The technological ward round: Discuss the benefits and challenges posed by paperless systems within the NHS. Should drugs charts, NEWS scores and patient notes all be transferred onto tablets?
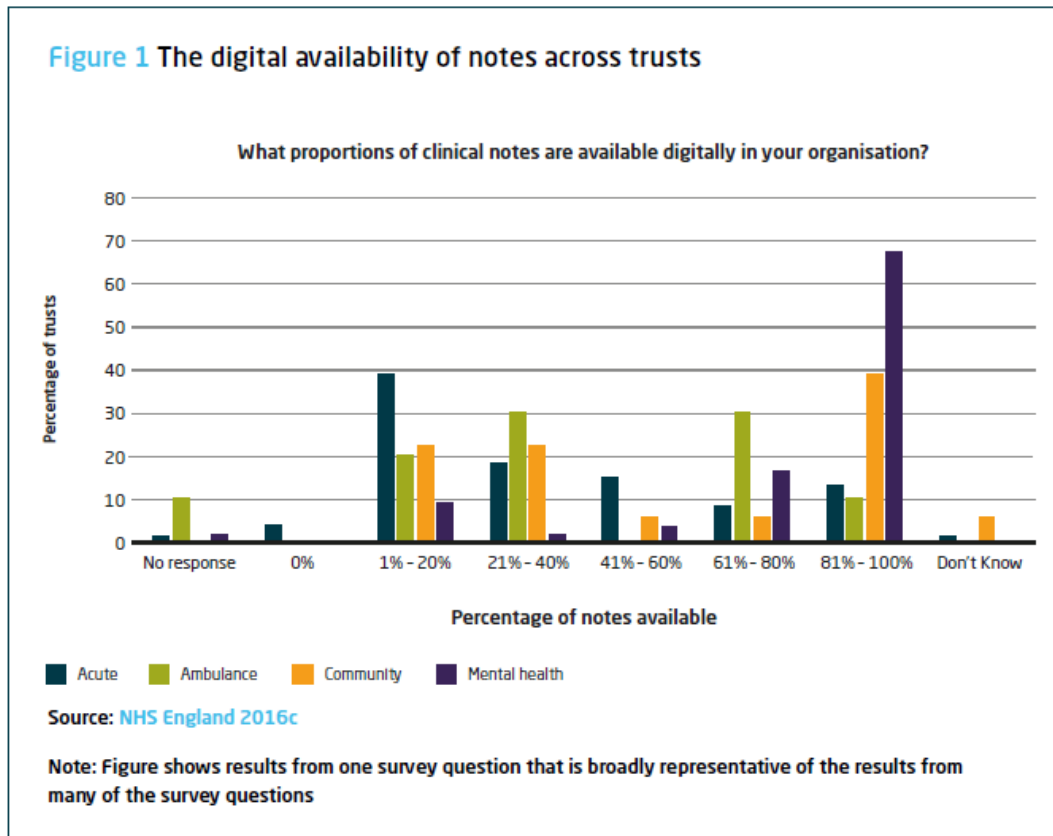
Introduction

Many of us have faced the predicament of finding patients notes when the consultant and the team are eagerly waiting for you to present a case on the ward round! To save oneself from this embarrassing situation, the classic responses are 'I can't find them' or 'maybe the nursing staff will know'. All in the hope that you will be forgiven and the team will move on to the next patient whilst you rush to hunt down those notes. Scenarios like this have always made me wonder, since technology is advancing so rapidly, why the NHS is still reliant on paper for recording patient information. Implementing technology would eliminate: time wastage in finding notes, frustration of deciphering illegible handwriting, struggle of navigating through notes and multiple folders, risk of confidentiality breach if the notes get in the wrong hands and much more. Thus, one could argue that moving to a paperless system is a no-brainer but such a shift is not as straight forward as it may sound. Hence, this essay will discuss the beneficial and challenging aspects of a paperless NHS.

Benefits

The 21st century has proven to be an era of technology. We have witnessed many revolutionary advancements with unlimited potential to safely harness the capabilities of technology. Thus far, healthcare systems have only begun to exploit the power of combining data with technology as it has the potential to transform health and society, improve the quality of healthcare services, reduce costs and administrative burden, and aid the development of new treatments (Kelsey & Cavendish, 2014). Evidence shows that 59% of UK citizens own a smartphone and 84% utilise the internet but only 2% had any digitally enabled interaction with the NHS (Ipsos MediaCT, 2014), proving there is great demand for escalating technology within the healthcare sector.

University hospital of Leicester NHS trust has employed handheld mobile technology and software to eliminate the time pressure frontline staff faces on filling paperwork. Now, patients' observations are instantly accessible to staff caring for that patient instead of having to chase for updates, allowing early intervention for any deteriorating patients (Kelsey & Cavendish, 2014). Automated alerts can be delivered to clinicians for patients scoring highly on NEWS charts. Utilising tablets also allows remote monitoring and ability to produce graphical representation of the patient's journey and progress making it much easier to interpret, especially when dealing with long-term patients with multiple sets of notes (Honeyman, Dunn & McKenna, 2016). Remote monitoring can also be applied outside of hospital setting particularly for specialities such as mental health. The complexity and legalities associate with vulnerable patients means consultations may have to done in various settings within the community or even prisons. It is thus unrealistic for healthcare professionals to be constrained

to paper-based tools to gather data. In late 2015, NHS trusts assessed their digital facilities (figure 1) (NHS England 2016c). Data showed that information in acute trusts was least structured and digitalised whereas mental health seemed to be best at digitisation of information and capacity to share information, going in line with the complex requirements as stated above (National Health Executive 2015).

