



The research commercialisation office of the University of Oxford, previously called **Isis Innovation**, has been renamed **Oxford University Innovation**

All documents and other materials will be updated accordingly.
In the meantime the remaining content of this Isis Innovation document is still valid.

URLs beginning www.isis-innovation.com/... are automatically redirected to our new domain, www.innovation.ox.ac.uk/...

Phone numbers and email addresses for individual members of staff are unchanged

Email : enquiries@innovation.ox.ac.uk

eHealth & Big Data



Isis Innovation & Oxford AHSN Technology Showcase



eHealth &
Big Data

Personalised Health and Care 2020

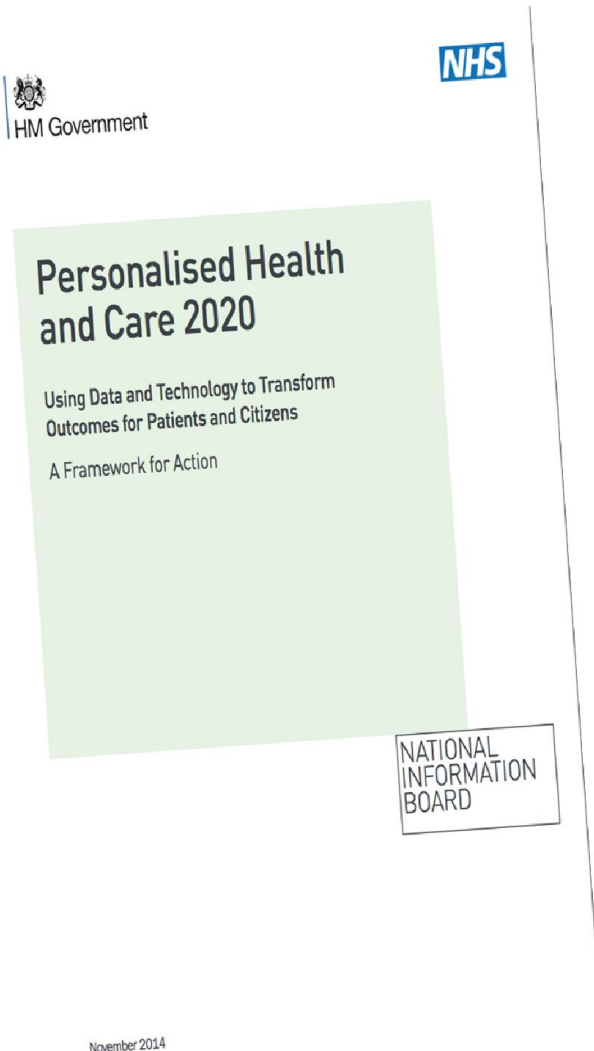
Paul Rice PhD
Head of Technology Strategy
NHS England

NATIONAL
INFORMATION
BOARD

Better use of data and technology has the power to improve health, transforming the quality and reducing the cost of health and care services.

It can give patients and citizens more control over their health and wellbeing, empower carers, reduce the administrative burden for care professionals, and support the development of new medicines and treatments.

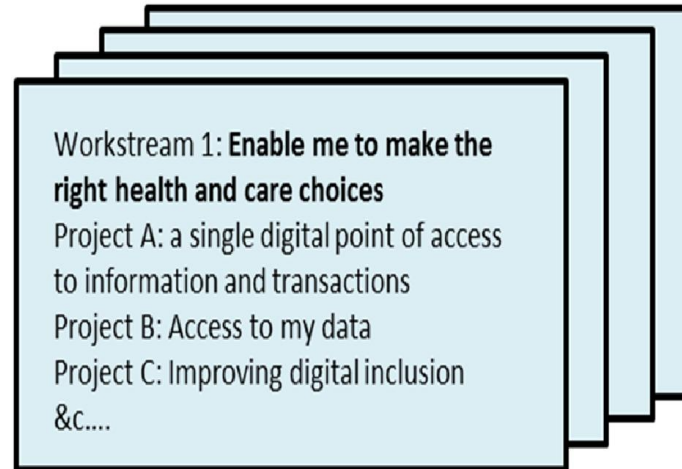
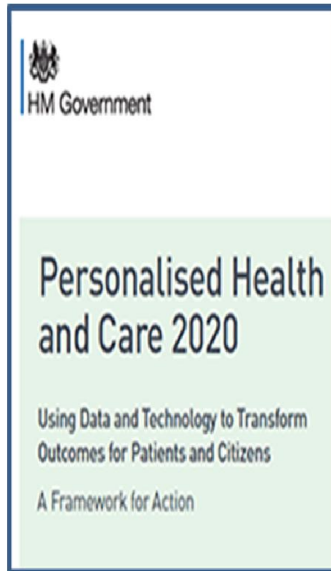
Personalised Health and Care 2020



