

## DIGITAL TECHNOLOGY The effect of the electronic health record on consultants' responsibility for patients and their care in general medicine

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### ABSTRACT

The electronic health record has dramatically improved the safety of medical care as well as the clarity and accessibility of the notes. An equally profound, but under-recognised consequence, is the effect it has had on 'patient ownership' and responsibility within the hospital. It is now very easy to access and read through patients notes, from a distance and at scale, to identify patients for attention. Automated alerts can be set for quantitative laboratory or physiological variables, for the same purpose, and artificial intelligence is being developed for alerts based on free text or radiographic interpretation. This article explores the risk of this approach to healthcare and the danger of a 'collusion of anonymity', whereby responsibility for care is sufficiently diffuse that no one has ownership of a patient's care.

**KEYWORDS:** ownership, electronic health record

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If a general practitioner (GP) wants to discuss the care of a hospital inpatient, with whom do they speak? If a patient has concerns about the decisions made in their care, whom should they approach? These queries relate to the complexity of healthcare, especially secondary care but of the relative obscurity of who actually is responsible for the patient in hospital, and patients and their GPs find the latter frustrating.

In hospital general internal medicine (GIM), patients would have had a named consultant, from admission to discharge (possibly into clinic), with an expectation of transfer back to the same consultant, should the patient be readmitted. This model revolved around 'patient ownership'.

'Ownership' can have troubling overtones with implied notions of power and dominance, but the relationship is not unidirectional, patients may like to feel that the doctor belongs to them

('my doctor'), just as most physicians will feel they are responsible for the patient ('my patient'). Primary responsibility for a patient's case during their hospital stay does not mean restriction of clinical decision making to that individual, rather, it means being able to draw on the expertise and opinion from many sources and disciplines in a mutually supporting multidisciplinary team (MDT). However, a key point is that it is for the patient's team to request that expertise and a key responsibility to choose what advice to act on.

In recent years, a number of factors have come together to erode patient ownership in hospital GIM. Many of these have been discussed at length: the European Working Time Directive dramatically improved the working lives of clinicians but did mean that it became impossible for one small team (or 'firm') to continuously care for a patient. Acute medical units (AMU) have been introduced to provide care for the first 48–72 hours, managed by specialists skilled in resolving uncertainty, diagnosis and treatment; thereafter, patients are then physically and bureaucratically transferred further down the hospital system. An additional component is the trend for multiple consultations. This may be a result of increasing subspecialisation and clinician uncertainty outside of their area of practice, as well as concern about medicolegal repercussions if such opinions are not sought.

An element that has been relatively unexamined is the impact of the electronic health record (EHR). In 2014, the NHS established the National Information Board's digital strategy *Personalised health and care 2020*, identifying the need to exploit the 'information revolution' and create a paperless environment.<sup>1</sup> EHRs have revolutionised medical care: they reduce prescription errors, improve the ability to audit and conduct research, can be shared securely with other clinicians, and are easily accessible. However, it is the very accessibility of the EHR that can erode the sense of patient ownership. Traditionally, a referral between colleagues resulted in relevant information being shared with the invited healthcare professional. This occurred under implied (patient) consent. What can now happen is that a healthcare professional can 'screen' multiple clinical notes, remotely, to see whether a patient falls under their purview; for instance, an alcohol care team might proactively 'screen' many patients' notes to find patients who drink beyond a threshold. Yet, healthcare professionals should only view the information relevant to their care setting, unless the patient has given their explicit consent for the full record to be viewed. When a patient's health data are shared or linked without the patient's knowledge, their autonomy is jeopardised.<sup>2</sup>

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Laboratory and physiological variables are also captured in the EHR and may be viewed remotely. Now, rather than someone reading through multiple patients' notes, the system can be programmed to automatically 'refer' to another team when a quantitative laboratory or physiologic threshold has been exceeded. A recent example of this is the diabetes Getting it Right First Time (GIRFT) report, which recommends 'that all trusts should have an electronic identification system, with screening and rapid referral for those most at risk of developing complications. The system should be integrated with web-linked meters in the wards, which allow the inpatient diabetes team to remotely view blood glucose and ketone data.'<sup>3</sup> Another challenge with automated referrals will, therefore, be maintaining the support, autonomy and comprehensive skill sets of clinicians on the GIM teams.

An exemplar of the shift away from the concept of patient ownership is in the management of pulmonary emboli (PE), which has traditionally been managed by GIM. In the USA, PE response teams (PERTs) were created to provide an MDT approach, acutely, to PE; particularly those at moderate-to-high risk of deterioration and death. Such teams are now being established in UK hospitals.<sup>4</sup> As already described, MDTs can provide great value by allowing shared decision making and diffusion of expertise. However, PERTs may be activated by members outside of the GIM team managing the patient. Indeed, technological advances mean that artificial intelligence may soon facilitate automated activation of the PERT.<sup>5</sup> The structure of a PERT will vary by institution but may involve critical care, pulmonary medicine, vascular medicine, emergency medicine, interventional and non-interventional cardiology, interventional radiology, vascular surgery, cardiac surgery, haematology, and pharmacy. If having sufficient professional capacity for decision making is an essential part of patient ownership, then such innovations are at risk of eroding the relationship between patient and named GIM physician.<sup>6</sup> The patient should be consulted, and made fully aware of any alert that drives the intervention of members outside of the named clinical team, and the dialogue that is needed.

The concept of psychological ownership is well described within the organisational psychology literature.<sup>7</sup> When people develop a sense of ownership towards a target, they tend to seek to 'protect and improve the target of the ownership'. Patient ownership is a key element of medical professionalism. A danger from the easy accessibility of the EHR, and unsolicited involvement in patient care, is the dilution of responsibility and, in the worst case, 'collusion of anonymity'.<sup>8</sup> In this scenario, individual facets of a patient's case may be approached by multitudes of specialists, with nobody taking responsibility for the whole person.

### What can be done?

There is a need to understand what patients' perspectives are on the issues discussed in this article. Do patients consider the absence of a lead clinician to be 'a price worth paying' if it brings greater benefits elsewhere? Is a multiplicity of clinicians involved in one's care considered advantageous? Careful research is required in this area.

Complex decision making about patient care shared between specialties and disciplines is to be applauded, but a named doctor must always take ultimate responsibility for coordinating care and communication with the patient and colleagues. It is imperative

that the named doctor draws in this expertise and decides what advice to follow, rather than a free-for-all approach to intervention.

Healthcare teams should only be able to view the records of patients with whom they have a direct clinical relationship. The definition of 'direct clinical relationship' is at the heart of this article and should be debated within the GIM community. Do teams outside the immediate provision of care (ie outside of GIM) have a conditional responsibility for oversight of areas that fall within their specialism? If that is felt to be the case, then information governance risks might be mitigated with the introduction of automated search ontologies that identify patients with, for example, diabetes without that team (in this case, the 'diabetes team') needing to access all patients' notes. Regular audit may help determine the performance of such search strategy. Automated alerts must trigger a dialogue between teams of clinicians and patients, not one conducted through written entries in the medical record. Opinions on patient care should not be given remotely, removing the primacy of the patient in their own care, but should be made physically together with the patient. Every effort must be made to facilitate continuity of care within the hospital system.

In this way, the collaborative complexity that can arise from involvement of different medical teams in patient care can be built around the stable locus of a patient and their named doctor. ■

### Conflicts of interest

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