

# **NIHR CLAHRC for LNR Approach to Knowledge Translation**

"Working together to conduct and implement high quality research to improve the health of the population of Leicestershire, Northamptonshire and Rutland"

## Foreword

This paper sets out the approach to knowledge translation of the NIHR CLAHRC for LNR. It rests on our experience of knowledge translation in the CLAHRC in the first two years of work, and builds on our initial approach (Baker et al, 2009). It incorporates new evidence and has also been informed by consultation with experts in the field.

The paper has been prepared to provide members of the CLAHRC and the NHS Trusts of LNR with a summary of our approach.

**“Through conducting and implementing applied health research that improves health outcomes, the NIHR CLAHRC for LNR helps NHS organisations become more successful in using research to improve effectiveness, efficiency and health”.**

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## Summary

Our approach has three elements:

- (a) Our definition of knowledge translation in health care and its component activities are taken from the Canadian Institutes of Health research (CIHR). This incorporates the ideas of end of grant knowledge translation and integrated knowledge translation through the co-production of research, and the knowledge to action cycle that describes the processes involved in implementation of research.
  
- (b) Our approach to embedding the principles of knowledge translation draws on the dynamic knowledge transfer capacity model (Parent et al, 2007). Following this model, we aim to increase the ability of NHS organizations to:
  - (i) take on board new knowledge or research evidence and employ it in delivering care (absorptive capacity);
  - (ii) apply the findings of research (disseminative capacity);
  - (iii) undertake activities to generate knowledge, including research studies and local evaluation projects (generative capacity).In association with these three capacities, we aim to help NHS organizations improve their ability to reflect on and respond to the effectiveness of these activities (responsive capacity).
  
- (c) We use a combination of activities to achieve knowledge translation, and growth in the knowledge translation abilities of NHS organizations. These include boundary spanners (the Coordinators), knowledge brokers (research leads, knowledge manager, fellows or staff with dedicated time in organizations), and networks within and between organizations focused on knowledge translation activities or specific service issues. We are strengthening social science expertise in the CLAHRC in order to guide these organic processes.

The following pages provide more information and relate the activities to the aims and objectives of NIHR CLAHRC for LNR.

## Aims and objectives of NIHR CLAHRC for LNR

### Background

CLAHRCs were established by the National Institute for Health Research as:

*“... collaborative partnerships between a university and the surrounding NHS organisations, focused on improving patient outcomes through the conduct and application of applied health research. They create and embed approaches to research and its dissemination that are specifically designed to take account of the way that health care is increasingly delivered across sectors and a wide geographical area.”*

They were also tasked with addressing the “second gap in translation” identified in Sir David Cooksey's Review of UK Health Research. That is, they are required to develop and test ways of increasing the speed and scale of the adoption of research evidence in clinical practice.

NIHR CLAHRC for LNR formulated this brief into four aims (1, 2a, 2b and 3) and related objectives (recently modified). The aims and objectives of CLAHRC for LNR are:

### Aims

***Aim 1: Conduct applied health research (in long-term conditions) in new ways that can more rapidly inform practice***

#### Objectives

- 1.i.1. Complete a planned programme of applied research to address important issues in the fields of prevention, early detection, education & self-management and rehabilitation of long-term conditions.
- 1.i.2. Draw generic lessons from the research programme to assist the NHS to deliver efficient care.
- 1.i.3. Increase the number of locally initiated high quality applied health research studies in long term conditions.
- 1.i.4. Increase the involvement of intended users of applied research, including NHS managers, clinicians and the public, in all stages of the research process.
- 1.i.5. Increase the number of new collaborations between academic researchers and NHS staff and organisations in bids for external research funding.

- 1.i.6. Improve the extent to which findings generated from completed applied research studies are disseminated and, where appropriate, applied.

***Aim 2a: Increase research capacity so partner NHS organisations are better able to generate new research evidence.***

Objectives

- 2.a.i. Improve the methodological skills of NHS staff who would like to lead or collaborate in research.
- 2.a.ii. Improve the ability of NHS organisations to prioritise, manage and/or initiate and lead research.
- 2.a.iii. Increase the opportunities for research-interested NHS staff, patients and the public to become actively involved in research or its implementation.

