offered responses were generated that could be slotted into existing categories, suggesting no additional categories were needed. Asking experts in questionnaire design to comment would have strengthened this approach further, as would discussions with potential respondents regarding meaning of the questions (construct validity). The mappings in Tables 4–6 provide some evidence of criterion validity (a comparison with an established standard and findings) (Long & Johnson, 2000), as it can be seen that the tool maps to at least two other tools in areas of the use of information, cognitive impact, CPD, informed decision making, collaborative working, risk and changes to service delivery. However, there is no established standard, so further statistical testing would be needed to fully establish validity and Cronbach alpha tests for internal reliability would help remove items where there is poor discrimination.

The mapping tables, and the results from the pilot also highlight where, in practice, libraries need to be cautious in using and interpreting the results from the survey. For example, results from the outcome 'Saving time' is low in comparison with other studies, but this may well reflect those in the sample who were using library services for the purpose of studying rather than a lack of impact on their time saved. Equally high impacts on elements such as 'improve my confidence' may indicate that the survey was completed by lots of users who had received training rather than the library is good at improving the confidence of all its users. To avoid this kind of interpretation, services should record who the survey is distributed to and when. Further analysis on the data, for example using cross-tabulation may also be useful.

Limitations

As noted above, the questionnaire seeks to capture a wide range of impacts using a short, generic tool. As a downside, this means that the tool does not capture a wide range of specific impacts, such as those related to direct, acute patient care. Nor does the questionnaire capture potential negative impacts of information, such as

those captured in the IAM questionnaire (Grad et al., 2008) or take into account that some of the cognitive impacts may well be affected by the personality and self-confidence of the individual respondent. The questionnaire appears to capture how library services are currently used as well as some of the organisational level impacts and the elements that are important in today's NHS (it maps well to a questionnaire that was developed using a content analysis of NHS policy documents and sought to reflect language within the current NHS; Brettell et al., 2016). It is therefore hoped that those responding to the questionnaire will be familiar with the language and answer according to the intended meaning, but this has not explicitly been tested. Using the questionnaire as a structured interview with a library service user would have overcome this. Finally, the health information landscape is rapidly changing which means that it may need a regular check (perhaps by comparing with interview or case study transcripts) to ensure it continues to capture relevant impacts.

Nevertheless, feedback from the pilot and initial roll out of the toolkit suggests that the aim of developing a simple, generic questionnaire that captures outcomes relevant across the stakeholders of all English NHS health libraries has been achieved. Initial testing is positive, and the theories incorporated within it (Saracevic & Kantor, 1997; Oakleaf, 2010; Matthews, 2015) suggest potential wider applicability than the English NHS setting for which it was developed. There is not, as yet, a culture of ongoing assessment within health library services. As mechanisms for centralised collation of results are established, the tool offers real, practical potential for routine measurement of the ongoing impact of English health library services. Given its comparability to other tools and its simplicity, it also has the potential for wider use in other research studies or internationally. Further validation and feedback is needed, but this should be seen as ongoing development, not only of the tool, but of the debate in measuring the impact of health library services. Use and development of the tool in this way could help establish a rigorous international evidence base for the impact of health libraries.

Conclusion

This project has developed and tested a simple, generic tool to routinely measure the impact of health library services. The English context and organisational structures of the NHS and NHS libraries provide a unique opportunity to collect outcome data at a national level to create a cumulative large-scale data set of evidence of sustained impact. Following an initial positive pilot, use of the tool is currently being rolled out across English NHS health libraries and ongoing data collection has begun. Combining the survey with other methods such as interviews will allow a detailed picture of the depth and breadth of the contribution of health libraries to be captured. This information can be used for planning, quality measurement and advocacy and the approach has potential for wider international adoption.

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Conflicts of interest

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Appendix 1 Value and Impact Task and Finish Group

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Appendix 2 Baseline survey

The Value and Impact Task and Finish Group has been asked to update the Impact Toolkit. The group is seeking ideas and opinions which will help create a new toolkit, which will be flexible and easy to use for health care library and knowledge services.

Please refresh your familiarity with the ImpactToolkit and the survey should then take no more than 5–10 minutes to complete.

Definition of ‘impact’ as used in this survey: ‘difference or change in an individual or group resulting from the contact with library services’ (ISO 16439 – *How to assess the impact and value of libraries* 2014).

1. Service name

2. LETB region (please select)

3. Sectors served by your library (tick all which apply)

- Primary
- Mental Health
- Acute
- Ambulance
- Community
- Commissioning or CCG
- Public Health
- Prison healthcare
- Social care
- Students
- Other (please specify below)

Other (please specify)

4. Do you collect any data about the impact of your library services? If your answer is no, please go to Question 9.

- Yes
- No, never

5. For which library services do you collect impact data, and how frequently?

	Never	Occasional data collection	Planned sampling (e.g. once per year)	Continuous data collection (e.g. every search)
Impact of library staff and resources as a whole	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Literature searches	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Impact of specific information resources (e.g. BMJ Learning, book collection, UpToDate, databases etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Library premises and IT facilities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Current awareness services	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Library induction session for new members	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Information skills training sessions (such as web searching, databases, critical appraisal, current awareness, study skills) (1:1 or group)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Clinical / Outreach Librarian	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other e.g. synthesising searches, research support (please specify below)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Other services for which you collect impact data, or free text comments on this question

6. Do you currently use any elements of the NHS LKS Impact Toolkit?[Link to toolkit](#)

	Never use	Use locally modified version	Use without modification
Online survey used by Buckinghamshire NHS Trust (A on webpage list)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Semi-structured 1:1 interview (B on webpage list)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Case study template (C on webpage list)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mediated search questionnaire (D on webpage list)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Questionnaire for training delivered (E on webpage list)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please add any free text comments about your use or non-use of the Impact Toolkit.

