Social Science & Medicine 164 (2016) 108–117

Contents lists available at ScienceDirect

Social Science & Medicine

journal homepage: www.elsevier.com/locate/socscimed

Collaboration and entanglement: An actor-network theory analysis of team-based intraprofessional care for patients with advanced heart failure

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ARTICLE INFO

Article history:
Received 16 September 2015
Received in revised form
30 June 2016
Accepted 11 July 2016
Available online 20 July 2016

Keywords:
Canada
Actor-network theory
Intraprofessional collaboration
Entanglement
Heart failure
Palliative care
Fluid management

ABSTRACT

Despite calls for more interprofessional and intraprofessional team-based approaches in healthcare, we lack sufficient understanding of how this happens in the context of patient care teams. This multi-perspective, team-based interview study examined how medical teams negotiated collaborative tensions. From 2011 to 2013, 50 patients across five sites in three Canadian provinces were interviewed about their care experiences and were asked to identify members of their health care teams. Patient-identified team members were subsequently interviewed to form 50 "Team Sampling Units" (TSUs), consisting of 209 interviews with patients, caregivers and healthcare providers. Results are gathered from a focused analysis of 13 TSUs where intraprofessional collaborative tensions involved treating fluid overload, or edema, a common HF symptom. Drawing on actor-network theory (ANT), the analysis focused on intraprofessional collaboration between specialty care teams in cardiology and nephrology. The study found that despite a shared narrative of common purpose between cardiology teams and nephrology teams, fluid management tools and techniques formed sites of collaborative tension. In particular, care activities involved asynchronous clinical interpretations, geographically distributed specialist care, fragmented forms of communication, and uncertainty due to clinical complexity. Teams 'disentangled' fluid in order to focus on its physiological function and mobilisation. Teams also used distinct 'framings' of fluid management that created perceived collaborative tensions. This study advances *collaborative entanglement* as a conceptual framework for understanding, teaching, and potentially ameliorating some of the tensions that manifest during intraprofessional care for patients with complex, chronic disease.

1. Background

The discourse of inter-/intraprofessional collaboration (IPC) evokes authority for those who wield it in contemporary discussions of clinical professionalism. Professional practice guidelines and codes of ethics leverage IPC as a symbol of workplace equity, patient safety and effective communication. Policymakers and administrators convey IPC's central role in workplace equity, effective communication and safe care (Service, 2001; Herbert, 2005). It stands as a matter of fact in healthcare, and proponents advocate its importance for improved patient access to health services, better use of clinical resources, and less stress with higher retention among health care providers (HFO, 2010; WHO, 2010).

Extensive critical reflection in healthcare sociology has focused on interprofessionalism, the study of professional interaction between professionals from medicine, nursing or other health professions. Much of this work began with the sociology of professions, particularly work theorizing how disciplines establish jurisdictions that are frequently put in conflict when existing boundaries must

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http://dx.doi.org/10.1016/j.socscimed.2016.07.010
0277-9536/

be defended or when new boundaries must be advanced (Abbott, 1988, 2001). Interprofessionalism researchers have described the influence of jurisdictional conflict at varying levels of analysis. At a macro-level, culture (Hall, 2005) and discourse (Haddara and Lingard, 2013) have been shown to be in conflict with how IPC is understood and enacted through health policy, or where professional hierarchies and values find ways to subsist despite professional interaction (Paradis and Whitehead, 2015). At an organisational level, studies have illustrated the tensions inherent in interprofessional practice, such as when institutional rules conflict with public legislation (Lahey, 2012) or when scope of practice guidelines are unsuited for institutional systems (Khalili et al., 2014; Manias, 2015). At the individual level, studies have shown how role confusion in interprofessional collaboration leads to interpersonal and professional misunderstandings (Khalili et al., 2013; Rodriquez, 2015) and "incivilities" (Boateng and Adams, 2016). Stronger critiques posit that interprofessionalism masks a managerialist discourse pervading contemporary healthcare that co-opts the hierarchical divisions between healthcare professionals that it is purported to dispel (Finn et al., 2010; Learmonth, 2003). Other work aims to reconceptualise the term altogether, claiming that interprofessional collaboration does not necessarily reflect the complex realities of clinical practice and should not be idealised as a central goal (Lingard et al., 2012a, 2014).

