Health Services Transformation Bulletin

6th November 2023

Artificial intelligence

Machine learning prediction of the total duration of invasive and non-invasive ventilation during ICU stay [Schwager E. *PLoS Digital Health*]
[This study aimed to improve the accuracy of predicting how long a patient in the ICU will need a ventilator, which is crucial for patient safety and hospital resource management. Authors used a technique known as gradient boosting regression, which leverages commonly available ICU data. The models performed significantly better than existing standards, with errors being notably lower.]
Available here

Artificial intelligence helps predict falls in the elderly [Fuller C-F. *British Journal of Healthcare Assistants*]
[UK healthtech company Cera Care (ceracare.co.uk) has launched an artificial intelligence (AI) discovery that predicts with 83% accuracy people falling at home a week before it happens. Cera is rolling out AI that is set to improve social care and prevent hospitalisations.]
Available here [NHS OpenAthens account required]

AI to prioritise patients waiting for elective surgery [Academic Health Science Networks]
[AHSN case study: To reduce the elective backlog in Cheshire and Merseyside, the Innovation Agency, the AHSN for the North West Coast, identified three trusts that would benefit from the use of an artificial intelligence system. Provisional findings show a three-day reduction in the average length of stay, post-operative avoidable harm events/ICU admissions minimised, and the conversion of many inpatient stays to day cases.]
Available here

Autonomous AI systems in the face of liability, regulations and costs [Saenz AD. *npj Digital Medicine*]
[Autonomous AI systems in medicine promise improved outcomes but raise concerns about liability, regulation, and costs. With the advent of large-language models, which can understand and generate medical text, the urgency for addressing these concerns increases as they create opportunities for more sophisticated autonomous AI systems.]
Available here

Can the NHS manage without AI? [The King's Fund]
[In November 2022 artificial intelligence (AI) became a hot topic of discussion in the news with the dramatic improvement in a type of AI called large language models (LLM). Now, a year later more than half of UK citizens have heard of one of these newer AI tools. An LLM is AI software that is provided with very large volumes of text and it uses this to create learning on how sentences are constructed, the links between words and the unwritten rules of language.]
Available here

Demand and capacity

Getting It Right First: Closing the gap: actions to reduce waiting times for children and young people
[NHS England]
[Data on elective care shows that activity for children and young people is still below pre-Covid-19-pandemic levels and recovery remains behind rates seen in adult services. This guidance contains 10 actions to help reduce waiting times for children, as well as quick links to data, resources and best-practice case studies. The 10 actions address how to improve theatre capacity, increase use of operating theatres and streamline pathways of care. It also includes practical measures.]
Available here

Increasing staff time for patient facing care on an inpatient geriatric unit through modification of multidisciplinary board rounds: a quality improvement project [Britton H. *BMJ Open Quality*]
[While significant staffing shortages continue, local innovations focused on staff time may have the potential to support effective use of limited resources.]
Available here

Design of care pathways

Moving care closer to home: three unanswered questions [The King's Fund]
[Danielle Jefferies, Policy Analyst at The King's Fund, considers what the health system needs to do to move care closer to home.]
Available here

Adult social care and the NHS: two sides of the same coin [NHS Confederation]
[This report provides an overview of total capacity & national trends across the health & care sector as well as the variation across the country. It focuses on demand for & provision of state-funded social care for older people as the largest group drawing on care & support, but finds that fewer people are being supported by state-funded social care in England despite the increase in people aged 65 & over. The need for care & support is also increasing among both working-age adults & children.]
Available here

A community rehabilitation and reablement model [NHS England]
[This guidance consists of best practice that systems should consider in connection with their intermediate care and rehabilitation services and implement where appropriate locally, and affordable within available budgets. The community rehabilitation model aims to increase capacity and access to high-quality therapy-led rehabilitation assessments and interventions that are timely, safe and person-centred, for people discharged on intermediate care pathways from acute settings and virtual wards.]
Available here

Reducing unplanned hospital admissions from care homes: a systematic review [Chambers D. *Health and Social Care Delivery Research*]
[Effective implementation of interventions at various stages of residents' care pathways may reduce

unplanned admissions. Integrated care and quality improvement programmes providing additional support to care homes appeared to reduce unplanned admissions relative to usual care. Most interventions are complex and require adaptation to local contexts. Work at the interface between health and social care is key to successful implementation.]
Available [here](#)

