Evaluation of Leicestershire Improvement, Innovation and Patient Safety Unit (LIIPS)

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1. Introduction

The Leicestershire Improvement, Innovation and Patient Safety Unit (LIIPS) was formally launched in December 2015 with the aim of facilitating improvement in the quality and safety of healthcare in Leicester, Leicestershire and Rutland by connecting people across health and academia with expertise and passion in the practice and science of improvement.

The idea for LIIPS initially developed from discussions between Professor Mary Dixon-Woods (University of Leicester, UoL) and Professor Kevin Harris (then University Hospitals Leicester NHS Trust, UHL). It grew around existing informal ties and a joint interest in patient safety and quality improvement. Early discussions included people in other key role from UHL such as Moira Durbridge, Suzanne Khalid and Jay Bannerjee, and from UoL such as Professor Graham Martin. The opportunity to develop and grow this network more formally came from Professor Dixon-Wood’s Wellcome Trust Award which allowed funding to be used to scope out the need, role and structure of a new Patient Safety Unit. After this consultation and a stakeholder event in June 2014 it was decided that the Unit would be strengthened by including more partners across Leicestershire and Rutland, so Leicestershire Partnership NHS Trust, the three NHS Clinical Commissioning Groups (Leicester City, West Leicestershire, and East Leicestershire and Rutland), two other academic institutions (De Montfort University and Loughborough University), and Healthwatch Leicestershire became involved in the next stages of development. This has included setting up governance structures and procedures\(^\text{1}\): a Steering Group with representatives from Partner Organisations, a Core Development Group, and a number of Task Groups focussed on co-ordination and delivery of activities. In addition, five Demonstrator projects\(^\text{2}\) have been initiated to inform future processes and the business model and to demonstrate the value of LIIPS.

Through discussion between partners at the LIIPS Steering Group and Core Development Group, LIIPS activity is now focused on the following offerings:

- Measurement for Improvement Workshops\(^\text{3}\) (‘Why to and ‘How to’ Workshops)
- Medication Safety Group Meetings (including sharing learning from Human Factors experts)
- Research and Evaluation Interest Group (developing research and evaluation amongst partners)
- The two other task groups (Service Improvement in Action, and Education and Training) are still in development

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\(^\text{1}\) LIIPS Governance Structure [http://www2.le.ac.uk/partnership/liips/copy_of_about-liips](http://www2.le.ac.uk/partnership/liips/copy_of_about-liips)

\(^\text{2}\) LIIPS Demonstrator Projects [https://www2.le.ac.uk/partnership/LIIPS/current-projects](https://www2.le.ac.uk/partnership/LIIPS/current-projects)

\(^\text{3}\) LIIPS Measurement for Improvement Workshops [https://www2.le.ac.uk/partnership/LIIPS/LIIPS-measurement-for-improvement-workshop](https://www2.le.ac.uk/partnership/LIIPS/LIIPS-measurement-for-improvement-workshop)
An evaluation of the LIIPS Unit was commissioned by East Midlands Academic Health Science Network’s Patient Safety Collaborative in December 2015 with the purpose of evaluating the existing LIIPS model as a possible model for future improvement and patient safety initiatives. The evaluation was carried out by the Institute of Mental Health’s Evaluation Team.

2. Objectives

This project aimed to evaluate the LIIPS activity to date, to inform the future development of LIIPS and other patient safety and quality improvement initiatives. Specific objectives are to:

- conduct a process evaluation of the development and remit of LIIPS, exploring current strengths and weaknesses, barriers and facilitators to effectiveness, and future opportunities and threats
- analyse routine data on LIIPS reach, attendance at events and other indicators
- carry out a preliminary return on investment analysis in one or two case studies

3. Methodology

3.1 Analysis of Routine Data

Available data on LIIPS activities was collated and analysed descriptively, and presented to display frequencies, means and percentage to highlight areas of activity and reach.

3.2 Qualitative Interviews with LIIPS Stakeholders

Qualitative interviews were used to explore the organisation and experience of LIIPS, including causal mechanisms within different local contexts, and the reflective experiences of different stakeholder groups. A sample of 9 NHS and 3 academic stakeholders, and 4 members of LIIPS core team (members of the LIIPS unit who have had a particularly hands-on role in developing and setting up the network and its activities) participated in semi-structured interviews to explore the organisation of LIIPS and reflective experiences on outcomes.

3.3 Detailed Case Study

A detailed case study of a LIIPS-related project has been examined to provide some initial indications of a model for future return on investments analysis, and the potential for wider adoption of the LIIPS models as a sustainable patient safety collaborative approach. Interviews with three stakeholders involved in this activity were used to build a model of inputs, outputs and outcomes for this case.
4. Results

4.1 Analysis of Attendance Data

Between June 2014 and April 2016 there have been 13 events organised by LIIPS focussed on a number of different topics. Data was received on those registered to attend (rather than actual attendees). Events to date have featured meetings of the Medication Safety Group, the Measurement for Improvement workshops, sessions relating to LIIPS itself such as the Research and Evaluation group.

