Harnessing technology for personalised care
Final report on the national IT Challenge process

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1 Introduction and summary

1.1 Introduction

Integrated Personal Commissioning (IPC)[1] and personal health budgets[2] are part of a wider drive to personalise care, empowering people to achieve better outcomes for their health and care. The Next Steps on the NHS Five Year Forward View[3] emphasised the importance of expanding these programmes to support disabled people and people with complex health needs.

To support expansion to the ambition of 100,000 personal health budgets by March 2021[4], effective digital systems are needed which are developed through engagement with people with care and support needs, their families and carers. NHS England launched the IT Challenge for Personalised Care in February 2017 by publishing a set of core and additional requirements[5] of high-quality IT solutions. The purpose of the challenge process was to:
- assess the quality and extent of existing systems
- support clinical commissioning groups (CCGs) and their partners in developing specifications that meets their local circumstances
- stimulate a dynamic IT supplier marketplace, encouraging innovation and new entrants.

This report provides the results of the IT Challenge and the next steps for IT suppliers, CCGs and NHS England. NHS England acknowledges that some CCGs and local partners are already investing in relevant IT infrastructure. The report is intended to support and encourage CCGs to procure and implement IT solutions that include the requirements for personalised care. This can be done most effectively through co-production with people with lived experience and in conjunction with NHS and local authority partners.

1.2 The results

The IT Challenge successfully attracted submissions from 24 diverse organisations. Each organisation set out how their solution meets the core requirements and at least one of the functional requirements as well as details on commercials, existing customers, scalability and vision. The process had an immediate effect on the IT supplier market, for example two pairs of supplementary suppliers agreed to partner with each other. Most IT suppliers have been encouraged to plan further developments of their products to meet the personalised care agenda.

This document lists 18 solutions that are considered to (a) meet the **core** requirements of personalisation and information management **and** (b) meet **one or more** of the five functional requirement areas, **or are expected to meet one or more** of the five functional requirement areas by the end of the financial year.

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[1] https://www.england.nhs.uk/commissioning/ipc
[2] https://www.england.nhs.uk/healthbudgets
[3] https://www.england.nhs.uk/publication/next-steps-on-the-nhs-five-year-forward-view/
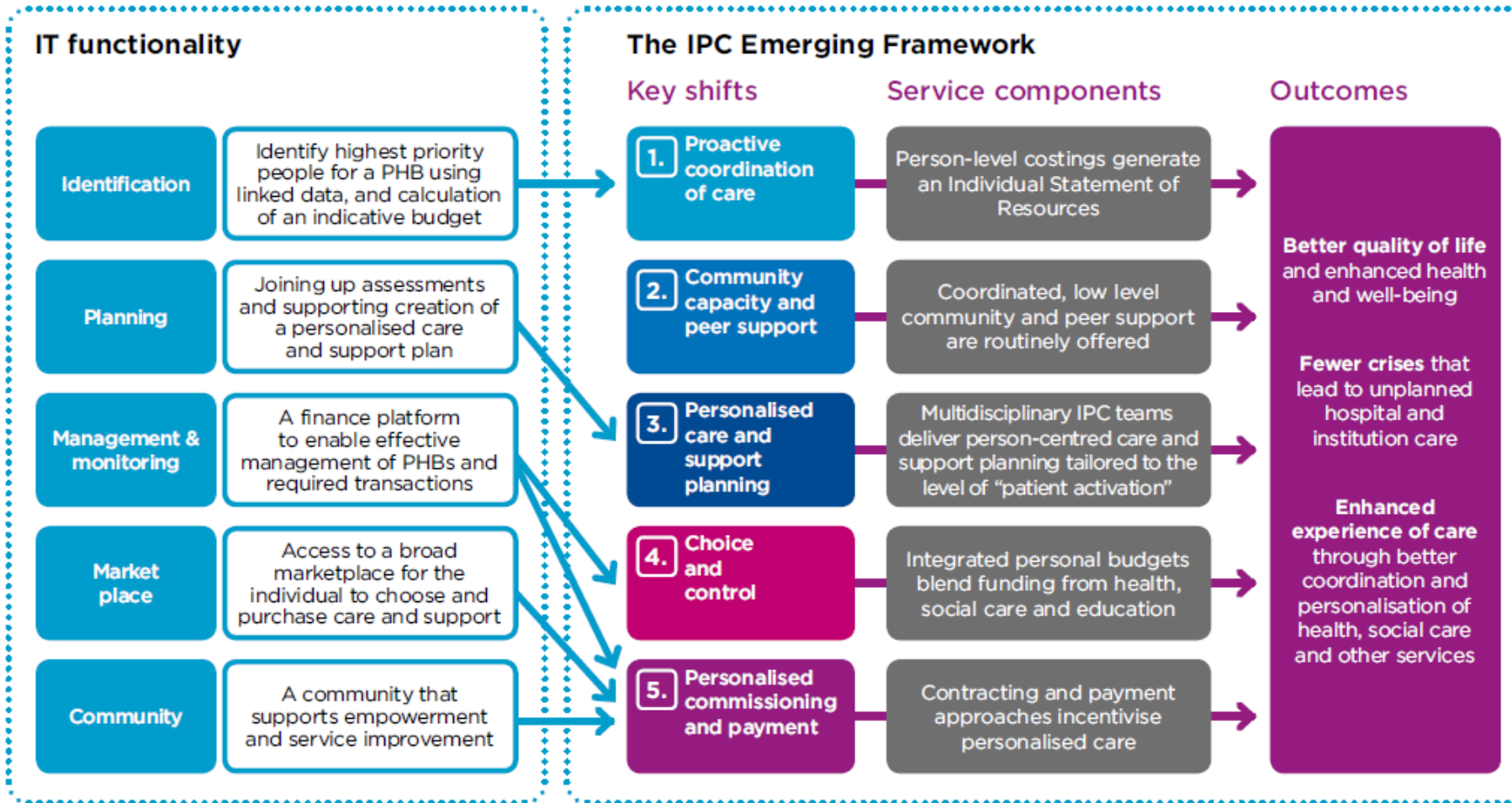[4] https://www.gov.uk/government/publications/nhs-mandate-2017-to-2018
[5] https://www.england.nhs.uk/personalised-health-and-care-framework/technology-to-support-personalised-health-and-care/

