

# Accelerating Innovation and Technology Adoption within the NHS

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Wealth Creation Programme



# AHSN core purpose



Each of the 15 AHSNs are licensed by NHS England for 5 years to deliver four objectives:

- Focus on the needs of patients and local populations
- Speed up adoption of innovation into practice
- Build a culture of partnership and collaboration
- Create prosperity

AHSNs also work collectively to support improvement around common themes such as patient safety

# What and where



## Oxford AHSN

3.3M population

Annual NHS spend circa £5bn

NHS employees 65,000

569 healthcare and life science organisations

Complex and varied landscape

Oxford AHSN Life Sciences map link:

<http://www.oxfordahsn.org/our-work/wealth-creation/obn-map/>

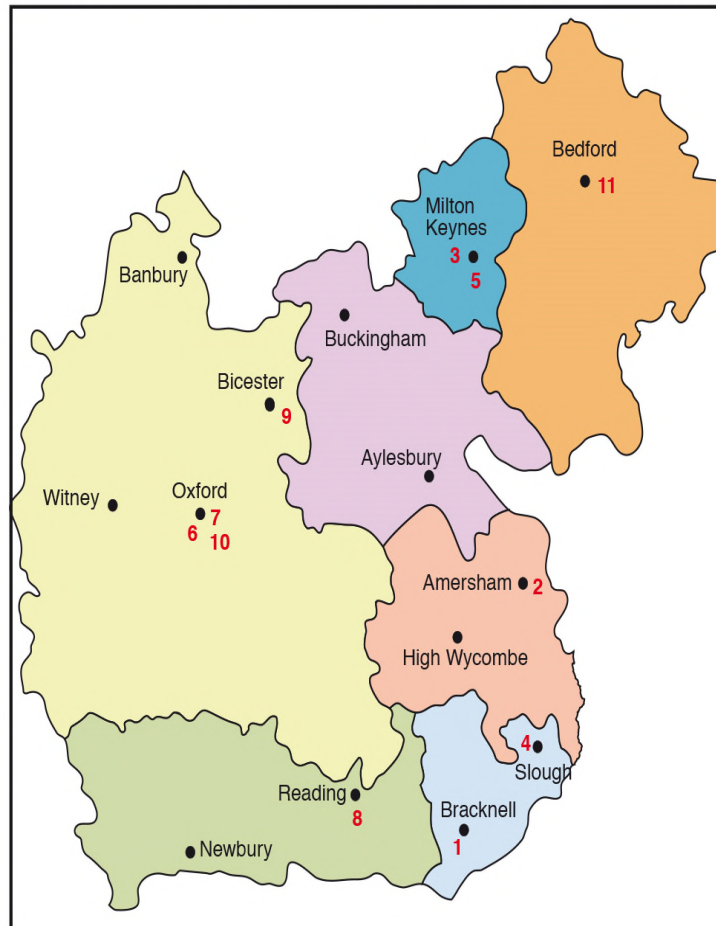
# Who comprises the Oxford AHSN?



# Our health partners

## NHS Trusts and Commissioners

1. Oxford University Hospitals NHS FT
2. Royal Berkshire Hospitals NHS FT
3. Milton Keynes Hospital NHS FT
4. Heatherwood and Wexham Hospitals NHS FT
5. Buckinghamshire Healthcare NHS FT (Acute and Community Services)
6. Bedford Hospital NHS T
7. Oxford Health NHS FT (Community and Mental Health for Oxfordshire and Mental Health for Buckinghamshire)
8. Southern Ambulance NHS FT
9. Berkshire Healthcare NHS T (Community and Mental Health Services)
10. Southern Healthcare NHS FT (Learning Disabilities Services)



1. Oxfordshire CCG (82 GP Practices)
2. Chiltern CCG (35 GP Practices) Buckinghamshire
3. Aylesbury CCG (21 GP Practices) Buckinghamshire
4. Milton Keynes CCG (27 GP Practices) Buckinghamshire
5. Berkshire West CCG Federation (54 GP Practices)
6. Berkshire East CCG Federation (51 GP Practices)
7. Bedfordshire CCG (55 GP Practices)