There has been substantial interest shown with a total of 403 individuals from 18 different organisations registered to attend one or more of these events. Attendees have come from different sectors including academic, public health, patient representative and other groups from across Leicestershire, Nottinghamshire and Northamptonshire.

Individuals from six organisations in particular have attended 3 or more events, including the University of Leicester (UoL), University Hospitals Leicester (UHL), Leicestershire Partnership Trust (LPT), local area Clinical Commissioning Groups (CCGs), Loughborough University (LboroU) and De Montfort University (DMU).

Attendees from a further 12 organisations have attended two or less times. These include HEEM, Northampton Hospital, NIHR, RDS, EMPSC, EMAHSN, PPI Groups, Healthwatch Leicestershire, Nottingham University, LLR Alliance, KGH and patient representative groups. Due to the infrequent attendance from these groups, they have been collapsed into the category ‘other’ in this report.

Of the 13 events organised by LIIPS, eight were focussed on partnership working within the areas of medication safety or ‘measurement for improvement’. The analysis focussed on these eight meetings as the remaining events served strategic aims other than that of facilitating collaboration between local stakeholders on these two key health areas.

Attendance

Across the four meetings arranged around the theme of Medication Safety, a total of 86 individuals registered to attend whilst a similar total of 84 registered for the Measurement for Improvement events.

Table 1. Registered attendees across four Medication Safety events (n=86)

<table>
<thead>
<tr>
<th>Organisation</th>
<th>UoL</th>
<th>UHL</th>
<th>LPT</th>
<th>CCGs</th>
<th>LboroU</th>
<th>DMU</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attendees (%)</td>
<td>14 (16%)</td>
<td>32 (37%)</td>
<td>13 (15%)</td>
<td>10 (12%)</td>
<td>6 (7%)</td>
<td>8 (9%)</td>
<td>3 (3%)</td>
</tr>
</tbody>
</table>
Table 2. Registered attendees across four Measurement for Improvement events (n=84)

<table>
<thead>
<tr>
<th>Organisation</th>
<th>UoL</th>
<th>UHL</th>
<th>LPT</th>
<th>CCGs</th>
<th>LboroU</th>
<th>DMU</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attendees (%)</td>
<td>2 (2%)</td>
<td>41 (49%)</td>
<td>21 (25%)</td>
<td>9 (11%)</td>
<td>1 (1%)</td>
<td>3 (4%)</td>
<td>7 (8%)</td>
</tr>
</tbody>
</table>

It is clear from the attendance records for both topic groups that individuals from certain organisations are currently better represented at LIIPS organised events than others. University Hospitals of Leicester, in particular, has been very actively involved. However, the size of the partner organisations will play a part in the number of staff able to attend events, and account for some of the variation seen. There appears to be scope for Leicestershire Partnership Trust as well as local CCGs to play a greater role in future events.

Though the largest difference in attendance, partly driven by UHL, appears not to be between individual organisations but rather the greater proportion of health partners overall than their academic counterparts.

Fig 1. Proportion of academic, health and other partners in attendance

As seen in Fig 1 above, individuals from health organisations make up the majority of those registered to attend LIIPS events. There are undoubted possibilities for shared learning and collaborative projects to occur by bringing together individuals from different health teams across acute care, mental health and primary care; though it may be the case that unique benefits might also arise from academic-health partnerships. Strategically marketing LIIPS events to more academic stakeholders, may further enhance the opportunities provided within LIIPS. Holding some events within different partner organisation sites may facilitate this.

4.2 Qualitative Interviews with LIIPS Stakeholders

Interview data was analysed thematically to identify themes emerging from the data concerning:
• The development of LIIPS
• The LIIPS mission and how it achieves it
• Facilitators enabling LIIPS to be effective
• Challenges and Barriers to LIIPS activity
• Future development of LIIPS

4.2.1 The Development of LIIPS

Organic and Evolving
The development of LIIPS from an initial idea to the current structure has been underpinned by its overarching aim of increasing collaboration between organisations. This has meant that the progression of LIIPS has been gradual, requiring shaping from partners, but also responding to change in the NHS and the need to develop its offer alongside this. The term “organic” and “evolving” was frequently used by interviewees to describe the development of LIIPS.

“It is continuing to evolve, partly because it has been set up to be this way - slow and steady, bottom up.” Core Team Member

Learning Through Demonstrator projects
The five LIIPS Demonstrator Projects were cited as a key way that LIIPS and partners have learnt about how best to work alongside partners on specific projects. These projects were selected for support from an open call to staff working in the LIIPS partner organisations. It became clear from these that a facilitating role was most time-efficient and beneficial, rather than being directly involved in helping to complete the projects. This was partly due to the limited resources of the core team, which means that partners need to contribute their time. But also because it encouraged real change and learning to happen within the partners, which was less likely to happen if the LIIPS core team had taken a more hands-on approach.

