NHS
Health Education England

Project reference: SIP: Improving Patient Safety through Simulation and a Quality Assurance Cascade

Health Education England, South London 2015/16 Strategic Investment Programme: Project Completion Final Report

Please submit this form to investments@southlondon.hee.nhs.uk by the deadline requested by HEE

Name of Project	Improving Patient Safety through Simulation and a Quality Assurance Cascade System
Organisation	Simulation & Interactive Learning Centre, Guys & St Thomas NHS FT, with KHP simulation partners KCH, SLaM and KCL (and George's Advanced Patient Simulation centre)
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OVERVIEW

1. What was the overall aim of the project?

What was the original bid? How does the project map to HESL Focus Areas/Strategic Priorities. Detail any changes to scope.

The original bid outlined an intention to design and deliver a suite of inter-professional simulation programmes and a quality assurance model with colleagues across South London that met the current and future health care needs of the local patient population. In addition, the bid aimed to support the further development of a collaborative simulation network that trains and supports faculty across all speciality and professions.

This strategic intention included:

- Development of a Hub and Spoke model across four main simulation centres in South London networking out to satellite centres e.g. Lewisham: The four hubs are King's College Hospital (KCH), Guy's and St Thomas' (GSTT), South London and the Maudsley (SLaM) and King's College London (KCL), and at St George's Hospital (SGH) Simulation centre.
- Provide simulation skills for trainers to become faculty through a Kings health Partners (KHP) networked suite of debriefing courses; in addition through topic focussed programmes, such as Delirium and Dementia to expand the inter-professional workforce's knowledge and skills in this patient group and their non-technical skills through the modality of simulation and debriefing.
- Promotion of a quality learning environment through a transferable Quality Assurance (QA) system developed and implemented by the South London Simulation Network
- Support innovative practice through developing new simulation courses to support new interventions for e.g. Home to Hospital.
- Embedding human factors and core values such as Care and Compassion into GSTT based simulation training to contribute to the Trust's patient safety and organisational resilience agenda.
- Contributing to the principles of shared learning from other simulation centres curriculums, patients and staff and cost effectiveness through peer reviewed programmes and sharing of course materials and resources.

Total Bid award for year three was £650K

In the original proposal to HESL £1.139 million pounds were requested for continuation of the project in 2015-16. In August 2015, the bid holder was informed that the money awarded in 2015-16 was £650K, a reduction of 43%.

Original deliverables updated to reflect year three award:

These deliverables were updated following a meeting between HESL and the bid holder in mid-August 2015, during which HESL advised what deliverables should be given priority for year three.

1. Continued development and expansion of the quality assurance project including the development of research evidence linked to robust evaluation procedures.

2. Make efficiency savings to each course delivered whilst ensuring quality is not affected.

3. Continued delivery of the innovative courses that were developed in 2014-2015.

4. Expand the network and host a shared learning event, support CPD and SLSN meetings.

2. Please provide a summary of what the project delivered.

1. Continued development and expansion of the quality assurance project including the development of research evidence linked to robust evaluation procedures.

See section 3 for further details

2. Make efficiency savings to each course delivered whilst ensuring quality is not affected.

A 25% saving was applied to all course costs without changing the content, length of session, faculty and other allocated resources.

3. Continued delivery of the innovative courses that were developed in 2014-2015.

Course delivery: Table 1

The table below shows the number of courses that were delivered between 1st April 2015 and the 4th March 2016. Fourteen of the innovative courses designed and piloted in 2014-15 were given year three funding. The delivery of these courses is spread out amongst seven of the nine non-university SLSN partners. All Trusts who submitted expressions of interests were awarded full funding with the exception of two day of delivery which would have exceeded the budget.

In summary, funding was provided to deliver 142 training dates. By Friday 4th March (which is the cut off date for this interim report) 103 of the 142 dates had been delivered. This leaves 39 dates yet to be delivered, 22 of which will be delivered by the 31st March 2016, and a further 17 to be delivered by the 30th June 2016.

The further 39 courses to be delivered to complete the project delivery will provide places for a further 468 attendees.

See below for details of which courses at which Trusts have been delivered, and are planned for delivery.