***Aim 2b: Increase research capacity so partner NHS organisations are better able to make use of existing research evidence.***

Objectives

- 2.b.i. Increase the skills of NHS staff to find, appraise, and interpret research evidence.
- 2.b.ii. Increase the skills of NHS staff to implement evidence.
- 2.b.iii. Enhance the “research mindedness” of NHS clinicians and decision-makers (research evidence given greater consideration when clinical or health service decisions are made).
- 2.b.iv. Improve access to research evidence for NHS staff.
- 2.b.v. Improve the range variety of activities and events to disseminate research findings across LNR.
- 2.b.vi. Increase public awareness of how applied health research is conducted, where evidence might be found and its potential value.

***Aim 3: Develop systems and structures for the application of knowledge and for the translation of research evidence into more effective and efficient health care policy and practice***

Objectives

- 3.i.1. Assist NHS organisations to develop structures and systems for the use of research evidence in decisions about new service provision, service development and health service commissioning.

- 3.i.2. Assist NHS organisations to develop systems and processes for recognition and reward for those who are engaged in applied health research.

If the CLAHRC can meet these objectives, beneficial outcomes will include:

- a more research-minded NHS;
- a more NHS-minded research community;
- an extensive portfolio of locally generated evidence for the prevention, detection, management and treatment of long-term conditions;
- an ever growing casebook of examples of 'evidence informed' changes to service planning, delivery and patient care;
- increased capacity and capability to conduct high quality locally relevant applied health research; and
- increased capacity and capability to identify and use research evidence to inform effective and efficient health care practice.

## Our approach to knowledge translation

CLAHRC for LNR has sought approaches to knowledge translation (KT) that:

- Involve methods of knowledge production that more rapidly inform practice;
- Provide direction for the application of existing research evidence to service delivery and care;
- Are underpinned by established theories (from psychology, education, social and management sciences);
- Can support the delivery of the aims and objectives of the CLAHRC by maximising the benefits of ongoing work programmes and informing new activities.

Our approach is characterised by the application of methods and theories on KT in the context of health service organisations. We seek to establish NHS organisations that use KT to improve the care they provide. Consequently, in addition to developing the KT skills of health professionals, we also work to develop the structures and processes organisations use to manage KT.

### ***(a) What we mean by knowledge translation***

A number of groups have developed, refined and, to some extent, tested models, theories and approaches to knowledge translation. Of these, the approaches used by the Canadian Institutes of Health Research (CIHR) appear particularly relevant to the broad goals of CLAHRCs (<http://www.cihr-irsc.gc.ca/e/29529.html>).

We have adopted the CIHR's definition of knowledge exchange, slightly modified to acknowledge the local population:

Knowledge translation is a dynamic and iterative process that includes the synthesis, dissemination, exchange and ethically-sound application of knowledge to improve the health of patients and the public, provide more effective health services and products and strengthen the health care system.

The CIHR distinguishes between two forms of knowledge translation:

#### 1. End of Grant Knowledge Translation

*"In end of grant KT, the researcher develops and implements a plan for making knowledge users aware of the knowledge that was gained during a project. Therefore, end of grant KT includes the typical dissemination and communication activities undertaken by most researchers, such as KT to their peers through conference presentations and publications in peer-reviewed journals.*

*End of grant KT can also involve more intensive dissemination activities that tailor the message and medium to a specific audience, such as summary briefings to stakeholders, interactive educational sessions with*

*patients, practitioners and/or policy makers, media engagement, or the use of knowledge brokers.”*

## 2. Integrated Knowledge Translation

*“In integrated KT, stakeholders or potential research knowledge users are engaged in the entire research process. By doing integrated KT, researchers and research users work together to shape the research process by collaborating to determine the research questions, deciding on the methodology, being involved in data collection and tools development, interpreting the findings, and helping disseminate the research results. This approach, also known by such terms as collaborative research, action-oriented research, and co-production of knowledge, should produce research findings that are more likely be relevant to and used by the end users.”*

This process is illustrated by the knowledge to action cycle (see Appendix).

