Understanding Universal Health Care Reform Options: Cost-Sharing for Patients

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FRASER INSTITUTE
2022

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Executive Summary

Comprehensive measures of performance indicate that Canada routinely lags behind its international peers on key metrics of how its health-care system performs—despite ranking amongst the most expensive universal health-care systems in the developed world. It is, therefore, unsurprising that a growing proportion of Canadians seem open to the possibility of fundamental reform of health care in Canada. However, major hurdles exist as a result of faulty perceptions about how other countries with universal health-care insurance coverage provide and finance their health-care systems.

This study—the third in the series, Understanding Universal Health Care Reform Options—documents the presence of mechanisms for cost-sharing by patients in 28 universal health-care systems; and evaluates the feasibility and desirability of introducing similar policies in Canada.

Patients in Canada are currently fully covered for the costs of insured medical services; that is, patients are not directly billed for any portion of their care. Economic theory suggests that the distorting effects of such first-dollar insurance coverage can lead to excess demand for medical care accompanied by loss of social welfare. In Canada, the rationing of services through long wait times is one such by-product of excess demand. Economic theory also offers a set of tools to mitigate the magnitude of this social-welfare loss through cost-sharing mechanisms. These include deductibles—an amount up to which individuals are exposed to the full cost of treatment, after which insurance covers expenses; co-insurance payments—a certain percentage of the cost of each unit of treatment that is to be borne by the individual; and co-payments—a fixed amount paid by the patient per unit of treatment.

This study finds that the vast majority of universal health-care systems around the world (22 of 28) expect patients to share in either the cost of outpatient primary care, outpatient specialist care, or acute inpatient care (though the latter is relatively less common) via deductibles (rarely), co-insurance charges, and co-payments. Notably, 8 of the 10 top-performing high-income universal health-care countries have some form of cost-sharing arrangement. These include Australia, Belgium, France, the Netherlands, New Zealand, Norway, Sweden, and Switzerland. In contrast, Canada is one of a small minority of only 6 countries (of the 28 examined in this report) that either entirely eschew cost-sharing by patients or do not generally expect patients to share in the cost of treatment (except for specific situations and purely private options) for core medical services within their standard universal health-care framework.

The wide-spread adoption of cost-sharing is unsurprising given its theoretical ability to reduce—or temper—the demand for unnecessary health-care services. This theory is supported by a wealth of empirical studies that broadly confirm that cost-sharing mechanisms can reduce the use of ambulatory care without necessarily resulting in adverse consequences for the population. However, because the tempering effect of cost-sharing payments extends to both essential and non-essential care, and because such reductions in medical care can have a disproportionate impact on vulnerable groups, it is important to provide these vulnerable populations with appropriate protection. Particular care should be taken to avoid large deductibles for mental health care and essential pharmaceuticals. This conforms with the approach taken by the 8 successful universal health-care countries identified in this report, which employ generous safety nets, set annual caps on out-of-pocket spending, and ensure exemptions for at-risk populations.

Cost-sharing mechanisms should not, however, be looked at as a blunt tool for overall cost-savings in the short run. Rather, if designed correctly, cost-sharing mechanisms can serve as a tool to encourage the appropriate use of medical services and reduce the magnitude of rationing as a result of excess demand. There is some support for this in the correlation coefficients calculated in this study, which suggest countries that employ cost-sharing mechanisms may have shorter wait times for elective treatment.

The findings of this study suggest that Canada should consider reform that would allow provinces to experiment with, and design, a system that requires patients to share directly in the cost of medical care while protecting vulnerable populations in order to reduce social-welfare loss. Unfortunately, cost-sharing mechanisms for medically necessary care are explicitly prohibited by the Canada Health Act and financial penalties will be imposed on provinces found in violation.

Introduction

Canada is one of at least 28 high-income countries around the world that have achieved universal (or near-universal) health-care insurance coverage for a core set of services (Barua and Moir, 2020a). Each of these countries, however, have achieved universal coverage for their respective populations in different ways, with widely varying approaches towards the private sector, hospital and physician payment mechanisms, and the degree to which patients directly share in the cost of treatment. Canada, for example, relies almost exclusively on a government-run insurance scheme to ensure universal coverage, fund hospitals using global budgets, and effectively prohibit physicians from charging any form of user fees and co-payments. Meanwhile, on the other end of the spectrum, Switzerland relies on a regulated market of private insurers for universal coverage, funds hospitals based on activity, and routinely expect patients to share in the costs of their treatment (Esmail and Barua, 2018).

Importantly, there are also differences in how successfully their respective universal health-care systems perform. While some of the differences in observed health status and outcomes may be the product of environmental and genetic factors, [1] differences in policy choices and tools employed by these countries also undoubtedly contribute to the relative performance of their health-care systems and are worthy of careful study and thoughtful consideration. Of particular concern for Canadians is that comprehensive measures of performance indicate that Canada routinely lags behind its peers in terms of relative availability of resources and access to timely care, while reporting mixed performance for use and clinical performance. These realities, despite the fact that Canada ranks amongst the most expensive universal health-care systems in the world, suggest a need for reform of health-care policies (Barua and Moir, 2020a).

While an increasing proportion of Canadians seem open to the possibility of fundamental reform of the country's health-care system, [2] major hurdles exist as

[1] "[F]actors such as clean water, proper sanitation, and good nutrition, along with additional environmental, economic, and lifestyle dimensions, are considerably more important in determining the outcomes a country experiences ... The actual contribution of medical and clinical services is usually considered to be in the range of 10 up to 25 per cent of observed outcome" (Figueras, Saltman, Busse, and Dubois, 2004: 85, citing Bunker, Frazier, and Mosteller, 1995; McKeown, 1976; Or, 1997). It should be noted that public- health measures (such as sanitation) likely make a much smaller contributions to health in developed countries, at the margin, compared to developing countries.

[2] For example, an Ipsos Reid survey showed that 76% of Canadians were open to private health care in 2018—a meaningful increase from the 56% of Canadians who indicated they were open to private

a result of faulty perceptions about how other countries provide and finance their universal health-care system. Clearly, a better understanding of the policy choices employed by Canada, and how they compare to other universal health-care systems, would benefit Canadians and their policy makers as they look towards the continual improvement and evolution of their health care system.

This study is part of a series of essays that examine three significant policy differences that have been identified by previous researchers, [3] with specific attention to the feasibility and potential desirability of health-care reform in Canada based on the experiences of universal health-care systems around the world. The first essay in this series, by Prof. Steven Globerman (2020), examines the availability and use of private health insurance in 17 high-income universal health-care systems and finds that all except Canada allow private health insurance in some capacity to pay for medically necessary health-care costs. The second essay in the series, by Nadeem Esmail (2021), examines the relative use of activity-based funding as the primary method of remuneration for hospitals and similarly concludes that Canada's current approach (prospective global budgets) renders it an outlier amongst its international peers. This third and final study in the series examines the relative presence of patient cost-sharing in 28 universal health-care systems.

The first section of this paper presents a theoretical framework for understanding some of the basic economic concepts of health-care insurance, moral hazard, and patient cost-sharing (deductibles, co-payments, and co-insurance). The second section documents the presence of cost-sharing mechanisms in 28 universal health-care systems, and presents detailed examples of the approaches followed by eight high-performing countries. The third section presents a summary of empirical studies examining the impact of cost-sharing by patients on the use and cost of medical services as well as the possible health and distributional effects. The fourth explores the correlation between cost-sharing, wait times, and financial barriers to medical care. The fifth section examines the feasibility of the introduction of patient cost-sharing in Canada within the context of the *Canada Health Act*. A conclusion follows.

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care in 2009 when a similar set of questions were asked (Clemens and Veldhuis, 2018). Research by SecondStreet.org also found that the percentage of Canadians who support or somewhat support spending their own money at private clinics went up from 51% in the first quarter of 2020 (Craig, 2020) to 62% in the last quarter of 2021 (Craig, 2021)

[3] See Esmail and Walker, 2008; Esmail, 2013, 2014; Globerman, 2013; Lundbäck, 2013; Skinner, 2009.

1 Health Insurance, Moral Hazard, and Cost-Sharing—a Theoretical Framework

In order to meaningfully discuss the relative benefits and broader consequences of deductibles, co-payments, and co-insurance in the context of a universal health-care system, it is important to briefly review some of the basic economic concepts that underpin medical insurance. In a seminal article published in the *American Economic Review* in 1963, economist Kenneth Arrow detailed the "special economic problems of medical care" and how the "medical-care industry and the efficacy with which it satisfies the needs of society differ [from the] norm". The article, Uncertainty and the Welfare Economics of Medical Care (Arrow, 1963), has been credited as laying the foundation of modern health economics and makes a clear economic (welfare) case for the widespread adoption of insurance (particularly health insurance), from both an individual and societal perspective.

Arrow describes how a risk-averse individual who acts to maximize the utility function would have a welfare gain by taking a policy with an agency that "stands ready to offer insurance against medical costs on an actuarially fair basis" (Arrow, 1963: 959–960). There will also be a social gain whereby the insurer suffers no social loss "[u]nder the assumption that medical risks on different individuals are basically independent, [as] the pooling of them reduces the risk involved to the insurer to relatively small proportions. In the limit, the welfare loss, even assuming risk aversion on the part of the insurer would vanish and there is a net social gain which may be of quite substantial magnitude" (Arrow, 1963: 960).

Although Arrow clearly explains how the development of health insurance is the result of uncertainty in the incidence of disease and in the efficacy of treatment, and indeed even suggests that "governments should undertake insurance in those cases where this market, for whatever reason, has failed to emerge" (Arrow, 1963: 961), [4] he also discusses a variety of the distorting effects of (medical) insurance.

[4] Pauly, in direct response to Arrow—and in the same journal, would formally illustrate that "insurance against some types of events may be nonoptimal ... and compulsory government insurance against some uncertain events may lead to inefficiency" (1968: 531).

Of specific interest for the cost-sharing by patients discussed in this paper is Arrow's identification of the potential for moral hazard. [5] He was specifically concerned about "the effect of insurance on incentives [because] the cost of medical care is not completely determined by the illness suffered by the individual but depends on the choice of a doctor and his willingness to use medical services". He noted how "widespread medical insurance increases the demand for medical care [and] Coinsurance provisions have been introduced into many major medical policies to meet this contingency as well as the risk aversion of the insurance companies" (Arrow, 1963: 961).

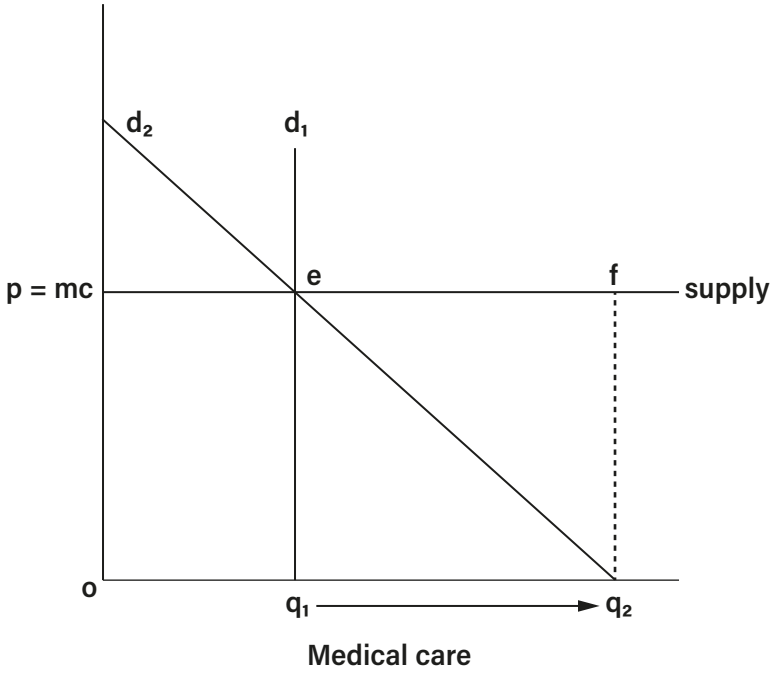
These potential distortions resulting from moral hazard were famously developed further in the subsequent article in the same academic journal by economist Mark V. Pauly (1968). In The Economics of Moral Hazard: Comment, Pauly showed that Arrow's welfare proposition for insurance only holds if demand is perfectly inelastic (which Arrow himself admitted may not be the case). Pauly successfully demonstrated that "medical insurance, by lowering the marginal cost of care to the individual, may increase health-care use" (Pauly, 1968: 535).

A simplified illustration of Pauly's proof is provided in figure 1. We assume the supply curve is constant and equal to the cost of producing each additional unit of medical care represented by the marginal cost curve mc. We also assume that individuals demand the same medical care regardless of price, such that the demand curve is perfectly inelastic and represented by d_1. Then, in a perfectly competitive market, equilibrium occurs at point e, where supply equals demand, and q_1 quantity of medical care is consumed. Further, Arrow's welfare proposition dictates that, if illness is a random event, individuals will prefer paying an actuarily fair premium for insurance that indemnifies them of all medical costs at the point of service, and no social welfare loss will occur.

However, Pauly (1968) successfully demonstrated that, if demand was not perfectly inelastic—that is, if quantity demanded for medical care is influenced by price—then Arrow's welfare proposition will not hold. For a demand curve d2, equilibrium again occurs at point e if individuals face market prices. However, the distorting effects of insurance are demonstrated when we consider "[t]he effect of an insurance which indemnifies against all medical care expenses [which would] reduce the price charged to the individual at the point of service from the market price to

[5] Arrow, 1963 is also one of the first examples of the use of this term in an economic context. It should be noted that health insurance may also create a different problem of "moral hazard" (not considered here) by inducing people to exert less effort in maintaining their good health. This is often called "*ex ante* moral hazard". By contrast, Pauly (1968) presents a theoretical model to explain how a consumer might demand more health-care services if the price he or she has to pay is reduced by the insurance (*ex post* moral hazard).

Figure 1: Social welfare loss of insurance



zero" (Pauly, 1968: 532). This being the case, when facing a zero price at the point of care, individuals will choose to consume q_2 units of medical care. At every point to the right of q_1, the marginal cost of supplying medical care exceeds the marginal benefit. Specifically, at q_2, the marginal benefit is zero while the marginal cost (for the supplier) remains $p = mc$. As a result, there will be a social welfare loss equal to efq_2—the value of the excess resources consumed. [6] Thus Pauly showed that "... medical insurance, by lowering the marginal cost of care to the individual, may increase usage" and since "the cost of the individual's excess usage is spread over all other purchasers of that insurance, the individual is not prompted to restrain his usage of care" (Pauly, 1968: 535).

It is worth noting that upon publication Arrow endorsed Pauly's analysis and declared that "Mr. Pauly's paper has enriched our understanding of the phenomenon of so called 'moral hazard' and has convincingly shown that the optimality of complete insurance is no longer valid when the method of insurance influences the demand for the services provided by the insurance policy" (Arrow, 1968: 537).

Interestingly, both authors—Arrow and Pauly—proposed various forms of co-insurance payments as potential solutions that could minimize the impact of these distortions. For example, Arrow specifically recognizes that "[c]oinsurance

[6] This area is equal to one half of the total excess cost eq_1q_2f (because the demand curve is assumed to be linear) as individuals derive some positive value, represented by the area eq_1q_2.

provisions have been introduced into many major medical policies to meet this contingency well as the risk aversion of the insurance companies" (Arrow, 1963: 961). [7] Again, Pauly developed Arrow's position further and demonstrated the effect of these payments using economic tools. Figure 2 and figure 3 provide simplified illustrations of Pauly's analysis of the effects of deductibles, and co-insurance payments.

Deductible

A deductible is defined as an amount up to which individuals are exposed to the full cost of product or service in question, after which the usual terms of insurance apply to cover the individual for expenses. In figure 2, we assume that insurance will cover the full costs of treatment once the deductible has been covered. Then, assuming no significant income effects:

1. For a zero dollar deductible, the individual's behaviour will be no different than in figure 1—consuming q_2 units of medical care.

2. For a deductible equal to or less than $q_1 \times mc$, the individual will pay the deductible, and again consume q_2 units of medical care.

3. For a deductible greater than $q_1 \times mc$, the individual will pay the deductible and consume q_2 units of medical care so long as the amount paid as a deductible "is less than the consumer's surplus [8] he gets from the 'free' units of care this coverage allows him to consume". This point occurs at $q_3 < q_2$ where area a = area b.

If the deductible is greater than $q_3 \times mc$, the individual will prefer not to take out insurance, and instead purchase q_1 units of medical care in the market.

Pauly's example demonstrated that the deductible either:

1. has no effect on an individuals usage or
2. induces him to consume that amount of care he would have purchased if he had no insurance (Pauly, 1968: 536)

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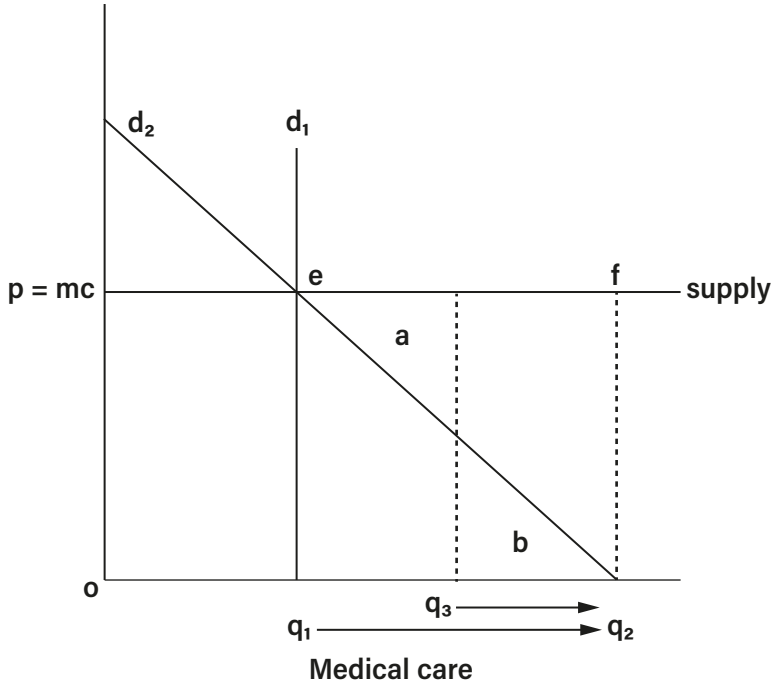
[7] In fact, Arrow (1963) mathematically shows the nature of an optimal insurance policy will have the following properties: [1] "If an insurance company is willing to offer any insurance policy against loss desired by the buyer at a premium which depends only on the policy's actuarial value, then the policy chosen by a risk-averting buyer will take the form of 100% coverage above a deductible minimum" (969) and [2] "If the insured and the insurer are both risk-averters and there are no costs other than coverage of losses, then ... any increment in loss will be partly but not wholly compensated by the insurance company; this type of provision is known as coinsurance" (971–972).