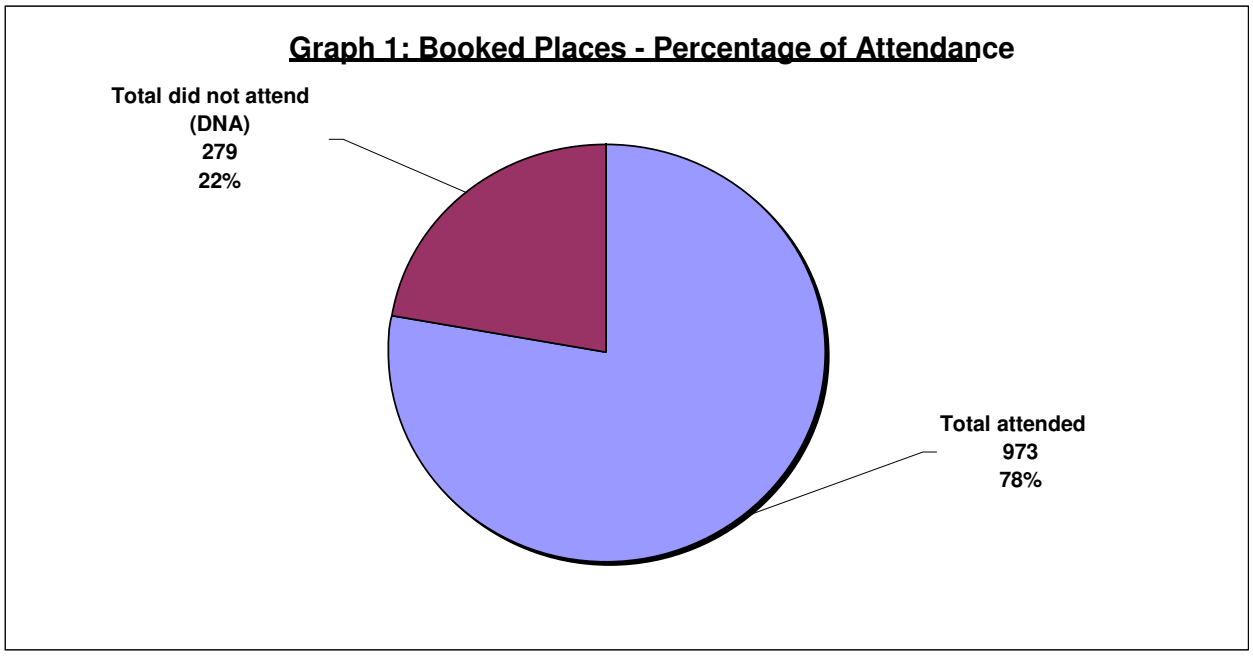
Table 1: SLSN 15-16 Sim delivery																
			Delivered 01.04.2015 - 04.03.2016 - Quarters 1 - 4												Planned 07.03.2016-31.03.2016 + carried over into 16-17	
No.	Course title	Total	Croydon		Epsom		GSTT		KCH		Kingston		Lewisham		St George's	
			Delivered	Planned	Delivered	Planned	Delivered	Planned	Delivered	Planned	Delivered	Planned	Delivered	Planned	Delivered	Planned
1	Admission Avoidance	6					6									
2	Delirium & Dementia	8					5	1	1	1						
3	End of Life Care - One Chance to Get it Right	15			4	1	5	1		2	1	1				
4	Good to Go - Enhancing Patient Transfer	6					6									
5	Home to Hospital	6						6								
6	No Catheter / No CAUTI	8	2				3	3								
7	Safer Tracheostomy Care	13	2				5	1	1	2	1	1				
8	Sepsis and 'The Sepsis Six'	20	2	1	2		6		4			2			3	
9	Taking Care	6					5	1								
10	Acclimatisation of Overseas Staff to Healthcare in the UK	8							1	1					2	4
11	Harm Free Care	4													4	
12	Team Based Trauma Life Support	15	1	1	1	1			6		1	1	1	2		
13	Paediatric Retrieval & Acute Multi-disciplinary Simulation PRAMS	6	4								1	1				
14	Sedation and Airway Management	11	3						4	2				2		

	Situations Outside Theatres															
15	Lead Provider courses	10					10									
	Sub-total	142	14	2	7	2	51	13	17	8	4	6	1	4	9	4
	Sub-total	142		16		9		64		25		10		5		13
	Delivered	**103**														
	Planned	**39**														
	Total	**142**														

Number of attendees, split by medical or non medical, and grade for the courses delivered between 1 April 2015 – 4 March 2016

A total of 1283 simulation-based training attendee places were made available across the 103 courses between 1 April 2015 to 4 March 2016. Of the spaces available, 1252 spaces were booked. A small number of places remained unfilled at the time courses were delivered. The overall unsubscribed figure is 2.5% (N.31).