These approaches align to distinct ‘modes’ of knowledge production (I and II) first described by Gibbons in 1994. Mode I knowledge production refers to traditional university-based academic research. Typically, the key (although not necessarily the only) impetus for the activity is the need to publish in high-impact peer-reviewed academic journals.

Gibbons et al suggest an alternative, Mode II, approach in which knowledge is generated in partnerships between research producers and potential end-users. In the context of health, Mode II research would be shaped by non-hierarchical collaboration between academic researchers and clinicians, managers, patients and others. Integrated knowledge translation is also referred to as *collaborative research, action research, participatory research, or co-production* of knowledge (Mitchell et al, 2009).

The CIHR also describe the relationship between knowledge producers and users in terms of the impetus for knowledge transfer between the communities: *knowledge push, knowledge pull* and *integrated knowledge exchange* (Box 1)

### **Box 1**

<b>Knowledge push</b>	Research evidence is disseminated to potential users. Likelihood of uptake might be enhanced through such activities as knowledge summaries or audience targeting.
<b>Knowledge pull</b>	Knowledge users are encouraged and supported to seek research evidence that might inform their clinical, organisational or policy decisions.
<b>Integrated knowledge translation (iKT)</b>	Researchers and knowledge-users work together to define and refine research questions, generate evidence, and to put it into practice

Academic led health research (mode I) has produced much useful evidence and will continue to be the dominant form of evidence production for the foreseeable future.

According to work done by the CIHR, 'knowledge brokers', networks, and communities of practice may accelerate knowledge dissemination and exchange. Knowledge brokers are viewed as filling a critical role by acting as intermediaries to facilitate collaborations between researchers and knowledge users. They may also play an important role in finding evidence to shape decisions, assessing, interpreting and adapting that evidence to the local context, and in identifying emerging issues that research can help to solve.

The CIHR report that strong collaborative relationships between researchers and knowledge users appear to enhance the effectiveness of dissemination and exchange activities. They suggest that integrated knowledge translation (iKT) is particularly useful in gaining understandings of complex "real-life" health service issues that require engagement of multiple stakeholders. They also assert that involving knowledge users as partners in the research process is a strong predictor that research findings will be used and that the impact of the research will be greater.

The CIHR have identified that institutional support, encouragement and incentivisation is an important factor for success of iKT activities and that this is true of both researcher and knowledge user organisations.

If full collaboration with end-users is not possible, for whatever reasons, research teams can still usefully be encouraged to seek advice from service representatives and patients throughout project planning, design, delivery and dissemination.

Research teams might also be encouraged to develop dissemination plans in order to provide carefully tailored messages to targeted audiences. Ideally, these messages should be plain, action-focussed and refined with a clear understanding of the needs of the intended knowledge users. These dissemination activities should take place alongside traditional academic diffusion activities (conference presentations, peer reviewed publications, etc).

### ***(b) The Dynamic Knowledge Transfer Capacity Model – KT in Organizations***

This model draws attention to the structures and processes used by organisations to manage KT. The 'dynamic knowledge transfer capacity' (DKTC) model (Parent et al, 2007) regards knowledge as a social construction and organizations as social systems. Knowledge is viewed not as an object to be transferred but as the product of interactions between people within social systems that have varying knowledge transfer capacities. To transfer knowledge successfully, social systems require four capacities.

Three of these capacities (absorptive, disseminative and generative) appear particularly pertinent in that they map to CLAHRC aims. Absorptive capacity is "the ability to recognize the value of new external knowledge, assimilate it and apply it to address relevant issues for a system's stakeholders." Disseminative capacity refers to "the ability to contextualize, format, adapt, translate and diffuse knowledge through a social and/or technological network and to build commitment from stakeholders. Generative capacity is "the ability to discover or improve knowledge

and the processes, technologies, products and services that derive from it.” Organizations need to monitor and reflect on the extent to which they have these three capacities, and to learn from their experiences. This is referred to as ‘responsive capacity’.

It should be noted that researchers are part of the social networks involved in KT and therefore the four capacities should encompass their activities as well as the internal activities of health care organizations.

### **(c) Achieving KT**

To date, NIHR CLAHRC for LNR has put considerable effort into building partnerships between health and academic partners in order to increase capacity to undertake both large and small scale applied health research. We are now devoting more energy to increasing the absorptive and implementation capacities of our partner NHS organisations.