[8] That is, the excess valuation of a product over price paid "measured by the area of a triangle below a demand curve and above the observed price" (Khemani and Shapiro, 1993: 28).

Figure 2: Social welfare loss of insurance with deductible



An important qualification noted by Pauly is that, if deductibles are high enough to introduce a significant income effect (that is, shifts the demand curve because of lower income), then the use of medical care will be somewhat restrained to the degree that the deductible makes the individuals poorer.

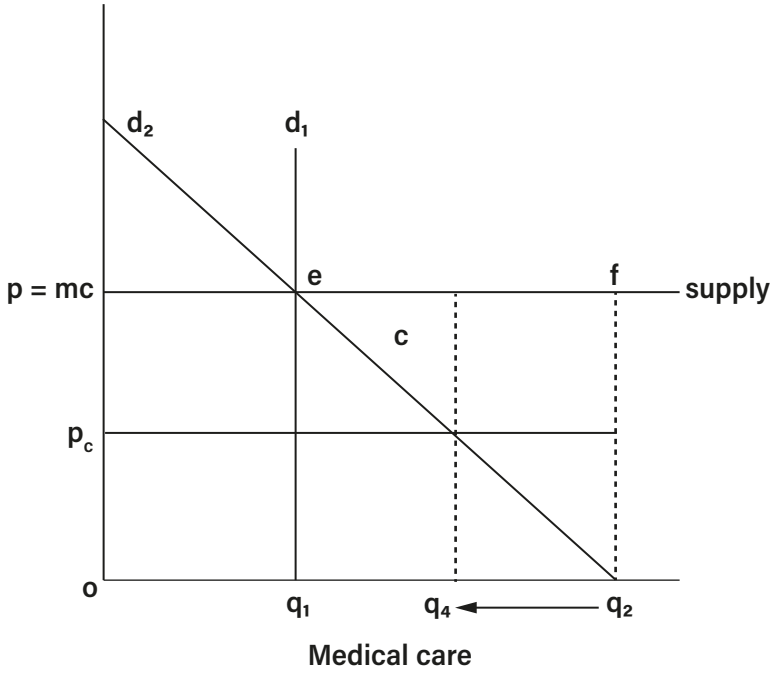
Co-insurance

A co-insurance payment, on the other hand, is defined as a certain percentage or fraction of the cost of each unit of treatment that is to be borne by the individual—typically less than the market price. For example, a 10% co-insurance rate will require individuals to pay 10% of the cost of their treatment, while the insurance plan will cover the remaining 90% of the cost. Figure 3 provides a simplified illustration of the effect of a coinsurance payment on individual consumption in contrast to full dollar coverage.

For a zero percent co-insurance rate, the individual's behavior will again be no different than in figure 1—consuming q_2 units of medical care—and a social welfare loss equal to efq_2.

If, however, individuals are required to pay some fraction op_c of the unit cost of medical care op, they would curtail their consumption. Specifically, in figure 3, when an individual is faced with a price $p_c < p$, they would demand $q_4 < q_2$. The social welfare loss under this scenario is represented by area $c < efq_2$. Of course, as Pauly noted "[t]he smaller the price elasticity of demand for medical care, the less will be the effect of coinsurance on usage" (1968: 536).

Figure 3: Social welfare loss of insurance with co-insurance



An obvious concern related to such payment is the fact that as the rate of co-insurance increases, so does the individual's exposure to risk resulting from incurring direct expenses for medical care. The manner in which countries that employ such co-insurance payments (and other cost-sharing mechanisms) attempt to mitigate this exposure will be discussed in the subsequent sections.

2 Cost-Sharing by Patients in High-Income Countries with Universal Health Care

Health-care insurance systems can generally be categorized into one of two groups: those where the government is the primary insurer providing benefits through a tax-funded national health-care system, and those that rely on a social health-insurance system where multiple insurers (public and private) operate in a regulated environment. Regardless of the system examined, individuals are ultimately responsible for paying for health-care services. Indirect payments, which are generally unrelated to the quantity of service provided, are usually made through the tax system in the first group, and through insurance premiums (often supplemented by the tax system) in the latter. There are, however, also various forms of direct payments that individuals may be required to make related to the level of services provided.

1. Deductibles: an amount up to which individuals are exposed to the full cost of product or service in question, after which the usual terms of insurance apply to cover the individual for expenses;
2. Co-insurance Payments: a certain percentage or fraction of the cost of each unit of treatment that is to be borne by the individual;
3. Co-payments: A fixed amount paid by the patient per unit of treatment.

These forms of payments are commonly referred to collectively as cost-sharing arrangements, and are the focus of this study. [9]

Canada belongs to the first group of countries: a tax-funded health-insurance system in which individuals make indirect payments (that is, generally unrelated to the quantity of service they personally consume) through the country's tax system. In addition, though not necessarily following directly from this earlier classification, Canada provides what is often referred to as "first-dollar coverage" for medically

[9] Of course, the most straightforward form of direct payment is the outright (out-of-pocket) purchase of health-care services by individuals using their own funds to pay for the cost of service. Although there are important differences that have been documented about Canada's (arguably unique) approach to this sort of direct purchase in comparison to its international peers, it is outside the scope of—and therefore not examined in—this study.

necessary services. [10] In other words, physician and hospital services covered by provincial health-care plans are free at the point of use. In fact, the Canada Health Act (as we will discuss later in section 5) explicitly prohibits user fees [11] and extra-billing [12] under threat of non-discretionary financial penalties imposed by the federal government on provinces where such payments have been recorded and reported to the Federal Minister of Health of the day. [13]

As a result, there is a prevailing misperception in Canada about the compatibility of patient cost-sharing mechanisms within a universal health-care framework. Specifically, the two are often portrayed in Canadian media as competing, mutually exclusive concepts. In other words, Canadians are often likely to be presented with a false choice: a universal health-care system absent any form of patient cost-sharing or the alternative where patients are expected to share in the cost of their treatment, but universality is sacrificed. One reason for this portrayal is likely the proximity of Canada (a universal health-care system without co-payments) to the United States (where patient cost-sharing is commonplace, but universality is arguably yet to be achieved). Of course, these comparisons create a false dichotomy that ignores the vast majority of our international peers.

One way to correct this misperception is to document the presence and extent of various cost-sharing mechanisms in other countries that have achieved universal health care coverage. Indeed, a 2016 report by Prof. Steven Globerman did just that and found that at least ten "developed countries employ cost-sharing in the form of deductibles, coinsurance, and/or co-payments for the set of services that are provided in Canada under provincial government health insurance programs" (2016: 9). This section seeks to expand Prof. Globerman's analysis to every high-income country in the OECD that has achieved universal coverage for health-care insurance.

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[10] "[T]he concept of 'medical necessity' has not been well defined by federal or provincial legislation, beyond the very broad statement that it is a service provided either by a physician, or a service provided in a hospital by a physician or other medical professionals" (Emery and Kneebone, 2013: 1).

[11] The Canada Health Act (R.S.C., 1985, c. C-6) defines user-fees as "any charge for an insured health service that is authorized or permitted by a provincial health care insurance plan that is not payable, directly or indirectly, by a provincial health care insurance plan, but does not include any charge imposed by extra-billing".

[12] The Canada Health Act (R.S.C., 1985, c. C-6) defines extra-billing as "the billing for an insured health service rendered to an insured person by a medical practitioner or a dentist in an amount in addition to any amount paid or to be paid for that service by the health care insurance plan of a province".

[13] For example, in 2016, Federal Minister of Health Jane Philpott warned Quebec's health minister that the federal transfers to the province would be reduced for violating the CHA by allowing fees for services covered by the public system (Canadian Press, 2016).

The list of countries included for comparison are derived from Barua and Moir, (2019). The authors identified 28 countries (including Canada) based on the following criteria: [1] must be a member of the OECD; [2] must have universal (or near-universal) coverage for core-medical services; [3] must be classified as a "high-income" country by the World Bank

The OECD has also performed 3 comprehensive international surveys to document health system characteristics of its member countries across a wide range of indicators. The first survey (2008/09) included 80 questions and was designed with the intention of "collecting qualitative information on health coverage, health care provision, resource allocation and governance" (Paris, Devaux, and Wei, 2010: 6). Since that time, two more surveys have been conducted by the OECD (OECD, 2012, 2016). Table 1 uses the responses of these two surveys in addition to those of Tikkanen, Mossialos, Djordjevic, and Wharton (2020) and Perkowski and Rodberg (2016) in order to document the use of deductibles and other patient cost-sharing mechanisms (co-payments and co-insurance) in the areas of primary care, specialty care, and acute inpatient care for the 28 countries identified by Barua and Moir (2019). A number of additional reports were used to either confirm or update the information for each country where necessary. Three broad inferences can be made from table 1.

1. The majority of high-income universal health-care systems around the world (22 of 28) routinely expect all or most patients to share in either the cost of out-patient primary care, out-patient specialist care, or acute in-patient care (though the latter is relatively less common) through co-payments, co-insurance payments and/or deductibles.
2. Canada is part of a small minority of only 6 countries (of 28) that either entirely eschew cost-sharing by patients or do not generally expect patients to share in the cost of treatment (except for specific situations and purely private options) for core medical services within their standard universal health-care framework. The other countries in this group are the Czech Republic, Denmark, Hungary, Spain, and the United Kingdom. It is notable that even within this group patients may be sometimes be subject to cost-sharing (co-payments, co-insurance payments, or other out-of-pocket payments); for example, this is the case in the Czech Republic, Denmark, and Hungary for specialist care in very specific circumstances (such as non-referred consultations and after-hours services).
3. The use of a system of patient co-payments or co-insurance payments is far more commonplace than general deductibles. The latter are routinely employed by only two countries (the Netherlands and Switzerland) and sometimes employed in two others (Germany and Ireland) for core medical services.

Table 1: Cost-sharing for core medical services

	Deductible	Co-payments and co-insurance			Additional references
		Outpatient primary	Outpatient specialist	Inpatient acute	
Australia	No	Sometimes [1]	Yes	Sometimes [2]	
Austria	No	Yes	Yes	Yes	Bachner et al., 2018
Belgium	No	Yes	Yes	Yes	Gerkens and Mekur, 2020
Canada	No	No	No	No	
Czech Republic	No	No	No [3]	No	Jan et al., 2015
Denmark	No	No	Sometimes [4]	No	Tikkanen, et al., 2020; Healthcare Denmark and Ministry of Health, 2017
Estonia	No	No [5]	Yes	Yes	Habicht et al., 2018
Finland	No	Yes	Yes	Yes	Keskimäki et al., 2019
France	No	Yes	Yes	Yes	
Germany	Sometimes [6]	No	No	Yes	Deutsche Krankenversicherung, 2022
Hungary	No	No	Sometimes [7]	No	Gaal and Velkey, 2011
Iceland	No	Yes	Yes	No	Sigurgeirsdóttir, Waagfjörð, and Maresso, 2014
Ireland	Sometimes [8]	Yes	Sometimes [9]	Yes	McDaid, Wiley, Maresso, and Mossialos, 2009; Wise, 2017; Inchicore Family Doctors, n.d.
Israel	No	No	Yes	No	Rosen, Waitzberg, and Merkur, 2015
Italy	No	No	Yes	Sometimes [10]	Ferré et al., 2014
Japan	No	Yes	Yes	Yes	
Korea	No	Yes	Yes	Yes	
Latvia	No	Yes	Yes	Yes	Behmane et al., 2019
Luxembourg	No	Yes	Yes	Yes	
Netherlands	Yes	No	No	No	
New Zealand	No	Yes	No [11]	No	Cumming, McDonald, Barr, Martin, Gerring, and Daubé, 2014
Norway	No	Yes	Yes	No	Sperre Saunes, Karanikolos, and Sagan, 2020
Portugal	No	Yes	Yes	No	Simões, Augusto, Fronteira, and Hernández-Quevedo, 2017
Slovenia	No	Yes	Yes	Yes	Albreht et al., 2021
Spain	No	No	No	No	Bernal-Delgado et al., 2018
Sweden	No	Yes	Yes	Yes	
Switzerland	Yes	Yes	Yes	Yes	
United Kingdom [12]	No	No	No	No	

Clearly, cost-sharing by patients for core medical services is not only compatible with universal coverage, but it is close to being the norm in high-income universal health-care systems. [14]

Canadians are probably more familiar with cost-sharing mechanisms for pharmaceuticals. This is primarily because, unlike hospital and physician services, the Canada Health Act (CHA) (and its prohibitions on user fees and co-payments) only applies to pharmaceuticals administered in a hospital. Indeed, an estimated 70.5% of Canadians have private drug insurance coverage and about 21% of Canadians are covered by provincial and territorial plans. Both private and public plans generally expect Canadians to share in the cost of their prescription medicines either through a deductible, or co-payment (or both). Of course, most provincial plans either exempt vulnerable populations (seniors, social assistance recipients, low-income families, and patients with chronic conditions), or require very low-levels of co-payments (Barua, Jacques, and Esmail 2018). Advocates of national pharmacare programs, however, often propose plans that would entirely eliminate such payments for all Canadians—including those who could very well afford them. [15] As a result, it is useful to document the presence of co-payments for pharmaceuticals in addition to other services such as diagnostic imaging and laboratory tests.

[14] A review by Perkowski and Rodberg (2016) found that 21 OECD countries (out of 28) used some form of cost-sharing for medical care (a patient's interaction with a physician), while 14 employed some form of cost-sharing for hospital care (inpatient or emergency care).

[15] For example, in 2019 the Canada's federal New Democratic Party proposed a pharmacare plan in which "[u]ser fees and co-payments would be banned unless the patient insisted on a more expensive brand-name version of the drug" (Walcom, 2019). However, more recent proposals include a $2–$5 copayment per prescription (Golding, MacRae, and Shamess, 2019).

Notes to table 1: [1] If physicians set their fees above the federally set schedule. [2] Private patients in public hospitals only receive 75% coverage of the federally determined provider fees for medical services. [3] €3.60 for ambulatory care out of office hours. [4] Co-payments for non-referred visits by individuals in "Group 2"—about 2% of the population. [5] Subject to fees for home-visits. [6] Primary (substitutive) private health insurance is an integral part of the universal health-care system in Germany, and such insurers offer plans with optional deductibles. [7] When non-emergency specialist services are obtained without referral, patients choose to go to a provider other than the one they were referred to, or if patients want to receive more services than the doctor prescribed. [8] Duplicative private insurance (that helps cover all or part of the medical and hospital costs) may require deductibles. [9] If patients visit an emergency department without being referred, or if they choose to be referred to a consultant as a private patient. [10] For the "unwarranted" use of hospital emergency services. Patients may also pay for private services delivered in public and private hospitals. [11] Private practitioners only. [12] The United Kingdom has a robust private health-care sector that may subject patients to direct charges and cost-sharing arrangements. However, the private sector is considered to be outside the core universal health-care framework and academic studies do not generally consider patients to be subject to cost-sharing payments for core services.

Sources for table 1: OECD, 2012, 2016; Tikkanen, Mossialos, Djordjevic, and Wharton, 2020 ; Perkowski and Rodberg, 2016. Data presented have been simplified for the purposes of presentation based on the authors' interpretation. Instances where cost-sharing for core medical services are required exclusively for private practitioners and hospitals. (such as in the United Kingdom, and specialists in New Zealand, for example) are not considered as such payments are commonplace and would not allow for meaningful interpretation of differences in required cost-sharing payments within a universal framework.

As can be seen in Table 2, every high-income country examined generally expects patients to share in the cost of their pharmaceutical consumption. [16] Many countries employ spending caps in order to limit total out-of-pocket expenditures on pharmaceuticals and, in some countries, patients are only expected to pay a fee if they opt for a brand-name pharmaceutical instead of the generic equivalent. Deductibles are employed more frequently for pharmaceuticals in contrast to medical services (table 1). It should be noted that, although patients in the England generally expected to pay a small fee for prescription pharmaceuticals, no such co-payments are required in Scotland, Northern Ireland, and Wales. As can be seen in table 2, there is no perceptible and consistent trend in cost-sharing for laboratory tests and diagnostic imaging, with countries taking a varied approach to such payments.

Table 2: Cost-sharing (co-payments and co-insurance) for other medical services and goods

	Laboratory services	Pharmaceuticals		Laboratory services	Pharmaceuticals
Australia	Sometimes [1]	Yes	Italy	Yes	Yes
Austria	Sometimes [2]	Yes	Japan	Yes	Yes
Belgium	Yes	Yes	Korea	Yes	Yes
Canada	No	Sometimes [3]	Latvia	Yes	Yes
Czech Republic	No	Yes	Luxembourg	No	Yes
Denmark	No	Yes	Netherlands	No [7]	Yes
Estonia	No	Yes	New Zealand	No	Yes
Finland	Sometimes [4]	Yes	Norway	Yes	Yes
France	Yes	Yes	Portugal	Yes	Yes
Germany	No	Yes	Slovenia	Yes	Yes
Hungary	No	Yes	Spain	No	Yes
Iceland	Yes	Yes	Sweden	Yes	Yes
Ireland	Sometimes [5]	Yes	Switzerland	Yes	Yes
Israel	Sometimes [6]	Yes	United Kingdom	No	Yes

Notes: [1] Free at the point of care when providers accept direct payments from Medicare. [2] For most people free of charge for services included in the benefit basket, but certain professional groups require co-insurance payments. [3] Varies across provincial plans. [4] Co-payment may be collected if the referral is from a private sector physician. [5] Free in public hospitals with referral. [6] Free at point of care according to 2012 survey. However, Rosen, Waitzberg, and Merkur (2015) note that households pay some costs out of pocket for laboratory tests. [7] Deductible may apply. Sources: OECD 2012, 2016. Data presented have been simplified for the purposes of presentation based on the authors' interpretation.

[16] Similarly, Perkowski and Rodberg (2016) found that "... all of the 28 countries in [their] sample utilized some form of cost-sharing for pharmaceutical care".

While the data presented in table 1 and table 2 broadly illustrate the ubiquity of cost-sharing arrangements for outpatient primary care, outpatient specialist care, acute inpatient care, and pharmaceutical care, it is worth documenting more precisely the nature of these arrangements and magnitude of payments in countries with relatively high performing health-care systems. When examining the case for reforming Canada's health-care system, it can be argued that it is not enough to simply demonstrate the relative presence of cost-sharing arrangements within universal frameworks, but rather their use in countries with objectively well-regarded high-performing health-care systems.

It is beyond the scope of this paper to devise a framework to identify these countries. At the same time, while various authors have made attempts to rank international health-care systems over the years, few have been successful in doing so. Notably, the most comprehensive ranking, encompassing 191 countries, is that published by the World Health Organisation in 2000 (WHO, 2000), which has been both lauded as a seminal work for the establishment of a general framework for assessing the performance of health-care systems, while simultaneously criticized for severe shortcomings (Deber, 2004).

