

# Effective deployment of digital systems in healthcare: a toolkit for clinical staff

September 2018

# Contents

Introduction

How to use this toolkit

Leadership

Engagement

Hardware and software

Communications five-step plan

Training and education

Deployment

Project management

Preliminary phase

'Go live' phase

Maintenance and support phase

Jargon buster

References

Acknowledgements

# Introduction

NHS organisations are in various stages of improving digital processes to enable better patient outcomes. Some may need time to prepare for increasing use of digital systems but they should all be largely digitalised by 2023 according to the [Wachter report in 2016](#). The [Five Year Forward View](#) outlines the ambition for transparency and real-time performance data including interoperability. Meanwhile, clinical staff want systems to be safer, with less duplication, and easier and quicker to use. It's time to be optimistic, embrace technology and make it work for patients and the public.

## Ways to achieve this

- Form strong learning networks to ensure professionals can implement and improve their digital skills and capacity.
- Develop strategies for electronic systems that move organisations towards more transparent communicating and sharing information. The [National Information Board](#) suggested in [Personalised health and care 2020: a framework for action](#) that moving towards alignment of services sooner will help us reduce the administrative burden on health professionals and move to a more person-centred and owned health and social care system.
- Use the blueprinting outlines to help organisations move more safely and quickly into digital systems to better help patient and public outcomes. The blueprinting work will help speed up moves to a digital system that contributes to research and driving innovation.

# How to use this toolkit

In a healthcare system struggling to provide healthcare to all where increasing the workforce does not seem to be the answer, digital innovation may be part of the solution.

This toolkit for senior management teams and directors outlines what organisations need to consider clinically when introducing digital systems. It draws on current research and practice to outline the stages of the process and demystify some of the jargon in the terminology of digital and informatics specialties. It also uses the NHS England [Global Digital Exemplars \(GDE\) programme](#) testbed sites for areas to benchmark and glean information from. Some areas have already started to integrate with social services information, we could do this for education and other public services and the information could then help inform care strategies and create healthier communities.

The toolkit looks primarily at primary care which has led digital advance as the acute, mental health and some community settings may have had a more challenging journey. The NHS England templates for the [digital maturity index](#) and [local digital road maps](#) indicate the baseline assessments and the broad direction for organisations.

There are several toolkits that can help with digital deployment, including some from NHS Digital:

<https://digital.nhs.uk/services/mobile-technology-investment-toolkit/mobile-technology-investment-toolkit-resources>

## Key national digital priorities

Ensure your digitalisation plans adhere to these priorities: electronic record systems, eprescribing, patient flow and identification systems, urgent and emergency care settings, patient engagement and chronic illness management.

# How to use this toolkit (2)

The toolkit looks at leadership, engagement, hardware and software and training and education, and then considers the three stages of a digital system roll out. It also provides a step-by-step communications plan.

The supporting tools offer templates, sample checklists for executive boards, a framework for clinical governance and example job descriptions.

**Leadership** is pivotal and getting executive involvement will be crucial to success. A range of staff groups and departments need to be involved for the cultural change.

We need to trial **hardware and software** and ensure that clinical staff have had opportunities to try it and input to what software they think might best help and the hardware that would work for their settings.

**Engagement of patients and public** is crucial, because within healthcare and the way patient information is kept and stored will need to be explained so engagement from the outset is important.

# Leadership

**Leadership is crucial.** The clinical staff lead the clinical area so they lead everything that happens in that setting. They therefore need to lead on digital deployment of a system: if they can lead they will own it and it will work better for the best patient outcomes.

**Leadership levels:** The person in charge of the environment needs to be part of the project. This might be a team leader in the community or ward manager in a hospital. Responsibility needs to be reflected in diagrams like the ones in Tools 3 and 5.

**Leadership and governance:** Clear structures and responsibilities are needed so that staff understand their roles and responsibilities within any digital system deployment. See Tool 5.

**Leading on standards and supporting change:** It is essential to have standards for edocumentation, for example for letters to patients and treatment plans, before using a digital system. The more can be done beforehand the better for interoperability with other organisations.

**Leading on patient safety:** It's important that clinical staff understand data security and the new General Data Protection Regulation and are mandated to undertake this update before any system is introduced..

# Engagement

The King's Fund [six building blocks for engaging staff](#) in the NHS (2015) is a useful model to consider here:

1. Develop a compelling, shared strategic direction.
2. Build collective and distributed leadership.
3. Adopt supportive and inclusive leadership styles.
4. Establish a culture based on integrity and trust.
5. Give staff the tools to lead service transformation.
6. Place staff engagement firmly on the board agenda.