Our strategy will involve education and training as well as methods that recognise the role of social systems and management structures. Training courses are being developed to address absorptive, implementation and generative capacities. Our applied research themes provide both locally relevant research and growing teams of researcher and practitioner partnerships that increase the generative capacity of organisations. Our implementation theme, supported by the applied theme, is assisting professionals and organisations develop implementation, and absorptive capacities.

Social and management science has informed the processes we are using to bridge the gap between researchers and practitioners. The Co-ordinators, our *boundary spanners*, bring researchers, practitioners and senior staff in organisations together to focus our activities on NHS priorities and build systems to embed KT. We are also establishing a number of *Knowledge Brokers*, alongside but distinct from the Co-ordinators. Thus, we have set aside funds to support fellow posts, that is, staff in organizations with protected time to facilitate KT activities. With the support of a new member of staff to support preparation of evidence summaries and their dissemination (to be appointed), they will be important knowledge brokers.

The Co-ordinators, Knowledge Brokers, researchers in our substantial programmes of applied research and other already active research-minded individuals and groups will be supported to form *networks*, potentially *communities of practice*, to enable and foster knowledge exchange. The networking process is supplemented by interactions between the CLAHRC and senior Trust staff in developing policy. Our activity with networks and communities of practice is at an early stage, but we already have some work to build on, for example the thriving networks established by the applied themes.

Our PPI processes involve patients and the public in these activities at various levels. In forthcoming work, we are expanding our investment in organisational behaviour expertise, with a specific focus on understanding and strengthening NHS

organizations' responsive capacity. We aim to concentrate effort where there is already some appetite for improved knowledge translation. Box 2 presents some examples of activities that flow from our approach.

**Box 2.** The push-pull-iKT taxonomy and DKTC model provide a useful framework for knowledge creation, dissemination, exchange and capacity development activities within CLAHRC:

Aim	Focus for knowledge exchange	Focus for capacity development	Example activities
1. Conduct applied health research (in long-term conditions) in new ways that can more rapidly inform practice	push	Disseminative	Disseminate tailored summaries of findings of CLAHRC studies to targeted audiences.
	iKT	Generative	Initiate or enhance academic-NHS collaboration (co-production) in applied health research studies.
2a. Increase research capacity so partner NHS organisations are better able to generate new research evidence.	iKT/pull	Generative	Increase the skills of NHS staff to enable them to undertake research-related activities to address pressing clinical and service issues.
	iKT		Enable experiential learning by providing opportunities for NHS staff to become partners in high-quality applied health research studies.
2b. Increase research capacity so partner NHS organisations are better able to make use of existing research evidence.	pull	Absorptive	Help organisations to develop capability and infrastructure for identifying, appraising and synthesising evidence in response to service issues and challenges.
3. Develop systems and structures for the application of knowledge and for the translation of research evidence into more effective and efficient health care policy and practice	iKT	Absorptive	Establish knowledge exchange forums (such as research interest groups, communities of practice, institutes and networks) for collaboration between researchers and users to respond to local health challenges.
	pull	Absorptive	Encourage changes in service planning and commissioning systems to enable, or even require, research evidence to inform service decisions (i.e. to increase evidence-informed decision making).
		Responsive	Increase the ability and skills of organisations to implement research evidence. Assist organisations; identify current structures and processes for managing absorptive and implementation capacities, and help organisations increase the effectiveness of these structures.

### ***Some implications***

The approaches collectively tell us that, in supporting knowledge translation, attention must be paid to:

