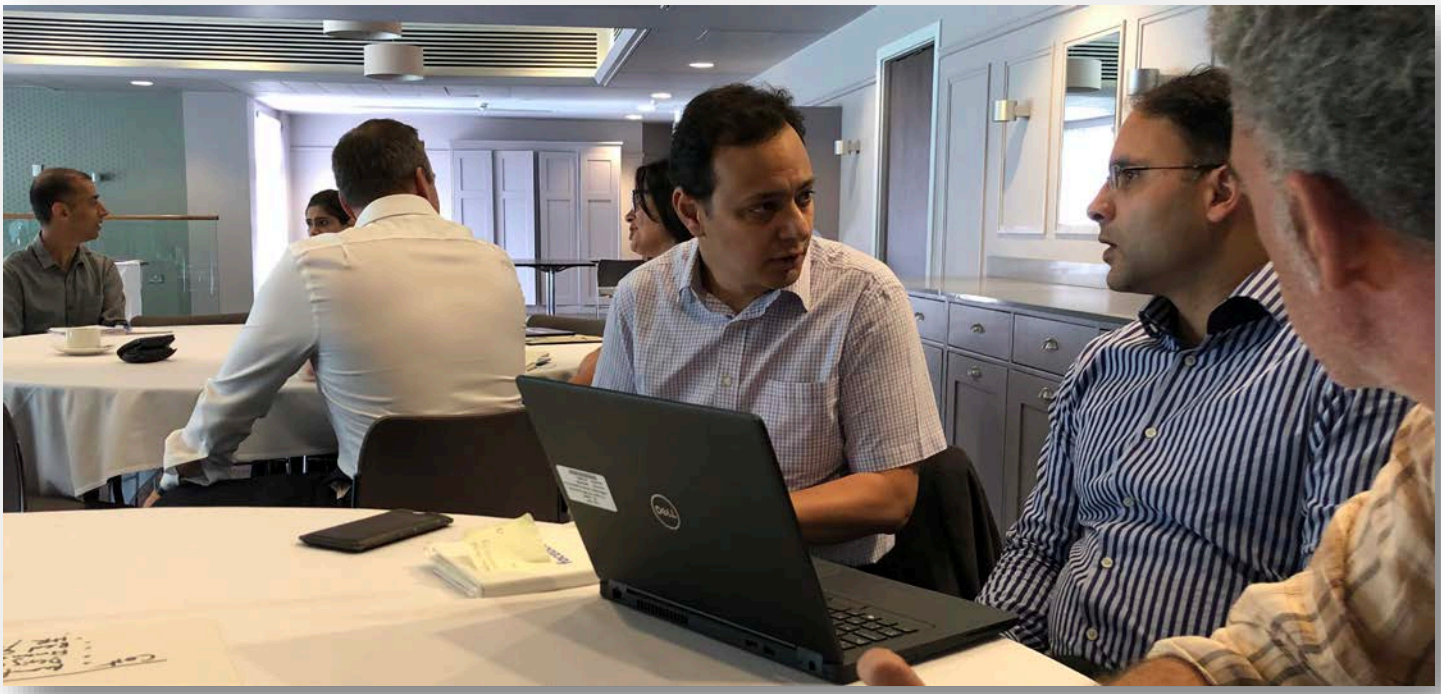
Oxford Academic Health Science Network



Oxford AHSN Year 7 Q1 Report

For the quarter ending 31st July 2019

Cover image: The Oxford AHSN launched its Accelerator Programme with a series of initial commercialisation workshops in Reading in June. Market discovery workshops follow in early September. The Accelerator Programme, run with BioCity, offers a unique launchpad for entrepreneurs and their ventures at every stage, from idea to market. More at: www.OxfordAHSN.org/accelerator

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Chief Executive's Review

We have made good progress on all seven NHS England national programmes and against the NHS Improvement specification for our Patient Safety Collaborative and the Office for Life Sciences' commission to develop an Innovation Exchange. It's good to see our expanded Strategic and Industry Partnerships (SIP) programme supporting so much activity, with an expanded web presence and a strong pipeline of companies we are working with across the four core functions of the Innovation Exchange. All three of this quarter's case studies are from the SIP programme.

Oxford AHSN teams and collaborators won two national awards this quarter. It is the second year running that the Oxford Patient Safety Collaborative has won a Health Service Journal award for patient safety. The national AHSN Network atrial fibrillation programme has been highly successful with many innovative service models developed and implemented. One example is the work undertaken by Oxford University Hospitals and Oxfordshire Clinical Commissioning Group with the support of the Oxford AHSN to provide safer prescribing of anticoagulants in primary care which won a Royal College of Pathologists Excellence Award.

I am very pleased that PIGF, the placental growth factor diagnostic to rule out pre-eclampsia, that we have supported locally through real world evaluation and regional spread in our partner trusts, is now on the national Innovation Tariff Payment. This supports the NHS in adopting innovation by removing some of the financial or procurement barriers which can inhibit uptake at scale. The Oxford AHSN is leading the national rollout and supporting other AHSNs.

In April, NHS England and the National Institute for Health Research (NIHR) published a national report on local innovation and research needs in the NHS. A workshop is taking place in September 2019, hosted by the Oxford AHSN and the new NIHR Applied Research Collaborative Oxford and Thames Valley, to provide an opportunity for regional discussions with a wide range of stakeholders around what further work is needed to address the key priorities identified in the survey. The workshop will start with a networking lunch followed by a keynote speech from Dr Sam Roberts, Chief Executive of the Accelerated Access Collaborative and Director of Innovation and Life Sciences for NHS England. Please attend or send a colleague if you receive an invitation.

The Oxford AHSN contributed six of the long list of 44 proposals from all AHSNs for the next set of national programmes. Proposals are being assessed and discussed by three AHSN Network panels. I am leading the panel for cardiovascular disease. Oxford AHSN representatives are taking part in the selection process for the other two categories – "mental health" and "other". The final selection will form the basis of national programmes for the AHSNs for 2020-2023.

With Seamus O'Neill stepping down as Chair of the AHSN Network and the Deputy Chair, Piers Ricketts, taking on the position, I have been elected as the new Deputy Chair for the AHSN Network. Paul Durrands has joined the AHSN Network Operations Group which oversees delivery by the AHSN Network.

Professor Gary Ford CBE FMedSci

CEO, Oxford AHSN

Oxford AHSN case studies

Case studies included in this report:

1: Healthcare Tech company's expansion and Stock Exchange listing enabled by Oxford AHSN expertise

Overview summary

In-depth support from the Oxford AHSN was instrumental in helping Sensyne Health develop and licence three products including GDm-Health, a remote monitoring system for women who develop diabetes during pregnancy. Oxford AHSN support included fine-tuning the product, establishing proof of concept by enabling expanded real-world testing from a single hospital site to hundreds of patients across four NHS trusts, helping to develop a commercial strategy and presenting at investor roadshows – in the run-up to and during Sensyne Health's stock market debut which raised £60m. This funding is supporting the company's expansion with 45 new jobs created by June 2019.

2: Oxford AHSN support enables AI company to leverage £700,000 of grant funding

Overview summary

The Oxford AHSN provided support to Ufonia, a company applying artificial intelligence technologies to transform healthcare, as part of an Innovate UK Digital Health Technology Catalyst (DHTC) feasibility grant (£75K). The Oxford AHSN helped with developing the business model for a project which assessed outcomes following knee-surgery. Ufonia has received further funding from the Harwell HealthTec Cluster proof of concept award and a follow-on grant from the DHTC (£665K) focusing on follow-up after cataract surgery.

3: The Oxford AHSN assists Fujifilm in real-world evaluation of point of care flu test

Overview summary

A new point of care test for the detection of flu is in the process of being commissioned by Buckinghamshire Healthcare after a winter evaluation in the Acute Medical Unit (AMU) at Stoke Mandeville Hospital. The test was developed by Fujifilm Medical Systems and is based on silver-amplified lateral flow technology in a simple cartridge with an automated reader. The test requires minimal hands-on time and sample preparation making it ideal for use in a busy department

Oxford AHSN case study 1

Date: Q1 2019/20

Programme/Theme: Strategic and Industry Partnerships

Title: Healthcare Tech company's expansion and Stock Exchange listing enabled by Oxford AHSN expertise

Overview summary

The Oxford-based firm Sensyne Health (formerly Drayson Health) uses artificial intelligence (AI) to develop medicines and aims to improve patient care through the analysis and commercialisation of real-world evidence from large databases of anonymised patient data in collaboration with NHS trusts.

In-depth support from the Oxford AHSN was instrumental in helping Sensyne Health develop and licence three products including GDm-Health, a remote monitoring system for women who develop diabetes during pregnancy. Oxford AHSN support included providing pilot data, writing a business plan, fine-tuning the product and establishing proof of concept by enabling expanded real-world testing from a single hospital site to hundreds of patients across four NHS trusts.

Enabled by the Oxford AHSN, the business headed by Lord (Paul) Drayson, signed a five-year strategic research agreement in July 2017 with the University of Oxford and Oxford University Hospitals NHS Foundation Trust. The collaboration creates a pathway for the commercial development of digital health innovations invented and clinically validated by the university and the trust and invests £5m back into patient care and research via a shared equity and royalties' agreement. Similar agreements have followed with other NHS trusts.

The Oxford AHSN provided support – including helping to develop the commercial strategy and presenting at investor roadshows – in the run-up to and during Sensyne Health's stock market debut in August 2018 which raised £60m. This funding is supporting the company's expansion with 45 new jobs created by June 2019.

Challenge identified, and actions taken

Three digital health products - SEND, GDm-Health and EDGE-COPD - which emerged from the University of Oxford's institute of Biomedical Engineering which were licensed exclusively to Drayson Health (now Sensyne Health) in February 2017. These digital health products use machine learning/artificial intelligence software. The problem exists in translating good science into commercial products that are adopted by the NHS to deliver significant improvements in patient health outcomes and cost reduction for the NHS.

This was achieved following wide-ranging and in-depth expert input from the Oxford AHSN which included:

1. providing pilot data
2. writing a business plan
3. fine-tuning the product
4. establishing proof of concept by enabling expanded real-world testing from a single hospital site to hundreds of patients across four NHS trusts.

The Oxford AHSN connected the product developers with Sensyne Health, leading to digital health products being licensed to the company and paving the way for spread and commercialisation. This is leading to improved care with millions invested back into the NHS and research establishments where the concepts were originally developed.

The Oxford AHSN provided support – including helping to develop the commercial strategy and presenting at investor roadshows – in the run-up to and during Sensyne Health's stock market debut in August 2018 which raised £60m including taking part in investor roadshows. This funding is supporting the company's expansion with 45 new jobs created by June 2019. Following this input the Oxford AHSN received a letter of endorsement from Sensyne.

Impacts/outcomes

Financial impact:

- Up to 45 jobs created by June 2019
- £5m invested back into patient care and research
- £60m raised through stock market debut in 2018

Supporting quotes

"Chronic disease affects the lives of millions of people as well as accounting for around 70% of NHS costs. Digital health technologies offer the potential to make a huge difference for these people and save money for the NHS. This highly innovative partnership will ensure that there is a pathway from invention to commercialisation for digital health products created in Oxford that will deliver benefits to patients and reinvestment back into the University and the NHS Trust."

Lord Paul Drayson, Chairman and CEO of Sensyne Health

"Digital health has enormous potential to generate patient benefit and economic savings throughout the NHS. In Sensyne Health we have found a partner committed to commercialising these ground-breaking technologies that could have a significant impact on patients around the UK."

Julie Hart, Director of Strategic and Industry Partnerships, Oxford AHSN

Future plans

GDm-Health has been implemented at Oxford University Hospitals, Royal Berkshire, Buckinghamshire Healthcare and elsewhere. The Oxford AHSN will measure its health economic impact and create a budget impact model to facilitate wider adoption and spread.

NHS England priorities addressed

- Care and Quality
- Funding and Efficiency
- Health and Well Being
- Driving Economic Growth

AHSN priorities addressed

Clinical areas:

- Diabetes
- Long term conditions (including ageing and frailty)
- Respiratory

System enabler projects:

- Data integration / interoperability
- Digital health (including road maps and enabled care services)

Start and end dates

The relationship started in 2014 as an Oxford AHSN Clinical Innovation Adoption project and progressed into a strategic partnership during 2017. During 2018, with increased capacity and capability at the Oxford AHSN, the partnership continued to grow and strengthen.

Contact

Julie Hart, Director of Strategic and Industry Partnerships, Oxford AHSN Julie.hart@oxfordahsn.org

Oxford AHSN case study 2

Date: Q1 2019/20

Programme/Theme: Strategic and Industry Partnerships

Title: Oxford AHSN support enables AI company to leverage £700,000 of grant funding

Overview summary

The Oxford AHSN provided support to Ufonia, a company applying artificial intelligence technologies to transform healthcare, as part of an Innovate UK Digital Health Technology Catalyst (DHTC) feasibility grant (£75K). The Oxford AHSN provided support in developing the business model for a project which assessed outcomes following knee-surgery. Ufonia has received a second grant under the Harwell HealthTec Cluster proof of concept award (£20K) to develop a test pilot version with a pharmaceutical partner. Following successful completion of the feasibility grant, a follow-on grant has been awarded by the DHTC (£665K) which is currently in 'launch and discovery' phase. The project will run until April 2021 and focus on follow-up post cataract surgery.

Challenge identified, and actions taken

During the feasibility study the Oxford AHSN held a Lean Strategyzer workshop for Ufonia to explore potential customers and the value proposition and then introduced Ufonia to a local NHS trust. Several constructive meetings were held with Buckinghamshire Healthcare NHS Trust (BHT) who identified that rising demand in cataract surgery was a strategic priority and that it was extremely challenging to telephone patients post-operatively to check on them and to capture patient reported outcome measures (PROMs). The Oxford AHSN also introduced Ufonia to the new Bucks HSC Ventures SME support programme. Ufonia was accepted into the first cohort, completing the programme earlier this year. Ufonia has also collaborated with My Clinical Outcomes, Oxford University Innovation (OUI), the Science and Technology Facilities Council (STFC) and BHT. The Oxford AHSN supported a successful bid for funding from the Innovate UK Digital Health Technology Catalyst (DHTC).

The Oxford AHSN has been involved in the project since its early stages and has worked closely with Ufonia to explore their potential customer base, value proposition and business model via Strategyzer workshops, and to clearly articulate them and the clinical challenge that they are looking to solve as well as identifying markets. Because of the workshop Ufonia decided to focus on ophthalmology in Buckinghamshire. The Oxford AHSN facilitated introductory meetings to relevant clinicians and senior managers. Being part of Bucks HSC Ventures enabled access to clinicians, key managers and patients to further promote and validate the proposal.

Ufonia has successfully applied for three grants:

- £25,000 from the STFC for feasibility testing of the initial idea (partnering with IBM)
- £20,000 from Harwell HealthTec which funded the building of the early prototype and further feasibility testing, which involved talking to patients and clinicians, alongside a pharmaceutical partner.
- £665,000 from Innovate UK, which will be used to build a fully automated system to be used in clinical practice.

The company presented their work at the Bucks HSC Ventures Showcase event in May 2019. They will use the Strategyzer canvases to generate seed funding use towards taking on five part-time employees.

Supporting quotes

"Buckinghamshire Healthcare NHS Trust has been a leader in innovation with regards to cataract pathways and we welcome our partnership with Ufonia, which we believe will build on our existing pathway innovations and help develop a system which delivers significant improvements to patient experience and care in an environment where resource struggles to match ever-increasing demand."

Mandeep Singh Bindra, Associate Medical Director for Research and Innovation and Consultant Ophthalmologist, Buckinghamshire Healthcare NHS Trust

"Ufonia have worked closely with the Oxford AHSN since 2017 and are integral partners in two successful Innovate UK grant awards and providing insights into our business proposition in the feasibility study. We look forward to working together for the next two years to roll-out Ufonia to other providers."

Nick de Pennington, CEO and Founder, Ufonia

"The collaboration within this partnership led by Ufonia offers the NHS a potentially affordable, simple and scalable mechanism to follow patients up post-operatively and to capture outcome measures to ensure that where necessary patients receive timely intervention if they are experiencing problems post-operatively."

Nicki Bromwich, Head of Commercial Development, Oxford AHSN

Future plans

The launch and discovery phase (April-September 2019) will be followed by a six-month development phase. Deployment of the technology will take place from April-September 2020 and the case for wider dissemination will be built over the subsequent six months until April 2021.

NHS England priorities addressed

- Care and Quality
- Funding and Efficiency
- Health and Well Being
- Driving Economic Growth

Start and end dates

2017-ongoing

Contact

Nicki Bromwich, Head of Commercial Development, Oxford AHSN nicki.bromwich@oxfordahsn.org

Oxford AHSN case study 3

Date: Q1 2019/20

Programme/Theme: Strategic and Industry Partnerships

Title: The Oxford AHSN assists Fujifilm in real-world evaluation of point of care flu test

Overview summary

A new point-of-care test for the detection of flu is in the process of being commissioned by Buckinghamshire Healthcare after a winter evaluation in the Acute Medical Unit (AMU) at Stoke Mandeville Hospital. The test was developed by Fujifilm Medical Systems and is based on silver-amplified lateral flow technology in a simple cartridge with an automated reader. The test requires minimal hands-on time and sample preparation making it ideal for use in a busy department.

The Oxford AHSN assisted in the setting up of the real-world evaluation, pulling the key clinical stakeholders together for initial meetings, drafting the protocols and data collection procedures alongside the trust's lead microbiologist and the AMU staff who would be using the test, organising training and logistics and helping with day-to-day queries.

The test enabled clinicians to quickly and easily diagnose and treat patients with flu, often resulting in a shorter stay in hospital, and saving around £200 per patient tested. The test was only run in small units in the emergency medicine department, but once commissioned use will be extended to the emergency department for use at the 'front door' of the hospital.

Challenge identified, and actions taken

Flu patients have a significant impact on A&E services during winter when the number of cases rises, leading to increased pressures on an already stretched service and longer waiting times. Patients with flu tend to stay longer than average, and are isolated where practical, which makes flexible use of the available beds more difficult.

Fujifilm Medical Systems originally had difficulty accessing emergency department clinicians to perform a real-world evaluation study, as well as sourcing project management resource, to gather the clinical evidence required to create a business case for their point of care flu test (the AG1 DriChem analyser).

The Oxford AHSN provided in-depth support to the company, assisting with evaluation, project management, commercialisation and procurement. As a result, Fujifilm was able to set up their first real-world evaluation in the UK in the acute medical unit at Stoke Mandeville Hospital (Buckinghamshire Healthcare NHS Trust). The Oxford AHSN provided a single point of contact for Fujifilm and the NHS trust, drafting protocols and giving day-to-day support.

The original reader for the test was unable to connect to the electronic patient record (EPR) which meant that all results had to be manually recorded and transferred. This was not ideal in a busy department and made it less likely to be commissioned in comparison to other tests on the market. The Oxford AHSN fed these concerns back to the company and this guided them in designing and manufacturing a reader that could be connected to the EPR system making it a more desirable system.

Impacts and outcomes to date

All nurses using the test agreed that it helped a lot with management of infectious patients and reduced the impact of flu that is usually seen on the unit, as well as reducing pressures on other departments if patients were transferred. Other similar studies have shown cost savings in the region of £200 per patient tested, as well as showing that point-of-care flu testing can reduce the length of stay by half. Buckinghamshire Healthcare is now in the process of commissioning the test for the AMU and emergency departments at Stoke Mandeville Hospital. This will be Fujifilm's first adoption site in the UK. The evidence and business case generated from this real-world evaluation is expected to drive further sales and implementation in other NHS trusts.

Supporting quotes

"As a senior clinician, every winter I had responsibility for the management of patient flow across the hospital. The point of care test for flu was a game changer. The rapid identification of those patients actually with flu helped streamline their management - and in some cases saved lives. It also allowed us to better manage the placement of patients, preventing overcrowding and using isolation more efficiently."

