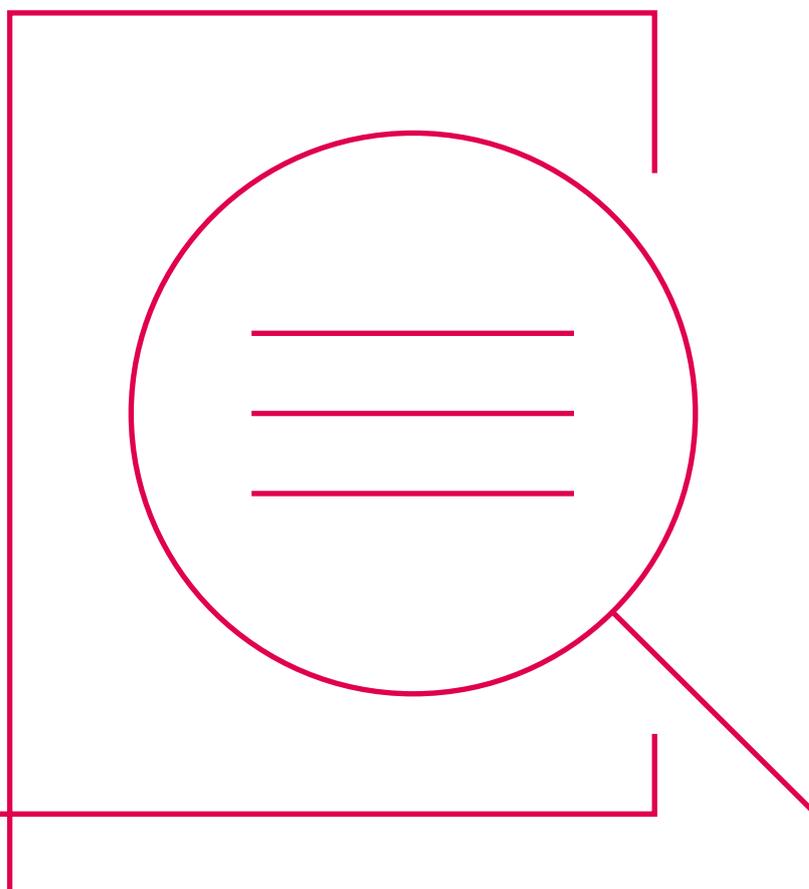**Academy of
Medical Royal
Colleges**

March 2017

Information and
Digital Technologies
Clinical Requirements
2020

Foreword

Breakthroughs in the use of data and technology are changing the way we live our lives. Adaptation of these changes has been relatively slow in healthcare, but there is now an increasing focus on learning how to use these technologies to improve the way we deliver care for our patients.

Policy developments in the digital agenda at a national level have been supported by the Academy of Medical Royal Colleges setting out its vision for NHS information systems in 2013[1] and the National Information strategy for a digital NHS in 2014.[2]

The aim of this document is to ensure that clinical priorities are met and reflected at a national level. It is the list of clinical requirements setting out what information and communication technologies clinicians would expect in 2020 in the work environment. These standards have been designed to establish a level of detail that will inform decision-making and enable accountability.

As 2020 approaches Clinicians should see the tangible areas of improvement in data and technology and use it to modernise and improve the quality of care we are able to deliver for our patients.

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Introduction

We live in an exciting age where the evolving nature of information and technology has the ability to transform the way we practice medicine. The free flow of information has led to the breaking down of barriers to knowledge, both physical and conceptual. We are already seeing the impact of these changes on our day-to-day practice – the way we record and share information and the use of mobile technology are examples of changes that have shaped the way in which we interact with patients.

The Five Year Forward View proposed a commitment to exploit the information revolution and the National Information Board (NIB) was subsequently established with the aim of putting data and technology safely to work for patients, service users, citizens and healthcare professionals. The Personalised Health and Care 2020 strategy [2] is a framework of action that aims to support frontline staff, patients and citizens to take better advantage of the digital opportunity. The priorities highlighted within this framework have been used to develop a number of roadmaps, which lay out in detail the steps required for the transformation of digital care.