The requirements were developed with CCGs, NHS England specialists, NHS Digital and people with lived experience of using personal health budgets.

The five functional areas map onto the key shifts of the IPC Emerging Framework[6].

Figure 1: How IT can support the implementation of IPC

IT functionality		The IPC Emerging Framework		
		Key shifts	Service components	Outcomes
Identification	Identify highest priority people for a PHB using linked data, and calculation of an indicative budget	1. Proactive coordination of care	Person-level costings generate an Individual Statement of Resources	**Better quality of life** and enhanced health and well-being
Planning	Joining up assessments and supporting creation of a personalised care and support plan	2. Community capacity and peer support	Coordinated, low level community and peer support are routinely offered	**Fewer crises** that lead to unplanned hospital and institution care
Management & monitoring	A finance platform to enable effective management of PHBs and required transactions	3. Personalised care and support planning	Multidisciplinary IPC teams deliver person-centred care and support planning tailored to the level of "patient activation"	**Enhanced experience of care** through better coordination and personalisation of health, social care and other services
Market place	Access to a broad marketplace for the individual to choose and purchase care and support	4. Choice and control	Integrated personal budgets blend funding from health, social care and education	
Community	A community that supports empowerment and service improvement	5. Personalised commissioning and payment	Contracting and payment approaches incentivise personalised care	

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6 https://www.england.nhs.uk/publication/integrated-personal-commissioning-ipc-emerging-framework/

Table 1: Summary of the results of the assessments

The following table summarises the number of solutions currently or expected to meet the five requirement areas by March 2018. By March 2018, NHS England expects five solutions to cover all five functional areas.

	Identification	Planning	Management & Monitoring	Marketplace	Community
Number of solutions currently acceptable	3	2	7	9	3
Additional number of solutions expected to be acceptable by March 2018	6	12	5	4	4
Total possible solutions by March 2018	**9**	**14**	**12**	**13**	**7**

1.3 Next steps for IT suppliers, CCGs and NHS England

NHS England expects the development of IT solutions will support the drive towards personalised care and the continued expansion of IPC and personal health budgets. Implementing a solution that meets the national requirements of NHS England will enable CCGs, working with delivery partners, to effectively scale up personalised care in line with guidance, such as the Personalised health and care framework[7], published in June 2017.