Guy Rooney, Medical Director, Oxford AHSN (and former Medical Director, Great Western Hospitals NHS Foundation Trust, Swindon, until June 2019)

"Point of care flu testing is of great help in managing the winter pressures that are placed on emergency departments, and further down the care pathway. It allows for speedier treatment decisions, especially outside standard lab hours, and allows for more efficient patient management."

Ashley Aitken, Senior Programme Manager, Oxford AHSN

Future

The Fujifilm test is in the process of being procured and should be in place for winter 2019/20. Stoke Mandeville data will be put through our budget impact model to determine potential wider cost savings.

NHS England priorities addressed

- Care and Quality
- Funding and Efficiency
- Health and Well Being
- Driving Economic Growth

Start and end dates

2017-ongoing

Contact

Ashley Aitken, Senior Programme Manager, Oxford AHSN ashley.aitken@oxfordahsn.org

Operational Review

Our first quarter of the seventh year of operations has gone very well. We have made significant progress on all seven of the NHS England national programmes although we still face significant challenges with two of them. Our Patient Safety Collaborative has made good progress in delivering the new national specification. The Office for Life Sciences has approved our updated Local Implementation Plan. Our Innovation Exchange has a stronger web presence and is supporting many companies across all four core functions.

The Oxford AHSN submitted six proposals for AHSN Network national programmes for 2020-2023. The total number of proposals received from all AHSNs was 44. The six proposals in the three categories are:

1. **Mental Health** – OxeHealth Digital Care Assistant to keep patients safe in acute facilities and Sleepio to tackle sleep deprivation (with Big Health)
2. **Cardiovascular disease** (CVD) – Excellence in Heart Failure (with Novartis), Optimising CVD Prevention in Primary Care and Bayer's Cardiovascular Risk Reduction Over Time (CARROT)
3. **Other** – Good Hydration!, reducing urinary tract infections in care homes (winner of 2018 HSJ Patient Safety Award).

Oxford AHSN representatives are involved in the selection process with colleagues from the other AHSNs and Gary Ford is leading the CVD category.

Prizes and publications

For the second year running the Oxford AHSN's Patient Safety and Clinical Improvement team won an HSJ Patient Safety Award, this time for sepsis identification – it shared the Best Emerging Solution category with Imperial College Health Partners and the NHS Improvement Patient Safety Measurement Unit.

In collaboration with Oxford University Hospitals and Oxfordshire Clinical Commissioning Group, we also won a Royal College of Pathologists Excellence Award for safer prescribing of anticoagulants in primary care.

Two BMJ publications of note from the Patient Safety and Clinical Improvement programme are: Paediatric enteral feeding at home - an analysis of patient safety incidents; and Reducing urinary tract infections in care homes by improving hydration.

Case studies this quarter (read the detailed case studies from page 8 and see Annex B for a full list of all our published case studies)

Three case studies from the Strategic and Industry Partnerships team have been included in this quarterly report:

1. In-depth support from the Oxford AHSN was instrumental in helping Sensyne Health develop and licence three products including GDm-Health, a remote monitoring system for women who develop diabetes during pregnancy. Oxford AHSN support included fine-tuning the product, establishing proof of concept by enabling expanded real-world testing from a single hospital site to hundreds of patients across four NHS trusts, helping to develop a commercial strategy and presenting at investor roadshows – in the run-up to and during Sensyne Health's stock market debut which raised £60m. This funding is supporting the company's expansion with 45 new jobs created by June 2019.
2. The Oxford AHSN provided support to Ufonia, a company applying artificial intelligence technologies to transform healthcare, as part of an Innovate UK Digital Health Technology Catalyst feasibility grant (£75K). The Oxford AHSN helped with developing the business model for a project which assessed outcomes

following knee-surgery. Ufonia has received further funding from the Harwell HealthTec Cluster proof of concept award and a follow-on grant from the DHTC (£665K) focusing on follow-up after cataract surgery.

3. A new point of care test for the detection of flu is in the process of being commissioned by Buckinghamshire Healthcare after a winter evaluation in the Acute Medical Unit at Stoke Mandeville Hospital. The test was developed by Fujifilm Medical Systems and requires minimal hands-on time and sample preparation making it ideal for use in a busy department.

Engagement

The Oxford AHSN's new Medical Director, Dr Guy Rooney, started in June 2019. He is meeting clinical leaders in the region and will help to ensure that we stay close to and support the emerging structures in the region such as rimary care networks and integrated care systems.

The Patient and Public Involvement, Engagement and Experience theme collaborated with Health Education England to support thinking on personalisation of care. The meeting, attended by 120 people, heard talks from Tina Coldham, Chair of INVOLVE, and Martin Vernon, National Clinical Director for Older People, and many more.

30 people attended the latest meeting of our Emergency Laparotomy Collaborative.

Led by Prof Gary Ford, the Oxford AHSN coordinated an independent research and innovation needs survey which produced a detailed picture across all AHSNs. A national report was published in May. Individual AHSNs are now discussing the emerging priorities for research and innovation with commissioners and research partners. In the Oxford AHSN region we are holding a workshop on 5 September.

Our regular monthly newsletter passed its 65th edition. It has around 1,350 subscribers. Collectively our updated websites received more than 200,000-page views in Q1 2019/20. The @OxfordAHSN Twitter account now has more than 4,900 followers. In addition to the monthly newsletter we are publishing thematic newsletters on an ad hoc basis, e.g. mental health – the next thematic newsletter focuses on primary care.

Highlights from the Oxford AHSN's three programmes:

1. **Patient Safety and Clinical Improvement (PSCI)** had another strong quarter as they shape the new national programmes for the Deteriorating Patient and Maternal and Neonatal care. This programme is also responsible for our mental health work including Serenity Integrated Mentoring (SIM) which made positive progress this quarter. PReCePT (preventing cerebral palsy in pre-term labour) is performing strongly across maternity units. Some other key activities and highlights in this period:
   - In collaboration with Imperial College Health Partners, we were pleased to win the Best Emerging Solution at the HSJ Patient Safety Awards for our work on the Suspicion of Sepsis dashboard.
   - Our work on reducing urinary tract infections (UTIs) in residents of care homes (Good Hydration!) was published in BMJ Open Quality. (Lean K, Nawaz RF, Jawad S, et al, Reducing urinary tract infections in care homes by improving hydration, BMJ Open Quality 2019;8:e000563. doi: 10.1136/bmjoq-2018-000563).
   - The first of two papers produced from analysis of NRLS data as part of the work of the Specialised Paediatric Care programme was published in the Archives of Disease in Childhood, showing the growing need to consider patient safety issues in complex care being carried out in home settings (Page B, Nawaz R, Haden S, et al, Paediatric enteral feeding at home: an analysis of patient safety incidents, Archives of Disease in Childhood, 2019. doi: 10.1136/archdischild-2019-317090)

The second paper on LTV incidents should be published later in the year.

- The team submitted two projects for consideration for national adoption through the AHSN Network – Good Hydration! and OxeHealth Digital Care Assistant.
- Katherine Edwards, Director of Patient Safety and Clinical Improvement, led a seminar at Oxford Healthcare Improvement on the different approaches to improvement from small scale local work to region wide and national work
- Funding and support from HEE for the development of an innovative e-learning package in maternity was sought and secured.

2. **Clinical Innovation Adoption (CIA)** has made good progress on the five national programmes it is delivering (Emergency Laparotomy is shared with PS&CI). We are close to the two-year target for GP practices using PINCER (see below).
   - Local projects initiated include a frailty project focused on osteoporosis and avoidance of second fractures through better bone management within primary care settings; this project is supported by Amgen and will officially launch in Q2. Primary care management of heart failure in Buckinghamshire supported by Novartis is also under way.
   - eMaps, the international market access project aimed at supporting Industry, will launch by the end of August with information being made available on the UK, European and USA health market structures, reimbursement, regulation and compliance requirements.
   - Sleepio has achieved significant media coverage in the quarter. Since the project's launch over 7,800 individuals in the Thames Valley have accessed Sleepio.
   - Data acquisition and analysis has transferred to CIA. The Medical Director is taking the lead on Information Governance and will support the AHSN's programmes
3. **Strategic and Industry Partnerships (SIP)** updated the local implementation plan for our Innovation Exchange which has been approved by the Office for Life Sciences. Examples of Innovation Exchange activities:
   - **1a Needs definition** - Providing additional capability helping innovators understand healthcare needs and priorities of the local health footprint. Local stakeholders such as Oxfordshire and Berkshire West CCGs, Health Education England and their primary care fellows, and the new primary care networks have been engaged. The online Innovation Exchange opened in June with a first call on the theme of healthy ageing.
   - **1b Needs definition -** Identifying the evidence requirements for innovative medicines, medical technologies, diagnostics and digital products. Examples include support to pathway development for treatment resistant depression, and, providing insights into the potential for an integrated personalised diabetes management system.
   - **1c Communicating local priorities.** This has been focused on outbound communication of local needs and priorities via the appropriate media and plays a key role in communication and diffusion with other AHSNs. The Innovation Exchange has a dedicated area on the Oxford AHSN website including details of all the four new core functions. Three case studies have been prepared this quarter (see Case Studies). Twitter is being used to raise awareness and attract interest in the programme.
   - **2. Innovator support and signposting.** Meetings and signposting SMEs has continued this quarter, with more than 30 face-to-face meetings held, as well as ongoing email support for 20 smaller companies. Support has been given around possible funding streams to several of these companies, as well as general advice on how to navigate the local ecosystem. The companies supported are at varying stages along the innovation pathway and are receiving advice and signposting as appropriate to their requirements. Examples: (1) a diagnostics SME has developed a point-of-care test to detect a series of biomarkers associated with critical cardiovascular disease for proposed use in emergency departments; (2) a feasibility study using our lean

assessment process methodology to assess the usability and benefits of the LiverMultiScan (LMS) for monitoring disease progression of autoimmune hepatitis; (3) a feasibility study using our lean assessment process methodology to assess the usability and benefits of a novel blood-based point-of-care (POC) diagnostic for stroke subtype diagnosis to enable rapid treatment for stroke patients with large vessel occlusion (LVO).

- **3. Evaluation in real world setting** – The SIP team is supporting the generation of a real-world evidence package that can demonstrate system (including health economic benefit), patient and clinical benefit for diagnostics; 47 companies supported in the quarter, e.g. Roche (PIGF), Biomerieux (digital), Sarissa (SMARTChip), Abbott (iSTAT), Horiba (MicroSemi).
- **4. Adoption of innovation and diffusion -** leading local adoption and diffusion of breakthrough diagnostic products evaluated through the Innovation Exchange, examples being delivery of an industry-funded programme for inflammatory bowel disease using TrueColours; working with Yorkshire and Humber AHSN to spread faecal calprotectin; HeadStart, urine-based biomarker test for the early detection of an acute exacerbation in patients with chronic obstructive pulmonary disease.

NHS England national programmes

We have made progress on all seven NHS England national programmes in Q1. Our forecast has changed little since the end of last year.

Atrial fibrillation (green) will overperform significantly; as previously forecast we expect 5,983 patients to benefit against the target of 3,000.

Emergency laparotomy (green) forecast of 803 patients is robust – around 200 patients are benefiting from the collaborative each quarter; the forecast has been corrected to 803 patients, in line with the business plan target. A well-attended sharing event was run by managers from the Oxford AHSN's Patient Safety and Clinical Improvement and Clinical Innovation Adoption teams.

PINCER (green) will also achieve the business plan target of 192 practices – in this quarter the bulk of the GP practices participating in the programme have been trained – the total figure is 178 practices. This is 88% of the practices in the four out of five participating CCGs. PINCER activities this quarter included:

- AHSN working with Medicines Optimisation leads at 4/5 CCGs to develop plans to recruit pharmacists (and in some cases GPs) to act as PINCER leads at each practice
- Through coordination with PRIMIS and CCGs, 13 action learning training sets were delivered across the Thames Valley at different localities
- 13 webinar sessions were delivered to almost 200 primary care PINCER leads around how to run and evaluate clinical audits as part of PINCER
- 13 face-to-face training sessions were delivered, teaching PINCER leads about how to run root cause analysis and develop action plans
- AHSN supporting numerous practices and the Local Medical Council to overcome information governance issues and sensitivities, giving practices across Oxfordshire the confidence to engage with the programme and sign up to the agreements required as part of implementation
- Currently the Oxford AHSN has over 200 active practices that plan to implement, 178 have implemented and uploaded PINCER data.

SIM has been changed from amber to green. The national target set for the Oxford AHSN has been reduced to zero from 4 because at the time it was set, Thames Valley Police had no appetite for SIM. However, both Berkshire Healthcare and Oxford Health working with Thames Valley Police are expressing interest in implementing an equivalent service to SIM based on the model run by Hampshire Constabulary – a service equivalent to SIM.

PReCePT (green) - the local maternity units are sustaining levels of $MgSO_4$ compliance of greater than 85% with rates improving from 80% to 90%. In-depth analysis of every case where a dose is missed has shown that in the last ten cases where a mother did not receive $MgSO_4$, five of those babies were born at home and the other five were delivered within minutes of getting into hospital. Engagement with lead midwives and obstetricians to raise awareness and increase training opportunities continues to be excellent.

ESCAPE-Pain (amber) – progress has been made and a third leisure centre commenced activity. Positive feedback has been received from participants. Discussions have continued with key stakeholders in the region to get to a decision point and Ravenscroft Physiotherapy in Milton Keynes has come on board. Delivery of the business plan target and forecast of 80 has been decreased to 59 patients because of the long lead time to get Ravenscroft operational.

TCAM (amber) – Buckinghamshire Healthcare has agreed to implement TCAM and an IT solution has been found. Frimley Health and Oxford University Hospitals are also expressing interest. The forecast of 453 patients, which is on target, depends on one of the trusts going live by 1 October 2019.

Milton Keynes patients are not going to benefit from either PINCER or TCAM. The Local Pharmacy Committee has rejected TCAM – although Milton Keynes University Hospital is keen. The CCG is concerned that adoption of PINCER will confuse the implementation of ECLIPSE in the 27 GP practices. Discussions continue. It should also be noted that only two out of 27 GP practices in Milton Keynes have engaged with the Atrial Fibrillation Detect programme; adoption in the rest of the Oxford AHSN region is in more than 80% of practices.

AHSN Network National programmes – forecast 2019/20

Programme	Contracted Metric	Reason for Higher or Lower Estimate	(2019/20) Business Plan or 5/7/19 forecast	2019/20 revised AHSN Network target	2019/20 excess or shortfall
AF	Number of previously unknown AF patients diagnosed with AF	Business plan target based on 2017/18 QoF performance	5,983	3,000	2,983
SIM	Number of high-intensity users covered by SIM	Interest in 2 out of 3 mental health providers. If this is implemented, more likely to be based on the similar Hampshire model than SIM itself.	4	0	4
TCAM	Number of completed referrals using TCAM	Our forecast is dependent on the 2 lead trusts being able to support IT transformation. If this is unachievable 2019/20 target under threat. Conservative assumptions on referral levels if we can achieve implementation with two Trusts.	453	453	0
ESCAPE-Pain	Number of people completing the ESCAPE-PAIN programme	Lower estimate as possible new sites are working through the approval process and may not come to fruition. The new figure is based on the assumption that: 1. Leisure sites are able to recruit participants 2. Ravenscroft Physiotherapy has advised they will pilot the programme, but facilitator training has not yet been scheduled. Anticipated start date during Q3. NB Business Plan target of 80 for 2019-20	59	570	-511
Emergency Laparotomy	Number of emergency laparotomies in hospitals implementing the pathway	All 6 Trusts are now included in reporting for 2019-20. The Q1 forecast based on a target of 803 was 201 however, during Q1 this forecast was exceeded as Trusts achieved 220 actual cases. On target for year end.	803	803	0
PINCER	Number of GP practices adopting PINCER	On target - now at 178 in Q1.	192	192	0
PReCePT	Number of additional mothers where MgSO4 given	Sustaining uptake of >85% - the achievable standard reported in the WoE study. Stretch target of 95% unachievable given small numbers	11	23	-12

Key Milestones – Q1 Progress

Programme/Theme	Key milestones 2019/20	Q1 Progress
Corporate	Improve appraisal system	Planned for Q3
Patient Safety and Clinical Improvement	Initiate COPD Discharge Care Bundle	The work for Q1 involved collection of baseline data on the current status of our partner trusts and engaging with key stakeholders
Clinical Innovation Adoption	Initiate two new funded projects that significantly benefit the NHS	Initiated 2 new funded projects (1) frailty related project (2) Heart Failure Both are significantly beneficial in terms of patient health and medium to long term costs to the NHS.
Strategic and Industry Partnerships	Launch of Project Accelerate National Support to pre-eclampsia	Oxford AHSN Accelerator Programme has been launched with an accelerator and a scale up element. Oxford AHSN is managing and coordinating the adoption of PlGF-based testing through the national AHSN network, which is already seeing very positive results in a relatively short time period; all AHSN's have assigned local project leads and all are actively engaging with their local maternity networks
Patient and Public Involvement, Engagement and Experience	Development and deployment of on-line recording and impact tool	Tool has been tested with three AHSN programmes. Further development required to include a planning section of the tool
Stakeholder Engagement and Communications	Implement findings of local research and innovation needs survey Lead national AHSN Network stakeholder survey Publish four single subject special edition newsletters Reach 5,000 Twitter followers	Workshop 5 Sep 2019 Survey due to run July-Aug 2019 Mental health published spring 2019. Primary care due summer 2019 Twitter followers: 4905, end June 2019

Finance

Oxford AHSN revenue for 2019-20 is forecast to be £5.75m. £4m is from NHSE, NHSI and OLS. Our partner contributions are forecast to be £0.4m, in line with previous years, and we plan to receive £1.4m of revenue from grants and commercial activities. Our year-end forecast has improved by £0.1m because new employees are joining later than plan - 4 new employees started late in Q1 with 3 more to start in Q2.

FINANCE PLAN - Quarter 1 2019-2020

Model Period Beginning	01-Apr-19	01-Apr-19
Model Period Ending	31-Mar-20	31-Mar-20
Financial Year Ending	**2020**	**2020**
Year of Licence Agreement	**7**	**7**
INCOME (REVENUE)	Opening Plan	Forecast
NHS England funding	2,411,385	2,411,385
NHS England - Other commissioning Funding	308,750	308,750
Partner contributions	399,966	399,966
Grant Funding from CLG	187,500	187,500
Health Education England	0	0
Office of Life Sciences Funding	830,000	830,000
NHS Improvement funding - PSC income	447,925	447,925
Other Income - Corporate Support	20,900	20,900
Other Income - Patient Safety Collaborative	20,225	20,225
Other Income - Clinical Innovation Adoption	816,995	816,995
Other income - Strategic & Industry Partnerships	299,422	299,422
Other Income - PPIEE	13,250	14,972
Total income	**5,756,318**	**5,758,040**
AHSN FUNDING OF ACTIVITIES		
Patient Safety & Clinical Improvement	749,468	742,354
Clinical Innovation Adoption	1,692,555	1,673,832
Strategic & Industry Partnerships	1,317,360	1,298,769
Informatics	163,481	104,095
PPIEE	152,024	146,779
Communications, events and sponsorship	167,986	167,851
Contribution to/From AHSN Network	136,000	136,000
Grant to Accelerare Ltd	235,318	362,827
Programmes and themes	**4,614,192**	**4,632,508**
CORPORATE		
Pay costs	721,258	697,994
Non-pay costs	420,868	427,538
Total Corporate Costs	**1,142,126**	**1,125,532**
Total expenditure	**5,756,318**	**5,758,040**

Net Income/Expenditure	**-0**	**0**
Programme funding previously committed	0	0
Surplus/(deficit)	**0**	**-0**

Risks and issues

There are no additional risk and issues to report (Please refer to Annex A)

Dr Paul Durrands ACA CMILT, Chief Operating Officer, Oxford AHSN

Patient Safety and Clinical Improvement

Summary

This quarter we were pleased to welcome Alice Roberts, Executive Assistant and Project Support Officer, to the team, and Bill Jewsbury, Deputy Medical Director, Frimley Health NHS Foundation Trust as a new member of the PSC Oversight Board. We also note the publication of the National Patent Safety Strategy which positively details the current and future role of the Patient Safety Collaboratives.