Patient and the public engagement may need varied approaches and there are several available. NHS England (2016) offers a simple framework based around three levels of engagement:

**Information:** Power lies with healthcare professional/service provider/system.

**Involvement:** Patients have an active role but powers lie with healthcare professional/service provider/system.

**Partnership or shared leadership:** Patients share power with healthcare professional/service provider/system

With a digital systems roll out, information, involvement and partnership are **all** required. The programme clinical lead needs a plan to ensure that staff and patients are all engaged.

# Hardware and software

Hardware and software need to be costed accurately and considered as an annual cost.

Technology moves on so quickly it is wise to trial it well before you commit and check out the costs for rental and maintenance. It is a good idea to think bigger than one simple project. A strategic approach will mean you can purchase more cheaper.



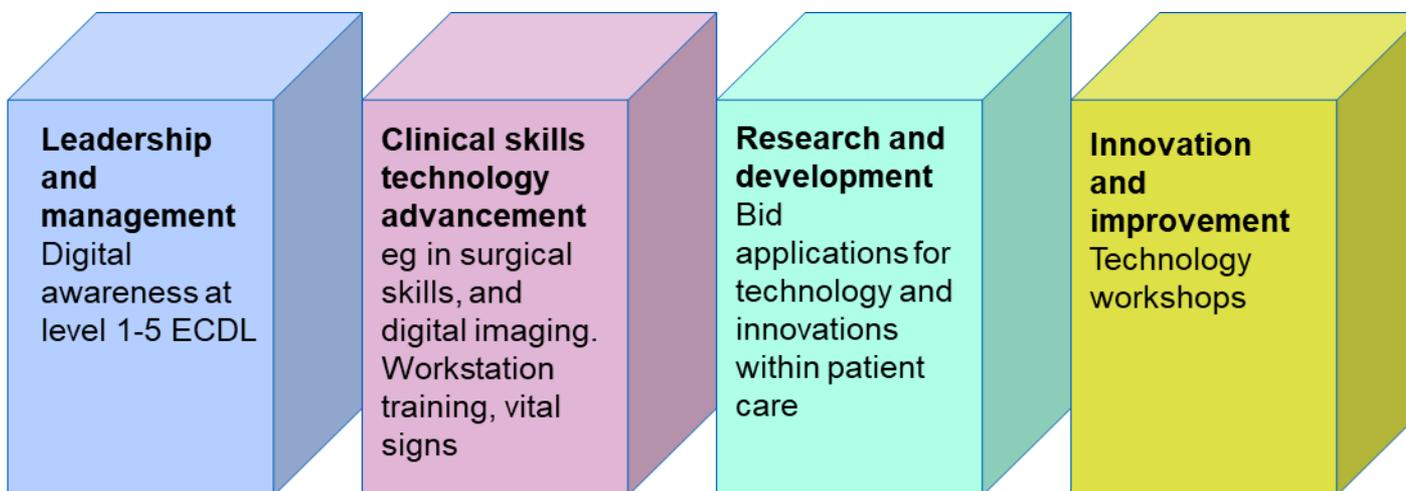
# Communications five-step plan

A communication plan needs to cover a number of elements, depending on the size of change and the people involved. For a large digital system change this step approach may be helpful.

- 1. Use staff engagement to form the vision.** You can then establish SMART (specific, measurable, achievable, relevant, timely) objectives from the beginning so that they can be clearly measured at the end.
- 2. Define your stakeholders:** all-staff, patients carers the public, partners, adjacent providers, voluntary sector organisations.
- 3. Identify your communication channels:** engage different channels for different groups and ensure all your social media (Twitter, Facebook, Instagram and your organisation webpage) delivers the same message in shorter or longer versions. You may also use newsletters, team briefs and meeting, training and education, directorate or board papers. Some stakeholder will require formal invites to consultation and open events. If the change is a systemic one, the national press may want to be involved.
- 4. Evaluate the results.** This information can also fuel a regularly monthly or quarterly report depending on the timeframe of the project.
- 5. Set a deadline and communicate it to stakeholders.** This also means that stakeholders will be aware of changes.

# Training and education

Rolling out digital systems requires involvement from education and training departments and roles. Most NHS education and training strategies cover five areas – this should all include consideration of the digital aspect.