Digital healthcare

Digital transformation in the NHS: government response to the Committee's eighth report [Health and Social Care Committee]
[As well as looking at the systems and innovation required for digital transformation within the NHS, the original report outlined the issues around preparing the NHS workforce such as staff involvement, changing roles and training. However, in this report, ministers have rejected a call by the Committee to pay higher salaries to boost the NHS's digital workforce to allow it to compete with the private sector.]
Available [here](#)

Intermediate care framework for rehabilitation, reablement and recovery following hospital discharge [NHS England]
[This framework consists of best practice guidance and a number of recommended actions that systems should consider in connection with their intermediate care services, and implement where appropriate locally, and affordable within available budgets. It is focused on step-down intermediate care – time-limited, short-term health and/or social care provided to adults who need support after discharge from acute inpatient settings and virtual wards to help them rehabilitate, re-able and recover.]
Available [here](#)

Access denied? Socioeconomic inequalities in digital health services [Ada Lovelace Institute]
[This report seeks to understand how people who have lived experience of poverty and ongoing health concerns are impacted by health inequalities when interacting with patient-facing digital health services. The findings suggest a need for policy-makers, health care leaders, and digital health service designers and developers to reconsider how they use data and how they design and deploy digital health services.]
Available [here](#)

Inclusive digital healthcare: a framework for NHS action on digital inclusion [NHS England]
[This document builds on previous NHS Digital guidance on digital inclusion for health and social care. It should be used to help design and implement inclusive digital approaches and technologies, which are complementary to non-digital services and support.]
Available [here](#)

The future of nursing and digital health: position statement [International Council of Nurses]
[A new position statement by the International Council of Nurses (ICN) highlights the ways in which the digital technology revolution supports the rapid and positive transformation of health care systems and facilitates the delivery of nursing care and how people engage with their health and wellness.]
Available [here](#)

Smartphone apps for point-of-care information summaries: systematic assessment of the quality and content [Lee M. *BMJ Evidence-Based Medicine*]
[Future apps should report a more detailed evidence-based methodology, be accessible for offline use and support search in more than one language. There should be clearer information provided in future apps regarding the declaration of authorship and conflict of interest.]
Available [here](#) [NHS OpenAthens account required]

Health records and data

Mapping and evaluating national data flows: transparency, privacy, and guiding infrastructural transformation [Zhang J. *The Lancet Digital Health*]
[Most UK National Health Service (NHS) care interactions are recorded in electronic health records, resulting in an unmatched potential for population-level datasets. However, policy reviews have highlighted challenges from a complex data-sharing landscape relating to transparency, privacy, and analysis capabilities. The authors use public information sources to map all electronic patient data flows across England, and provide recommendations to support data infrastructure transformation.]
Available here

Improvement

Building lean improvement skills at scale: an evaluation of a massive open online course in the English NHS [Smith IM. *BMJ Open Quality*]
[Lean Fundamentals helped large numbers of participants to develop Lean process improvement skills—avoiding costs associated with commercial Lean training in the range £1.7 m to £3.4 m and generating ROI of between £11 and £23 per every pound spent on delivery. This demonstrates that massive online is an effective and efficient method for building improvement knowledge and skills at scale.]
Available here

Breaking the Rules for Better Care [Institute for Healthcare Improvement]
[Step-by-step guide to get started with planning and hosting a Breaking the Rules initiative in your organization. IHI has periodically urged organizations to ask their patients, families, and staff a simple question: "If you could break or change any rule in service of a better care experience for patients or staff, what would it be?" Every time, IHI has seen an enthusiastic response to the idea of removing unnecessary barriers to reimagining and redesigning our health care systems.]
Available here

Integrated care

Unlocking the power of health beyond the hospital: supporting communities to prosper [NHS Confederation]
[This report explores how investment in community care can improve system productivity as it relates to spend. It finds that acute health care spending between 2020/21 and 2021/22 grew faster than any other form of NHS spending, despite performance continuing to be challenged with pressure on A&E, beds and discharges. It concludes that responding to these pressures requires a more holistic understanding of system productivity.]
Available here