Personalised Health and Care 2020 considers what progress the health and care system has already made and what can be learnt from other industries and the wider economy.

It is a framework for action that will support frontline staff, patients and citizens to take better advantage of the digital opportunity.

How do we do it?



The roadmaps need to specify benefits for patients, citizens, service-users and local communities:

- Better health and wellbeing
- Quality and safety
- Effectiveness
- Benefits to science and the economy

Work streams

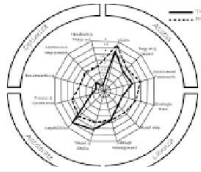
1.1	enable me to make the right health and care choices: providing patients and the public with digital access to health and care information and transactions
1.2	enable me to make the right health and care choices: providing citizens with access to an accredited set of NHS and social care 'apps'
2.1	give care professionals and carers access to all the data they need: setting the commissioning and regulatory roadmap for implementation of digital data standards by 2018/2020 (including agreement on the standards)
2.2	give care professionals and carers access to all the data they need: roadmap for comprehensive data on outcomes and value of services now – ensuring the business intelligence requirements of health and care are met
3	make the quality of care transparent: roadmap for publication of comparative data
4	build and sustain public trust: deliver roadmap to consent based information sharing and assurance of safeguards in the interim
5	bring forward life saving treatments and support innovation and growth
6	support care professionals to make the best use of data and technology
7	assure best value for taxpayers from existing programmes
8	technical standards work stream

Giving health and care professionals access to the data they need



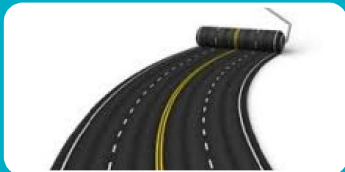
Interoperability

- The development and adoption of digital information and data standards that enable information sharing as part of a coherent interoperability strategy



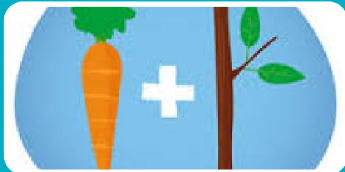
Digital Maturity

- Baseline and benchmarking tool to assure progress and highlight best practice



Local Digital Roadmaps

- The development of inclusive, viable local plans that supports localities, enabling them to plan their own route to a paperless health and care system



Levers and Incentives

- Utilise regulatory, inspection, commissioning and development levers to ensure that the benefits enabled by information technology are identified and optimised



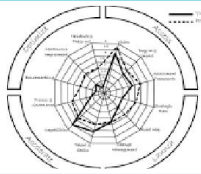
Developing Digital Capability

- The building of effective leadership and the creation of a learning environment to drive digital adoption across the health and care system



Interoperability

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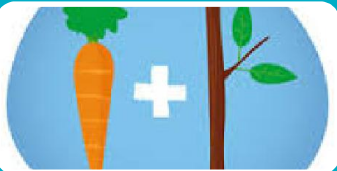
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Levers and Incentives