In more recent years, less ambitious attempts have been made by reports focusing on fewer countries (Schneider, Sarnak, Squires, Shah, and Doty, 2017) or a handful of indicators (Conference Board of Canada, 2012, 2015); or avoiding the concept of aggregate ranking entirely in favour of a collection of rank-ordered (but separate) indices (CIHI, 2011). At the same time, despite their drawbacks, these reports contain useful (albeit, limited) information about the relative performance of international health-care systems.

It is possible, however, to create a combined list of countries that feature at the top of these rankings. A literature review was conducted in order to identify international rankings of health-care systems that meet the following criteria: [1] published between 2010 and 2020; [2] provided an ordered ranking of countries that reflects the overall performance of their respective health-care systems relative to their international peers; and [3] the countries included are members of the OECD. [17] The literature review identified three reports that met the criteria:

1. Schneider, E., D. Sarnak, D. Squires, A. Shah, and M. Doty (2017). *Mirror, Mirror 2017: International Comparison Reflects Flaws and Opportunities for Better U.S. Health Care*. The Commonwealth Fund.
2. Conference Board of Canada, 2015. *Health: Provincial and Territorial Ranking.*
3. Bjornberg, A., and A. Phang (2019). *Euro Health Consumer Index 2018*. Health Consumer Powerhouse.

[17] Ad-hoc rankings published by newspapers and magazines were excluded from the review.

The top 5 countries ranked in each of these reports were identified in order to generate the non-ordered list of countries in table 3. [18] Of these 10 countries, two (Denmark and the United Kingdom) do not routinely expect patients to share in the cost of medically necessary services within their universal framework. A discussion of the cost-sharing arrangements in the remaining eight countries follows.

Table 3: Countries ranked among the top 5 in international comparisons, 2010–2020

Australia	New Zealand
Belgium	Norway
Denmark (no cost-sharing)	Sweden
France	Switzerland
Netherlands	United Kingdom (no cost-sharing)

Note: Consideration of an updated report by the Commonwealth Fund (Schneider, Shah, Doty, Tikkanen, Fields, and Williams II, 2021) would alter this set of countries by excluding New Zealand and including Germany. However, because the updated report was released after the majority of this paper was written, the older version (Schneider, Sarnak, Squires, Shah, and Doty, 2017) is used.

Australia

Background

Australia's universal-access health-care system can be characterized as a primarily tax-funded public system that is deeply integrated with parallel private funding and private delivery of core medical services. Universal health insurance coverage is provided to residents through a public scheme (commonly referred to as Medicare), although residents can also purchase duplicative and voluntary private health-care insurance. Responsibility for health care in Australia is decentralized: the federal government plays a leadership role in financing health care and formulating health policy while states are mostly responsible for the delivery of services, with delivery split between both the public and private sector (Glover, 2020; Healy, Sharman, and Lokuge, 2006).

The government's universal-access health-care system is primarily funded through general taxation in conjunction with a 2% Medicare levy (Australian

[18] For a full list of countries ranked in the three reports, please see Appendix 3. It should be noted that Canada did not feature in the top 5 countries in the Commonwealth Fund's ranking, ranking 10th out of 11 countries examined. One Canadian province (British Columbia) featured in the top 5 jurisdictions in the Conference Board of Canada's report card, but Canada ranked 10th out of 29 jurisdictions. As British Columbia is a province it was not considered for inclusion in this report; the next country in the ranking, France (6th), was included.

Taxation Office, 2021; Glover, 2020). [19] The scheme provides coverage for medical care services on a positive list referred to as the Medical Benefits Schedule (MBS). The MBS is extensive, but in general covers consultation fees for physicians (both GPs and specialists), hospital care, maternity care, mental-health care, diagnostic testing prescribed by a physician, surgeries and therapeutic procedures performed by doctors, some dental surgeries performed by dentists, limited optometry, medical appliances and prostheses (Glover, 2017, 2020; Healy, Sharman, and Lokuge, 2006).

For some context about the relative size of the cost-sharing requirements and safety nets discussed below, it is worth noting that the per-capita income in Australia—as measured by Gross National Income per capita—was AU$75,539 in 2020 (World Bank, 2022).

Cost-sharing

Depending on where one is receiving care, cost-sharing is a common experience for Australian patients. Patients may be billed directly [20] for medical visits with general practitioners (GP) and specialists and are then reimbursed by the federal government. Visits to a GP are typically covered fully (100%) whereas visits to specialists and other "out of hospital medical services" [21] are usually covered only partially (85%) (Glover, 2020; Healy, Sharman, and Lokuge, 2006: 39). Physicians may set their fees above the federally set schedule if they choose, but in doing so lose their ability to directly bill the government. Physicians (GPs and specialists) whose fees do not exceed this fee schedule retain their ability to directly bill the government (known as bulk billing). [22]

Australian patients can choose to be treated in hospital as either a public or private patient. Those who choose to be treated as a public patient are usually only treated in public hospitals and have the entirety of their care covered by Medicare, but are restricted in which hospital and physician they may choose (Barua and Esmail, 2015). Those who choose to be treated as a private patient can decide to be treated at either a public or private hospital. Private patients, however, only receive 75% coverage of the federally determined provider fees for medical services through

[19] There is also a 1% surcharge for high-income earners who do not have private insurance covering hospital treatment.

[20] Unless the practice in question has the technology to process the claim instantly, in which case this is done at point of care (Glover, 2020).

[21] These could include diagnostic imaging, pathology, radiation or chemotherapy, dialysis, and rehabilitation (Australian Government, Department of Health, 2019b).

[22] From 2021 to 2022, 12.0% of services were not bulk billed, with the average patient contribution being AU$73.39 (Australian Government, Department of Health, 2022).

Medicare. Patients must bear the cost of this gap unless their insurance includes "gap coverage" that can top up unfunded portions for medical services (Barua and Esmail, 2015; Glover, 2017: 11). In addition, patients are also responsible for accommodations, surgical theater fees, prostheses, and diagnostic testing.

The public Medicare program also provides universal coverage for pharmaceuticals listed on the Pharmaceutical Benefits Schedule (PBS). Patients are often expected to pay a portion of the cost, often in the form of a co-payment. In 2021, Australians could expect to pay a maximum co-payment of $41.30 per script for most medication (Australian Government, Department of Health, 2020b). [23]

Safety nets

The Australian health-care system has developed several protections to ensure that vulnerable populations are not disproportionately affected by out-of-pocket expenses. There are three main safety nets for medical services, each with their own eligibility for coverage, threshold standards, and benefits.

The first is the Original Medicare Safety Net (OMSN), introduced in 1984, which only counts "gap payments" (difference between MBS reimbursement and the fee schedule) for out-of-hospital care towards a set threshold (AU$477.90 in 2020). Once this threshold is crossed, the OMSN will reimburse 100% of the scheduled fee for the remainder of the calendar year (Australian Government, Department of Health, 2019a).

The second protection—the Extended Medicare Safety Net (EMSN)—was introduced in 2004 and provides an "additional rebate" to families and individuals of "80 per cent of any future out-of-pocket costs for out-of-hospital Medicare services" for the rest of the calendar year. The OMSN is calculated prior to the EMSN. Whereas the OMSN has a single general threshold, EMSN has two indexed thresholds (2022): [1] AU$717.90 for those with a Commonwealth concession card and those receiving a family tax benefit; [2] AU$2,249.80 for all other singles (non-concessional) and families (Australian Government, Department of Health, 2015, 2021b). Various concession cards, which provide additional payment benefits, can be obtained if an applicant meets specific criteria (Australian Government Services, 2021).

The third safety net for medical services is the "Greatest Permissible Gap" (GPG). This measure ensures that the difference between an MBS fee for a medical service and the standard 85% Medicare benefit paid by a patient cannot exceed a specified fixed amount (AU$87.90 as of Nov 2021) (Australian Government, Department of Health, 2021a). The GPG applies to all out-of-hospital Medicare services, is indexed annually, and applies to MSB items that exceed a fee amount

[23] Pharmacists can provide a $1 discount at their discretion (Australian Government, Department of Health, 2020b)

of AU$586.20 (15% of which is AU$87.90). In the event this gap does exceed the specified fixed amount, the difference between the fixed amount and the size of the gap is paid out as an additional benefit to the patient.

There is also a Pharmaceutical Benefits Scheme Safety Net that has two thresholds. The first, titled the General Patient Safety Net threshold, which applies to all patients, was set at AU$1,486.80 for 2020. When total applicable payments exceed this amount for an individual and/or their family, they can apply for a "Safety Net concession card". This sets a maximum co-payment of $6.60 for each prescription plus premiums for the remainder of the calendar year. A new "concessional Safety Net threshold" of AU$316.80 is then set. When applicable additional co-payment for individuals and families passes this second threshold, they become eligible to apply for a "Safety Net Entitlement Card", which entitles holders to receive items free of charge for the remainder of the calendar year, except for applicable premiums (Australian Government, Department of Health, 2020a). This makes the total cap on co-payments annually in 2020 of AU$1,803.60 per individual and/or household.

Belgium

Background

Belgium has a compulsory health-insurance system [24] that is primarily funded through compulsory income-dependent social security contributions and (to a lesser extent) state subsidies and indirect tax revenue. The Federal State is responsible for the overall financing and regulation of the Belgian insurance scheme, alongside hospital budgets. Federated entities [25] are responsible for preventative and long-term care as well as (more recently) capital investment for hospitals and medical equipment (Gerkens and Merkur, 2020). The National Social Security Office (NSSO) collects social security contributions from employers and employees and redistributes the social security budget to the National Institute for Health and Disability Insurance (English: NIHDI; French: INAMI), which is responsible for the organization and management of compulsory health insurance (the Ministry

[24] Health insurance is one of six sectors of the Belgian social security system.

[25] Belgium has two types of federated entities—three regions (the Flemish and Walloon regions and the Brussels-Capital region) and three communities (a Flemish, a French, and a German-speaking community)—that represent different cultural and/or ethnic groups. Each of these regions and communities have their own legislative body and government (community governments generally decide upon matters related to health care). The Flemish community and Flemish region were combined into a single Flemish federated entity with a government and parliament responsible to the Flemish community (Flanders, Finance and Budget (n.d.). See figure 2.2 in Gerkens and Merkur, 2010 to see those relevant to the health-care system.

of Health is responsible for the organization and rules of the health system). The NIHDI is responsible for allocating "a prospective budget to the sickness funds to finance the health care costs of their members" (Gerkens and Mekur, 2020: 67).

Compulsory insurance coverage (through sickness funds) and delivery of health care is primarily offered through private entities (European Commission, 2019). Belgians must register with a sickness fund. They must register with either one of 6 private, not-for-profit sickness funds (one is exclusively for railway personnel) or one public fund (the Auxiliary Fund, which accounted for about 0.7% of the insured population in 2009) (Gerkens and Mekur, 2010; OECD and EOHSP, 2019b). Choice is free except that railway workers are automatically registered in a dedicated sickness fund of the Belgian railway company. Sickness funds cannot refuse coverage, and are responsible for reimbursing providers and citizens for the care they deliver or receive. Insured services are delivered by public and private institutions (and individual health-care providers). Residents can also purchase voluntary insurance from sickness funds (managed by mutual health-insurance companies) and private for-profit insurance companies.

There are two systems of payment in Belgium. The first is a reimbursement system through which patients are generally required to pay for the full cost of outpatient and ambulatory care (referred to as "direct payment") and then claim reimbursement from their sickness fund. A majority of patients are under this system, an intention of which is to "avoid overconsumption and promote responsible use of public money" (Gerkens and Mekur, 2020: xxvii). The second is a third-party payment system in which the sickness fund the patient has registered with directly pays the provider and the patient is only responsible for applicable co-insurance payments and non-reimbursable charges. While this third-party payment system typically applies when receiving inpatient care or when purchasing pharmaceuticals, this form of payment is being gradually expanded to ambulatory care (European Commission, 2019). [26]

For some context about the relative size of cost-sharing requirements and safety nets discussed below, it is worth noting that the per-capita income in Belgium — as measured by Gross National Income per capita—was €37,007 in 2020 (World Bank, 2022).

Cost-sharing

Regardless of the method of payment and reimbursement, insured persons are expected to pay a portion of the cost of their medical care. Cost-sharing mostly comes in the form of fixed co-payments or as a proportion of the national fee

[26] In order to improve access to general practitioners, individuals who qualify may also have third-party payment cover the up-front costs of primary care consultations (NIHDI, 2015).

schedule (that is, co-insurance payments) and other supplemental payments (such as extra billing) (Gerkens and Mekur, 2020). [27] The rate of co-insurance payments are standardized for all insured individuals but will vary among services and for those enrolled in the preferential reimbursement (PR) system (sometimes referred to as increased intervention system) discussed in the section on safety nets below (Gerkens and Mekur, 2020). Previously, health insurance funds would generally reimburse between 60% to 75% of medical fees resulting in co-insurance payments of 25% for GP consultations and 40% for specialist consultations for the general population (Gerkens and Mekur, 2010). However, this system was reformed in 2011 for GPs and 2015 for medical specialists, resulting in a system of fixed co-payments for these services (Gerkens and Mekur, 2020).

For consultations with a GP, patients pay a fixed co-payment of €6 without a global medical record, [28] €4 with a global medical record. Patients with preferential reimbursement pay €1.5 without a global medical record and €1 with a global medical record.

Payments that patients can expect to make for ambulatory or outpatient care are based on three figures: [1] the fee as determined in the "national fee schedule"; [2] the reimbursement rate of those under the preferential reimbursement program; and [3] the reimbursement rate for those not in the preferential reimbursement program. The cost a patient could expect to pay for a visit to a GP or specialist is shown in table 4.

Table 4: Co-payments for visit with general practitioner or specialist, 2020

	PR beneficiary	Regular beneficiary
Consultation with a general practitioner (no global medical record)	€1.5	€6
Consultation with a general practitioner (with global medical record)	€1	€4
Consultation with a specialist (for every specialty)	€3	€12

Source: Gerkens and Mekur, 2020.

As mentioned, financing and reimbursement of inpatient care typically occurs under the third-party payer system. While sickness funds directly cover the majority

[27] Patients are generally required to pay for the full cost of outpatient and ambulatory care and then claim reimbursement from their sickness fund. Individuals are only partly reimbursed with the remaining balance, making up the cost a patient is responsible for.

[28] Sometimes referred to as the Global Medical File, this opt-in program was introduced in 1999 and was intended to increase the "availability of medical, social and administrative patient information and access to such information" while also "optimizing the quality of primary care provided and avoiding unnecessary or duplicated care and contradictory prescriptions" (Gerkens and Mekur, 2010: 64).

of the costs for care, patients are in most cases responsible for: [1] an initial lump sum for the first day of care; [2] a smaller fixed daily rate that applies from the second day onwards; [3] the cost of medicines (flat daily rate of €0.62); and additional costs for [4] supplements (that is, single rooms) (European Commission, 2019; NIHDI, 2022). Those entitled to preferential reimbursement do not have to pay the higher lump sum on the first day while also paying a lower daily flat rate (table 5). Patients may also be responsible for a percentage of medical fees and be subject to extra billing on the daily amount and medical fees if treated in a single room (Gerkens and Mekur, 2020).

Table 5: Fixed costs of hospitalization/acute inpatient care, 2022

	PR beneficiary	Regular beneficiary
Day 1	€6.12	€44.51
Day 2 onward	€6.12	€17.24

Source: NIHDI, 2022.

About 2,500 pharmaceuticals are partially reimbursable in Belgium. [30] This partial reimbursement for pharmaceuticals is generally applied at the pharmacy through the third-party-payer scheme, so patients only pay the "non-reimbursable amount as a co-payment to the pharmacy" (European Commission, 2019: 24). The amount that is reimbursed for a drug is based on: [1] the pharmaceutical category (reflecting the social importance of the drug); [2] pharmacotherapeutic criteria; [3] price criteria; and [4] the location where the drug is dispensed (European Commission, 2019; Gerkens and Mekur, 2020).

Safety nets

Belgium has also developed several protections to ensure that vulnerable populations are not disproportionately affected by out-of-pocket payments. [31] As can be seen in table 4 and table 5, the preferential reimbursement (PR) system gives a higher level of reimbursement to individuals of low income when purchasing

[30] Reimbursable medicines are classified into seven "categories" (five of which are considered necessary) based on their social importance, therapeutic value, and the rate of reimbursement a patient can expect (European Commission, 2019; Federal Public Service Social Security, 2018: 115; NIHDI, 2019a).

[31] Though not directly related to cost-sharing, Belgium also offers protection to its most vulnerable patients through its Special Solidarity Fund (SSF), which reimburses patients for "certain medical expenses for rare diseases, rare indications and innovative techniques which are not (yet) refunded by the compulsory health insurance" funds (Belgian Health Care Knowledge Centre, 2010: 10). Patients can also apply for support from this fund if they find themselves needing an expensive medical device or care abroad (NIHDI, 2020c).

different forms of medical care. In addition to some other services, this system can assist patients receiving primary care, outpatient specialist care, outpatient prescriptions, and inpatient care. For example, the third-party payment system automatically applies to PR patients for GP consultations. As of 2020, policy holders who meet specific conditions (e.g., widow, invalid, pensioner, handicapped) applying for PR had to have an annual income of less than €19,957.16 plus €3,694.61 for each additional dependent the previous year (NIHDI, 2020a). [32] For those who do not meet these conditions, in 2020 the ceiling was €19,335.92 and a €3,579.60 ceiling for every additional person.

In addition to PR, Belgium also uses four types of "Maximum Allowable Billing" (MAB) to protect vulnerable populations. A general, financially based, MAB applies to all households and creates a ceiling for out-of-pocket expenses, which is dependent on a family's (household's) income level (table 6), "for all necessary health expenses" (Gerkens and Merkur, 2010: 98). Once a family's out-of-pocket expenses cross this threshold, all additional qualifying costs are covered by the sickness fund in full for the remainder of the year (Gerkens and Merkur, 2010; NIHDI, 2016). While the income-based MAB applies to most Belgian households, special categories with lower thresholds also exist for families with low incomes (NIHDI, 2020d).

Table 6: Maximum Allowable Billing (MAB) based on income, 2020

Income bracket	Ceiling
€0.00–€19,277.55	€477.54
€19,277.56–€29,635.62	€689.78
€29,635.63–€39,993.73	€1,061.20
€39,993.74–€49,920.24	€1,485.68
€49,920.25–	€1,910.16

Source: NIHDI, 2020d.

Aside from a household's income level, the MAB system applies in three other ways. Social MAB, for example, applies a lower (€477.54 in 2020) threshold to households that already qualify for preferential reimbursement (see NIHDI, 2020d, 2021 for details). MAB also applies to the cost of care being provided at the individual level for children under the age of 19 regardless of income (€689.78 in 2020) and for those who are chronically ill with additional conditions, €106.12 in 2020)

[32] Individuals can also qualify for increased intervention without consideration of income if they meet certain capacity or situational conditions (Appendix 1).