Some IT suppliers are already working with CCGs or local authorities. Other IT suppliers will be able to use these requirements to support the development of their solutions and approach to working with CCGs.

It is not mandatory to implement the solutions outlined in this report. Where CCGs are implementing an IT solution, they will have to follow procurement guidance, in line with their own legal requirements to procure under the Public Contracts Regulations 2015. Six specific suggested actions for CCGs are listed in section 4.1. As mentioned in these actions, where CCGs are implementing local solutions for personalised care, they are expected to work with partners within their Sustainability and Transformation Partnership (STP) footprint, including local authorities, and should align their approach with their Local Digital Roadmap (LDR) [8].

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[7] https://www.england.nhs.uk/personalised-health-and-care-framework/
[8] https://www.england.nhs.uk/digitaltechnology/info-revolution/digital-roadmaps/

NHS England will support CCGs through regional events in autumn 2017 and will target support to local areas that are planning to procure IT solutions detailed in this report. Further information, such as case studies, will be shared through the personal health budgets learning network for NHS and local government professionals[9].

2 The state of the IT supplier market

2.1 Wide variety of IT suppliers

The variety of suppliers engaged in the IT Challenge for Personalised Care was considerable:

- **Size**: ranging from small English companies to global corporations.
- **Main location**: While all would expect to develop a presence on the ground in England to support any scaling up, some have their main operations in Scotland, France, the United States or Australia.
- **Sector background**: IT suppliers who had a background in both healthcare and social care took part in the process. No single IT solution has a strong track record in both the NHS and local authorities.
- **User focus**: All suppliers listed in this report have modules or whole systems specifically designed for use by the public (patients, service users, family carers and friends), but in some cases the system and company focus has historically been entirely on professionals. This has required a shift in design thinking and culture. Other companies have been founded specifically to digitally empower patients and people with care and support needs.

2.2 An IT supply market that is still responding to requirements

The IPC and personal health budget programmes set new requirements for IT systems. In particular, it is expected that individuals are able to engage directly with systems, if they wish and have the capacity, to perform the following functions:
- Develop their integrated care plans proactively with professionals.
- Manage their allocated NHS, social care and education personal budgets.
- Purchase from providers including (but not limited to) use of personal assistants.

The requirement for IT systems to provide these functions directly to people with lived experience is not typical. It is therefore not surprising that the IT supply market is still developing to meet requirements. Many suppliers set out clear plans describing how their offers would be developed during 2017/18. NHS England has therefore rated those suppliers according to whether they are expected to reach an acceptable level of functionality and process by March 2018.

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[9] http://www.personalhealthbudgets.england.nhs.uk/login/

3 The results for individual suppliers

3.1 Some caveats

The IT Challenge for Personalised Care process was not as rigorous as a formal procurement, but provides an assessment of the IT supplier market. The 24 written submissions were initially assessed by a multi-speciality panel, and 22 were progressed to interview. The panel consisted of specialists in IPC delivery, finance, information governance, technical requirements, CCG and commissioning support unit (CSU) perspectives, procurement/commercial and local authority systems. The panel also included people with lived experience of using personal health budgets. The process did not include time for:

- hands on testing. The majority of suppliers provided a software demonstration at interview
- taking up any customer references, although all suppliers were asked about existing customers and many provided case studies
- validating all written responses in detail to the possible 55 detailed requirements at interview (if all additional functional areas were completed).

3.2 The evaluation criteria

All panel members scored and commented on the written submissions, which provided background for all the interviewers.

Interviewers scored each IT solution against the following criteria:
a) Core requirements, including co-production, support for different budget models, data security, interoperability, data analysis and multiple accessible devices
b) Additional requirements under the five functional areas:
    a. Identification
    b. Planning
    c. Management & monitoring
    d. Marketplace
    e. Community
c) Commercial model
d) Existing customers
e) Other information, such as implementation services, hosting, support services, any additional factors.

Each of these areas were scored 0 – 5 as follows:

Score	Description
5	Excellent – Satisfies the requirements exceptionally or fully
4	Good – Satisfies the requirements, with minor additional benefits
3	Acceptable – Satisfies the requirements
2	Satisfies many requirements but not to a sufficient level overall
1	Satisfies some requirements
0	Unacceptable – does not meet the requirements

IT suppliers were issued individual feedback reports and given two weeks to challenge them. The reports set out the average scores for each of the functional areas being assessed and a combined average for the other areas as well as a score for core requirements. The panel assessed functionality for general usability and supplier competence as well as against the specific additional requirements.