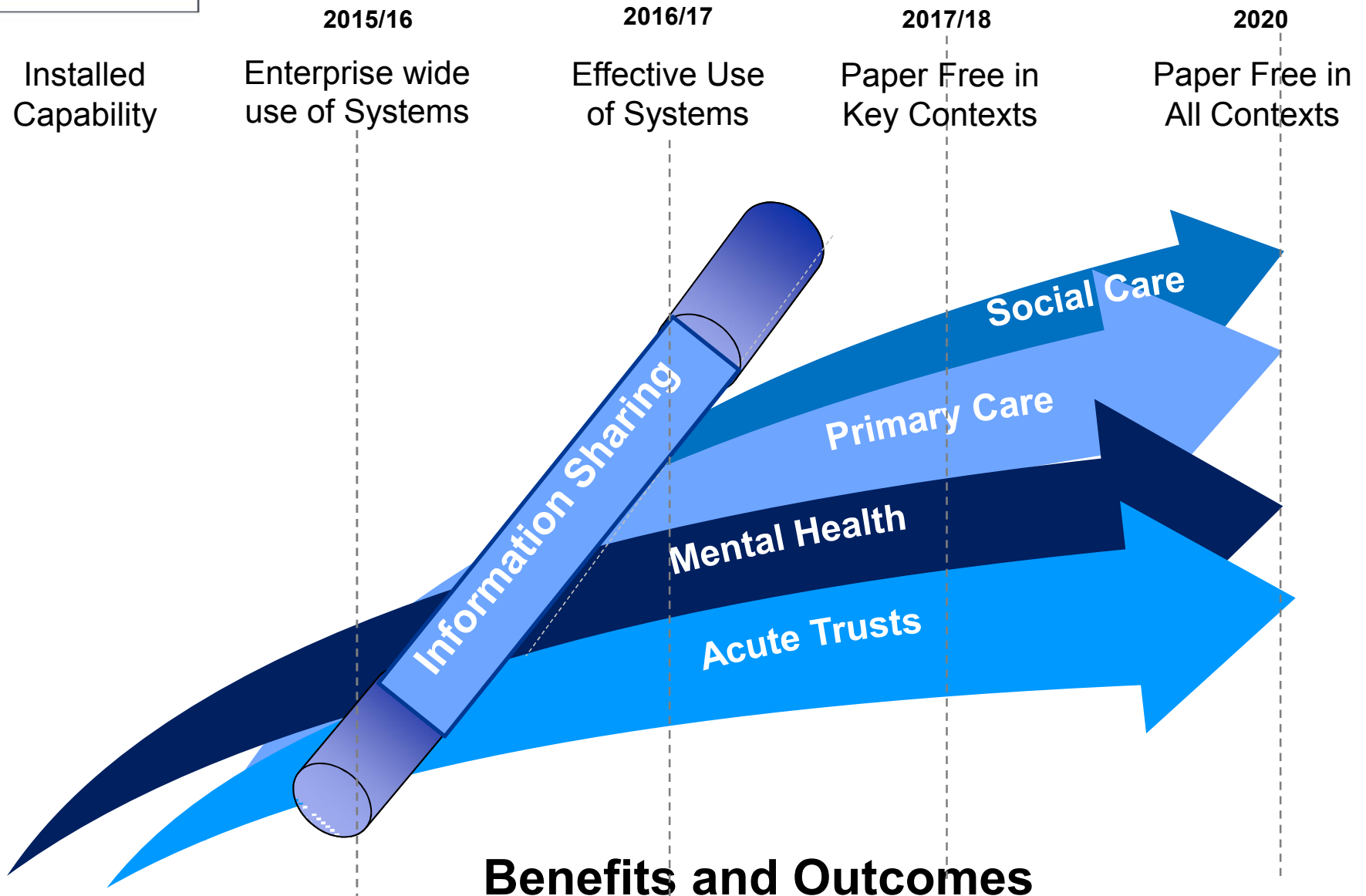
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Developing Digital Capability

- The building of effective leadership and the creation of a learning environment to drive digital adoption across the health and care system

Digital Maturity – “Paper-free” health and care



READINESS

Governance

X Questions
Y Questions

Leadership

X Questions
Y Questions

Resourcing

X Questions
Y Questions

Information
Governance

X Questions
Y Questions

Strategic
Alignment

X Questions
Y Questions

CAPABILITIES

Records,
Assessments &
Support Plans

X Questions
Y Questions

Transfers of
Care, Orders &
Communication

X Questions
Y Questions

Decision
Support

X Questions
Y Questions

Remote &
Assistive
Care

X Questions
Y Questions

Asset and
Resource
Optimisation

X Questions
Y Questions

Citizen
Activation

X Questions
Y Questions

INFRASTRUCTURE

Wi-Fi

X Questions
Y Questions

Business
Continuity

X Questions
Y Questions

Cyber
Security

X Questions
Y Questions

System
Resilience

X Questions
Y Questions

 Provider
 Health &
Care
Economy



Interoperability

- The development and adoption of digital information and data standards that enable information sharing as part of a coherent interoperability strategy