(Gerkens and Mekur, 2020; NIHDI, 2020d). In addition to a lower MAB ceiling, meeting the conditions for "chronically ill" status entitles patients to the application of a third-party-payer scheme for consultations with a GP (NIHDI, 2019b).

Fixed payments ("lump sums") are another way in which vulnerable patients with high medical expenditures are financially protected. Residents with high expenditures can qualify to receive yearly flat-rate payments (for example, €321.44–€642.9 for chronic patients) from their health insurer in instances related to chronic illness, medical dependency, the need for "incontinence materials", and palliative home care (European Commission, 2019: 301–302; Gerkens and Mekur, 2010, 2020; NIHDI, 2020b).

France

Background

France's universal-access health-care system is based on a statutory health-insurance [SHI] model. Coverage is provided to all residents through non-competitive statutory health-insurance schemes. Enrollment is compulsory and primarily based upon type of employment. [33] Private voluntary insurance of a complementary or supplementary nature is also available in France (Chevreul et al., 2015). [34]

The universal insurance scheme is financed through contributions from both employers and employees. [35] There are two main [36] Statutory Health Insurance (SHI) schemes: [1] the general SHI scheme that covers employees, the self-employed, students, and "recipients of certain benefits and simple residents"; [2] the agricultural SHI fund (for farmers and agricultural employees) (Vie Publique, 2021). Coverage is mandatory as employees and their dependents cannot opt out, except in rare cases (e.g., foreign employment). As a means of covering gaps in coverage the PUMa (Protection universelle maladie) law was passed in 2016, which made eligibility for SHI universal (Chevreul et al., 2015; OECD and EOHSP, 2019a).

[33] The Administration of Health and Social Affairs, and its sub-directorates, are the entities in charge of health care. Their specific responsibilities include budget allocation to different health-care sectors, negotiation and approval of service tariffs, and drug prices (Chevreul et al., 2015; Durand-Zaleski, 2017).

[34] This insurance is used to top up coverage, fund co-payments, and provide coverage additional to what is provided in the universal scheme, such as vision and dental care (Chevreul et al., 2015).

[35] Chevreul and colleagues (2010) note that "employees' payroll contributions have been almost fully substituted by an earmarked tax called the 'general social contribution' (contribution sociale généralisée) based on total income and not only on earned income" (2010: xxv). Additional revenue is generated from earmarked national income taxes, levies on the alcohol, tobacco and pharmaceutical industry, voluntary health-insurance companies, and state subsidies (Durand-Zaleski, 2017)

[36] There are a number of special schemes for civil servants, members of the military, marine and mining staff, and so on. For a full list see Direction de l'information légale et administrative, 2020.

SHI coverage is wide and includes hospital care (in both public and private hospitals), [37] outpatient care, diagnostic services, maternity care, prescribed drugs, medical appliances, medical related transport, and home care (Chevreul et al., 2015; Durand-Zaleski, 2020). Several positive lists at the national level are used to define what specific items are covered (Durand-Zaleski, 2017). Patients typically pay the cost of ambulatory care up front and are then reimbursed by SHI and by a voluntary health insurance scheme afterward, with third-party payment (whereby practitioners are directly paid by SHI and VHI plans) becoming an option for low-income populations in 2015. [38]

For some context about the relative size of the cost-sharing requirements and safety nets discussed below, it is worth noting that the per-capita income in France—as measured by Gross National Income per capita—was €32,777 in 2020 (World Bank, 2022).

Cost-sharing

French citizens are expected to share in the cost of their care. Patients are typically responsible for co-payments and co-insurance payments (based on regulated fees) for outpatient care (GPs and specialists), inpatient care, and outpatient prescription drugs. Extra billing above the official tariffs (referred to as balance-billing) are sometimes charged by doctors who have opted to work in what is known as Sector 2 (only certain full-time public-hospital physicians may request access to this sector as of 2015) [39] (Chevreul et al., 2015; Durand-Zaleski, 2020).

Typical co-insurance charges expected for GP and specialist visits, outpatient prescription drugs, inpatient hospital stays, medical devices, and dental care are provided in table 7. In addition to co-insurance payments, many medical services in France also require some form of additional flat co-payment. Typically, these

[37] In 2019, there were 983 private for-profit facilities (33% of country's total), 671 private non-profit establishments, and 1,354 public institutions in France. Private for-profit facilities specialize in surgery and short-term care, and treat any patient without discrimination. In 2019, 60.9% of hospital stays (long- and short-term) for surgery were in private for-profit establishments (DREES, 2021).

[38] According to Labrie and Boyer, "this reimbursement principle does not apply, however, to hospitalized patients or to beneficiaries of the complementary universal medical coverage program. There is thus no prior disbursement required from these patients: the health insurance system or supplemental insurance handles payment of the costs directly. Patients are required to pay only the amounts they are responsible for (the 'patient contribution' and, if applicable, a daily charge as well as supplements for personal comforts such as private rooms, telephone, television, etc.). In reality, these charges are looked after by the supplemental insurance plans with which patients are affiliated" (2008: 2).

[39] Penalties may apply to doctors in Sector 2 for charging fees in excess of 150% of the offical tarrif (Chevreul et al., 2015). Doctors in Sector 3 are considered "non-conventioné" and can charge fees independently, with the universal scheme covering €0.61 for a general medical consultation and €1.22 for a consultation with a specialist (Conseil national de l'Ordre des médecins, 2022).

Table 7: User charges for health services in France, 2015, 2020

Health service	Type of user charge in place	Out-of-pocket maximum
Visit to GP	Co-insurance (30%) + €1.00 co-payment	€50/year for co-payment
Specialist consultation	Co-insurance (30%) + €1.00 co-payment	€50/year for co-payment
Outpatient prescription drugs	Co-insurance (15%–100%) + €0.50 co-payment	€50/year for co-payment
Inpatient stay	Co-insurance 20% + €18.00/day	Co-insurance applies to first 31 days
Dental care	Co-insurance (30%); €1 co-payment [1]	€50/year for co-payment
Medical devices	Variable co-insurance depending on device	

Note: [1] If treatment isperformed by a stomatologist.
Sources: Chevreul, et al., 2015; Durand-Zaleski, 2020.

apply to daily hospital care, catering fees, outpatient doctor visits, prescription drugs, and transport by ambulance. These co-payments are limited by an annual cap of €50 a year. [40]

Outpatient care is covered at 70% (co-insurance rate of 30%) of the statutory tariff (for doctors and dentists). This coverage can drop to 60% for medical auxiliaries (including nurses and physiotherapists) and laboratory tests. Inpatient care is covered at 80% (co-insurance rate of 20%), although this can increase to 100% if specific conditions are met (table 7); patients receiving extensive procedures that cost over €120 pay a flat fee of €24 per hospital stay (Le Cleiss, 2021). This is on top of the daily fee charged for hospital accommodations, although this is also subject to several exemptions (table 8).

Medicines in France are sold at a price determined by the Ministry in charge of health in conjuction with a number of other agencies (including pharmaceutical companies) based on what the drug offers in terms of the efficacy and value of the "Rendered Medical Services" (SMR) and in terms of its added value, referred to as the "Improvement of the Rendered Medical Service" (ASMR). [41] The reimbursement rate for medication is in turn determined by the National Union of Health Insurance Funds based on the SMR and the "seriousness of the condition" (Ministry of Solidarity and Health, 2016). While "most drugs are covered at a rate of 65%" the coverage can range from 15% to 100%, whereas highly effective drugs, like insulin, carry no co-insurance charges (Chevreul et al., 2015: 76; Durand-Zaleski, 2017).

[40] These deductibles do not apply to those under the age of 18, specific beneficiaries, and women who are 6 months pregnant (Chevreul et al., 2015).

[41] The Transparency Commission makes evaluations "in comparison with available treatments or drugs already available for the same pathologies" (Chevreul et al., 2015: 49).

Table 8: Cost-sharing exemptions in France

Conditions for exemptions for all care
1. those receiving care for 32 specified long-term illnesses;
2. those seeking infertility treatment and pregnancy termination;
3. occupational Injuries;
4. pregnant women after fifth month of pregnancy;
5. live organ donors;
6. disabled children;
7. pensioners;
8. contraceptives for minors aged 15 or more.
Conditions for inpatient care co-insurance exemption
1. over 31 days of hospital care;
2. maternity care;
3. newborn care (first 30 days);
4. those receiving care for 32 specified long-term illnesses;
5. those seeking infertility treatment;
6. those on military or disability pensions;
7. occupational injury;
8. minors who are receiving treatment for a sexual crime;
9. those on state sponsored medical coverage.
Conditions for inpatient accommodation exemption
1. maternity care from last 4 months to 12 days postpartum;
2. newborns for first 30 days of care;
3. those on state-sponsored medical coverage;
4. occupational injuries;
5. institutionalized disabled children under 20 years of age;
6. military pensioners;
7. those under the hospital-at-home scheme;
8. those under the Alsace-Moselle SHI scheme.

Sources: Chevreul, et al., 2015; Durand-Zaleski, 2017.

Safety nets

The French state also has several ways of protecting vulnerable groups from high out-of-pocket expenses. For example, those with low incomes (<€8,723 per year) are entitled to free or state-sponsored health insurance, dental and eye care, and rises with each household member (Durand-Zaleski, 2020). Low-income beneficiaries are estimated to make up 9% of the population, 6% of whom are on a means-tested Voluntary Health Insurance (VHI) scheme, with the remaining 3% receiving state-sponsored coverage.

Exemptions from co-insurance charges and co-payments are also available for various select populations, and those with particular conditions or those requiring particular treatments (table 8). Complementary voluntary health insurance can also be taken out in order to cover the cost of co-insurance charges and co-payments (Barua and Esmail, 2015; Chevreul et al., 2015).

Netherlands

Background

The Netherlands has a compulsory social health-insurance scheme where private health insurers compete in a heavily regulated environment. In this setting, the role of the Dutch government is to ensure a properly functioning universal health-care insurance market. Since the implementation of the 2006 Health Insurance Act, everyone living in the Netherlands must purchase a standard insurance package from one of a number of private insurers, in a regulated but competitive market.

Insurers "operate under private law; can negotiate to a certain extent with health care providers on price, volume and quality of care" (Schäfer et al., 2010: 54). [42] Insurers providing basic coverage are required to accept all applicants and are "obliged to accept anyone who applies for the standard insurance package and must charge all policyholders the same premium, regardless of their age or state of health" (Ministry of Health, Welfare and Sport, 2021b). Coverage must include core services provided by general practitioners, medical specialists, and obstetricians, and hospital treatment among others. The National Health Care Institute "advises the minister on what services should be included in the package" (Kroneman et al., 2016: 73). The definition of covered services is extremely broad and only a small negative list of excluded services is maintained.

The health-care system is primarily financed by compulsory contributions and premiums. [43] Specifically, about half of adult contributions for health insurance are based on the community-rated premium set and collected by their insurer (Kroneman et al., 2016). Individuals must also pay an additional income-dependent contribution (with a maximum limit for annual contributions) either through their employer or directly to the relevant tax authority; these are pooled into the Health Insurance Fund (*Zorgverzekeringsfonds*). [44] While the premium can vary from one insurer to another, they must determine a flat community-rated premium for adults that applies uniformly across the country (irrespective of age, gender, or pre-existing medical

[42] The lower house of the Dutch parliament passed legislation in 2014 that would allow hospitals to operate on a for-profit basis and distribute profits to investors (Tweede-Kamer, 2015). This bill was still pending approval by the senate as of October 10, 2018 (Meersma, 2018).

[43] In 2019, the weighted average annual premium for a Dutch resident amounted to €1,384 (Ministry of Health, Welfare, and Sport, 2021). In 2022, the average monthly premium for basic insurance was €128.30 (Zorgwijzer, 2022).

[44] This fund, in turn, reallocates these contributions as a form of risk-adjustment by compensating insurers based on the individuals on their roster (Kroneman et al., 2016). It is estimated that together with the public funding of about 5% (van Kleef, 2012), the income-related contribution covers 50% of the total premium burden with nominal premium charges covering the other half (Ministry of Health, Welfare, and Sport, 2012).

conditions). [45] Most Dutch citizens (83.9% in 2021) also purchase private voluntary health insurance that will cover the costs associated with dental care, physiotherapy, eye glasses, and the co-payments for medications that exceed the remuneration rate (Ministry of Health, Welfare, and Sport, 2021a; Wammes, Jeurissen, Westert, and Tanke, 2017; Wammes, Stadhouders, and Westert, 2020).

For some context about the relative size of cost-sharing requirements and safety nets discussed below, it is worth noting that the per-capita income in the Netherlands—as measured by Gross National Income per capita—was €41,161 in 2020 (World Bank, 2022).

Cost-sharing

Deductibles are the major form of cost-sharing within the Dutch health-care system for core services. In 2019 and 2020, all Dutch citizens over the age of 18 were expected to pay an annual deductible of €385 for specific types of care (National Government of the Netherlands, 2020a). Patients do not pay a deductible for some forms of care (table 9). Co-payments and/or co-insurance charges are required for

Table 9: Medical care for which a deductible and contribution are owed in the Netherlands, 2020

Kind of health care	Description	Patient pays a deductible?
General practitioner	Visit a doctor	No
Dentist	Children up to the age of 18: monitoring and treatment; and fluoride treatment for children up to 6 years old who get "permanent" teeth	No
	From 18 years: surgical dental care and X-ray examination	Yes
Medical specialist	Visit a medical specialist, such as a dental surgeon, internist, or allergist	Yes
Hospital	Hospital stay, surgeries, and hospital emergency	Yes
Medicines [1]	Most medicines	Yes
Blood test	Blood samples through a doctor and medical specialist	Yes
Mental health care	Basic mental health care for people with mild to moderate mental illness; for example, conversations with a psychologist or internet treatment (e-health)	Yes
	Specialist mental health care for people with severe, complicated mental illnesses	
	First 3 years of residence in a mental healthcare institution	

Note: [1] Patients also pay a "personal contribution" for certain medications that exceed the maximum reimbursement from the basic insurance package.
Source: Ministry of General Affairs, 2020.

[45] Insurers are free to choose where and by whom the care is delivered. Individuals, meanwhile, are free to choose the insurer and health plan of their choice and can switch insurers from year to year without fear of financial penalty (Acri née Lybecker and Barua, 2019).

certain types of care and equipment (see Appendix 2). For most health care, however, once this deductible threshold is met insurance will cover the entirety of the cost of the care in question.

Dutch citizens may also choose a higher deductible in exchange for a discount on their monthly premiums. Deductibles may be set at an additional €100, €200, €300, €400, and €500 (National Government of the Netherlands, 2020a). In exchange for choosing a higher deductible, patients receive a discount on their monthly premiums. [46]

The degree to which patients are exposed to cost-sharing also depends on the kind of policy they hold. "In-kind policies", for example, allow patients to visit specifically contracted health-care providers and receive no bill for the care they receive. Non-contracted providers can be seen, but may only receive partial reimbursement for the visit from the insurer. The patient is responsible for the balance, although insurers are expected to ensure this option remains affordable. By contrast, "restitution policies" allow for a free choice of provider in exchange for the insured paying the bill out of pocket and receiving reimbursement from the insurance fund afterward (Kroneman et al., 2016). [47] [48]

Dutch citizens enjoy broad pharmaceutical coverage under the basic insurance plan, provided that the medicines they are prescribed are registered under the Medicines Reimbursement System (GVS) (National Healthcare Institute Netherlands, 2021; National Government of the Netherlands, 2020b). [49] Patients over the age of 18 must still reach their annual €385 deductible before basic insurance begins reimbursement for medications. In addition to a deductible, certain prescriptions may require that patients also pay a "personal contribution" for

[46] While insurers were once able to offer up to a 10% discount in exchange for taking on a higher deductible, as of 2020 the maximum discount that can be offered is 5% (National Government of the Netherlands, 2019b).

[47] "[T]he health insurer does not have to reimburse more than is considered reasonable in the Dutch healthcare market (in a court ruling "reasonable" is described as in accordance with the market)" (Kroneman et al., 2016: 89).

[48] "Restrictive conditions policies", a newer development among in-kind policies, offer an even cheaper alternative to in-kind policies by including a limited number of contracted providers. Combinations of these policies also exist whereby "some insurers offer a restitution policy, but provide the opportunity to pay bills directly to contracted provider" (Kroneman et al., 2016: 89). In 2017, in-kind schemes made up the majority (64.9%) of policies on offer in the marketplace, with refund (26.3%) and combination (8.7%) policies making up a minority of the market place (Ministry of Health, Welfare, and Sport, 2021a).

[49] The drugs included on this list are decided by the Ministry of Health, Welfare and Sport (VWS) with advice from the National Health Care Institute and the Scientific Advisory Board (National Health Care Institute, 2019).

medications that exceed the maximum reimbursement from the basic insurance package. Specifically, the average price of the cluster of therapeutically interchangeable products is determined and, if the price of a drug is above this amount, the patient is required to pay the difference. [50] [51] As of 2019, the government has set a €250 maximum annual limit on the amount that can be spent on personal contributions (National Government of the Netherlands, 2019a).

Safety nets

While cost-sharing is understood to be a foundation of the Dutch system, several protections are in place to ensure accessibility while avoiding unnecessary financial burdens being placed on vulnerable groups. To start, children under the age of 18 are exempt from having to pay the annual €385 deductible that applies for specific types of care for all adults (National Government of the Netherlands, 2020a). As of 2019, there is a €250 cap for personal contributions paid towards medication on top of the existing deductible (National Government of the Netherlands, 2019a). Further, Elissen and colleagues note that "individuals who incur structural care expenses over time, for example as result of chronic illness or disability, receive financial compensation" (2015: 99) . In addition, those on low incomes may qualify for a "health care allowance" funded from income-related contributions (Elissen, Duimel-Peeters, Spreeuwenberg, Vrijhoef, and Nolte, 2015).

In order to ensure that premiums do not pose a significant impediment to care for low-income individuals, the Health Care Allowance Act (*Wet op de Zorgtoeslag* [WZT]) provides for a health-insurance nominal premium allowance for those for whom the premium constitutes an excessive burden relative to their income. According to the Dutch Ministry of Health, Welfare, and Sport, "[u]nder the WZT, people are entitled to financial support from the government depending on ability to pay" (2012: 48). This allowance is based on the income of the individual and an "allowance partner", and the average price of the standard premium plus the compulsory deductible. In 2013, 57% of Dutch households received a health-care allowance. On average, 41% of the premium was compensated. As of 2020, Dutch citizens without an allowance partner had to earn less than €30,500 to receive the smallest monthly allowance. For those applying with a partner, the threshold to receive the smallest monthly allowance was a combined income of €39,000 (Tax Authorities of the Netherlands, 2020).

[50] Insurers must fully reimburse at least one medicine in each group under a preferred drug program. Further, if the prescribing physician decides that a more expensive medicine is necessary, the patient will not have to pay the excess (Schäfer et al., 2010).

