Digital health & care

Reading list
October 2019
This reading list has been compiled by the Health Management Library team. It is not intended to be comprehensive but contains a selected list of references aiming to give an introduction to the topic.

Take a look at our Digital health & care topic guide to find more: policy and guidance, publications, toolkits and useful websites.

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DIGITAL HEALTH & CARE

A selection of books and reports

This report outlines the benefits that investment in data analytics could bring to clinicians, managers and leaders, decision makers and patients.

Gives a vision of the NHS in the medium-term future. Discusses the role that harnessing knowledge is likely to have on services. Specifically the impact of digital technology on care delivery, and the role of social innovation and human behaviour are discussed.


Case studies to illustrate the use of technological innovations in health services.

With the founding of a new body, NHSX, to lead national policy for technology, digital and data, this report seeks to explain how national policy for digitisation is working from the perspective of acute trusts.

Discusses how digital technology is improving mental health services in the United States and Australia and the lessons that can be learned for the NHS.

The Department of Health’s vision on what is needed to enable the health and care system to make the best use of technology to support preventative, predictive and personalised medicine.


Looks at cyber security issues relevant to the NHS, and the vulnerabilities in NHS IT. It explains the national structure of accountability for cyber security, and examines the challenges of emerging technologies. It also provides recommendations for meeting these challenges.

*Digital transformation is about adopting processes that allow your organisation to investigate experiment and strategically employ new technology on an ongoing basis.*

*Sets out the possibilities that digital technology promises for the future of health care and how the possibilities can be realised.*

*Examines trends in three areas relating to digital technology in health services - innovation, evidence, and adoption - in order to assess what is happening in these areas that might impact on NHS healthcare services. Specifically looks at the use of "Apps" in health services, how they have grown in the last few years and their potential for saving money and improving services.*

*Considers how technology could be adopted quicker and more widely by the NHS to improve the care that patients receive and to drive better health outcomes. The report tracks the patient journey, from prevention and diagnosis in the community, into primary and secondary care, through into management of long-term conditions. It sets out proposals for future development of technology in the NHS, which impact across the patient journey.*


*This report examines the key elements of implementing large-scale change involving digital technology drawing on experience from case studies, supported by a review of published evidence about large-scale digital change in health care.*


*This report looks at the current landscape of data-driven technologies and their applications in mental healthcare, outlining areas where these tools offer the most potential for the NHS and its patients.*

Looks at the use of digital technologies in healthcare from a sociological viewpoint.


The government’s strategy showing how technology will be used to reshape and improve services, support person-centred care, and improve outcomes.

Explains how to harness data to improve your organisation's performance. Covers tools, techniques and tactics used by some of the biggest 'disruptive' companies in the world to turn data into business performance.


A selection of journal articles

The author reports on work to develop machines that can diagnose conditions faster and more accurately than people.
https://www.bmj.com/content/355/bmj.i5680

Describes an action learning programme to create 'digitally ready' nurses.

Provides an in-depth analysis of the application of 'Big Data' in the field of medicine. Discusses the implications of wearable sensing devices as well as personalised medicine. The advantages of the analytical capabilities of Big Data are also discussed.

The article looks at how harnessing big data and machine learning will help clinicians make safer, informed, and better choices. Topics mentioned include combination of data recorded in single records with data from elsewhere to form a rich seam of material, definition of technology according to the Five Year Forward View, and development of a vision of a future that includes technology as an enabler of modern practice.

http://search.ebscohost.com/login.aspx?direct=true&AuthType=ip,athens,cookie,url,uid&db=heh&AN=129885983&site=ehost-live


Discusses the possibilities of ‘digital transformation’ for improving efficiency in the public sector.


The complexity and rise of data in healthcare means that AI will increasingly be applied within the field. Several types of AI are already being employed providers of care and life sciences companies. The main categories of applications involve diagnosis and treatment recommendations, patient engagement and adherence, and administrative activities. Ethical issues in the application of AI to healthcare are also discussed.

http://futurehospital.rcpjournal.org/content/6/2/94.full


The article discusses the importance of using data analytics in healthcare organizations.


This article discusses the growing role of telehealth in standard health care, the facility and impact of using digital technology in day-to-day patients’ management and the best evidence available from those using digital technology on the front line.

http://search.ebscohost.com/login.aspx?direct=true&AuthType=ip,athens,cookie,url,uid&db=heh&AN=124159094&site=ehost-live


There is great hope that in healthcare, AI may allow for better prevention, detection, diagnosis, and treatment of disease. While many fear that AI will disrupt jobs and the physician-patient relationship, others believe it can eliminate many repetitive tasks to clear the way for human-to-human bonding and the application of emotional intelligence and judgment. Reviews several recent studies of AI applications in healthcare that provide a view of a future where healthcare delivery is a more unified, human experience.

https://www.nature.com/articles/s41746-017-0012-2

Advances in technology are transforming the way that health data is collected and used. This includes improvements in existing technology as well as innovations in mobile technology such as smartphone apps and wearables. Health data is strictly regulated under the EU Data Protection Directive 95/46/EC. Under current data protection rules, health data is broadly interpreted and will, in most circumstances not connected to the provision of healthcare, require organisations to obtain explicit consent from individuals for its collection and use. Further data protection compliance issues arise such as identifying who is a controller, ensuring transparency, using health data for research purposes and keeping health data secure.

http://search.ebscohost.com/login.aspx?direct=true&AuthType=ip,athens,cookie,url,uid&db=heh&AN=116430835&site=ehost-live


This review examined the published literature with the purpose of reviewing current research to develop a new agenda regarding the use of 'big data' in healthcare. The outcome of the review is a proposed framework on big data capability and its impact on healthcare organisation performance.


The purpose of this review was to map the field of digital technologies for informal and formal care that have already been explored in terms of acceptance, effectiveness and efficiency, and to show the scope of the used methods, target settings, target groups and fields of support.

https://doi.org/10.1186/s12913-019-4238-3


Argues that to maximise the benefits of artificial intelligence (AI) in healthcare and to build trust among patients and practitioners, it will be essential to robustly govern the risks that AI poses to patient safety.

https://qualitysafety-bmj-com.knowledge.idm.oclc.org/content/28/6/495


Emergency admissions are a major source of healthcare spending. This study aimed to derive, validate and compare conventional and machine learning models for predicting patients' first emergency admission. Machine learning methods are capable of capturing complex interactions that are likely to be present when predicting less specific outcomes, such as this one.

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6245681/

Discusses the benefits of machine learning in medical diagnoses and treatment of disease. Looks at requirements to explain clinical judgments that are made based on machine learning algorithms, in light of the General Data Protection Regulation legislation. https://www-bmj-com.knowledge.idm.oclc.org/content/364/bmj.1886


The purpose of this study is to develop a framework for the success factors of a technology-based service encounter in the healthcare industry. Roles of humans and technology and success factors in the encounter are reviewed and proposed. A systematic literature review supports the proposed framework, which explains success factors for technology-based service encounters in healthcare.
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