

## TECHNOLOGY

# NHS still reliant on paper patient notes and drug charts

A BMJ survey shows most trusts have failed to eliminate paper, and even the most advanced are unable to realise the full potential of electronic records, writes **Jo Best**

Three quarters of trusts in England that responded to a *BMJ* survey are still reliant on paper patient notes and drug charts, despite progress towards electronic records and prescribing. The survey results came in just as an expert panel convened by a House of Commons committee concluded that the UK government had failed to meet a key target to eliminate paper prescribing in hospitals and to introduce digital or electronic prescribing across the entire NHS by 2024. Going paperless has been an NHS dream for some years: in 2013, then health secretary Jeremy Hunt challenged the NHS to go paperless by 2018; migration to electronic patient records (EPRs) remains a priority for the NHS today.

Under the *NHS Long Term Plan*, trusts are being challenged to achieve “a core level of digitisation by 2024” and to “accelerate the rollout of EPR systems and apps.” The current targets are that 90% of NHS trusts should have an EPR system by the end of 2023, and 95% by March 2025. In England, the NHS says that it is investing nearly £2bn to encourage trusts to adopt EPRs; £440m was spent last year to help hospitals install or upgrade, according to NHS England. NHS figures from May this year show that 88% of trusts in England now have EPRs.

Yet *The BMJ*'s survey shows that paper notes remain prevalent. *The BMJ* asked 211 acute, community, and mental health trusts whether they used patient notes and drug charts in paper, electronic, or both formats (fig 1). Two trusts, the Royal Free London and Liverpool Women's Foundation Trusts, said they were unable to provide the

information requested; 24 trusts failed to respond.

Of the 182 trusts that responded to *The BMJ*'s questions on patient notes, 4% (seven trusts) said that they only use paper notes and 25% (45 trusts) were fully electronic (fig 2). The remaining 71% (130 trusts) used both paper notes and an EPR system. The information was provided through either trust press offices or responses to freedom of information requests.

For many trusts that are primarily electronic, paper notes persist in certain settings: they are often still used in the community, because IT systems don't support recording patient information outside of hospital or in settings where a physical signature is required. The quantity of paper generated by trusts can be staggering; Barking, Havering, and Redbridge University Hospitals NHS Trust estimates that it creates 25 million pages of A4 a year, for example.

### Paperless prescribing?

For drug charts, paper is almost as enduring. Of the 172 trusts that responded to *The BMJ*'s questions on whether drug prescribing and administration is done on paper, electronically, or both, 27% (46 trusts) said they use only an electronic system (fig 3). A further 64% (110 trusts) use a mixture of both electronic and paper prescribing, and 9% (16 trusts) use only paper drug charts. One further trust, the Tavistock and Portland, responded but noted that it does not administer drugs or have a pharmacy service.

The government has said that, by March 2021, 80% of hospitals had electronic prescribing and medicines administration (EPMA) in place; it

### Why is it so hard for the NHS to ditch the paper?

A report published earlier this year by the government's Infrastructure and Projects Authority downgraded its assessment of how likely the NHS is to hit its deadline for the rollout of EPRs. “Delivery confidence is red [the lowest rating] as a number of NHS trusts are reporting they are unlikely to be able to fully implement an Electronic Patient Record by March 2025,” the report says. It forecasts a new end date of 2026 for the project.

A National Audit Office report published in 2020, *Digital Transformation in the NHS*, looked at the progress made in recent years towards going paper-free and found the health services had “failed to make expected progress since 2014.”

It proposed several reasons for the lack of momentum, including whether there was sufficient funding available to achieve paperless aims and a lack of understanding of how much investment is required for digital transformation.

It also highlighted broader challenges to digital transformation, including a lack of relevant skills and outdated IT systems, and cast doubt on whether NHS England's Global Digital Exemplars programme—in which trusts with higher levels of digital maturity develop “blueprints” of best practice—would be enough to spread good practice