Other key activities and highlights in this period included:

- In collaboration with Imperial College Health Partners AHSN we were pleased to win the Best Emerging Solution at the HSJ Patient Safety Awards for our work on the Suspicion of Sepsis dashboard.
- Our work on reducing UTIs in residents of Care Homes (Good Hydration!) was published in BMJ Open Quality. (Lean K, Nawaz RF, Jawad S, et al, Reducing urinary tract infections in care homes by improving hydration, BMJ Open Quality 2019;8:e000563. doi: 10.1136/bmjoq-2018-000563).
- The first of two papers produced from analysis of NRLS data as part of the work of the Specialised Paediatric Care programme was published in the Archives of Disease in Childhood, showing the growing need to consider patient safety issues in complex care being carried out in home settings
  (Page B, Nawaz R, Haden S, et al, Paediatric enteral feeding at home: an analysis of patient safety incidents, Archives of Disease in Childhood, 2019. doi: 10.1136/archdischild-2019-317090)
  The second paper on LTV incidents should be published later in the year.
- The team have submitted two projects for consideration for national adoption through the AHSN Network – Good Hydration and OxeHealth Digital Care Assistant.
- Katherine Edwards, Director of Patient Safety, led a seminar at Oxford Healthcare Improvement on the different approaches to improvement from small scale local work to region wide and national work
- Funding and support from HEE for the development of an innovative e-learning package in maternity was sought and secured.

More detail on our activity on individual workstreams in Patient Safety and Clinical Improvement follows.

Maternal and Neonatal Safety Workstream

Maternal and Neonatal Health Safety Collaborative

The Maternal and Neonatal Health Safety Collaborative is a three-year national programme to support improvement in the quality and safety of maternity and neonatal units across England led by NHS Improvement. The Patient Safety Collaborative is supporting trusts within the region throughout this programme. This quarter the collaborative has welcomed Milton Keynes University Hospital and Buckinghamshire Healthcare into wave three. Representatives from both trusts attended the national learning set hosted by NHS Improvement and supported by the Patient Safety Collaborative. The teams are now in their diagnosis phase to identify the key area for improvement locally.

Alongside this the SCORE safety culture survey was undertaken and de-brief sessions have been held in both hospitals allowing staff to understand their survey results and voice any concerns or suggestions to improve culture. Frimley Health has also undertaken further SCORE de-briefing sessions with over 100

band 6 midwives learning and sharing through the process. These sessions are invaluable to capture safety concerns as well as ideas from the ground up to share with the local leadership.

The Thames Valley Local Learning System met on 7 June with 22 midwifery and neonatal representatives from across all five hospitals. The focus on these days is for everyone to learn from each other's quality improvement journey. Measurement for improvement was integral to the day, highlighting the importance of not just measurement but interpreting data to instruct further improvements. The beauty of the Local Learning System is that all members are on the same journey, at different stages, and can support each other through their experiences. The Patient Safety Collaborative hosts the Learning System and creates a safe space for sharing and learning.

Alongside individual local projects the aim of the collaborative is to work on a system level improvement piece. The regional maternity and neonatal steering group met and agreed to work together to reduce the incidence of major obstetric hemorrhage (MOH). At present there is variation in the definition of an MOH and moving forward this will be addressed as well as the gathering of baseline data. Through working together as a region, we aim to reduce variation, learn from each other and improve outcomes for women at risk or who sustain a hemorrhage after labour. Additionally, there is the intention to focus on the optimisation and stabilisation of the very preterm infant.

The Maternity Regional Improvement Group (steering group) take a collaborative approach to reducing variation in maternity care and improving safety and quality of care for pregnant women and their families in the region through the development of regional guidelines, quality improvement projects and shared learning across boundaries. The group, consisting of a wide range of clinicians and stakeholders from across the Thames Valley offer high level guidance and clinical expertise to the local learning systems (LLS) and the focus on working at a system level to deliver specific programmes of work identified in the Maternal and Neonatal Health Safety Collaborative (MNHSC) as discussed above.

In this quarter the group have updated and ratified regional guidelines to support intrauterine transfer of extremely premature babies, and a guideline bundle to standardise the administration of MgSO4 for neuroprotection for this group of babies. Additional support has been offered to the regional maternity trusts and the wider PReCePT audience in the form of an evidence paper to support the use of a bolus versus a bolus and infusion regime of MgSO4.

The maternal medicine regional transfer guideline developed by the group has now been adopted by NHSE and is important work which has supported the establishment of a maternal medicine network.

Working with the Patient Safety Academy a research project is continuing which seeks to address the degree of compliance with the existing regional guidelines throughout using interviews and conversations with staff to extrapolate the level of implementation of the recommendations. This aims to evaluate how successful these interventions may have been and provide guidance for future work.

In addition, funding was secured from HEE to support the development of an e-learning package to train midwives in the skill of intermittent auscultation of the fetal heartbeat using simulation. In the past in text books/midwifery training and national guidance, the focus has been on the timing of this procedure and the number that has been produced rather than a more detailed assessment of how the baby is coping. This has resulted in a wide variance of interpretation amongst midwifery staff and results in the potential to miss signs of distress in labour.

The current in-person training package developed by Consultant Midwives Christine Harding (RBH) and Wendy Randall (OUH) has been successfully used in two Trusts in the region. The interactive e-learning package should enable this innovative training to be rolled out to all Trusts in the region (both Thames Valley and Wessex), and

further afield as appropriate. Current interest in the current training has been very high, and it has recently won a British Journal of Midwifery Award in Midwifery Education.

The PSC continues to maintain our engagement and representation on our associated Local Maternity System Boards.

Perinatal Regional Governance Group

This continues to be an important and valued opportunity for the regional governance obstetric, neonatal and midwifery leads to share learning from the investigation of Serious Incidents. Over time trust has developed within the group and the focus is now on maintaining links with national groups for example the Health Safety Investigation Branch (HSIB) and sharing a business case to support the resourcing of external reviewers with medical directors and maternity and neonatal safety champions with the regional trusts. The group report to their own internal trust governance structures and to the local maternity system (LMS) safety workstream.

PReCePT

The PReCePT programme is supporting the spread and adoption of the uptake of MgSO4 for preterm mothers under 30 weeks gestation in acute trusts with neonatal units, aiming to increase the percentage of mothers at risk of premature labour receiving MgSO4 to 85%. This intervention has been shown to reduce the incidence of cerebral palsy in children born prematurely.

There is excellent engagement with PReCePT lead midwives and obstetric colleagues working to raise awareness and increase training opportunities for staff in Buckinghamshire, Royal Berkshire, Milton Keynes, Wexham Park, Frimley and Oxford trusts. We hold regular meetings with the PReCePT lead midwives and regional improvement lead to monitor progress, troubleshoot problems and share the learning from cases where MgSO4 has not been given. The key reasons are imminent delivery, emergency presentations and birth occurring before arrival at a hospital.

Across the network our administration rate for MgSO4 for prevention of cerebral palsy in preterm labour has improved from 80% to 90%. In-depth analysis of every case where a dose is missed has identified that in the last 10 cases where a mother did not receive MgSO4, five of those babies were born at home and five delivered within minutes of getting to the hospital.

A patient story video with a family who received MgSO4 prior to their preterm twins being born has been well received and shared with the national programme team.

Supportive guidelines and a summary evidence paper on the risks of MgSO4 bolus versus MgSO4 infusion has been shared with the regional and national teams.

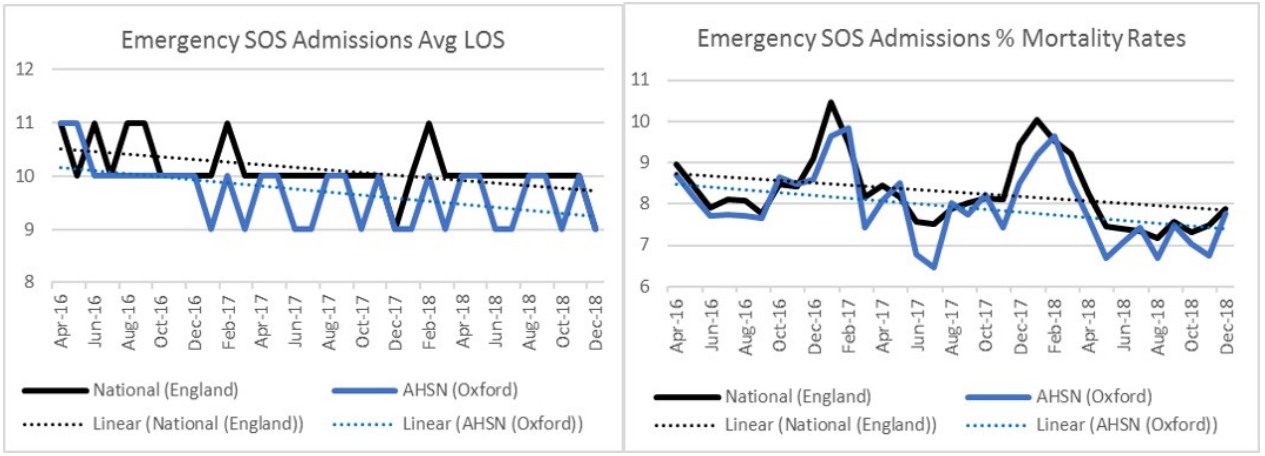
The PReCePT midwives are (where appropriate and with consent) collating feedback from mothers on their experience, of receiving MgSO4 and we will share these with the national programme team.

The focus now is on measures for sustainability and plans to continue to improve opportunities for the optimisation and stabilisation of the preterm infant through a system-level Quality Improvement project. We are keen to work on a greater understanding of why women present late to hospital and considering ways to raise awareness of the signs of preterm labour to encourage earlier presentation. We are reviewing the guidance for the transfer of women in preterm labour ensuring that there is clear guidance for the accompanying midwife with regards to her role and responsibilities should delivery occur on route to the tertiary hospital.

Deteriorating Patient Workstream

This quarter we have supported Imperial College Health Partners AHSN and the Patient Safety Measurement Unit with their Suspicion of Sepsis dashboard, attending a national workshop and will be a pilot site for version 2 of this tool. This work won Best Emerging Solution in the HSJ Patient Safety Awards in July.

Our regional data shows that we continue to have a downward trend in relation to length of stay and mortality.



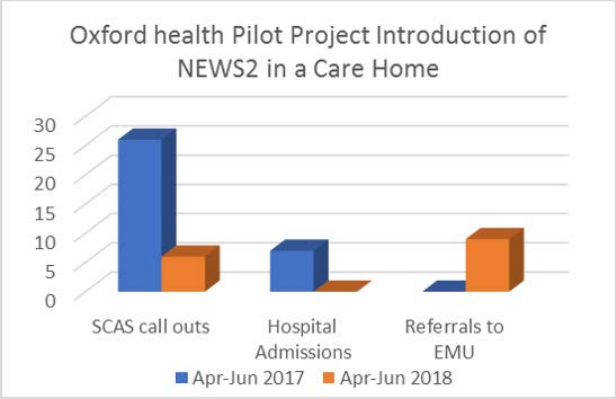
We also supported Oxford University Hospitals, who were finalists at the BMJ Awards for innovation in the quality improvement category.

Clare Hird - Sepsis Nurse Specialist, Andrew Brent - Trust & Regional Clinical Lead and Jo Murray, Regional Patient Safety Programme Manager.

At our quarterly Sepsis Stakeholders meeting we had presentations from Royal Berkshire who shared their Call 4 Concern project and Sepsis6 At First-contact Evaluation (SAFE) quality improvement pilot, as well as Imperial College Hospitals sharing their experience of Flow Coaching Academy and the development of their Sepsis Big Room.

All five acute trusts in our region are now implementing NEWS2 and significant progress is being made in community in-patient wards across the region. Peer support and sharing resources continues via our NEWS2 Champions regional network as well as engaging with the national on-line forum.

A pilot project by Oxford Health Care Home Support Service, implementing NEWS2 in a care home, showed significant reduction in hospital admissions and 999 call outs as well as improved care pathways and confidence of care home staff. We are supporting the spread of this project in Oxfordshire as well as piloting RESTORE2, from Wessex PSC, in care homes in Buckinghamshire. Collaboration is across the pathway with commissioners, GPs, acute trusts care home staff and education teams.



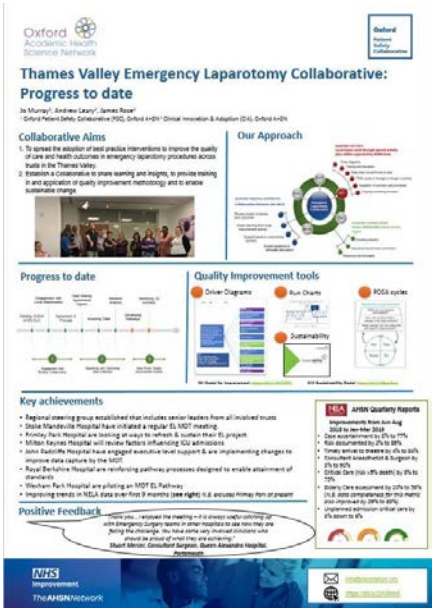
The regional Mortality Review Group met for the fifth time. All five acute trusts in our region are embedding Structured Judgement Reviews and four out of five have implemented a Medical Examiner system with the fifth coming on line by the end of the year. This forum offers ongoing peer support, sharing practical resources and site visits. We also heard from the NHSE South East Regional Quality Improvement Lead for Learning Disabilities Mortality Review programme (LeDeR). We will continue to look at how learning from deaths can be improved across the healthcare pathway.

An abstract has been submitted to present our regional approach to learning from deaths for the second Annual Royal College of Physicians National Mortality Case Record Review conference.

Adoption and Spread Workstream

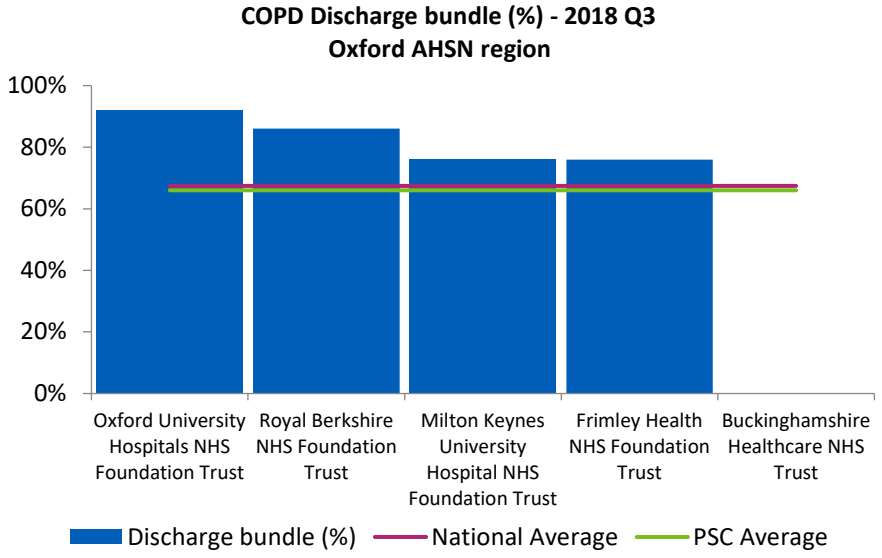
Emergency Laparotomy

The Patient Safety Collaborative continues to support the CIA team with the Thames Valley Emergency Laparotomy Collaborative. This quarter we have completed site visits, offering updated driver diagrams, data analysis for improvement and introduced the Sustainability tool at the third regional event in June. The progress is summarised in a poster we presented at the national Emergency Laparotomy Sharing Event on 25 June (for further information on EL refer to CIA report/tables updating ELC progress*)*



COPD Discharge Care Bundle

Our work on the COPD Discharge Care Bundle forms one of the interventions in the NHSI Adoption and Spread workstream aiming to support implementation of the British Thoracic Society COPD discharge bundle in acute trusts and increasing the number of organisations implementing one or more elements of bundle by March 31, 2020. The work for Q1 involved collection of baseline data on the current status of our partner trusts and engaging with key stakeholders. The graph below demonstrates that all are already performing well, and feedback is that other improvements related to COPD may be required. We are currently awaiting further national data before developing action plans for involved Trusts



COPD Discharge Bundle uptake: most recently available data from NACAP
Bucks data not available – was at 89% Q1, 91% Q2 so appears to be data collection issue

Emergency Department (ED) Checklist

The Emergency Department checklist is one of the interventions outlined within the national spread and adoption workstream. The purpose of the ED checklist is to improve the safety and clinical outcomes of patients accessing the emergency department with a focus on two key elements

- Physiological parameters to form a NEWS2 score
- Pain score

The aim is to increase the number (from baseline) of (Type 1 adult) of ED's using an ED safety checklist by 31 March 2020.

Our work on the spread and adoption of the ED checklist has been made easier through our successful ED collaborative which is due to hold its 5th collaborative event in October 2019. We can report that the one trust who had not fully implemented the checklist has now done so and at the end of Q1 five out of five (100%) of our partner trusts are using an ED safety checklist.

We will work on sustainability going forwards.

Mental Health

Anxiety and Depression Network

The Anxiety and Depression Network is now in the final stages of development of two new service innovations focused on relapse prevention: The Paddle therapy support app and the new, integrated step 2 treatment relapse prevention/ staying well protocol. Both these innovations have been initiated and developed by the network's Patient Forum. The Paddle website and instruction video are nearly finished as is the step 2 protocol training video.

The Anxiety and Depression Network is working in partnership with the CSU to complete an additional SUS data extraction so that, once resource has been secured, the health economics evaluation of the new IAPT-LTC Programme can be extended to 12 months (in addition to the three months study).

Regional Collaborative - Improving Care for Emergency Department Frequently Attending Patients

Our Health Foundation funded Thames Valley-wide project held a successful event in May 2019, with attendees from emergency departments (EDs), mental health services and the third sector. Three service users from the STARS initiative, with experience of frequently attending ED shared their experiences, and this presentation had a very powerful impact on delegates, with several of them asking for contact details for STARS so that they could incorporate the service-user voice into their own service development. Other speakers shared best practice from ED departments in Bristol and Cambridge, and we heard from the Welsh frequent attenders' network (WEDFAN). There was also a session on Physical Symptoms, Pain and Distress in the ED, and a presentation from the P3, a voluntary sector service working with high intensity users of services in Milton Keynes. There was an opportunity for delegates to network with those from other areas but importantly also time to discuss plans within local areas. WEDFAN kindly opened its June multi-disciplinary team's national event to delegates from the Thames Valley and several attended.

Within the event evaluation, stakeholders fed back the key areas they would like the project to focus on for the remainder of the funded time (up to November). Priorities included information sharing, service users attending multiple EDs, and the use of psychologists in ED. Following the event, we have been having discussions with the Thames Valley and Surrey Care Records Partnership (see https://www.thamesvalleysurreycarerecords.net/about) how this initiative will be able to help Emergency Departments to meet the needs of patients who attend more than one ED, by enabling access to records across the Thames Valley and Surrey.

We are also pursuing further work looking at peer support and how this can help frequently attending service users.

Early Intervention in Psychosis – Improving Transfers

The safety of patient transfers initiative continues its work and is due to complete in August with the production of an infographic resource with embedded letter templates for the protocol.

Serenity Integrated Mentoring (SIM)

SIM is a national initiative being rolled out by AHSNs, in which police are integrated within a mental health team, working together with high impact users of services helping them towards safer and healthier lives. We have been exploring whether this is an initiative that could be rolled out within Oxford AHSN's area, be this is the SIM model itself or a similar model which is implemented in Hampshire.