# Our university partners



The Open  
University



THE UNIVERSITY OF  
BUCKINGHAM





# Our LEP partners

# SEMLEP

**South East Midlands**  
Local Enterprise Partnership

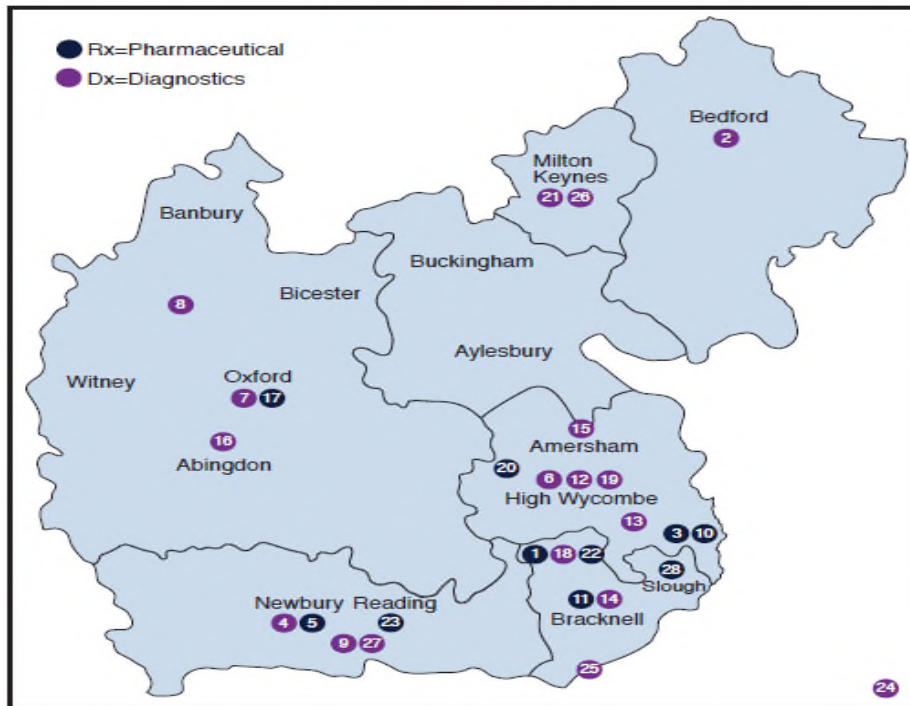
**Buckinghamshire**  
**Thames Valley** LOCAL ENTERPRISE  
PARTNERSHIP  
THE ENTREPRENEURIAL HEART OF BRITAIN



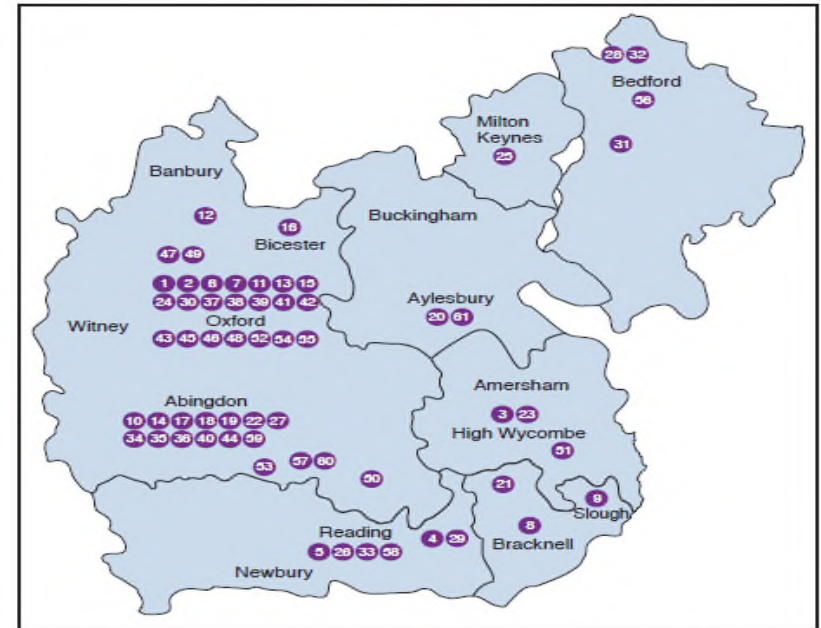
Local enterprise partnerships are partnerships between local authorities and businesses. They decide what the priorities should be for investment in roads, buildings and facilities in the area.

# Diagnostic companies in Oxford and Thames Valley Region

Large Diagnostics and Pharmaceutical Companies in the Network



Small and Medium Diagnostic Enterprises in the Network



Companies account for 83% global market in diagnostics



# The Oxford AHSN

## Vision

- Best health for our population and prosperity for our region

## Mission

- We will bring together universities, industry and the NHS to improve the health and prosperity of the Oxford region through rapid clinical innovation adoption

# The Oxford AHSN

## Strategy & objectives

- Our strategy is to be facilitative and work through our partners
- We will build infrastructure and support the development of people to accelerate innovation and early adoption in our NHS partners that improves health and adds value
- This will include funding clinical networks and developing teams for commercial development and innovation adoption to promote and accelerate change

## Our values

- We will be inclusive, transparent and fair

# The Oxford AHSN – 4 programmes

## Best care

- 10 AHSN funded clinical networks and working with Thames Valley Strategic Clinical Networks