As clinicians we play a pivotal role in ensuring that these roadmaps lead to tangible improvements in the quality of care that patients receive. We are in the unique position of not only understanding the needs of our patients, but also appreciating the distinct complexities of different health settings and systems. It is vital that we contribute to discussions at a national level to ensure that any decisions lead to real improvements on the ground. If our primary duty is to put our patients' interests above all else then it is essential that we actively contribute to decisions being made in this space which will inevitably have a very real impact on our patients.

The Clinical Requirements 2020 document has been written with the aim of ensuring that the Personalised Health and Care 2020 strategy reflects and meets clinical priorities. The document is a list of clinical requirements which aims to set out, in plain English, a generic description of what clinicians would expect in 2020 from the work environment with regards to information and communication technologies. It is a set of standards designed to establish a level of detail that will inform decision-making and make it accountable.

The Academy believes that clinicians should play a key role in shaping the Personalised Health and Care 2020 strategy. Through active engagement and continuing dialogue we can ensure that the core values held dear by both patients and clinicians are enshrined in these standards. Clinicians, more than any other party, appreciate the importance of patient safety in any dialogue about information or technology. They also understand the significance of recognizing and addressing the potential for health inequality at early stages of policy development. Clinicians are regularly faced with difficult decisions where they must balance the need for efficiency whilst ensuring high standards of care. They understand the importance of prudently allocating resources and can give key insights into this area.

This is a valuable opportunity to engage, shape and steer the conversation so that these clinical priorities and values are met.

The Personalised Health and Care 2020 strategy is an ambitious framework of action that requires buy-in from healthcare professionals at all levels. Adequate resource and time must be allocated so that clinicians can meaningfully contribute to this space. It is also vital that we, as clinicians, engage in these discussions to ensure that we represent our patients' interests and provide the valuable insights that will be essential for the true transformation of care.

Clinical requirements: the doctor's perspective

Overarching objectives

1. There must be adequate access to locally provided hardware and wireless networks so that a digital healthcare system is present for all clinical encounters when needed, including remote access if necessary. It must be practical to use at the point of care without queuing or waiting.

2. The digital system should have easy and relatively complaint free access (with patient consent, or in an emergency when consent cannot be obtained) to the entire patient record, across care boundaries.

3. Digital systems required for delivering direct patient care should be intuitive to use and commensurate with the use of non-permanent staff members:

   — Ideally it should take less than one hour to learn to safely use a new system for agency or locum staff AND
   — Ideally it should take less than 0.5 day to use the system optimally for all users.

4. All technology used in the NHS should be compliant with NHS clinical safety standards. The minimum standards to be adopted are: SCCI 0129 (for manufacturers) and SCCI 0160 (for healthcare organisations).

The patient record

5. The information in the patient record should be appropriately consolidated and visualised so that relevant information is displayed at the point of clinical contact.

6. Care plans will have a common clinical meaning and structure so that the content is interoperable and shared between clinical teams and the IT systems that support them, without the need to re-enter data. Care plans should be modifiable to reflect the needs of different patients and specialties.

7. Test results (both radiological and pathological) must be available electronically to the relevant clinicians who need them. This will support better decision making, improve the communication of test results to patients, and prevent unnecessary duplication of tests.

8. Patient wishes in regard to treatments, Do Not Attempt Resuscitation (DNAR orders), organ donation, consent for research and specimen collection should be embedded in the electronic record in a way that these patient decisions can be most easily seen by any clinician involved in their care.

Digital interaction between patient and clinician

9. Clinicians will be able to prescribe certified medical devices, including apps, with appropriate education to enable safe patient use. These prescribed certified medical devices should be able to interoperate with the user's NHS record.

10. Patient initiated or recorded data (including from apps or wearables) should be capable of being part of every provider record by 2020, subject to adequate safeguards being agreed.