“It’s about being as smart as we can with the resource we’ve got, that’s what we are learning as well. Where are we going to get the most benefit for what we do.” Core Team Member

“The learning from the demonstrator project was immense – the need to empower staff to do this themselves.” NHS Stakeholder

4 Demonstrator Project Call: https://www2.le.ac.uk/partnership/LIIPS/demonstrator-projects
4.2.2 The LIIPS Mission and how it achieves it
There was unanimous agreement that the LIIPS mission was worthwhile, and a valuable addition to NHS and academic partners in Leicestershire and Rutland. A number of themes emerged from the interviews concerning the specific nature of the mission, and how it was best achieved.

*Enabling Quality Improvement & Patient Safety*

Interviewees were in agreement that the mission of LIIPS was to enable improvement in the quality and safety of healthcare in the region. It aimed to support individuals and organisations, and co-ordinate improvement activity by bringing everyone together who has a similar interest and purpose in improving healthcare.

It was acknowledged that there were many excellent individuals within the Leicester, Leicestershire and Rutland area who were already making real improvements to quality and patient safety, but that they had been working in an isolated way rather than a collective. The overall aim of LIIPS was to bring the existing expertise together; to consolidate and capitalise on the potential that was already in the system but that was remaining latent.

> “There wasn’t a facilitating mechanism ... that could help with the co-ordination, help with the focus, help develop the mission, to put those people together to have those conversations.” *Core Team Member*

*Facilitating Connections*

There was consensus amongst interviews that the main way LIIPS achieves its overall mission is through facilitating connections between partners and individuals with complementary skills and expertise. It brings people together to build capacity and support individuals and organisations to deliver better and safer patient care. In particular, there has been a focus on encouraging collaboration across academic and NHS partners. Interviewees described the value they got from these connections with people who were also interested in patient safety but brought a different skill set.

> “It filled a gap that was missing in Leicester, closer working ties between NHS and academics.” *NHS Stakeholder*

> “That matching is something that people can’t get anywhere else, and does seem to be beneficial and valued” *Core Team Member*

In addition, interviewees described the role that LIIPS partners have in connecting the network to other initiatives and stakeholders across the region. These included the East Midlands CLAHR, AHSN, Patient Safety Collaborative and Health Education East Midlands.

*Supporting Capacity Building and Implementation*

Another way LIIPS achieves its aim is through supporting NHS partners to build capacity in Quality Improvement and Patient Safety in their own organisations, thereby promoting internal implementation of these approaches by “front-line” staff. The Measurement for
Improvement workshops were highlighted as the main means for achieving this. Building the capability to implement these approaches in NHS partners was seen as critical, and a core deliverable.

“What we really need to get out of it is people who are more capable of driving change and understanding improvement. That in itself will be a tremendous measure of success.” Core Team Member

“NHS partners want enhanced support to achieve improvement, so we need to look at the longer-term, a way of creating capacity for improvement within organisations.” NHS Stakeholder

Not Doing the Improvement Itself
The LIIPS core team were also keen to stress what LIIPS didn’t do. The LIIPS role was not to take on projects itself, for the LIIPS core staff to complete, but to facilitate the partners to take on new improvement projects. Its role was to guide, provide advice, and facilitate, but they were not a resource to be used to implement the approaches.

“[LIIPS is] a facilitator for improvement, rather than the improver arm itself.”
Core Team Member

“It’s introducing, it’s connecting, it’s creating energy, it’s helping to form shared goals, but it’s not doing any of that work itself” Core Team Member

4.2.3 Facilitators Enabling LIIPS to be Effective
When asked about examples of success stories or real impact that LIIPS had achieved, interviewees frequently mentioned the Measurement for Improvement Workshops or activities linked with the Medication Safety Group.

“[The Measurement for Improvement and the Medication Safety Group activities]... are clearly defined roles and functions, and the benefits are clear. It is not just networking.” NHS Stakeholder

Following attendance at the Measurement for Improvement Workshops, interviewees described how changes have been made to how they write their Safety Reports to the Board, to what outcomes they measure, and to how they analyse their data. In one organisation, this is believed to have contributed to an improvement in patient safety statistics.

“[The improvement] is not all down to LIIPS, but they have contributed by helping us to focus on the right things.” NHS Stakeholder
Tangible outcomes were also reported following the Medication Safety Group activities. These included 2 short-listed bids to HEEM for funds; PhD placements and UG/MSc dissertations hosted by NHS partners; and a new bid being worked on.

“People are bringing real data to the Medication Safety Group Meetings, and real case studies so that we can apply the academic knowledge to this. Then the hope is that people can start to apply the knowledge directly to their practice.” Core Team Member

When asked about the strengths of the LIIPS model and factors that facilitated it to achieve these successes, a number of themes emerged.

_Credibility amongst different partners_

Having the ‘right’ people involved, who had the necessary connections, reputation and experience for their roles, was seen as one of the main facilitators for the success of LIIPS. The people involved have existing networks, other complementary interests, roles and activities, and they are engaged in senior roles relating to patient safety and improvement in the key partners. In addition, many of them have established working relationships with the other key players.

“We’ve had a lot of the right people, in the right place, at the right time.” Core Team Member

The LIIPS core team were consistently described as people who had credibility and respect amongst all the partners. This was in terms of their expertise and knowledge, but also their understanding of the NHS perspective and the changing policy and operational context.