Although there are joint police and health mental health initiatives such as street triage in place, Thames Valley Police, which shares the same footprint as Oxford AHSN, has not been supportive of the SIM model itself in which service users are proactively mentored jointly with health teams on an ongoing basis. A new lower more realistic

national target has been set for the numbers of service users to be supported across England during 2019-20, and within this, the Oxford AHSN's target has been set to zero because as at the time it was set, there was not a positive decision to implement a SIM like service within the Thames Valley. We are hoping, however, that the outturn figure for the AHSN will be above this figure, as mental health and police teams within our area are now actively investigating the Hampshire model (which has passed equivalence testing) for potential implementation during 2019-20.

Industry

The Mental Health Programme Lead continues to work with the AHSN Strategic and Industry Partnerships programme and has had discussions during Q1 of several products and innovations which address mental health.

Clinical Innovation Adoption

Forward planning completed by the CIA team in Q4 has benefited our Q1 activities, optimising our capability and capacity. These actions have enabled the programme to make good progress in Q1.

With much of the national and local work being focused on cross working activities in health settings, the team has recruited a local CCG Pharmacist and two more Clinical Innovation Managers, one with an acute medical background and the other with Primary Care Practices/CCGs experience.

To enable rapid delivery, and to coordinate the many fast-moving projects, a Project Support Officer has also been appointed and a Data Analyst now sits in the CIA Team providing IG and data support for CIA and all the Oxford AHSN. The CIA team is managing the Innovation and Technology Payment, Accelerated Access Collaborative, Rapid Uptake Products internal interface with the Strategic and Industry Partnerships and Patient Safety Collaboration programmes - and the Director attends the National Spread and Adoption Programme Oversight Group (NAPOG).

National Programmes progressing particularly well this quarter include PINCER which has now moved from 25 Practices trained to 178 and Emergency Laparotomy Collaborative which is on target for the number of procedures using elements of the bundle of six ELC approach.

TCAM and Escape Pain continue to prove challenging; TCAM is of interest to Trusts however, IT issues such as integration with existing Trust Pharma systems or clashing EPMA implementation schedules have slowed down progress; three Trusts are front runners for delivery – Buckinghamshire Healthcare, Oxford University Hospitals and Frimley Health. Milton Keynes CCG is interested in Escape Pain and is working with us and one of their largest physio services to implement a pilot.

Local projects initiated include the frailty project focused on osteoporosis and avoidance of second fractures through better bone management within primary care settings; this project is supported by Amgen and will official launch in Q2. Primary Care management of Heart Failure in Buckinghamshire supported by Novartis is also under way.

eMaps, the international market access project aimed at supporting Industry will launch by the end of August with information being made available on the UK, European and USA health market structures, reimbursement, regulation and compliance requirements.

We have added a short section on data this month to raise awareness of this back-office activity.

Project progress for Clinical Innovation Adoption Q1

The CIA Programme manages five of the seven national programmes undertaken by Oxford AHSN. Three are progressing well and two are challenging.

National Programme	Measure/goal	Business Plan 2019/20	Q1 Position	Comment	Status
Atrial Fibrillation	Number of patients diagnosed with AF	3,000	5,983 (forecast) Annual measure in Oct 19)	Based on the 2017/18 QoF we have a high degree of confidence that the target will be achieved and exceeded. QoF 2018/19 is due for publication Oct 2019.	
Emergency Laparotomy	Number of procedures	803	220	220 actual cases which exceeded expected 201 for Q1.	
PINCER	Number of GP Practices implementing PINCER	192	178	Two-year cumulative target. Close to achieving the target.	
TCAM	Number of completed referrals	453	0	All five Trusts are actively engaging with us to implement TCAM. Potential IT solutions have been identified at all Trusts. An MOU with one Trust is close to being signed. A re-calculation of outer limit implementation suggests that if 2 Trusts get the IT in place by 1st October, the TCAM cumulative target may still be achievable. We continue to work on this.	
ESCAPE-pain	Number of people completing the programme	80	4 (year-end forecast has been reduced from 80 to 59)	A third leisure site commenced the programme in Q1, with 5 participants starting the course. Four participants completed at least 75% of the programme and therefore are classed as having completed the course. The other two leisure sites have struggled to recruit suitable participants and as such they did not run any courses during Q1. At the end of Q1, confirmation was received that Ravenscroft Physiotherapy (NHS provider) will pilot the course. Training is to be scheduled during Q2, with an anticipated start date in Q3. Due to the patients currently referred to this service, finding suitable patients for ESCAPE-pain is not anticipated to be an issue for this site.	

National Project: Atrial Fibrillation

Background

Atrial fibrillation (AF) is the most common cardiac arrhythmia affecting around 2% of the population. Prevalence increases sharply with age and many people with AF are unaware that they have the condition. AF is the cause of 20% of all strokes and confers a five-fold increase stroke risk for an individual.

AF related strokes are associated with higher mortality and higher disability than other types of strokes. Anticoagulation (with warfarin or a Direct Oral Anticoagulant – DOAC) has been shown to reduce the risk of stroke in patients with AF by two-thirds

Quarter 1 highlights

Berkshire West Integrated Care System project – AF Champions

The AF Champions project formally launched in May 2019. The first cohort of 13 GPs received a training session on AF detection, anticoagulation initiation and anticoagulation optimization. The session was well received by those attending. Participants have been given a MyDiagnostick device and are working on quality improvement projects focused on opportunistic AF detection in a variety of ways (shingles clinics, waiting room detection, blood clinics, long term conditions clinics etc.)

Educational material

With support from Health Education England, a suite of educational materials is being developed to support the AF programme. The content has been 'storyboarded' by the developer and work is now underway to build the e-learning programme. This will be finalised in September 2019 and the launch will be supported by podcasts and a webinar.

Activities for next quarter

- Second session for AF Champions cohort 1
- Engagement activities for AF Champions cohort 2
- Finalise e-learning package

National Project: Emergency Laparotomy Collaborative (ELC)

The ELC Programme aims to improve outcomes and survival for patients undergoing emergency laparotomy through the introduction and adoption of a bundle of six best practice interventions and incorporates the National Emergency Laparotomy Audit (NELA).

Activities in Q1

The 3rd Thames Valley ELC Conference – 3 March 2019

The third regional meeting drew speakers from Royal United Hospital Bath, Milton Keynes University Hospital, Oxford University Hospitals and the Oxford AHSN. All six hospitals were represented. Notable enthusiasm for the site updates session where members embodied the collaborative, supported by anonymised feedback from the day attributing significant value to this forum; a standing item for the meeting. Other sessions covered data as a tool for change; an account of the experience and mixed fortunes of implementing the programme during an

earlier wave of the national project; the use of a QI sustainability tool; financial planning in the NHS; opportunities to capture patient experience working with patients, carers and the public and support via OxCCARE, a Trainee Research and Audit Network; evaluating the clinical and economic impact of innovative diagnostics in hospital and pre-hospital settings to develop business case for adoption; and implementation of point-of-care testing.

The Emergency Laparotomy Collaborative Steering Group

The Group met for the first time at the end of April. Terms of reference have been agreed. Actions from the meeting are ongoing. One such action has been the agreement by OxCCare trainees to develop their skills in patient engagement though training and support by the Director of PPIEE, Oxford AHSN and the Lay Representative from the Steering Group. The Chief Nurse from OUH, Sam Foster, has kindly agreed to join the Steering Group. Dates for subsequent meetings have been circulated.

Best Practice Tariff

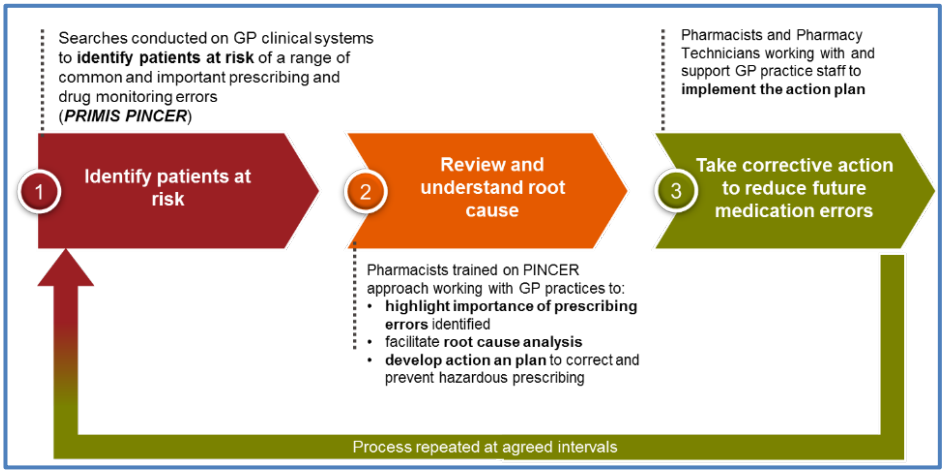
No further national updates this quarter. Several hospitals operate on a block contract which negates the raised or lowered portions of the fee pertaining to performance although Collaborative sites still strive towards the intentions of the Programme.

National Project: PINCER

What is PINCER?

PINCER is a pharmacist-led information technology intervention for reducing clinically important errors in general practice prescribing. It has been shown, in a large cluster randomised controlled trial published in The Lancet, to reduce medication error rates by up to 50%. A published economic analysis showed introducing PINCER was cost effective, demonstrating an increased quality of life for patients (0.81 Quality Adjusted Life Years per practice) and an overall reduction in costs of £2,679 per practice.

PINCER intervention comprises three core elements:



The software component of PINCER is based on a set of computerised queries which can be run on GP clinical systems to identify at-risk patients who were being prescribed drugs that are commonly and consistently associated with medication errors. These "indicators" include the prescription of nonselective non-steroidal anti-inflammatory drugs (NSAIDs) and β blockers, and the monitoring of angiotensin-converting-enzyme (ACE) inhibitor or loop diuretics, methotrexate, lithium, warfarin, and amiodarone.

Anticipated Benefits

- Reduction in serious medication related adverse effects, and a significant improvement in prescribing safety in primary care.
- Cost saving of approximately £2,600 per practice. If implemented across the entire Oxford AHSN region this would be approx. £780,000 over a 5-year horizon.
- Additional savings would be made by preventing any hospital admission related to an adverse effect.

Historic Activities

- Project kicked off in May with Initiation discussion with National PINCER leads at PRIMIS And Wessex AHSN (May 2018).
- Raising Awareness with CCGs (June 2018)
    - Offered introduction to PINCER at the Thames Valley CCG Heads of Meds Management meeting.
    - Recognised a significant risk to delivery was likely to be the resource required to run searches and QI element. Options explored included using GP based practice pharmacists to lead at each practice (likely to require incentivisation for practices) or seeking centralized pharmacist resource from CCGs to train on the job in practices.
- Raising awareness with GPs (July 2018)
    - Ran PINCER sessions with GP prescribing leads to raise awareness of PINCER and seek feedback.
    - All saw value in PINCER but raised issue again with resource challenges.
- Developing a Pilot Programme
    - 4 / 5 CCGs engaged to develop plans for a small pilot of PINCER with 25 practices which ran between Nov 2018 and Jan 2019.
    - Barriers and opportunities to wider rollout were identified and built in to plan for broader roll out across the Thames Valley.
- Building project around incentives
    - 2/4 CCGs developed PINCER into primary care development schemes for 2019/20.
    - 2/4 CCGs decided to leverage with new QI QOF domain within the GP contract.

Activities in Q1 2019

- AHSN worked with Meds Ops leads at 4/5 CCGs to develop plans to recruit Pharmacists (and in some cases GPs) to act a s PINCER leads at each practice.
- Through coordination with PRIMIS and CCGs 13 action learning training sets were delivered across the Thames Valley at different localities
- 13 webinar sessions (ALS1) were delivered to almost 200 primary care PINCER leads around PINCER and how to run and evaluate the clinical audits as part of this.
- 13 face to face training sessions (ALS2) were delivered, teaching PINCER leads about how to run root cause analysis and develop action plans.
- AHSN supported numerous practices and the Local Medical Council (LMC) to overcome IG issues and sensitivities, giving practices across Oxfordshire the confidence to engage with the programme and sign up to the agreements required as part of the implementation.
- Currently the Oxford AHSN has over 200 active practices that plan to implement and 177 having implemented and uploaded PINCER data.

Overview

All practice figures are discrete number of practices

CCG	CCG name	Active Practices	PRIMIS Members	Signed DPA	Uploaded Baseline
15A	NHS BERKSHIRE WEST CCG	47	47	46	46
14Y	NHS BUCKINGHAMSHIRE CCG	40	40	40	37
15D	NHS EAST BERKSHIRE CCG	47	45	44	40
10Q	NHS OXFORDSHIRE CCG	70	67	66	54
	Total	**204**	**199**	**196**	**177**

Activities planned Next Quarter (Q4)

- AHSN will develop plan to complete the PINCER training for the 200 PINCER leads
- Developing plans around sustainability and addressing the new PCN pharmacists and ensuring they are trained in PINCER
- Continuing to support practices around IG, QI methodology and action planning to ensure that the expected reductions in medication errors are realised

Progress against targets

The national target for PINCER in the Oxford AHSN was to have implemented PINCER at 192 practices by end of Q4 2019/20. This is expected to be reached in Q3 2019/20.

National Project: Transfer of Care Around Medicines (TCAM)

Background

The Transfer of Care Around Medicines (TCAM) project aims to reduce the number of patients being re-admitted to hospital due to adverse medication events. Patients at risk of an adverse medication event are identified and referred by hospital pharmacists to community pharmacists through a secure platform called 'PharmOutcomes'. Community Pharmacists can then invite the patient to a review where they are able to address any issues with the medication and re-emphasise the correct way to take the medication.

Metrics

The nationally agreed targets for Oxford AHSN for TCAM are shown below. No acute Trusts in the Oxford AHSN region went live with TCAM by the end of Q1 and consequently no referrals have been completed. The referral target of 453 is achievable but is dependent on: Trust IT issues being resolved within timescales; the rate of referrals made by the Trusts; and the 'conversion rate' attained in community pharmacies. Analysis of outcome data across the AHSN Network suggests the target is achievable and we are cautiously optimistic.

Table shows 2019/20 target and position at Q1.

National Programme	Measure/goal	2019/20 Plan	Q1 Position	Comment	Status
TCAM	Number of acute Trusts using TCAM	2	0	We have identified an IT solution for Buckinghamshire Healthcare and have offered to fund this. Integration of IT is straightforward at Oxford University Hospitals, but the work needs to be coordinated with their Trust-wide IT programme. Frimley Health is also expressing an interest in adopting TCAM.	
TCAM	Number of completed referrals	453	0	There is the potential to achieve the cumulative referral target by 31/03/20 if one trust goes live by 01/10/19.	

Progress made during Q1

The focus has continued to be on stakeholder engagement and the development of implementations plans for sites wishing to proceed. Sites that do not have an electronic prescribing and medicines administration (EPMA) system need to identify and implement an IT integration solution. Progress by Trust is highlighted below:

Buckinghamshire Healthcare

An integrated IT solution to enable transfer of discharge information to PharmOutcomes has been scoped and costed by the Trust. Oxford AHSN has proposed to fund the IT work on the condition that a clear schedule, under a MOU, is agreed. We are drafting an implementation plan with the aim of 'going live' in November. Options to fund and rapidly progress this work has been put to the Trust.

Oxford University Hospitals

The Cerner EPMA system which launched in 2018/19 has now been embedded and the Trust is able to engage with the TCAM project. Discussions with the Trust's Clinical Informatics team have confirmed that PharmOutcomes can be relatively easily fully integrated with the EPMA. The Trust is determining when the integration can be scheduled into their IT team's work schedule. An implementation plan will be developed in consultation with both the Trust and the LPC.

Royal Berkshire

The Cerner EPMA system which was launched in November 2019 has now embedded into practice and the Trust is able to engage in the TCAM project. There is strong clinical interest but some concern over the impact on workload. Oxford AHSN is liaising with PharmOutcomes and the AHSN medicines optimisation network to arrange demonstrations of the system in practice.

Milton Keynes University Hospital

The Trust Pharmacy team are keen to progress the TCAM project. The Trust uses Cerner EPMA and therefore the IT integration should be relatively straightforward. A WebEx demonstration of PharmOutcomes will be set up shortly. More work is required, with the offer of support from the National AHSN Team, to engage Community Pharmacists and develop a robust plan for implementation.

Frimley Health

Frimley Health does not yet have an EPMA system. A technical solution has been identified by the IM&T department and funding offered by the Oxford AHSN to implement this solution.

Next Steps

- Agree project plan and sign MOU with Buckinghamshire Healthcare
- Agree project plan and sign MOU with Frimley Health
- Agree IT implementation date and formalise project plan with Oxford University Hospitals
- Arrange WebEx demonstration of PharmOutcomes for Royal Berkshire
- Further engagement of community pharmacists at Milton Keynes University Hospital

National Project: ESCAPE-pain

Background

ESCAPE-pain (enabling self-management and coping with arthritic pain using exercise) is an evidence-based rehabilitation programme for people over 45 years with hip or knee pain. The programme integrates education, self-management and coping strategies with an individualised exercise regime. It can be delivered in both the health and leisure sectors by physiotherapists and fitness instructors. Each programme consists of 12 sessions run over six weeks, with typically 12 patients per session.

The national programme is running for two years and has just entered the second year.

Q1 Update

This quarter saw a third leisure centre commence the programme, and positive feedback has been received from the first cohort of participants. The Oxford AHSN is continuing to work with this site to assist with marketing the course to ensure enough numbers of participants for future programmes.

Q1 has also continued to seek decisions from those sites who have been considering the programme, Ravenscroft Physiotherapy in Milton Keynes and the Buckinghamshire Musculoskeletal Integrated Care Service (MusIC). The MusIC service has indicated they are still in discussions with the commissioner regarding the implementation of the programme. Ravenscroft Physiotherapy has advised they will be implementing the service on a pilot basis initially, with an anticipated start date within Q2. The Oxford AHSN will fund the facilitator training course.

During this quarter, a meeting was held with Berkshire West commissioners to discuss the programme. Following consideration of the programme, it was decided that ESCAPE-pain will not be incorporated into the new MSK pathway that is currently being implemented. However, once this is embedded, the team may revisit the programme towards the end of the year.

The Oxford AHSN has identified funding for a project support officer to assist with contacting individual leisure centres to discuss potential interest in offering the programme. This is due to commence in Q2.

The annual outturn for 2019/20 is 80 participants completing the course. The implementation by Ravenscroft Physiotherapy will help attain this, however it will be dependent on the site moving the programme from a

pilot phase to full implementation.

Activities for next quarter

Q2 will focus on the following:

- Training for Ravenscroft Physiotherapy
- Confirmation of start date for Ravenscroft Physiotherapy
- Commence contacting leisure centres to discuss programme

Local and International Projects

The projects reported below have been initiated either through partner priorities (fall prevent projects, Wiresafe, prostate cancer), national awarded funding via bids (Innovate UK – Sleepio/Atrial Fibrillation), workforce development funding from Health Education England (HEE) or international funding (EIT Health - eMaps).

Requirement	Project	Start	End	Status
Local	Frailty - Bone Health Management in Primary Care (recently added.	Sept 2019	June 2021	Start Q2
Local	Heart Failure (detect and treat - Novartis)	May-18	Dec-20	ongoing
Local	Sleepio (Innovate UK)	Apr-18	Dec-20	ongoing
Local	Falls Project 2/Phase 2: FallSafe Bundles	Jan-17	Mar-19	Completed
Local	Patient Safety – Wiresafe	May-17	Jun-19	Completed
Local	Atrial Fibrillation project - Reducing AF-related stroke through a coordinated primary/ secondary care	Nov-18	Dec-20	Sep 2020
Local	Innovation Course cohort 6 (Buckinghamshire New University/Oxford AHSN)	Sep-18	Jun-20	ongoing
International	eMaps – Market Access Tool	Jan 2017	Dec 2019	ongoing

Local Project: Excellence in Heart Failure

Background

The Excellence in Heart Failure project is being delivered in primary care in Buckinghamshire and includes code cleansing to increase recorded prevalence of heart failure and medicines optimization to improve quality of life and reduce hospital readmission. The project is delivered through a joint working arrangement (JWA) between Oxford AHSN and Novartis. Through this JWA Novartis have appointed Interface Clinical Services to support practices in running clinical audits.