Of the 1252 places that were booked, there were 973 attendees with 279 (22%) cancellations or Did Not Attends. Reasons for non-attendance were various including recall back to work, sickness absence, or non-specified.

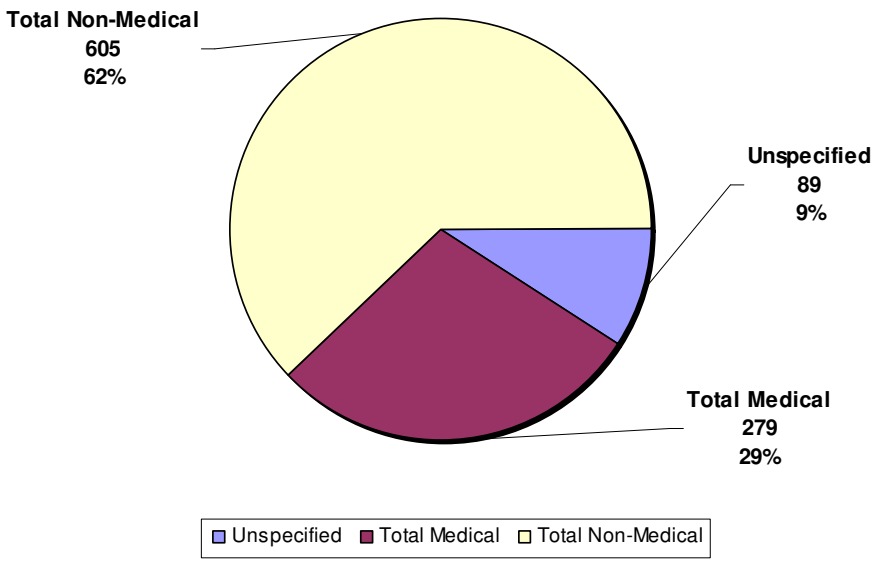


The DNA rate appears high at 22%; It is not fully clear why this is as 200 of the 279 DNA's did not give a reason for not attending. Efforts to maximise attendance have been incorporated since eth SLSN managers reviewed processes across centres: steps taken included sharing of course spaces across the network, coding DNA's and an agreement to overbook to accommodate DNA's impact on course delivery.

