Catchment areas of medical practices and the role played by geographical distance in the patient’s choice of doctor

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Abstract For a needs-planning system to be able to guarantee to provide the population with universal, locally available ambulatory medical care, it requires information concerning how patients choose their doctors, the size of the catchment areas of medical practices and the resulting distance-sensitivity of the population in relation to each medical speciality. In this contribution a model of opportunity’s preference for the health sector is developed. The key parameter of the distance sensitivity of the patients on the basis of real data is calibrated. Furthermore, this contribution empirically examines whether people in their choice of the established surgeons minimize the ways time (expense minimization) or if they are not aware of the nearest doctor, but the doctor of their confidence (act of preferential expression).

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1 Introduction

In no other sector is the fundamental tension between the free market economy and government planning more clearly manifest than in health care. From the point of view of welfare theory, there is—with only a handful of exceptions—insufficient evidence of market failure in the field of health care to justify extensive state intervention or the necessity of completely publicly organised health care (cf. Breyer et al. 2003, p. 172).
The players in the health system—as in many other fields—could therefore be allowed to act more or less free from state regulation. In almost all developed economies health care is subject to a high degree of regulation. In addition to the conditions imposed on health insurers, there are a wide variety of other requirements to be met by the players in the field of health. In some countries hospital planners determine the location of hospitals, limiting the freedom of doctors to exercise their profession. In addition, there are often plans which ascertain the ‘need’ for office-based physicians and authorise practices accordingly. Since such massive state intervention cannot be justified by resource allocation theory, other strategies are used. In Germany, for instance, it is argued that health care benefits are a matter of public welfare and should therefore be offered independently both of individual income and wealth and of place of residence. Applied to the supply of health services, this principle is invoked to demand the ‘equality of living conditions’ guaranteed in the German constitution. The consequence is that health benefits must be made available universally and in such a way that taking advantage of them involves neither long distances nor long waiting times. This goal, however, can only be attained by appropriate intervention on the part of the planners.

In Germany, hospital planning has existed since 1972 at the level of the Länder, the (now) 16 states constituting the Federal Republic of Germany. A system of ‘needs planning’ for office-based physicians was introduced in 1993. This system was conceived as a response to the glut of doctors and was intended to limit the number of self-employed office-based physicians. Taking affect at the level of counties and county boroughs (towns with a county-level administration of their own), it does not lay down locations for medical practices which practitioners are then obliged to occupy but works on the principle of ‘open’ and ‘closed’ planning areas. Doctors are the free to choose the location of their practice in counties which are ‘open’. In ‘closed’ planning areas, however, it is generally no longer possible to establish a new practice. This ‘needs planning’ system achieved its purpose of limiting the growth in the number of doctors. However, there is now a lack of doctors in many areas. Today, gaps are appearing in the medical coverage provided by doctors working within the statutory health insurance system, as office-based doctors retire without finding a successor. This shortage in the next generation of doctors has made it necessary to be able to define local needs more precisely so that these increasingly scarce ‘medical assets’ can be allocated to areas where they are really needed. For a ‘needs planning’ system to be able to guarantee to provide the population with universal, locally available ambulatory medical care, it requires information concerning how patients choose their doctors, the size of the catchment areas of medical practices and the resulting distance-sensitivity of the population in relation to each medical speciality.

The present paper presents empirical results which use real data from the actual delivery of medical care to characterise how the population chooses physicians and the size of the catchment area of medical practices. First, the various methods used to delineate catchment areas are described; then the data and the calculation methods are presented; finally, an explanation of the results is offered.

Of course proximity is not the only factor for the doctor’s choice by the patient. Moreover factors like doctor’s reputation and certification, office appearance,