Progress in Q1

The AHSN team attended locality prescribing fora to share details of the project and to encourage practices to sign up. To date, ten practices have agreed to participate and five have initial audit dates booked in July and August.

The first steering group meeting for the project was held. Progress was discussed, and risks and issues identified and mitigated.

The project was submitted to the AHSN Network as a potential national project for 2020/21 and 2021/22. A toolkit is being developed to support roll-out to other CCGs or AHSNs. To build up an evidence base for national roll-out, Oxford AHSN has reached out to other geographies to contact other sites that are running a similar heart failure medicines optimization project.

Activities for next quarter

- Newsletter article to encourage more practices to participate
- Toolkit scoping and development
- Discussion with other sites

Local Project: Innovate UK Funded: Sleepio

Sleepio is an online Cognitive Behavioral Therapy-based support programme that helps users with insomnia which affects one in ten adults. It aims to improve sleep without recourse to medication through a fully automated, interactive web-based tool.

Innovate UK is funding a project providing free direct access to Sleepio to all 2.7 million adults living or working in the Thames Valley (Berkshire, Buckinghamshire, Milton Keynes and Oxfordshire) from October 2018 until autumn 2019. This is the first large-scale NHS rollout of direct access digital medicine. Any adult can access the programme without needing a GP referral or prescription.

This initiative is being led by the Oxford Academic Health Science Network (Oxford AHSN) in partnership with Big Health (the company that developed Sleepio), major employers, GP surgeries and other primary care professionals.

Activities in Q1

- A communications project has been developed with a public relations specialist to reach a wider audience using social media and other channels to increase the number of people within the Thames Valley accessing Sleepio; preferably those with poor sleep who are more likely to engage with the CBT-based element of the course. This aspect of the project has also involved public and patient involvement; including an Expert by Experience session to gather the views of local people with sleep issues to ensure that the messaging and language of the campaign are authentic.

- **Commissioner Engagement** – A final draft of the paper "Determinants of and barriers to adoption of digital mental health at scale in the NHS" will be submitted to BMJ Innovations shortly.

- **GP Engagement** – The nine GP surgeries in Buckinghamshire have continued to recruit and engage patients. The Swan Practice and Meadowcroft Surgery have engaged with the most patients over the course of the project (193 and 189 respectively). In Q1, Meadowcroft recruited 136 patients, The Hall Practice recruited 103, and The Swan recruited 99. MJOG communications have increased the number of patients engaging with Sleepio where these have been issued.

Interestingly, the number of patients being referred by practices other than the nine engaged with the project is increasing; 388 compared with 185 in Q3 and 267 in Q4 in the previous year (i.e. following the project launch).

- **Population Engagement -** For the duration of the Sleepio project, the web-based tool will be made available to anyone (over 18 years-of-age) within the Oxford AHSN geography. Following the official launch on World Mental Health Day - 10 October 2018 - large employers and third sector organisations (particularly those supporting carer's, mental health issues, and long-term conditions) are being sought to engage with the project and roll-out Sleepio.

- Nine large local employers are now rolling out Sleepio to their staff (Buckinghamshire Healthcare NHS Trust, Oxford Brookes University, Oxford Health, Oxford University Hospitals, Oxfordshire County Council, TXM Group, Unipart, University of Buckingham, and West Berkshire Council). In Q1, the number of Thames Valley-based employees accessing Sleepio was 3,390; compared with 2,009 from the previous two quarters after the project's launch on World Mental Health Day (10 October 2018).

- Presentations to several groups have been given; including GP Psychiatry Study Days and Health Hospitals events which have raised awareness of the availability of Sleepio to clinicians and patients alike. Third sector organisations such as Oxfordshire MIND, Restore, and Archway have also been approached to engage with their clients. Presentations also given to brand partners at the Westgate Centre (retail complex) and at Oxford Science Park.

- Media engagement to coincide with Mental Health Awareness week has been sought locally. Case studies have been featured on local radio (BBC Oxford and Jack FM) as well as articles within the national press (Guardian, BBC News etc.), as well as regular articles in stakeholder newsletters. This will be expanded over the coming quarter in partnership with Good Relations and the communications project. This also involved an interview with the Financial Times.

- A survey – issued to around 1,000 individuals in the Thames Valley – developed from expert by experience forum. The results from the survey will help generate media stories with a local perspective and to be combined with online and other media channel promotion.

- Since the project's launch over 7,800 individuals have accessed Sleepio from the Thames Valley. The majority of those (just over 50%) individuals are Oxford-based.

Activities for Next Quarter

GP Engagement

- Continue to utilise alternative communication routes, such as MJOG, to raise awareness with relevant and clinically appropriate patients registered with data partner practices.

Population Engagement

- Continue to develop and implement digital communications project in conjunction with digital design agency – following Invitation to tender process – including input from those with lived experience to be rolled out by August 2019.

- Greater focus on universities, organisations and services supporting those recovering from physical health issues and rehabilitation, and large employers (particularly those with Mental Health First Aiders and/or employee wellbeing champions).

Local Project: Elastomeric Devices

Background

Elastomeric devices are small, single use pumps used to administer medication such as IV antibiotics or chemotherapy and can be used in patients' homes. As the pressure on hospitals beds is significant, Trusts are keen to explore alternative ways to treat patients safely and effectively that either can facilitate an earlier discharge from hospital or prevent an admission to hospital. Elastomeric devices could be used to support both the discharge of patients who would otherwise remain in hospital purely to receive IV antibiotics, and to support the prevention of admissions for such patients.

This project is initially being run with OUH, to provide support to the pharmacy and clinical teams to develop and embed this service to enable a greater number of patients to benefit from this model of treatment.

Q1 Update

OUHT is currently piloting the use of the devices with 25 inpatients. Following successful completion of the pilot, the devices will be rolled it out for use in patients' homes.

Activities for next quarter

Q2 will see the continued engagement with OUH to keep up to date regarding progress of the pilot and planning for the wider expansion of the devices.

Local Project: Healthy Ageing

Background

Healthy ageing is a key priority for health and social care and has been highlighted in the NHS Long Term Plan. This incorporates a wide spectrum of health needs, such as the management of patients who are classed as frail, but also enabling people to age well and live well into older age such as providing greater awareness of and the necessary steps for successful management of long-term conditions.

The Oxford AHSN has identified a need for a greater awareness of bone health and the appropriate management of osteoporosis to prevent fragility fractures. This project is also being deployed by four other AHSNs who are collaborating to deliver the "Northern Bone Health Programme". The Oxford CIA team will be initiating a local project with GP practices to ensure patients with osteoporosis are managed in accordance with NICE guidelines and are optimised on treatment. The project will also include an educational component for both patients and clinicians.

Q1 Update

The project has been scoped and a draft plan has been reviewed by the clinical lead. The new PPIEE tool has been used to highlight the key areas of the project where patient public involvement will be beneficial.

Local Project: FallSafe Care Bundle Project (closed)

Background

The FallSafe quality improvement project was developed by the Royal College of Physicians (RCP) to support frontline staff to deliver evidence-based falls prevention initiatives. It enables staff to provide multifactorial assessments and interventions that identify and treat the underlying reasons for falls and to ensure preventative steps have been taken to ensure patients do not fall when in the care setting. Staff complete monthly audits that monitor compliance against each of the elements. The original RCP project estimated falls reduced by 25% on wards implementing the FallSafe care bundles.

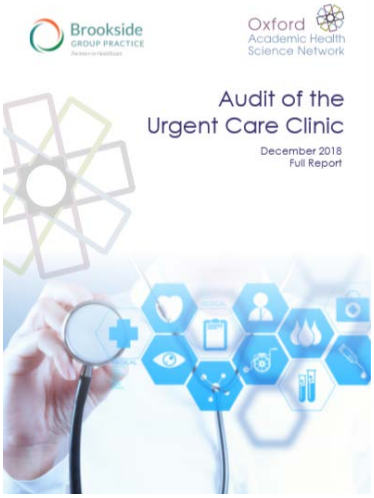
Q1 Update

The project with Oxford Health came to an end in May 2019 and the final report has been compiled. The results demonstrated improvement in compliance against most of the care bundle elements compared to compliance levels at the beginning of the project. Furthermore, three out of the four wards that implemented FallSafe demonstrated a downward trend in both the number of patients falls and the number of falls that resulted in harm over the course of the project.

The project also resulted in several changes and improvements to help the wards comply with the FallSafe elements. Some of these are highlighted below:

- Training sessions held on bed rail assessment, lying and standing blood pressure, urinalysis and how to measure and provide walking aids
- Additional call bells and night lights procured
- Work commenced to look at standardisation of patient white board across all wards
- Prioritisation grid introduced to highlight patients requiring FallSafe elements

Local Project: Brookside Group Practice Urgent Care Clinic Review (closed)



Following a request from Brookside Group Practice to the AHSN for support to audit their new urgent care clinic in December 2017, a was report compiled and an article published in Pulse (online GP journal) highlighting the findings. A second audit was undertaken in December 2018 which included questions on the two point of care tests that have been introduced into the practice. Further analysis was completed in Q4 2018/19 and the report finalised in Q1. An update of the second audit is to be included in Pulse Intelligence, a new online platform for all practice management content, run by Pulse. The second audit

produced similar findings to the initial audit and continued to demonstrate that the urgent care clinic within the Practice is an efficient and effective way of utilising the skills of the multi-disciplinary team to see urgent patients within primary care.

Innovation and Technology Payment (ITP) 2019/20

NHS England (NHSE) launched the third wave of ITP products during quarter 1. The ITP aims to reduce financial and procurement barriers to enable the uptake of products that are evidence-based, cost-effective and market ready innovations and that demonstrate the potential to deliver significant patient outcomes and savings to the NHS.

The four themes supported by the ITP in 2019/20 are:

- Non-invasive vagus nerve stimulation for cluster headaches
- Diagnostic placenta growth factor-based test for the rule-out of preeclampsia in pregnancy
- High sensitivity troponin assay for the identification of myocardial infarction
- Absorbable hydrogel spacer to reduce rectum radiation exposure during prostate radiation therapy

There are two further themes that are being supported through the Evidence Generation Fund (EGR). These will have a more limited rollout to evaluate their potential benefits:

Digital app to support emergency mental health assessments

- Interoperable personal health record

The technical guidance was released by NHSE at the end of Q1 and summarises the products, eligibility criteria and data requirements. The Oxford AHSN will work with the relevant organisations to support the adoption of these products.

myCOPD

Background

The treatment of COPD (Chronic Obstructive Pulmonary Disease) is complex, with different inhalers needing to be used in different ways. This has the potential for poor treatment compliance leading to poor outcomes and potentially wasted prescribing. Improving self-management for patients with COPD is a key priority for the NHS, as good symptom management is essential to stabilise the disease and prevent exacerbations.

myCOPD is an integrated online education, self-management, symptom reporting and pulmonary rehabilitation (PR) system. It focuses care on behaviour modification and self-management of COPD to increase the knowledge and skills that patients need to treat their own illness. The system includes a self-management plan and inhaler diary, a COPD Assessment Test (CAT), a pulmonary rehabilitation program, online education tutorials, weather and pollution forecasts, and symptom reporting.

Patient licences have been made available at a CCG level to those CCGs who indicated their interest in and intention to implement the product. Through the Innovation and Technology Payment (ITP) programme, NHS England will fund the cost of the patient licences with licences covering the patient's lifetime.

Q1 Update

With the Oxford AHSN region, Milton Keynes CCG and Berkshire West CCG have licences allocated via the ITP. During the quarter, Berkshire West CCG and clinical team met with the company and agreement in principle has been made to progress with implementation, pending further demonstration of the product in Q2.

Within Milton Keynes, engagement has been made with both the CCG and acute and community respiratory team. A demonstration meeting has been scheduled with the company for early Q2.

Activities for next quarter

Quarter 2 will focus on progressing implementation plans with both Berkshire West and Milton Keynes CCGs and continuing to facilitate engagement between the company and CCGs/clinical teams.

Patient Safety Devices

Background

Since 2017/18 the CIA team has been working with two NHS Innovation Accelerator (NIA) Fellows to implement three patient safety devices (Non-Injectable Arterial Connector (NIC); PneuX; WireSafe™) within critical care and operating theatres. The devices provide engineered solutions that significantly reduce the possibility of human error and improve the safety in providing care to critically ill patients. Two of these devices (NIC and PneuX) were provided to Trusts at zero cost via the Innovation and Technology Tariff (ITT). The WireSafe™ project closed at the end of 2018/19.

Q1 Update

During the quarter, NHS England confirmed funding would continue in 2019/20 via the ITT for the NIC and PneuX and as such the AHSN will continue to support these devices. Due to the work undertaken during the previous two years, there has been limited activity during the quarter. However, one additional site did confirm they will be implementing the NIC, with usage due to commence during Q2.

Activities for next quarter

Support will be provided as required to sites wishing to implement these devices. Reports to be provided by exception going forward.

UroLift

Background

UroLift is a minimally invasive treatment for benign prostatic hyperplasia which can be undertaken as a day case, as an alternative to TURP or laser. There are several patient and health economy benefits including:

• Preservation of sexual function	• Rapid symptom relief
• Improved bed capacity	• Improved theatre capacity due to shorter procedure time compared to TURP or laser

Q1 Update

All Trusts within the region are either offering the procedure or are seeking business case approval to offer it. During the quarter, Buckinghamshire Healthcare commenced offering the treatment. The AHSN also continued to engage and support the Trust not yet offering this treatment option. During the quarter, confirmation was received from this Trust that the business case has been approved and as such quarter 2 will focus on scheduling the necessary clinical training and arranging the first list.

The table below summarises UroLift activity by Trusts in the region:

Trust/Activity	Urolift Procedures					Status
	2018/19				2019/20	
	Q1	Q2	Q3	Q4	Q1	
Oxford University Hospitals	6	13	3	7	9	
Royal Berkshire	5	5	12	5	6	
Buckinghamshire Healthcare	0	0	0	0	3	
Milton Keynes University Hospital	0	0	0	0	0	Confirmation that Business case has been approved during Q1
Frimley Health: Frimley Park Hospital	15	26	17	20	17	
Frimley Health: Wexham Park Hospital	0	0	0	12	8	

Activities for next quarter

Activities in Q2 will focus on engaging with MKUH to schedule the necessary training for the clinical team and arranging the first list.

Innovation/Change Management Training for Frontline Staff

The Adopting Innovation and Managing Change in Healthcare Settings Programme

Background

The Adopting Innovation and Managing Change in Healthcare Settings Programme is designed to help healthcare professionals identify and introduce new ways of improving patient care and to teach them about

innovation adoption/quality improvement and managing change within health care settings. This funding is to continue providing training for our regional NHS staff and has attracted Doctors, Nurses, AHPs, Health Scientists and Managers.

Activities in Q1

Cohort six has been enrolled and started. There are 30 students enrolled for cohort six. This Cohort has attracted students from all NHS settings including Mental Health, Acute, Community and Primary Care. The students presented their initial project outlines at the Poster Day in May. This was attended by the Director of Clinical Innovation Adoption and the CIA team who provided feedback and support. The quality and standard of the projects is exceptionally high in this cohort.

Activities for next quarter

In September Cohort seven (module 1) will commence and 30 additional students will undergo in to the programme. Continued high levels of interest from a wide variety of healthcare professionals is sustained and currently there is a waiting list for the next cohort.

Breakdown of NHS Staff engaged with the programme

ORGANISATION	COHORTS					TOTALS
	1	2	3	4	5	
Berkshire Healthcare NHS Foundation Trust	1	5	2	0	2	10
Great Western Hospitals NHS Foundation Trust	2	3	0	1	2	8
Milton Keynes University Hospital NHS Foundation Trust	1	1	0	0	0	2
Oxford University Hospitals NHS Foundation Trust	21	4	4	12	8	49
Oxford Health NHS Foundation Trust	1	3	4	6	4	17
Royal Berkshire NHS Foundation Trust	1	0	0	0	0	1
Buckinghamshire Healthcare NHS Trust	0	8	5	1	9	24
Frimley Health NHS Foundation Trust	0	0	4	1	0	5
CCGs/GPs/NHSE	0	1	1	3	0	5
Cohort 6 (February 2019)						33
Cohort 7 (Sept 2019)						30
Total Students Trained						**184**

European Market Access for Partners (eMaps)

Background

This is an online platform to support the life science Industry and innovators to understand how the NHS and other health sectors work in other countries; Its primary purpose is for preparing to access markets. The digital platform provides advice and information on key areas of market access including clarifying and testing value proposition, regulations and compliance, pricing and reimbursement, market structure, stakeholders and overall pathways for market access. Information has been developed for UK, France, Spain and Denmark and work started during Q4 on Germany, Italy, Portugal and the US. The modules giving information about digital, medical technology and drugs within country's markets. This is an EIT Health KIC funded activity that is of benefit to the UK Life Science Market and others across the world.

Activities in Q1

Activities with Portuguese and Italian partners commenced during the last quarter with regular scheduled bi-weekly meetings taking place alongside the US. These include reviewing of content development, progress of modules, timeline overview and video production update. The pricing and commercial model has now been finalised including detail behind unit prices and tie in periods for initial purchase. The name was widely discussed with alternatives presented and the name eMaps was the one that showed the greatest appeal. Alongside this the domain name was also selected and secured which was eMaps.co as the primary URL and eMaps.info also purchased. The UK content was created in 2017 so due to the various changes in policy, process and terminology, a continuous review is taking place. To aid the review and validation process of content, the anti-plagiarism software 'Turnitin' was purchased and has been implemented. The payment method and subscription has been confirmed. Partners for German content have now been appointed.

Activity in Next Quarter

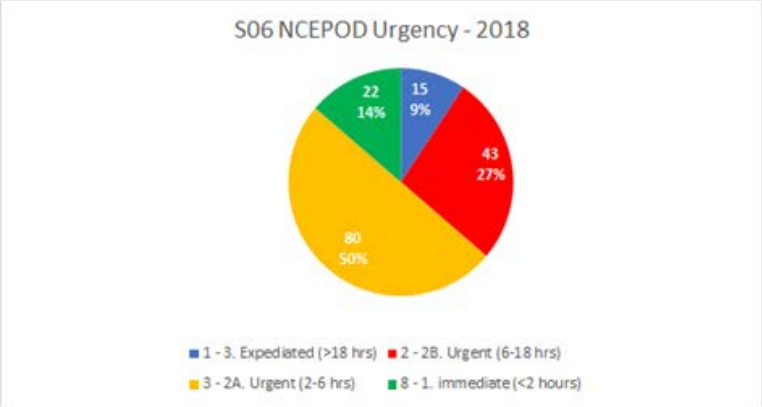
- Testing of the API integration will complete, and the payment portal will switch to live mode.
- UK content will have been reviewed to a standard that will enable the platform to go live with all policy, process and terminology inconsistencies captured and corrected. Alongside this the anti-plagiarism checks will have been carried out on UK content
- Following this, any permissions will have been sought from the owners of substantial content or references made as appropriate.
- The Team will host a face to face event in mid-July with Phase three partners in Europe (Portugal and Italy).
- The platform will be launched (soft launch) when UK modules completed, followed by a public launch following a marketing campaign.

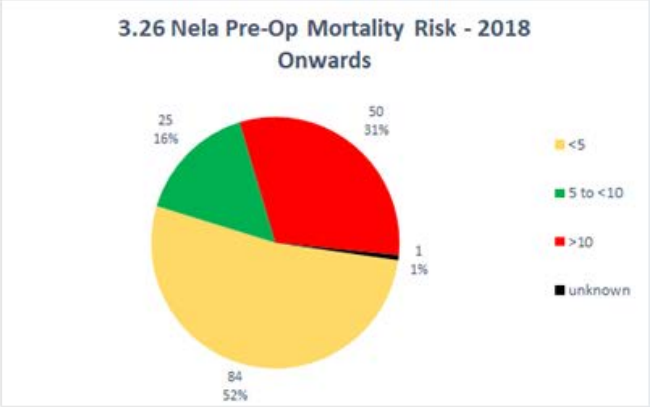
Data Management for CIA and other Oxford AHSN programmes

The CIA team and AHSN have been in discussions with South, Central & West CSU, exploring what services they have to offer which would enable us to create linked different datasets and information for tracking patients care management; This will be used to better understand the patient pathway and indicate where there may be a requirement for better system optimisation. This will support projects and activities in the CIA programme and the other key programmes within the AHSN (i.e. PS and SIP).