Digital Maturity

- Baseline and benchmarking tool to assure progress and highlight best practice



Local Digital Roadmaps

- The development of inclusive, viable local plans that supports localities, enabling them to plan their own route to a paperless health and care system



Levers and Incentives

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Developing Digital Capability

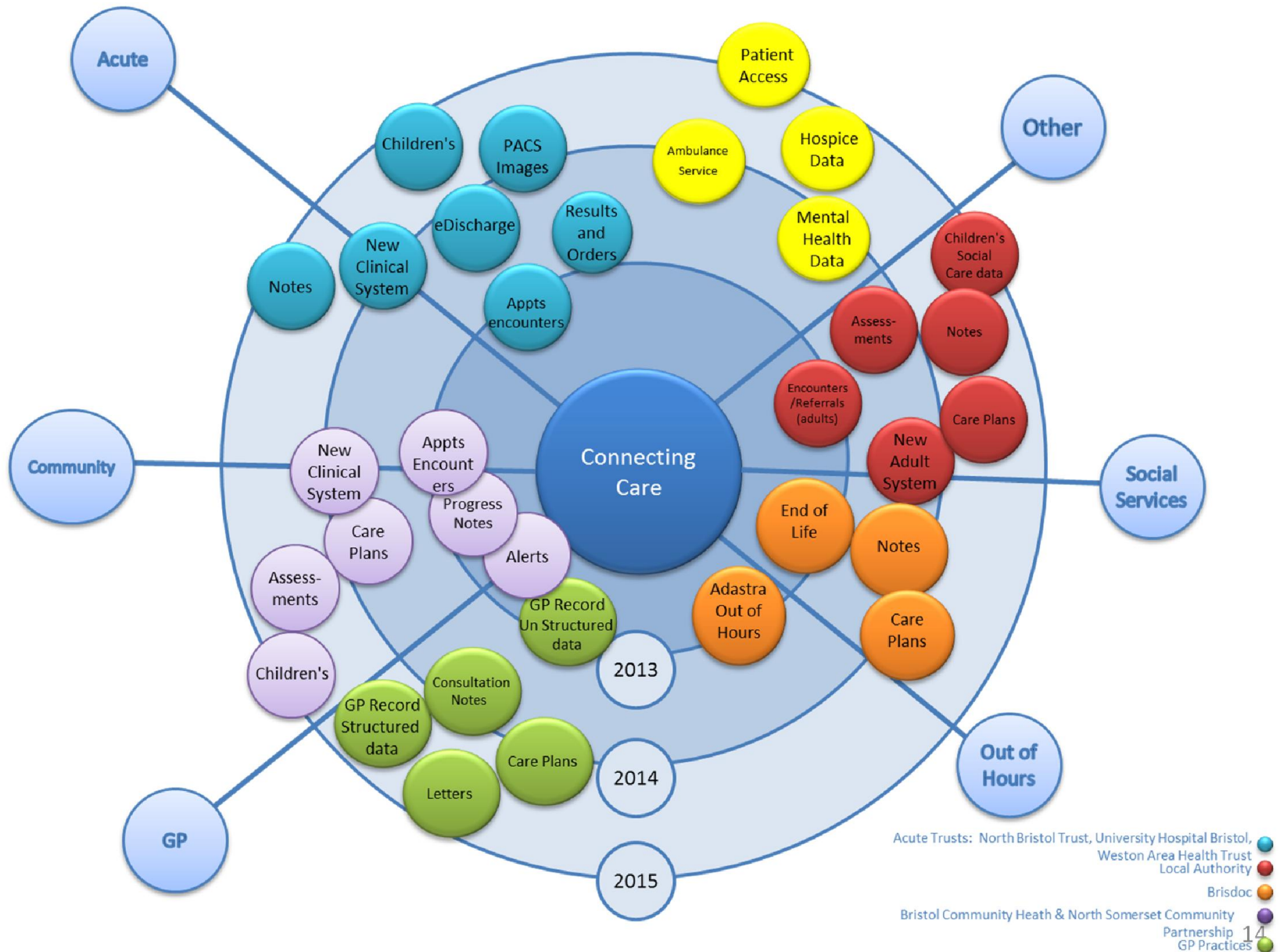
- The building of effective leadership and the creation of a learning environment to drive digital adoption across the health and care system

Local Digital Roadmaps

1. Commissioners will be asked to document their digital capabilities and plans against a predefined set of pathways in the 2016 roadmap:
 - End of Life Care
 - Management of multiple co-morbidities
 - Urgent and Emergency Care
 - Mental Health Care
2. Over subsequent years the scope will expand.
3. The pathways are illustrative and will need to be tailored to the reality of local provision.
4. Additional locality specific services can be added if they help illustrate local flows.



