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Political cycles in physician employment: A case of Japanese local public hospitals



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ABSTRACT

A shortage of physicians in local public hospitals is often a heated political issue. When local politicians have the authority to intervene in the management of a public hospital, they may increase the employment of physicians during election years in order to alleviate the shortage. We test this hypothesis empirically using a census of city hospitals in Japan from 2002 to 2011 (N = 4583). Our results support the hypothesis that the number of physicians increases in election years. This effect is stronger in cities with a greater population of elderly residents. We also find that physicians tend to come from university hospitals in the same region. Overall, this paper provides direct evidence of political intervention on physician employment.

1. Introduction

The introduction in the US of the Affordable Care Act under the Obama administration and the current efforts to repeal it under the Trump administration have drawn a great deal of attention to the intersection of politics and health care policy. In Japan, many researchers also argue that national and local politics exert great influence on health care policy as increasing health expenditures put pressure on government budgets. However, while some studies reveal the impacts of presidential elections (Potrafke, 2010) and political ideology (Herwartz and Theilen, 2014) on national-level health care expenditures, our knowledge of more direct political intervention in health policy formation is still limited.

One of the exceptional quantitative studies of this issue is Bloom et al. (2015), who use the win margin in local elections as an instrumental variable for hospital competition to show that the incumbent party's win margin is associated with hospital closures in the National Health Service in the UK. Clark and Milcent (2011, 2018) use the census of French hospitals to show that public hospitals employ more staff in depressed times and areas. This is consistent with the theoretical discussion in Alesina et al. (2000) that public employment is a disguised redistribution. A recent work by Bertoli and Grembi (2017) also investigates political influence on the diagnosis-related group (DRG) system in Italy and finds that the proportion of physician members in the regional government is positively associated with reimbursements for newborn treatments.

Following these studies, this paper examines how the timing of local elections affects the management of local public hospitals in Japan by applying a standard empirical methodology for the political-budget cycle (see Drazen (2001), de Haan and Klomp (2013), and Dubois (2016) for survey) to hospital-level longitudinal data. Specifically, we use data on Japanese municipal hospitals during the period from 2002 to 2011. Japanese local politics in this period provides an ideal opportunity to study this objective, because the healthcare system has attracted broad public attention since it was on the verge of collapse in the 2000s (e.g., Komatsu, 2006; Yasunaga, 2008), and municipal hospitals play an important role in the provision of necessary but unprofitable care. This was widely publicized by provocative media reporting. The alleviation of the physician shortage in local public hospitals was therefore a heated political issue during the 2000s. Many anecdotal accounts also tell us that mayors played a crucial role in bringing physicians to their municipal hospitals from hospitals elsewhere.

One of the contributions of this paper is to find new channels in political intervention in health care provision, that is, a direct control on employment in public health providers. Interpretation of the results of this paper is also clearer than in previous studies that focus on aggregate expenditure levels (Potrafke, 2010; Herwartz and Theilen, 2014). Since physician shortages were a dominant political issue during the study period, hiring new physicians in local public hospitals was arguably "visible" to local voters (Veiga and Veiga, 2007; Drazen and Elsava, 2010). In addition, the Japanese local electoral system enables

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us to exclude the potential endogeneity of election timing. Though the election year can be determined endogenously if the incumbent calls an election when the timing is favorable (Ito and Park, 1988), most elections in Japanese municipalities are held at the termination of a term, and are thus "scheduled". The term of all mayors, four years, is stipulated by national law, and we can therefore safely argue that the election timing of Japanese municipalities are exogenous. This identification strategy follows recent studies including Shi and Svensson (2006) and Potrafke (2010).

2. Background

2.1. Local public hospitals in Japan during 2000s

In 2014 there were 177,546 hospitals and clinics in Japan, more than half of which were clinics without beds (MHLW, 2016). The number of hospitals, defined as medical institutions with 20 beds or more, was 8493. One feature of hospital care in Japan is that the private sector plays a major role, much like in the US, accounting for about 80% of hospitals. Public hospitals can be placed into three categories according to their owners: national (n = 329), prefectural (n = 203), and municipal (n = 651). Although the functions of each hospital are not well defined and undifferentiated (Hashimoto et al., 2011), public hospitals are more likely to provide unprofitable care (Yasunaga, 2008), much like in the US (Duggan, 2000; Lindrooth and Weisbrod, 2007; Bayindir, 2012). The ratio of medical revenues to medical costs of local (prefectural or municipal) public hospitals was around 90% during our sample period in the 2000s, meaning local hospitals receive subsidies from local governments.