The Interface and Collaboration for Data Projects

- Emergency Laparotomy – received data from trusts for Q4, completed charts and made our own amendments to the KSS Data Dashboard to respond to evolving data requirements. In addition, we worked on a detailed information request from one site with specific challenges in theatre allocation and critical care provision. The pie charts below present the urgency of cases for those patients undergoing emergency laparotomy procedures and their mortality risk. These insights contribute to a deeper understanding of demands upon theatre scheduling and the relative demand for critical care beds post-operatively.





Ongoing

- Exploring different data sources for a Prostate Cancer Project and looking into tailoring our application for the project.
- Looking into possible data requests for the Faecal Calprotectin and Heart Failure projects.
- Support also has been provided to the SIP team reference Faecal Calprotectin and the Patient Safety Collaborative for AKI and Postpartum Bleeding for the Regional Maternity Steering group.

Strategic and Industry Partnerships

Creating an Innovation Exchange for the Oxford AHSN

The aim of the Strategic and Industry Partnerships (SIP) Programme remains to support the development of partnerships between academia, industry and the NHS across the development pathway for new products and services. This now covers new medicines, diagnostics, medical technologies, and digital health innovations. In practice, the activities of the SIP Programme connect very closely with the other Oxford AHSN programmes but focus on two crucial stages in the pathway - the concept of a new innovation and evidence gathering for business model generation. The activities of SIP were restructured during 2018/19 to deliver the four core functions that form the basis of the new Office for Life Sciences model of working as an Innovation Exchange and have been further refined for 2019/20 business plan. The Local Implementation Plan was updated during June and submitted to the Office for Life Sciences. The Self-Assessment Quarterly report was RAG rated Green for the last quarter (JH).

1a. Needs definition - Providing additional capability for helping innovators understand healthcare needs and priorities of the local health footprint

In depth conversations were held with Oxfordshire Clinical Commissioning Group regarding healthcare needs and priorities, discussions centered on an efficient referral pathway tool (REGO) and the potential for increasing the use of Point of Care diagnostics in primary care. Conversations were also held with West Berkshire Clinical Commissioning Group regarding patient-centric albumin creatinine ration (ACR) testing. The belief here was a digital diagnostic device could be prescribed for patients at risk of Chronic Kidney Disease (CKD), for patients to conduct the test at home, with results uploaded onto the GP clinical systems. Conversations centered around the clinical need and both patient and clinician acceptance. A meeting was attended with Health Education England (HEE) Thames Valley and their Primary Care Fellows for 2019/20. These fellows are exploring either the adaption of their ideas into innovations or the assessment of current innovations in primary care for impact, according to local needs and with a digital focus. Relations have been established with Primary Care Networks (PCNs), who have stated the need for support to identify potential innovations, which could satisfy the criteria for enhanced payment through the Network Contract Directed Enhanced Service (DES).

Finally, relations with the Primary Care Diabetic Lead at Buckinghamshire Clinical Commissioning Group were re-established, and conversations are now taking place with their Transformation Manager for Long Term Conditions, Ill Health Prevention & Supported Self Care, to identify possible ways of supporting their data analytics team, to reduce the element of unwarranted variation; greater attention for those whom are at high-risk, those who are poor attendees, through smarter and more efficient ways of working (VM).

The online Innovation Exchange opened for its first call on 30 June 2019. The call is around the theme of “Healthy Aging” which aligns with local NHS needs as articulated by Transformation Lead (VM), as well as Government Grand Challenge, and will be used as a test to gauge industry’s willingness to engage with calls of this type and to cement the process behind the Exchange. Innovators will be required to complete a comprehensive form to provide the AHSN with details of their innovation and where they are in the development pathway. We will then score these innovations and take those that have promise and match up with our local clinical needs forward. Once the process of the calls has been finalised and put into practice, we will then create an “open” call with no theme for early stage

innovators to apply to. The current plan is that any promising innovations that do not align with clinical interests could be forwarded on to other AHSNs who could potentially take the innovations forward, but this is reliant on innovators being happy for their details to be shared, and other AHSNs having capacity to take on further projects (ARA).

1b. Needs definition - Identifying the evidence requirements for innovative medicines, medical technologies, diagnostics and digital products

Treatment Resistant Depression (TRD) is one of several major depressive disorder (MDD) subtypes commonly defined as: "An MDD episode that does not respond to two antidepressant (AD) treatments that are prescribed at adequate doses for a sufficient length of time". TRD has a substantial clinical burden driven by non-response to treatment as well as a higher incidence of suicide relative to non-treatment-resistant counterparts. The total estimated cost of healthcare services for depression in England in 2007 was £1.7 billion. Compounded by loss of employment, the societal cost substantially increases the total to £7.5 billion. Given the lack of prevalence data for TRD in the UK, assuming that rates are similar to the US (i.e. 10.6%), as demonstrated in the STAR*D study, then this would estimate that 153,000 individuals are living with TRD in the UK. A novel treatment is indicated, in conjunction with an oral AD, for the treatment of TRD in adults. During and after each of these novel treatments, individuals should be observed by appropriately qualified personnel until they are ready to leave based on clinical judgement. This is to ensure that potential transient blood pressure increases (10% of patients) are monitored and perceptual/dissociative effects (24% of patients) have resolved. Given the nature of the pathway reconfiguration entailed, members of the Market Access team are working to deliver insights into this new treatment and new care pathway for patients with TRD. To date a literature review has been undertaken of TRD to inform the pathway development, and as a result the current pathway and proposed pathway have been constructed to understand the care journey for patients with TRD. A pre-read document and questionnaires have been drafted for both clinician and payer Key Opinion Leaders (KOLs) and during the next quarter we will be engaging and recruiting KOLs to interview (AA).

Members of the Market Access team are working to provide National Health Service (NHS) insights into the potential for an Integrated Personalised Diabetes Management (IPDM) approach and explore opportunities for a risk-share reimbursement model. The project is funded by the European Institute of Innovation and Technology (EIT), which supports innovations and improves patient outcomes. The IPDM approach is targeted at people with type 2 diabetes but could possibly meet the needs of people with type 1 diabetes too. The IPDM approach is an integrated package of products that can be used in type 1 and type 2 diabetes management pathways and includes: education and information for patients to make positive behavior changes, and blood glucose monitoring equipment and insulin pumps for people at risk of poor blood sugar control. Patients can use an app to upload their blood sugar levels remotely, in real-time, which is then available to a clinician to analyse. Clinicians can use this data to identify those patients most at risk of sub-optimal blood glucose testing and control and adjust the patient treatment accordingly in real time rather than waiting until an annual review. The IPDM approach also includes a population analytics software tool, which can identify specific patient groups who may benefit from adjustment to their diabetes management. To provide insight from a local and national perspective, interviews have been taking place with clinicians, payers and Key Opinion Leaders (KOL) into the opportunities the IPDM approach offers compared to current standard of care in diabetes management. The interviews will also determine whether the payers are can consider outcomes-based funding contracts or other forms of risk-share funding, and if so, what outcomes are important and how they could be measured. The key output of the project is a report and presentation in September 2019 (GH).

1c. Communicating local priorities

Senior Programme Manager (ARA) and Digital Marketing Manager (RU) are focused on outbound communication of local needs and priorities via the appropriate media and play a key role in communication and diffusion with other AHSNs. The Innovation Exchange area on Oxford AHSN website has had a complete overhaul, with details of all the four new core functions added. The Oxford AHSN Accelerator programme has been added to the Oxford AHSN website, along with some frequently asked questions. A paid Twitter campaign was used to drive bookings onto the commercialisation workshops for the Accelerator programme. A leaflet was created for the commercialisation workshop, along with the Pre-Accelerator workshop and a newsletter was sent out focusing on the Accelerator programme.

Four case studies have been prepared this quarter.

1. **Owen Mumford** – Members of the SIP team performed a Lean Assessment Process to enable the company to gauge the clinical utility and acceptability of their new test against current clinical practice and potential value to sexual health clinics in the NHS in England and explore utility in other potential clinical settings.
2. **CareHound** - Through the Bucks HSC Ventures programme, the SIP team provided a Lean Strategyzer workshop to help direct Consentricare's future customer discovery, develop their value proposition and further their product development.
3. **Ufonia** - The SIP team has been involved in the project since its early stages and have worked closely with Ufonia to explore their potential customer base, value proposition and business model via Strategyzer workshops, and to clearly articulate them and the clinical challenge that they are looking to solve.
4. **FujiFilm** – Members of the SIP team assisted in the setting up of the real-world evaluation, pulling the key clinical stakeholders together for initial meetings, drafting the protocols and data collection procedures alongside the Trust's lead Microbiologist and the AMU staff who would be using the test, organising training and logistics and assisting with day-to-day queries.

In the last three months there has been a big push on increasing the number of tweets posted on the Strategic and Industry Partnerships programme Twitter feed (@SIPoxfordahsn). This has had the highest number of impressions, clicks, retweets and likes in June since the account was set up.

Impact evaluation - Strategic and Industry Partnerships Twitter activity:

	Impressions	**Engagement rate**	**Link clicks**	**Re-tweets**	**Likes**
April 2019	1,500	1.80%	1	3	1
May 2019	5,500	1.10%	20	12	17
June 2019	37,400	1.50%	832	50	43

Meetings held with local NHS partners to assess needs:

- Oxfordshire Clinical Commissioning Group
- Deputy Director, ICS Delivery – Berkshire West
- Primary Care Networks / GPs / Clinicians, Berkshire West
- Health Education England Thames Valley
- Primary Care Diabetic Lead – Buckinghamshire Clinical Commissioning Group

2. **Innovator support and signposting**

Senior Programme Manager (ARA), supported by members of the SIP team, is focused on helping companies to develop innovative solutions that meet healthcare needs; directing companies to local resources; supporting health partners to innovate by triaging of novel innovations that have the potential to fit with NHS need; and supporting the development of viable business models and strategies for company growth. Meetings and signposting SMEs has continued this quarter, with over thirty face-to-face meetings being held, as well as on-going email support for twenty smaller companies. Support has been given around possible funding streams to a number of these companies, as well as general advice on how to navigate the local eco-system. All the companies being supported are at varying stages along the Innovation Pathway and are receiving advice and signposting as appropriate to their requirements.

A diagnostics SME has developed a point of care (POC) test to detect a series of biomarkers associated with critical cardiovascular disease. The product has a proposed use in the Accident and Emergency (A&E) department to provide faster and more accurate results, which can lead to faster patient management decisions for patients presenting with critical cardiovascular disease. In addition, it can improve the patient experience and alleviate pressure in the A&E department. A&E departments nationally across the NHS consistently miss the four-hour target for referral or discharge of a patient in A&E. A potential solution could be POC testing which can allow for faster results to reach various clinicians and allow for faster patient management decisions and turnaround time which can be a potential solution for the A&E. Members of the Market Access team have undertaken a feasibility study which involved conducting an in-depth literature review, developing a map of the care pathway, and preparing a participant information document and a semi structured interview questions. Key stakeholders were identified and interviewed ranging from emergency consultants, junior doctors, nurses and point of care managers to understand where in the care pathway this product may be utilised, barriers to adoption and adjustments required for the device (MM).

Members of the Market Access team are conducting a feasibility study using our Lean Assessment Process methodology to assess the usability and benefits of using the LiverMultiScan (LMS) for monitoring disease progression of autoimmune hepatitis (AIH) patients in the care pathway. AIH is usually diagnosed using liver biopsies and routinely monitored with blood samples and/or liver biopsy every twelve to twenty-four months. Liver biopsies are seen as the gold standard for determining liver pathology and histology, but they are invasive and expensive procedures. LMS is a non-invasive technique. It can enhance MRI images to quantify liver fat, iron and can help to measure and correct MRI-T1 maps (cT1) of the liver for the presence of hepatic iron overload. These measurements may help in improved patient outcome and management. This study aims to explore the utility and potential value to clinicians of LMS technology in monitoring AIH patients on treatment and the potential for use in the diagnosis of patients with suspected AIH. After an initial literature search, the clinical pathway

was mapped and key documents prepared. The first being a participants' information sheet containing all the information about the new technology, the aim and objectives of the study and the proposed use

of LMS in the care pathway. The second document being an interview protocol, which consists of semi-structured interview questionnaires, human factor tools and the clinical pathway for discussion. Stakeholders will be identified and interviewed after the key documents have been approved. A feasibility study report will be prepared based on the qualitative and quantitative questionnaires and statistical analysis and delivered in the next quarter. An early economic evaluation will be conducted on to explore the cost of implementing the LMS in the care pathway for monitoring the AIH patients. Identified resources will be valued in monetary terms using appropriate UK unit costs. Sensitivity analysis conducted to test variability of different parameters (MB).

Members of the SIP team are also conducting a feasibility study using our Lean Assessment Process methodology to assess the usability and benefits of using a novel blood- based point-of-care (POC) diagnostic for stroke subtype diagnosis to enable rapid treatment for stroke patients with Large Vessel occlusion (LVO) in the care pathway. There are two main types of stroke: ischemic, due to lack of blood flow, and hemorrhagic, due to bleeding. Untreated LVO in acute ischemic stroke is associated with poor clinical outcomes. Current treatment of stroke patients is dependent on diagnosis via computerised tomography (CT) scan to the head. CT is highly accurate for detection of brain hemorrhages but less accurate for detection of ischemic stroke or LVOs. In case of a negative result from CT, a further MRI scan is performed to confirm ischemic stroke. If LVO is suspected, patients are transported to the nearest centre where a further procedure, called CT angiography, is performed. The new POC test device combines blood biomarkers that are highly specific for stroke subtypes with ultra-rapid immunoassay detection can identify LVO patient within twenty minutes. This POC test may help in reducing the time of diagnosis and speeding the treatment for LVO patients resulting in improved prognosis. The aim of this study is to understand the economical constraints and advantages that such a blood test could offer in various clinical and payer settings. After the literature search, the clinical pathway is being mapped and interview documents prepared to assess the utility and the barriers to adoption. Early economic evaluation will be conducted to explore the value proposition for the POC test in the care pathway. Identified resources will be valued in monetary terms using appropriate UK unit costs. Estimated costs will be compared between across pathways (NO).

Innovate UK is funding a project with Ufonia which seeks to introduce automation of clinical follow-up after cataract surgery, to enable proactive and timely access to healthcare services for patients, while optimising professional's workload. This project will develop an artificial intelligence (AI) based system to conduct an autonomous telephone conversation with patients in a live clinical setting. It will also create conversation architecture to capture information about cataract surgery follow-up. Lastly, this project will also generate a healthcare integration engine to read and write data between the system and those of healthcare providers. Members of the Market Access team will conduct stakeholder analysis with healthcare providers in the AHSN Network. Key clinical and finance contacts will be approached to test the value-proposition and business model (AA).

Recruitment of patients to the Sleepio evaluation continues. The first cut of health economics data is due from the Office for Health Economics in July. Early data shows that those people completing the six-week Sleepio course are achieving an additional five hours extra sleep per week. A new project manager, Charlotte Lee, is in post and an interim project review has been completed which has refocused the clinical and population engagement work-streams. A proposal was also submitted for Mental Health National Spread and Adoption Programme 2020 (NB).

3. Evaluation in a real world setting

The SIP team is supporting the generation of a real-world evidence package that can demonstrate system (including health economic benefit), patient and clinical benefit for diagnostics.

	Projected Benefits	**Company Details**	**Number of companies into OLS Database**
April 2019	AIH Grant £242,017	Roche flu; Biomerieux; Bucks HSC; BigHealth; Janssen; Bayer; eCloud; Ufonia; MediPlus; Perspectum; Cloud-HF; LivaLife; Medtronic; GE; Novartis; Sensyne; Physiomics; Osler; Abbott; theHill; Sarissa; Creavo; FebriDx; Mologic; Roche Diagnostics; Quidel	15
May 2019	N/A	Bucks HSC; Intuitive Surgery; Mode Sensors; Perspectum; Cloud-HF; Quidel; Biomerieux; Sensyne; Osler; Abbott; Janssen: TrueColours; theHill; BigHealth; FebriDx; Mologic; Roche	12
June 2019	MRCP+ Grant £227,782	BigHealth; Mologic; Roche Diabetes; Perspectum; Sarissa; Janssen; Liberate; Turbu+; Curetis; Roche, Quidel; theHill; MyWay Digital Health; FujiFilm; TrueColours; FebriDx; PMD Solutions; Marvis, Alaxo; Medtronic; GE;	20

		Novartis; Bucks HSC; Cartezia.	

Sarissa Biomedical have developed a novel point of care assay, SMARTChip, using enzymatic biosensor technology to detect purine levels in patients displaying stroke-like symptoms. Purine levels are increased when the blood supply to cells is cut off and they undergo metabolic stress. As such, the test can identify ischaemic strokes enabling rapid diagnosis and ischaemic stroke-mimics to divert them away from the stroke pathway appropriately. To conduct the service evaluation for the Sarissa Biomedical SMARTChip, further information is required by the Point of Care and Research and Innovation teams at Buckinghamshire Healthcare NHS Trust regarding unpublished data to support validation of the test. Oxford University Hospitals NHS Foundation Trust also displayed a keen interest in the device and its use. However, the lack of resources within the trust stalled the progression of conducting a service evaluation at that site. Delays in manufacturing have postponed the start of the clinical trial and change of the company CEO has resulted in re-evaluation of the business development work package. The SMARTChip product will no longer be CE marked prior to the completion of the project for a service evaluation to take place. Enquiries regarding a clinical trial within the stroke / emergency department services in a hospital setting are ongoing with Buckinghamshire Healthcare NHS Trust (NO).

The evaluation of the utility of Point of Care testing in primary care (the Abbot iSTAT and Horiba MicroSemi) at the Brookside clinic (Earley, Reading) is ending as the final few tests are completed. The aim of the project is to evaluate the impact POC tests have in a novel mode of patient triage on the patient and decision-making patient pathway, with the objectives of allowing faster diagnosis and clinical decisions in primary care and reducing the number of referrals into secondary care. Record forms are informing a review to determine the impact of the test results on the clinical decisions made and the value to patient, compared to current practice. The staff at the clinic have been very positive about the value of the tests to support their local decision making and management on subsequent care and in the “softer” benefits e.g. reassurance for the patient. A report and business case will be written to allow a funding bid for permanent adoption of the tests (GC).

A novel point of care test, **FebriDx**, that can distinguish whether an acute respiratory tract infection (ARTI) is clinically significant, of bacterial origin or of viral origin has been developed by RPS Diagnostics, now Lumos Diagnostics. The single use test detects C-reactive protein (CRP), an acute-phase inflammatory protein elevated in the presence of a clinically significant infection and Myxovirus resistance protein A (MxA), an intercellular protein that becomes elevated in the presence of an acute viral infection. The test has a rapid turn-around time of 10 minutes and can be used in primary care or other areas where patients enter the health service. The test has the potential to deliver improvements in service efficiency reducing referrals to secondary care due to diagnostic uncertainty and by reducing inappropriate antimicrobial prescribing, aligning itself with the UK five-year action plan for antimicrobial resistance. Several sites have been identified to conduct a service evaluation and assess the impact of the test where the FebriDx test is considered to have the potential to deliver clinical benefit. A date has been set to deliver training on the use of the device and data capture to the lead GP centre. Preparation for the site is complete with consumables ordered and documents composed. Documents have also been assembled for an additional primary care site and are awaiting feedback from GPs to enable delivery of training. Engagement with stakeholders at acute secondary care sites identified has revealed

the requirement of comparator onsite validation of the test to be performed, which has associated cost and resource implications. For that reason, these sites may be unsuitable for a service evaluation. Alternative sites such as community inpatients and rapid response and triage service have been identified as having the potential to implement the test and being clinically useful (NO).