## Clinical innovation adoption

- adoption at scale of innovations to improve patient outcomes, experience and safety; clinically led, working with NHS providers and industry

## Research and development

- work with Thames Valley and South Midlands Local CRN, NIHR, CLAHRC, life science industry and other research infrastructure

## Wealth creation

- help the region become the favoured location for inward life science investment, life science business creation and growth

# Maternity Clinical Network



*Mr Lawrence Impey, Consultant in Obstetrics and Foetal Medicine at Oxford University Hospitals and Lead for the Oxford AHSN Maternity Clinical Network. The aims and priorities of the network include improving healthcare of mothers and babies by hospitals working together more effectively and making better shared use of data*



# Assessment of ultrasound quality

- Ultrasound is key to safe pregnancy management
- Very little data on USS image quality
- Intelligent Ultrasound have developed automated image analysis tool
- We are planning to introduced this as a pilot in one of our network units
- Locally controlled feedback to improve standards





# Drug safety: magnesium

- Different hospitals' policies lead to confusion among rotating trainee doctors
- Major drug error led to near miss maternal death
- Agreed common policy and pharmacy based dilution
- Every unit has same dilution

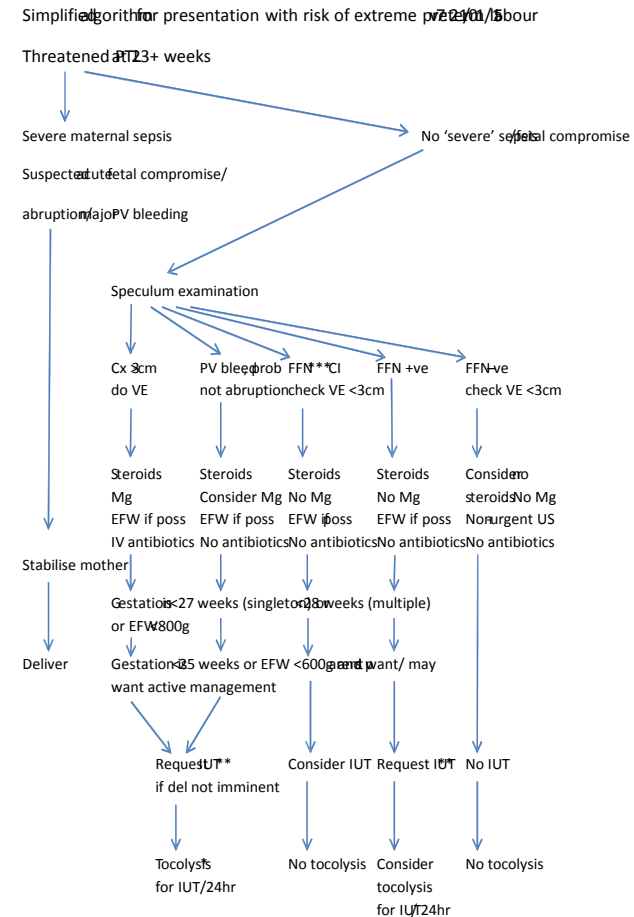
	BUCKS	MKH	OUH	RBH	WPH
Dose of MgSO <sub>4</sub>	16mmol (4g)	8ml 50% (4g)	8ml 50% (4g)	8ml 50% (4g)	8ml 50% (4g)
Volume of N.saline	12ml	42ml	12ml	32ml	42ml in 100ml bag
Total volume	20ml	50ml	20ml	40ml	50ml
Syringe driver	YES	NO	YES	NO	YES
Rate of infusion	5-15mins	10mins	10mins	10ml/5mins	10mins @ 300ml/hr

# Preterm baby transfer

- Very preterm babies do much better if delivered in a L3 NNU
- Network audit of when and why this did not happen 2012-2014
- Revealed much, but key was identification of risk, consistent
- Management policy and administrative difficulties with transfer
- Agreed guideline and red tape-free transfer enacted

## Recent example Mrs SA

- Possible preterm labour
- Identified via new test as high risk
- Rapid transfer to OUH via new route
- Clinically very well but reviewed by local key team
- Actually impending severe sepsis (major cause of maternal death)
- Immediate extreme preterm delivery



# Wealth Creation Programme



*Dr Nick Scott-Ram MBE, Director of Commercial Development, has over 25 years experience in commercial and business development in the life sciences sector. Nick was awarded the MBE for services to biotechnology in 2001.*



# Wealth creation key priorities

## Supporting companies along the adoption pathway

- Clear innovation pathways from origination to adoption highlighting health benefits and alignment with NHS needs
- Benefits to large and small businesses

## Supporting investment into the region

- Attracting greater regional investment
- Grant support – SBRI, Horizon 2020, Innovate UK

