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The effects of immigration on NHS waiting times☆

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ABSTRACT

This paper analyzes the effects of immigration on waiting times for the National Health Service (NHS) in England. Linking administrative records from Hospital Episode Statistics (2003–2012) with immigration data drawn from the UK Labour Force Survey, we find that immigration reduced waiting times for outpatient referrals and did not have significant effects on waiting times in accident and emergency departments (A&E) and elective care. The reduction in outpatient waiting times can be explained by the fact that immigration increases natives' internal mobility and that immigrants tend to be healthier than natives who move to different areas. Finally, we find evidence that immigration increased waiting times for outpatient referrals in more deprived areas outside of London. The increase in average waiting times in more deprived areas is concentrated in the years immediately following the 2004 EU enlargement and disappears in the medium term (e.g., 3–4 years).

1. Introduction

The impact of immigration on the welfare of host-country residents has long been a contentious topic. In the UK, a majority of the public has been opposed to more immigration since at least the 1960s, and most people perceive the costs of immigration to be greater than the benefits (Blinder, 2012). The EU enlargement of May 1, 2004, exacerbated this debate as citizens of eight new member states (Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia and Slovenia), commonly referred to as the A8, were granted immediate unrestricted rights to work in the country. The UK was one of only three EU countries, including Ireland and Sweden, that opened its labor market to A8 citizens immediately upon accession, a decision that led to a substantial immigrant inflow to the UK.

Previous papers have analyzed the effect of immigration in the UK on public finances (Dustmann et al., 2010; Dustmann and Frattini, 2014), labor markets (Dustmann et al., 2013), the housing market (Sá, 2015) and crime (Bell et al., 2013), among others. We know less about the effects of immigration on the National Health Service (NHS). Residents of the UK, including immigrants, have free access to the NHS. This free access has resulted in speculation that immigrants may increase the demand for NHS services disproportionately and that some immigrants move to the UK with the explicit purpose of abusing the health care system. These arguments and the potential health care costs associated with immigration have resulted in the introduction of an NHS surcharge for non-EU citizens applying for a UK visa.

Despite the intense political debate on the impact of immigration on the NHS, research on this topic has been limited by the paucity of data. Using longitudinal data from the British Household Panel Survey, Wadsworth (2013) finds that immigrants generally use hospital and general practice services at the same rate as those born in the UK. Steventon and Bardsley (2011) provide evidence

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suggesting that the belief that immigrants use more secondary care than British natives may be unfounded. Although these are valuable findings, these studies do not provide information on the impact of immigration on NHS efficiency. Waiting times are an important measure of the quality and productivity of a public health care system (Castelli et al., 2007; Gaynor et al., 2012a; Propper et al., 2008a). This paper aims to provide insights on this impact by examining NHS waiting times.

Waiting times function as a rationing mechanism in the NHS and play a role similar to a price (Lindsay and Feigenbaum, 1984). Research suggests that waiting times are one of the leading factors of patients' dissatisfaction with the NHS (Appleby, 2012; Sitzia and Wood, 1997; Propper, 1995). Postponing treatment delays the associated benefits and can have negative effects on patient health (Siciliani and Iversen, 2012; Cullis et al., 2000). Average waiting times for some NHS services were considerably high during the 2000s, and British politicians have suggested that increased immigration was a key factor contributing to NHS waiting times.

Between 1993 and 2013, the number of foreign-born UK residents more than doubled from 3.8 million to approximately 7.8 million (Rienzo and Vargas-Silva, 2012). This increase in the stock of immigrants is likely to have directly increased the demand for health care services. Immigration also affects the demographic composition and population morbidity rates, two factors that have key repercussions for health care demand. These effects of immigration are likely to vary significantly by location, as there is substantial variation across local areas in both the share of immigrants and NHS capacity.

Using a basic theoretical framework, this paper investigates the effects of immigration on waiting times in the NHS. We consider waiting times in outpatients (referrals), elective care (inpatients) and A&E.[1] We exploit a unique dataset created by merging administrative records and survey data. To the best of our knowledge, no studies have directly examined the impact of immigration on NHS waiting times. The purpose of this paper is to fill this gap in the literature.