As of today, signatures have been provided by all parties, regarding the consortium agreement National Consortium of Intelligent Medical Imaging (NCIMI), for the £10 million grant from Innovate UK, through the Government's Industrial Strategy Challenge Fund, with a further £5 million from industry partners within the consortium. Further discussions are required with the NCIMI senior team, to confirm projects requiring evaluation. Meetings have taken place with one of the twelve projects, Brainomix, to scope objectives, the necessary protocols for change, baseline and timeline. Within the next quarter work should be underway for completion of the first sub-project agreement template (VM).

Initial scoping of the service pathway for dermatology, from referral to outpatients has been conducted with the dermatology lead at Oxfordshire Clinical Commissioning Group, to identify reasons for referral and scope for change. Oxfordshire Clinical Commissioning Group was noticing a high number of dermatology related referrals, some which were appropriate and some not. As a result, it had begun to affect their demand management, with long waiting lists and clinicians feeling pressured. Since this exercise, Oxfordshire Clinical Commissioning Group have commissioned a referral software, REGO, which has now been launched amongst practices in the Oxford area. This software will effectively manage referrals, related to dermatology and other areas. In-house Oxfordshire Clinical Commissioning Group will be evaluating the effectiveness of this software to better manage referrals, identifying those patients that require primary care management and monitoring and do not require referral (VM).

With cancer as a national objective, it has been an Oxford AHSN objective to understand the impactful work being conducted in the Thames Valley. As a result, stakeholders at the Churchill Hospital, the Lead Scan Navigator as well as the Oxfordshire Clinical Commissioning Group, Cancer Lead were engaged. It has provided great insight to the efforts and successes of this, one of ten vague symptoms pathways being piloted across the nation. Meetings have also been held with stakeholders at the Royal Brompton Hospital, Berkshire West Clinical Commissioning Group, along with The Thames Valley Cancer Alliance and external industry parties to forge an end-to-end pathway supporting the earlier identification of cancer with risk stratification within primary care and a community based faster diagnosis initiative, ruling in or out for cancer, to effectively move forward speedily in the pathway the right patients, to receive the right treatment at the right time. Interest has been shown by the NHS National Cancer Programme, to support their accountability to meet the vision in the Long-Term Plan for cancer, with an evidence-proven, sustainable, scalable pilot/trial. Within the next quarter, steps hopefully will have been taken to scope this project, with also submission for potential grant funding from Innovate UK, as part of their Industrial Strategy Grand Challenge (VM).

Respiratory, is a disease area that is becoming better managed in the Oxfordshire region, with positive impact on demand management. Through stakeholder engagement, it has become apparent Oxfordshire Clinical Commissioning Group has developed a pulmonary rehabilitation service for COPD sufferers with an enhanced integrated respiratory MDT in the community setting, catering for other respiratory conditions too. Insight was provided through stakeholder engagement with the Long-Term Conditions Lead at Oxfordshire Clinical Commissioning Group (VM).

From discussions with Oxfordshire Clinical Commissioning Group, there is currently a greater focus for demand management on other disease areas, which have been classed as higher priority therefore the

investigations into the ophthalmology area have been suspended (VM).

Members of the SIP team are conducting a cost analysis model for Wokingham Community Hospital to evaluate the benefits and cost of care of implementing Point of Care testing (POCT) across the community care hospitals in Berkshire Healthcare NHS Foundation Trust. A business plan will be written based on the analysis for all the five community hospitals for the potential implementation of POCT in the community hospital care pathway. Currently for all the community health wards (except Wokingham), all blood samples are sent to the pathology department at the acute trust. This can often be a timely process and lead to a delay in diagnosis and appropriate treatment whilst waiting for sample results. All urgent bloods are couriered to the acute trust at Wexham Park Hospital for the East wards and Royal Berkshire Hospital for the West wards. At present, only the Wokingham community hospital use QuikRead go CRP and the i-stat Allinity as POCT. QuikRead go CRP is a fast and simple rapid test for quantitative determination of C-reactive protein (CRP) in whole blood, serum and plasma. The test gives reliable results within minutes and speeds up the path to the right diagnosis. The I-stat Allinity is an advanced, easy-to-use, portable system that delivers real-time, laboratory quality blood test results at the point of care. It is used for venous blood gases and urea and electrolytes. With the new proposed process, the blood samples can be taken and tested immediately, and the results can support clinical judgement with a timely diagnosis and appropriate treatment which could both reduce patient length of stay and improve patient experience. Smaller samples are required from the patient for POC testing, which is advantageous when taking bloods from deteriorating patients. A cost analysis will be performed to evaluate the total cost and benefit of implementing the POC device at the Wokingham community hospital based on the real-world data collected for three months. Based on the Wokingham study, a business case will be produced for the POC to be implemented at other community hospitals in their care pathway. The data collection sheet has been collated and we are waiting for their confirmation on the data collection. We have requested them to start collecting the data for the analysis to start in July for the duration of three months for the pathway comparison (MB).

4. Adoption of innovation and diffusion

Head of Evaluation and Transformation (GC) is leading local adoption and diffusion of breakthrough diagnostic products evaluated through the Innovation Exchange activity. Programme Manager (ML) leads the gastroenterology programme including delivery of an industry-funded programme for Inflammatory Bowel Disease (IBD) using TrueColours, or similar software, as a patient reported outcomes measure for Ulcerative Colitis and Crohn's and supports the regional roll out of faecal calprotectin testing. Following the roll out of the TrueColours (TC) platform in Oxford in June 2018 the IBD Programme has continued successful recruitment and training of patients with Ulcerative Colitis and from February 2019, Crohn's Disease. This real time digital data collection technology is now a component of clinical care in the Oxford IBD service. Each patient, with Ulcerative Colitis from June 2018 and, from February 2019, with Crohn's Disease, seen by the Oxford IBD service is offered the chance to register with the TrueColours IBD programme. Once registered, the patient receives email prompts that link to independently validated questionnaires. There were 116 IBD patients recruited for the period from April to June, totaling 650 patients recruited for the period of twelve months to June 2019.

ML has continued providing ongoing support to clinicians using the TC-IBD in the outpatient clinics and working with the IBD service to further validate the TrueColours UC (TCUC) Escalation of Therapy or

Intervention (ETI) calculator in an IBD outpatient clinic setting to support the IBD service demand and capacity management. Ongoing support is being given to IBD service improvement initiatives in accordance with the Trust's strategic priorities (e.g. reduce waiting time, reduce unnecessary out-patient appointments, monitor patients better) and working towards the development of preliminary Health Economics (HE) evaluation models. The completed preliminary data analysis for the IBD clinics activities has identified potential HE benefits. Discussions have re-opened with Oxford University Hospitals and the TC-IBD software developers on the options available for the integration of the TC-IBD with the local ePR system (Cerner Millennium).

In Winchester, work is ongoing in continuing to support Hampshire Hospitals in presenting options available and in selecting the best solution in line with their IM&T strategic direction. Work is ongoing with Infloflex and the trust in presenting the required documentation for the internal approval process. Data collection has started (as a one-off version) for the baseline survey (ICHOM) with an anticipated target of 200 patients. TC-UC was shortlisted for BMJ nomination for a digital innovation award and the IBD team together with the TrueColours software developers attended nomination ceremony in April 2019. The Year two Contract for Medical Educational Grant was successfully secured with Janssen to continue the IBD programme in 19/20.

Hand over from GC to ML for the faecal calprotection project was completed in April 2019. Following the Faecal Calprotectin (FCal) Testing network meeting in London (facilitated and organised by Yorkshire and Humber AHSN) in May 2019 where the guidance document on capturing and measuring the benefits of adopting the new pathway was issued, the support team preliminary met to discuss the document and agree on the next steps in obtaining the data. Main activities have been around introduction and establishing new contacts with the key stakeholders across the CCGs, primary and secondary care in the South-Central Region. Contact has re-established with Berkshire West Clinical Commissioning Group and we are waiting for the Gastro Clinical Meeting to take place to understand the main focus and priorities. Following the introduction and roll out of the new FCal testing across seven GP Practices in Aylesbury Vale CCG in January 2019, work has been in progress for establishing key contacts to initiate the six-month review meeting. Various alternative ways of data gathering are being considered (ML).

A feasibility report for HeadStart, urine-based biomarker test for the early detection of an acute exacerbation in patients with Chronic Obstructive Pulmonary Disease (COPD), using the Lean Assessment Process (LAP) methodology was submitted to Mologic. Findings were presented at the quarterly meeting with key barriers to adoption highlighted, including clinical trial data to support clinical utility and service / resource changes needed to support adoption. The LAP methodology has similarly been used to map the COPD exacerbation treatment pathway and a background literature search has facilitated the development of a questionnaire. A value proposition section has also been included, as costings for the test have not been supplied (NO).

Supporting the Innovation National Networks through SIP

The activities of SIP have also been restructured to align with four of the nine Innovation National Networks (INNS) under the NHS England re-licensing process and our shared priorities across the AHSN network are:

Stimulating economic growth through the Innovation Pathway and the Innovation Exchange

Oxford AHSN led a collaborative AHSN network project underway to evaluate opportunities to support

the depression pathway in terms of pathway redesign and funding; outcomes measurement and service redesign. Manchester, HIN, West Midlands, Imperial, and Eastern AHSNs are involved and other AHSNs have been invited to join the project (NB).

Transforming digital health and maximising the potential of artificial intelligence (AI)

Digital technologies and artificial intelligence (AI) have the potential to revolutionise the way health and care services are delivered. They present a huge opportunity for the NHS to drive improvements in quality and efficiency in the health service as well as supporting patients to manage their own health and wellbeing. Transformation Lead (VM) is identifying MedTech and digital innovations for testing or adoption across all three healthcare settings: primary care, community and secondary care.

During this quarter many opportunities for transformation have been identified, with digital and AI acting as enablers for change. In the primary care sector, GPs and CCGs are firstly welcoming the use of data analytics, to intelligently identify high risk patients and poor-attendees for targeted health care, especially for those who require it the most. In Berkshire West, this may be through a cancer risk stratification tool and in Buckinghamshire a data analytics platform targeting the disease areas; diabetes and respiratory. Other opportunities to mine primary care data are also being pursued, possibly for rare disease screening, especially for those that have pathway guidance interventions. Secondly, the primary care sector is searching for methods to encourage patients to be more responsible for the health needs, with 'nudges' and positive behavior change. As a result, a digital device to support those suffering from mild-moderate asthma is being explored, to encourage better adherence of their preventer inhaler, reducing the number of acute respiratory episodes, opening capacity for GPs and improved medicines optimization for Clinical Commissioning Groups.

Regarding the community setting, conversations are in the early stages with the diabetes lead for Buckinghamshire Clinical Commissioning Group to assess whether digital intervention could support the movement of type 1 diabetes management from secondary care to a community setting, closer to home for patients, ultimately, reducing the number of 'failed to attend' appointments in secondary care, and with improved health outcomes. Another area being explored is the use of a Patient Health Record (PHR) system to support carers, by giving them insight and knowledge of medication intake and specific care required for the aged, ultimately to reduce the number of unintended episodes and visits to A&E,

by providing more tailored care.

Lastly, for secondary care, the adoption of new MedTech or digital solutions is a difficult ask, but the potential for digital and AI to deliver elements of automation through robotics and to support workforce, especially with its resource constraints are being explored. Time will be required to effectively engage with those in secondary care, clinicians, managers and Leads to fully scope the realistic opportunities that may exist. In the meantime, the NCIMI project will start to make an impact in the next quarter, highlighting challenges and change requirements for the adoption of AI in secondary care (VM).

7. Working with researchers and research funders

Informed by the results of the AHSN Network's 2018 survey, which identified local NHS research and innovation needs, this work stream combines its efforts with industry partners to research new solutions, which may deliver improvements in health outcomes, by meeting regional needs and challenges and where funding is likely to exceed the resource required to manage the project, relevant bids will be made to charities and clinical leads for support.

Within fifteen years better use of AI and data could result in over 50,000 more people each year having their cancers diagnosed at an early rather than late stage. This would mean around 20,000 fewer people dying within five years of their diagnosis compared to today. National priorities to meet this need and priority has been set out in the Long-Term Plan, through personalised and risk stratified screening and within the NHS England Operational Planning and Contracting Guidance 2019/20, with requests for all regions to; improve their patient times to diagnosis for cancers and the rollout of new Rapid Diagnostic Centres (RDCs).

Oxford AHSN is planning to submit an Industrial Strategy Challenge Fund bid (Steering a path towards integrated diagnostics) opening in July 2019, with probable match funding, from a pot of £22M will bring together, academic health science network partners, NHS Trusts, Industry partners, a commercial partner, the Thames Valley Cancer Alliance, several charities and SMEs. The expectation will be to design an end-to-end pathway to support earlier identification and faster diagnosis of cancers through better use of data and technology, within the current infrastructure, workforce and data constraints. The pathway that emerges from this project should be self-sustainable following the conclusion of this project and scalable for the NHS national team countrywide. As a neutral party, Oxford AHSN would look to lead this project and bid, conducting evaluation, showcasing effectiveness of the pathway, embedded technology and patient experience (VM).

8. Support clinical and commercial innovators

In the first licence period the Oxford AHSN helped to establish two regional innovation hubs aimed at supporting the creation and development of new innovations that would be better aligned with the needs of the NHS. The priority for 19/20 is the establishment of a multidisciplinary accelerator programme.

Five SMEs graduated from the first cohort of Bucks HSC Ventures on May 8 2019. The SMEs presented at a graduation Showcase event and will be invited to form an alumnus. Their progress with product development and employment of staff will be tracked throughout the ERDF project timeframe. Case studies and video footage have been produced. Three two-day events are planned over the summer focusing on best start in life, prevention and ageing well ahead of launch of the call for the second cohort, which will start in September (NB).

TheHill is a digital health innovation community at the nexus of the Oxford Hospitals, the University of Oxford, Oxford Brookes University and the thriving local digital network of designers and developers, with links to London and the Thames Valley. The European Regional Development Fund funds TheHill as part of a match funded Innovation Support for Business Programme delivered by Oxfordshire Local Enterprise Partnership (OxLEP), University of Oxford, Cherwell District Council, Oxford City Council and Oxford University Hospitals. TheHill was created to address the challenge of identifying and developing emerging innovations that arise from daily practice in the NHS, research in the academic institutions in Oxford and inspired ideas from individuals and teams. It guides innovators through a development pipeline to implement solutions, which are commercial and impactful; transforming care and improving the lives of patients and healthcare professionals. TheHill runs a series of monthly networking events and workshops, which are supported by Oxford AHSN. It has hosted three workshops so far on User-Centred Design, Networking Masterclass and Technology Appraisal. Members of the SIP team led the Technology Appraisal workshop. TheHill is currently supporting 13 Small and medium-sized enterprises (SMEs) providing one to one support and the number are increasing following workshops, networking events or referrals. Oxford AHSN has also been involved in providing one to one support to SMEs (FH).

The Oxford AHSN Accelerator and Scale Up programme offers a unique launchpad for entrepreneurs and their ventures at every stage, from idea to market. This programme in its formative year is fully funded by the Oxford AHSN and is targeted towards innovators in the South Oxfordshire and Berkshire regions primarily, but also the wider AHSN network. Our aim is to facilitate cross-sector exchange of ideas and collaboration, mainly to aid innovators' access to fast-track routes to funding for commercialisation and impact at-scale across the wider health ecosystem. We are collaborating with BioCity to deliver an intense 12-week Accelerator and Cartezia to deliver a scale-up programme engaging a cohort of innovators and start-ups that range from early ideas-stage to post seed-funding stage. Regional players such as University of Reading, Berkshire West Integrated Care System and Royal Berkshire are partnering with us strategically to promote our initiative within their clinical, research and innovation networks.

Our first cohort is an enriched diversity of innovators working on a myriad of health technologies ranging from remote monitoring for pregnancy, dementia and cystic fibrosis; AI-enabled platforms for GP consultation to medical robotics; and storytelling applications. The feedback from the Accelerator and Scale Up pilot workshops is positive. Similarly, we successfully delivered scale-up workshops tailored to the commercial needs of start-ups that are addressing challenges of market access and subsequent rounds of funding for scalability. Through constant communication, we are receiving a growing interest of a wider network of innovators and potential strategic partners such as the Eastern AHSN and regional Local Enterprise Partnerships (LEPs) in collaborating with us moving forward on this initiative (SK).

Supporting the Accelerated Access Collaborative through SIP

The most significant drivers for the pre-eclampsia (PE) project in the quarter have been the result of activity by both NHS England (NHSE) and The National Institute for Health and Care Excellence (NICE) and the subsequent national engagement with the project across the AHSN Network.

NHSE have announced the availability of Innovation Technology Payment (ITP) funding to pay for test reagents to help drive uptake, spread and adoption of placental growth factor (PlGF)-based testing for diagnosis of suspected PE across all maternity services in England. This uptake is to be delivered by the national AHSN network.

PlGF-based tests from two manufacturers, Roche Diagnostics and Quidel Corporation, are supported by ITP payments, both of which are also recommended for use in diagnosing PE under NICE Guideline DG23. To add further weight to the adoption of the test, at the end of June NICE also issued updated guidelines on managing hypertension in pregnancy, NG133, which specifically recommends the use of PlGF-based testing in cases of diagnostic uncertainty around PE.

The combination of these drivers has meant that the Oxford AHSN is now managing and coordinating the adoption of PlGF-based testing through the national AHSN Network, which is already seeing very positive results in a relatively short time period; all AHSN's have assigned local project leads and all are actively engaging with their local maternity networks and services, engaging with local stakeholders and prioritising Trusts most likely to adopt the test in a short timeframe first.

High sensitivity troponin (HST) and Faecal Microbiota Transplantation (FMT) are also supported by Innovation Technology Payment (ITP) funding.

Chest Pain, with the suspicion of acute myocardial infarction ("MI" or "heart attack"), is responsible for around 700,000 attendances to Emergency Departments per year and over 253,765 (5%) emergency

admissions in England and Wales. However, only approximately 20% of emergency admissions for chest pain will be diagnosed with an MI. The Elecsys® high-sensitivity Troponin assay provides earlier detection of acute MI and allows non-ST segment elevation myocardial infarction (NSTEMI) to be ruled out within four hours, if the test results are available within three hours of presentation. This ensures access to effective treatment, and routes patients to more appropriate treatment and avoiding unnecessary hospital admission. This Rapid Uptake project is therefore about introducing a pathway change to the way in which HST is used in the Emergency Department (ED), guiding the service to adopt one of several "early rule-out" pathways for the use of HST within zero, one (European Society of Cardiology) or three hours (NICE) of the patient's first blood test. The benefits for the patient and service alike are quicker diagnosis of AMI, reduced waiting times, reduced hospital stay for non-AMI patients and reduced overall cost (in the order of 50% compared to current >3h pathways). The South West AHSN experience of implementation has shown that an ED-owned diagnostic pathway is the most successful model to adopt. Oxford AHSN is in the process of establishing current HST use and pathways in regional ED services to form an approach and implementation plan (GC).

