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The possibilities of technology in shaping healthcare professionals: (Re/De-) Professionalisation of pharmacists in England

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ABSTRACT

The paper discusses the possibilities technology provides for (re-)shaping healthcare professionals. Drawing upon critical studies of technology and the sociology of professionals, we present findings from a longitudinal study into the introduction of the Electronic Prescription Service (EPS) in Community Pharmacies in England conducted between June 2009 and July 2011. Our case illustrates the conditions that allow technology to shape healthcare professionals and the potential consequences of such shaping. The data collected, which consisted of qualitative interviews and document analysis, and their analysis rests on predictions of future directions and developments of the pharmacy profession through EPS. Specifically, we show that technology has the potential to shape fundamental aspects of pharmacy work such as its nature and values, professional roles, the degree of power professionals can exercise, their jurisdictions and professional boundaries. Drawing upon these changes and on their implications, we argue that the introduction of technology in a healthcare setting does not determine consequences but opens up a field in which processes of de-professionalisation and re-professionalisation occur simultaneously. Their implications for healthcare professionals in the future, remains an open, yet worth exploring, question for the present.

Introduction

Governments across the globe are introducing information technology (IT) in their healthcare systems with the intention of transforming service organisation and delivery, especially in terms of resource utilisation, clinical decision making, patient satisfaction and service productivity and quality (Berg, 1997; Davidson & Chiasson, 2005). A number of studies evaluate the implementation of these initiatives and the realisation of espoused benefits (Cresswell et al., 2011; Greenhalgh et al., 2008, 2010; Robertson et al., 2010). Fewer studies investigate the unintended and perhaps more veiled consequences of IT for healthcare professionals (Aarts, Ash, & Berg, 2007; Barrett, Oborn, Orlikowski, & Yates, 2011; Cho, Mathiassen, & Nilsson, 2008; Nicolini, 2006). In this paper we discuss the possibilities technology provides for shaping the pharmacy profession – specifically its nature, roles, values, power, jurisdictions and boundaries – and the conditions that enable such shaping (Motulsky, Sicotte, Lamothe, Winslade, & Tamblyn, 2011).

Technological innovation in pharmacy is not new, and includes new medicines, devices and organisational systems (Barrett et al., 2011). Our paper examines the introduction of new IT within the English community pharmacy context. Community pharmacists serve the public in independent shops, chains of pharmacies, medical centres and supermarkets. They have an NHS contract for dispensing medicines and may offer other NHS funded services such as smoking cessation, minor ailments schemes and adherence support services. Suitably qualified pharmacists have the right to prescribe, although few in community pharmacy have this training. Pharmacies may be owned by non-pharmacists and over half the pharmacies in England are owned by large chains. Our paper does not focus on hospital pharmacists or pharmacists who work in research institutions and reference to pharmacy(-ists) will imply community pharmacy(-ists).

To examine the possibilities of technology in recreating community pharmacy, we focus on the adoption of the Electronic Prescription Service (EPS) in the English NHS. The EPS was initiated in 2005 as a part of the UK National Programme for IT (NPfIT), delivered by the Department of Health agency, Connecting for Health (CfH). EPS refers to the electronic generation, transmission and receipt of prescriptions from a prescribing authority (a doctor) to a dispensing authority (a

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pharmacist). EPS has been envisioned as a project that would bring about considerable benefits to pharmacists such as economic efficiencies, reduction of errors, faster dispensing process, faster access to information and time savings (Department of Health, 2008; NHS Connecting for Health, 2009).

We make two arguments in this paper. First, new health technologies play into longstanding debates related to the social organisation of healthcare work. Second, their consequences on healthcare professionals are neither unidirectional nor deterministic; technology conditions processes of re-professionalisation and de-professionalisation simultaneously. Taking an agential view of technology, our paper discusses possibilities rather than certainties of the future shaping of the pharmacy profession through IT. Understanding these possibilities is important not only for healthcare professionals but also for those who manage IT adoption and implementation in healthcare settings.

An agential view of technology

An agential view suggests technology has a form of agency in that it constrains, prescribes, enables and provokes consequences (intended and unintended) (Greenhalgh & Stones, 2010; Mort, Goodwin, Pope, & Pope, 2005). Agency is neither reduced to the technology nor to its use but is about the effects that technology-in-use produce (Nicolini, 2006). We highlight four aspects of this agential view in relation to how technology 'regulates', 'governs', 'mediates' and 'represents' humans and their activities. Our emphasis is placed on the consequences of technology's agency rather than on its origins (Greenhalgh & Stones, 2010).