3.3 What does "Expected to be Acceptable" mean?

Where it was clear that a supplier's system is not yet at an acceptable level but had potential and there was a commitment to development, the panel agreed to score the solution as it is expected to be by March 2018. NHS England is keen to encourage a vibrant market of IT solutions.

The "expected" score is based on the assumption that the IT supplier will be able to work with a CCG to establish more detailed requirements, working in co-production with people with lived experience. Some IT suppliers need to invest in their solution to reach their expected level and NHS England has been given assurances that they will do so.

3.4 The table of results

Supplier	Product(s)	Identifi-cation	Planning	Management & Monitoring	Market-place	Com-munity
Adam	SProc.net & adam LIFE	-	Expected	Expected	Acceptable	-
AXSYS	Excelicare and myCarepod	Acceptable	Expected	-	-	-
Capita Business Services Ltd	ChooseCare	_	_	Acceptable	Acceptable	_
Carelabs	Care Wallet, Care Pay, 1001 doctors, CareBook	Expected	Expected	Acceptable	Expected	Expected
Coordinate My Care	CMC and myCMC	-	Expected	-	-	-
IBM	Watson Care Manager	-	Expected	Expected	Expected	-
Imosphere & NHS Arden & Greater East Midlands CSU	Care Partner with FACE RAS and Atmolytics	Expected	Expected	_	_	_
ISeeU Global	iSeeU eMarketplace	Expected	Expected	Expected	Acceptable	Expected
Liquidlogic	LAS and Citizen Portal	Acceptable	Acceptable	Acceptable	Acceptable	-
MCB Ltd	My Care Bank			Expected	Acceptable	
Mediware Human & Social Services Inc.	Harmony	Expected	Expected	Expected	Expected	Expected
NHS Shared Business Services	PHBChoices	Expected	Expected	Acceptable	Acceptable	Expected
OLM Systems Ltd	Platform for Care – including Eclipse, MyLife, Fiscal	_	Expected	_	_	_

Supplier	Product(s)	Identifi-cation	Planning	Manage-ment & Monitoring	Market-place	Com-munity
	and Commissioner					
Oxford Computer Consultants	OCC MarketPlace	-	-	Acceptable	Acceptable	Acceptable
Patients Know Best	PKB	_	Acceptable	_	_	_
Pinnacle Health Partnership LLP	Outcomes4 Health & PinnacleBuy	Expected	Expected	_	Expected	_
PCG Technology Solutions	Assist	_	_	Acceptable	Acceptable	Acceptable
Servelec HSC with PCG Technology Solutions	Finestra, Corius, Mosaic (all from Servelec) with Assist (PCG)	Acceptable	Expected	Accepted	Acceptable	Acceptable

3.5 Lessons for IT suppliers

There are three recommended areas for improvement, which apply across the majority of assessed IT suppliers:
- The importance of co-production of solutions with people with lived experience
- Because a person's personalised care & support plan is central in the IPC and personal health budget processes, IT solutions need to enable people to update their care and support plan on an ongoing basis, for example, to reflect changes of chosen care providers.
- The need for open application programming interfaces (APIs).

For more information, please refer to the Personalised health and care framework[10]. IT suppliers are expected to work with CCGs and their partners to develop their solutions in line with the requirements of the framework.

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[10] www.england.nhs.uk/personalised-health-and-care-framework/

4 Next steps for CCGs and their local partners

4.1 Six actions for CCGs

NHS England recognises that CCGs are at different stages in terms of:
- local partnerships
- engagement with the public and care providers
- numbers of personal health budgets
- IT plans
- strategic operational priorities.

There is no mandatory NHS England requirement and no nationally determined timescale for putting an effective IT infrastructure in place to develop more personalised approaches to care. However, given the lead times involved in IT implementation projects, CCGs developing such projects may find it helpful to take the following actions from autumn 2017. NHS England can offer further support as indicated.