Being equally credible to academic partners and NHS partners was a “rare trick” and an important factor in the success of LIIPS to date. People in key roles in LIIPS need to understand and respect both sides equally, and be able to create the conversations and to make the connections between both academic and NHS partners.

“The individuals involved [have facilitated its success]..., their credibility in improvement science, their willingness to let this grow for the wider community rather than their own academic agenda, and their knowledge.” NHS Stakeholder

The more formal involvement of the academic partners was identified as a particular strength of the model by NHS partners.

“[Academic partners] have been very responsive through their Human Factors department, and that’s been a highlight for me.” NHS Stakeholder

Likewise, academic partners have valued the opportunities provided by better connectivity to NHS.
“[Our academic staff] have found it to be tremendously useful, for developing a better understanding of the clinical difficulties associated with medication safety.” Academic Stakeholder

Non-hierarchical and independent
The independence and neutrality of LIIPS was seen as a real strength that helped it to achieve its mission - bringing together the different commissioners, providers and academics to improve patient safety through collaboration in a way that is not led by any of the organisations. Its neutrality is important to getting the trust of the NHS partners, and the partners trust LIIPS because it is not perceived to be aiming to get money, recognition, or channel resources. Because LIIPS staff are not doing operational, day-to-day healthcare delivery, they are seen to be free to focus on improvement in an objective and independent way.

“Its independence is a real strength” NHS Stakeholder

“People in the network feel listened to…. It’s democratic, we are given the opportunity to give feedback” NHS Stakeholder

Focus on real problems
Interviewees stressed that the focus of LIIPS activity on real and current NHS problems was a clear strength, and increased the levels of engagement from NHS partners. Wherever possible, LIIPS activities use knowledge and evidence from academia, but it keep it very focused on solving practical issues in the NHS. That focus is driven by the NHS partners’ needs to ensure relevance. In both the Measurement for Improvement workshops and in the Medication Safety Group activities, bringing together ‘live’ problems with current expert knowledge enhanced the value of these LIIPS activities.

“Coming from an NHS background is critical in getting the message across about how to use the data to solve the real problem or tell the story, relating it to real examples.” Core Team Member

“It focussed in on real problems in the hospitals, and getting academic input into these e.g. redesigning paperwork, looking at process flows using human factors approach. It has really enriched the way I work, and the way I think. I have no doubt that we will end up with a better working model than we have now.” NHS Stakeholder

Local Area Focus
The focus of LIIPS activity on the specific geographical area of Leicester, Leicestershire and Rutland was thought to be an important factor in the success of the approach. There was a perceived strength in developing local networks and connections, and building capacity within the local areas. This allowed a sense of intimacy to develop; knowing the people on the patch, who’s good at what, and creating the weak ties that enable problems to be
solved by others in the network. There was a concern that this connectivity would be lost if the model covered a larger geographical patch.

“It is really important that it stays local otherwise it could easily lose its purpose and its strength in developing local networks.” Core Team Member

“Keeping it small is one of the key things.” Core Team Member

Making Sustainable Connections to Support Improvement
LIIPS is seen to be particularly effective in achieving its role in connecting people to support and enable improvement. This involved not only identifying people with matching needs and expertise, but also supporting a genuine and sustainable relationship that benefits both parties. This is done through making weak ties between individuals, and providing support for these connections to enable improvement work around the particular current needs. It is also hoped that these connections will be sustained, and be utilised to provide support for other future problems without the direct involvement of the LIIPS team.

“There is a desire to do things better, ...so the obvious thing is to utilise the knowledge, expertise, interest, energy, that’s already present, but people don’t know where it is. Even within the same organisation, people don’t know where to go.” Core Team Member

“If it hadn’t been for LIIPS and the demonstrator project, I wouldn’t have been able to [achieve this]. I have built these links now; they will be built on again.” NHS Stakeholder

“I value the connections that it has enabled to happen”. NHS Stakeholder

4.2.4 Challenges and Barriers to LIIPS activity:

Measuring impact and demonstrating benefits
Despite the positive benefits and impacts described in the interviews, it was also acknowledged that objective measurement of these benefits was a major challenge for LIIPS and its partners. Demonstrating real benefits, and the value of those benefits, was seen to be important to maintain partners’ interest in and commitment to LIIPS, but challenging to establish. The lack of a planned approach to assessing impact was identified as a risk by members of the LIIPS Core Team and Stakeholders. Although engagement levels can be assessed through records of attendance at events and meetings, the impacts or successes are not systematically recorded.

“How do you measure the benefit of an introduction? We don’t track necessarily what happens. So knowing the benefit of what we’ve done is not something we’ve got a handle on”. Core Team Member
“[LIIPS] needs to be able to demonstrate a return on investment for partners, especially when there are lots of other initiatives and projects requesting funding.” *NHS Stakeholder*

Even where more tangible changes have occurred following LIIPS activities, it was felt that it is still too early to assess any real impact of these. However, there was a genuine expectation among NHS Partners that this evidence would come in time. The need to demonstrate return on investments and financial benefits is also a wider challenge to Quality Improvement and Patient Safety programmes as a whole.