11. Clinicians will be able to interact virtually with patients AND other clinicians, if appropriate (telephone, email, video-conferencing). These consultations should be recorded into the patient's electronic record to a standard expected professionally as well as technically.

12. Clinical systems will increasingly analyse the patient record and automatically populate red flag alerts in decision support tools when certain relevant information is entered, to include:

    — Allergy information
    — Medicine interactions
    — Individual risk scores
    — Relevant alerts, with avoidance of alert fatigue and workarounds.

13. Clinical decision support and decision making tools should be nationally regulated. This should include agreed:

    — Research standards agreed with Health Research Authority [HRA]
    — Knowledge approval by NICE and professional bodies working together
    — Device registration by MHRA
    — Technical standards via NHS Digital.

This governance should be included as part of all contractual arrangements.

14. Digital systems supporting self-care through a personal health record will increasingly generate automatic prompts which will interact with the patient [if permitted] including: Chronic disease monitoring

    — Medicines reminders
    — Tracking functions for monitoring treatment schedules
    — Screening information
    — Pending prevention procedures
    — Appointment reminders
    — Patient or carer information materials
    — Feedback for service improvement.

15. Digital technologies should support the clinician in performing effectively in their working day. This should include technologies which:

    — Replace the traditional patient "list" – accurately identifying and locating the patients in a hospital that an individual clinician is responsible for
    — Improve communication within and across teams
    — Facilitate efficient task management including rostering and workflow for all staff but particularly community clinicians working across geographies
    — Provide access to up to date information and evidence services.

Digital Prescribing

16. All prescriptions should be viewable within electronic patient records and all prescribing must be shared with the patient's GP.

17. Community medication records can be used to semi-automatically populate hospital prescription charts which can be modified if necessary. Hospital prescription chart medications should automatically populate discharge summaries and community/GP medication records following a medicines reconciliation process, which must involve a clinical decision.

Administrative functions

18. Diagnostic, procedural and medication data will be coded using national standards (technical and professional), using the same coding throughout the NHS. This data will be able to be used to automatically populate patient records, reducing transcription time and eliminating errors.

19. Record headings for structuring the patient record should support both coded data and narrative, such that clinical context is captured along with clinical richness that cannot be coded.

20. Clinical records, entered by clinicians at the point of care, should automatically feed administrative tools which populate payment systems, safety and performance datasets. Clinicians should not spend time on administrative coding but should concentrate on accurate and complete records for the care of individual patients which meets professional standards of recording.

Transfers of care

21. Authorised clinicians will be able to book ambulatory care encounters for patients in primary (excluding GP), secondary or tertiary care using a standard e-referral system, including for follow-up of patients leaving hospital.

22. There should be national registers of practices or services so that clinical communications can pass securely from one service to another and real time communication accompanies transitions of care.

23. Transfer of care communications should use standard structured information models produced by the Professional Record Standards Body (PRSB), which are based on the Academy standards, to enable interoperability between information systems.

Clinical Governance

24. It will be possible for any clinician who has performed a surgical operation, interventional procedure, or given an anaesthetic or sedation to support such a procedure, to be identified from electronic records and in secondary use data sets.

25. Systems will have inbuilt end user query tools which will support individual, departmental or provider level:

    — Clinical audit, service improvement and innovation
    — Service management, including real-time performance information
    — Information governance testing to ensure access to records is always relevant and justified via audit trails
    — Activity logs for maintaining professional registration and regulation
    — Complaint investigation
    — Incident investigation including root cause analysis.

References

1.   Academy of Medical Royal Colleges 2013, ' i-care: Information, Communication and Technology in the NHS' http://www.aomrc.org.uk/publications/reports-guidance/icare-ict-in-the-nhs-1013/

2.   National Information Board 2014, 'Personalised Health and Care 2020: Using Data and Technology to Transform Outcomes for Patients and Citizens: A Framework for Action' https://www.gov.uk/government/publications/personalised-health-and-care-2020