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Health policy 126 (2022) 853–864

Contents lists available at ScienceDirect

Health policy

journal homepage: www.elsevier.com/locate/healthpol

Strategic purchasing and health systems resilience: Lessons from COVID-19 in selected European countries

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ARTICLE INFO

Keywords:
Purchasing
Payers
Contracting
European health systems
Health systems resilience
COVID-19 pandemic

ABSTRACT

Strategic purchasing is a popular and frequently proposed policy for improving the efficiency and adaptiveness of health systems. The COVID-19 pandemic shocked health systems, creating a test of the adaptability and resiliency of their key features. This research study explores (i) what role purchasing systems and agents played in the COVID-19 pandemic, (ii) if it was strategic, and (iii) how it has contributed to a resilient health system. We conducted a qualitative, comparative study of six countries in the European Union—focusing on three as in-depth case studies—to understand how and when strategic purchasers responded to seven clearly defined health system "shocks" that they all experienced during the pandemic. We found that every case country relied on the federal government to fund and respond to the pandemic. Purchasers often had very limited, and if any then only passive, roles.

1. Introduction

Strategic purchasing is a common policy for improving the efficiency and adaptiveness of health systems. On paper, it is an active, evidence-based process wherein the health care provider mix, service mix, and volume are collaboratively determined by prioritizing the financing of specific goods and services over others. The goal of this policy is that societal objectives, such as the promotion of equity, quality of care, efficiency, and responsiveness to citizen priorities, are maximized [1,2]. Supporters claim that strategic purchasing is more than simple contracting because it allows efficient market-based coordination of decisions through decentralized actors that can allocate resources tailored to regional needs [2,3].

Resilience refers to the ability of a system to restore itself after stress [or shock], independent of that shock. Resilience as a concept focuses on the ability of the system to absorb and respond well to system shocks or any combinations of stressors [4–6]. Health system shocks are sudden and often severe changes that impact a health system at multiple levels [4]. Resilience models and health system shock models have similar stages. In these frameworks, a system goes through preparedness and planning, shock onset and absorption, shock impact and recovery, and adaptation and learning [4,7,8].

During a crisis, a resilient health system can effectively adapt in response to dynamic situations, recovering from and absorbing shocks while maintaining core functions and serving the ongoing care needs of their communities [9]. The COVID-19 pandemic shocked health systems, creating a test of the adaptability and resiliency of their key features. Governments worldwide have been compelled to rapidly examine and modify purchasing arrangements for channeling resources to health providers to increase coronavirus testing and treatment and to protect providers from revenue shortfalls [10,11]. Governments paid providers, expanded benefits packages to insurers, and adjusted payment methods, rates, and contracting procedures due to the pandemic [12]. But, did strategic purchasing increase health system resilience?

In this study, we ask what role purchasing systems and agents played in the COVID-19 pandemic: if purchasing was strategic, and if it has contributed to a resilient health system. Rather than asking what explains pandemic outcomes, we use the pandemic to examine the contribution of strategic purchasing to healthcare system resiliency. Many claims have been made about the advantages of strategic purchasing and its current prominence in international health policy recommendations [2,13–17]. For example, advocates claim that strategic purchasing promotes risk pooling and enables purchasers to develop policy expertise and capacity that, when combined with data, allows

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https://doi.org/10.1016/j.healthpol.2022.06.005
Received 3 January 2022; Received in revised form 7 June 2022; Accepted 13 June 2022
Available online 14 June 2022

them to make evidence-based decisions. In the context of a crisis, we could expect that strategic purchasers would use the flexibility of disaggregated organizations and inherent adaptiveness of different providers to respond quickly.

Other researchers point out that its record in practice has been relatively poor, with few cases of successful implementation. Greer, Klasa, and van Ginneken (2020) found four asymmetries that explained why strategic purchasers could not fulfill that promise [3]. These asymmetries weakened the purchaser(s) relative to other actors such as providers or governments. Information asymmetries between purchasers, patients, and providers are well known. Most importantly, purchasers' information about patients is costly to acquire and interpret and often remains incomplete. Second, market power asymmetries between providers, especially hospitals with local monopolies, reduces the purchaser's power and negotiating leverage. Next, political power asymmetries leave purchasers, especially insurance companies, in politically weaker positions than the providers, patients, or governments with which they contend. Last, financial asymmetries limit the purchaser's ability to redirect resources and change capital investment plans that could broadly impact their respective health system. These four asymmetries suggest that strategic purchasers and purchasing would fail to be key tools to respond to the COVID-19 pandemic instead of being sidelined by governments and deemed too rigid and weak to manage crisis response.

The implications of this question—what does strategic purchasing contribute to health system resilience—could go beyond the specific policy initiative of strategic purchasing. Strategic purchasing is in large part the health care policy version of the broad New Public Management (NPM) approach [18]. NPM's combination of efficiency incentives and organizational fragmentation can become problematic in that they emphasize contracting, the division of labor, and efficiency over speed, adaptiveness, and reserves. NPM schemes might promote incremental adaptiveness (e.g., slow efficiency improvements or alteration of services to reflect local populations) but not the kind of large-scale adaptation that needs to happen in a crisis [19].

In other words, there is a longstanding agreement that organizations face a decision between making and buying what they need: creating resources in-house, such as skilled permanent employees, versus buying them in from outside contractors. NPM, including strategic purchasing, biases organizational design towards "buy" rather than "make." This creates two problems known since Coase first started to develop what became transaction costs theory: it presumes that the resources are available to be bought and that purchasing them will not take excessive time and energy [20]. The result is that while NPM might be serviceable as an efficiency-enhancing approach—assuming transaction costs and capture of purchasers by providers are kept in check [21]—it might be actively damaging to overall system resilience. The role of strategic purchasing in the COVID-19 pandemic can therefore shed some light on the broader contribution of NPM to health resilience.

2. Materials and methods

The COVID-19 pandemic tested the governance among all health systems around the world. To assess the effect of COVID-19 on purchasers' role in health systems, we first made a country-case selection of systems that have adopted or intended to adopt strategic purchasing as a policy strategy. We then followed a qualitative case-study methodology to evaluate the role of purchasers during the COVID-19 pandemic on this sample of European countries. We draw heavily on the evidence collected in the COVID-19 Health Systems Response Monitor, a policy tracker produced by the European Observatory on Health Systems and Policies, and the European Observatory's Health Systems in Transition (HiT) reviews. We supplemented this data with peer-reviewed articles and grey literature using a snowball search where data was lacking, limited, or unclear [22–37].