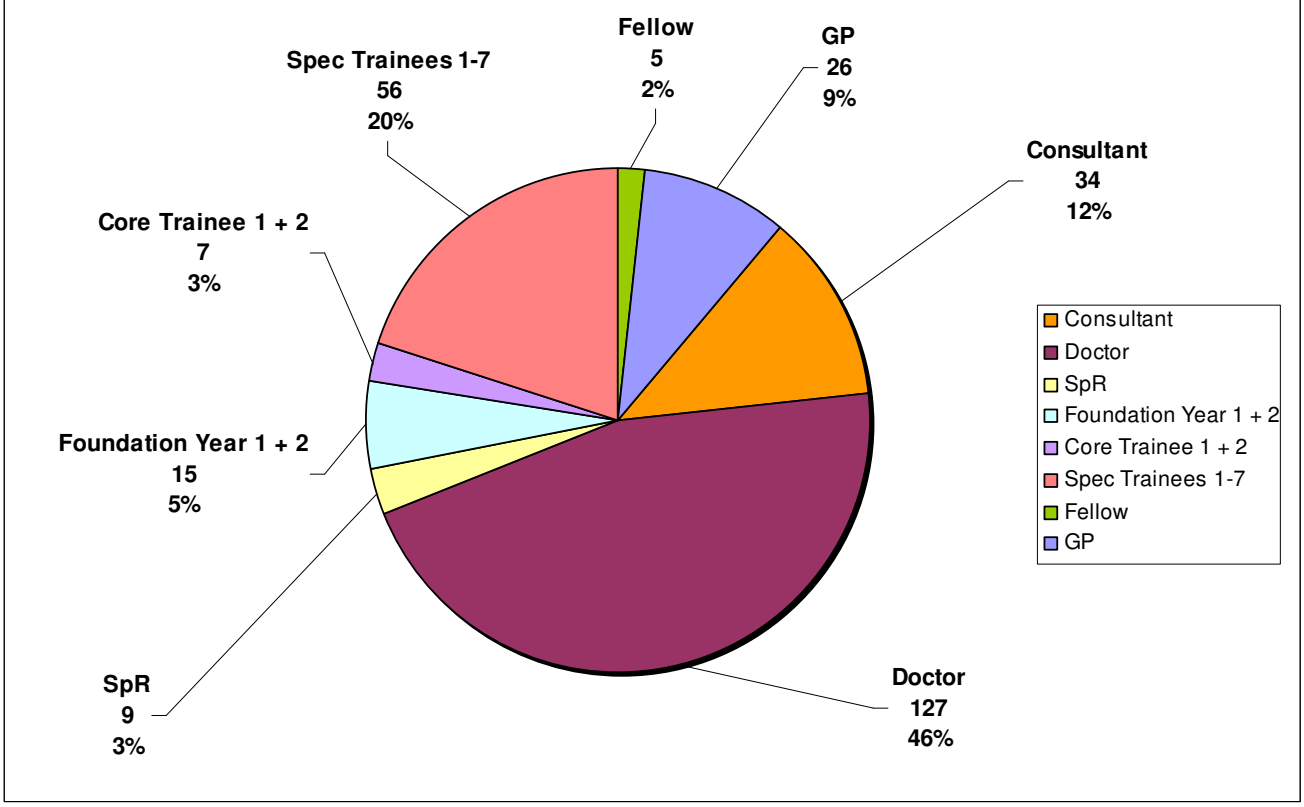
Attendees breakdown

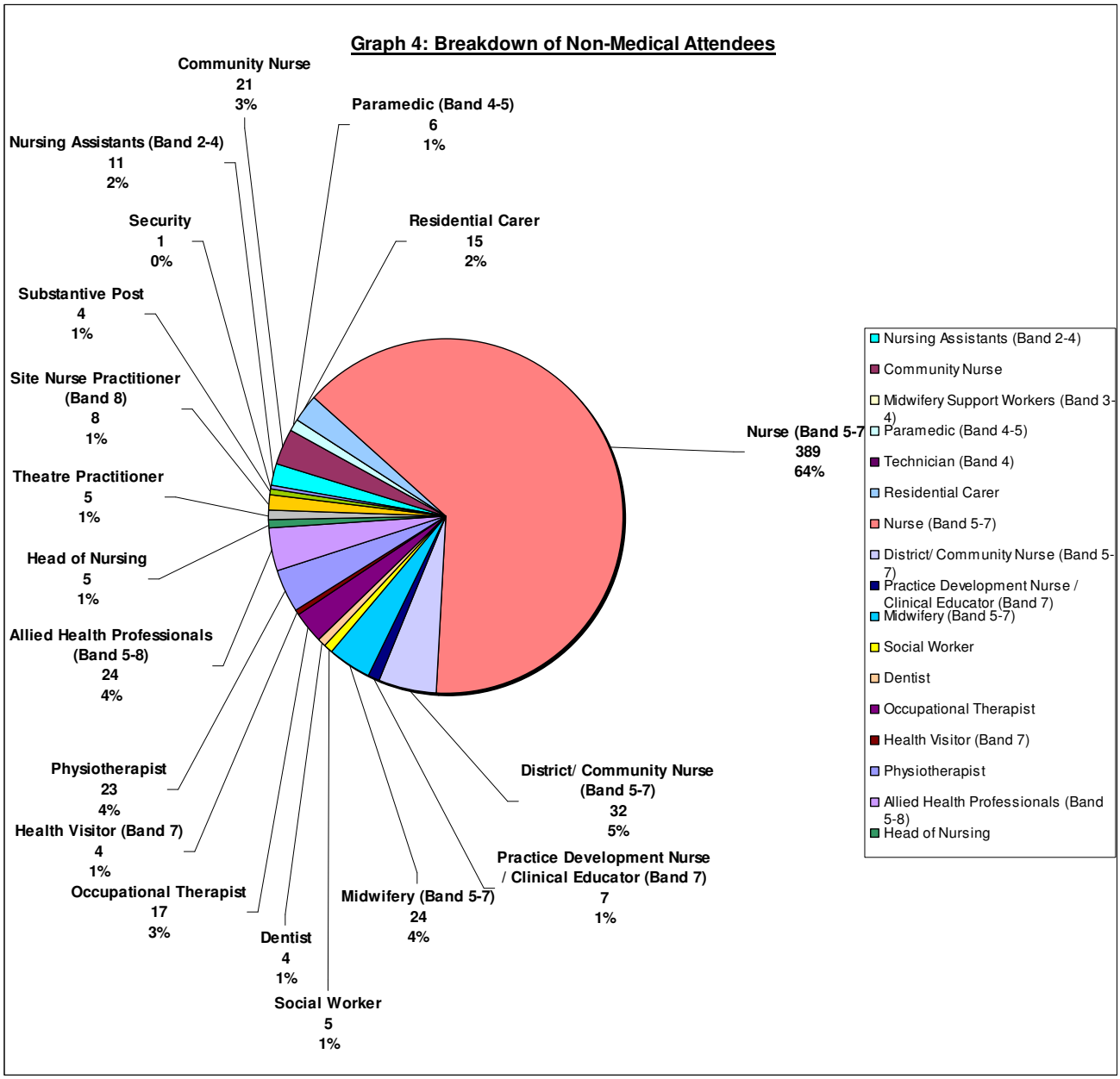
Total Medical	279
Total Non-medical	605
Unspecified	89
Total	**973**