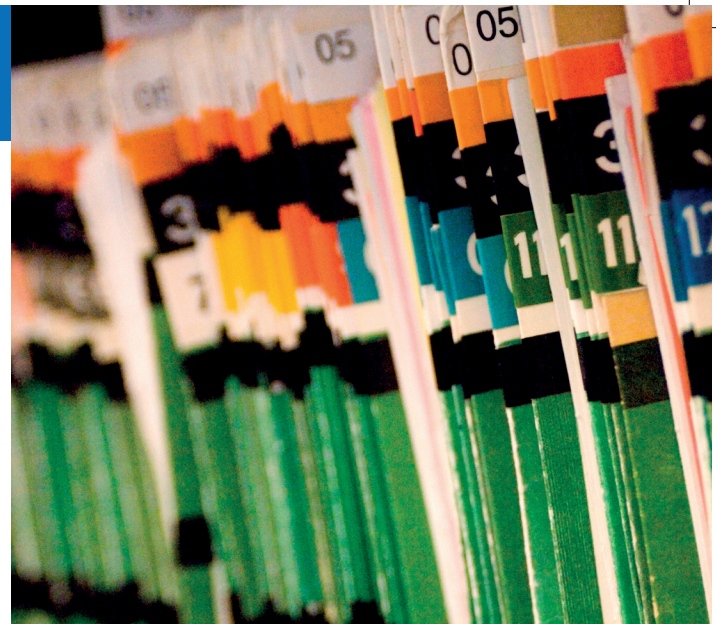
to less technologically advanced trusts.

It seems that many of the same challenges remain for trusts around adopting fully electronic systems. Money continues to be an issue: funding for the NHS Frontline Digitisation programme, which provides funding for EPR rollouts, has been cut by around £700m.

“EPR systems are very expensive and a huge undertaking. Without previously promised funding, trusts without an EPR system will struggle to invest,” says Miriam Deakin, director of policy and strategy at NHS Providers. “On top of the cost of installing the system itself, there is more expenditure on staff training and ongoing development of the EPR.”

Several other familiar factors continue to dog EPR rollouts. “Funding can continue to be an issue,” says Pritesh Mistry, policy fellow at the King's Fund. “But there's also the question of organisational readiness.”

“As well as the technology part of that, there's also organisations' digital readiness in terms of the infrastructure [an EPR] sits on, whether you have enough devices, whether you've got the right internet connectivity, [and] whether you've got people with the skills to implement an EPR [system] and create new workflows that get the most out of it.”





**EPR systems are a huge undertaking**  
Miriam Deakin

EPR rollouts are often seen as a technology project, but they're more than that: an opportunity to review and improve processes within a trust. As a result, such rollouts can bring unforeseen challenges, including changes in workflows and hospital culture. "The challenge for trusts is not just switching paper processes to digital but transforming ways of working to improve patient safety, efficiency, and decision making driven by better quality of data," says Deakin.

She also highlights procurement challenges: "With very few, mostly expensive, suppliers, there are limits to how much an EPR system can be tailored to an individual trust or service. Some trusts, therefore, are looking at joint procurement with partners and within integrated care systems."

says the NHS is "on track" to eliminate paper prescribing in hospitals. Initially, it had planned to have EPMA in all trusts by 2024; that target has now been pushed back to 2025.

The 2024 pledge was described as "overly ambitious" by a panel convened by the House of Commons Health and Social Care Committee and chaired by Jane Dacre, former president of the Royal College of Physicians. "We found inadequate progress in the delivery of this commitment due to the lack of joined up digital infrastructure in the NHS and social care," Dacre said when the panel reported at the end of July 2023.

Given that a paperless NHS has been an aspiration for more than 10 years and some trusts have had EPR systems in place for nearly two decades, why are paper notes and drug charts still so prevalent?

One factor is the frequent change in government. Trusts trying to hit targets around paperless prescribing and patient records have, in recent years, seen a succession of secretaries of state for health with varying approaches, and the release of several strategies detailing digital transformation targets and priorities. "As a trust, how do you keep on top of all those things when what you're being told to do is always shifting?" asks Dale Peters, senior research director at technology analysts TechMarketView.

### Money, time, and safety

Another factor is cost—or the adequacy of investment or funding (box). But although this can be cited as a blocker to the rollout of electronic systems, the use of such software tends to generate savings—by increasing the efficiency of healthcare staff or reducing safety incidents, for example.

In a survey of 250 staff by Oxleas NHS Foundation Trust after the implementation of an EPMA system, 96% of respondents found that the electronic system saved time and 93% said that they preferred electronic prescribing over paper. The use of electronic prescribing can cut medication errors by 30% compared with paper prescribing, government figures show.