[51] For more information, see Ministry of Health, Welfare, and Sport, Netherlands, n.d.

New Zealand

Background

New Zealand operates a publicly funded universal health-care system that delivers services through public and private organizations. The public scheme is primarily financed through general taxation collected at the national level, with a small portion (less than 10%) through its Accident Compensation Corporation (ACC). [52] New Zealand also has a parallel private health-care sector with approximately one third of residents (Gauld, 2020) holding private insurance (from not-for-profit and for-profit companies) to cover elective care in private hospitals and outpatient consultations, quicker access to non-urgent care, private rooms, and any gaps in public reimbursement.

At the central level, the Ministry of Health (MOH) is primarily responsible for health-care policy, determining the benefit package and setting the budget, while 20 District Health Boards (DHB) take on planning and funding responsibilities at the local level. In 2009, a National Health Board was established as a "business unit within the MOH with responsibilities for funding, monitoring and planning of DHBs" (Cumming et al., 2014: 16) among other responsibilities aimed at reducing bureaucracy. A network of 31 primary health organizations (PHO) are funded through a capitation model and are responsible for coordinating primary health-care activities.

Publicly funded health-care services with no cost-sharing include emergency care, inpatient and outpatient care at public hospitals, maternity services, and dental care for children under 18. Subsidized coverage is provided for family doctors, support services for the disabled, and means-tested long-term care for seniors. Residents also receive subsidized coverage for over 2,000 drug brands listed on a positive list (The Pharmaceutical Schedule) determined by PHARMAC (Pharmaceutical Management Agency) (Cumming et al., 2014). The ACC covers medical costs arising from accidents including payment for hospital surgical and specialist services, physiotherapy, counselling services, and so on (ACC, 2022).

For some context about the relative size of cost-sharing requirements and safety nets discussed below, it is worth noting that the per-capita income in New Zealand—as measured by Gross National Income per capita—was NZ$58,792 in 2019 (World Bank, 2022).

[52] The ACC purchases care from public and private hospitals for patients with accident-related injuries. It is funded by employers through a risk-based payroll premium, employees based on earnings through a PAYE tax, and drivers via vehicle registration fees and excise taxes on petrol (in addition to other sources).

Cost-sharing

Patients are generally expected to share in the cost of services provided by family doctors and nurses in a primary care setting. [53] As independent businesses, general practices can set their own fees (within a range agreed upon by the DHBs and PHOs) and (since 2002) receive public funding via a capitation system that is adjusted for age and health status (Ministry of Health, New Zealand, 2018b). Physicians determine the level of the co-payment (within a certain threshold) [54] independently, which usually ranges from NZ$15 to NZ$50 per encounter (Gauld, 2020). Patients incur relatively lower co-payments if they enrol with any particular practice (which then receives extra government funding). Specialist care is free within the public health-care system. However, patients can use private hospitals and specialists in order to get quicker treatment; for this they are subject to direct charges (unless they have private insurance). Prescription drugs are covered by the public system and invite small co-payments of NZ$5. Co-payments may also be required for crutches and other medical aids, but are free for children under 16. [55]

Safety nets

New Zealand has a number of safety nets to assist vulnerable groups. To start, there are no co-payments for services rendered by general practioners to children under 14. There are also a several protection schemes designed to assist specific groups.

1. Practices that serve high-needs populations can join a Very Low Cost Access (VLCA) programme in order to receive additional government funding in exchange for offering lower co-payments within specified thresholds for different age groups. Benefits include: zero fees for children aged 0 to 13; a maximum NZ$13 charge for those aged 14 to 17; and a NZ$19.50 maximum charge for adults ages 18 and over (Ministry of Health, New Zealand, 2020).

2. The Community Services Card (CSC) was introduced to provide subsidies for individuals and families below a set income threshold, those living in public housing, and those on an "accommodation supplement". Benefits include:

[53] "In February 1992 user charges were introduced for services provided by public hospitals. These were dropped in 1993" (New Zealand Parliament, 2009).

[54] Agreed to by district health boards (DHBs) and PHOs (Ministry of Health, New Zealand, 2018b).

[55] For adults over 16 years, the government fully subsidizes medical items required for employment or educational training. If the medical aid or prosthesis is required as a result of injury, and is deemed necessary after assessment by one of the limb centres of the New Zealand Limb Board, ACC will usually cover the cost of the item (Cumming et al., 2014: 67–68).

reduction in GP fees, reduction in prescription fees, emergency dental care, travel and accommodation for treatment away from home, and home help (Ministry of Health, New Zealand, 2021a).

3. The High Use Health Card (HUHC) is for high frequency users (>12 GP visits in one year) and reduces the cost of fees for after-hours care and visits to practices where a user is not enrolled (Ministry of Health, New Zealand, 2021b).

4. Care Plus offers reduced rates for individuals with chronic illness and serious medical and mental-health needs (Ministry of Health, New Zealand, 2018a).

5. Pharmaceutical Subsidy Cards provide a benefit for individuals and families who fill over 20 prescriptions in a year. Once this threshold is crossed, users are no longer responsible for the NZ$5 prescription co-payment (Ministry of Health, New Zealand, 2021c).

In addition to frequent users (via the HUHC) and low-income individuals (via the CSC), reduced co-payments also apply to seniors (65 and older) and those living in recognized low-income areas. [56] These reduced co-payments for primary care range from NZ$10 to NZ$25. Medical aids are free for children under 16 years of age, for those who need them for employment or educational training, or for those who require them after injury as assessed by a limb clinic. The ACC will cover the cost of the aid if it is required as a result of accidental injury.

Norway

Background

Norway operates a tax-funded national health care system. Coverage is universal with "equal access to health care of good quality" as a key objective enshrined in the 1999 Patients' Rights Act (Sperre Saunes, Karanikolos, and Sagan, 2020: 23). Private insurance plays a small role, with about 10% of Norwegians holding voluntary health insurance plans of a supplementary nature (offering quicker access to non-emergency services and ambulatory care from private providers) (Sperre Saunes, 2020; Globerman, 2020).

The Norwegian health-care system is often referred to as "semidecentralized": the central government is responsible for specialist care (delivered via four regional

[56] Additional money has been provided to PHOs serving people living in the 20% most "deprived areas" according to the New Zealand *2013 Index of Deprivation* (Ministry of Health, New Zealand, 2014).

health authorities) while municipalities are primarily responsible for primary care. At the central level, the government sets a national budget and the Ministry of Health and Care Services (MOHCS) is responsible for determining and implementing the national health policy as well its overall regulation and supervision. The Norwegian health-care system draws most of its funding through general taxation (74%) and the National Insurance Scheme (11%). [57]

The public health-care systems entitles patients to essential medical goods and services. [58] Though there is no positive list of medical services included in the basic benefits package, coverage generally includes preventative services (check-ups, screenings, and so on), primary care (GPs, physiotherapists, and chiropractors), medically essential specialist and ambulatory care, emergency care, and nursing care. Some coverage is also available for medical eye care (excluding glasses) and dental care for children and vulnerable groups.

For some context about the relative size of cost-sharing requirements and safety nets discussed below, it is worth noting that the per-capita income in Norway—as measured by Gross National Income per capita—was kr 585,394 in 2020 (World Bank, 2022).

Cost-sharing

Cost-sharing is a core feature of certain parts of Norway's health-care system. The primary objective of such payments is to reduce demand for minor health issues, regulate the growth of public spending, and prioritize resources towards areas of greater need (Sperre Saunes, Karanikolos, and Sagan, 2020). Although in-patient care and home-based long-term nursing care are exempt from cost-sharing, patients are generally required to share in the cost of other publicly insured health services. Specifically, patients are subject to a co-payment of kr 155 for GP visits, kr 351 for outpatient specialist care, kr 250 for radiology tests, and kr 55 for laboratory tests. Co-payments for physiotherapy range from kr 123 to kr 300 while co-insurance payments for institutional long-term care are means-tested payments that can range from 75% to 85% of an indvidual's income. [59]

[57] Enrollment in the NIS is automatic and residents must pay social insurance contributions. In 2019, the rate for employees was 8.2% and between 5.1% to 14.1% for employers (Gauld, 2020).

[58] Populations covered and the scope of coverage are defined in the Municipal Health and Care Act of 2011, the Specialist Care Act of 1999, and the National Insurance Act of 1997. "The scope of the statutory coverage is determined by parliament as part of the public budget approval process" (Sperre Saunes, Karanikolos, and Sagan, 2020: 31).

[59] Patients are entitled to keep 25% of the national minimum income (kr 25,000) and 15% of any income above that threshold. Rehabilitation care and complex dental care for children under 18 are also subject to co-payments.

Norwegian residents are also covered for prescription drugs on a positive list (known in Norway as the "blue list"). Patients are required to pay 39% of the price of prescribed drugs up to kr 520 for a three-month prescription.

Safety nets

Norway employs a number of safety nets to ensure that co-payments are not an excessive financial burden. An annual cap (Ceiling 1) of kr 2,369 (in 2019) is applied for services provided by physicians and psychologists, diagnostic tests, approved prescription pharmaceuticals, and medically related transportation costs. A separate annual cap (Ceiling 2) of kr 2,085 applies to services provided by physiotherapists, certain dental procedures, accommodation costs at rehabilitation centres, and overseas medical expenses. These caps are not means-tested and apply equally to everyone before the exemption is granted.

Payments related to care (e.g., for GP and specialist visits, outpatient pharmaceutical costs, laboratory testing, and physiotherapy) for children under 16 are exempt from user charges. Standard dental care is free for children under 18, while young adults (ages 19–22) are subject to reduced rates. There are also dental-care exemptions for older residents living in long-term care (LTC), those who are disabled, and for people living with one of 15 related oral diseases (e.g., cancer of the mouth, periodontitis, and bite abnormalities).

Patients who incur extra costs from long-term illness greater than kr 9,180 per year can deduct related expenses from their taxable income. Certain vulnerable groups are also exempt from user charges. For example: [1] Norwegian residents eligible for minimum retirement or disability pensions (kr 167,169) receive free essential drugs and nursing care; [2] Those with communicable diseases (HIV/AIDS) as well as those with work-place injuries qualify for free medical care related to their condition; [3] those incurring additional expenses because of permanent illness, injury, and disability can apply for additional cash transfers (basic benefits) amounting to kr 678 to kr 3,383; [4] those with permanent and severe impairment can also qualify for financial support for assistive devices.

Sweden

Background

Under Sweden's universal-access health-care system residents are primarily covered for core health-care services directly by the government through a tax-funded scheme, though Swedish patients are allowed to purchase health-care services privately as well as buy voluntary private insurance.

Responsibility for Sweden's health-care system is split between three levels of government. The federal Ministry of Health and Social Affairs is responsible for budget setting, regulatory supervision, and ensuring the system operates in accordance with its fundamental objectives. The financing, purchasing, and provision of health-care services are the responsibility of Sweden's 21 counties, which are also in charge of primary care and specialist care. The 290 Swedish municipalities are, in turn, responsible for elder care, rehabilitative care, and home care (OECD and EOHSP, 2019c).

The Swedish health-care system draws most of its funding through taxation. [60] However, taxes are not earmarked for health-care expenditures and tax rates vary from region to region. The federal government operates a national tax-equalization fund in order to redistribute revenues adjusted for differences in structural factors (like age, socioeconomic factors, and geographical conditions) among the county councils who are responsible for health insurance for their populations. [61]

For some context about the relative size of cost-sharing requirements and safety nets discussed below, it is worth noting that the per-capita income in Sweden—as measured by Gross National Income per capita—was kr 445,644.95 in 2020 (World Bank, 2022).

Cost-sharing

Cost-sharing is a central feature of Sweden's universal health-care system. Flat, direct user fees are expected for most types of care, including GP and specialist visits, house calls, inpatient hospital stays, and emergency room visits. Regions set the user charges for hospital and primary care (Glenngård, 2020). As a result, expected user fees vary based on the region in which care is received and the type of service being provided to patients (table 10). Federal law regulates user charges for prescription drugs, dental care, and high-cost protection schemes (Anell, Glenngård, and Merkur, 2012).

Table 10: Range of co-payments for typical medical care, 2022 and 2021

Primary care—GP	House call	Visit to specialist with referral	Visit to specialist without referral	Stay in hospital room [1]	Visit to emergency room
kr 100–300	kr 0–300	kr 0–400	kr 200–400	kr 100/day	kr 200–500

Note: [1] Data is from 2021.
Source: Sveriges Kommuner och Regioner, 2022; OECD and EOHSP, 2021.

[60] In Sweden, both the county councils and the municipalities have the right to levy income taxes to pay for these services.

[61] State grants paid to county councils are also used to subsidize prescription drugs, among other things.

Patients are also expected to share in the cost of pharmaceuticals. Cost-sharing for pharmaceutical expenses occurs on a stepwise scale, with coverage increasing the more a patient spends out of pocket. In 2022, patients were expected to pay the full amount for prescription medications over the year until they reached the first threshold of kr 1,200. After this point, governmental coverage increases as patients spend more and cross four additional thresholds (table 11).

Table 11: Pharmaceutical cost-sharing and safety nets, 2022

Drug cost for 12 months	Patient pays	Patient fee in kr
kr 0–1,200	100%	kr 0–1,200
kr 1,200–2,290	50%	kr 1,200–1,745
kr 2,291–4,255	25%	kr 1,745–2,237
kr 4,256–5,889	10%	kr 2,237–2,400
kr 5,890 and above	0%	kr 2,400

Source: Dental and Pharmaceutical Benefits Agency, 2022; Sveriges Kommuner och Regioner, 2022.

Safety nets

The Swedish health-care system also has several safety nets in place to protect patients from being overburdened with the cost of medical and pharmaceutical care. The main instrument used is a set of annual caps on user charges for various types of care. These caps apply at the national level for the general population, regardless of individual or family income (Anell, Glenngård, and Merkur, 2012; Glenngård, 2020). In 2022, this cap was set at kr 1,200 within a 12-month period, after which co-payments are no longer expected (Sveriges Kommuner och Regioner, 2022).

In 2022, there was also a separate 12-month cap on out-of-pocket pharmaceutical spending set at SEK 2,400. This cap applies as patients gradually cross spending thresholds with increasing state coverage. Patients are entitled to receive prescribed medication free of charge after spending this maximum amount in a 12-month period (Dental and Pharmaceutical Benefits Agency, 2022; Glenngård, 2020).

Sweden also exempts specific groups from co-payments based on specific qualifying criteria. For example, children and youth under the age of 20 and adults over the age of 85 are exempt from paying out of pocket for outpatient visits. Children under the age of 18 are also exempt from co payments for pharmaceuticals. Preventative services such as maternity care, immunizations, and cancer screening are also exempt from user charges (Glenngård, 2020).

Switzerland

Background

Switzerland has nationally mandated universal health coverage that relies on the purchasing and provision of medical insurance through private non-profit firms. The health-care system is based on a largely decentralized model, where the primary responsibility for health-care services lies with the country's 26 *cantons* (member states of the Swiss confederation). [62] The federal government regulates the financing of the health-care system and is primarily concerned with ensuring universality (through legislation and supplementary funding) to its citizens in an environment of managed competition among insurance companies and providers. The Federal Department of Home Affairs is also responsible for defining the basket of services covered under the Mandatory Health Insurance (MHI) plan.

Following the implementation of the 1994 Health Insurance Law (LAMal), [63] residents must purchase (pay premiums for) basic social health insurance (SHI) packages from one of a number of public and private insurers who compete with each other in a regulated competitive market. [64] All basic SHI insurers, also known as Mandatory Health Insurers (MHIs) [65] are required to provide coverage for a

[62] The cantons also administer premium subsidies for low- and middle-income patients, and the coordination of health-care services (Pietro et al., 2015: 19). Depending on their size, municipalities also play an important role in long-term care and social support services for vulnerable groups.

[63] The law came into effect in 1996. If an individual does not take out insurance, the cantonal authority will automatically register the person with a health insurance fund. Diplomats, individuals working for international organizations, temporary students with equivalent health insurance coverage, and some individuals with health insurance in another EU member state may be exempt from compulsory coverage (FOPH, 2014). It is estimated that 99.5% of citizens have health insurance. However, in 2018, there were also 166,327 insured citizens with insolvencies (FOPH, 2019b). In the event that a citizen fails to pay their premiums to an MHI company, that firm may request that the Canton subsidize up to 85% of the unpaid premium, alongside other debts, on behalf of the insured person. Cantons engage in enforcement at the user level by creating black lists of individuals with unpaid premiums. MHI companies are then only obligated to subsidize emergency care for those on this blacklist. After a debt is settled, an individual will once again receive full care. At this point, MHI companies are expected to reimburse 50% of the repaid debt to the canton.

[64] Insurers are not allowed to make profits on the basic, compulsory insurance package but may offer supplementary insurance packages on a for-profit basis. As in the Netherlands and Germany, Swiss governments operate a risk-redistribution scheme among insurers with the goal of mitigating the adverse effects of community-rated premiums and guaranteed issue (that is, where insurers cannot deny coverage based on health status and risk).

[65] That is, those insurers not dealing exclusively in voluntary supplementary-insurance services. In 2018, Swiss citizens benefited from the choice of 51 private non-profit firms offering SHI plans customizable within governmentally defined bounds that seek to meet their financial and health-care needs (FOPH, 2019a).

standard package of governmentally determined benefits to all applicants and are required to accept all applicants. This standard package covers the majority of treatments performed by a doctor and/or in a hospital including maternity, accidents, illness, and certain preventative measures. While premiums may differ among insurers on the basis of several factors, each can vary premiums for the basic universal insurance product based only on applicants' place of residence (community rating) [66] and a limited set of broad age ranges (0–18, 19–25, and 26 years).

Choice and financial responsibility for the individual are central to the Swiss approach. Patients are free to choose among insurers, free to change insurers, free to choose among plan characteristics including managed care and higher deductibles. They are also able to select "alternative" arrangements, such as joining a Health Maintenance Organization or committing to a "Family Doctor Model" in order to lower their premiums (FOPH, n.d.). [67]

For some context about the relative size of cost-sharing requirements and safety nets discussed below, it is worth noting that the per-capita income in Switzerland—as measured by Gross National Income per capita—was fr 79,628 in 2020 (World Bank, 2022).

Cost-sharing

Cost-sharing is a prominent feature of the Swiss health-care system, with patients usually subject to deductibles and co-insurance charges for medical services, and co-payments for hospital care. The amount of annual cost-sharing will depend on the selection of a plan and the age of the insured (table 12). Residents over the age of 18 are required to pay yearly a deductible of their choice ranging from fr 300 to fr 2500; those under 18 are not required to pay a deductible. For adults, the size of the deductible will determine the premium rates to be paid. Residents can opt to be subject to a higher deductible in return for lower annual premiums (table 13). Firms also have the option of offering deductibles for children (those younger than 18 years old) ranging from fr 100 to fr 600, different from those applied to adults at large. This deductible applies to outpatient, inpatient, and prescription drugs. Patients are responsible for the full cost of care until this deductible is met.

