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Cardiopulmonary resuscitation decisions in the emergency department: An ethnography of tacit knowledge in practice

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ABSTRACT

Despite media images to the contrary, cardiopulmonary resuscitation in emergency departments is often unsuccessful. The purpose of this ethnographic study was to explore how health care professionals working in two emergency departments in the UK, make decisions to commence, continue or stop resuscitation. Data collection involved participant observation of resuscitation attempts and in-depth interviews with nurses, medical staff and paramedics who had taken part in the attempts. Detailed case examples were constructed for comparative analysis. Findings show that emergency department staff use experience and acquired tacit knowledge to construct a typology of cardiac arrest categories that help them navigate decision making. Categorisation is based on 'less is more' heuristics which combine explicit and tacit knowledge to facilitate rapid decisions. Staff then work as a team to rapidly assimilate and interpret information drawn from observations of the patient's body and from technical, biomedical monitoring data. The meaning of technical data is negotiated during staff interaction. This analysis was informed by a theory of 'bodily' and 'technical' trajectory alignment that was first developed from an ethnography of death and dying in intensive care units. The categorisation of cardiac arrest situations and trajectory alignment are the means by which staff achieve consensus decisions and determine the point at which an attempt should be withdrawn. This enables them to construct an acceptable death in highly challenging circumstances.

1. Introduction

Approximately 25,000 to 30,000 cardiopulmonary resuscitations (CPRs) are attempted annually in the UK, usually in an emergency department (ED) (Boucher, 2010).

In the ED, resuscitation attempts involve either patients who suffer cardiac arrest outside hospital and are brought in by emergency paramedics or critically ill patients arresting shortly after arrival. In each case, staff must rapidly decide whether to continue, begin or withdraw CPR—invariably with an incomplete patient history and limited clinical data (Boucher, 2010). Pre-existing 'do not attempt resuscitation' (DNAR) orders are often not readily available and there is little time to establish their validity and applicability even if present. Although providing a trial of CPR when prognosis is uncertain is good clinical practice (General Medical Council, 2013; Iserson, 2010), the Resuscitation Council (UK) (2015) highlights the importance of quickly identifying those patients for whom resuscitation is futile; this is often difficult.

Survival statistics alone are of little value in assessing the best course of action for individual patients. Survival rates for cardiac arrest outside of hospital are around 1%–8% (Resuscitation Council (UK), 2015; Clarke et al. 2014; Herlitz et al., 2006) and fewer than 20% of patients arresting in hospital will survive to discharge (Stapleton et al., 2014; Resuscitation Council (UK), 2011). Overall survival rates have not significantly changed for decades and are especially poor when associated with advanced chronic disease (British Medical Association (BMA), 2014; Gaieski et al., 2012). Factors associated with better outcomes include rapid response times, early initiation of CPR, younger patient age, the presence of a 'shockable' cardiac rhythm, early defibrillation and Advanced Life Support (ALS) treatments and skilled post cardiac arrest care (Nolan

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et al., 2015; Hess and White, 2010).

In decision making, when the conditions for using logical and rational approaches, such as statistical probabilities cannot be met, there may be recourse to a model that relies on heuristics; a strategy of decision making that ignores part of the available information but nonetheless allows decisions to be made quickly and accurately (Gigerenzer and Gaissmaier, 2011). Heuristics decision strategies have particular characteristics, they are: simple; neither inherently good or bad; exploitive of learned human capacities and reflective of the way decisions are made naturally, in the environments at hand (Pieterse and De Vries, 2013). One form of heuristics uses the principle of less is more, i.e. where there is an inverse relationship between the level of accuracy and amount of information (Gigerenzer and Gaissmaier, 2011). Heuristic decision making is a consequence of human experience gained over time within a particular context. The ability to view situations within their contexts and as a whole, by drawing on previous experiences, is a characteristic of expertise (Gillespie and Paterson, 2009; Polanyi, 1966). In ED practice, cardiac arrest demands rapid and complex decision making to be effected about the appropriate levels of intervention to be provided without detailed information about that particular patient. Repeated exposure to cardiac arrest situations is likely to lead to decision making approaches in which staff differentiate cardiac arrest situations using 'less is more' heuristics to combine explicit and tacit knowledge. This enables rapid intervention in the absence of complete information.

The complexity of decision making is revealed by existing research which shows that CPR attempts in the ED vary in length from very brief to prolonged (Bailey et al., 2011; Chan, 2011; Larkin, 2002; Lockey and Hardern, 2001; Timmermans, 1999). A greater understanding of how practitioners use tacit knowledge may reveal how decision making occurs in resuscitation situations. This paper draws on data from an ethnographic study of health care professionals working in two EDs to examine how they use tacit knowledge to reach decisions to commence, continue or stop resuscitation.