The *BMJ* also discussed with some trusts whether they track serious

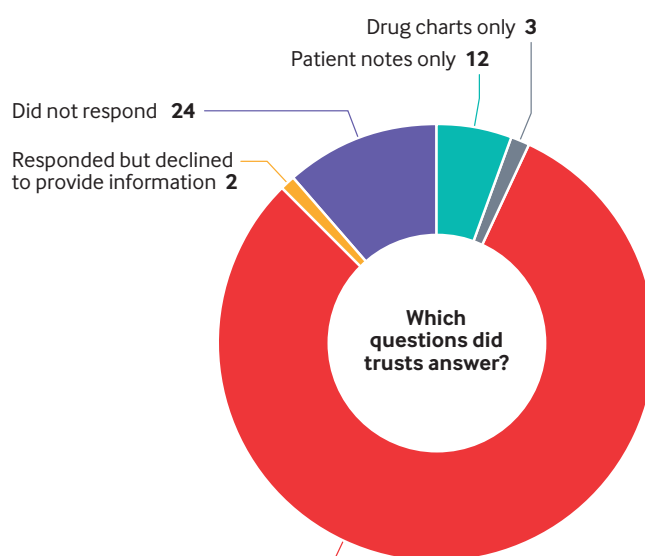


Fig 1 | Which questions did trusts answer?

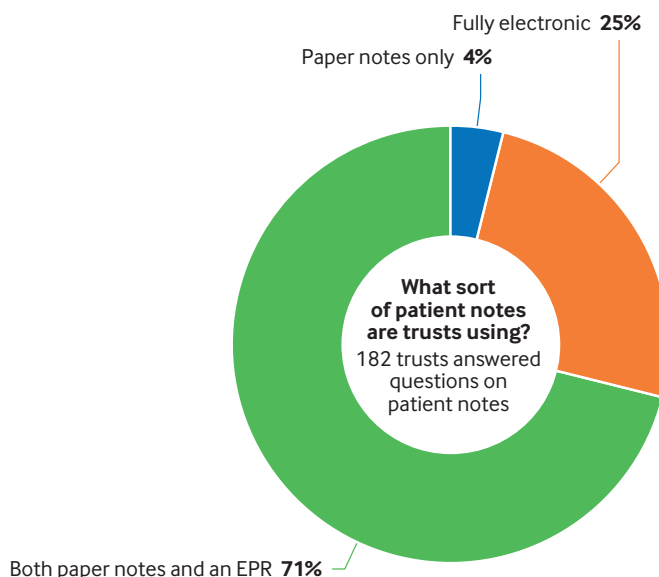


Fig 2 | What sort of patient notes are trusts using?

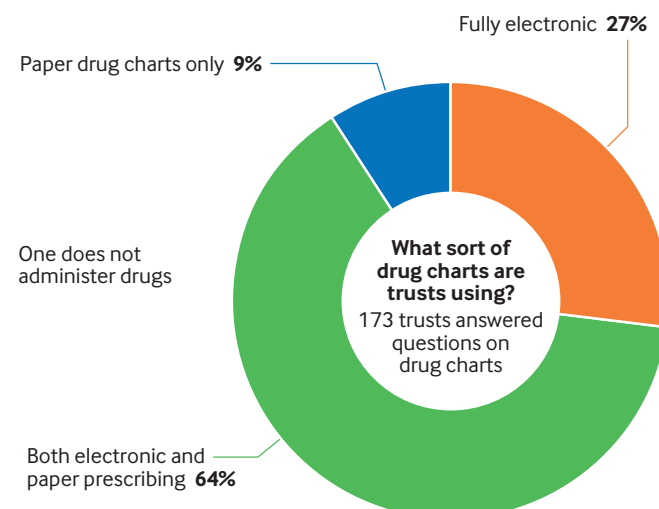


Fig 3 | What sort of drug charts are trusts using?



## CASE STUDY: NAVIGATING THE BUMPS IN THE ROAD TO DIGITISATION

Humber Teaching NHS Foundation Trust began its electronic journey in 2012, when it moved to an electronic patient record (EPR) system under the National Programme for IT.

It initially aimed to be fully electronic by 2015 but needed almost another two years before it could ditch paper notes entirely. “It was bumpier than expected,” says Lee Rickles, the trust’s chief information officer.

To become paperless, the trust had to invest in its IT infrastructure, particularly as it has a substantial

community services presence. “You can’t roll out something like that without good infrastructure, the right devices, pervasive wi-fi, good mobility,” Rickles says. “Without the basics in place, the rest of it just doesn’t come together.”

It took some time before electronic systems became embedded in the trust. “Although we had advocates, it was still a bit painful. The thing that really changed that view was when we brought pharmacy, the medics, and the nurses together around electronic

prescribing in around 2018,” Rickles said, with electronic prescribing and medicines administration (EPMA) rolling out trust-wide over the next few years.