According to Grimmelmann (2005) technology has a significant *regulatory role* through prescribing certain forms of behaviour whilst limiting discretion as 'users' follow 'embodied rules' often without knowing or questioning them (Grimmelmann, 2005). Elaborating this, Kallinikos (2010) argues that technology produces a 'regulative regime' of four inter-dependent functions: it 'simplifies' by lifting up human activity from its complexity; it 'differentiates' and sets boundaries on what is desirable; it 'commodifies' by inscribing human agency to technology and it 'automates' by executing tasks in a large scale. Automation simplifies processes so they can be followed without the application of explicit knowledge, fostering predictability, quantification and central decision making (Zuboff, 1989). Automation is associated with attempts to de-skill professionals (Bush, Langley, & Wilson, 2009), yet, as Barrett et al. (2011) show it may also give professionals the possibility to engage in more conceptual activities and develop new capacities (Abbott, 1988; Zuboff, 1989) leading to re-skilling (Zuboff, 1989).

For Latour (2007) technologies are '*mediators*' that '*…transform, translate, distort and modify the meaning or the elements they are supposed to carry*' (Latour, 2007, p.39). From this perspective technology acts by transferring and simultaneously transforming knowledge, practices and relations. Technology maintains and disseminates information across temporal and geographical boundaries. It also ranks, compares and inscribes information into reports generating in this way new information (Doolin, 2003; Latour, 1988; Zuboff, 1989) that allows professionals to make more informed decisions; a process called by Zuboff (1989) as 'informatisation'.

The agency of technology also lies in its ability to *represent* things through displacement (Cooper, 1993). Technology brings things closer and, in so doing, makes them visible (Harman, 2010). Proximity and visibility make objects available, known and amenable to use or intervention. For instance, performance monitoring systems render professional practice 'legible' (Bush et al., 2009) thereby enabling surveillance (Power, 1999). Yet, although technology reveals things, it does not necessarily make them known in their totality. Some of their aspects will always remain hidden (Introna, 2009). What we know of technology and its consequences is reduced to that which proximity and visibility allow us to know.

By adopting an agential view of technology we do not support technological determinism. Our argument is that technology and social practice are co-constructed and situated within a particular social, cultural, historical and professional context (Timmermans & Berg, 2003).

Organising and reorganising professional work?

When thinking about the implications of technological change within healthcare organisations particular consideration is needed of the interaction between technology and professional practice, in this case pharmacy practice. In seeking to distinguish 'professions' from other occupations social scientists have highlighted a range of 'traits', interactions, systems and institutional capabilities that explain professional status and power (Abbott, 1988; Macdonald, 1995). A common view is that exclusive access to (and control of) expert knowledge, as manifest in professional training, socialisation, registration and practice, legitimise the assumption that these professions, and not other occupations, should undertake, direct or regulate work because only they possess the necessary knowledge and standards (Brint, 1996; Freidson, 1970).

Beyond these claims, scholars have interpreted professions, especially the process of professionalisation, as a vehicle for social closure (Freidson, 1970; Larson, 1978). Abbott (1988) highlights that professions exist within an inter-dependant system or ecology of work, whereby professional status involves the construction of bounded jurisdictions. From this perspective, professional power is further elaborated as the ability to retain jurisdictions and closure.

Although institutional scholars often regard professions as powerful institutional agents (Scott, 2007), there is recognition that the logic of professionalism, as an ideological basis for organising expert work, has been surpassed by the logics of bureaucracy and the market (Freidson, 2001). In the healthcare context it is argued that management, consumer demand, and greater public access to knowledge via new information technologies, have transformed professional status (Haug, 1988; McKinlay & Stoeckle, 1988). A significant development has been a growth of more standardised, rationalised and managed ways of organising expert work (Macdonald & Ritzer, 1988), as exemplified by evidence-based guidelines (Harrison, 2004; Power, 1999; Timmermans & Berg, 2003). According to some, these illustrate de-professionalisation, whereby expert occupations have lost their distinct status and power in the name of efficiency, productivity or customer service (McKinlay & Stoeckle, 1988). Others have interpreted such change as illustrating re-professionalisation. Instead of being passive victims of change, they highlight the interaction and mediation of organisational change, especially how professionals resist or capture change in the processes of remaking and retaining their professional influence (Adler, Kwon, & Heckscher, 2008; Freidson, 1970; Waring & Currie, 2009).

In thinking about the re-configuration of healthcare professions, it is essential that we also recognise more fully the role played by technologies in institutionalising, contesting and retaining these jurisdictions (Timmermans & Berg, 2003). The design, use and control of technologies and other materials are integral to establishing and maintaining distinct domains of professional practice. Equally, the introduction of new technologies provides a key site for contesting or reconfiguring jurisdictions and boundaries.

Applying these ideas to the pharmacy profession we highlight that pharmacists' work is fundamentally technological (defined