2.1. COVID-19 "Shocks" to health systems financing

The pandemic brought a surge in COVID-19 related care needs such as Intensive Care Units (ICU), PCR testing, and telehealth visits [12]. Health systems needed to reshape service provisions to supply the population with the necessary care and, at the same time, sustain the availability of other elective and emergency care activities for non-Covid patients. We aimed to observe purchasing patterns and explore deeply how each country behaved in crucial areas related to health financing to learn the role of purchasers during the COVID-19 pandemic. To understand the role of strategic purchasing, we can interpret the pandemic, above all, as a series of shocks. Health care systems changed what they provided (much more intensive care and other COVID-19 related care, much less elective surgery, and even regular emergency care). Also, they changed what they purchased (requiring far more ventilators, PPE, and vaccines than usual). To understand how and when strategic purchasers responded, we draw on previous work by Waitzberg et al. (2021) about adjustments to provider payment mechanisms in response to COVID-19. Our goal was to identify the following key categories of activity in which there was an evident COVID-19 shock:

(a) **Surge in demand for pandemic-related health care services:** What was the purchaser's response to unexpected COVID-19 related costs? The COVID-19 pandemic created a surge in demand for staffed hospital beds, intensive and critical care beds, specialist staff and therapeutics, and emergency response. Financing and strategically allocating resources to these areas across health systems in mid-crisis might be a task in which strategic purchasing mechanisms could be valuable.

(b) **Surge in demand for pandemic-related services (testing, tracking, and tracing):** What was the purchaser's response to unexpected COVID-19 related testing and tracing techniques? Testing includes viral tests (nucleic acid amplification test (NAATs) and antigen test) and antibody tests (blood test). The increase in coronavirus testing and tracking tracing programs spike the need to reallocate resources from non-essential testing, surveillance, and tracking of other diseases. Countries implemented testing in pharmacies, laboratories, healthcare facilities, and non-health-related settings such as schools, churches, and others. Countries incurred expenses to develop tracking and tracing mobile applications and hire personnel for contact-tracing programs. How did strategic purchasing strategies fit into the effects of the massive surge of test-track-trace strategies?

(c) **Drop in demand for all other healthcare services:** What was the purchaser's response to unexpected COVID-19 related changes for other services? The surge in need for COVID-19 related care came with a precipitous drop-in elective health care, from primary care to surgery, and even a puzzling drop in urgent critical care demand in some places. Pre-pandemic, normal purchasing tends to focus on these categories, with money and attention concentrated on common and chronic treatments. Without them, providers potentially faced a financial crisis, and insurers a very profitable year—the baseline being the United States, where private insurers greatly profited from this change in demand. How did strategic purchasing mechanisms respond to this massive shift in demand away from the services that normally drove budgets?

(d) **Change in service modality:** What was the purchaser's response to changes in how care was delivered? For example, the rise of telehealth has been one of the most common, and lauded, results of the pandemic. A shift to widespread telehealth creates challenges for reimbursement systems (allowing reimbursement for telehealth and setting rates), requires new investment (in technology, infrastructure, and training), and raises equity concerns

for patients with poor or no internet access or skills. How did strategic purchasers respond to the sudden rise of telehealth?

(e) **Change in provider requirements:** What was the purchaser's response to changing provider behavior and provider needs during the pandemic? PPE includes products such as gowns, gloves, high-quality face masks, and goggles. There was a global surge in demand for PPE in early 2020 and widespread reports of chaotic and corrupt markets, as well as competition within health care systems. While the acquisition of equipment such as PPE is typically the concern of providers rather than strategic purchasers, any actor charged with stewardship of a health system in spring and summer of 2020 might have chosen to try and coordinate PPE acquisition and distribution. We include this because while procuring equipment is not typically a responsibility of strategic purchasers, it is an element of the strategic purchasing *system* that providers purchase supplies.

(f) **Change in provision (vaccines):** What was the purchaser's response to vaccine acquisition and vaccination campaigns? In 2021, large-scale vaccination programs began. How did strategic purchasers participate in setting policy or in financing the acquisition and provision of vaccines?

(g) **Change in policy salience and urgency:** What was the purchaser's response to changing policies during the pandemic? Many of the definitions of strategic purchasing have built-in requirements that include population health perspectives and participation. The pandemic put a premium on quick and often central action. Was there any evidence that strategic purchasing mechanisms allowed representative patient or public perspectives to enter debates?

In keeping with our focus on resilience and response, we focus on the early stage of each policy. This means the first "wave" (spring and summer 2020) and second "wave" (fall and winter 2020) for everything except vaccination campaigns, which, with some variance by country, refers to spring 2021.

2.2. Country-case selection

We selected six critical European Union health systems that have been previously chosen and studied for diverse geographic locations, health system types (Bismarckian, Beveridgean, and private insurance-based), and level of decentralization [2]. The resulting sample is presented below, along with an overview of the current purchasing and market structures of the chosen health systems. We selected five Social Health Insurance countries–Germany, France, Netherlands, Switzerland, Slovakia–and one National Health Service system in a country with a high level of decentralization, England in the United Kingdom (UK).

Refer to the Appendix for Table 1: "Country-case selection and purchasing structures."

3. Main results

Table 2 in the Appendix summarizes our main results of six country-case comparative analyses evaluating the role of purchasers during the COVID-19 pandemic in Europe. For the most part, we found that in all examined countries, the entity responsible for healthcare purchasing did not have a significant role in the surge in demand for pandemic-related services and changes in service modality, provider requirements, provision, and policy saliency.

In all our case countries, the purchaser had little to no role as a decision-maker in their respective country's response to a surge in demand for pandemic-related services in acute care such as ICU capacity. While purchasers in the Netherlands contributed to the costs of having ICU beds available for COVID-19 care, they did not possess a long-term strategic plan or vision to build more capacity in the future. Additionally, the purchaser did not participate in hospital bed planning. Similarly, the Swiss saw a more centralized approach than usual, with cantons mostly managing and implementing decisions made at the national level. There was often much deliberation and negotiation between the Swiss cantons and the confederation whenever laws and regulations were passed.