“One of our weaknesses of the entire Improvement approach is the lack of focus on finance and cost effectiveness” *Core Team Member*

**Clearer Roles for LIIPS and Partners**

Although LIIPS started off as an evolving network to be shaped to the needs of the partners, a number of interviewees felt that it now needed a more defined role and a clearer offer to partners. The initial developmental stage of LIIPS was felt to be important, and had achieved lots of engagement and commitment to the model. It had also allowed learning in the first eighteen months about what works well, what the partners needs are, and what the LIIPS team have capacity to do. However, some suggested that the time is right for a more defined role and plan, a clearer Unique Selling Point that makes it distinct from other initiatives such as CLAHRC, AHSN and PSC, and the presentation of clear examples of what it can do for partners.

“It has got so much potential but more clarity is needed. There is no brochure that says what the offer is. There is a danger that partners will dis-engage if there is no clear menu or list of things LIIPS has done or can do for you.” *NHS Stakeholder*

“It needs a strategy for the future to be clearly defined and a clear implementation plan, focused on one or two priorities which are similar across partners.” *NHS Stakeholder*

Others highlighted the need for LIIPS to remain a vehicle for sharing the knowledge and expertise that is generated and owned by the partners. A specific plan would not allow it the flexibility to respond to emerging needs and priorities within the NHS.

“We shouldn’t be trying to develop a 5-year forward plan for LIIPS, we should be letting it evolve. It needs to be organic, and the front-line need to own it”. *Core Team Member*

Others suggested that re-iterating the mission and highlighting examples of current activity is important.
“A more regular update from the board on a 6-monthly plan and direction would be good.” *NHS Stakeholder*

**Increasing involvement from Partners**

Outside the small team of LIIPS salaried staff, activity is currently dependent on a few individuals giving freely of their time. Being reliant on a few key people who hold strategically important posts within partner organisations represents a risk. If key people move, will new people in those posts know what LIIPS is about and continue to engage/fund? Within the partner organisations, the knowledge of and involvement in LIIPS needs to be spread more widely to diminish this risk. LIIPS is very aware of the need to actively involve others to provide additional the input.

“Success of LIIPS seems very reliant on a very small number of people…. We’d only need to lose a few of those for it to potentially be jeopardised.” *Core Team Member*

“We need others to contribute to the doing. There is an equitable contribution to meetings, but not to delivering the plan.” *NHS Stakeholder*

Moving away from reliance on individuals to a more systems-oriented approach is an alternative way of reducing this risk. By building a sustainable a system, this can continue even if key people moved on.

However, from the NHS partners’ perspective, capacity to attend meetings and to take on LIIPS-related activities is often limited due to existing NHS pressures and prior commitments. There is a resource challenge on clinicians’ time and priorities, and there are many new initiatives that LIIPS needs to compete with for clinician attention. This leads to reluctance from some partners to attend meetings if there are no clear outputs or benefits, coupled with a high risk of being asked to take on actions they feel they have no capacity for.

“People in the NHS want someone to do the projects for them. It’s not just about developing capacity internally, because there are capacity issues [in the NHS]. People want end results, but they’ve not got time to do it themselves. This is why student placements are a win-win,…..a really good way forward”. *NHS Stakeholder*

“unless there is a clear output to the meeting [NHS staff] will become less inclined to come along. Might be better to have very focussed meetings to actually produce something, rather than discuss and share.” *NHS Stakeholder*

“Unless you make people think ‘Oh, yes, I’ve got a LIIPS meeting. I can get this done.’ It will be very, very difficult to keep everyone on-board and motivated” *NHS Stakeholder*
It is likely that the first people to use LIIPS will be those who are already interested and motivated by the agenda, for whom improvement projects meet specific professional or individual aims. Reaching a wider cohort of people, for whom quality improvement and patient safety is not considered central to their role, will be more challenging.

Future LIIPS events and meetings need to attract new NHS leaders, clinicians and staff, and academics, through high profile speakers, relevant topics and practical timings and venues.

“There is a real challenge of keeping a high profile when people are overwhelmed [by other initiatives and priorities]” *NHS Stakeholder*

“[LIIPS should] consider arranging meetings to fit better with clinicians schedules – meetings in the middle of the day at the University are difficult to attend for many NHS staff.” *NHS Stakeholder*

“One of the markers of success will be different faces appearing at events [like the launch]” *NHS Stakeholder*

**Reaching Frontline staff**

Linked to the theme of increased involvement in LIIPS was the need to specifically involve more ‘front-line’ staff, i.e. the clinicians and health care professionals delivering care, rather than the leaders and managers. Although any staff member from one of the partner organisations can get involved in LIIPS, there is a feeling amongst those currently involved that this may not be getting through to staff who don’t consider their core job role to be about patient safety and improvements. If LIIPS just targets those who are already interested, they will just increase the expertise of those who are already motivated by the agenda – the low-hanging fruit. Instead the focus should be on raising the general awareness of improvement in all staff, but particularly front-line NHS and academic staff. Awareness of LIIPS activities amongst those who attend the various groups is good, but there is uncertainty about how widely this goes beyond those individuals, and filters through to the rest of the organisation.