Policy reforms by the Koizumi government from 2001 to 2006 drew public attention to the difficult environment of public hospitals. First was the consecutive negative revisions of the public fee schedule. Health care in Japan operates under a single-payer system, with the public fee schedule revised biennially. The revision rate was -2.7% in 2002, -1.0% in 2004, and -3.16% in 2006. These reduction rates were far larger than the decrease in general price level during the same period. Since the role of private health insurance in Japan is limited, hospitals could not compensate for this reduction by increasing revenues obtained via reimbursement from private insurance or other sources. Thus, these negative revisions contributed to the deterioration of the fiscal situations of local public hospitals. Second was the introduction of the New Postgraduate Medical Education Program (NPGME) in 2004. Prior to the introduction of the NPGME, residency training was not mandatory and residents were trained mainly in (public and private) university hospitals. The introduction of the NPGME made residency training mandatory and permitted non-university hospitals, including large local public hospitals, to train residents, leading to a drastic reduction of the labor supply of young hospital physicians in university hospitals. Although the NPGEM decreased the number of medical residents (interns) in university hospitals, medical universities have considerable power over the personnel management of physicians in the local health care market, and therefore, these hospitals could compensate for the reduction in young residents by recalling physicians who worked for other nearby hospitals. This reduced the number of physicians in the hospitals in some rural areas, where medical residents seldom go to do clinical training (Iizuka and Watanabe, 2016; Sakai et al., 2013). Third was the drastic decrease in Local Allocation Tax (LAT) grants, which are fiscal equalization block grants allocated to local governments from the national government. In 2004, LAT grants were cut by 12%. This reform seriously worsened the fiscal situation of local governments in rural areas. Since the local public hospitals are financially dependent on their local governments as mentioned above, this in turn affected local public hospitals.

Coupled with many medical accidents in 2006 and 2007, the Japanese health care system of the 2000s was widely seen as being on the verge of collapse (e.g., Yasunaga, 2008). The provocative media

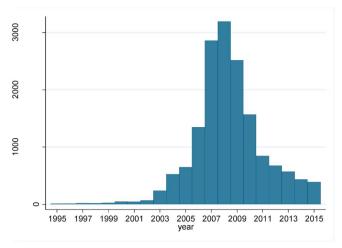


Fig. 1. Number of the newspaper reports that include the phrase "physician shortage".

(Note) Four major newspapers in Japan (i.e., the Asahi, Mainichi, Yomiuri, and Sankei) were searched for the phrase "physician shortage" (in Japanese, *ishi husoku*).

reporting led by medical professionals helped bring widespread attention to the problem. One example of a book that garnered broad public attention was titled "Health Care Collapse", published in 2006 by a hospital physician, Dr. Hideki Komatsu, (2006). Fig. 1 shows the number of newspaper reports on the word "physician shortage" from the four major newspapers, namely, Asahi, Mainichi, Sankei, and Yomiuri. This figure suggests that the general public recognized the severe physician shortage during the period from 2007 to 2010, after the publication of Komatsu's influential book. These circumstances can reasonably lead us to assume that the shortage of physicians in local public hospitals was one of the dominant political issues during the 2000s.

2.2. Japanese local politics

The local governments in Japan are two-tiered. There were 47 prefectures (upper tier) and 1718 municipalities (lower tier) in 2014. All municipalities are geographically covered by prefectures. Prefectures and municipalities are democratic governing bodies and employ a dual representation system, where each local government has an executive head (mayor for municipalities and governor for prefectures) and a council. The head of each local government is directly elected by the constituency (i.e., local residents); the same applies to council members. A fiscal year starts in April and ends in March. The mayor prepares a draft budget for the upcoming fiscal year and must obtain the council's approval by March.

The term of council members and mayors is four years. In April 1947, all municipalities held their mayoral and council elections. Because the term of office is the same for all municipalities, many hold elections in the same years. During our sample period, such "unified" local elections were held in 2003, 2007, and 2011. If a mayor leaves office without serving his/her full term due to, for example, sudden death, the term of office for the next mayor is also four years. Thus, if a municipality has held such an "early" election in the past, it deviates from the usual four-year cycle of local elections and can be held in any month of the year. One major reason for mid-term elections is a municipal amalgamation. When two or more municipalities amalgamate into one, the new municipality must hold mayoral and council elections. Japan implemented the Heisei Great Amalgamation in the 2000s, which decreased the number of municipalities by approximately 40%, with 316 mayoral elections due to amalgamation between 2002 and 2006.

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