Likewise, in all our case countries, the purchaser had little to no role as a decision-maker when responding to a surge in demand for pandemic-related services in public health care and disease surveillance activities such as testing, tracking, and tracing. Purchasers were initially hesitant to pay for and finance comprehensive COVID-19 testing programs. Most health insurers focused on creating plans and financing mechanisms to compensate for lost revenue due to postponed care. Across most of our case countries, purchasers often passed testing costs to patients through co-pays or unsubsidized out-of-pocket payments. In all cases, the government—not the purchaser—was the ultimate coordinator of test and trace programs and the actor in charge of securing COVID-19 PCR and rapid antigen tests.

Although limited, purchasers across all case countries had some role in dealing with a drop in demand for all non-COVID-related health services. Most purchasers focused on establishing reimbursement mechanisms for COVID-19 care and detailed plans to fund lost revenue from delayed elective and non-elective care. Purchasers were heavily dependent upon the federal government in bailing out the healthcare system and creating emergency funding streams for health systems, providers, healthcare workers, and patients. Purchasers had little to no ability to self-fund any lost revenue. No purchasers had an established pool of money or a sufficient stockpile of healthcare resources in a crisis or shock such as a pandemic. Additionally, only Germany, the Netherlands, and Switzerland had explicit mechanisms that allowed for multi-stakeholder input during the decision-making process.

In most of our case countries, purchasers were also absent or passive decision-makers in changes in service modality. Telehealth was already available in all our case countries before the pandemic. Again, most purchasers focused on establishing or broadening reimbursement mechanisms for telehealth services. Many purchasers also spent much of their time dealing with administrative burdens related to the EU's stringent privacy laws. None planned for increased telehealth demand in the long-term, and none prepared to grow capacity accordingly. Purchasers passively reacted to policies that increased access to telehealth, but few, if any, worked to ensure equity and fair access to such services.

Purchasers were minimally responsive to changing provider behavior and needs during the pandemic in our selection of case countries. PPE was not a concern of purchasers as the federal government was the ultimate steward in coordinating PPE acquisition and distribution on a national level. Purchasers would often passively distribute already acquired PPE at the sub-national level. No purchasers chose to plan and coordinate PPE acquisition strategically, nor did purchasers try to engage with providers and health systems to understand demand and changing needs.

Not a single purchaser oversaw vaccine acquisition. The central government ordered vaccine acquisition and, in five cases, created mass vaccination campaigns—often with their national public health department. NHS England coordinated the English mass vaccination campaign, but not through purchasing mechanisms. Purchasers were not involved in setting policy for vaccination strategies or financing vaccine procurement and distribution. They often had passive roles, and most health systems (including England) reverted to a command-and-control style of delegation and authority.

Last, purchasers passively accepted any policy changes throughout the pandemic. Few included a population health perspective outside of viral surveillance and hospital bed capacity. Many other chronic and acute conditions (i.e., diabetes, obesity, asthma, cancer, heart disease) were postponed, forgotten, or ignored as the pandemic raged on. Patients and the public had little say in healthcare purchasing decision-making.

Refer to the Appendix for Table 2: "Healthcare Financing Shocks

and the Role of Purchasers during the COVID-19 Pandemic."

4. Case study results

Additionally, we wanted to explore in-depth how systems based on strategic purchasing handled COVID-19. We focused on how strategic purchasing mechanisms and strategic purchasers were part of the adaptations made in response to the pandemic, whether through their usual operations or their use in *ad hoc* pandemic-related responses.

Case studies can permit more in-depth analyses of policies and reconstruction of the dynamics of individual systems, complementing larger comparative analyses. We focused our case studies on three exemplary cases for deeper analysis after initially exploring the scope of the issue in the six HSRM cases. These were chosen as examples of different kinds of strategic purchasing systems: The United Kingdom, Switzerland, and the Netherlands. These three countries vary in terms of market structure, choice of purchaser, and type of purchaser. Additionally, all three countries had strong but varying responses to the COVID-19 pandemic. The UK is a single-payer system with no choice in the purchaser, while both the Netherlands and Switzerland have multi-payer competing market structures where patients can choose their health insurer. Furthermore, the Netherlands is a case of a national, non-geographically delimited private health insurer system that allows for-profit purchasers to exist. At the same time, Switzerland is a case of a decentralized, cantonal health insurer system that does not allow for-profit purchasers to exist.

4.1. England

The English NHS is one of the homelands of strategic purchasing as theory and policy, with Margaret Thatcher's "internal market" of 1988 being a landmark in the policy's history. The United Kingdom government directly governs England, which makes up 85% of the population. Scotland and Wales do not have strategic purchasing. While Northern Ireland on paper has strategic purchasing, its small size and politics mean that it has never resembled a market with competitive purchasing [38]. We, therefore, focus our discussion on England.

By 2020, there had been thirty years of heavily evaluated efforts to institute strategic purchasing in England, in different configurations, and with different priorities and another reorganization was being debated in Parliament in 2021. The Health and Social Care Act of David Cameron's government and the evolution of the NHS after its implementation had given the English NHS its structure as of early 2020 [39]. In law, the strategic purchasers were primarily Clinical Commissioning Groups (CCGs), local groups of primary care doctors, with an organization called NHS England (NHSE) commissioning specialist services and supporting CCGs and a national tariff set centrally. In practice, by the start of 2020, NHS England was orchestrating ad hoc groups of CCGs in an explicit effort to develop integration and partnerships with providers for planning and service delivery purposes. The machinery of strategic purchasing and competition remained in place, but the existing system's leadership was in NHS England and the priority, integration. The relationship between NHS England and the Department of Health and Social Care (DHSC), always tricky, was influenced by the challenges of Brexit and austerity. These challenges gave Conservative politicians little incentive to engage with complex health policy problems and gave NHS England more latitude to manage the system.

