



# The impact of pecuniary and non-pecuniary incentives for attracting young doctors to rural general practice



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## ARTICLE INFO

### Article history:

Available online 20 December 2014

### Keywords:

Norway  
General practice  
Young doctors  
Rural  
Incentives  
Discrete choice experiments  
Reference dependence

## ABSTRACT

Shortages of GPs in rural areas constitute a profound health policy issue worldwide. The evidence for the effectiveness of various incentives schemes, which can be specifically implemented to boost recruitment to rural general practice, is generally considered to be poor. This paper investigates young doctors' preferences for key job attributes in general practice (GP), particularly concerning location and income, using a discrete choice experiment (DCE). The subjects were all final year medical students and interns in Norway (N = 1562), of which 831 (53%) agreed to participate in the DCE. Data was collected in November–December 2010. Policy simulations were conducted to assess the potential impact of various initiatives that can be used to attract young doctors to rural areas. Most interestingly, the simulations highlight the need to consider joint policy programs containing several incentives if the policies are to have a sufficient impact on the motivation and likelihood to work in rural areas. Furthermore, we find that increased income seem to have less impact as compared to improvements in the non-pecuniary attributes. Our results should be of interest to policy makers in countries with publicly financed GP systems that may struggle with the recruitment of GPs in rural areas.

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## 1. Introduction

The shortage of GPs in rural areas constitutes a profound health policy issue worldwide (Dussault and Franceschini, 2006; Straume and Shaw, 2010; Ono et al., 2014). Out of 34 OECD countries, only the Netherlands does not consider the distribution of doctors to be an issue (Ono et al., 2014). There are principally two types of policy instruments to get doctors into underserved areas; regulations and incentives. A major concern is that regulatory strategies, such as compulsory placements, may alienate potential applicants from the profession and thus prove counterproductive (Grobler et al., 2009). Incentive schemes are either financial (income compensation), or non-financial, focusing on improvements in non-pecuniary working conditions (Grobler et al., 2009; Scott, 2001). The evidence for the effectiveness of various incentives schemes, which can be specifically implemented to boost recruitment to rural general practice, is generally considered to be poor, and rigorous studies evaluating the effect of the proposed incentive schemes are presently lacking (Grobler et al., 2009; Barnighausen and Bloom, 2009).

Before deciding which financial and non-financial incentive schemes should be introduced, it is crucial to understand doctors' preferences with regard to those job characteristics in which policy makers intend to intervene. The aim of this paper is to investigate young doctors' preferences for key job attributes in general practice (GP), emphasizing the relative importance of location and income. This is approached using a discrete choice experiment (DCE). In the absence of revealed preference data, DCEs are acknowledged to be a valuable method for eliciting preferences in the field of human health care resources research (Blaauw et al., 2010; Scott et al., 2013).

Our study provides an important contribution to the existing literature. This is the first DCE from a high-income country to include location as a specific attribute on a sample of young doctors in their *pre-adapted* stage. Preferences for location have previously been studied by Scott et al. (2013) on a sample of experienced GPs in Australia. The authors found (as expected) that GPs have a very strong preferences for staying in their current practice, and hence, their current location. Reference-point bias and high transaction costs of moving jobs were listed as possible explanations for the strong preferences for the status quo. Based on their findings, Scott et al. (2013) suggest that policies should rather be targeted at GPs

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who are more mobile, such as those in training, than existing GPs. An understanding of young doctors' preferences and their trade-offs of job characteristics, *prior to their first medical job*, is therefore crucial to public health policies that seek to correct the geographical maldistribution of GPs. As pointed out by Scott et al. (2013), to relocate doctors later in life, after they have settled down, is more difficult due to "location inertia" and immobility.

Moreover, we include other job attributes that are associated with location such as opportunity for professional development, opportunity to control working hours and practice size. Limited opportunities for professional development, a heavier workload (e.g. higher on-call burden) and smaller practice sizes have been identified as important reasons why young doctors have an aversion to working in rural areas, both in Norway (Andersen et al., 2001; Olsen, 1998; Straume and Shaw, 2010) and many other countries (Dussault and Franceschini, 2006; Ono et al., 2014; Humphreys et al., 2002). By using a DCE we are able to separate these effects and examine the (dis)utility associated with urban locations per se when controlling for these other underlying disincentive factors. To date this remains largely unknown.

