Hello and welcome to the first of a series of quarterly supplements to the monthly HMIU covering topics that may be relevant to the new-build healthcare facility for West Suffolk.

You will need an OpenAthens password to read some of the content. You can register at [https://openathens.nice.org.uk/](https://openathens.nice.org.uk/).

As always, I hope you find the content relevant and helpful and please contact me with any feedback or suggestions for future issues.

**New hospital design**

*Lessons from the last hospital building programme, and recommendations for the next. July 2020*

Nuffield Trust

This paper gathers lessons from the last hospital building programme, and recommendations for the next and brings together the views of a number of experts who were involved in the previous phase of hospital development.

Contributors included NHS project directors, architects, health planners, researchers and consultants. We asked them to identify some of the most important learning, and the practical and policy implications that can be taken from this experience.

Some key issues identified by the experts that have immediate relevance include:

- the need to improve planning and the assumptions that underpin it
- identifying ways to improve the quality of design, procurement, project management and construction
- concerns regarding the approvals process.
10 hospital projects nearing completion

Construction News April 2020

In London, Birmingham, Manchester, Glasgow, Harrogate and Bristol, contractors are helping the NHS turn existing buildings into field hospitals to boost the nation’s capacity to treat coronavirus cases. Across the country, a number of other healthcare facilities are moving towards completion, some within the next few months, some further into the future – and some that should already have opened.

Designing for Patient Safety and Efficiency: Simulation-Based Hospital Design Testing. Oct 2020

Full text unavailable, ask the Library for assistance wsh-tr.library@nhs.net

In the design of new healthcare facilities, the ability to mitigate risk in the preconstruction period is imperative. Simulation-based Hospital Design Testing (SbHDT) in a full-scale cardboard mock-up can be used to proactively test the complex interface between people and the built environment.

This study was a prospective investigation of (SbHDT) in the schematic design planning phase for a 400-bed freestanding children's hospital where frontline staff simulated episodes of care. Latent conditions related to design were identified through structured debriefing. Failure mode and effect analysis was used to categorize and prioritize simulation findings and was used by the architect team to inform design solutions.

SbHDT in the schematic phase of design planning was effective in mitigating risk related to design prototypes through effective identification of latent conditions and validation of design changes.

It's time for the mandatory use of simulation and human factors in hospital design. Aug 2020

Building a new healthcare facility is complex and poses challenges in delivering a facility that is fit for purpose and designed to minimise latent environmental and process errors.

This article summarises what the disciplines of Human Factors/Ergonomics and Simulation can offer to the design and testing of new hospital builds. It argues the incorporation of both disciplines throughout the planning, design, commissioning and operations phases of the building project can minimise latent safety risks to promote patient safety and staff well-being across the building lifecycle. Future directions and policies should include incorporation of human factors design and mandatory process testing before opening.

Available in full text at Australian health review: a publication of the Australian Hospital Association from ProQuest (Health Research Premium) - NHS Version
Building for Change: Comparative Case Study of Hospital Architecture. Jun 2020

Most hospitals are designed for highly specialized medical functions, which is often in conflict with the need to design the hospital facility to accommodate evolvement and change of functions over time.

The study compares two hospital buildings with a very similar configuration and medical program but with significantly different architectural design strategies: One was designed for an unknown future medical function, and the second was designed for a specific medical function. The study analyses the two hospital buildings by their design strategy, planning, design process, and construction by phases and compares their change in practice over the last twelve years.

The design strategy to fit a specific function limited the hospital ability to make changes during the design process, construction, and occupancy phases. Systematic design of system separation for an unknown function, in comparison to a "tailor-made" approach in the design for a specific function, was found to support a variety of changing medical programs.

Architectural design strategies developed in an early stage of the design process have a major impact on the future evolution of the hospital facility. The different results between the two projects also demonstrate the greater influence of healthcare policies, hospital organization culture, and infrastructure funding models on the architecture and flexibility of hospitals.

Available in full text at HERD from Unpaywall

De-centralised healthcare delivery

Social prescribing and NHS facilities: how could the NHS better use its facilities to support social prescribing, holistic care and community resilience?

NHS Property Services

The NHS long-term plan has pledged to refer at least 900,000 people to social prescribing by 2023/24 to help improve people's wellbeing; the fitter, healthier and more socially connected people are, the less likely it is they'll need to access local GP or other health professionals. This research carried out by The King's Fund and based on a survey conducted with more than 2,000 people in England, shows that there's also a strong appetite from the public for these services. The research was commissioned by NHS Property Services.
**Vertical integration of GP practices with acute hospitals in England and Wales: rapid evaluation**

Rand Europe

In several locations across England and Wales, NHS organisations responsible for managing acute hospitals have also taken over the running of primary care medical practices.

This report, commissioned by the National Institute for Health Research and undertaken together with the Health Services Management Centre at the University of Birmingham and the Health Services Research Group at the University of Cambridge, evaluates what has led to this kind of vertical integration in England and Wales, how it has been implemented, and with what consequences.

**Digital innovations**

**Digital health and Covid-19: a PRSB consultation**

Professional Records Standards Body (PRSB)

This report examines the digital transformation of health and care services during the pandemic and recommends how the system can use the lessons from Covid-19 to advance digital change, while maintaining safety and prioritising citizens’ needs. The report is based on consultation with more than 100 PRSB members and partners including the Royal Colleges, social care system leaders, health care providers, patient groups, regulators and others.

**Digital Inclusion in Health and Care: Lessons learned from the NHS Widening Digital Participation Programme (2017-2020)**

Good Things Foundation

Good Things Foundation has been working with NHSX, NHS Digital, NHS England and local partners in health, social care, and community sectors to improve digital participation in health and care.