In the pandemic, the first problems were in health finance: finding ways to finance and provide COVID-19 related care and stabilize NHS provider finances without much regular care. The government's responses happened at the level of Whitehall departments.They included writing off the historic debts of NHS trusts [40], which had become very large in recent years due to cuts in preventive and social care that had traditionally taken pressure off NHS services. The debts were, in one sense, "paper" since they were owed by one part of the government to another, and there was no realistic chance of their being repaid. However, they loomed large in government accounting and evaluations of NHS providers and their managers. The government also shifted independent (private and charity) care contracting from CCGs to NHSE to use better that capacity (e.g., to keep cancer treatment going when NHS hospitals were full). Additional money went directly to NHSE, which centralized its allocation to maintain NHS hospitals. Extensive rapid cross-training and repurposing of staff and infrastructure meant that much of the NHS was handling COVID-19 cases at one time or another. This occurred with a payments system primarily in abeyance—mainly, finance shifted from an activity basis to a block contract with additional COVID-19 capital support as of April 2020. Primary care providers, as well as trusts, could seek reimbursement for the capacity needed to offer remote services [22,23]. The ability to provide services remotely meant that primary care providers could stabilize revenue flows and support their patients.

The three substantial new projects were surveillance (testing and tracing), PPE acquisition, and vaccinations. The first two were commissioned by the government separate from NHSE or other NHS organizations. Neither has, on the evidence so far, worked well. The third—the vaccination campaign run through the NHS—has performed well.

NHS Test and Trace was set up as a private contract issued by the DHSC. Its combination of a rushed and nonstandard contracting procedure and poor performance provoked criticism of the government approach and suggestions of cronyism. A Parliamentary inquiry found it did not affect the spread of COVID-19, despite its "unimaginable" expense [41] and the head of NHSE was careful to specify that it was not his responsibility [42,43]. Since 2018, PPE acquisition had been through a specialist organization serving NHS Providers called NHS Supply Chain; it was created to seek efficiency relative to purchasing by individual trusts. It rapidly proved unable to scale up its purchases, so the government turned to consultants to purchase PPE. Again, accusations of cronyism were later found to be accurate, with the consultants and political leaders showing favoritism to politically connected vendors, overly high prices (even by the standards of mid-2020), and quality or delivery problems [44].

The vaccinations system, by contrast, worked with a mixture of central specialist vaccination centers run by the NHS, hospital-based hubs—these two being handy for the mRNA vaccines, given their ultra-cold refrigeration requirements—and vaccination through the existing primary care and community care infrastructure. In other words, it followed a template through which the NHS had operated long before the internal market, with primary care and hospitals being backed up by nationally organized specialist services. Compared to Test & Trace, it was very effective.

In short, the English experience was of a high degree of centralization within government, something familiar internationally and built on the already centralized and informal English health governance [45]. In the text of the Health and Social Care Act, which supposedly structures the NHS, NHSE is supposed to be the leading strategic purchaser but is supposed to lead primarily through supporting CCGs. It had become the center of the NHS years before and erected a set of integrated structures

with no firm basis in law. In 2020, it acted essentially as a powerful part of the government. NHSE, and the NHS, demonstrated its effectiveness, but strategic purchasing was essentially an irrelevant concept to the actual operation of the English health system. NHSE coordinated the system, managing finance, priorities, and patient flows.

In 2021 the government proposed a more centralizing new model for the English NHS that would substantially reduce the pretense of strategic purchasing and competition mechanics while enhancing ministerial powers of direction. The NHS pendulum between ministerial control and efforts to decentralize had, as predicted, swung again; the NHS center, NHSE, and the DHSC would once more be a control center instead of putative stewards of a market of strategic purchasers [46].

4.2. Netherlands

The need for a coordinated response to the COVID-19 pandemic overruled pre-existing structures in the Dutch health care system, which is characterized by a decentralized system where competing health insurers purchase (acute) care from health care providers and municipalities are responsible for organizing public health services. The government establishes the overall framework with rules and with the help from several agencies oversees the proper functioning of the health system. However, a more centralized approach became needed to keep providers solvent, to purchase sufficient provider capacity and protective equipment, to spread patients over available capacity, and to establish enough contact tracing, testing, and vaccination capacity. Decentralized purchasing turned out to be a bottleneck for an effective response, necessitating that responsibilities had to be redefined on an ad hoc basis.

The financial implications of the pandemic for providers were grave. The Dutch health insurers, tasked with paying and purchasing health services, could not solve these alone. Early in the pandemic, the Ministry of Health initiated talks with health insurers in March and agreed that no health institution might go bankrupt due to the COVID-19 crisis. The exact measures or the distribution of the cost between the Ministry of Health and the health insurers were still subject to negotiation. In the meantime, stakeholders (providers associations, insurers, and the Dutch health care authority) worked on detailed plans to compensate for revenue losses due to postponed care, as well as new payments for Covid-related care [47]. For example, starting in May 2020, GPs received an extra 10 EUR capitation payment for each patient in their practice to cover covid-related services and income losses as well as an additional EUR 15 per hour for extra out-of-office care services. Healthcare providers that were not involved in providing Covid-19 services (e.g., Dentists and physical therapists) mainly were compensated to cover fixed costs, called “continuity payments” [48].

Later, in July 2020, hospitals and insurers reached an agreement on how to deal with the extra expenditures due to COVID-19. It was agreed that hospitals would receive a fixed budget for 2020 based on the initially negotiated turnover for 2020. They receive 100% fixed costs and 80% variable costs (based on the assumption that they had 20% less regular care provided due to COVID-19). There were additional regulations for underspending or overspending of this budget [49].

In December 2020, the Ministry of Health, the umbrella organizations of the Dutch health insurers, and the Dutch hospitals reached an agreement on how to allocate financial risks for 2021. However, great uncertainty remained about the needed care for COVID-19 patients and the amount of postponed regular care, as well as the number of referrals from GPs (which had dropped substantively). Furthermore, in case of negative financial results due to COVID-19, the signatories committed to finding a case-by-case solutions. This included the possibility of consulting with financiers to avoid an increase in the financing burden for the hospitals. Additionally, part of the discussions was how to expand digital and telehealth solutions for health services, including new payments. The Dutch Healthcare Authority, which supervises the three health care markets and can impose tariffs and performance regulation, has expanded rules to allow more patient consultations by telephone or otherwise remotely in the case of regular care. Before, the first contact had to be in-person to be eligible for remuneration [50].