Insured citizens and residents are also expected to pay 10% of the cost of services they consume after reaching their chosen deductible. This co-insurance charge applies to nearly all medical services rendered under basic insurance and includes acute inpatient care, primary care visits, specialist visits, clinical laboratory testing, and diagnostic imaging. A 10% co-insurance charge is also required for prescription

[66] Health insurers can set a maximum of three regional premium levels within a canton (FOPH, 2020c).

[67] Individuals are also able to purchase complementary and supplementary voluntary health insurance.

medications, and a 20% co-insurance rate applies for prescription drugs if an equivalent lower-cost alternative is available (FOPH, 2020c). For treatment in acute-care hospitals, there is a fr 15 ($20) co-payment per inpatient day.

Table 12: Average level of cost-sharing (CHF) per insured person, 2020

Category	Amount	Category	Amount
Deductible		Age Group	
Ordinary annual deductible	fr 544	Children (<18 years)	fr 106
Optional annual deductible	fr 806	Young adult (19–25 years)	fr 454
Restricted choice (HMO, etc.)	fr 511	Adult (26+ years)	fr 662

Source: FOPH, 2020b.

Table 13: Deductible and premium (CFH) per insured based on insurance model, 2020

Model	Deductible		Average premium		
	Child	Adult	Child (0–18 years)	Young adult (19–25 years)	Adult (26+ years)
Standard model with ordinary deductibles	0	300	1,336	4,268	5,639
Standard model with optional deductibles	100	500	1,354	4,139	5,740
	200	1,000	1,285	3,711	5,176
	300	1,500	1,184	3,397	4,737
	400	2,000	1,022	2,971	4,312
	500	2,500	1,032	2,628	3,993
	600	—	875	—	—
Other forms of insurance (HMO, etc.)	0	300	1,182	3,744	4,916
	100	500	1,223	3,714	4,877
	200	1,000	1,099	3,229	4,366
	300	1,500	936	2,822	3,939
	400	2,000	787	2,357	3,539
	500	2,500	815	2,283	3,327
	600	—	754	—	—

Source: FOPH, 2020a

Safety nets

The Swiss health-care system provides numerous avenues of assistance to ensure that low-income individuals are able to receive quality health care. [68] Cost-sharing through the 10% co-insurance charge is capped at fr 700 for adults and fr 350 for children and adolescents in a given year. There is also a maximum cap on all user charges for primary care visits, specialist consultations, and outpatient prescription drugs for both adults (fr 3,200) and children under 18 years old (fr 950). There is no cap, however, on the daily inpatient charge of fr 15.

Some services are exempt from deductible and co-insurance payments: maternity related services, general medical care for women at 13 weeks of gestation until 8 weeks postpartum, mammography under a cantonal breast screening program (no deductible), and screening for colon cancer under a cantonal program (no deductible) (FOPH, 2020c). Children (those under 18 years of age), young adults up to age 25 in training, and pregnant women are not required to pay daily hospital contributions (FOPH, 2020c) and co-payments (Pietro et al., 2015; Sturny, 2020).

National old age, survivor, and disability/invalidity insurance programs "provide pensions to qualified individuals that they can use to purchase health insurance and pay cost-sharing amounts" (Lundy and Finder, 2008: 18). Further, "Swiss cantons provide means-tested supplementary benefits to those with old age, survivors, or invalidity insurance that consists of monthly benefit payments and noncontributory reimbursement of costs due to sickness and disability" (Lundy and Finder, 2008: 18).

[68] In 2001, the Council of States recommended that cantons provide subsidies to ensure that premiums do not exceed 8% of household income. However, the criteria for receiving subsidies, and the amount, are established individually by each canton and may vary considerably. According to Sturny (2020), approximately 27.3% of the insured population received an income-related premium subsidy (which can also be used for co-payments).

3 Empirical Evidence on the Possible Consequences of Cost-Sharing

The previous sections clearly demonstrate two things. First, the majority of high-income countries around the world with universal health-care systems (22 of 28) expect patients to share in the cost of outpatient primary care, outpatient specialist care, and/or acute inpatient care (though the latter is relatively less common) through deductibles, co-payments and/or co-insurance payments. Second, 8 out of the 10 high-income countries with universal health-care identified as top-performers have some form of cost-sharing arrangements typically with annual limits and with either exemptions or subsidies for vulnerable populations (often both). Of course, the nature and degree of cost-sharing (as well as the safety nets) can vary considerably as does each country's broader approach to achieving universal coverage for their populations.

Various studies have also presented empirical evidence of the potential consequences of various cost-sharing arrangements. Before examining the findings of these studies, it is useful to revisit Pauly's work presented in section 1. Specifically, Pauly (1968) used economic theory to demonstrate that a deductible (depending on its size) either [1] has no effect on an individual's usage or [2] induces the individual to consume the amount of care that would have been purchased in the absence of insurance. Meanwhile, individuals required to pay some fraction of the unit cost of medical care (that is, a copayment) would curtail their consumption (dependent on the price elasticity of their demand—that is, the percentage change in demand associated with a percentage change in price). A significant portion of the literature is focused on empirically testing these hypotheses on individual demand through data on the volume of services demanded when subject to cost-sharing payments.

However, Pauly's (1968) framework was based only on a single individual and a homogenous medical market, subject to a homogenous deductible or co-insurance or co-payment. Economic theory also suggests that the introduction (or increase) of the price an individual faces for a good may also result in a substitution effect—that is, the degree to which an individual may use an alternative treatment that is not subject to cost-sharing. The relative magnitude of these two effects can have varying implications for total health-care expenditures, health outcomes, and equity. For example, if cost-sharing payments are required for primary care visits but not for treatment in emergency rooms, patients might visit the latter for medical advice that could have been provided by a family physician.

The most famous empirical analysis of the effects of cost-sharing arrangements is the RAND Health Insurance Experiment (HIE). One of the largest and most comprehensive randomized controlled trials on cost-sharing to date, the HIE examined what the effects of alternate levels of cost-sharing were on the use of services, cost, and health outcomes among adults and families under 62 years old (Brook et al., 2006; Keeler, 1992; Newhouse, 1996). Commissioned by the United States Department of Health, Education, and Welfare, the study had the resources required to eventually recruit 7,700 individuals (2,750 families), randomly assign them to several different insurance plans, contract out and provide comprehensive medical care, and observe the use of covered services among participants at six locations from 1974 to 1982.

The HIE randomized participants into 14 different fee-for-service (FFS) insurance configurations that varied along two dimensions: rate of co-insurance charges and maximum dollar expenditure (MDE). Enrolees were exposed to co-insurance rates ranging from 0%, 25%, 50%, and 95% and each co-insurance rate had a different MDE at 5%, 10%, or 15% of family income or a maximum of $1,000. In other words, regardless of the plan, once enrollees paid a maximum of $1,000 out of pocket for medical services, all costs were covered. [69] Two groups of enrolees were also placed on Health Management Organization (HMO) cooperative style plans. Insurance plans were designed to be comprehensive and offer all necessary medical services ranging from hospital, physician, dental, pharmaceutical, vision, dental, allied health-care services, nursing facilities, and home care. The six co-insurance plans are briefly summarized below:

1. Free care: zero co-insurance
2. 25% co-insurance: MDEs of 5%, 10%, or 15% of family income ($1,000 maximum);
3. 50% co-insurance: MDEs of 5%, 10%, or 15% of family income ($1,000 maximum);
4. 95% co-insurance: MDEs of 5%, 10%, or 15% of family income ($1,000 maximum);
5. Mixed co-insurance: 50% for outpatient mental and dental, 25% for all other services. MDEs of 5%, 10%, or 15% of family income ($1,000 maximum);
6. Individual deductible: 95% co-insurance for outpatient services and zero percent (free) for inpatient services; MDE of $150 per person ($450 per family).

The results of the HIE clearly demonstrated that participants enrolled in cost-sharing plans reduced their use of all covered services compared to those not subjected to

[69] An estimated third of families hit their MDE for the year, on average (Aron-Dine, Einav, and Finkelstein, 2013).

cost-sharing (table 14). On average, participants with cost-sharing had one-to-two fewer annual physician visits, 20% fewer hospitalizations, fewer dental visits, and claimed fewer prescription drugs (Brook et al., 2006).

In addition to their analysis of simple means, Manning and his colleagues (1987) also developed more robust estimates that reduce sensitivity to catastrophic cases, which could skew results. The predicted mean and associated expenses from this model are presented in table 15.

Table 14: Sample means for annual use of medical services per capita

Plan	Face-to-face visits	Outpatient expenses (1984$)	Admissions	Inpatient dollars (1984$)	Prob. any medical (%)	Prob. any inpatient (%)	Total expenses (1984$)	Adjusted total expenses (1984$)
Free	4.55 (.168)	340 (10.9)	.128 (.0070)	409 (32.0)	86.8 (.817)	10.3 (0.45)	749 (39)	750 (39)
25%	3.33 (.190)	260 (14.70)	.105 (.0090)	373 (43.1)	78.8 (1.38)	8.4 (0.61)	634 (53)	617 (49)
50%	3.03 (.221)	224 (16.8)	.092 (.0116)	450 (139)	77.2 (2.26)	7.2 (0.77)	674 (144)	573 (100)
95%	2.73 (.177)	203 (12.0)	.099 (.0078)	315 (36.7)	67.7 (1.76)	7.9 (0.55)	518 (44.8)	540 (47)
Individual deductible	3.02 (.171)	235 (11.9)	.115 (.0076)	373 (4.5)	72.3 (1.54)	9.6 (0.55)	608 (46)	630 (56)
Chi-squared (4)	68.8	85.3	11.7	4.1	114.7	19.5	15.9	17.0
P value for *chi*-squared (4)	<.0001	<.0001	.02	n.s.	<.0001	.0006	.003	.002

Note: Standard errors in parentheses.
Source: Adapted from Manning, Newhouse, Duan, Keeler, Lelbowitz, and Marquis, 1987: table 2.

Table 15: Various measures of predicted mean annual use of medical services, by plan

Plan	Likelihood of any use (%)	One or more admissions (%)	Medical expenses (1984$)
Free	86.7 (0.67)	10.37 (0.420)	777 (32.8)
Family pay:			
25%	78.8 (0.99)	8.83 (0.379)	630 (29.0)
50%	74.3 (1.86)	8.31 (0.400)	583 (32.6)
95%	68.0 (1.48)	7.75 (0.354)	534 (27.4)
Individual deductible	72.6 (1.14)	9.52 (0.529)	623 (34.6)

Note: Standard errors in parentheses.
Source: Adapted from Manning, Newhouse, Duan, Keeler, Lelbowitz, and Marquis, 1987: table 3.

Two clear observations can be made:

1. The likelihood of any use of the health-care system falls as the co-insurance rate increases. Specifically, individuals on the zero percent (free) co-insurance plan have an 86.7% probability of using the health-care system while those on the 95% co-insurance plan have a 68% probability.
2. Similarly, predicted total medical expenses also decrease: "Mean predicted expenditure in the free care plan is 46% higher than in the 95% plan ($p < .001$)" (Manning, Newhouse, Duan, Keeler, Lelbowitz, and Marquis, 1987: 260). [70]

Manning and his colleagues made three additional notable observations about the use of resources:

1. "The largest decreases in the use of outpatient services occurs between the free and 25% plans, with smaller but statistically significant differences between the 25% and other family coinsurance (pay) plans".
2. "Cost-sharing affects primarily the number of medical contacts, rather than the intensity of each of those contacts".
3. "There are no significant differences among the family coinsurance (25%, 50%, and 95%) plans in the use of inpatient services" (1987, p. 258). [71]

The study also used three methods to calculate elasticity (that is, the percentage change in demand associated with a percentage change in price), and found that "price elasticities for a constant coinsurance policy are in the −0.1 to −0.2 range" (Manning et al., 1987: 268), although results based on the work of Keeler, Rolph, Duan, Hanley, and Manning are most commonly cited as "approximately −0.2" (1982: 251). Manning and his colleagues estimate a welfare loss of between $37 to $60m (based on $200m total expenditures on services in 1984 by non-seniors) when moving from a 95% co-insurance plan to a free plan.

In order to examine the impact of co-insurance on the appropriateness of care, RAND analysts compared results for conditions grouped into categories that varied according to known medical effectiveness. The analysis found that although cost-sharing reduced the levels of inappropriate care amongst participants, it also reduced—to roughly a similar extent—appropriate use. Lohr and colleagues (1986)

[70] This result is similar to the difference in the ANOVA analysis of sample means.

[71] Although the third result is often inferred to signify that cost-sharing affects the initiation of care and not so much subsequent costs once a patient has entered the health system, this should be qualified by the fact that the upper-limit on annual out-of-pocket spending in the HIE (as well as more limited patient choice in a course of treatment upon referral from a GP), helps explain this observation.

found that predicted use of ambulatory care fell between one quarter and one third for participants on cost-sharing plans, with the exemption of chronic disease where no significant difference could be observed. For children, predicted use fell between one fifth and one half. When stratified by income group, cost-sharing again resulted in lower predicted usage for both "effective/acute" and "medical care rarely effective but self-care effective" conditions. The effect was stronger (but not statistically significantly) for poor adults. While cost-sharing did reduce the use of rarely effective care for non-poor children, it did not have a similar effect on effective care. However, again, there were reductions in both effective and ineffective care for poor children.

Finally, RAND analysts examined the impact of cost-sharing on health outcomes and broadly found that the reduction in services as a result of cost-sharing do not generally result in adverse effects on the health of participants in the plan. Specifically, Brook and colleagues examined 11 measures of health status representing general health, health habits, psychological health, and risk of dying, and found that for the average person differences between the cost-sharing plans would be "clinically and socially negligible" (1984: vii) (table 16). The only exceptions were for corrected far vision, and diagnostic blood pressure, where those on the free plan reported better outcomes (and improvements were greater for the poor). While the poorest and sickest 6% of participants not exposed to cost-sharing had marginally better outcomes on 4 out of 30 measures (Brook et al., 2006), free care did not have a significant positive effect on the five "general health measures" studied for differences in income or initial health status (Brook et al., 1984). [72] Differences in patient satisfaction or the adoption of risky behaviour were not observed between the free and cost-sharing plans.

There has been significant discussion about the apparent contradiction between the results regarding reduction in predicted appropriate or effective care (which should theoretically result in lower health outcomes) and the lack of observed effect on the majority of measures of health outcomes. Lohr and colleagues suggest that this might be because "the additional services used in the free plan may have produced offsetting effects" (1986: 81). In other words, the negative health effects of reducing appropriate care for the participants in the cost-sharing plan may be counter-balanced by potential harm done by consuming inappropriate care by participants on the free plan—thus resulting in no observable differences in health status between the two. [73]

[72] Although the magnitude of the confidence intervals prevent concluding the lack of clinically important differences.

[73] Chernew and Newhouse (2008) state that "RAND researchers interpreted the failure to find an effect of cost-sharing on health status as reflecting a beneficial reduction in use of harmful medical services that offset the negative consequences associated with a reduced use of beneficial services. Specifically, some of the services foregone because of higher cost-sharing might have led to worse health outcomes, suggesting a benefit from charging patients more" (2008: 412).

Table 16: Predicted exit values and raw mean differences of health status measures for an average person, according to measure and plan

Health status measures	Numbers of persons	Cost-sharing plans				Free plan	Predicted mean difference (free minus cost-sharing)	Raw mean difference (free minus cost-sharing)
		Catastrophic	Intermed.	Ind. deduct.	Total			
General health (score, 1–100)								
Physical functioning	3,862	86.0	85.0	84.9	85.3	85.3	0.0 (–1.6, 1.5)	–0.3 (–2.3, 1.7)
Role functioning	3,861	95.5	95.0	94.7	95.1	95.4	0.3 (–0.6, 1.2)	–0.3 (–2.3, 1.6)
Mental health	3,862	75.6	75.5	75.8	75.6	75.5	–0.2 (–1.1, 0.8)	–0.1 (–1.1, 1.0)
Social contacts	3,827	69.3	70.2	69.8			–0.3 (–2.3, 1.6)	–0.2 (–2.4, 2.0)
Health perceptions	3,843	68.1	68.0	67.9			–0.6 (–1.5, 0.3)	–0.9 (–2.1, 0.3)
Health habits								
Smoking (scale, 1–2.20	3,758	1.28	1.29	1.29	1.29	1.29	0.0 (–0.02, 0.02)	–0.00 (–0.03, 0.03)
Weight (kg)	2,804	72.8	72.6	73.1	72.8	72.8	0.0 (–0.5, 0.5)	0.0 (–1.0, 1.0)
Cholesterol level (mg/dl)	3,381	202	200	204	202	203	1.0 (–1.0, 3.0)	–1.3 (–4.5, 1.9)
Physiologic health								
Diastolic blood pressure (mm Hg)	3,495	79.0	78.5	78.8	78.8	78.0	–0.8 (–1.5, –0.1)	–0.9 (–1.8, –0.1)
Functional far vision (no. of Snellen lines)	3,477	2.55	2.50	2.51	2.52	2.42	–0.1 (–0.16, –0.04)	–0.13 (–0.21, –0.05)
Risk of dying (score)	3,317	1.01	0.98	1.03	1.01	0.99	–0.02 (–0.05, 0.02)	–0.03 (–0.08, 0.02)

Notes: * free minus cost-sharing. Numbers in parentheses are 95% confidence intervals; an approximate confidence interval is given for role functioning.

Source: Adapted from Brook et al., 1984: table 5.

Since the publication of the results from the HIE, a number of independent studies have empirically examined the effect of co-payments in the subsequent decades. One of the most comprehensive reviews of these studies was performed by Kiil and Houlberg (2013), who examined 47 studies of the behavioural effects of co-payments published between 1990 and 2011. The authors summarize their findings in three areas: [1] demand effects; [2] health effects and substitution; and [3] distributional effects.

1 Demand effects

Kiil and Houlberg reported that the majority of studies examined found that higher co-payments generally reduced the use of health-care services, with the exception of hospitalizations, and that "[t]he estimated price elasticities are all negative

and numerically less than one" (2013: 819). [74] In Germany, however, one study reported that "the effect tails off about 2.5 years after the introduction of co-payments" (Rückert, Böcken, and Mielck, 2008: 820) and two studies (Augurzky, Bauer, and Schaffner, 2006; Schreyögg and Grabka, 2008) found no effect of small co-payments for visits to general practitioners. Co-payments were also found to generally reduce the use of ambulatory care (but not hospitalizations). About a third of studies reviewed found co-payments reduced the use of prescription medications for the general adult population, while another third found that reduction in co-payments close to retirement resulted in an increase in use. However, the effect of co-payments on populations with a documented need for medicine was more mixed, suggesting that the effect of co-payments varies depending on the "type of medicine as well as the part of the population in focus" (Kiil and Houlberg, 2013: 822). Finally, the three studies examining prevention found that co-payments had reduced the use of preventative-care services.