**Mandatory training:** information governance; induction into new electronic systems and all update alterations; email training and social media awareness

ECDL: European Computer Driving Licence

# Deployment: big bang or timetabled roll out

Deploying a digital system in a healthcare setting uses general project management skills including general awareness of change management, benefits realisation, real-time testing, data migration and managing deadlines.

You will often hear terms such as 'big bang versus a slow drip effect' in relation to change management in IT systems. They are largely self-explanatory but broadly speaking depict different styles of managing a roll out.

- Big bang means going live with a new system over a short time with lots of local support and a defined beginning and end. The more advanced the organisation's project management the quicker the process becomes. A big bang approach in an organisation of 4,000 staff might take 3 to 6 months. This demands an increase in roles such as 'floorwalkers' and 'superusers', and potentially 24-hour phone access to IT support.
- With a timetabled approach there should still be a beginning and an end point, but also considerable testing and reworking. This approach can be required to bring the staff along with the process.

Neither way is right or wrong: both have challenges and benefits. Organisations need to determine which approach they required to maintain patient safety and use staff momentum. Whichever is decided, it is wise to set deadlines so that deployment can move into the project maintenance stage rather than remaining in t go live for too long.

# Project management

General project management tools are also helpful for understanding and outlining the plan for time before a digital roll out, during (the 'go live' phase) and the time afterwards (the maintenance or support phase). These are two examples:

NHS Improvement [effective project management guidance for clinical staff](https://improvement.nhs.uk/documents/2147/project-management-overview.pdf)  
(<https://improvement.nhs.uk/documents/2147/project-management-overview.pdf>).

The King's Fund (2018) [detailed guidance on managing a digital change](https://www.kingsfund.org.uk/publications/digital-change-health-social-care)  
(<https://www.kingsfund.org.uk/publications/digital-change-health-social-care>): a handy tool for clinical staff taking on this role.



# Preliminary phase

Using a checklist approach to determine if your organisation is ready for a digital roll-out can be helpful for explaining to staff at all levels what they need to do. Here are some broad considerations for this phase:

- leadership: board to ward/community team; Lead clinical roles (project lead, chief nursing information officer (CNIO), chief clinical information officer (CCIO) and chief medical information officer (CMIO)
- benchmark all stages in the preliminary stage
- clinical governance framework, data security and quality
- finance framework: what would be needed for a system that would impact positively on patient safety.
- stakeholder: engage staff/patients and the public: develop a communications/ social media strategy
- varied training opportunities
- share plans with the wider sustainability and transformation partnership (STP), patients and carers.

# ‘Go live’ phase

The ‘Go live’ phase always requires a specified term so that staff appreciate they have a defined amount of time with intensive support to help them adopt the system. Here you can manage annual leave and increase training and specialist knowledge presence in the clinical area. Here are some broad considerations for this phase:

- a date with good lead-in time.
- patient, carer and staff engagement events
- intensive training for support roles (Floorwalkers, champions clinical education roles)
- involve all executives and staff
- report patient safety throughout.



# Maintenance and support phase

This stage can often be forgotten in excitement about the new system and the rush to push it out but it is vital to consider who will maintain the system and what the ongoing maintenance and clinical support will look like. Here are some broad considerations for this phase:

- the project management office team needs to hand over to the maintenance and support team
- some form of 24-hour contact system for mistakes, queries and general useful information
- after the `Go Live` stage all clinical staff job descriptions will need to include a digital competency section
- the maintenance and support team need to evaluate and modify the system as users identify the issues
- staff, executive team, patients and carers need to see the benefits through the data generated of having the digital system. Present the data needs in board papers and feed it back to departments for use in performance management and quality improvement
- a final patient and carer stakeholder meeting to conclude any issues
- share the experience regionally and nationally at events such as The King's Fund digital congress.

# Jargon buster

| Term                                | Definition  |
|-------------------------------------|---|
| SNOMED CT                           | A structured clinical vocabulary for use in an electronic health record; the most comprehensive and precise clinical health terminology product in the world                                  |
| Data migration                      | Moving data from old systems to new digital systems. Migration can alter data so all fields need to be checked.   |
| Interoperability                    | How digital systems pass information to each other so that users can log in once but access information from varied systems. Particularly used for community and acute interfaces             |
| Business as usual (BAU)             | Often used as an end outcome of a digital roll out where staff see the digital kit as their business as usual. True of patients too, if patients need to interact with a digital technology   |
| Patient administration system (PAS) | An administrative system typically used in hospital and community service setting, that contains essential nonclinical data, such as patient attendance lists, appointments and waiting times |
| Software patch                      | A piece of software designed to fix problems with, or update, a computer program or its supporting data   |