In relation to the Measurement for Improvement workshops, a number of interviewees felt that only by supporting front-line staff to attend would we see these staff empowered to do Quality Improvement as a core part of their job and the approaches actually implemented. However, due to difficulties in getting front-line staff released from their jobs to attend training, often it is the Heads of Service, managers and Improvement Staff that go to the training. Getting the right people to attend these sessions is critical, and may require a different approach to delivering the training that targets particular areas, facilitates attendance and maximises the relevance to their role.

“Measurement for Improvement training should be delivered in the place of work and made relevant to the measurement/outcomes being used by the teams” *NHS Stakeholder*
Similarly, with the medication safety group, the need to involve all prescribers in the learning emerging from the LIIPS activities was identified.

“There is lots of positive engagement from nursing and pharmacy staff around medication safety, but the majority of prescribers are doctors, and there doesn’t seem to be that much interest from medical staff”. **NHS Stakeholder**

**Sustainable funding**

LIIPS was established to run for a set-up year, funded mainly by Mary Dixon-Woods’ Wellcome Trust Investigator award and by the University of Leicester Prospects Fund. Then financial contribution for core infrastructure costs came from all partner organisations for 6 months and then a contribution for 12 months until March 17. In addition to financial support from organisations for core infrastructure costs, partners support the LIIPS governance groups and LIIPS interest groups, training and networking activities through the provision of staff time. Healthwatch Leicestershire contribute support in staff time but do not contribute to core infrastructure costs. Staff from the LIIPS partner organisations can attend all LIIPS activities free of charge. Although stakeholders reported that they get value for money from their membership, the time involved in negotiating and securing the funding from partners and the pressures on funding from elsewhere in the partner organisations were cited as a risk to this as a sustainable source of funding. The plan is for LIIPS to increase financial income from sources other than the partner organisations so as to move towards requiring decreased financial support from partners for the core infrastructure costs.

The challenge of finding these sources of sustainable funding was identified by a number of interviewees, though it was generally felt that it is now the correct time in its development to look for alternative funding models. An alternative source of funding could also support an increase in the LIIPS resources, through additional team members.

“[LIIPS is] clearly doing a good thing; it has excellent and enthusiastic people involved. But there doesn’t seem to be a mechanism for ensuring it is sustainable in the future, through funding… [it is] being distracted by delivery.”

*Academic stakeholder*

A number of different funding models were suggested. For example, seeking external funding through a commissioned project; becoming self-funded through generating income via conferences, Quality Improvement training provision, events, and consultancy projects; or using part-funded models where partners donated in-kind or additional contributions for additional services.

“The goal is to be self-sufficient, but that can’t just happen overnight.” **Core Team Member**
4.2.5 Future Development of LIIPS

There was an expressed need for LIIPS to continue to develop in a dynamic way that reflected the needs of its partners, and not to remain static.

“[LIIPS] needs to continue to evolve, otherwise it will fail to be about improvement.” *NHS Stakeholder*

**Engaging with Different Partners**

Increased engagement with some specific types of partner was identified as an area for future development. Health Education partners leading UG and PG healthcare training and education (e.g. HEI Course leaders in Medicine and Allied Health Professions, HEEM) would be critical to support the next generation of clinicians see this kind of collaborative improvement work as part of their working role in the NHS. Other partners mentioned included: voluntary sector, social care providers, and the private sector. Clarity about the relationship between LIIPS and other associated initiatives such as CLAHRC, AHSN and PSC was also highlighted as needing further development.

**Focus on Emerging Safety Issues**

The need to be at the forefront of the patient safety agenda was highlighted by interviewees. Whilst the focus on the safety of current medication usage is very important, and should continue, LIIPS also has a role in highlighting the safety implications of new medicines and therapies. In particular, the challenges brought by new, innovative treatments (e.g. regenerative medicine) and how the NHS can make sure they are used safely. This may require input from other academic disciplines that aren’t currently involved in LIIPS.

**The national picture**

Although LIIPS operates within a specific local area, and this was seen as a strength, the opportunity to feed into the national picture should not be overlooked by this focus. A number of interviewees described the need to think about how to influence the national patient safety and quality improvement agenda and policy makers for them to have an impact and to make a real difference.

“They need to think about how to have an impact at the national level.”
*Academic stakeholder*

“It is important to keep the links with national developments, particularly the Health Foundation’s Q Initiative” *Core Team Member*
4.3 Detailed Case Study: a Medication Safety Group project

4.3.1 Background
A case study of a specific project that can from the Medication Safety Group activities was conducted to explore in-depth the processes, resources’ input and the anticipated outcomes of a key LIIPS partnership. This partnership involved faculty and students from Loughborough Design School at Loughborough University alongside staff from both UHL and LPT.

Although medication errors occur relatively infrequently, efforts are being made across both UHL and LPT to further reduce the number of medication errors made within their care teams. Meanwhile academics at Loughborough University are doing research into human factors and complex systems, examining the interactions between people, products, technologies, services, procedures, policies and culture. A LIIPS-instigated collaboration was formed to assess whether adverse drug events could be reduced through an investigation of the human factors and procedures in place in a number of different care units.