2 Health effects and substitution

Kiil and Houlberg's analysis of the health effects of co-payments (that is, cost-sharing; see footnote 74) and substitution towards other services were limited to prescription medicine, and generally focused on the elderly population in Canada. They found that about "half did not find any significant effects in the short-term" while "studies that tend to find negative effects of co-payments on the use of prescription medicine find a positive effect of copayment on mortality and substitution to other types of health care" (Kiil and Houlberg, 2013: 822).

3 Distributional effects

Kiil and Houlberg found overwhelming evidence that "vulnerable groups, including individuals with low income and in particular need of care, reduce their use relatively more than the remaining population in consequence of co-payments" (2013: 825), confirming the importance of exemptions and subsidies for these population groups. [75]

In summary, Kiil and Houlberg's analysis of the empirical literature generally confirm that cost-sharing arrangements (see footnote 74) reduce the use of most health-care services (excluding hospitalizations), and may result in unfavourable outcomes

[74] Kiil and Houlberg (2013) do not explicitly distinguish between different types of cost-sharing arrangements. It is not possible to clearly distinguish their usage of the term "co-payments" in a collective sense (for a variety of cost-sharing arrangments) from the more narrow definition used in this study. As a result, we advise caution while reading this summary of Kiil and Houlberg's findings.

[75] One study in Quebec (Contoyannis et al., 2005) found the opposite result for prescription medications for low income individuals and those in bad health.

for elderly populations with specific prescription-drug needs. As expected, the results also document a variety of unfavourable distributional impacts on vulnerable populations, confirming the need for their exemption from a welfare standpoint.

There are a few limitations to Kiil and Houlberg's review that should be noted in the present discussion. First, while there is significant overlap between the countries included in their analysis and the present study, three countries are conspicuously absent: Switzerland, the Netherlands, and Norway—each of which, as we shall see later, hold key insights for the design and implementation of co-payments in universal health-care systems. Second, Kiil and Houlberg note that "[t]he health care system in Canada provides the background for most of the studies" (2013: 816); the Canadian system is not a particularly well-known model of cost-sharing. Third, and likely related to the previous limitation, results for the health effects and substitution are based entirely on studies examining prescription drugs (mostly elderly patients).

Another review of 176 studies by Qingyue, Liying, and Beibei (2011) had broadly similar results. The authors found that "the introduction of cost-sharing decreased the utilization of most kinds of medical services" and that changes to the level of cost-sharing can influence utilization. [76] As a result "cost-sharing could be an effective tool to avoid over consumption of some kind of drugs and services" (2011: 56). For example, Hsu and colleagues (2006) found that "[r]elatively modest levels of patient cost-sharing for ED care decreased ED visit rates without increasing the rate of unfavorable clinical events" (cited by Qingyue, Liying, Beibei, 2011: 54). By contrast, Qingyue, Liying, and Beibei cautioned that cost-sharing could result in potentially adverse consequences for poorer populations and vulnerable groups who may also substitute towards other medical interventions in response. The imposition of cost-sharing for essential prescription pharmaceuticals was again documented as resulting in potential adverse results for patients (particularly, vulnerable groups in Canada). Relative differences in cost-sharing may, however, be a useful tool to mitigate moral hazard and encourage the use of more appropriate (or more cost-effective) medical interventions.

Again, it's important to note that despite significant overlap of countries examined, the results reported by Qingyue, Liying, and Beibei (2011) are based on a number of studies in the United States, Taiwan and China—countries that not are the subject of our study. More generally, while the results of large literature reviews like that of Qingyue, Liying, and Beibei (2011) and Kiil and Houlberg (2013) are insightful and broadly confirm much of the RAND experiment's findings, it may be more useful to examine individual studies focusing on specific issues and countries of interest.

[76] The elderly or those with chronic diseases may be influenced by changes to cost-sharing to a lesser degree (likely as a result of a lower elasticity of demand for medical services)

In 2003, a pilot program was implemented in Germany by one of the largest SHI providers, Techniker Krankenkasse, to study the effects of elective deductibles. Members were offered a €240 bonus if they opted for a €300 deductible (it also introduced a flat-fee of €20 for each physician visit). Pütz and Hagist (2006) found when examining the average number of consultations per insured that "the fixed deductible of €20 per visit causes a reduction of 23.5% in consultations with general practitioners and 42% in consultations with specialists ... However, the likelihood of an insured consulting a general practitioner in 2003 does not depend on participation in the deductible model. The only reduction is the average number of consultations with general practitioners" (2006: 229). Both the probability of seeing a specialist and the number of consultations with a specialist fell. Across the 10,155 participants, TK theoretically saved €645,000. Overall, when examining total costs for hospital treatment, inpatient prophylactic measures, and pharmaceuticals, the authors estimated TK saved €1.71 million with the pilot program.

A 2012 study by Huber, Rüesch, Mielck, Böcken, Rosemann, and Meyer examined the effects of cost-sharing on outpatient care by comparing German insureds (without cost-sharing) and Swiss insureds (with cost-sharing), an approach that contrasts with most studies that compare insureds within a single health-care system. The authors concluded that "[o]n the one hand, cost-sharing may result in a focused and conscious health care utilization among insurants with high socio-economic status [while on] the other hand, cost-sharing may reduce needed health care among insurants with low socio-economic status, thus resulting in adverse affects" (2012: 786). Not only does their conclusion largely align with the RAND results, but it highlights the importance of the design of co-payments (and low-income exemptions) in determining overall social benefit.

In 2003, Felder and Werblow examined data from Switzerland with a focus on understanding the motivation behind differences in individual choice of the level of deductible. Specifically, the authors noted that (at that time) 60% of the population opted for the minimal deductible, with the rest opting for higher thresholds. At the same time, they observed lower gross health-care expenditure associated with larger deductibles. They found that "[e]ven though part of the reduction of health care expenditure is due to the rational choice of contracts, co-insurance induces a change in demand that significantly contributes to the reduction. Depending on the size of the deductible, between one third and 70% is due to moral hazard. Furthermore, the higher the deductible, the higher the change in behavior of the insured" (2003: 46).

A more recent study in Switzerland by Sandoval , Petrovic, Guessous, and Stringhini (2021) found that 9.7% of their study sample of individuals (aged 20 to 74) reported forgoing health care primarily for economic reasons, and "[p]articipants

with high-deductible plans were significantly more likely to forgo health care than those with low-deductible plans". However, this difference was not observed among seniors over 65 years of age. The authors note that they "could not determine the value of forgone care" and did not examine the impact on medical outcomes (2021: 1).

A 2004 study by van Vliet examined the effect of deductibles in the Dutch health-care system and calculated "an estimated price elasticity of −0.14. The highest price sensitivity is found for GP care (−0.40) and physiotherapy (−0.32), and the lowest for specialist care (−0.12) and prescription drugs (−0.08); hospital care was hardly affected" (2004: 283). A more recent study in the Netherlands focused exclusively on mental-health care and found that "a secondary mental healthcare copayment of €200 was followed by a 35% decrease in initial treatments among adults, without selection effects ... [and that the] impact of the co-payments was strongest among treatments of short duration and treatments with 'vague' diagnoses" (Lambregts and van Vliet, 2018: 781).

A 2020 analysis by Alessie and colleagues examined the effects of voluntary deductibles in the Dutch system to study moral hazard using data from 2009 to 2016 and both confirmed earlier research while revealing new insightful results. As expected, the authors found that

> voluntary deductible decreases the probability of specialist visits by 31 [percentage points], GP visits by 23 [percentage points], mental health care specialist visits by 5.5 [percentage points], and hospitalizations by 16 [percentage points]. Considering the amount of health care utilization, having a voluntary deductible reduces the number of specialist visits by approximately 19.7% and the number of GP visits by approximately 27.1%. (Alessie, Angelini, Mierau, and Viluma, 2020: 1267)

However, the study also found that voluntary deductibles had "a positive effect on the number of days spent in the hospital, conditional on having any hospitalization" with individuals subject to deductibles spending 155% more time in hospitals. The inference from this finding was that individuals subject to deductibles avoid hospitals for less serious issues and/or postpone treatment until the condition is more severe. The authors concluded that "even though a voluntary deductible creates incentives for adverse (or in the case of mental health care, advantageous) selection, it is an effective tool for reducing moral hazard in health care utilization" (Alessie, Angelini, Mierau, and Viluma, 2020: 1267).

Kraaijvanger and colleauges (2018) examined the effects of additional copayment on self-referred visits—that is, patients who were not referred by a GP or brought by ambulance—to emergency departments in the Netherlands. The study found that with "a copayment of €100, 47% of the [self-referred patients] would

choose to visit their GP instead of the ED" (Kraaijvanger, Rijpsma, van Leeuwen, and Edwards, 2018: 86); higher co-payments, however, were largely ineffective, in line with the RAND HIE finding above that most of the effectiveness in cost-sharing is at the lower end of the spectrum. The authors did not find an observable correlation between the level of co-payment and the appropriateness of care, suggesting that prospective patients may not be able to assess the severity of their condition properly. Consistent with other empirical evidence cited already, the study found that co-payments deterred consumption for lower-income patients more easily.

Another study in the Netherlands, by Hayen, Klein, and Salm (2018), tackled a more nuanced question about the framing of cost-sharing by examining the effects of deductibles in comparison to rebates: "Under a no-claim refund policy, individuals receive a payment at the end of the year if their health care spending during the year was below the no-claim refund limit" (2018: 2). The authors found "a 5.25 percentage-point decrease in the probability to have a claim in a given month under the no-claim regime and a 7.22 percentage-point decrease under the deductible" (2018: 25). In other words, deductibles had a stronger effect than no-claim rebates. In contrast to other studies, the authors found that "low income groups do not react stronger to cost-sharing incentives than high income groups" and "the effect of both no-claim refunds and deductibles on 5 selected types of high value care is economically negligible" making a strong case for deductibles in contrast to no-claim rebates. Based on these results the authors estimated that "total annual health care expenditures are around 10% higher under a no-claim refund than under a deductible" (2018: 43).

When Dutch patients were surveyed about their own preferences with regards to cost-sharing programs, Salampessy and colleagues (2018: 1) found (among other things) that the use of a less-complex system of co-payments (as opposed to co-insurances) that offer clear information in advance improve adherence to recommended care, and that respondents (to the study's questionnaire) prefer being billed later rather than directly at the point of care. Importantly, an "optimally designed" cost-sharing program based on respondents' preferences would result in "an adherence [to medical treatment advised by the treating physician] of more than 72.9% among those who reported to have forgone health care" (Salampessy, Alblas, Portrait, Koolman, and van der Hijden, 2018: 1). It should, however, be noted that the study is based on preferences for hypothetical scenarios stated in a questionnaire and not observed changes in behaviour. Further, the authors "assumed that use of health services will always have the same medical benefits and that not using them will always have adverse health effects" and acknowledge that "[b]oth assumptions will unlikely be true in real-life situation" (Salampessy, Alblas, Portrait, Koolman, and van der Hijden, 2018: 11).

In a 2020 study of the Korean population, Park and Choi (2020) determined that "the influence of cost-sharing differs according to patients' income levels. Moreover, reduced co-payments increased health-care utilization exclusively among the Korean elderly with low income" (2020: 8).

In terms of the effect of cost-sharing on health expenditures, Perkowski and Rodberg's 2016 analysis of 28 OECD countries found that, though there were differences in the average expenditure (as a percentage of GDP and per capita) between countries with and without cost-sharing (for medical and hospital care, evaluated separately), the differences were not statistically significant. As a result, the authors conclude that "neither cost-sharing for medical care nor cost-sharing for hospital care is associated with a decrease in health expenditure" (Perkowski and Rodberg: 115). [77] Given the simplified approach used (and acknowledged) by the authors for their empirical tests, these results should be interpreted with caution.

By contrast, a review of five high-income countries by Zare and Anderson (2013) found that although "all of the selected countries have experienced increases in the level of cost-sharing for one, two, or all three services during the 2000–2010 period ... the percentage of total out-of-pocket spending as a percentage of total health expenditures has declined [although they acknowledge that one] main reason is that the countries have eliminated cost-sharing for some specific groups" (2013: 43). Lee, Bloor, Hewitt, and Maynard (2015) examined 52 studies related to user charges and found that "[u]ser charges do reduce utilization of pharmaceuticals, and reduce public expenditure by shifting costs to patients. But they reduce the use of essential as well as non-essential drugs, and without adequate exemptions they affect vulnerable groups disproportionately" (2015: 52).

A similar note of caution was provided about the effect of deductibles on mental health care in the Netherlands by Ravesteijn, Schachar, Beekman, Janssen, and Jeurissen (2017). The authors studied the effect of the reforms in 2012 that introduced a deductible of €200 for outpatient treatment and €150 per month for inpatient treatment and found that decreases in annual number of treatments generated savings of €70.4 million, but involuntary commitment and increases in acute care generated costs of €57 million. As a result, "[o]verall, the cost-sharing reform was associated with estimated savings of €13.4 million". Net savings were largest for depressive disorder and anxiety disorder, but were negative for physychotic and bipolar disorders. In other words, "for adults with psychotic disorder or bipolar

[77] In contrast to the RAND experiments as well as the literature reviews by Kiil and Houlberg (2013) and Qingyue, Liying, and Beibei (2011), and Perkowski and Rodberg also found that "cost-sharing for medical care, too, is not associated with decrease in medical care usage, while cost-sharing for hospital care is associated with greater, not lesser, use of hospital care" (2016: 115) as measured by in patient days per capita. Again, these results should be interpreted with caution.

disorder, the additional costs of involuntary commitment and acute mental health care exceeded savings by €25.5 million (US$28.8 million)" (Ravesteijn, Schachar, Beekman, Janssen, and Jeurissen, 2017: 932).

Bundorf (2016), meanwhile, examined the effects of Consumer-Directed Health Plans [78] and found that "CDHPs reduce health care spending by approximately 5% to 15% relative to similar plans with lower deductibles and without spending accounts" (2016: 9) and that "spending reductions appear to persist over time ... and they generate greater spending reductions among low- or medium-risk enrollees than among high-risk enrollees" (2016: 32).

The empirical studies reviewed in this section provide clear evidence of how cost-sharing mechanisms can reduce the use of ambulatory care (with a smaller impact on inpatient care). However, this effect extends to both essential and non-essential care. Further, the impact of such payments can result in larger reductions for vulnerable groups including low-income populations, seniors, and those with chronic medical conditions. While some studies suggest that the observed reduction in services do not generally result in adverse effects (or that these effects are clinically and socially negligible), others document the potential for medical harm. Particular attention should be paid when designing cost-sharing frameworks for mental health care and pharmaceutical programs, avoiding large deductibles that could potentially reduce necessary care and result in larger social costs for the patient and the system more generally.

The differences between these sometimes contrasting observations highlight the importance of design when it comes to cost-sharing mechanisms and suggest that they should be tailored to appropriately subsidize (or exempt) vulnerable populations and not be used as a blunt tool. [79] It is therefore unsurprising that the 8 universal health-care countries identified as top-performers in section 2 all have generous safety nets, annual caps on out-of-pocket spending, and exemptions for at-risk populations.

A more recent proposal is value-based insurance design whereby co-payments are modulated according to the demonstrated therapeutic value of treatments. That is, lower co-payments are required when the deemed benefits in terms of health outcomes are potentially higher, and vice versa (Chernew et al., 2010; Baicker and Levy, 2015; Gruber, Maclean, Wright, Wilkinson, and Volpp, 2020).

[78] These plans generally have a "high deductible, a personal spending account, and the availability of information tools for enrollees" (Bundorf, 2016: 9).

[79] Exemptions may also result in unintended consequences. For example, In Belgium, a recent study showed that waiving out-of-pocket payments for pharmaceuticals entirely after a threshold had been met led to increased opioid consumption in vulnerable population groups (Boogaerts et al., 2021).

Finally, it is worth noting that, although the RAND study was conducted between 1974 and 1982, its results broadly correspond with the conclusions of empirical studies conducted in subsequent years, and therefore likely hold important lessons for the appropriate design and effect of a variety of different cost-sharing plans. A significant area of departure worth noting here concerns estimates of cost savings. While some empirical studies are able to identify program specific cost-savings, the few studies that have attempted to quantify the aggregate financial effect of cost-sharing mechanisms have not been able to identify such savings for the health-care system as a whole. This is not surprising: it could be argued that in the presence of excess demand, the degree to which unnecessary services are reduced may only result in more efficiency (or less rationing) or increased delivery of essential services rather than cost-savings *per se*. The degree to which this may be the case is explored in the next section.

4 Exploring the Correlation among Cost-Sharing, Wait Times, and Financial Barriers to Medical Care

Of significant interest for Canadians is the nature of the relationship between cost-sharing mechanisms and wait times for medically necessary care. Patients in Canada face some of the longest wait times in the developed world. This is true in both an absolute and relative sense: the Fraser Institute's annual survey of wait times reveals that Canadians faced a median waiting time of 22.6 weeks between referral from a general practitioner and receipt of treatment in 2020. [80] Importantly, the 12.1-week wait for treatment after specialist consultation was 4.3 weeks longer than what physicians consider to be clinically "reasonable" (7.8 weeks) (Barua and Moir, 2020b).

As documented earlier, and despite ranking amongst the most expensive universal health-care systems in the world, comprehensive measures of performance also indicate that Canada routinely lags behind its peers in terms of wait times (Barua and Moir, 2020a). For example, data from a 2016 Commonwealth Fund survey (see table 18) reveal that—compared to other countries with universal health care—Canada tied for last place (out of 10) for the percentage of patients able to make a same-day appointment when sick (43%), ranked worst (10th out of 10) for the percentage of patients who reported waiting two months or more for a specialist appointment (30%), and worst (10th out of 10) for the percentage of patients who reported waiting four months or more for elective surgery (18%) (Mossialos, Djordjevic, Osborn and Sarnak, 2017).

Based on the theoretical framework presented in section 2, it stands to reason that, by reducing demand for inappropriate (or unnecessary) medical services, cost-sharing mechanisms have the potential to lower wait times. Indeed, Ramsay and Esmail succinctly summarize this argument as follows: "Proponents of user fees and cost-sharing argue that, if required to bear a portion of their health-care costs, individuals will curb their consumption of medical care, so medical services of lesser value eventually will be eliminated" (2004: 10). While the empirical studies

[80] Patients faced a wait of 10.5 weeks from referral by a general practitioner to consultation with a specialist, followed by a 12.1-week wait for treatment after specialist consultation in 2020. Canadian patients faced a median 20.9 week wait between referral by general practitioner to receipt of treatment in 2019, before the COVID-19 pandemic set in.

documented in the previous section clearly demonstrate the possible effect of cost-sharing mechanisms on the use of medical-care services (albeit, not necessarily the specific reduction of unnecessary services exclusively), studies directly linking such mechanisms explicitly to wait times are scarce. In fact, we could not find any studies that empirically test this relationship across several countries.