Graph 2: Breakdown of Total Delegate Background



Graph 3: Breakdown of Medical Attendees





4. Expand the network to include other simulation providers including those providing simulation to undergraduates as part of university.

Current Membership with regular attendance at meetings is from the below organisations:

Universities Undergraduate simulation education provider

1. Kings College London (Florence Nightingale Faculty of Nursing and Midwifery)
2. King's College London (School of Medicine)
3. Kingston University & St George's University of London
4. London South Bank University
5. The University of Greenwich

HealthCare & Post Graduate simulation education provider

1. Croydon Health Services NHS Trust
2. Epsom and St Helier University Hospital NHS Trust
3. Guy's and St Thomas' NHS Foundation Trust
4. King's College Hospital NHS Foundation Trust
5. Kingston Hospital NHS Trust
6. Lewisham & Greenwich Hospital NHS Trust
7. South London and the Maudsley NHS Foundation Trust
8. South West London and St George's Mental Health NHS Trust
9. St George's University Hospital NHS Foundation Trust

5. Host a shared learning event, support CPD and SLSN meetings.

GAPS have responsibility for the maintenance of the website and have incorporated a Blog and a twitter account for the network now.
.**http://southlondonsim.com/ Twitter = @southlondonsim**

The conference was publicised via the web site and all details of courses shared are on the site

For further information on the Shared Learning Event see section 3

SLSN Quarterly Meetings – Table 2

Date	Host	Venue	No of attendees	No of member organisations represented
Friday 15th May 2015	South London and Maudsley	Lambeth Hospital	23	8
Friday 4th September 2015	Greenwich University	Avery Hill Campus, Eltham	24	9
Friday 27th November 2015	Lewisham & Greenwich NHS Trust	Simulation Centre, Lewisham Hospital	18	11 (inc HESL)
Thursday 10th March 2016	GSTT	SaIL Centre, St Thomas' Hospital	22	8 + 2 visitors

Friday 10th June 2016	King's College London	James Clerk Maxwell Building, KCL	n/a	n/a
Friday 2nd September 2016	Epsom & St Helier	To be confirmed	n/a	n/a
Friday 9th December 2016	*St George's Hospital TBC*	To be confirmed	n/a	n/a
Friday 10th March 2017	Kings College Hospital	Weston Education Centre, Denmark Hill	n/a	n/a

3. Please provide details of what went well with the project. Please include details of outputs and outcomes including key performance indicators as applicable.

3.1 Expansion of dissemination / delivery of innovation courses across the network:

Experience and feedback from the first round of expressions of interest for the 4:2 cascade model informed us for year three 2015/16. This led to a simplification of the process which enabled a short turn around from notification of process to award and allocation of courses monies (2nd September announcement with notification of fund allocation in October).

All the SLSN centres participated in this process with the exception of the two mental health trusts - See table 1 on page 3.

3.2 Quality assurance

Single course reviews have been established for a second year and to date 16 courses have been peer reviewed. The process serves multiple purposes, two of these are: 1) Centres/ course directors receive a report which can provide insight into course design, delivery and administration, whilst faculty receive onsite coaching and feedback from an external colleague whom has experience of simulation methodologies. 2) Faculty further develop their own skills and understanding of simulation frameworks and methodologies - the tool allows for flexibility of course design and visiting reviewers can gain a broader perspective of how simulation can be used as an educational tool to enhance patient safety and course delivery.