Three semi-structured interviews were conducted with stakeholders from UHL, LPT and Loughborough University. Two units, a respite home for adults with severe learning difficulties (LPT) and the Dialysis Unit at Leicester General Hospital were evaluated by MSc students from the University. After interviewing relevant stakeholders it became apparent that the same processes were followed for each unit at both UHL and LPT. The following description, and model depicted in Figure 2, applies to both NHS settings.

4.3.2 Medication safety project: resources, activities and outcomes
The primary input for all partners has been staff time in the initial organisation of the project and data collection by MSc students. Organisational tasks most often consisted of time spent in meetings and other forms of communication (telephone, email) between NHS staff and members of Loughborough University.

For NHS partners, most time was spent in the initial organisation of the projects with an estimated 20 hours spent in total on this activity in each project. This was to establish the project plan, arrange approvals and plan data collection. To date, less time has been spent on implementation. This total increases to 24 hours when we include the time spent by nurses being interviewed by university students (often on their breaks). The majority of the organisational work was performed by the NHS project leads. Contributions were also made by the team leader of the care unit involved in the project, the service manager, members of the Research Governance team, the Practice Development Nurse and a pharmacist. The wider involvement of NHS staff differed slightly between LPT and UHL projects with the former involving a broader range of staff in addition to the LIIPS lead.

For Loughborough University the majority of the time spent on the project was during the implementation stage with student-led data collection and literature reviews. In particular, two full days were spent on observations and an estimated 100 hours spent on the
literature review. This has been included in the estimates of the time input by the university in the logic model below (Figure 2), though does not represent a cost as such as the time forms part of the required study hours for the students’ modules.

Thus the main additional input required of the University, outwith their usual duties, was the time spent by the LIIPs project lead in the development of the partnership with NHS collaborators during the initial stages of the project. This amounted to two, 1 hour meetings for each project.

The primary benefits for the university were the applied learning outcomes for MSc students involved in the project. This centred on the methodological experience of different methods of data collection and analysis within a healthcare setting. Findings from the student reviews were suggested to be important for developing new research hypotheses for PhD students at the university working within healthcare ergonomics.

A feedback report is currently being produced by the student with recommendations expected to be made both at the service level e.g. putting in new processes or adopting new technologies and practice level recommendations for nurses e.g. good practice guidance.

The main outcome being anticipated is reduced medication errors. Most drug administration within the two NHS units is oral, with errors including the type of medicine, strength, time of day, omissions and extra doses. Benefits of reducing medication administration errors are expected to accrue to patients, families and carers, nursing staff and team. Patients would benefit from improved safety and reduced risk of accidents and families and carers – who are routinely informed of medication errors – may see reduced stress levels. Nursing staff may see benefits in terms of perceived confidence and competency and the wider team would be more efficient if reduced errors meant that
Fig 2. Logic model for the human factors medication safety project (per project)

<table>
<thead>
<tr>
<th>INPUT</th>
<th>ACTIVITIES</th>
<th>OUTPUT</th>
<th>EXPECTED OUTCOMES</th>
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<td><strong>Staff time: organisational</strong>&lt;br&gt;NHS (~20 hours total)&lt;br&gt;• NHS project lead&lt;br&gt;• Team leader&lt;br&gt;• Service manager&lt;br&gt;• Research governance&lt;br&gt;• Pharmacists&lt;br&gt;• Practice Development Nurse&lt;br&gt;• Unit Nurses&lt;br&gt;University (~6 hours)&lt;br&gt;• University project lead</td>
<td>Partner meetings to set-up project (n=7)&lt;br&gt;Nurse interviews (n=8)&lt;br&gt;Student observations of care units (2 days)&lt;br&gt;Student literature review of human factors in medication errors&lt;br&gt;University project lead supervision of student data collection</td>
<td>Feedback report (due):&lt;br&gt;• Recommendations on systems policy&lt;br&gt;• Recommendations on good practice</td>
<td>Reduced medication errors:&lt;br&gt;→ Improved patient safety&lt;br&gt;→ Improved wellbeing of families/carers&lt;br&gt;→ Reduced costs of nurse re-training and/or supervised practice&lt;br&gt;Education outcomes for students:&lt;br&gt;→ Applied learning&lt;br&gt;→ Potential Publications&lt;br&gt;→ Future Research ideas and proposals</td>
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<td><strong>Staff time: implementation</strong>&lt;br&gt;NHS (~4 hours)&lt;br&gt;• Nurse&lt;br&gt;University (~125 hours)&lt;br&gt;• Student&lt;br&gt;• University project lead</td>
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nurses were not taken off medication administration duties, which would create workload pressures elsewhere, and also in terms of the time/resources needed in providing further training and/or supervised practice.

Without knowing the impact upon medication errors it is not possible to do a full cost-benefit analysis of this LIIPS project. It is expected that most of the financial return would accrue to NHS partners. Cost avoidance is anticipated through a reduction in the numbers of nurses who need to undergo re-training as a result of medication errors. In addition, the minimum rate for a human factors consultant is known to be approximately £1000/day. As Loughborough University input totalled over 3 working days (for each NHS project) a substantial cost saving was made by both LPT and UHL.