Following previous studies on the effects of immigration in the UK (Sá, 2015; Bell et al., 2013), we analyze the correlation between spatial variation in the immigrant inflows and waiting times in England. We use immigration data at the local authority level drawn from the special license access version of the UK Labour Force Survey (LFS), obtained via an agreement with the Office of National Statistics (ONS). To study the effects of immigration on waiting times in the NHS, we merge this information with administrative records drawn from the Hospital Episodes Statistics (HES) provided by the Health and Social Care Information Centre (HSCIC) and extracted at the lower super output area (LSOA) level.

As waiting times are not based on socioeconomic status, they are usually viewed as an equitable rationing mechanism in publicly funded health care systems. However, research provides evidence of marked inequalities in waiting times across socioeconomic status (Cooper et al., 2009; Laudicella et al., 2012; Barr et al., 2014; Propper et al., 2007). Thus, we also analyze differences in our results based on the level of deprivation of the LSOA in order to explore differences in the impact of immigration in different areas.

To address the concern that immigration may be endogenous to the demand for health services and correlated with unobserved determinants of NHS waiting times, we use popular instrumental variable approach which exploits the fact that historical concentrations of immigrants are a good predictor of current immigrant inflows. By including local-area and year fixed effects and controlling for local time-varying characteristics, we can reasonably assume that past immigrant concentrations are uncorrelated with current unobserved shocks that could be correlated with demand for health care services.

Although the political debate has mostly focused on the possible effects of immigration on A&E, we find no evidence of significant effects on waiting times in A&E. While the coefficient is positive, the point-estimate is small and not precisely estimated. However, it is important to note that we only have information on A&E waiting times for the 2007–2012 period. On the other hand, using 2003–2012 data, we find a reduction in waiting times for outpatient care. In particular, we show that an increase in the stock of immigrants equal to 10% of the local initial population leads to a 19% reduction in outpatient waiting times. Finally, immigration is positively associated with inpatient waiting times for the 2003–2012 period, but the effects are smaller in absolute value (+2%) and not-precisely estimated.

To investigate the mechanisms underlying the negative effect of immigration on waiting times, we analyze the effects of immigration on native mobility, average morbidity in the population and health care supply. Consistent with previous studies, our results indicate that immigration increases natives' likelihood of moving to different local authorities. The analysis also confirms that recent cohorts of immigrants are relatively young and healthy upon arrival ("healthy immigrant effect"), suggesting that the increase in demand may have been less than predicted by the NHS (Sá, 2015; Wadsworth, 2013; Steventon and Bardsley, 2011). These effects on mobility and population composition are likely to explain some of the observed reduction in waiting times. Meanwhile, the results suggest that the supply of health care is not affected by immigration.

Finally, we find that waiting times increased in areas that native internal migrants moved into – with respect to areas that received more immigrants – and that immigration increased the average waiting time for outpatients living in deprived areas outside of London in the period immediately following the 2004 EU enlargement. Our findings suggest that the short-term increase in outpatient waiting times in deprived areas in response to immigration can be explained by both the lower mobility of incumbent residents in these areas and the higher morbidity observed among immigrants moving into more deprived areas.

This paper is organized as follows. Section 2 presents the theoretical framework. Section 3 provides a discussion of the empirical specification, the identification strategy and the data. Section 4 presents the main results of the paper and a battery of robustness checks. Section 5 discusses the potential mechanisms explaining the main findings. We then illustrate the heterogeneity of the results across England in Section 6. Concluding remarks are given in Section 7.

2. Theoretical framework

We illustrate the relationship between immigration and waiting times using a basic model of the demand and supply of health care services. Our model builds on Lindsay and Feigenbaum (1984), Windmeijer et al. (2005), Martin et al. (2007), Siciliani and Iversen (2012), and we extend the model to explicitly incorporate the effects of immigration. Unless admitted through A&E, all patients are referred by their GP to access NHS care. If patients receive a referral, they join the waiting list for outpatient care. The specialist can decide whether the patient needs elective hospital care, in which case the patient is placed on the waiting list for hospital admission.

[1] The patient journey usually begins in primary care and can begin with a diagnostic procedure (outpatients), before entering the secondary care system for either an opinion, diagnosis, treatment or procedure. Outpatients are patients who are not hospitalized overnight but who visit a hospital, clinic, or associated facility for diagnosis or treatment. Elective care is planned care. An elective procedure is one that is advantageous to the patient but it is not urgent.