The NHS Widening Digital Participation programme completed in March 2020 - the month when the country went into lockdown following the outbreak of coronavirus. Since then, the national and community response to COVID19 has
revealed digital as a universal need. Digital participation has become essential for our lives, for our health and wellbeing.

This new report brings together the lessons learned, practical tips and recommendations from the Widening Digital Participation programme. The lessons learned could not be more timely.

### Environmental factors

Nothing to report this quarter.

### Workforce

Nothing to report this quarter.

### Patients and carers

**Health effects of heating, ventilation and air conditioning on hospital patients: a scoping review**, Aug 2020

In the face of climate change, the protection of vulnerable patients from extreme climatic conditions is of growing interest to the healthcare sector and governments. Inpatients are especially susceptible to heat due to acute illness and/or chronic diseases. Their condition can be aggravated by adverse environmental factors. Installing air conditioning can be seen as an element of public health adaptation because it was shown to improve mortality rates of hospital patients experiencing hot temperatures. Still, the mediating factors and resulting health effects are largely unknown.

The publications described the installation of HVAC on general wards and in intensive care units. Main topics were heat stress protection and support of thermoregulation, but also the rewarming of hypothermic patients. HVAC use resulted in a recovery effect shown by improved vital signs, reduced cardiac stress, accelerated recuperation and greater physical activity. This protective effect was demonstrated by a shorter hospital stay for patients with respiratory disease and a reduction of mortality for heat illness patients.

This scoping review summarises the fragmented evidence on health effects of HVAC and fan utilisation for inpatients. Installing HVAC has the potential to improve patients’ outcomes and to make hospital treatment more efficient during heat waves. The application of HVAC could be a promising adaptation measure to mitigate the adverse effects of climate change on health and healthcare systems.
Potential infection control risks associated with chilled beam technology, experience from a UK hospital, Aug 2020

Energy efficiency technologies are now a feature in hospital design with active chilled beams an example of one in use worldwide. Such innovations have clear benefits but there is paucity of information with respect to any infection control risks. We describe our experience of chilled beam technology from one of our hospitals where we faced challenges with cleaning and episodes of water ingress including condensation. We highlight the importance of infection control risk assessment in relation to new technologies and the implementation of appropriate risk mitigation.

Design Models for Single Patient Rooms Tested for Patient Preferences, Jul 2020

Using 3D design models, this study aims to better involve patients in the design of hospitals by investigating what physical environmental characteristics in hospital patient rooms are valued by patients.

A main finding is that patients and medical professionals consistently choose for hospital rooms with the highest amount of daylight access. What this study adds is that the orientation of the windows matters as well. Horizontal windows, allowing for a panoramic view, were twice as much chosen than were vertical windows.

Another important finding concerns patients' preferences for an open door, suggesting patients prefer to stay "connected" to the outside world. This study is important as it shows, empirically, that patients may make different choices if in research the rooms are better conceptualized and thus visualized and if multiple design features are assessed as configuration rather than using a sequential, "one-design-characteristic-after-another" approach.

Co-Production

How do we incorporate patient views into the design of healthcare services for older people: a discussion paper.

People's emotional and practical response to challenges in health and well-being and the responsiveness of systems to their needs is crucial to improve the quality of service provision. This is a particularly important aspect of care for older people as felt, expressed and normative needs may be fundamentally different and vary as they become increasingly dependent.
Co-production shifts the design process away from the traditional 'top-down' medical model, where needs assessments are undertaken by someone external to a community and strategies are devised that encourage these communities to become passive recipients of services. Instead, an inductive paradigm of partnership working and shared leadership is actively encouraged to set priorities and ultimately helps improve the translational gap between research, health policy and health-service provision.

The four methodological approaches discussed in this paper (Priority Setting Partnerships, Discrete Choice Experiments, Core Outcome Sets and Experience Based Co-Design) represent an approach that seeks to better engage with older people and ensure an inductive, co-produced process to the research and design of healthcare services of the future. These methods facilitate partnerships between researchers, healthcare professionals and patients to produce more responsive and appropriate public services for older people.

Available in full text at BMC oral health from BioMed Central

Co-production in practice: how people with assisted living needs can help design and evolve technologies and services.

We conducted 10 co-design workshops with users of telehealth and telecare, their carers, service providers and technology suppliers. Using vignettes developed from in-depth ethnographic case studies, we explored participants' perspectives on the design features of technologies and services to enable and facilitate the coproduction of new care solutions.

Analysis revealed four main themes. First, there is a need to raise awareness and provide information to potential users of assisted living technologies (ALTs). Second, technologies must be highly customisable and adaptable to accommodate the multiple and changing needs of different users. Third, the service must align closely with the individual's wider social support network. Finally, the service must support a high degree of information sharing and coordination.

Available in full text at Implementation science : IS from BioMed Central

QI

Implementing a quality improvement programme in a locality mental health service. Jan 2020

In the summer of 2017, a QI programme was endorsed and supported by the clinical director and the head of nursing in the mental health delivery unit of a Welsh health
board. This article describes the process of introducing the QI programme in one of the three locality mental health services in the health board.

A QI board was established to oversee the process and provide support, and QI champions were introduced to develop QI skills and capacity among staff across the locality mental health service's clinical teams.

Improvements made by the QI champions during the first 12 months of the programme included: increased accuracy of electronic transfers of care; reduced readmission rates; the co-production of guides to engage ward-based staff; and the creation of digital staff stories. The authors also reflect on the challenges they experienced in introducing the QI programme and make recommendations for organisations and senior nurses for implementing such programmes effectively.

Available in print at Nursing management (Harrow, London, England : 1994) from West Suffolk Hospital Library (lib304991) Local Print Collection