Figure 1 The digital availability of notes across trusts

What proportions of clinical notes are available digitally in your organisation?

Source: NHS England 2016c

Note: Figure shows results from one survey question that is broadly representative of the results from many of the survey questions

The potential of drug charts to become paperless is also a favourable concept. Misidentification and mistreatment through human error can have grave consequences for both the patient and the hospital. Digitising patients' records will prevent misidentification by synchronising the patient's wristband with barcode scanning technology (Honeyman, Dunn & McKenna, 2016). Moreover there is added convenience of signing patient drug charts without being physically present at the bedside and messaging pharmacy to dispense drugs for discharge summaries (Cape, 2015).

Consolidating comprehensive clinical data and test results under a single system enables a single point of identification and access while reducing the risk of errors or loss of data. Stand-alone systems such as endoscopy, trauma and clinical imaging also offer opportunities for integration. Concerning patient safety and management, a hot topic of debate during the BMA MSC national conference in 2016 was doctor's illegible handwriting (BMA MSC conference, 2016). It was stated that illegible notes could cause delays and potential dangers for the patient. Arguments for a compulsory handwriting assessment before qualifying were put forward indicating the current inefficiencies in patient note keeping. A paperless system would not only solve such issues, it will provide guaranteed security measures, facilitate audit trials, enhance work productivity and ultimately improve healthcare for patients.

Challenges

There are many great benefits of technology but it does not come without its drawbacks. For healthcare professionals, the advent of digital age has often felt as a rather intrusive additional burden on top of an already pressured system. Some hospitals that use digital tools also still use paper tools, making doctors juggle between two systems and having to do the work twice - describing digitalisation as pointless (Kelsey and Cavendish, 2014).

'The digital doctor: Hope, Hype, and Harm at the Dawn of Medicine's Computer Age' – a book written by Dr. Robert Wachter (2015) describes the dangers of overreliance on technology. It spins off a single mistake occurring in a top end hospital with an expensive fully safeguarded electronic system that led to an enormous overdose of thirty-eight pills of an antibiotic instead of one. Investigation showed that the system did alert hospital staff about the error in prescribing. However, the red exclamation marks on screens and constant beeping has become a norm in hospitals and alert fatigued has developed, making staff immune to such warnings. Moreover, humans put more trust in computers as 'it knows what it is doing' and discussions with knowledgeable colleagues is diminishing as a result, leading to compromised patient care. Dr. Wachter is also concerned about the failure to adapt together with lack of expertise in the use of paperless systems within the NHS and feels it would be a difficult task to yield tech-savvy clinicians. He concludes that computers should act as servants not masters and someday digitalised healthcare may be the success we dreamt of, instead of the mess we created (Wachter, 2015).

Headline news in May last year was a key wake-up call for the NHS. A global cyber ransomware attack, termed the largest cyber-attack in NHS history, crippled NHS services causing severe disruptions and uncertainty. Major operations and appointments were cancelled, access to medical records was lost, administrative systems failed and patients were left stranded on wards and emergency departments. Many questions were raised regarding vulnerability, practicality and sustainability of electronic systems. As doctors resorted back to paper and pen to restore some functionality in the hospital, many appreciated the value of having a simplistic method of storing data (Bodkin et al., 2017). It proved the benefit of keeping traditional methods over a paperless system.

Future vision

Despite the challenges posed by paperless system, the consensus is to make NHS technically advanced. It is not unreasonable to consider that NHS can be essentially digital by 2020. The multibillion-pound National Programme of IT that ran from 2002 to 2011 failed to achieve its main goal of creating an integrated electronic clinical record system across primary and secondary care (National Audit Office, 2013). Lack of local engagement and over-centralisation in decision-making meant patients' needs were unmet and poorly understood (Wachter, 2016).

In 2012 when Jeremy Hunt took post as Secretary of State for Health, he challenged the NHS to become paperless by 2018 (Hunt, 2013). This determination was expanded in the 'NHS five

year forward view' (Honeyman, Dunn & McKenna, 2016) and further extended to year 2020. This plan is to take a balanced approach and close the gaps identified in healthcare relating to care and quality, efficiency and funding, and health and wellbeing. In 2016, Jeremy Hunt announced that £4 billion had been reserved for digital technology projects within the NHS including £1.8 billion to reach the ambition of being paperless at the point of care. The NHS is already working with major companies such as Microsoft, Apple and Google to create software and apps. Lessons learnt from cyber-attack last year has made the government consider spending £1 billion to use towards cyber security and data protection (McGoogan, 2016).

Nevertheless, the government needs to be careful not to set the expectations too high and be clear about how funds will be used - which currently seem insufficient for the 2020 target. After multiple staff strikes and demoralising changes regarding working hours set by the government, NHS staff needs to rebuild the confidence and optimism to make paperless NHS into a reality.

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