Researchers have paid such extensive, recent attention to interprofessionalism in order to fill gaps left by early social science that focused narrowly on medicine over nursing and other health professions. These studies include canonical work on professional development in medical education (Becker, 1961) and early theories on the practice of medical expertise and authority (Freidson, 1960, 1970). This early work in the sociology of professions mapped the same medical hegemony responsible for an overall lack of scholarly attention offered to nursing and other health professions (Barr et al., 2005). Furthermore, this shift toward interprofessionalism is also regarded as the historical by-product of public calls for medical reform following several damaging reports published at the turn of the 21st century (Green, 2014). White papers such as the Institute of Medicine damning *To Err is Human* (Kohn et al., 2000) and the UK's horrific *Shipman Inquiry* (Smith, 2002) exposed the dangers of unilateral models of clinical decision-making and authority. Leaders and practitioners from across the health professions embraced the discourse of interprofessionalism as a way to improve professional equity and patient safety in medicine (Reeves et al., 2010).

The NHS' *Five Year Forward View* stands as a contemporary example of interprofessionalism's place in health policy discourse. This government report describes a significant investment in interprofessional primary healthcare teams that will facilitate networks of integrated care, multi-specialty group practices and an expansion to in-reach support for patients at home (NHS, 2014). Another example is Canada's *Unleashing Innovation* report, which recommends healthcare that engages and empowers patients and families in healthcare decision-making and leverages digital health technologies to streamline the integration of care across the specialty health workforce (Health Canada, 2015). With support through public perception, policy reform and outcomes-based research funding, interprofessionalism ascended to the sine qua non of the patient safety and medical professionalism movements.

Interestingly, much less scholarly attention has been paid to medical *intra*-professionalism, which captures. Relations between subdisciplines of a given discipline and traces how that discipline internally invents, maintains, and invests in its "intellectual turf" (Abbott, 2001, p. 139). While medical specialisation dates back to the 19th century, its heterogeneity continues as medical education and research drive the development of new specialties, subspecialties, and advanced practice certifications every few years (Weisz, 2006). Studies of medical intraprofessionalism include explorations of dynamic, overlapping scopes of practice among medical specialties (Martin et al., 2009; Lingard et al., 2012a), challenges accessing resources and equipment (Currie et al., 2008; McIntosh et al., 2014), professional legitimacy claims (Sanders and Harrison, 2008; Currie et al., 2014), and working through institutional or departmental authority (Powell and Davies, 2012). Notwithstanding this work, researchers have made recent, high-profile calls for research exploring how intraprofessional HF care delivery is accomplished in increasingly complex and distributed healthcare environments (Clark and Thompson, 2010; Clark, 2013; Selman et al., 2009).

Existing knowledge of medical intraprofessionalism is also constrained by a strong inclination in social theory to view collaboration as a human endeavour. One prominent definition states IPC is "an active relationship between two or more health or social care professions who work together to solve problems or provide services" (Zwarenstein and Reeves, 2006, p. 48). Scholars taking up this definition tend to essentialise people as the crux of the relationships, interactions, negotiations and forces that lead to intraprofessional collaborative tensions. Few studies explore the intermingling of human and nonhuman elements in intraprofessional collaboration, though there are notable exceptions (Fenwick and Nerland, 2014; McIntosh et al., 2014; Timmermans, 2006; Timmermans and Buchbinder, 2012).

This study used actor-network theory (ANT), an approach to social theory and research presupposing that all human and nonhuman entities, or *actants*, are entitled semiotic space in descriptions of the social. ANT posits that not only do people play a role in intraprofessional collaboration, so do laws, guidelines, technologies, and clinical spaces. From this standpoint, human actants are both part of and defined by broader networks of human and nonhuman actants. Importantly, the sociologist Michel Callon's term *entanglement* features in this analysis first to describe the heterogeneous, relational milieu of people, things and ideas that compose our world, and second to describe the dynamic interactions, patterns and assemblies through which these human and nonhuman *actants* form practices, knowledges and technologies (Callon, 1999).

1.1. Actor-network theory and IPC

Though its descriptions have varied over the past 35 years, ANT, alongside Science, Technology and Society (STS) and the Sociology of Scientific Knowledge (SSK), originated as a relational-materialist framework for exploring knowledge producing environments and data transmission (Law and Singleton, 2013). The philosopher and anthropologist Bruno Latour stands as one of the major contributors to its intellectual foundations and methodological considerations (*esp.* Latour and Woolgar, 1979; Latour, 1987, 1988, 1993, 1996, 2004, 2005, 2013). ANT represents a departure from structuralist approaches to sociology; social scientists have described it as application of post-structuralist perspectives (Fenwick and Nerland, 2014; Law, 2004). Latour (2005) calls structuralist sociology the "sociology of the social" (Latour, 2005, p. 9), claiming social science overly relies on hidden social forces at work influencing human actants. ANT, or the "sociology of associations" (Latour, 2005, p. 9), posits that local collectives of people, things and researchers form their own relational 'sociologies'. While 'sociologists of the social' describe society in terms of an organisational ether that pervades all human experience, 'sociologists of association' describes the social as a heterogeneous entanglement of constantly shifting relations between human and nonhuman actants (Latour, 2005; Callon, 1999).