The insurers played no role in other areas where strategic purchasing could logically have been expected, including testing, PPE acquisition, and vaccinations. Notably, in the early days of the pandemic, the cooperation between the Ministry of Health and the National Institute for Public health and the Environment, which drafted the testing policy, and the public health services, was suboptimal, leading to long waiting times in the autumn of 2020. The Ministry had purchased insufficient testing capacity, partly due to the Outbreak Management Team’s advice to primarily use hospital laboratory capacity (KPMG 2021). Furthermore, according to a Netherlands Court of Audit report (September 2020), the government did not clearly understand the laboratory capacity and the supplies necessary for testing. The Netherlands has a fragmented landscape of labs that use many testing systems, which have experienced varying problems with acquiring sufficient supplies [51]. Acknowledging the lack of enough expertise, the Ministry attempted to change this situation with an appointment of a special envoy in late March, a former pharma executive, to purchase all the ingredients needed to roll out a testing strategy. Although the Netherlands had lower weekly testing rates for much of 2020, it had surpassed the EU average by the end of the year [52].

Furthermore, there was a significant shortage of masks, gowns, safety goggles, and gloves for healthcare staff. Before the pandemic, the health care providers were responsible for emergency medical protective equipment in acute care. During the early stages of the pandemic, the National Network Acute Care (LNAZ) assumed a coordinating role in the distribution of PPEs. Yet as early as March, under tremendous public pressure, the Ministry of Health started to take on the purchasing role, which has led in some cases to competition between the Ministry and individual providers. All parties were united in the National PPE Consortium, which then became solely responsible. Relatively soon after, shortages in the international markets for PPE turned into oversupplies, and the situation improved. Summing this up, the purchasing role in response to the pandemic was far from strategic and involved a more active approach from the government than the health insurers.

4.3. Switzerland

Switzerland has universal mandatory health insurance provisioned through a system of regulated competition among private providers. It was a unique case that showcased the challenges that purchasers faced in addressing the COVID-19 pandemic. Cantons (local governments) are individually responsible for all decisions regarding healthcare financing and provision of services. They need only to make sure that they follow a general national legislative framework. While cantons and purchasers, which were insurance companies, were initially given autonomy, the pandemic created a volatile situation that required a more centralized and federal approach. Due to a lack of clarity in official emergency powers laws, most cantons ceded their powers to the central government to implement uniform policies, such as closures of borders, businesses, and schools [53,54]. Ultimately, the Confederation ended up bearing most of the healthcare costs throughout the pandemic, such as procuring

and supplying cantons with essential medical supplies. Cantons were only responsible for redistributing these medical supplies within their jurisdictions. The Swiss government ordered too much PPE and ventilators, which resulted in cantons sending healthcare supplies back to the federal government. But, due to an inability to store them, cantons were told to keep them, donate them, or sell them to other countries [55].

Similar trends were evident in testing, tracking, and contact tracing. Initially, testing was minimal and only provided to vulnerable populations [56]. In charge of financing COVID-19 PCR tests, insurers chose to push testing costs onto patients via co-pays [26]. Patients were unwilling to pay the out-of-pocket expenses, which led to a decrease in COVID-19 testing and poor viral surveillance. The Confederation ultimately earmarked funds to help pay for COVID-19 tests to ensure that baseline testing occurred to better document community viral spread. Thus, contact tracing technologies were financed by the Swiss Federal Office of Public Health and public research universities [53,57]. The Swiss government also expanded testing to the entire population (if an individual showed symptoms of COVID-19) and collaborated with nationally-based pharmaceutical companies to develop covid tests. Similarly, the Confederation was responsible for all COVID-19 vaccine procurement.

Early in the pandemic, cantons had widely different strategies for public health surveillance and epidemiological data collection. Many still relied on paper records, while others established algorithms to scrape online digital data [26]. Regardless, all the strategies were steeped in controversy and led to inconsistencies in case counts and deaths [53]. Ultimately, the Confederation via the Federal Office of Public Health had to digitize to provide more accurate updates on COVID-19 surveillance data [56,53]. Moreover, Switzerland had slowly reduced hospital capacity over the last few years due to the high costs of inpatient care which were often shouldered by cantons [53,58]. This led to a decrease in ICU capacity during the pandemic compared to other western EU countries.

Additionally, the Federal Council stepped in to increase healthcare capacity by declaring a state of emergency ("exceptional situation") and dispatching military personnel to assist with security, health, and logistics [59]. Many patients postponed care during the pandemic, leading to worse population health outcomes that were not covid-related. Cantons had high regulatory hurdles, so many mental healthcare providers struggled to transition to telehealth and could not provide insured services. In summary, the Swiss showed a high degree of power centralization within the government over time, with purchasers often not included in the decision-making process.

5. Discussion

In none of our cases were the tools of strategic purchasing used to orchestrate pandemic response, with governments primarily sidelining the strategic purchasing agencies. Governments, usually the central government, designed and implemented policies to respond to the pandemic with little reference to the tools of strategic purchasing. This reflects the findings of a broader study on COVID-19 health system responses in 8 social insurance countries in Europe (Austria, Belgium, France, Germany, Luxembourg, the Netherlands, Slovenia and Switzerland) that the insurers played no major role in managing the pandemic [60].

Our introduction suggested four reasons (information, political, financial, and market asymmetries) why strategic purchasing might not have been an effective policy tool and strategic purchasers' ineffective agents in the face of the COVID-19 pandemic. The case studies suggested that governments' decisions to largely sideline strategic purchasing mechanisms indeed reflects these four asymmetries. Asymmetries related to market and political power may be the main constraints for strategic purchasing to successfully take place during a crisis such as the COVID-19 pandemic. A purchaser has power only if competing providers have spare capacity, and this assumption is not always translatable [3]. Thus, during the COVID-19 pandemic with hospitals running at high bed occupancy rates, overboard emergency rooms, and excessive demand for ventilators and hospital staff, there is no real reason nor enough incentives for purchasers to decide care strategically. At the same time, political power played a huge role in England, Germany, and Switzerland during this public health crisis. Centralized approaches dominated health communication, financing, and public health measures. The assertion of central governments' power counteracted the decentralizing, competitive tendencies of strategic purchasing models. Political power did not allow purchasers to adapt to system shocks on their own; governments clearly did not view it as appropriate to address an issue as important as COVID-19 with standard operating procedures.