Action	Details	Support available from NHS England
Action 1	**Decide on NHS geography** Decide whether to implement a system for IPC and personal health budgets in conjunction with neighbouring CCGs within the STP footprint, for example through partnerships established through the 2016 Local Digital Roadmap (LDR) process.	The Heads of Digital Technology in NHS England regional teams have a coordinating role. They check alignment with the Local Digital Roadmaps (LDRs) and with the objectives of the Sustainability and Transformation Partnerships (STPs). They seek opportunities to scale up where one CCG might be looking to deliver a product and it could be used by CCGs in the STP area. Contact details are available through the Harnessing Technology pages of the personal health budgets learning network, open to NHS and local government professionals[11].
Action 2	**Join up with local authorities in the same geography** Include local authority adult social care departments and children's services in line with the IPC approach.	If a CCG is struggling to obtain a response from the appropriate staff within a local authority, then NHS England can approach the Local Government Association (LGA) for assistance through its networks.
Action	**Evaluate existing local systems**	NHS England will run regional workshops in autumn 2017 to

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[11] http://www.personalhealthbudgets.england.nhs.uk/LearningNetwork/personalisation-it/

Action	Details	Support available from NHS England
3	Evaluate any relevant systems in use locally within the NHS or local authorities against the IT requirements for personalised care to identify the gaps. The process should include people with lived experience through co-production for those elements that they will be using. This may also identify different and more detailed local requirements.	discuss the findings of this report, the requirements and gather feedback from local areas around existing systems. Information will be shared through the Harnessing Technology section of the personal health budgets learning network. NHS England can also, as appropriate, connect CCGs with people who have direct experience of personalised care, who have worked with the national team.
Action 4	**Decide whether to develop or procure** Agree with partners whether one or more systems already in use locally can be extended for IPC and personal health budgets and public use under an existing contract, or whether new services need to be procured.	NHS England nationally and regionally can assist with this process, for example by sharing experiences of other local areas with similar current systems.
Action 5	**Establish the business case and funding model** Assess the system-wide benefits of empowering individuals to achieve higher quality of care through the scaling up of IPC and personal health budgets. An effective IT system will not be the single factor in achieving this, but will be an essential enabler. The IT system(s) should be seen as a framework upon which local people, individuals and professionals, can develop more personalised approaches to care. Local areas should review their existing delivery models on the basis of achieving their local personal health budget ambitions. An efficient IT system should free up clinical and administrative effort.	NHS England will continue to gather and share evidence on the benefits of personalised care including individual stories. While there are no current plans for national funding of personal health budget systems, NHS England will notify CCGs where there may be funding opportunities. Some CCGs may be able to use funds awarded under the Estates and Technology Transformation Fund (ETTF). Regional NHS England teams are also able to advise on potential sources of funding. IT suppliers have different commercial approaches to their solutions and NHS England can provide more information to those CCGs who wish to find out more.
Action 6a	**Depending on the outcome of Action 4,** **develop a system already in use locally** If existing system(s) can be enhanced, develop a plan with partners and existing IT supplier(s) to deliver that.	NHS England may be able to support multiple CCGs across the country to cooperate where there is an existing system that is being enhanced.
Action 6b	**Or procure and implement** If there is no locally used system that can be developed, then proceed to procurement and an implementation plan.	NHS England will provide a range of support, including making individual IT supplier feedback reports available to those CCGs planning procurement. Contact details for all the IT suppliers in the above list are available through the Harnessing Technology section of the personal health budgets learning network.

4.2 The importance of co-production

The IT Challenge for Personalised Care benefited from working through co-production with people with lived experience, and CCGs should also plan to:

- include patients and carers with lived experience on the development of the specification and the interview panels
- ensure co-production starts at the beginning of the development of the specification and not as an afterthought
- fully explore the requirements of care and support planning by identifying the experiences patient and carers want to have using a service
- understand what areas are important to the patient and carer
- think through and work with their IT supplier about how they link the different patient datasets to summarise and tell their story once
- facilitate engagement of IT suppliers with people with lived experience
- include people with lived experience in consideration of issues of information governance, information sharing and privacy.

4.3 Learning from local authorities

Digital engagement of individuals with their care is still at an early stage. The NHS has made great strides in enabling access to GP records online. Local authorities have tended to focus on self-referral and online resource directories or e-marketplaces. CCGs may be able to learn from some of their experiences. The Local Government Association (LGA), the Association of Directors of Adult Social Services (ADASS) and the Society of IT Managers (Socitm) surveyed these in a joint project over 18 months from September 2015. The findings are published in a series of ten briefings on the LGA website[12]. Briefing 8, E-marketplaces, e-brokerage and wellbeing portals, may be of particular interest to CCGs looking to implement systems for personal health budget holders.