Patient-centred care

A case study of the impact of a dietitian in the multi-disciplinary team within primary care: a service evaluation [Hickson M. *Journal of Human Nutrition and Dietetics*]
[The dietitian can improve patient-centred care for several patient groups; enhance learning for staff around nutrition and dietary issues; and contribute to more efficient working and cost savings around prescription of nutritional products. This was an evaluation of one service and further research is needed to understand the value dietitians can contribute and the factors supporting effective and efficient working in this context.]
Available here

Research and Innovation

Plain language summaries: enhancing patient-centred care and improving accessibility of health research [Riganti P. BMJ Evidence-Based Medicine]
 [The primary audience of clinical research PLS should be patients and caregivers. This is the most equitable/inclusive strategy and is an ethical imperative to promote patient-centred care/patient involvement in health research. PLSs can improve health literacy by providing people with the opportunity to expand their understanding of health-related conditions and encouraging them to continue learning. They could enhance how healthcare professionals communicate scientific evidence to patients.]
Available here [NHS OpenAthens account required]

Social prescribing

Implementation and impact of a social prescribing intervention: an ethnographic exploration [Pollard T. *British Journal of General Practice*]
[Careful consideration of how social prescribing is implemented within primary care is required if it is to provide the support needed by those living in disadvantaged circumstances.]
Available here

Virtual wards and hospital at home

Interim Professional Standards for Hospital at Home, including Virtual Wards [Royal Pharmaceutical Society]
[These interim professional standards have been developed to assure high quality care, equity of care and best outcomes for people in the Hospital at Home setting in relation to pharmacy services as well as medicines use. Hospital at Home services are now growing at pace and scale, with the aim to support NHS recovery and enable reforms to community; and urgent and emergency care.]
Available here

Virtual ward platform technologies for acute respiratory infections [National Institute for Health and Care Excellence]
[Early value assessment (EVA) guidance on virtual ward platform technologies for acute respiratory infections.]
Available here

Workforce

NHS Health Careers toolkit [NHS Health Careers]
[This new toolkit aims to support employers with inspiring the next generation and to offer the information they need to make educated career decisions. The guidance contains top tips for planning and running careers events and activities as well as some examples of good practice to ensure that the events meet their objectives.]
Available here

Good Recruitment for Older Workers: A new toolkit [Centre for Ageing Better]
[The experiences of older workers are crucial to organisational success. This toolkit, published in collaboration with CIPD and REC, helps organisations reap the benefits of being more age-inclusive employers.]

Available [here](#)

Managing the healthcare support worker workforce post-pandemic: the organisational perspective Part 2/2 [Kessler I. *British Journal of Healthcare Assistants*]
[The second of two-parts, this article discusses the importance of the HCSW workforce and the continued HCSW contribution to the delivery of high-quality care, which has combined with a growing recognition of the role as a stepping-stone into registered nursing and, therefore, a means of addressing broader recruitment challenges.]
Available [here](#)

A multidisciplinary approach to retaining support staff [White H L. *British Journal of Healthcare Assistants*]
[Healthcare assistants are a vital part of the nursing team, but turnover rates are high. Implementation of a multidisciplinary approach could increase job satisfaction and reduce turnover rates.]
Available [here](#) [NHS OpenAthens account required]

Waste not, want not: strategies to improve the supply of clinical staff to the NHS [Nuffield Trust]
[For every five nurse training places, only three nurses join the NHS. The rate of dropouts in the staffing pipeline from student to early-career clinician is high, with significant numbers opting out before or soon after joining the NHS, contributing to an understaffed health service under ever-greater strain. This analysis sets out the scale of NHS attrition and puts forward a 10-point plan to improve retention, including a policy proposal to gradually write off student debt over 10 years.]
Available [here](#)

Costs and cost-effectiveness of improved nurse staffing levels and skill mix in acute hospitals: A systematic review [Griffiths P. *International Journal of Nursing Studies*]
[Although more evidence on cost-effectiveness is still needed, increases in absolute or relative numbers of registered nurses in general medical and surgical wards have the potential to be highly cost-effective. The preponderance of the evidence suggests that increasing the proportion of registered nurses is associated with improved outcomes and, potentially, reduced net cost.]
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Agile working to improve staff retention [NHS Employers]
[This article looks at research into how customised working arrangements can meet the needs of employees and organisations and tips for implementation.]
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