We also noted several possible topics for further inquiry. Definitions of strategic purchasing often explicitly require that purchasers' decisions involve public and patient participation. Even if those requirements are often poorly fulfilled, changes to purchasing and finance systems in the pandemic mainly occurred without public or patient engagement. In many countries, including the UK and the Netherlands, rapid purchasing decisions in 2020 led to accusations of corruption and cronyism; these merit further investigation to ensure integrity in purchasing. Furthermore, strategic purchasing has long been more popular in health care purchasing, with efforts to promote public health less common and developed. In the public health crisis of COVID-19, we identified negligible use of strategic purchasing within health systems. In a global context, much of the attention to strategic purchasing in policy circles is directly aimed at using it to improve health care in lower- and middle-income countries [2]. While none of our cases are LMICs, we can speculate that the marginalization of strategic purchasers is often due to their limited resources relative to the government. States with fewer resources might logically find strategic purchasing even more challenging. Nonetheless, countries should aim to have strategic purchasing and achieve universal health coverage to provide equitable access to care without financial risk. Interesting cases of strategic purchasing implementation at a policy level such as Kenya, South Africa, Ghana, and Nigeria [61].

Finally, these results have implications for public financial management (PFM) systems. In our six analyzed countries, the PFM mechanisms, such as how money is pooled and distributed across services, affected purchasing management during COVID-19. Centralized budgetary fund pooling with a flexible structure was found to be most common for tracking emergency health expenditures in crisis management [62]. This reflected how federally centralized purchasing happened in our country cases, not leaving space for purchasers to have a strategic role. Future research should look at the role of strategic purchasers within innovative public financial management (PFM) practices (such as advance payments to health services providers or innovative disbursement mechanisms) and their impact on health system resilience.

Some limitations affected our study. Our study has significant heterogeneity across the selected health systems and there might be limits to its generalizability. Additionally, we primarily relied on country expertise and data provided to the European Observatory for their

COVID-19 Health System Response Monitor (HSRM) reports, supplemented by scholarly and grey literature. We did not conduct interviews or stakeholder consultations, which means that we were dependent upon our interpretation of data in the case studies, the HSRM reports, and their respective teams' analysis of in-country policy developments. However, all HSRM reports included contributions from country experts. Additionally, during the study period, COVID-19 was an ongoing pandemic. Conducting independent interviews with country experts was not feasible due to the short timeframe of our study. We addressed this limitation by triangulating our qualitative data, collecting data from three unique sources: the HSRM reports (which were validated or written by country experts), official government documents, and peer-reviewed academic literature.

Refer to the Appendix for Table 3: "Elements of Strategic Purchasing during the COVID-19 Pandemic across case countries."

6. Conclusions

The COVID-19 pandemic was a significant shock to health care systems. We asked what role strategic purchasers played in the response. We found that they were largely sidelined by governments, asked primarily to avoid applying standard operating procedures that would have been unhelpful in a crisis (e.g., by undermining hospital finances during standstills in elective procedures).

One obvious implication is that strategic purchasing, whose efficacy can be questioned on various grounds, is not a useful policy option for governments that wish to have more resilient health systems. Strategic purchasing might improve health care systems through incremental decisions on the margins outside of a crisis, but it might also reduce resiliency by reducing surge capacity, increasing transactions costs, or otherwise shaping incentives and organizational focuses in ways that undermine overall systemic resilience. In the cases we examined, it did not provide strategic direction or additional resources in a pandemic. Whatever can be said, resilience in a crisis does not appear to be among its contributions to the health system.

One implication for countries with strategic purchasing is that the system might require a significant redesign of strategic purchasers or purchasing if strategic purchasing is to play a vital role in crisis response. At a minimum, a detailed examination of the incentives facing different actors in the system should be a part of governments' after-action reports to address perverse incentives revealed in the crisis. Alternatively, policymakers could accept that strategic purchasing and purchasers will not play a key role in emergencies and assume that they can take centralizing measures as needed. In fact, several insurers were not represented in crisis management teams or pandemic plans [60]. Perhaps this reflected policymakers' expectations of their usefulness in crisis situations. Even if that is the decision, our cases show that strategic purchasing schemes can have unexpected effects that impair performance in a crisis by creating incentives to have fewer beds or staff than is necessary for a health emergency. For broader thinking about health and public services, the experience of strategic purchasing in the pandemic sheds light on the interaction between organizational design and resilience.

Strategic purchasing turned out to be a policy agenda that governments largely abandoned in the COVID-19 pandemic—too inflexible and weak to use in a crisis. Strategic purchasing systems could be reconsidered to increase their usefulness in health system shocks and prevent any perverse incentives or long-term adverse effects on health care system resilience. More broadly, the lessons from the COVID-19 pandemic in health systems might suggest limits to the policy usefulness of New Public Management and essential NPM policy tools such as outsourcing, contracting, and competitive bidding for services.

Funding

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Declaration of Competing Interest

All authors declare that they have no conflicts of interest.

Acknowledgments

We want to thank Madelon Kroneman, editor of the Dutch page of the Health Services and Policy Monitor (HSPM), for her valuable input on the Dutch case study. In terms of funding, thanks to the U.S Fulbright Program and the Office of Global Public Health, Gelman Global Scholars at the University of Michigan School of Public Health for providing summer internship grants to MCM. The Copernicus Center for Polish Studies and the Copernicus Fellowship at the University of Michigan who provided funds to KK. Finally, the Engineer Research and Development Center (ERDC) provided support to SLG, award W912HZ22P0031.

Appendix: Tables and Figures

Table 1
Country-case selection and purchasing structures.