## Building a culture of innovation in the NHS

- Entrepreneurs Programme
- Challenge 2023
- Apps and e-health lab

## Building long-term partnerships with businesses & other organisations

- SMEs & large companies

# Clinical Innovation Adoption Programme



*Tracey Marriott, Director of Clinical Innovation Adoption. Tracey is leading the Programme for the Oxford AHSN, working closely with the Oxford AHSN clinical networks, providers, commissioners and suppliers for innovation implementation.*



# What is innovation adoption?

Oxford AHSN has defined innovation as:

*“..... an idea, service or product, new to the NHS or applied in a way that is new to the NHS, which significantly improves the quality of health and care, and delivers value for money, wherever it is applied.”*

tertiary care, secondary care, community care, mental health care,  
primary care and **self-care**

# What are the barriers to adoption?



Sources:

Journal of Healthcare Management, 01 September 2013, vol./is. 58/5(353-366), 10969012  
Information Systems Research, 01 September 2013, vol./is. 24/3(539-560), 10477047  
Price Waterhouse Cooper, Emerging mHealth: paths for growth, 2013  
Health Policy, 2013, vol./is. 111/1(1-13), 0168-8510  
Health Care Management Review, 2013, vol./is. 38/2(125-136), 0361-6274  
Health Service Journal, 2012, vol./is. 122/6292(26-27), 0952-2271  
BMC Health Services Research, 2011, vol./is. 11/342, 1472-6963

# What influences innovation adoption?





# Innovation adoption at scale can only be delivered by our partner NHS organisations



**Our Clinical Innovation Adoption team will support the partners' teams to accelerate innovation adoption**

# NHS Commissioners and Providers – who controls the £113bn NHS England budget

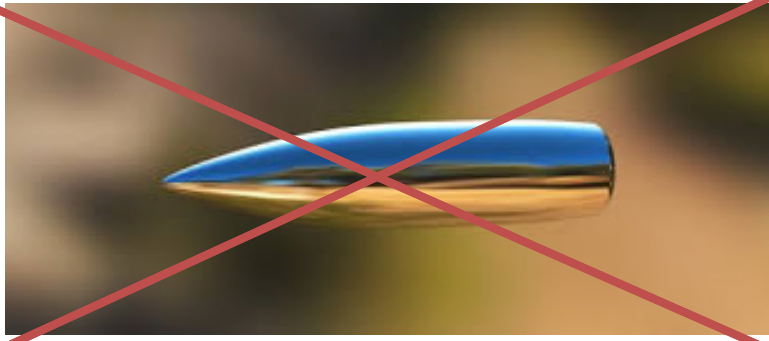
- Primary Care (65,000 GPs, 8,000 practices) commissioned by NHS England
- Secondary Care (156 acute providers including 101 Foundation Trusts) commissioned by Clinical Commissioning Groups (211 CCGs) under standard contract
- Tertiary Care commissioned by NHS England Specialist Commissioning
- Mental Health (56 Trusts)
- Community Services (34 Trusts) commissioned by CCGs
- Ambulance Services (10 Trusts) commissioned by CCGs
- Independent sector organisations (853) commissioned by CCGs

# Procurement landscape and using incentives in the system to support Clinical Innovation Adoption

- Procurement and clinical preference (147,000 doctors, 372,000 qualified nursing staff, 154,000 qualified scientific and therapeutic staff and 36,000 managers)
  - NHS Supply Chain (medical supplies and durables)
  - Procurement Hubs (medical supplies and durables)
  - Government Procurement Services (IT, estates, agency staff)
  - Local buying and clinical preference a significant factor
- Medicines
  - Branded Medicines – Pharmaceutical Price Regulatory Scheme
  - Generic Medicines – collaborative purchasing by hospitals and pharmacies and GPs
  - CCGs pay for High Cost Drugs in Trust contracts and GP prescribing
  - NICE
  - Cancer Drug Fund
- How we are making the system support clinical innovation adoption:
  - Our local health economy is circa £5bn
  - CQUIN for CAUTI
  - Best Practice tariff for Rheumatoid Arthritis
  - NHS Litigation Authority premium reduction for patient safety initiatives

**Academic Health Science Networks understand the NHS landscape**

## Complexity, detail, engagement and localisation



- No silver bullet
- Oxford AHSN - over 100 workstreams

*"The whole principle came from the idea that if you broke down everything you could think of that goes into riding a bike, and then improved it by 1%, you will get a significant increase when you put them all together"*