7. Please tell us about other methods you use to collect impact data (tick all which apply)

- Questionnaire or survey written by your own library staff for your own service
- Regionally-created survey or questionnaire shared with other NHS libraries
- Focus groups
- One-to-one interviews
- Other (please specify below)

Other methods used, or free text comment on this question

8. How do you use impact data for your library services? (Tick all which apply)

- Evaluate and modify services
- Publicity and marketing
- Justification in business cases/funding bids
- We collect some data but don't really use it
- Other (please specify)

Other uses for impact data, or free text comment on this question

9. Suggest useful changes or additions to the Impact Toolkit in the comment box below.

10. How could the Toolkit be used to report comparable data nationally, while remaining useful locally? (E.g. a set of core/mandatory questions with added questions for customisation.) Please comment below.

11. What format(s) would be most useful if, in future, you decide to use the updated Toolkit? (Tick all which apply)

- Microsoft Word document
- PDF
- Online questionnaire
- Other (please specify)

Suggest formats or survey software which you would find useful

12. If you are willing to share any tools or questionnaires you use to measure impact, or would like to contribute to the development of the Impact Toolkit, please add your name and contact details here.

Thank you for your time.

Later we will feed back an anonymised summary of all the survey results via regional Library Leads. To submit your answers, click the DONE button below.

Appendix 3 KfH Generic Impact Questionnaire Impact of Library Services

This short survey is to collect information about the value of library services. The questions were developed by a Value and Impact Task and Finish group working for NHS libraries in England (part of the NHS Knowledge for Healthcare framework). The data you provide will help us understand and demonstrate the contribution of library services.

Version 1.2 December 2016.

1. You recently used the library service for:

- | | |
|---|--------------------------|
| Current awareness or alerts | <input type="checkbox"/> |
| Literature search or evidence search | <input type="checkbox"/> |
| Supply of an article, book or document | <input type="checkbox"/> |
| Training or e-learning | <input type="checkbox"/> |
| Access to electronic or print information | <input type="checkbox"/> |
| Clinical or outreach librarian service | <input type="checkbox"/> |
| Study space | <input type="checkbox"/> |
| IT facilities | <input type="checkbox"/> |
| Journal club | <input type="checkbox"/> |

(continued)

2. From that single use of library services or resources how did you use, or how might you use, the information, knowledge or skills gained? (Tick any that apply)

	Have Used	Probably will use
Personal or professional development	<input type="checkbox"/>	<input type="checkbox"/>
Direct patient care	<input type="checkbox"/>	<input type="checkbox"/>
Teaching or presentations	<input type="checkbox"/>	<input type="checkbox"/>
Sharing information with, or advising, other staff or colleagues	<input type="checkbox"/>	<input type="checkbox"/>
Patient information, advising or educating patients, clients or families	<input type="checkbox"/>	<input type="checkbox"/>
Developing guidelines/guidance/pathways/policies	<input type="checkbox"/>	<input type="checkbox"/>
Audit	<input type="checkbox"/>	<input type="checkbox"/>
Research	<input type="checkbox"/>	<input type="checkbox"/>
Organisational/service development/business planning	<input type="checkbox"/>	<input type="checkbox"/>
Legal or ethical questions	<input type="checkbox"/>	<input type="checkbox"/>
Commissioning or contracting	<input type="checkbox"/>	<input type="checkbox"/>
Publication	<input type="checkbox"/>	<input type="checkbox"/>
None of the above	<input type="checkbox"/>	<input type="checkbox"/>

3. From that single use of library services or resources how did the information, knowledge or skills gained help? (Tick any that apply)

Confirm prior knowledge or refresh my memory	<input type="checkbox"/>
Gain new knowledge	<input type="checkbox"/>
Generate new ideas	<input type="checkbox"/>
Update skills	<input type="checkbox"/>
Gain new skills	<input type="checkbox"/>
Improve my confidence	<input type="checkbox"/>
Save my time	<input type="checkbox"/>
None of the above	<input type="checkbox"/>

4. Did your use of library resources or services contribute to any of the following impacts? (Tick any that apply)

	Had an immediate contribution	Probable future contribution
Reduced risk or improved safety	<input type="checkbox"/>	<input type="checkbox"/>
Improved the quality of patient care	<input type="checkbox"/>	<input type="checkbox"/>
Saved money or contributed to financial effectiveness	<input type="checkbox"/>	<input type="checkbox"/>
More informed decision making	<input type="checkbox"/>	<input type="checkbox"/>
Contributed to service development or delivery	<input type="checkbox"/>	<input type="checkbox"/>
Facilitated collaborative working	<input type="checkbox"/>	<input type="checkbox"/>
Contributed to personal or professional development	<input type="checkbox"/>	<input type="checkbox"/>
None of the above	<input type="checkbox"/>	<input type="checkbox"/>

5. What is your main role?

If it is unclear which option your role fits into you can check the guidance (right click on the link and open in a new window or check online) http://content.digital.nhs.uk/media/11198/Appendix-A-Staff-Group-Definitions-v40/pdf/Appendix_A_Staff_Group_Definitions_v4.0_Final.pdf

Additional Clinical Services	<input type="checkbox"/>
Administrative & Clerical	<input type="checkbox"/>
Allied Health Professionals	<input type="checkbox"/>
Estates & Ancillary	<input type="checkbox"/>
Healthcare Scientists	<input type="checkbox"/>
Medicine & Dental	<input type="checkbox"/>
Nursing & Midwifery	<input type="checkbox"/>
Scientific & Technical	<input type="checkbox"/>
Students	<input type="checkbox"/>