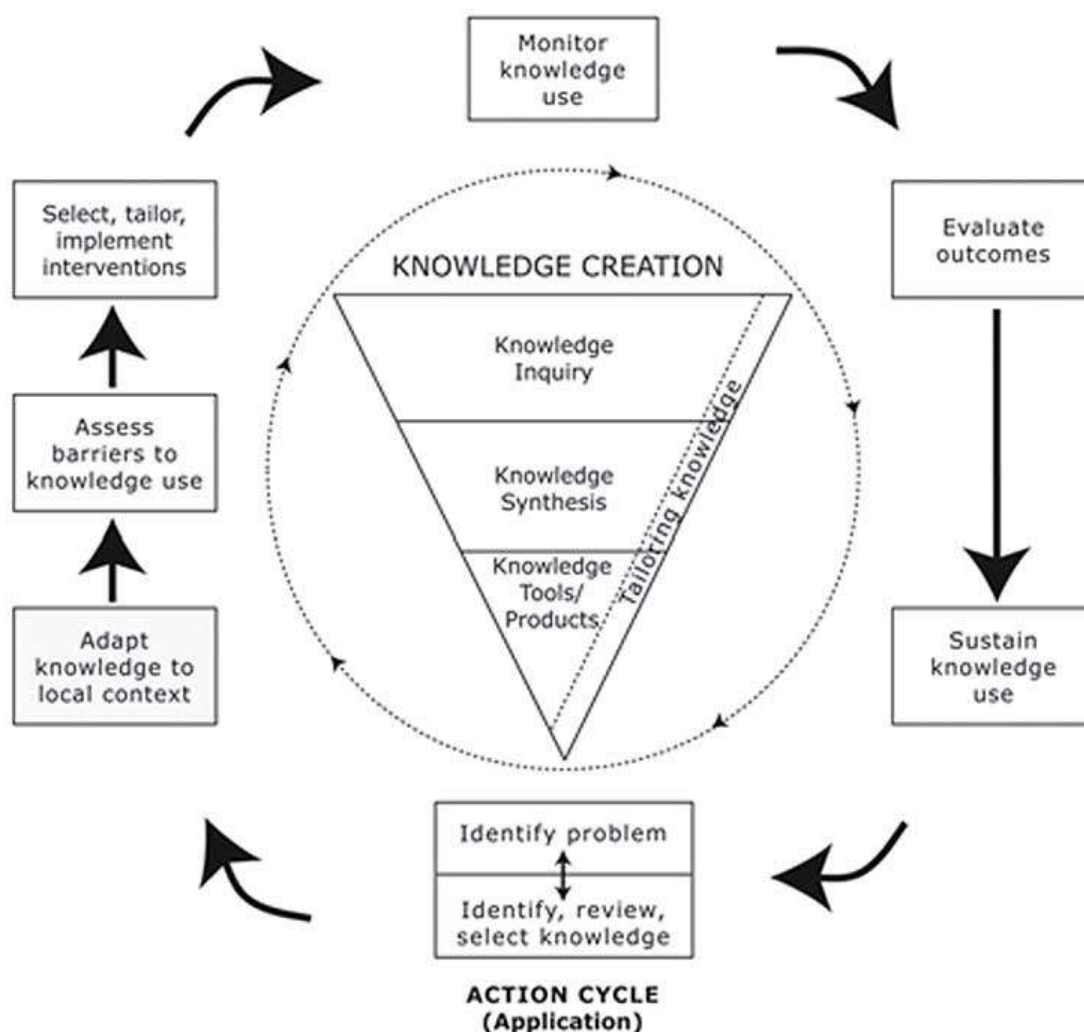
- The method of knowledge production and the relationship between knowledge producers and users;
- The impetus for and resistance to change (at multiple levels);
- The perceived value of evidence in supporting improvement;
- The capacities within a system to generate, disseminate and absorb knowledge (in terms of the human and other resources available to the organisation);
- The process by which knowledge is selected, adapted, implemented, monitored and sustained.

## Appendix:

### The Knowledge-to-Action Cycle: Implementing and Sustaining Evidence-Informed Innovations

The CIHR refers to the knowledge-to-action (KTA) cycle to describe (an idealised) process by which knowledge is created, adapted, refined, applied, monitored and sustained. This process implies that a range of activities might be necessary for the sustained use of particular knowledge in practice. According to the CIHR, the KTA process:

*“... conceptualizes the relationship between knowledge creation and action, with each concept comprised of ideal phases or categories. A knowledge creation “funnel” conveys the idea that knowledge needs to be increasingly distilled before it is ready for application. The action part of the process can be thought of as a cycle leading to implementation or application of knowledge. In contrast to the knowledge funnel, the action cycle represents the activities that may be needed for knowledge application.”*



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