Sir Dave Brailsford, British Cycling's Performance Director



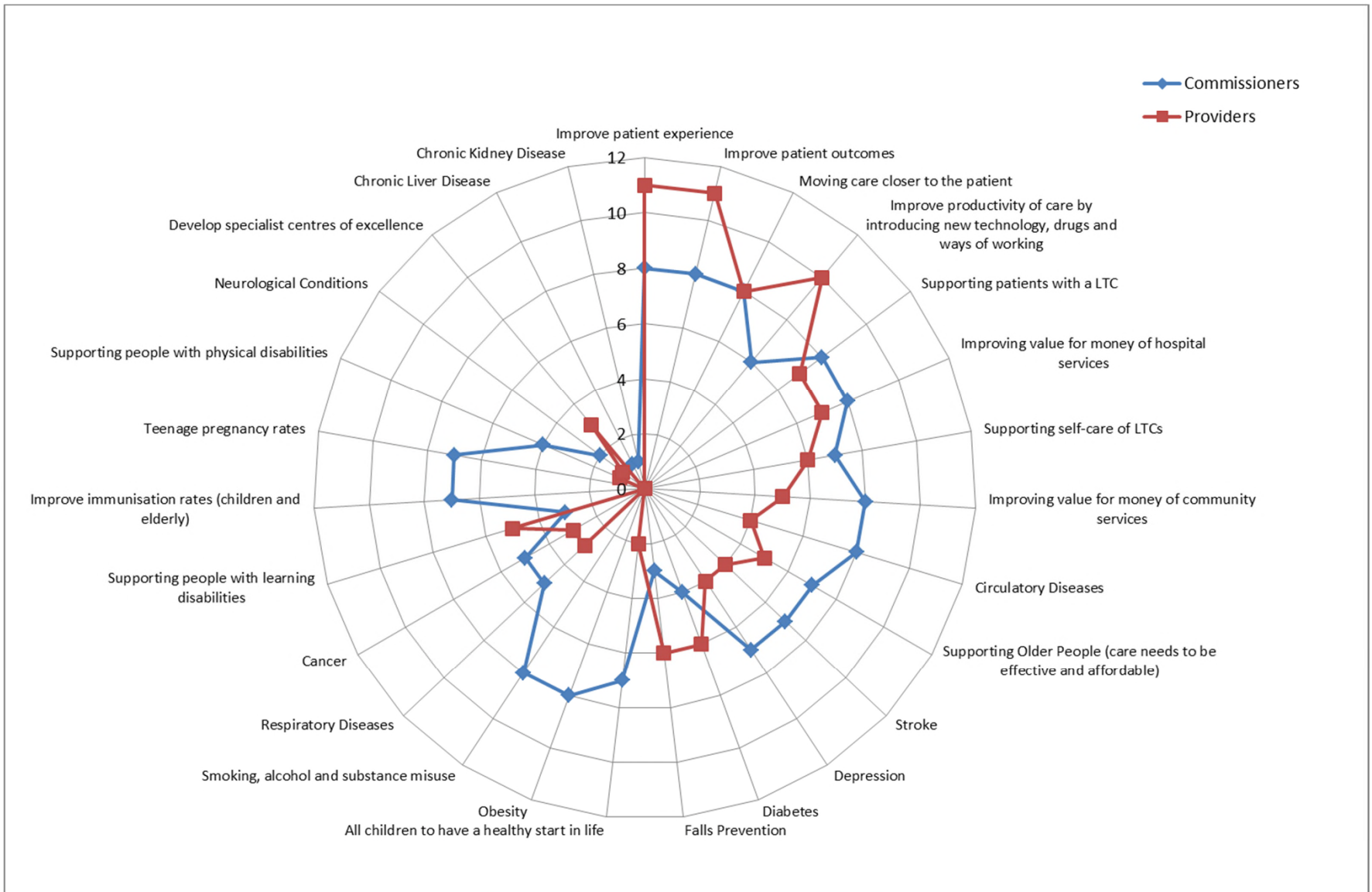


# The Clinical Innovation Adoption Programme at the Oxford AHSN

- Finds innovations that add value to the regional healthcare outcomes
- Aligns innovations to strategic priorities and needs
- Facilitates clinical pathway redesign
- Supports innovations to be adopted (both the innovators & the adopters)
- Works to remove internal and external barriers to innovation adoption
- Develops collaborative networking across the region
- Supports implementation, measures and monitors

