Social Science & Medicine 76 (2013) 47–56

Contents lists available at SciVerse ScienceDirect

Social Science & Medicine

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

Patterns of family doctor decision making in practice context. What are the implications for medical practice variation and social disparities?

Roy Lay-Yee [a,*], Alastair Scott [b], Peter Davis [a]

[a] COMPASS Research Centre and Department of Sociology, University of Auckland, Private Bag 92019, Auckland 1142, New Zealand
[b] Department of Statistics, University of Auckland, New Zealand

ARTICLE INFO

Article history:
Available online 2 November 2012

Keywords:
New Zealand
Primary care
Medical practice variation
Clinical decision making
Reimbursement type
Social disparity

ABSTRACT

Medical practice variation and social disparities in health are pervasive features of health care systems. But what impact might everyday clinical decision making have in shaping such aggregate patterns, and could this in turn be influenced by the immediate environment in which family doctors practise? We investigate this by studying inter-practitioner variation in clinical activity across four payment types in New Zealand, a "gatekeeper" primary care system. We do this for four measures of clinical activity by patient ethnic and socio-economic status in a 2001/2002 representative sample of 9272 encounters at 185 family practices. Initial analysis showed little variation in clinical activity either by patient status or by practice type. However, with the application of multi-level statistical techniques it was evident that, while there was still little systematic difference in practitioner activity rates by patient status, inter-practitioner variation was greater for patients of ethnic minority background and from socio-economically deprived areas. Furthermore, this variability was particularly marked in fee-for-service practice settings. Thus, to the extent that family doctor decision-making behaviour within practice context helps shape aggregate patterns of medical practice variation and social disparity, treatment differences are likely associated not with the level of service but with its variability.

Introduction

Medical practice variation (MPV) and social disparities in health are pervasive *macro* features of health systems. But what are the underlying behavioural mechanisms? Could patterns of clinical decision making (CDM) at the *micro* level of the patient encounter, mediated via the *meso* context of the site of practice, play a central role in shaping these aggregate features? This is the fundamental research question being considered in this study and we approach this by determining whether practitioner intervention rates for four common clinical activities (signifying CDM) differ by patient social status in both level and variability (signifying MPV and social disparities), and whether such patterns are in their turn conditioned by practice context (particularly payment and associated organisational arrangements).

Practice variation, social disparities, and decision making

MPV is well-identified at provider, provider group, facility and plan levels and generally accounts for up to 20 per cent of total variability on various performance criteria (Fung et al., 2010). Nevertheless, while such variability has been confirmed cross-culturally (for example, Mousques, Renaud, & Scemama, 2010), and, while connections have been made to the implications for health policy (Davis, Gribben, Scott, & Lay-Yee, 2000), the behavioural mechanisms that might underlie MPV have not been widely canvassed.

In a similar vein, the issue of social disparities in health (that is differentials in health or health care by social status) is high on the policy agenda of many developed societies, and authorities have attempted to advance policies to address these (Exworthy, Blaine, & Marmot, 2003). However, while much has been achieved in the definition and ever-more exact quantification of such disparities, effective interventions to prevent, stabilize or reduce them are hard to find (Mackenbach et al., 2008). There are few if any instances of consciously-designed policy interventions that have successfully addressed them (Starfield & Birn, 2007), and links to mechanisms in care delivery have not often been made.

Yet, it is increasingly being recognized that health care delivery – particularly, in the primary care sector – needs to be included in any comprehensive policy agenda on social disparities (Starfield & Birn, 2007), particularly since primary care is potentially a crucial pathway to equitable social outcomes (Starfield, Shi,

* Corresponding author. Tel.: +64 9 3737 599x85160; fax: +64 9 3737 986.
E-mail address: r.layyee@auckland.ac.nz (R. Lay-Yee).

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http://dx.doi.org/10.1016/j.socscimed.2012.10.003

& Macinko, 2005), and there is increasing evidence that health care may indeed make a considerable contribution to improving health outcomes (Nolte & McKee, 2003), likely reducing rather than increasing inequalities of outcome (Tobias & Yeh, 2009).

A key element in any behavioural model of MPV and social disparities – and the possible relationship between them – is the role of the practitioner and patterns of clinical decision making (CDM) since, once the patient has entered the delivery system, the allocation of resources is determined to an important extent by provider actions (for example, this may be particularly likely with variations in preference- and supply-sensitive care (Wennberg, 2011)). In this context, a number of investigators have sought to make a connection between CDM and health care disparities (Lutfey, Eva, Gertsenberge, Link, & McKinlay, 2010), arguing that there may be central features of cognitive framing that can influence provider actions, either consciously or more usually unconsciously, to take account of clinically irrelevant patient characteristics, such as ethnicity, and that this may be influenced by practice context (Burgess, 2010; Lutfey et al., 2008). Other influences identified have been the interaction with the patient (Burgess et al., 2008), practice style (Mousques et al., 2010), guidelines (de Jong, Groenewegen, Spreeuwenberg, Schellevis, & Westert, 2010), practitioner perceptions (van Ryn & Burke, 2000), diagnostic certainty (Lutfey, Link, Grant, Marceau, & McKinlay, 2009), and collegial environment (de Jong, Groenewegen, & Westert, 2003).

