

# The Private Hospital Market in Denmark

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**Motivation:** A basic question in the design of single-payer healthcare is the extent to which medical treatments should be provided by the public or the private sectors. In recent years, the Danish health care system has increasingly relied on private hospitals for additional capacity. Services from private operators are purchased by the Danish local regions using several different procurement methods. However, there is no systematic database that records the cost of these privately provided, but publicly funded, services. This project will construct a novel dataset to allow historical comparisons of the prices achieved under the different auctions and bargaining agreements that have been used to procure private sector medical services. We will use this data to infer the fixed and marginal costs of private providers, and to make recommendations for how regions should design these procurement auctions to minimize costs while ensuring adequate supply. The data are also relevant to a broader research project on hospital waiting times and investments in capacity through the public and private sectors.

**Background:** Up through the 2000s, the treatment of publicly funded patients at private hospitals increased dramatically. This shift was driven by medical advances in elective surgery as well as political decisions to broaden the market. A major driver has been the waiting time guarantee, where patients facing excessive waiting times in the public system are offered free treatment at private hospitals. This is called “extended free choice” (fritvalg). The funding for these private procedures is taken from the regions’ budgets, so the regions decided to expand capacity in order to bring down waiting times. While most regions have used private operators to expand capacity, they have used a variety of procurement methods. For cataract operations, for example, two regions (Northern Jutland and the Capital Region) have relied primarily on procurement auctions. There, a specified number of procedures is guaranteed to the auction winner. Two other regions (Mid Jutland and Southern Denmark) have instead opted to rely on private practitioners for cataracts, under the so-called “Paragraph 64 agreements.” There, prices are negotiated with practitioners through bilateral bargaining. These two methods of buying extra capacity are complementary to the default prices paid under the waiting time guarantee, referred to as the DUF-prices.<sup>1</sup> The DUF-prices are set in negotiation between the Danish Regions and the Danish Regions and the Association of Private Hospitals and Clinics (BPK). An interesting pattern is that the prices obtained from both procurement auctions and Paragraph 64 agreements have fallen over time relative to the DUF prices for fritvalg patients. However, it is difficult to get a precise picture of the relative merits and magnitudes over time using currently available data.

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<sup>1</sup>Danish: *Det Udvidede Frie Sygehusvalg*.

**Research Questions:** Our primary research question is how the different procurement methods employed by Danish regions have affected prices paid to the private system across regions and over time. In addition to using different procurement mechanisms (bargaining or auctions), the regions have changed what is procured, e.g. the quantity of treatments procured from a single provider, and the types of medical treatments procured from the private sector. This project would also be complementary to an ongoing project in which we are examining the waiting times for hospital procedures in Denmark. In particular, we are investigating the welfare consequences of using waiting time guarantees as a method for allocating scarce public hospital capacity. It has turned out during this work that an important policy response from regional governments to the national waiting time guarantee policy has been to purchase extra hospital capacity from private operators. The funding we apply for herein will allow us to learn more about the cost incentives underlying these decisions, which may be relevant for future work depending on what the data shows.

**Empirical Strategy:** The first part of our empirical strategy is simply collecting the data and organizing it into a standardized format. Our focus here will be on identifying common aspects of procurements (quantity, mechanism, etc) and obtaining comprehensive information on all procurements from the five Danish regions across a broad range of medical services. We are requesting research assistant funding for this highly labor-intensive work. The second part of our empirical strategy will investigate the relationship between procurement methods and costs. We will employ multiple empirical techniques here. First, we will conduct descriptive analyses of procurement costs for different procurement methods and types. Second, using techniques from empirical industrial organization, we will structurally estimate the distribution of private sector provider costs based on auction bids and bargaining agreement prices for different medical treatments over time. A challenge here will be finding a large enough sample of procurements for comparable procedures. Even if we are limited by the number of procurements, economic theory will allow us to bound provider costs based on auction bids and agreement prices. We can use these bounds to bound the prices that would have been obtained through other procurement methods.

**Data:** A key output of this project is a new dataset on public procurements of private sector medical services. Historical data on both procurements and private clinic activity exists, but it is not available in a useful format for research. For instance, the portal [ted.europa.eu](http://ted.europa.eu) has data on historical procurements of hospital procedures, but details regarding the number of operations are only available in text form inside PDF documents. The project will hire a Research Assistant (RA) to codify this data and put it into a format that will be useful for statistical analysis. In addition to the data from TED, the RA will contact each of the regions in order to gather historical paragraph 64 agreements and codify the procedures covered and prices paid. Some recent agreements are published on the Regions' websites, but historical ones must be obtained by contacting each of the five regions directly. The data to be extracted from these PDFs will include the period and procedures covered, the practitioner clinics that were included in the agreement (typically around 5-10 in a region), and the minimum annual quantity required to be performed. Given data on the private practitioners covered, we can merge the data to the database on private practitioners, Sygesikringsregistret, to obtain the actual realized quantities. We have already obtained access to the medical registers at Statistics Denmark, which contain information on almost all procedures done in public and private hospitals. We observe the DRG-prices for all public sector treatments, as well as most private sector treatments, including those provided through extended free choice

(fritvalg). We can compare the prices obtained through procurement auctions and bargaining agreements in our constructed dataset with the DUF and DRG prices in the registers. The registers also allow us to measure demand for medical treatments and patients' hospital choices, which influence private hospitals' entry decisions and cost structures. Although the primary part of the funding is salary for the RA, we also expect to have to pay minor fees to Statistics Denmark and/or to the Danish Regions for assistance or services related to the integration of the ID keys from the different data sources.

**Research Output:** We intend to publish our findings on the relationship between procurement methods and costs in a policy-oriented field journal such as the Scandinavian Journal of Economics or the Journal of Health Economics. The broader research project on waiting time guarantees and public vs private sector investments – to which this project would be a valuable input – may be suitable for publication in a general interest journal.

**Policy Relevance:** We will make the created dataset on procurements publicly available after we have published our work. The simple descriptive comparisons that this data enables will help regions compare historical results in order to improve procurement design moving forward. We know, for example, that regions have experimented with the scope of the auctions, trying to assess the tradeoff between offering a large quantity to facilitate economies of scope, against a smaller quantity which would increase competition from small hospitals. We have spoken to people at Danske Regioner who are interested in learning of our findings, which will be their incentive to help our RA in data collection.

**Risk management:** Since comparing procedures can be extremely complicated, we will start by focusing on cataract surgeries. These procedures make up a large share of public procurements from private hospitals, and have been purchased both under procurements and bargaining. We will then move on to knee and hip surgeries and, if the budget allows, to additional procedures.

**Timeline:** The project funding lasts for two years with the following key milestones:

- 2021Q3: Hire an RA
- 2022Q1: Procurement data ready for cataracts
- 2022Q3: Procurement data ready for knees and hips
- 2023Q1: First working paper draft
- 2023Q2: Conferences and end of project period.