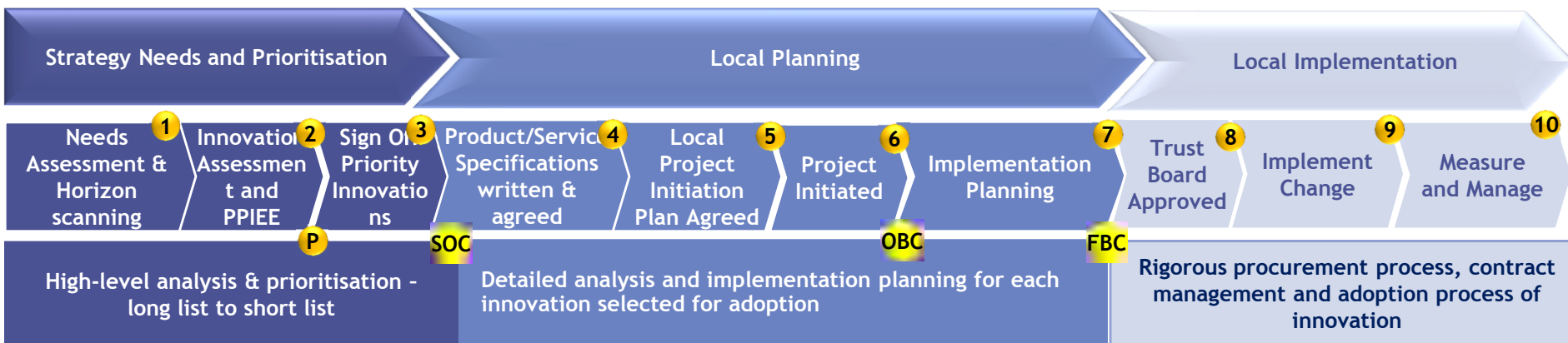


# 2014/15 Strategic Priorities of Commissioners and Providers



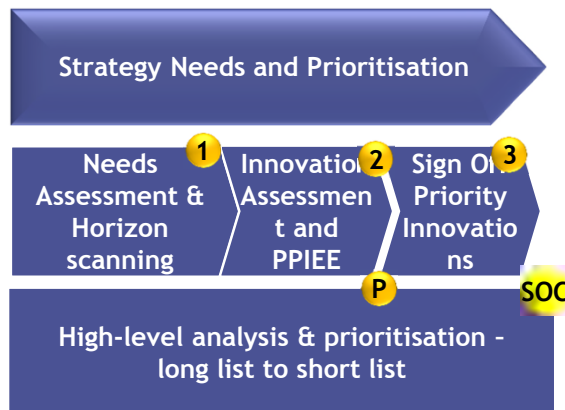
# Clinical Innovation Adoption Process

## Steps 1–10



# Clinical Innovation Adoption Process

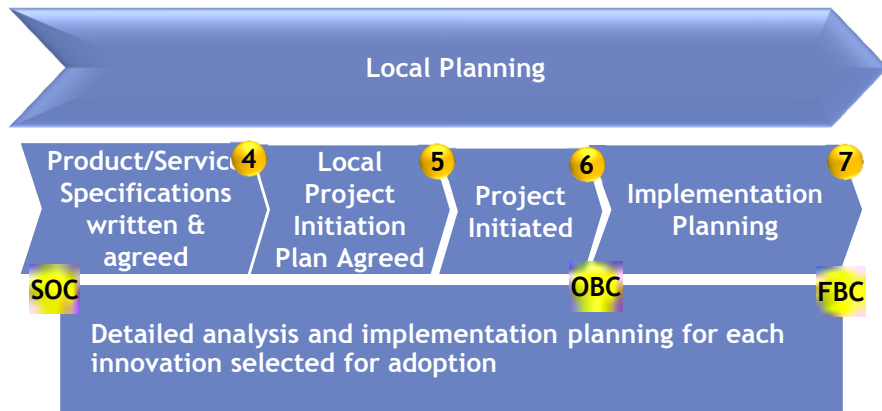
## Steps 1–3



- 1 • Assessment of Clinical Needs
  - Assessment of regional strategic plans
- 2 • Identify project reference group membership
  - Appoint Clinical Lead
  - Relevant innovations identified
  - Literature review paper produced
  - Develop regional strategy
  - Develop and agree PPIEE plan
- 3 • Create communication and engagement plan
  - Literature review paper produced
  - Develop regional strategy
  - Develop PPIEE plan

# Clinical Innovation Adoption Process

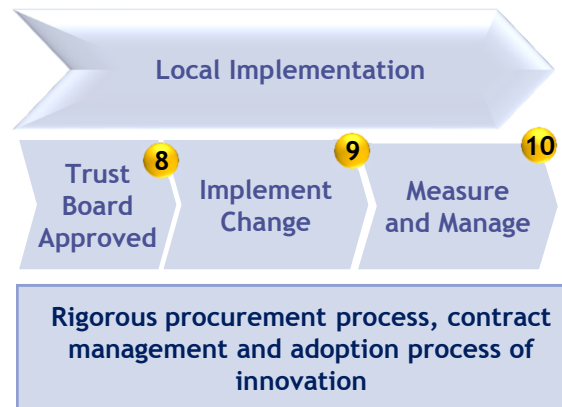
## Steps 4–7



- 4 • Set up regional workshop
- Agree regional strategy
- Oversight sign off of strategy
- Local Project Team Operational
- 5 • Local Project Plan agreed
- Local base assessment/data collection completed
- Local options appraisal complete
- Finance & activity plans complete
- 6 • Local PPIEE Plan complete
- Local procurement routes confirmed
- Outline business case approved
- Local training plan agreed
- 7 • Local estates/IT plan agreed
- Local procurement plan agreed
- Local final business case approved