A further 16 to 20 courses are planned to be reviewed within Quarter 1 and 2 of the next financial year. The junior doctors' strike and winter pressures have impeded this networked process as a number of courses have been cancelled or faculty release has been difficult due to delivery commitments.

Reports and tools are currently paper based. A job share position has been recruited to in February 2016 to support the expansion of QA activity and the Clinical Educator post-holders will be enabling release of more senior staff to support QA cascade and developing and piloting a SMART Phone tool to assist with the simplification of this process.

The Biennial centre reviews have been piloted internally by SaIL and the time to prepare evidence was more than anticipated. The tool is being modified and centres will be invited to provide dates for a review in April to June.

3.3 Shared Learning Event

150 delegates (including volunteer stewards registered with 125 attending the inaugural SLSN conference ' **Harmonising Concepts: What if? We connect, we share and we learn... A simulation collaboration conference for the SLSN'** on February 26th at the Kia Oval. The

programme included three national and international key note speakers, Alan Ryan, HEE TEL lead, Dr Demien Zyld, Associate Medical Director & Assistant Professor from NY Simulation Centre, USA and Professor Joanna Hughes and Michael Arlow, Queens University, Belfast.

Inter-professional faculty from KCL, GSTT, LSBU, Croydon and Epsom & St Helier facilitated four workshops on topics identified as areas for development within the SLSN faculty.

Expert Debriefing: The Right Tool for the Job
Circle of Care: a Model for Compassionate Human Factors in Healthcare
Immersion- Improving fidelity in Simulation-based Education
Writing Scenarios and learning Outcomes for Simulation-Based Education

In addition we had 32 poster presentations and 4 workshops from SLSN members and had a networking lunchtime and social reception to close the conference. The evaluation of this event is underway via a delegate survey and a summary report will be made available to HESL.

Best paper and Best poster awards were made. The first prize for both awards being a free 2-day conference place to ASPiH in November 2016 and two further book prizes were available for 2nd and 3rd runners up for posters.

3.4 SLSN meetings & CPD

Quarterly meetings have been maintained with the venue rotating across SLSN including the university sites. Patterns of representation show dominance of attendance by the Host organisation. Attendance impact factors have been identified as travel times for those with combined clinical commitments and clinical commitment changes such as the junior doctor strike.

Meetings have had standing CPD items of host project presentations and a workshop or journal club to enhance networking and sharing as well as discussions around sustainability & other SLSN activities.

Quarterly dates have been set with venues planned ahead for 2016-17.

2016/17 SLSN meeting dates:

12:30-1-15 – optional tour of centres & Lunch
1.15- 5pm

Friday 10th June 2016 – King's College London (James Clerk Maxwell Building, 57 Waterloo Road, London SE1 8WA)
Friday 2nd September 2016 – Epsom & St Helier
Friday 9th December 2016 – *St. George's TBC*
Friday 10th March 2017 – King's College Hospital

4. Please provide a breakdown of final costs and expenditure.

	Plan	Spend to 31.03.2016	Carry over to 16-17	Notes
Year 3 Award	**£650,000**	**£442,890**	**£207,110**	
Course delivery	£403,000	£354,890	£48,110	Carry over is to support courses postponed in 15-16
Quality assurance course assessments	£17,000	£7,000	£10,000	Remaining 20 QA sessions
Bi-ennial centre reviews	£19,000	£0	£19,000	To complete objective
QA Fellow and admin support work	£90,000	£37,000	£53,000	To fund Simulation Fellow whose appointment was delayed due to timeframes of receiving funding notification
Research & Evaluation	£98,000	£23,000	£75,000	To complete objective
Shared learning event, support CPD and SLSN meetings	£23,000	£21,000	£2,000	To be spent on supporting SLSN members on CPD events

5. Please provide details of any issues and challenges faced and what lessons learnt can be taken from these for any future projects

We are aware that the principles of sharing of course resources have been fully embraced for innovation in simulation course provision such as End of Life, Sepsis, Tracheostomy Care and more familiar topics such as Sedation and Trauma. Some have been developed and shared with greater success than others.