Site of practice

Practice variation and social disparities, therefore, are notable features of health systems, while the behavioural drivers of these patterns are likely located at the micro level of CDM in myriads of patient encounters. However, such encounters take place in a practice context that may play a role of intermediation and influence. In Fig. 1 we present a diagram that captures the key analytical connections between the four elements under discussion: at the aggregate level are well-established macro patterns of both practice variation and social disparity (which may be related to each other), at the encounter level are interactions between practitioners and patients that are likely the behavioural mechanisms for these patterns, and at the meso level is the practice context for such encounters, which may intermediate and influence those drivers.

In the current investigation diversity in practice organization (centred around arrangements for practitioner remuneration), and its potential association with patterns of clinical activity for socially-defined groups of patients, is the focus, and the empirical setting is New Zealand since that country provides special conditions for the exploration of the relationship between practice type and CDM. This is so for two reasons. Firstly, it is a publicly-subsidised "gatekeeper" system of primary care, so family doctors play a key role in allocating scarce resources to patients (Forrest, 2003). Thus CDM is central. Secondly, unusually for a publicly-subsidised gatekeeper system, New Zealand has exhibited considerable diversity of practice organization in primary care, in large part because it has undergone four major restructures of the health care system over the last 20 years (Gauld, 2003). As a consequence of this cascade of reform activity, primary care had by the early 2000s provided a temporary window for this investigation of four reimbursement types (see Box). These ranged from two systems of fee-for-service payment (independent and co-ordinated respectively), through capitation reimbursement, to salaried practices governed by community organizations (Hider, Lay-Yee, Crampton, & Davis, 2007).

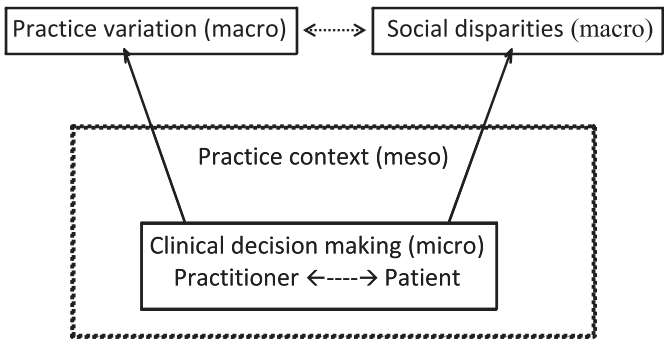

Fig. 1. Practice context mediates the macro-level effects of clinical decision making.

With this range of practice types in primary care, and given the importance of equity considerations in the New Zealand reform process at the time (Hefford, Crampton, & Foley, 2005), is it possible in this environment to assess CDM in its relationship both to features of practice context – particularly practitioner reimbursement – and to key criteria of patient social status, namely ethnic and socio-economic status? For example, it might be surmised that fee-for-service and capitated payment systems would be associated with contrasting patterns of care, with the first being linked to more fragmented and less consistent care than the second (Gosden et al., 2001; Keenan et al., 2010; Mousques et al., 2010), and that this might be less conducive to high-quality care for socially-disadvantaged patients (Burgess, 2010).

Hypotheses

This paper seeks to assess these questions through the analysis of patterns of variability in clinical activity in different practice

Box. Features of New Zealand's primary care system in the early 2000s.

The New Zealand health care system is largely funded by government from general taxes, and has been consistently so since the 1930s (Hefford et al., 2005). Within this tax-funded system primary care is provided by private General Practitioners (Family Doctors), who receive a government subsidy per patient, as well as patient co-payments. Access to hospital and specialist services is by referral from family doctors, a so-called "gatekeeper" system (Forrest, 2003).

As a result of over a decade of health reform activity New Zealand primary care in the early 2000s supported the following major practice types:

1. **Independent** sites of solo and group practice largely unchanged from the traditional pattern.
2. Practices **co-ordinated** by Independent Practitioner Associations (IPAs) with a modicum of structure but retaining traditional fee-for-service payment.
3. **Capitated** practices in IPAs under contract to funding authorities.
4. Practices governed by community organizations (including Māori, the indigenous people), staffed with **salaried** employees and under quite prescriptive contracts to funding authorities.

This diversity in payment system has since been superseded in the mid-2000s by a more uniform blending of capitation and fee-for-service, reduced co-payments, patient enrolment, and elements of community consultation (Hefford et al., 2005).