# Clinical Innovation Adoption Process

## Steps 8–10



- 8 • Agree local implementation plan
- 8 • Agree local change management plans
- 9 • Local procurement awarded
- 9 • Local training delivered
- 9 • Local technology/medicines/service change operational
- 9 • Project close and handover agreed
- 10 • Produce audit/evaluation/benchmark
- 10 • Findings conference delivered

# What will success look like?



Our patients  
will tell us the  
benefits the  
innovations  
have made to  
their lives



By 2018 we would  
have achieved  
80% adoption of  
40 innovations  
across the region



Our partner  
organisations  
will be locally  
and nationally  
recognised for  
their work



A collaborative  
culture of  
innovation will be  
adoption will be  
business as usual

# CIA – innovations for 14/15

1. CAUTI bladder scanner – **reduce urinary tract infections**
2. \*ECG Monitor - **moving care closer to home**
3. Electronic blood transfusion – **patient safety and waste reduction**
4. Intermittent pneumatic compression stockings – **reduce risk of mortality**
5. SHaRON (adults with eating disorders) – **better clinical engagement and experience**
6. NICE TA - Alzheimer's – **improved patient outcome and carer experience**
7. NICE TA - Rheumatoid arthritis – **improved patient outcome and experience**
8. \*NICE TA - AF, warfarin, anticoagulants - **reduce risk of DVT/Pulmonary Embolism**
9. Intra operative fluid management - **patient safety and recovery**
10. Gestational diabetes Management – **patient experience and reduced clinic time**



# CIA – innovations for 15/16

1. Falls
2. Rehabilitation – Care4today
3. Alcohol care teams
4. Secondary fragility fractures
5. Heart failure – IV in the community
6. Mental health project
7. 3 projects of interest to the Trusts

# Clinical innovation adoption examples

Intermittent pneumatic compression stockings – **reduce risk of mortality**



Electronic blood transfusion – **patient safety and waste reduction**



CAUTI bladder scanner – **reduce urinary tract infections**



# Case study - Gestational Diabetes



## The Health Need and Benefits

- Increasing numbers of women with 3<sup>rd</sup> Trimester Gestational Diabetes requiring clinical monitoring

## Benefits

- Assists with patient self management
- Remote clinical monitoring with alerts
- Regular opportunity to communicate with patient
- Reduction in unnecessary clinic visits so increased capacity
- Further research underway on impact on difficult births and birth defects.

## Roll Out Completed and Planned

Trusts	2014/15	2015/16
Ox Uni Hosp	✓	
Royal Berks Hosp	✓	
Milton Keynes	✓	
Frimley Health		Underway
Bucks Healthcare		Planned
Great Western		Planned
Bedford		Planned

*Developed as a collaboration between OUH (Lucy McKillop) and Institute of Biomedical Engineering at the University of Oxford (Lionel Tarassenko)*

Potential savings to the NHS in Oxford AHSN region of £700k full adoption of technology

# Emergency Multidisciplinary Unit

## Acute ambulatory care at the hospital/community interface

- Diagnosis, observation, treatment, rehabilitation not provided in the traditional hospital bed base or out-patients
- Needs rapid point of care diagnostics, decision-makers, observation periods, reassessments
- Improved patient experience, reduce negative impact of hospital admission, cost effectiveness

News / Guardian Healthcare Innovation Award winners

### Guardian Healthcare Innovation Award winners

28 OCTOBER 2013   



Left to right: Dr Daniel Larsson, GP and researcher at the University Department of Primary Care; Dr Barbara Batty, Deputy Clinical Director, South West Locality at Oxfordshire Clinical Commissioning Group; Maggie Welsh, Unit Manager Abdomen Matron at Abingdon Community Hospital, Oxford Health NHS Foundation Trust; and David Dendle, Public Services Editor for The Guardian

Oxfordshire team collects Guardian Healthcare Innovation Award for Service Delivery Innovation