As we only have anecdotal evidence and feedback from our central administration systems, in order for us to fully understand the challenges faced and lessons learnt we need to now focus some of our evaluation capacity to formerly review the 4:2 course design and dissemination model, faculty development processes and QA framework. we propose to undertake the following with network colleagues to explore in more depth:

1) Course sharing model - 4:2 method - to be evaluated through a focus group evaluation and a survey
2) Faculty development - utilise a survey of participants attending LHP and GAPs courses
3) QA - a focus group and brief thematic analysis of report recommendations

6. Please provide a summary of your project evaluation: Were the predicted benefits realised? How were these quantified or quantitatively assessed? What are the policy implications and changes in healthcare practice arising from the project and the outcome of the evaluation?

6.1 Is the evaluation complete or in progress:

A multi-faceted evaluation approach is in progress. It was implemented across the workstreams and was aided by the appointment of two simulation research fellows in 2015. These appointments were

made by matching funding from SaIL and contribution from evaluation funding from the Maudsley Centre for Mental Health Simulation. The two fellows are progressing the analysis of existing evaluation data as well as the design and development of new ways of considering evaluation of simulation as both a learning modality and a window into healthcare practice. These two complementary strands make up the overall strategy of research in simulation and have guided our work to date and will continue to do so as evaluation work continues even beyond the funded stream of courses has completed.

A summary of some of these projects:

- A central feature of simulation based training is human factors, providing staff with the 'non-technical' social and cognitive skills to cope with demanding clinical situations. A priority for the team was to develop a method of evaluating the learning of these core health care skills during simulation training and beyond. Through consultation with clinicians and experts in the field of human factors research we have developed and are piloting a validated instrument to evaluate healthcare skills learning during simulation training. A bank of over 240 items have been distilled into a validated generic instrument for evaluating simulation learning, based on published research and scholarship into non-technical skills. The instrument is currently being piloted at simulation training courses at SaIL and Maudsley Simulation. Preliminary findings from a sample of 27 simulation training sessions suggest that the instrument is sensitive to changes in participants' non-technical skills ($t(25)=5.2$, $p<.01$) and sensitive to variations in training courses.
  Once fully validated, this instrument will enable us to (i) assess learning of core healthcare skills during simulation training, (ii) assess retention of learned skills at follow-up and (iii) explore the impact of training methods, content and format on learning. The instrument will be made available for use across the network as well as published and shared internationally.
- Poor teamwork has been implicated as a factor in failing to recognise or treat medically deteriorating patients. Interprofessional (IP) teamwork is particularly challenging due to cultural and educational differences and backgrounds. IP training is an integral aspect of simulation training but training in this area is limited by a lack of theory to underpin teaching and no formal definitions of teamwork.
  This work employed communication research methods, alongside human factors theories of teamwork to identify behavioural markers of teamwork during interprofessional simulated settings. These markers informed the design of the Teamwork Observational Assessment Tool (TOAsT), which is being piloted with videos of simulated scenarios involving medically deteriorating patients on interprofessional courses at the SaIL centres. Video data is being analysed and inter-rater reliability is in process. A secondary aim of this study is to use to the tool to examine the impact of context and team composition on teamwork dynamics and to explore the link between teamwork performance and clinical outcomes. Once completed, TOAsT will be available for use to assess teamwork performance during simulated settings, while also providing a behavior-based language that can be used to facilitate teamwork discussions during debriefs.
- As a minimum, all courses delivered at SaIL and Maudsley Simulation are now evaluated using self-report questionnaires administered to participants pre- and post-training assessing their knowledge and confidence in the specific course learning objectives. Participants consistently demonstrate significant improvements in their knowledge and confidence in the course learning objectives post training.
- In some cases qualitative evaluation of simulation courses is also conducted longitudinally to explore the learning and translation into practice in more detail. Through qualitative one-to-one semi-structured interviews, we explore (i) the personal experience of completing the course (ii) their reflections of how the training course has changed their own practice and the resultant effects in the workplace. Two courses at Maudsley Simulation are currently being evaluated in this way and data collection is on-going.
- Evaluation of a pilot intensive team-based in-situ simulation training for whole teams in psychiatric triage units. This in-situ training was novel and innovative providing intensive training (1 day/week for 6 weeks) for whole teams in psychiatric triage units. Evaluation of the training occurred on three levels: (i) The feasibility and acceptability of the training was evaluated qualitatively through focus groups with training participants; (ii) participants' knowledge and confidence in the learning objectives was assessed quantitatively pre and post

training and (iii) incident reporting changes pre and post training. The training itself highlighted training needs of the team and limitations of the environment. Delegates' feedback was positive overall and they demonstrated post course improvements in knowledge and confidence of learning objectives, alongside higher incident reporting rates 3 months after training.