5. Summary
There has been substantial interest in LIIPS over the past 2 years, and there is an energy and optimism around the potential of the Unit to make a real difference to patient safety and quality improvement. But there is also an acknowledgement amongst all partners that this cannot happen overnight, and that real change takes time to embed and is fostered through the bottom-up, collaborative approach that LIIPS has taken. Our evaluation has highlighted a number of findings that could be used to feed into the next stage of developments for LIIPS. These are summarised below.

LIIPS Activity
• Over 400 individuals from 18 organisations have attended LIIPS events and meetings.
• University Hospitals Leicester staff has been very actively involved, and there may be scope for Leicestershire Partnership Trust and local CCGs to play a greater role in future events.
• Individuals from health organisations make up the majority of those registered to attend LIIPS events. Marketing LIIPS events to more academic stakeholders, may further enhance the opportunities provided within LIIPS.

LIIPS Development
• The development of LIIPS has been gradual and led by the needs of partners, rather than imposed, in line with its collaborative aim and function
• Reflection and learning about the ‘how’ as well as the ‘what’ has been a key activity to date – demonstrator projects have given a lot of learning about how LIIPS should work with partners to develop their capacity

LIIPS mission
• Interviewees had a shared understanding of the mission of LIIPS to enable quality improvement and patient safety, and that the main ways this was achieved was through:
The Institute of Mental Health

- facilitating connections between existing expertise in the geographic area; and
- building capacity in Quality Improvement and Patient Safety within the NHS

- Although the LIIPS Core Team were very clear that doing the improvement projects was not the role of the LIIPS team, some NHS partners were not so clear on this point

**Facilitators to Effectiveness**
- The Measurement for Improvement workshops and Medication Safety Group projects were highlighted as LIIPS activities that had led to tangible changes in practice in NHS partners
- Having the right people involved – with credibility, reputation, networks – was of critical importance, and knowing that people are doing this for the wider community, not just for personal development and reputation
- Independence and non-hierarchical structure of LIIPS was particularly important for NHS Partners
- The focus on real NHS problems means that it is directly relevant and easy for NHS partners to directly apply learning to their operational work
- The focus on the local area of Leicester, Leicestershire and Rutland supported the connections to be made, and promoted a shared knowledge of where the expertise is in the area.
- Supporting sustained connections was also seen as key – not only matching needs and expertise, but supporting those relationships to develop so that weak ties become sustained and ongoing relationships that are returned to in the future

**Challenges and Barriers**
- Objectively demonstrating the positive impacts and benefits of LIIPS activity was seen as a major challenge, and a potential risk to future commitment of partner investment. This challenge was also reflected in the wider patient safety/ QI agenda, and not just specific to LIIPS
- Some stakeholders felt that LIIPS needed to develop a Unique Selling Point, with a clearer offer and more defined role to take to partners, to prevent their disengagement. A more regular update and highlighting of current activity would help re-iterate to partners what the LIIPS mission and way of working was
- LIIPS is overly reliant on a few key people who hold strategically important posts within partner organisations, which represents a risk. Interviewees highlighted the need to engage more people in partner organisations, including clinicians and frontline staff.
- There is limited capacity to attend meetings and take on projects within some partner organisations. There is a need to find the right people to involve who can take on the tasks as part of their job role
- There are logistical difficulties reaching the front-line staff and training them in Quality Improvement approaches. It was suggested that LIIPS look at offering training on-site with NHS teams
- Finding a sustainable funding model to ensure that LIIPS can continue and grow its resources was seen as a big challenge, and a priority for the next stage of LIIPS development. Stakeholders felt that LIIPS should consider different funding models to allow continuation and expanding the core team

**Areas for Future Development**
- Engaging with other partners e.g. health education and training partners, social care, voluntary care, and other patient safety initiatives
- Keeping at the forefront of the medication safety agenda, and highlighting the emerging safety issues in relation to new and developing therapies
- Feeding into the national patient safety agenda where possible

**LIIPS case study**
- A model of inputs, activities, outputs and expected outcomes was developed for LIIPS medication safety projects. However, without knowing the impact of the projects upon medication error rates it is not possible to do a full cost-benefit analysis

**6. Conclusion**
Based on the findings described in this evaluation report, the following considerations are recommended for setting up similar units elsewhere.

- The structure and focus for the unit should be developed in a bottom-up, collaborative way and led by the needs of partners, rather than imposed
- A local area focus should facilitate sustainable connections between partners
- Activities involving training and capacity building in measurement for improvement and human factors in medication safety, and relating to real NHS problems led to tangible changes in practice in NHS partners
- It is important to involve key people in strategically important roles who have the necessary credibility, reputation and experience, but also to promote awareness of the initiative widely to front-line staff within the partner organisations
- There needs to be a dedicated team who can focus on the development of the initiative and support the activity; these staff need to have credibility in NHS setting as well as with academic partners
- Funding for the initiative needs to be considered from the outset to ensure sustainability
- Monitoring, describing and assessing benefits and impacts should be built into planned activities where possible.