Local Roadmaps (Bristol example)



The diagram is a project timeline for Bradford District NHS, spanning from Year 1 to Year 5. It features a central 'DIGITISATION' hub (a red circle with a blue bar) and various project lines color-coded by type:

- AGILE PROGRAMME (Red):** Includes 'Paper Light Working', 'Agile Infrastructure Review', 'WIP', 'Procurement Process', 'Estates Year 17', 'Year 2 Benefit?', 'Year 3 Benefit?', 'Year 4 Benefit?', 'Real Time Data', 'Paper Free Working', and 'AGILE PROGRAMME'.
- AGILE ROLLOUT (Blue):** Includes 'AGILE ROLLOUT', 'Review Previous Services', 'Corporate Services', 'Medical Staff', 'Community Mental Health', 'Estates Year 27', 'Estates Year 37', 'Estates Year 47', 'Estates??', 'School Nursing', 'Hubs Go Live', 'NHS Tech Fund', 'S<', 'Evaluate Pilots', 'SystemOne Optimisation', 'Clinical Record Viewer', 'RDO Upgrade', 'Service Line Reporting', 'Initial Response Teams', 'Agile Build', 'Health Visitors', 'Older Peoples', 'Close', and 'AGILE ROLLOUT'.
- ESTATES (Brown):** Includes 'Estates Year 17', 'Estates Year 27', 'Estates Year 37', 'Estates Year 47', and 'ESTATES??'.
- IM&T STRATEGY (Yellow):** Includes 'IM&T -IG Toolkit Levels', 'Independent ISO Accreditation', 'Establish Capacity For Innovation', 'Infrastructure Partner', 'Quarterly Reporting', 'NMM Level 3', 'NMM Level 4', 'NMM Level 5', 'Refresh Strategy', and 'Establish Innovation Programme'.
- CLINICAL SYSTEM REVIEW (Green):** Includes 'CLINICAL SYSTEM INTEGRATION', 'System Optimisation', 'Locality Shared Care Record', 'Long Term Review', 'Establish BI Function', 'Contract Review', 'SLA Review', 'WIP', 'S<', 'Evaluate Pilots', 'NHS Tech Fund', 'Hubs Go Live', 'School Nursing', 'Hubs Go Live', 'NHS Tech Fund', 'S<', 'Evaluate Pilots', 'SystemOne Optimisation', 'Clinical Record Viewer', 'RDO Upgrade', 'Service Line Reporting', 'Initial Response Teams', 'Agile Build', 'Health Visitors', 'Older Peoples', 'Close', and 'AGILE ROLLOUT'.
- SERVICE LEVEL AGREEMENT (Black):** Includes 'SLA Change?', 'SLA Changes?', 'Paper Light Working', 'Agile Infrastructure Review', 'WIP', 'Procurement Process', 'Estates Year 17', 'Year 2 Benefit?', 'Year 3 Benefit?', 'Year 4 Benefit?', 'Real Time Data', 'Paper Free Working', and 'AGILE PROGRAMME'.
- TELEHEALTH (Purple):** Includes 'TELEHEALTH', 'Telehealth Year 4', 'Telehealth Year 3', 'Telehealth Year 2', 'Telehealth Year 1', 'Telehealth Year 2', 'Telehealth Year 3', 'Telehealth Year 4', 'Telehealth Year 5', 'Telehealth Year 6', 'Telehealth Year 7', 'Telehealth Year 8', 'Telehealth Year 9', 'Telehealth Year 10', 'Telehealth Year 11', 'Telehealth Year 12', 'Telehealth Year 13', 'Telehealth Year 14', 'Telehealth Year 15', 'Telehealth Year 16', 'Telehealth Year 17', 'Telehealth Year 18', 'Telehealth Year 19', 'Telehealth Year 20', 'Telehealth Year 21', 'Telehealth Year 22', 'Telehealth Year 23', 'Telehealth Year 