# Jargon buster (2)

| Open source platform | This refers to software that people can modify and refine, this is often preferable in public collaboration IT projects where sharing has been agreed. |
|----------------------|--|
| Agile                | Agile means that software development can be iterative and done in collaborative teams, with joint ownership.  |
| IoT                  | The Internet of things is a network of physical devices and other items with software and sensors that connect to share data on things together.       |
| cloud                | Cloud computing allows multiple applications and platforms to share and interact safely, virtually.  |

# References

Health Education England (2017) Building a digital ready workforce. <https://hee.nhs.uk/our-work/building-digital-ready-workforce>

Health Education England (2017) Digital literacy: existing educational resource mapping and analysis.

NHS England (2014) *Next Steps on the NHS Five Year Forward View*. [www.england.nhs.uk/wp-content/uploads/2014/10/5yfv-web.pdf](http://www.england.nhs.uk/wp-content/uploads/2014/10/5yfv-web.pdf)

NHS England (2016) *Patient engagement in patient safety: a framework for the NHS*. Available at: [www.england.nhs.uk/signuptosafety/wp-content/uploads/sites/16/2016/05/pe-ps-framwrk-apr-16.pdf](http://www.england.nhs.uk/signuptosafety/wp-content/uploads/sites/16/2016/05/pe-ps-framwrk-apr-16.pdf)

NHS England (2016) *The Wachter Review* [www.england.nhs.uk/digitaltechnology/info-revolution/wachter-review](http://www.england.nhs.uk/digitaltechnology/info-revolution/wachter-review)

NHS England (2016) *Understanding Leading Change, Adding Value: a framework for nursing, midwifery and Care staff* [www.england.nhs.uk/leadingchange/about/](http://www.england.nhs.uk/leadingchange/about/)

NHS England (2017) *Leading change, adding value: what it means for nurses and care staff*. [www.england.nhs.uk/wp-content/uploads/2017/07/nursing-what-it-means-social-care.pdf](http://www.england.nhs.uk/wp-content/uploads/2017/07/nursing-what-it-means-social-care.pdf)

The King's Fund (2015) *Six building blocks for harnessing the creativity and enthusiasm of NHS staff*. [www.kingsfund.org.uk/sites/default/files/field/field\\_publication\\_file/staff-engagement-feb-2015.pdf](http://www.kingsfund.org.uk/sites/default/files/field/field_publication_file/staff-engagement-feb-2015.pdf)

The King's Fund (2016) *A digital NHS? An introduction to the digital agenda and plans for implementation*. [www.kingsfund.org.uk/sites/default/files/field/field\\_publication\\_file/A\\_digital\\_NHS\\_Kings\\_Fund\\_Sep\\_2016.pdf](http://www.kingsfund.org.uk/sites/default/files/field/field_publication_file/A_digital_NHS_Kings_Fund_Sep_2016.pdf)

<https://www.hee.nhs.uk/sites/default/files/documents/Facing%20the%20Facts%2C%20Shaping%20the%20Future%20a%20draft%20health%20and%20care%20workforce%20strategy%20for%20England%20to%202027.pdf>

---

Health Education England (2017)

# Acknowledgements

Thank you to all the organisations who gave freely of their time and shared their journey with NHS Improvement, NHS Digital and NHS England when we asked for information and visited at challenging times.

- Addenbrooke's Hospital, Cambridge University Hospitals NHS Foundation Trust
- Basildon and Thurrock NHS Foundation Trust
- Imperial College Healthcare NHS Trust
- Gloucestershire Hospitals NHS Foundation Trust
- Royal Berkshire NHS Foundation Trust
- Salford Royal NHS Foundation Trust
- University College London Hospitals
- University Hospitals Bristol NHS Foundation Trust
- University Hospitals Birmingham NHS Foundation Trust
- West Hertfordshire Hospitals NHS Trust
- West Suffolk NHS Foundation Trust

A special thank you goes to Anne Cooper and Caron Swinscoe who lent their expertise.

Contact us:

**NHS Improvement**

Wellington House,  
133-155 Waterloo Road  
London,  
SE1 8UG

**0300 123 2257**

**[enquiries@improvement.nhs.uk](mailto:enquiries@improvement.nhs.uk)**

**[improvement.nhs.uk](http://improvement.nhs.uk)**

 **[@NHSImprovement](https://twitter.com/NHSImprovement)**

This publication can be made available in a number of other formats on request.