	United Kingdom (England)	Germany	France	Netherlands	Switzerland	Slovakia
Market structure	Single Payer	Multi-payer (competing)	Multi-payer (non-competing)	Multi-payer (competing)	Multi-payer (competing, Cantonal)	Multi-payer (competing)
Choice of purchaser	No	Yes	No	Yes	Yes	Yes
Purchaser	Clinical Commissioning Groups (CCGs)	Sickness Funds	Health Insurance Funds	Health insurers	Health insurers/sickness funds	Health insurance companies
Purchaser coverage	NHSE: national, geographically delimited CCGs: local, geographically delimited	National, non-geographically delimited	National, geographically delimited	National, non-geographically delimited	Cantonal, non-geographically delimited	National, non-geographically delimited
Government	NHS England	Federal Ministry of Health	Government/ Ministry in charge of Health	Ministry of Health, Welfare and Sport	Federal Office of Public Health/Cantons/ Municipalities	Ministry of Health
For profit?	No	No	No	Allowed (only one insurer)	No	Allowed

Source: Klasa, Greer, van Ginneken (2018): "Strategic Purchasing in Practice: Comparing Ten European Countries"

Table 2
Healthcare financing shocks and the role of purchasers during the COVID-19 pandemic.

Categories	Decision-maker	United Kingdom (England)	Germany	France	Netherlands	Switzerland	Slovakia
Surge in demand for pandemic-related services	*Purchaser decision making?*	**No** No role for NHS strategic purchasers (NHSE or CCGs)	**No** No role for the sickness funds	**No** No role for health insurance funds	**Partial** Health insurers contribute to the costs of providing COVID-19 care	**Partial** Cantons (not insurers) bear the costs for redistribution of essential medical supplies within the canton	**No** No role for health insurance companies
	Government decision making?	**Yes** NHS centralized purchasing at the Whitehall level.	**Yes** Parliament approved the COVID-19 Hospital Relief Act which comprises several measures to guarantee the funding of hospitals and ensure their liquidity. - The Ministry of Health recommended a step-by-step procedure for re-planning hospital bed capacities in Germany.	**Yes** Ministry of Health activated White Plan containing organizational measures intended to cope with an exceptional increased activity in hospitals	**Partial** The Ministry of Health agreed with health providers that no health institution might go bankrupt due to the COVID-19 crisis and that the distribution of the cost was a joint responsibility	**Partial** The Confederation passed the Ordinance on Measures to Combat the Coronavirus (COVID-19 Ordinance 2) which allowed cantons (not insurers) to retain their responsibilities. Cantons were responsible for ensuring sufficient hospital and clinic capacities (Art. 10a).	**Yes** All funding sources were from the Ministry of Finance
Surge in demand for pandemic-related services (testing, tracking, and tracing)	*Purchaser decision making?*	**No** No role for NHS strategic purchasers (NHSE or CCGs)	**No** No role for the sickness funds	**No** No role for health insurance funds	**No** No role for health insurers	**Partial** Over the course of the pandemic, there was a switch from Cantons and patients bearing the costs of testing (via co-pays) to the confederation assuming all coronavirus testing costs	**No** No role for health insurance companies
	Government decision making?	**Yes** Central government departments set up a separate body (NHS Test and Trace)	**Yes** The federal government secured nine million rapid antigen tests in 2020 via purchase guarantees that the federal states and institutions can officially purchase and distribute according to need	**Yes** Government installed testing capacity and estimated the number of available tests per day at around 5,000. However, France has developed a dependency on international providers for the reactive of these tests, which limits national autonomy.	**Yes** Testing and reporting cases is coordinated by the National Institute for Public Health and the Environment (RIVM), while testing and tracking is performed by the public health services.	**Yes** Over the course of the pandemic, there was a switch from Cantons and patients bearing the costs of testing (via co-pays) to the confederation assuming all coronavirus testing costs	**Yes** Government secured resources and established testing capacity
Drop in demand for all other healthcare services	*Purchaser decision making?*	**No** No role for NHS strategic purchasers (NHSE or CCGs)	**Partial** The Federal Joint (self-government of physicians, dentists, hospitals, and health insurance funds) announced regulations to implement the ordinance of the federal states to postpone elective procedures within days	**No** No role for health insurance funds	**Partial** Stakeholders (providers associations, insurers, and the Dutch Health Care Authority) worked on detailed plans to compensate for revenue losses due to postponed care, as well as new payments for Covid related care, while the Ministry of Health agreed with insurers that no provider should go bankrupt.	**Partial** FOPH delegated decision-making on drug and lab test reimbursements to health insurers (i.e., reimbursing pharmaceuticals and reviewing conditions)	**Partial** Health insurance companies covered 75% of average provider income lost
	Government decision making?	**Yes** Central government put in place a modified national	**Yes** Ministry of Health's ordinance regarding the provision of	**Yes** The White plan resulted in the de-scheduling of all	**Partial** The Ministry of Health agreed with health providers	**Yes** Federal Office of Public Health (FOPH) drew up guidelines to	**Yes** Ministry of Finance established laws

(*continued on next page*)

Table 2 (*continued*)