24', 'Telehealth Year 25', 'Telehealth Year 26', 'Telehealth Year 27', 'Telehealth Year 28', 'Telehealth Year 29', 'Telehealth Year 30', 'Telehealth Year 31', 'Telehealth Year 32', 'Telehealth Year 33', 'Telehealth Year 34', 'Telehealth Year 35', 'Telehealth Year 36', 'Telehealth Year 37', 'Telehealth Year 38', 'Telehealth Year 39', 'Telehealth Year 40', 'Telehealth Year 41', 'Telehealth Year 42', 'Telehealth Year 43', 'Telehealth Year 44', 'Telehealth Year 45', 'Telehealth Year 46', 'Telehealth Year 47', 'Telehealth Year 48', 'Telehealth Year 49', 'Telehealth Year 50', 'Telehealth Year 51', 'Telehealth Year 52', 'Telehealth Year 53', 'Telehealth Year 54', 'Telehealth Year 55', 'Telehealth Year 56', 'Telehealth Year 57', 'Telehealth Year 58', 'Telehealth Year 59', 'Telehealth Year 60', 'Telehealth Year 61', 'Telehealth Year 62', 'Telehealth Year 63', 'Telehealth Year 64', 'Telehealth Year 65', 'Telehealth Year 66', 'Telehealth Year 67', 'Telehealth Year 68', 'Telehealth Year 69', 'Telehealth Year 70', 'Telehealth Year 71', 'Telehealth Year 72', 'Telehealth Year 73', 'Telehealth Year 74', 'Telehealth Year 75', 'Telehealth Year 76', 'Telehealth Year 77', 'Telehealth Year 78', 'Telehealth Year 79', 'Telehealth Year 80', 'Telehealth Year 81', 'Telehealth Year 82', 'Telehealth Year 83', 'Telehealth Year 84', 'Telehealth Year 85', 'Telehealth Year 86', 'Telehealth Year 87', 'Telehealth Year 88', 'Telehealth Year 89', 'Telehealth Year 90', 'Telehealth Year 91', 'Telehealth Year 92', 'Telehealth Year 93', 'Telehealth Year 94', 'Telehealth Year 95', 'Telehealth Year 96', 'Telehealth Year 97', 'Telehealth Year 98', 'Telehealth Year 99', 'Telehealth Year 100'.
- ADMIN HUBS (Pink):** Includes 'ADMIN HUBS', 'Admin Hub Year 27', 'Admin Hub Year 37', 'Admin Hub Year 47', 'Admin Hub Year 57', 'Admin Hub Year 67', 'Admin Hub Year 77', 'Admin Hub Year 87', 'Admin Hub Year 97', 'Admin Hub Year 107', 'Admin Hub Year 117', 'Admin Hub Year 127', 'Admin Hub Year 137', 'Admin Hub Year 147', 'Admin Hub Year 157', 'Admin Hub Year 167', 'Admin Hub Year 177', 'Admin Hub Year 187', 'Admin Hub Year 197', 'Admin Hub Year 207', 'Admin Hub Year 217', 'Admin Hub Year 227', 'Admin Hub Year 237', 'Admin Hub Year 247', 'Admin Hub Year 257', 'Admin Hub Year 267', 'Admin Hub Year 277', 'Admin Hub Year 287', 'Admin Hub Year 297', 'Admin Hub Year 307', 'Admin Hub Year 317', 'Admin Hub Year 327', 'Admin Hub Year 337', 'Admin Hub Year 347', 'Admin Hub Year 357', 'Admin Hub Year 367', 'Admin Hub Year 377', 'Admin Hub Year 387', 'Admin Hub Year 397', 'Admin Hub Year 407', 'Admin Hub Year 417', 'Admin Hub Year 427', 'Admin Hub Year 437', 'Admin Hub Year 447', 'Admin Hub Year 457', 'Admin Hub Year 467', 'Admin Hub Year 477', 'Admin Hub Year 487', 'Admin Hub Year 497', 'Admin Hub Year 507', 'Admin Hub Year 517', 'Admin Hub Year 527', 'Admin Hub Year 537', 'Admin Hub Year 547', 