- Exploring funding for simulation and what impact this has had more broadly. This project, which combines realist evaluation methods with interpretive policy analysis, seeks to explore the ways in which the policies and funding streams that have shaped simulation have, in turn, shaped the way that we look at and use simulation in practice. The overall goal is to answer the question of what changed as a result of simulation policy and funding. Data collection and analysis is underway in this study currently and will continue, with dissemination planned in a peer-reviewed journal article

Existing research and evaluation data continue to be collected and compiled and will be reported with course reports. Further, the team use this data to disseminate at international conferences and publications as appropriate. As an example, the team presented 8 different projects at the prestigious International Meeting on Simulation in Healthcare in the US in January 2016.

6.2 Methodologies used (e.g. stakeholder feedback, cost benefit analysis):

Overall, our methods are tailored to the specific needs of the project including: observational analysis using annotation software; quantitative data collection using questionnaires; qualitative data collection using focus groups and one-to-one interviews. The specific methods used for each project are outlined in the project sections above. The intention of all of these projects is to highlight the various methods and approaches that can be used for research and evaluation of simulation-based learning such that ongoing simulation efforts can be evaluated more fully, more efficiently, and with greater rigour.

6.3 Author(s):

6.4 Key findings:

The majority of projects are ongoing, as evaluation work will continue past the end of the funded course dates; further, some courses are intended to continue beyond the original end-of-project date. Those projects with preliminary findings are displayed above within each project section.

6.5 Have the findings been published (if yes, please provide a link):

The projects listed above are all currently in progress and publications are currently in preparation.

7. How is sustainability being addressed following completion of the project? What opportunities to scale up the work have been identified and how are these to be implemented?

Applications for funding to build on the evaluation and research streams are being developed and we hope to submit these to relevant funding bodies over the coming months.

Course delivery: - Sail have participated in the HIN Catheter Care Collaborative to promote the course to the wider network. They have also shared the course details with two further HIN Groups on Sepsis and Acute deterioration.

Good to Go - Enhancing Patient Transfer has been developed with the Southwark and Lambeth Integrated Care service and London South Bank University around the transfer of care process and

the agencies involved in this. SLIC are evaluating this course LSBU and we hope this course will be commissioned by the integrated care teams in 2016-17

Individual hospitals are seeking / have received local support to continue course delivery of some of the courses shared; Croydon for example have a further set of dates for No Catheter, No CAUTI, Safer Tracheostomy care.

8. What have you done or what will you now do to share learning and best practice from the project across South London?

The SLSN conference provided 4 workshops on areas identified as areas of variability from the first round of peer course reviews undertaken in 2015-16: Multi-professional faculty from across the universities and centres created 4 stimulating 90 minute workshops on Writing Scenarios and learning Outcomes, Debriefing, a Model for Compassionate Human Factors in Healthcare and Immersion and fidelity in Simulation-Based Education.

In addition fellows and clinical educators were invited to present their courses and projects through the medium of electronic posters with 5 minute talks: these will all be placed upon the SLSN website to enhance dissemination.

Evidence Base for Simulation & the network activities:

The network is leading on a cross-London research network of simulation centres, gathering and reporting good practice and encouraging the development of simulation research by supporting smaller centres' to consider a scholarly approach to their work. There have been updates on progress at the quarterly meetings.

Over the next year we intend to showcase the evaluation work outlines in section 6 that we have undertaken in South London and explain how this can be developed in other centres.

Three areas of SLSN activity supported specifically in this bid that we wish to help embed through reflective understanding of how these have been working are mentioned in section 5. Course sharing model - 4:2 method, Faculty development and QA
We will be focusing our efforts here to identify what will help make these sustainable.

As course delivery concludes we will be hosting year end course reviews where QA report and evaluation data will be shared with faculty. Each Host centre will invite faculty from all centers whom have participated in the 4:2 delivery to attend.

9. Additional Information

In addition to the above the network members intend to explore sustainable models for the network to function. The requirements and the objectives of the network vary and along with HESL & DME's aim for collaborative course delivery, the members wish explore how other networks have maintained their systems and processes for sharing innovation, expertise and standards.

One example is the Scottish Clinical Skills Network whom charges a small fee for individual members.