Young doctors' preferences for job characteristics in high-income countries have been examined using DCEs in three previous studies (Günther et al., 2010; Pedersen and Gyrd-Hansen, 2013; Sivey et al., 2012), of which Günther et al. (2010) is the only study whose primary aim is to examine preferences for location. The authors examine young physicians' preferences for attributes associated with the location of general practice in Germany. Their findings suggest that the compensation required to offset the disutility of a rural practice as compared to an urban practice could be reduced by improving the non-pecuniary working conditions in rural areas, such as lowering the on-call ratio. They do not, however, include a specific attribute for location measured on a rural/urban scale. Other DCEs conducted in developing countries focus on young doctors' (or clinical officers') location choice (Mandeville et al., 2014). These studies provide insights into the potential impact of various incentives that can be used to attract young doctors to rural areas in developing countries. However, the extent to which the findings from these experiments are relevant and transferable to high income countries is highly questionable, and none of these studies examine young doctors' preferences with reference to key job attributes in general practice.

Understanding young doctors' preferences with regard to income is particularly important, as financial incentives are widely used to affect the location choices of GPs (Ono et al., 2014). In the qualitative pre-interviews (conducted as part of the design process), income for young hospital doctors emerged as a reference (anchor) point; i.e. respondents expressed a strong aversion to earning less than young hospital doctors, while earning a higher income was not considered important. This finding corresponds to the theory of reference dependent utility, whereby Kahneman and Tversky propose that individuals form preferences in relation to "reference states", in which losses loom larger than gains (Kahneman et al., 1990; Tversky and Kahneman, 1991). To capture this asymmetry in the young doctors' income preferences within the context of a DCE, we use a design that allows for the estimation of a reference dependent model examining the extent to which respondents perceive income losses different from income gains. Nonlinearities and reference-dependence in health workers' income preferences have largely been ignored in the DCE literature, where the standard approach assumes a linear functional form (Scott et al., 2013; van der Pol et al., 2014; Holte et al., 2014).

Our sample constitutes young doctors who have not yet selected their specialties. Using this specific group of doctors allows us to examine not only the preferences of those who are determined to become GPs, but also to identify the preferences of *potential*

*entrants* to general practice, with reference to key job attributes in general practice. This enables us to answer the relevant but yet unresolved questions of which incentive mechanisms to apply, and whether those who are inclined to become GPs hold different preferences over job-attributes than those who are less inclined to become GPs.

## 2. The Norwegian context

Norway has had a list patient system in primary health care since 2001. Most GPs in Norway are independent private providers, working on a contract with a municipality. The current default remuneration scheme is fully activity-based, with around 2/3 of their gross income from fee for service (FFS) (a mixture of government and patient payment) and the remaining from capitation paid by the municipalities. Supplementary practice forms include various salary-based contracts, mainly offered to GPs in rural areas. In addition, there is a small group of GPs running full private practices. According to data from Statistics Norway 78% of all full-time equivalent GP-work was done by default remuneration scheme contractors, 19% by salaried GPs, and 3% by fully private GPs in 2013 (Figures from StatBank Norway).

In municipalities with less than 5000 inhabitants, 52% of all full-time equivalent GP-work was done by salaried GPs, compared to 13% in municipalities with 50,000 inhabitants or more. Despite systematic geographical differences in the GPs' contracts, the average income level remains roughly the same across GPs in rural and urban areas (according to data from a recent survey of GPs (Holte et al., 2014)). However, the work content and workload may differ. Even if all GPs are obliged to participate in additional out-of-hours emergency medical service, only about half of them do, and more so in small than large municipalities (Sandvik et al., 2012, 2007).

Norway is a long-stretched country with many small rural municipalities. Among the total number of 428 municipalities, 228 have less than 5000 inhabitants and only 14 have 50,000 inhabitants or more. Many rural municipalities are struggling to recruit GPs. Data from The Norwegian Directorate of Health on GP contracts show that from 2001 to 2013 there were 2.6 new GP recruitments per GP-contract in municipalities with less than 5000 inhabitants, compared to 1.5 in municipalities with 50,000 inhabitants or more. These figures do not include locums. The use of short-term locums is far more common in the small municipalities than in the large ones. Anecdotal media reports tell about certain municipalities having had 20–30 short-term GP-locums during a two year period. Concerns have been raised that the discontinuity in the GP services may have resulted in incorrect treatment with fatal consequences for individual patients. However, these aspects are not documented by scientific sources.

National level policies to attract young doctors to rural areas are lacking, so each municipality is largely responsible for finding ways to recruit and retain GPs within the limits of their budgets and creativity. However, as a general incentive to attract skilled workers to the most northern part of Norway, the authorities offer various tax incentives for people who live in these areas. Types of incentives differ across rural municipalities. Some offer increased salaries, extra vacation, paid educational leave of absence (Abelsen and Bæck, 2005), while other municipalities increase the total number of doctors to make their workload more livable or invest in temporary but regular locum arrangements to handle the out-of-hours emergency medical service parts of the year (Brandstorp, 2014).

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