Electronic systems also give the trust, whose sites are geographically dispersed, an easier way to manage remote working. “Very quickly, operational staff realised there were other benefits, like virtual multidisciplinary teams and remote work. They realised that, if there’s a pharmacist at home in Hull who needs to check a patient in Hornsey,

it can be done virtually and signed off electronically.”

Having digital systems also means better working with outside organisations, as the EPR data are plugged into the shared care record, enabling agencies including social care, acute and ambulance services to access, for example, crisis plans.

The trust has two EPRs—Lorenzo predominantly for mental health and SystemOne for community and inpatient uses—and is developing plans for its next generation of EPRs. “We’ve still got the same old



**Basic infrastructure needs to be in place**  
Lee Rickles

challenge around a lot of EPRs: they’re still not really that good, especially when compared to modern consumer technologies.” They are, says Rickles, not fit for purpose, with not enough focus on clinical requirements.

“Where we need to move forward is making things more user centred.”

incidents that specifically relate to paper—for example, a misread drug dose, a lost set of patient notes, or an illegible plan. Many trusts said that they did not specifically track whether paper was a contributory factor to a serious incident. Of those that were able to monitor serious incidents related to paper, most reported between zero and three incidents in the latest 12 month period tracked by the trust.

Electronic prescribing “definitely is safer,” says Linda Karlberg, a GP trainee in Edinburgh, who has spent the past two years in a paper heavy trust. “I guess it is a bit of a shame that EPMA can take some of the thinking out of it. But when there’s so much polypharmacy and you’re tired and burnt out, it is safer—drug errors don’t happen the same way—if [EPMA] auto populates a dose, you’re less likely to make a mistake.”

Tim Ho, respiratory consultant and medical director at Frimley Health NHS Foundation Trust, agrees, “I think it’s a big safety tool.”

Without fully digital systems, trusts and their doctors will miss out on the new ways of working that digitisation enables, including virtual wards or remote work, he adds. “Once clinicians have got used to [the EPR], it does allow a completely different way of working,” Ho says. “It’s not just a patient record, it’s actually a transformational tool to change how you work.”

“Having information quite literally at your fingertips on your device means you can remotely work with information

in a secure way. If you’re a clinician and you’ve been anxious about seeing a result—if you’ve been in clinic in the afternoon but you think, “Oh, what about Mrs Smith’s blood test?”—you can actually access that result and, if there’s something that needs action, you can securely message members of staff.”

### Sharing presents the same problems

Electronic systems are often touted as enabling all staff to work from a single record, presenting a clear overview of a patient. But, as with paper notes, information sharing between electronic systems can be a challenge: the EPR system from one trust is unlikely to be interoperable with another, and IT systems in the same hospital or trust might equally struggle to access the same patient’s data.

Similarly, information contained in an EPR is often not easily viewable by other hospitals, primary care providers, or third sector organisations. “Although there’s been progress in that area, it’s still nowhere near where it needs to be to have those fully interoperable systems within the NHS,” says Peters.

A lack of agreed technology standards, issues around patients’ consent on how data can be used, and a lack of the appropriate digital skills are all holding the NHS back from better interoperability between electronic systems, a 2021 report by the Institution of Technology and



**Much of the data is locked away in proprietary systems**  
Dale Peters



**There’s a lot of potential there**  
Pritesh Mistry

Jo Best, freelance journalist and doctor, Sussex  
jo@jobest.online  
Cite this as: *BMJ* 2023;382:p2050

Engineering found. “An interoperable public health IT system requires e-health records to be subject to strong confidentiality controls, technical standards to be matched with clinical protocols, and national direction to be balanced with localised delivery models,” the report says.

While paper notes or non-interoperable systems persist, the NHS is missing out on exploiting the rich data it holds for population health, improving service delivery, or bettering patient care. “We always talk about the NHS having this unrivalled data set, but actually so much of that data is locked away in proprietary systems and in formats that aren’t compatible with the other data,” says Peters. “Until we have those interoperable systems, we’ll never really see the benefit of having that sheer amount of data.” Without interoperable electronic systems, the NHS will also not be able to benefit from upcoming technological advances such as artificial intelligence.

Pritesh Mistry, policy fellow at the King’s Fund, says that one day EPRs might feature clinical decision support, advising doctors how to investigate or treat patients. Concept systems have already been developed to allow doctors to query data from other patients to guide management of similar presentations. Such advances, however, will need robust software and information, Mistry adds. “There’s a lot of potential there, but it does depend on the quality of the data and the analytical smarts of the systems.”