One of the important lessons from local authorities that have implemented online e-marketplaces is to successfully engage care providers from the outset. There must be clearly articulated benefits to providers, such as faster payment, streamlined processes or access to a larger market.

4.4 Information Governance considerations

As part of this evaluation of IT suppliers, a high level assessment was carried out of suppliers' current information governance and IT security practices, which informed the overall grading of each supplier. It is essential that CCGs carry out their own assessment in this area, to inform their decision about whether to use any particular supplier and to support the roll out and implementation of any new solution. The Privacy by Design approach, developed by the Information Commissioners Office is particularly helpful in considering information risks. Further information can be found in the IPC Finance and Commissioning Handbook[13].

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[12] https://www.local.gov.uk/our-support/our-improvement-offer/care-and-health-improvement/informatics/engaging-citizens-online
[13] https://www.england.nhs.uk/publication/finance-and-commissioning-handbook/

4.5 Interoperability

None of the IT suppliers are currently rated as Acceptable in all five of the functional areas, and only five are expected to be so by the end of 2017/18. CCGs may therefore wish to meet the IT requirements for personalised care through the use of multiple IT systems that are integrated. NHS England therefore included Core Requirement 3.6, setting out that solutions are expected to align with the NHS Interoperability Toolkit[14] to support the use of multiple IT systems. NHS England cannot provide assurance that all suppliers listed in this report are fully conformant and CCGs should assess individually according to local requirements. NHS England's recommendation is that systems must offer open application programming interfaces (APIs) that are secure, real-time or near real-time and use a Representative State Transfer (RESTful) approach.

A significant challenge with interoperability is defining the boundary of the business processes between systems and the data that needs to be transferred. NHS England will seek to work with CCGs and IT suppliers to develop appropriate data exchange standards.

STPs are expected to establish a range of place-based capabilities, such as risk stratification, case management, and care planning to enable better care for key groups of individuals. The systems to support these capabilities could form part of the portfolio of systems to support IPC and personal health budgets.

CCGs and STPs should contact their regional teams for guidance on interoperability and aligning their digital roadmaps to make use of a place-based approach for shared systems.

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[14] https://digital.nhs.uk/interoperability-toolkit

5 Next steps for NHS England

NHS England expects to take the following steps to support the implementation of local and/or regional digital systems for personalised care. This plan will be reviewed and developed in line with feedback from CCGs and other stakeholders.

Timescale	Actions
Summer 2017	• Appoint a national Digital Systems Lead for Personalised Care • Support individual CCGs progressing with development or procurement through conference calls (ongoing) • Obtain benchmark information on current public engagement tools including e-marketplaces in use in local government (from the Local Government Association's (LGA) social care Digital Maturity Assessment[15]) • Share information and participate in discussions in the Harnessing Technology area of the personal health budget learning network (ongoing)
Autumn 2017	• Spread awareness of this report amongst all relevant stakeholders nationally, regionally and locally • Hold a workshop in each region to discuss this report and hear feedback on local progress, issues and opportunities • Set up and facilitate a national group of champions for digital systems for personalised care (ongoing) • Consider benchmarking current CCG systems for personalised care through a Digital Maturity Assessment • Support IT suppliers continuing development of understanding and products
Winter 2017-18	• Assess desirability of a formal national framework from which CCGs can procure personalised care systems (note that current thinking is that each area will need to reflect local circumstances in any procurement and therefore a national framework may not be appropriate. This will be reviewed in autumn 2017 through discussions with CCGs.) • Assess the case for any national standards to help define interfaces between business processes / systems • Targeted support for early adopters of digital personalised care systems • Support CCGs in making their internal business case

NHS England does not currently expect to produce any more detailed requirements or functional specifications. Local specifications from individual CCGs may be shared with their permission.

CCGs wanting more information, advice or support can contact the Personalised Care Group, by emailing England.PersonalisationIT@nhs.net.

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[15] https://www.local.gov.uk/our-support/our-improvement-offer/care-and-health-improvement/informatics/social-care-digital-maturity