Clostridium difficile infection (CDI) can be a serious, life-threatening condition. It can occur in patients undergoing antibiotic treatment those on broad-spectrum antibiotics. The use of broad-spectrum antibiotics can alter the balance of bacterial species resulting in overgrown Clostridium difficile. Faecal Microbiota Transplantation (FMT**)** is the transfer of processed faecal material from a healthy individual to one with Clostridium difficile infection restoring the balance in the gut microbiome. FMT is highly effective in treating recurrent CDI and was approved by NICE for this purpose in 2014. FMT is on the Innovation and Technology Payment (ITP) 2019/20 programme. ITP supports the NHS in adopting innovation by removing some of the financial or procurement barriers, which can inhibit uptake at scale. FMT is supplied to NHS providers under the zero-cost model from the University of Birmingham Microbiome Treatment Centre, which holds the only The Medicines and Healthcare products Regulatory Agency (MHRA) Specials Licence for FMT in England and Wales. The project is to support the adoption and spread of FMT supplied through the ITP programme for use in the management of patients with recurrent Clostridium difficile infection (CDI) in our region. The key stakeholders were identified from Royal Berkshire NHS Foundation Trust, Milton Keynes University Hospital NHS Foundation Trust, Frimley Health NHS Foundation Trust, Oxford University Hospitals NHS Foundation Trust and Buckinghamshire Healthcare NHS Trust. Oxford University Hospitals NHS Foundation Trust and Buckinghamshire Healthcare NHS Trust used FMT last year and activities have started to understand why they have not used FMT since October and September 2018 respectively. FMT has been added to the agenda for the next Oxford-Wessex Gut Club meeting and a Microbiology Seminar attended by infection prevention and control, gastroenterologists, microbiologists and other interested clinicians. Contact made with key stakeholders in Royal Berkshire Hospital NHS Foundation Trust (FH).

Creating the sustainability for the SIP through Market Access activities

The SIP team is building its team strength in Market Access to extend capacity and capability in project work to support innovation. The Market Access team are working with commercial partners through projects, which can facilitate earlier access for NHS patients to innovative technologies. The scope for such projects includes medicines, devices, diagnostics and digital technologies. Projects can be taken forward in a range of stages of product development to inform on viability in the context of utility in the NHS. The Market Access team also work with partners in securing grant funding for joint programmes of activity which can involve projects testing approved product in NHS care settings. The aim for the Market Access team is to develop a sustainable capability to work with commercial partners on a range

of projects relevant to the introduction of innovation and address barriers to adoption, and the associated approaches to overcome them, earlier in the product development/adoption process. The Market Access team will also liaise around the Accelerated Access Collaborative to identify barriers to product uptake and work with others in the AHSN Network to improve relevant adoption (AS).

Research & Development (R&D)

The R&D programme supports the development of capability, capacity and collaboration across the NHS and the Universities to make the region a more attractive place for research to improve healthcare locally and nationally.

The R&D Oversight Group is chaired by Joe Harrison, Chief Executive of Milton Keynes University Hospital NHS Foundation Trust. The primary focus of the group is to share information about R&D across the Network and its partners. The group draws upon expertise from regional clinical, academic and commercial partners with time commitment being the main resource contributed from external sources. The group is led by the Oxford AHSN CEO and has a small budget for managerial support. The group includes other regional infrastructure, for example, the NIHR, CRN, CLAHRC (ARC), regional Clinical Trials Units and Biomedical Research Centres.

The most recent, June 2019, R&D group meeting, commenced with Gary Ford giving the Chief Executive's summary. Following the presentation at the February meeting from Sara Ward, Senior Manager NIHR Collaboration for Leadership in Applied Heath Research and Care (CLAHRC) Oxford, introducing and providing an overview of the Applied Research Collaboration (ARC) application submitted to NIHR to the group, a further overview was given to the group by Richard Hobbs, Director NIHR CLAHRC Oxford. This prompted discussion on how the wider Thames Valley region and Oxford AHSN R&D Group partners may contribute and add value to the ARC moving forward. Discussions followed framed around the following questions:

- What is the best mechanism for fully engaging the R&D group with the ARC?
- How can the ARC be best shaped to include regional partner influence?
- How will Oxford University's limited capacity in public health and social care research be increased by regional partners?
- How will workforce development and maintenance plans be disseminated at a regional level?
- Which ARC themes (Disease Prevention through Health Behaviour Change, Patient Self-Management, Mental Health Across the Lifecourse, Community Health and Social Care Improvement and Applied Digital Health) would benefit from regional involvement?
- What funding might be available for regional work?
- Is it appropriate to have regional representation on the ARC Exec Group and Strategy boards?

Following the presentation and discussions, points of note included:

- The criteria for the ARCs have been adapted from those of the CLAHRC to involve Public Health and Social Care more fully.
- From an ARC perspective, boundaries mirror those of the AHSN therefore Milton Keynes is part of the Oxford ARC region.
- With the ARC set to commence in October the team are looking to expand the partner network, impact and improve efficiency.
- £150m funding is available with £9m funding for each ARC over five years, to be at least matched by in-kind contributions or from external sources, alongside £15m national leadership budget, to run from October 2019.
- Gary Ford is implementation lead for the Oxford and Thames Valley ARC application.
- A prospective partner engagement process will be defined at the workshop currently planned for September.

- Key to note that ARC is not a funding body for partner projects. Activity has been committed before funding was allocated therefore little budget available for new work (synonymous to a programme grant).
- External input more for working up follow-on grant applications using the ARC network and any future ARC applications to improve quality with engagement also needed for wider implementation of projects defined in application with the focus on how the ARC is developing capability around the region.
- ARC Implementation Manager will work with ARC research teams and partner institutions to identify timelines and implementers as ongoing process, rather than more usual process requiring publication once evidence gathering and dissemination complete.
- A discussion was initiated, to be continued after the September workshop, around the role of the AHSN R&D group as a mechanism for the partners to contribute to the ARC work.
- Matched funding is required for all ARC work. To-date, the CLAHRC has matched £14.2m from commercial, HEI and charity sources.
- The R&D group remit does not currently include public health and social care, with no NHS input from that perspective, therefore ARC involvement will alter the scope significantly. The ARC team will remain at the table and the relationship evolution will be monitored.

Discussions and collaboration between the R&D group and ARC will continue moving forward, with the ARC senior management team taking a regular place at the R&D group meetings.

Following the meeting, the NIHR confirmed, as anticipated, the establishment of the new network of ARCs including one covering Oxford and the Thames Valley.

In April 2019, NHS England and the NIHR published a national survey of local innovation and research needs for the NHS. A workshop is taking place in September 2019, hosted by the Oxford AHSN and Oxford and Thames Valley ARC, to provide an opportunity to discuss the key priorities for Oxford and the Thames Valley identified in the survey. These include:

1. a need for innovation and research addressing workforce challenges
2. delivery of mental health services and providing care for patients with mental health needs, particularly in children and young people
3. integrating services to provide effective care for patients with complex needs – including multimorbidity and frailty
4. use of digital and artificial intelligence technology.

The workshop will start with a networking lunch followed by a keynote speech from Dr Sam Roberts, Chief Executive of the Accelerated Access Collaborative and Director of Innovation and Life Sciences for NHS England. Afterwards a set of parallel sessions will focus on the four key priority areas. The outputs of the workshop will shape the future work of the Oxford AHSN and the NIHR ARC Oxford & Thames Valley.

Patient & Public Involvement, Engagement & Experience (PPIEE)

Personalisation of care underpins the NHS Long-Term Plan. To support new thinking in this area we ran the first Innovation in Person-centred Approaches conference with Health Education England. Oversubscribed, and attended by 120 people, the event brought together professionals from academia, education, health and care services, alongside patients and the public. We heard about the relevance of the arts, dancing to prevent falls, developing relationships through shared housing, seeing beyond the patient to the person and the value of empathy for both staff and patients.

Tina Coldham, Chair of INVOLVE, and Professor Martin Vernon, National Clinical Director for Older People give keynote talks

Audience participation was enthusiastic! Read more about the conference here.

Training and Development

Recording and impact

We ran our first training event of the year to publicise our Working Together recording and impact tool. This beta version is being updated as people start to use the checklist to prompt thinking about good practice in patient and public involvement, to record what activities take place during a project and whether involving patients and the pubic makes a difference. As part of our ongoing work with local AHSN projects we are using the tool to support developing comprehensive PPIEE plans with initial work on heart failure, preeclampsia and sepsis. These plans will be reported on in forthcoming quarterly reports. We will be holding a formal launch event on 24 September 2019.

Leadership for Coproduction

The impact of the Leading Together Programme continues with the, now well established, health column in the Newbury Times. This is one of the projects developed by Karen Swaffield and Paul Durrands in our first cohort of graduates. The success of the learning disabilities programme is demonstrated by the commission of two further cohorts and a train the trainer programme.

Thames Valley and Surrey Care Records Partnership

The website for the Partnership is now live and its development was heavily supported by the Communication Coproduction Panel we established in January. Local care professionals and members of the public contribute to the work of the Panel.

Working with National Voices we completed a review of the literature on the views of the public on data sharing which will be published later in the year.

We also ran an initial engagement event for Oxfordshire attended by a range of patients and staff to explore what was important to them in digital healthcare. We developed a range of ‘we statements’ as a result that can be used to support the development of the Oxfordshire digital strategy.

As part of our continued commitment to working in partnership with patients and the public, we are delighted to announce the appointment of Colin Godbold to the TVS LHCR Programme Board. Colin brings a commitment to transparency and the effective sharing of health information which will help provide essential, independent challenge to our work. Colin’s extensive business background in IT and consultancy, alongside lay member roles in SCAS, Frimley Health Foundation Trust and the Administrative Data Research Network give him a unique set of skills and experience on which to draw. We will also be asking Colin to help with the future delivery of our coproduction work, which includes establishing our Engagement Advisory Board. Oxford AHSN lay partner Douglas Findlay remains involved in the Programme through the newly established Design Authority.

Collin Godbold-Lay Member for Programme Board

Stakeholder Engagement and Communications

The first quarter of 2019/20 saw the Oxford AHSN consolidate its reputation for supporting the spread of innovation at pace and scale. Every day we share our experience, expertise and connections to meet the needs of our partners across the NHS, industry and research.

We hosted two significant events which attracted attendees from across our region and beyond. More than 30 people came to the third meeting of our regional emergency laparotomy collaborative (ELC) in June. It brings together multi-disciplinary teams from all five acute NHS trusts in Berkshire, Buckinghamshire, Oxfordshire and Milton Keynes which perform emergency surgery. The collaborative aims to reduce variation in outcomes, quality of care and metrics. Its priorities include embedding quality improvement skills, supporting sustainable change and encouraging a collaborative culture. It links to other AHSNs as ELC is one of seven national programmes coordinated by the AHSN Network.

In May around 120 people attended an innovation in person-centred approaches conference hosted by the Oxford AHSN with Health Education England. It was an opportunity to hear about innovations, share ideas and develop connections. The wide-ranging audience enjoyed a diverse and rich agenda which covered dancing to prevent falls, seeing beyond the patient to the person and the value of empathy for both staff and patients. Read more about this event here.

The Oxford AHSN coordinated an independent research and innovation needs survey which produced a detailed picture across all AHSNs. A national report was published in May. Individual AHSNs are now discussing the emerging priorities for research and innovation with commissioners and research partners. These align closely with those identified in the NHS Long Term Plan. In the Oxford AHSN region we are holding a workshop on 5 September. This will inform future work plans for the AHSN and our research partners.

The continued success of our collaborations with the NHS, industry and research was reflected in several new national awards for the AHSN and its partners. These are listed below.

Our regular monthly newsletter passed its 65th edition. It has around 1,350 subscribers. Sign up here: http://j.mp/OxfordAHSNnews. We also published the first in a series of quarterly one-off updates to reflect the growing wealth of projects led by the Oxford AHSN and its partners. The first of these focused on mental health. Download it https://mailchi.mp/oxfordahsn/mentalhealth1 here. Future single topic editions will cover primary care, digital health and care homes.

Our web content is regularly updated at www.OxfordAHSN.org, www.patientsafetyoxford.org, www.clinicalinnovation.org.uk and www.healthandwealthoxford.org. Collectively these websites received more than 200,000-page views in Q1 2019/20. The @Oxford AHSN Twitter account now has more than 4,900 followers.

Key publications 2019/2020

Paediatric enteral feeding at home: an analysis of patient safety incidents	Archive of Disease in Childhood, BMJ Journals, June 2019 https://adc.bmj.com/content/early/2019/06/14/archdischild-2019-317090
Reducing urinary tract infections in care homes by improving hydration	BMJ Open Quality, July 2019 http://bmjopenquality.bmj.com/cgi/content/full/bmjoq-2018-000563

Awards won 2019/20

Sepsis identification Winner, Best Emerging Solution, HSJ Patient Safety Awards with Imperial College Health Partners and the Patient Safety Measurement Unit	https://www.oxfordahsn.org/news-and-events/news/sepsis-identification-tool-wins-national-patient-safety-prize/
Safer prescribing of anticoagulants in primary care Winner, Royal College of Pathologists Excellence Awards with Oxford University Hospitals and Oxfordshire Clinical Commissioning Group	https://www.oxfordahsn.org/news-and-events/news/patient-safety-initiative-wins-national-prize/

Appendix A - Risks Register & Issues Log

Risks Register

#	Prog	Risk	Description of Impact	Likelihood	Impact	Time	Mitigating Action	Owner	Actioner	Date	Date mitigated	RAG
1	Oxford AHSN Corporate	Failure to establish culture of partnership and collaboration across the region	Insufficient engagement of clinicians, commissioner universities and industry.	Low	Med	> 6 -12 mon	Stakeholder and communication strategy for the AHSN Each project has an engagement plan, including patient involvement.	AHSN Chief Executive	Programme SROs	06-Sep 13	Ongoing	AMBER
2	Oxford AHSN Corporate	Failure to sustain the AHSN	Programme activities cease	Low	Med	> 6--12 mon	NHS England has re-licensed all AHSNs. NHSI and OLS have confirmed funding to March 2020. Actively pursuing industry partnerships and grants.	AHSN Chief Operating Officer	AHSN Chief Operating Officer	31-Jul 14	Ongoing	AMBER
3	Oxford AHSN Corporate	National Programmes delivery		Med	Med	>6 12 mon	Robust engagement plans in place.	AHSN Chief Operating Officer	AHSN Chief Operating Officer	19-Feb 18	Ongoing	Amber

Issues Log

#	Programme	Issue	Severity	Area Impacted	Resolving Action	Owner	Actioner	Date	Status	Date Resolved
2	Oxford AHSN Corporate	Lack of awareness by local partners and national stakeholders of progress and achievements of the AHSN	Minor	Culture	Overarching comms strategy. Level of engagement monitored across all programme and themes. Website refreshed regularly visits per month increasing. Twitter followers and newsletter subscribers increasing. Oxford AHSN stakeholder survey. Quarterly report sent to all key stakeholders. Electronic Newsletter to stakeholders. Oxford AHSN organise and participation stakeholder events. Participation in ICS and STPs.	AHSN Chief Operating Officer	Head of Communications	19 Jan 18	90% complete	

Appendix B - Oxford AHSN case studies published in quarterly reports 2013-2019

Quarterly report	Case study summary	Programme/Theme
Q1 2019/20	Healthcare tech company's expansion and Stock Exchange listing enabled by Oxford AHSN expertise	Strategic and Industry Partnerships
	Oxford AHSN support enables AI company to leverage £700,000 of grant funding	Strategic and Industry Partnerships
	The Oxford AHSN assists Fujifilm in real-world evaluation of point of care flu test	Strategic and Industry Partnerships
Q4 2018/19	Learning together through a regional patient-centred event to improve sepsis support and information	Patient Safety and Clinical Improvement
	Improving detection and management of atrial fibrillation	Clinical Innovation Adoption
	Understanding the impact of a new model of urgent care within a GP practice	Clinical Innovation Adoption
Q3 2018/19	AHSN-led collaboration brings multi-million-pound investment to Buckinghamshire and supports SMEs to meet health and social care needs	Strategic and Industry Partnerships
	Better diagnosis of pre-eclampsia improves patient safety and reduces burden on maternity services	Strategic and Industry Partnerships
	Patient forum helps improve NHS services for people with anxiety and depression	Mental Health
Q2 2018/19	Healthcare tech company's expansion and Stock Exchange listing enabled by Oxford AHSN expertise	Strategic and Industry Partnerships
	Unique point of care blood test speeds up clinical decision-making improves quality of care and reduces costs	Strategic and Industry Partnerships
	AHSNs come together to create new sepsis identification tool	Patient Safety and Clinical Improvement
Q1 2018/19	Spreading best practice in dementia through webinar programme	Mental Health

	Establishing networks to improve patient care in early inflammatory arthritis	Clinical Innovation Adoption
	Supporting life science companies and entrepreneurs to access healthcare markets	Clinical Innovation Adoption
Q4 2017/18	Showcasing developments in NHS MSK, falls, fracture and frailty services	Clinical Innovation Adoption
	Improving detection and management of AF	Clinical Innovation Adoption
Q3 2017/18	Digital Health Roadmap published to guide digital health developers	Strategic and Industry Partnerships
	Reducing urinary tract infections in care homes by improving hydration	Patient Safety
	Stillbirth prevention - Oxford Growth Restriction Identification programme saves a life	Patient Safety/Best Care: Maternity
Q2 2017/18	Point of care test evaluation points the way to quicker diagnosis of common childhood illnesses	Strategic and Industry Partnerships
	Oxford AHSN insights on digital health feed into key report on Oxfordshire's tech cluster	Strategic and Industry Partnerships
	Defining and measuring suspicion of sepsis	Patient Safety
Q1 2017/18	Improving patient outcomes following high-risk surgery through better use of technology	Clinical Innovation Adoption
	Improving return rates to psychiatric wards	Patient Safety
	The Hill – putting innovation at the heart of healthcare in Oxford	Strategic and Industry Partnerships
	Improving the care and life chances of young people who develop psychosis through effective early intervention	Best Care (Early Intervention in Psychosis)
Q4 2016/17	Digital health initiative leads to better monitoring and fewer hospital visits for women who develop diabetes during pregnancy	Clinical Innovation Adoption
	Better data sharing through regional information governance framework	Informatics
	Catalysing innovation and driving economic growth in Buckinghamshire	Strategic and Industry Partnerships

	Lives of more premature babies saved through improved referral pathways	Best Care (Maternity)
Q3 2016/17	Promoting workforce health and wellbeing through our Get Physical initiative	Corporate
	Improving detection and management of atrial fibrillation (AF)	Clinical Innovation Adoption
	New standard measures to improve care for patients with IBD developed by international collaboration	Wealth Creation
	Leading together – patients and professionals take a collaborative approach to solve health issues	PPIEE
	Better network-wide data sharing improves patient care	Best Care (Maternity)
Q2 2016/17	Digital survey results	Wealth Creation
	Imaging patient info films	Best Care
	Sustainability project	Wealth Creation
Q1 2016/17	Bicester healthy new town	Wealth Creation
	Children's immunisation	Best Care
	Perinatal SHaRON	Clinical Innovation Adoption
Q4 2015/16 (annual report)	Memory clinic accreditation update	Best Care
	Meds optimisation CBT progamme	Best Care
	AWOL project	Patient Safety
	J&J collaboration	Wealth Creation
	CAUTI project	Clinical Innovation Adoption
Q3 2015/16	EIP data-based approach	Best Care
	Leading Together programme starts	PPIEE

	Get Physical event review	Corporate
Q2 2015/16	Targeted medicines support	Best Care/Patient Safety
	Memory clinic accreditation	Best Care
	IPC stockings	Clinical Innovation Adoption
	Alumni Summit review	Wealth Creation
Q1 2015/16	A&D recovery rates	Best Care
	Pre-term birth location saves lives	Best Care
	In2vu data visualisation	Informatics
Q4 2014/15 (annual report)	GDm remote monitoring	Clinical Innovation Adoption
	IOFM benchmarking	Clinical Innovation Adoption
	Sustainable energy	Wealth Creation
Q3 2014/15	Developing patient leaders	PPIEE
	CFT – heart attack test	Wealth Creation
Q2 2014/15	Memory clinics	Best Care
	Managing acute appendicitis	Best Care / Patient Safety (PSA)
	A&D recovery	Best Care
Q1 2014/15	Dementia network launch	Best Care
	Medicines optimisation launch	Best Care
	Wealth creation explained	Wealth Creation
	GDm remote monitoring	Clinical Innovation Adoption

Q3 2013/14	App development route map	Wealth Creation
	2023 Challenge	Wealth Creation

Updated: July 2019