Categories	Decision-maker	United Kingdom (England)	Germany	France	Netherlands	Switzerland	Slovakia
		contract to enable use of independent hospital capacity until March 2021	pharmaceuticals ensured supply of medicinal products to the population during the epidemic and to reduce insured persons' risk of infection from visiting pharmacies	medical procedures and non-emergency surgery to free up a maximum of beds and especially human resources	that no health institution might go bankrupt due to the COVID-19 crisis and that the distribution of the cost was a joint responsibility	ensure that the pricing and cost absorption of inpatient treatment was regulated uniformly throughout Switzerland	and economic measures which limited recovery of lost income for purchasers and providers
Change in service modality	*Purchaser decision making?*	**No** No role for NHS strategic purchasers (NHSE or CCGs) other than reimbursement	**Partial** Federal Association of Sickness Funds agreed to extend teleconsultations for physicians and psychotherapists	**No** No role for health insurance funds other than reimbursement	**No** No role other than reimbursement	**Partial** Cantons limited by FOPH rules and mostly focused on reimbursements	**No** No role for health insurance companies other than enabling increased use of telehealth and email consultations
	Government decision making?	**Yes** Primary care providers, as well as trusts, could seek reimbursement for the capacity needed to offer remote services	**Yes** Volume restrictions on physicians providing remote consultations were lifted in Germany. Also, detailed billing schedules have been produced where these did not already exist	**Yes** Tele-consultations, which were already available (reimbursed) in France and charged the same price as a normal consultation, are highly recommended in the current situation.	**Yes** Rules were loosened by the Dutch Health Care Authority to enable more remote consultations	**Yes** FOPH compiled valid rules for billing telehealth consultations and issued recommendations for temporary solutions during COVID-19	**Yes** Federal government created bonus payment for telehealth services and expanded scope of services that can be done through telehealth tools) was put into effect
Change in provider requirements (equipment, PPE)	*Purchaser decision making?*	**No** No role for NHS strategic purchasers (NHSE or CCGs)	**No** No role for the sickness funds	**No** No role for health insurance funds	**No** **No role for insurers**	**Partial** Cantons had to reimburse the confederation for medical supplies and PPE	**No** No role for health insurance companies
	Government decision making?	**Yes** Commissioned by the government and separate from NHSE or other NHS organizations	**Yes** The Federal Ministry of Health distributed 290 million masks to nursing professionals and patients and their visitors for the COVID-19 first and second wave	**Yes** Responsibility of the Ministry of Social Affairs and Health	**Partial** **Responsibility of the providers, with increasing participation in purchasing andwork funding of the Ministry of Health**	**Partial** Costs for the procurement of important medical goods were pre-financed by the Confederation	**Yes** The government acquired all PPE
Change in provision (vaccines)	*Purchaser decision making?*	**No** No role for NHS strategic purchasers (NHSE or CCGs)	**No** No role for the sickness funds	**No** No role for health insurance funds	**No** **No role for insurers**	**No** No role for cantons or insurers	**No** No role for health insurance companies
	Government decision making?	**Yes** The government secured a spending measure related to vaccines in the 2021 budget: roll-out, clinical trials, increase capacity for vaccine testing, study to test the effectiveness of combinations of different Covid-19 vaccines, and investment in a clinical-scale mRNA manufacturing	**Yes** In Dec 2020, Prime Health Minister announce a new ordinance regarding the entitlement for vaccination against the coronavirus SARS-CoV-2 -Federal Ministry of Health implemented changes in the ordinance regarding the changes in entitlement for vaccination against the coronavirus SARS-CoV-2	**Yes** The national health authority secured a vaccine budget for Pfizer and AstraZeneca and started a vaccination campaign.	**Yes** Ministry of Health procured all COVID-19 vaccines	**Yes** The federal government procured all COVID-19 vaccines	**Yes** The government in charge of all vaccine procurement

(*continued on next page*)

Table 2 (*continued*)

Categories	Decision-maker	United Kingdom (England)	Germany	France	Netherlands	Switzerland	Slovakia
Change in policy salience and urgency	*Purchaser decision making?*	**No** No evidence of population health measures	**No** No evidence of population health measures	**No** No evidence of population health measures	**No** No evidence of population health measures	**Partial** Limited canton role in national health policy changes	**No** No role of health insurance companies
	Government decision making?	**Yes** NHS England in charge of all policy changes	**Yes** Federal government in charge of all policy changes	**Yes** Government in charge of all policy changes	**Yes** Ministry of Health in charge of all policy changes	**Yes** The Confederation in charge of all policy changes	**Yes** Federal government in charge of all policy changes

Source: Author's own elaboration

Table 3
Elements of strategic purchasing during the COVID-19 pandemic across case countries.

Categories		United Kingdom (England)	Germany	France	Netherlands	Switzerland	Slovakia
Population Health	Addressed Population Health Needs	Yes for pandemic response No for traditional population health needs which were delayed	Yes for pandemic response No for traditional population health needs which were delayed	Yes for pandemic response No for traditional population health needs which were delayed	Yes for pandemic response No for traditional population health needs which were delayed	Yes for pandemic response No for traditional population health needs which were delayed	Yes for pandemic response No for traditional population health needs which were delayed
Citizen Empowerment	Included Citizens' Views/Values	No	No	No	No	No	No
	Enforced Purchaser Accountability	Purchaser not part of decision-making process	Purchaser not part of decision-making process	Purchaser not part of decision-making process	Purchaser not part of decision-making process	Purchaser not part of decision-making process	Purchaser not part of decision-making process
	Increased Citizen Choice	No	No	No	No	No	No
Strengthening Government Stewardship & Capacity	Did Health Policy Shape Purchasing Decisions?	Yes	Yes	Yes	Yes	Yes	Yes
	Integrated Regulatory Framework	Federal-level regulations (command and control) Both purchaser and provider focused regulations	Federal-level regulations (command and control) Providers more heavily regulated; decentralized purchasing regulations	Federal-level regulations (command and control) Both purchaser and provider focused regulations	Federal-level regulations (command and control) Providers more heavily regulated; purchasers had limited role in decision-making process	Federal-level regulations (command and control) Both purchaser and provider focused regulations	Federal-level regulations (command and control) Providers more heavily regulated; purchasers not part of decision-making process
	Government Capacity and Credibility	Yes	Yes	Yes	Yes	Yes	Yes
Developing Effective Purchaser and Provider Organizations	Purchaser Competence	Purchaser not part of decision-making process	Purchaser not part of decision-making process	Purchaser not part of decision-making process	Purchaser not part of decision-making process	Purchaser not part of decision-making process	Purchaser not part of decision-making process
	Choice of Multiple Providers	No	No	No	Yes	Yes	No
	Provider Competence and Autonomy	Limited provider autonomy due to pandemic related laws and regulations	Limited provider autonomy due to pandemic related laws and regulations	Limited provider autonomy due to pandemic related laws and regulations	Limited provider autonomy due to pandemic related laws and regulations	Limited provider autonomy due to pandemic related laws and regulations	Almost no provider autonomy due to pandemic related laws and regulations
	Clear and Coherent Accountability	Purchaser not part of decision-making process	Purchaser not part of decision-making process	Purchaser not part of decision-making process	Purchaser has limited role in decision-making process	Purchaser has limited role in decision-making process	Purchaser not part of decision-making process
Cost-Effective Contracting	Incorporated Cost-Effective Contracting	Purchaser not part of decision-making process	Purchaser not part of decision-making process	Purchaser not part of decision-making process	Purchaser has limited role in decision-making process	Purchaser has limited role in decision-making process	Purchaser not part of decision-making process

Source: Adapted from Klasa, Greer, van Ginneken (2018): "Strategic Purchasing in Practice: Comparing Ten European Countries"

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