'Admin Hub Year 557', 'Admin Hub Year 567', 'Admin Hub Year 577', 'Admin Hub Year 587', 'Admin Hub Year 597', 'Admin Hub Year 607', 'Admin Hub Year 617', 'Admin Hub Year 627', 'Admin Hub Year 637', 'Admin Hub Year 647', 'Admin Hub Year 657', 'Admin Hub Year 667', 'Admin Hub Year 677', 'Admin Hub Year 687', 'Admin Hub Year 697', 'Admin Hub Year 707', 'Admin Hub Year 717', 'Admin Hub Year 727', 'Admin Hub Year 737', 'Admin Hub Year 747', 'Admin Hub Year 757', 'Admin Hub Year 767', 'Admin Hub Year 777', 'Admin Hub Year 787', 'Admin Hub Year 797', 'Admin Hub Year 807', 'Admin Hub Year 817', 'Admin Hub Year 827', 'Admin Hub Year 837', 'Admin Hub Year 847', 'Admin Hub Year 857', 'Admin Hub Year 867', 'Admin Hub Year 877', 'Admin Hub Year 887', 'Admin Hub Year 897', 'Admin Hub Year 907', 'Admin Hub Year 917', 'Admin Hub Year 927', 'Admin Hub Year 937', 'Admin Hub Year 947', 'Admin Hub Year 957', 'Admin Hub Year 967', 'Admin Hub Year 977', 'Admin Hub Year 987', 'Admin Hub Year 997', 'Admin Hub Year 1007'.
- BUSINESS INTELLIGENCE (Light Blue):** Includes 'BUSINESS INTELLIGENCE', 'Year 5 Benefit?', 'Year 6 Benefit?', 'Year 7 Benefit?', 'Year 8 Benefit?', 'Year 9 Benefit?', 'Year 10 Benefit?', 'Year 11 Benefit?', 'Year 12 Benefit?', 'Year 13 Benefit?', 'Year 14 Benefit?', 'Year 15 Benefit?', 'Year 16 Benefit?', 'Year 17 Benefit?', 'Year 18 Benefit?', 'Year 19 Benefit?', 'Year 20 Benefit?', 'Year 21 Benefit?', 'Year 22 Benefit?', 'Year 23 Benefit?', 'Year 24 Benefit?', 'Year 25 Benefit?', 'Year 26 Benefit?', 'Year 27 Benefit?', 'Year 28 Benefit?', 'Year 29 Benefit?', 'Year 30 Benefit?', 'Year 31 Benefit?', 'Year 32 Benefit?', 'Year 33 Benefit?', 'Year 34 Benefit?', 'Year 35 Benefit?', 'Year 36 Benefit?', 'Year 37 Benefit?', 'Year 38 Benefit?', 'Year 39 Benefit?', 'Year 40 Benefit?', 'Year 41 Benefit?', 'Year 42 Benefit?', 'Year 43 Benefit?', 'Year 44 Benefit?', 'Year 45 Benefit?', 'Year 46 Benefit?', 'Year 47 Benefit?', 'Year 48 Benefit?', 'Year 49 Benefit?', 'Year 50 Benefit?', 'Year 51 Benefit?', 'Year 52 Benefit?', 'Year 53 Benefit?', 'Year 54 Benefit?', 'Year 55 Benefit?', 'Year 56 Benefit?', 'Year 57 Benefit?', 'Year 58 Benefit?', 'Year 59 Benefit?', 'Year 60 Benefit?', 'Year 61 Benefit?', 'Year 62 Benefit?', 'Year 63 Benefit?', 'Year 64 Benefit?', 'Year 65 Benefit?', 'Year 66 Benefit?', 'Year 67 Benefit?', 'Year 68 Benefit?', 'Year 69 Benefit?', 'Year 70 Benefit?', 'Year 71 Benefit?', 'Year 72 Benefit?', 'Year 73 Benefit?', 'Year 74 Benefit?', 'Year 75 Benefit?', 'Year 76 Benefit?', 'Year 77 Benefit?', 'Year 78 Benefit?', 'Year 79 Benefit?', 'Year 80 Benefit?', 'Year 81 Benefit?', 'Year 82 Benefit?', 'Year 83 Benefit?', 'Year 84 Benefit?', 'Year 85 Benefit?', 'Year 86 Benefit?', 'Year 87 Benefit?', 'Year 88 Benefit?', 'Year 89 Benefit?', 'Year 90 Benefit?', 'Year 91 Benefit?', 'Year 92 Benefit?', 'Year 93 Benefit?', 'Year 94 Benefit?', 'Year 95 Benefit?', 'Year 96 Benefit?', 'Year 97 Benefit?', 'Year 98 Benefit?', 'Year 99 Benefit?', 'Year 100 Benefit?'.