1.1. Background

In their seminal ethnographies, Glaser and Strauss (1965, 1968) showed that health care staff develop ways of determining expected pathways—known as 'trajectories'—for dying patients and that staff use a range of strategies to manage the inherent uncertainties associated with transitions between different trajectories. Dealing with uncertainty is part of the everyday work of health care professionals and represents the 'messiness' of clinical practice (Schon, 1983). Under the guise of evidence-based medicine, efforts have been made to devolve the uncertainty of clinical decision making to algorithms—logical and highly rational approaches that break decision making down into a series of interlinked steps. Algorithms for ALS management are published by the Resuscitation Council (UK) based on the recommendations of the International Liaison Committee on Resuscitation (Nolan et al., 2015). However, a long tradition of social research in health care has also shown the importance of 'tacit' or 'gestalt' knowledge in decision making.

Tacit knowledge, as opposed to explicit, scientific knowledge, is hidden; described by Polanyi (1966:4) as 'we can know more than we can tell'. This type of knowledge is based on acquired expertise or habitual practices that the expert practitioner may find difficult not only to articulate, but even to recognise at all; such knowledge becomes taken for granted, although often shared in a particular subculture (Insch et al., 2008; Spradley, 1979).

The use of tacit knowledge in a wide variety of health care settings has been explored. Beckstead et al. (2014) investigated disparities in physicians' referral for cardiac rehabilitation. They found a systematic gender bias where women were judged less likely to benefit from referral but 1 in 3 physicians were unaware of their bias. In public health, Higgins et al. (2011) explored how practitioners use evidence in practice and found the lack of transferability of statistically based evidence to local communities meant that professional judgements were dependent on a mix of knowledge of the evidence based literature and tacit knowledge based on professional experiences and observations thus building cumulative and shared wisdom. In occupational therapy Metzler and Metz (2010) show how therapists synthesise research based evidence with experiential knowledge when exercising clinical judgement and that the high value placed on research knowledge may result in tacit knowledge being driven underground.

Some insights into how tacit knowledge and habitual practices influence the management of resuscitation and non treatment decisions in the ED and other clinical care areas have been provided by a small body of ethnographic research (Chan, 2011; Bailey et al., 2011; Page and Komaromy, 2005; Seymour, 2000; Timmermans, 1999).

In the ED, Chan (2011) shows that the time available to make the transition from active intervention to end of life care in the ED is short and thus hard to manage for staff. Decision making depends on the perception and understanding of the clinician in an inherently stressful and fast paced situation. Habits and routines relating to the use of algorithmic principles can sometimes overshadow more subtle communication practices or disguise the ethical complexities of decision making. Past experiences are crucial in helping clinicians deal with such situations.

Examining the everyday practices of emergency staff in the USA, Timmermans (1999) identifies four characteristic patterns or categories of cardiac arrest—'legal', 'elite', 'temporary stabilisation' and 'stabilisation'—that are tacitly assigned according to the circumstances of the arrest, the clinical viability of the patient's recovery and perceptions of the social worth of the patient within the ED culture. The role of tacitly assigned social worth in the management of death in the ED is illustrated by Bailey et al. (2011) in a description of 'spectacular' and 'subtacular' deaths. Spectacular deaths involve active resuscitation and are regarded as priorities by ED staff because they fit with the life-saving ethos of the ED. In contrast, the care needs of patients with 'subtacular' deaths, who are often older people with long term conditions, are relegated by staff to a lower level of priority. In a comparison of unexpected deaths following CPR in emergency care versus expected deaths occurring in care homes for older people in the UK, Page and Komaromy (2005) show how tacit expectations shape professional practice and reinforce both professional and team identities.

Seymour's (2000) ethnography of death and dying in the intensive care unit- an area of fast paced clinical action with some similarities to the ED- shows how staff synthesise explicit and tacit knowledge to try to achieve alignment of two potentially divergent trajectories of dying: 'technical dying', based on evidence gleaned from bio-monitoring and the results of biomedical investigations and 'bodily dying' based on expertise acquired from prior experience of similar clinical situations. When intensive care staff successfully align these trajectories they are able to describe the process of withdrawing life support as 'nature taking its course'. The present study examines the transferability of one the author's insights into trajectory alignment since we anticipated it may be transferable to the ED and the resuscitation practices of emergency practitioners within the UK (Seymour, 2000). This notion informed the aims and objectives for this study with a particular focus on trying to understand how staff determine an appropriate point for resuscitative efforts to be withdrawn.