CATEGORIES

#### SIMILAR STORIES

New targets challenge industry to reduce salt levels  
7 March 2014

Department for Education Opens Consultation  
7 March 2014

Green light for £1.6m university building





**Clinical Leader: Dr. Jacqui Hussey, BHFT**



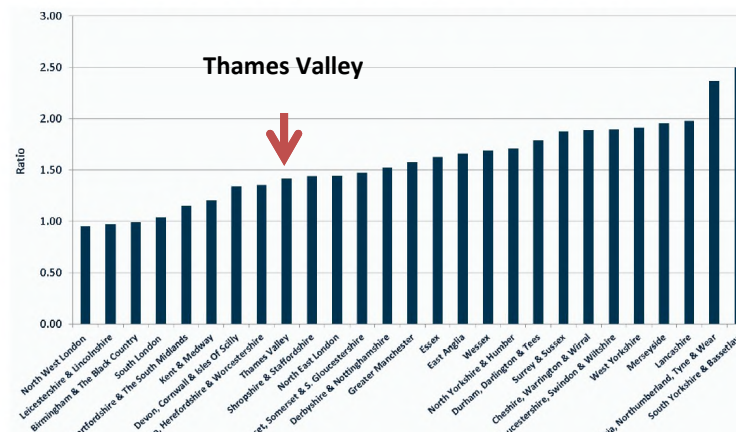
## Use of NICE appraised medicines in the NHS in England – 2012, experimental statistics

Published 21 January 2014

<http://www.hscic.gov.uk/catalogue/PUB13413/use-nice-app-med-nhs-exp-stat-eng-12-rep.pdf>

- ❑ Acetylcholinesterase (AChE) inhibitors - donepezil, galantamine and rivastigmine - are recommended as options for managing mild as well as moderate Alzheimer's disease
- ❑ Memantine is recommended as an option for managing moderate Alzheimer's disease for people who cannot take AChE inhibitors, and as an option for managing severe Alzheimer's disease.
- ❑ A difference at national-level in expected Vs observed use suggests there may be barriers to uptake
- ❑ There is also variation across Area Teams

**Figure 4** Ratio of observed to expected, Alzheimer's medicines, at Area Team level, 2012



**Table 2** Expected and observed use for Alzheimer's medicines, 2012

Year	Expected (DDDs)	Observed (DDDs)	Ratio
2012	35,647,222	55,315,700	1.55

## Progress to Date

April 2014

- Project selected as one the 10 AHSN Innovations for 2014/15

October 2014

- Clinical Champion identified

November 2014

- Project scope agreed with Clinical Champion & Dementia Network
- Data Analysis – Expected Vs Observed DDDs across AHSN region initiated

February 2014

- Project initiated to collate information
- Workshop on Clinical Pathway redesign planned

# Intra Operative Fluid Management

## Clinical Leader – Dr Emmanuel Umerah, Frimley Health

April 14	May	June	Sept	Oct	Nov -Dec	March	April 15
<ul style="list-style-type: none"><li>•Project Selected and supported by RIF Fund</li></ul>	<ul style="list-style-type: none"><li>•Set up collaboration with NHS Benchmarking Network to delivery the project</li></ul>	<ul style="list-style-type: none"><li>•Project launch across the Oxford AHSN region. NHS England agree to participate in project.</li></ul>	<ul style="list-style-type: none"><li>•Clinical Regional Workshop hosted to design benchmarking dataset</li></ul>	<ul style="list-style-type: none"><li>•Suppliers engaged to understand barriers to adoption</li></ul>	<ul style="list-style-type: none"><li>•IOFM Benchmarking Dataset launched with qualitative survey</li></ul>	<ul style="list-style-type: none"><li>•Presenting initial findings at the National Theatre Benchmarking Conference in London</li></ul>	<ul style="list-style-type: none"><li>•National rollout of IOFM project as part of the National Theatre Benchmarking Project</li></ul>

### Expected Patient Outcomes:

Providing senior doctors and nurses information to assist clinical practice and departmental management, based on robust evidence. The expected patient outcomes are:

- Reduce rate of re-admission and re-operation
- Fewer post operative complications
- Reduce emergency admissions into intensive care after surgery
- Low risk of cardiac complications minimally or non-invasive monitoring
- Reduce risk of catheter (CVP, arterial, PAC) related infection
- Reduce length of hospital stay, patients are 'fit for discharge sooner'

### Project Objectives:

1. Increase the relevant adoption of Intra Operative Fluid Management Technology across the region
2. Understand the barriers to adoption from perspective of NHS Providers, NHS Commissioners, Industry
3. Design and develop a useful tool that providers and commissioners can use for business planning, service development and contract management
4. Provide feedback to NHS England to inform national policy

Participating:  
Royal Berkshire Hospital,  
Frimley Health , Bucks  
Healthcare, Milton  
Keynes Hospital, Bedford  
Hospital, Oxford  
University Hospitals,  
Great Western Hospitals,  
Central Manchester  
Hospitals

Estimated 47,000  
people in Oxford  
AHSN region  
could benefit  
from full  
implementation  
of IOFM  
technology

Potential  
savings to the  
NHS in Oxford  
AHSN £24.3M  
full adoption  
of technology