- BENEFITS REALISATION (Grey):** Includes 'BENEFITS REALISATION', 'Year 5 Benefit?', 'Year 6 Benefit?', 'Year 7 Benefit?', 'Year 8 Benefit?', 'Year 9 Benefit?', 'Year 10 Benefit?', 'Year 11 Benefit?', 'Year 12 Benefit?', 'Year 13 Benefit?', 'Year 14 Benefit?', 'Year 15 Benefit?', 'Year 16 Benefit?', 'Year 17 Benefit?', 'Year 18 Benefit?', 'Year 19 Benefit?', 'Year 20 Benefit?', 'Year 21 Benefit?', 'Year 22 Benefit?', 'Year 23 Benefit?', 'Year 24 Benefit?', 'Year 25 Benefit?', 'Year 26 Benefit?', 'Year 27 Benefit?', 'Year 28 Benefit?', 'Year 29 Benefit?', 'Year 30 Benefit?', 'Year 31 Benefit?', 'Year 32 Benefit?', 'Year 33 Benefit?', 'Year 34 Benefit?', 'Year 35 Benefit?', 'Year 36 Benefit?', 'Year 37 Benefit?', 'Year 38 Benefit?', 'Year 39 Benefit?', 'Year 40 Benefit?', 'Year 41 Benefit?', 'Year 42 Benefit?', 'Year 43 Benefit?', 'Year 44 Benefit?', 'Year 45 Benefit?', 'Year 46 Benefit?', 'Year 47 Benefit?', 'Year 48 Benefit?', 'Year 49 Benefit?', 'Year 50 Benefit?', 'Year 51 Benefit?', 'Year 52 Benefit?', 'Year 53 Benefit?', 'Year 54 Benefit?', 'Year 55 Benefit?', 'Year 56 Benefit?', 'Year 57 Benefit?', 'Year 58 Benefit?', 'Year 59 Benefit?', 'Year 60 Benefit?', 'Year 61 Benefit?', 'Year 62 Benefit?', 'Year 63 Benefit?', 'Year 64 Benefit?', 'Year 65 Benefit?', 'Year 66 Benefit?', 'Year 67 Benefit?', 'Year 68 Benefit?', 'Year 69 Benefit?', 'Year 70 Benefit?', 'Year 71 Benefit?', 'Year 72 Benefit?', 'Year 73 Benefit?', 'Year 74 Benefit?', 'Year 75 Benefit?', 'Year 76 Benefit?', 'Year 77 Benefit?', 'Year 78 Benefit?', 'Year 79 Benefit?', 'Year 80 Benefit?', 'Year 81 Benefit?', 'Year 82 Benefit?', 'Year 83 Benefit?', 'Year 84 Benefit?', 'Year 85 Benefit?', 'Year 86 Benefit?', 'Year 87 Benefit?', 'Year 88 Benefit?', 'Year 89 Benefit?', 'Year 90 Benefit?', 'Year 91 Benefit?', 'Year 92 Benefit?', 'Year 93 Benefit?', 'Year 94 Benefit?', 'Year 95 Benefit?', 'Year 96 Benefit?', 'Year 97 Benefit?', 'Year 98 Benefit?', 'Year 99 Benefit?', 'Year 100 Benefit?'.

The diagram is set against a background of colored hexagons and includes a 'LINE KEY' on the right side.

Next Steps

- National Information Board Roadmaps – out for consultation until early September
- NIB Leadership meet to ratify final plans at NHS Expo in early September
- Detailed priority business cases prepared – existing informatics portfolio re-aligned and additional funding proposals submitted to Comprehensive Spending Review
- Planning and performance of the NHS and social care – including NCM/Integration Pioneers etc. attuned to the digital opportunity
- New service offers and capabilities maximise the potential of digital technology to delivery efficient, effective, high quality and participative services that benefit professionals, citizens and their carers