While a detailed empirical analysis of this relationship is beyond the scope of this publication, it is possible to conduct a preliminary analysis to examine the potential relationship between cost-sharing mechanisms and wait times using broad international statistics. Specifically, it is possible to construct a simple index of the presence and, to some degree, the pervasiveness of cost-sharing across a set of universal health-care systems, which can then be contrasted with wait times data.

In order to construct such an index we use qualitative data from table 1 (p. 12) and table 2 (p. 15), limited to those countries with universal health care for which comprehensive international data on wait times are also available. The presence of cost-sharing in any particular country, for any specific field of medical service, is categorized as a 1 while its absence is coded as a 0 (countries classified as "sometimes" employing cost-sharing are coded as 0.5) (table 17).

The index presented in table 17 provides a simplified summary of what we have read about each country's approach to cost-sharing in section 3. Deductibles are presented as a separate category as they may apply to one or more areas of care.

Table 17: Index of cost-sharing in 10 high-income universal health-care countries

	Deductible	Core medical services (co-payments and co-insurance)			Other medical goods and services (co-payments and co-insurance)		Total number of categories of cost-sharing
		Outpatient Primary	Outpatient Specialist	Inpatient Acute	Laboratory Services	Pharmaceuticals	
Australia	0	0.5	1	0.5	0.5	1	3
Canada	0	0	0	0	0	0.5	0.5
France	0	1	1	1	1	1	5
Germany	0.5	0	0	1	0	1	2.5
Netherlands	1	0	0	0	0	1	3
New Zealand	0	1	0	0	0	1	2
Norway	0	1	1	0	1	1	3.5
Sweden	0	1	1	1	1	1	5
Switzerland	1	1	1	1	1	1	6
United Kingdom	0	0	0	0	0	1	1

Sources: table 1 (p. 12) and table 2 (p. 15).

The final column presents the number of categories for which cost-sharing has been documented in each country, and should be interpreted with caution. While it provides some idea of the overall relative presence of cost-sharing mechanisms in each country it does not explicitly account for the magnitude of payments, nor does it factor the effect of annual caps on out-of-pocket spending and exemptions for vulnerable populations. That being said, the simplified data presented enables us to see differences between countries' approaches at a quick glance. For example, it is fairly clear to see that cost-sharing mechanisms are generally present across a wider spectrum of health-care goods and services in countries like Switzerland, Sweden and France – and rarer in countries like the United Kingdom and Canada, which corresponds with what we have learned so far.

Table 18 reports wait times data for the same set of countries, from a report published by the Commonwealth Fund, for three key areas of care. By comparing table 17 and table 18, a few observations can be made about these areas of care.

Table 18: Timely access to care in 10 high-income universal health-care countries, 2016

	Able to get same-day/next-day appointment when sick (%)	Waited two months or more for specialist appointment (%)	Waited four months or more for elective surgery (%)
Australia	67	13	8
Canada	43	30	18
France	56	4	2
Germany	53	3	0
Netherlands	77	7	4
New Zealand	76	20	15
Norway	43	28	15
Sweden	49	19	12
Switzerland	57	9	7
United Kingdom	57	19	12

Note: Data for the United States is excluded because it is not classified as a universal health-care system by the OECD (Barua and Moir, 2020a).
Source: Mossialos, Djordjevic, Osborn and Sarnak, 2017.

Able to get same-day/next-day appointment when sick

1. Of the cost-sharing categories presented in table 17, the presence of a general deductible along with co-payments and/or co-insurance for outpatient primary care would be most relevant to patients' ability to get an appointment on the same or next day when sick. By adding columns 2 and 3 in table 17 together, a new sub-index can be constructed in which, for example, a score of 2

corresponds to a system of cost-sharing that includes a deductible plus additional co-insurance and co-payments for outpatient care, 1 for countries that use either a deductible or co-payment/coinsurance per service, 0.5 for countries that have cost-sharing applied only partially or with very common exemptions. It is then possible to compare this new sub-index with the data in column 2 of table 18.

2. The correlation of these variables is weakly [81] positive (0.20) suggesting effectively no evidence that the presence of a deductible and outpatient co-payment are correlated with a higher percentage of patients receiving same-/next-day care.

3. The Spearman correlation between the ranks of these variables is 0.29, suggesting a positive, but weak, relationship.

4. Neither of these results are statistically significant.

Waited two months or more for specialist appointment

1. Of the cost-sharing categories presented in table 17, the presence of a general deductible along with co-payments and/or co-insurance for outpatient specialist care would be most relevant to the percentage of patients who waited two months or more for a specialist appointment. By adding columns 2 and 4 in table 17 together, a new sub-index can be constructed in which, for example, a score of 2 corresponds to a system of cost-sharing that includes a deductible plus additional co-insurance and co-payments for specialist care, 1 for countries that use either a deductible or co-payment/coinsurance per service, 0.5 for countries that have cost-sharing applied only partially or with very common exemptions. It is then possible to compare this new sub-index with the data in column 3 of table 18.

2. The correlation of this sub-index with data for wait-times for appontments with a specialist is moderately negative (−0.43), suggesting that the presence of a deductible and co-payments are moderately related to fewer patients reporting having to wait longer than 2 months for specialist care.

3. The Spearman correlation between the ranks of these variables (lower percentage of patients waiting longer than 2 months, and higher cost-sharing scores are given preferable ranks) is 0.32. This suggests that countries that rank as having a larger presence of a deductible and co-payments are weakly correlated with ranking better on wait times.

[81] We use the thresholds suggested by Evans (1996) as follows: .00–.19 = “very weak”; .20–.39 = “weak”; .40–.59 = “moderate”; .60–.79 = “strong”; and .80–1.0 = “very strong”.

4. Neither of these results are statistically significant.

Waited four months or more for elective surgery

1. Of the cost-sharing categories presented in table 17, the presence of a general deductible along with co-payments and/or co-insurance for inpatient care would be most relevant to the percentage of patients who waited four months or more for elective surgery. By adding columns 2 and 5 in table 17 together, a new sub-index can be constructed in which, for example, a score of 2 corresponds to a system of cost-sharing that includes a deductible plus additional co-insurance and co-payments for inpatient care, 1 for countries that use either a deductible or co-payment/coinsurance per service, 0.5 for countries that have cost-sharing applied only partially or with very common exemptions.

2. The correlation of this variable with wait time data is strongly negative (−0.75) suggesting that the presence of a general deductible along with co-payments/co-insurance for inpatient care is strongly related to fewer patients reporting having to wait longer than 4 months for elective surgery. This result is statistically significant at a 95% confidence level ($p_{\text{two-tailed}} = 0.013077991 < \alpha = 0.05$).

3. The Spearman correlation between the ranks of these variables (lower percentage of patients waiting longer than 4 months, and higher cost-sharing scores are given preferable ranks) is 0.80. This suggests that countries that rank as having a larger presence of a general deductible along with co-payments/co-insurance for inpatient care are very strongly correlated with ranking better on wait times. This result is statistically significant at a 95% confidence level ($p_{\text{two-tailed}} = 0.013077991 < \alpha = 0.05$).

Of course, it should be noted that wait times are a function of many factors including the availability of services (relative to demand), demand responses to changes in availability, private activity in insurance and provision, artificial limitations on access, and approaches to hospital and physician funding. The results of the present analysis take none of these factors into account and are by no means definitive. However, they provide some evidence that countries that employ cost-sharing mechanisms may have shorter wait times for specialist appointments and elective treatment, although this relationship is only considered strong and statistically significant for the latter, based on our limited analysis. [82]

[82] It should be noted that the result for elective treatment does not necessarily contradict the empirical studies cited before suggesting that cost-sharing has a smaller impact on the use of inpatient care, only that the wait for such care seems to be correlated with the presence of general deductibles and co-payments and cost-sharing for inpatient acute services.

A chief concern for many Canadians opposed to the introduction of cost-sharing is that this will erect financial barriers to medically necessary care. A preliminary analysis of this possibility can be conducted using data for the same set of countries from the Commonwealth Fund for cost-related barriers to care (table 19). By comparing data from table 19 and table 17, the following observations may be made.

Table 19: Cost-related barriers to care in 10 high-income universal health-care countries, 2016

	Did not visit a doctor because of the cost (%)	Skipped a medical test, treatment, or follow-up recommended by a doctor because of the cost (%)	Did not fill or collect a prescription for medicine or skipped doses of medicine because of cost (%)
Australia	8.64	7.43	6.28
Canada	6.34	5.72	10.22
France	8.58	12.49	3.92
Germany	2.77	4.68	3.16
Netherlands	3.31	3.57	4.39
New Zealand	14.24	9.69	5.73
Norway	5.25	3.78	3.36
Sweden	3.26	2.99	5.69
Switzerland	16.2	9.86	8.90
United Kingdom	3.72	2.7	2.10

Source: Canadian Institute for Health Information [CIHI], 2016.

Did not visit a doctor because of the cost

1. Of the cost-sharing categories presented in table 17, the presence of a general deductible along with co-payments and/or co-insurance for outpatient primary and specialist care would be most relevant to the percentage of patients who did not visit a doctor because of the cost. By adding columns 2, 3, and 4 in table 17 together, a new sub-index can be constructed in which, for example, a score of 3 corresponds to a system of cost-sharing that includes a general deductible plus additional co-insurance and co-payments for outpatient primary and specialist care, 1 for countries that use either a deductible or co-payment or co-insurance per service, 0.5 for countries that have cost-sharing applied only partially or with very common exemptions.

2. The correlation between the percentage of patients reporting forgoing visiting a doctor and the index of the three cost-sharing variables is 0.50, suggesting the

presence of deductibles and cost-sharing for outpatient primary and specialist care are moderately related to a larger percentage of patients forgoing care. This result is not statistically significant at a 95% confidence level, but is statistically significant at the 90% confidence level using a one-tailed test ($p_{one\text{-}tailed} = 0.072120757 < \alpha = 0.10$).

3. The Spearman correlation between the ranks of these variables (lower percentage of patients reporting not visiting a doctor because of cost and higher cost-sharing scores are given preferable ranks) is 0.32. This suggests that countries that rank as having a larger presence of deductible and cost-sharing for outpatient primary and specialist care (ranking better) are weakly correlated with ranking worse for the percentage of patients forgoing care. However, this result is not statistically significant.

Skipped a medical test, treatment, or follow-up because of the cost

1. Of the cost-sharing categories presented in table 17, the presence of a general deductible along with co-payments and/or co-insurance for laboratory services would be most relevant to the percentage of patients who skipped a medical test, treatment, or follow-up that was recommended by a doctor because of the cost. By adding columns 2 and 6 in table 17 together, a new sub-index can be constructed in which, for example, a score of 2 corresponds to a system of cost-sharing that includes a general deductible plus additional co-insurance and co-payments for laboratory services, 1 for countries that use either a deductible or co-payment or co-insurance per service, 0.5 for countries that have cost-sharing applied only partially or with very common exemptions.

2. The correlation between the percentage of patients who skipped a medical test, treatment, or follow-up because of the cost and the aggregate variable representing deductibles and cost-sharing requirements for laboratory services is 0.24, suggesting a weak relationship.

3. The Spearman correlation between their ranks (0.11) suggesting cost-sharing for laboratory tests is very weakly correlated with patients forgoing care.

4. Neither of these results are statistically significant.

Did not fill or collect a prescription for medicine or skipped doses of medicine because of the cost

An analysis could not be conducted as every country examined reported at least some level of co-payments for pharmaceuticals, thus preventing observable differences based on the categorization of data from the OECD.

Like the analysis of data for wait times, the results of the analysis above are by no means definitive; they provide, however, some evidence in addition to the empirical studies summarized in the previous section that patients in developed high-income countries with universal health care that employ cost-sharing mechanisms may forgo visiting doctors, although this relationship is only significant at the 90% confidence level using a one-tailed test (instead of the more commonly employed 95% confidence level using a two-tailed test). It should be pointed out that this is not unexpected given the nature of cost-sharing mechanisms described above; the question of whether these forgone consultations and tests are medically necessary or not, however, remains unanswered. In keeping with the empirical evidence of the potential negative consequences of cost-sharing, the data presented reinforces the importance of appropriate design of cost-sharing frameworks in order to protect vulnerable populations.

It is important to acknowledge explicitly the limitations of the current analysis. The results are drawn from a very small sample of countries, the presence of cost-sharing mechanisms is quantified using a very simple method, and the resulting variation in the cost-sharing variable is minimal. Further, wait times and cost-barriers to care are a function of many factors not included for consideration here. That being said, the results of the present analysis correspond with the theoretical and empirical evidence presented earlier, and provide basic confirmation of the effect of cost-sharing mechanisms on wait times and cost-barriers to care at an international level. We hope that the analysis provided in this section encourages researchers to examine the effects of cost-sharing mechanisms on these areas in more detail in the future.

5 Cost-sharing and the *Canada Health Act*

The previous sections document the wide adoption of cost-sharing for most core health care services by other countries with universal health care—particularly those considered more successful than Canada on indicators of health care performance. In addition, the empirical evidence presented broadly confirms the potential for cost-sharing to reduce the demand for health-care services and shift the point at which patients seek care to possibly less expensive and more appropriate settings without, depending on the design of the cost-sharing framework, necessarily adversely affecting health-care outcomes. At the same time, the empirical evidence also documents the possible negative consequences that may accompany patient cost-sharing arrangements and highlights the importance of protecting vulnerable populations. [83]

This suggests that provinces in Canada could benefit from introducing patient cost-sharing arrangements for certain (mostly outpatient) medical services, so long as they are accompanied by protections and exemptions for vulnerable populations and low-income groups. To the extent possible, these protections and exemptions should be applied proactively and automatically. Given the variety of approaches employed by different universal health-care systems, it is likely provinces would benefit from being able to experiment with various approaches in order to design a framework tailored to the specific health, demographic, and financial profile of their residents. Unfortunately, the ability of provinces to do so in Canada is effectively prohibited by the *Canada Health Act* (CHA). [84]

Although section 92(7) of the *Constitution Act of 1867* assigns provincial Legislatures the exclusive right to determine health-care policy, the federal government is able to influence the defining characteristics of provincial health-care systems by exercising its spending power through the CHA. This financial act defines the terms and conditions under which provincial governments will receive payments from the federal government through the Canada Health Transfer (CHT), estimated at just over $43 billion in 2021 (Canada, Department of Finance, 2021).

[83] Of course, there may be administrative costs associated with specifying who is in a "vulnerable group", documenting expenses, providing rebates and subsidies, and so on.

[84] Canada, Justice Laws Website (2022). *Canada Health Act* (R.S.C., 1985, c. C-6). Act current to 2022-04-04 and last amended on 2017-12-12.

Cost-sharing mechanisms are explicitly disallowed by the CHA, with any reported payments resulting in defined non-discretionary penalties for provinces for violations. Specifically, sections 18 to 21 of the Act require reductions in federal cash transfers for health care if provinces allow or require user fees (cost-sharing) or extra billing for medically necessary services under the public insurance scheme. In either case, the CHA requires federal transfers be reduced on a dollar-for-dollar basis for the amount determined to have been charged to patients in any given province.

Provinces that wish to have access to their full cash transfer for health care must ensure medically necessary or required services provided through the public scheme are fully funded (100% or first-dollar coverage), without any allowance for providers or facilities to request privately funded payments (such as a facility fee) above what will be paid under the public scheme for medically necessary treatment. Charges are explicitly permitted only for accommodation or meals for those who require chronic care and are more or less permanent residents of a hospital or other institution. Charges (user fees or extra billing) may also be permitted under the explicit terms and conditions of the CHA for services that are not considered by the province to be medically necessary (a term that is not clearly defined in the CHA), which ostensibly could include private accommodation, superior implants to the one provided under the public scheme, and new medical therapies not covered by the public scheme. Despite these allowances, the explicit prohibition on charges for medically necessary services effectively prohibits (by the threat of financial penalty) almost the entire palette of cost-sharing tools used by the countries examined in this report.

In fact, the Canadian federal government could—at its discretion—go even further and withdraw all cash transfers for health care to a province if it considers reported cost-sharing requirements to have violated one of the five criteria (commonly referred to as principles) of the CHA. Specifically, it is possible for a federal government to consider user fees and extra billing to have compromised reasonable access under the criteria of Accessibility, which states that a province must provide for insured health services on uniform terms and conditions and on a basis that does not impede or preclude, either directly or indirectly whether by charges made to insured persons or otherwise, reasonable access to those services by insured persons.

Despite this, provincial policy-makers have in the past advocated the institution of cost-sharing arrangements. For example, in Alberta, the *Mazankowski Report* [85] specifically highlighted the need to include cost-sharing in the reform of health care financing in Alberta:

[85] In the spring of 2000, Ralph Klein, then Premier of Alberta, tapped former federal finance minister Don Mazankowski to chair a 12-person advisory council to evaluate the province's health-care system and formulate recommendations for wide-ranging and sweeping reform. The recommendations were published in *A Framework for Reform: Report of the Premier's Advisory Council on Health*, commonly called the "Mazankowski Report".

> Many have suggested—and the Council agrees—that without fundamental changes in how we pay for health services, the current health system is not sustainable ... If we restrict ourselves to a system where all the funding comes from provincial and federal taxes we have little choice but to ration services—and Albertans deserve better. We can't sustain a system where people are told: these services or treatments are available, they will diagnose health problems, cure illnesses, and make your life better, but they cost too much so you can't have them. (Mazankowski, 2001: 4)

The Council made a number of specific recommendations on possible new sources of funding including "medical savings accounts, increased health care premiums, user fees, co-payments, deductibles, taxable benefits, or supplementary insurance" (Mazankowski, 2001: 30). These reforms would clearly require changes to the *Canada Health Act* or the province would have to forego portions of its share of the Canada Health Transfer from the federal government if not the entire transfer, depending on the federal governments' perception of cost-sharing in the province.

How the federal government chooses to interpret the contravention of the CHA with respect to cost-sharing also matters. For example, under a strict interpretation, the federal government would simply be required to make non-discretionary dollar-for-dollar reductions to the Canada Health Transfer. This is not necessarily problematic, as the collected fees could simply be used to compensate for the lost revenue, while introducing the incentive structure for the demand of medical services. As another work-around, the Castonguay Report to the government of Quebec (Task Force on the Funding of the Health System, 2008) suggested a tax-based deductible that would not be collected at the point of care, and further that failure of payment would not result in denial of access to care (Boychuk, 2008). [86] However, if the federal government determines, in its opinion, that such cost-sharing compromises reasonable access under the criterion of Accessibility, it could theoretically withdraw all cash transfers for health care.

[86] However, given the empirical evidence presented above, it is unclear whether such a deductible would provide the necessary incentives to reduce excess demand for health-care services.

Summary and Conclusion

Despite ranking amongst the most expensive universal health-care systems in the developed world, Canada lags its peers in terms of key metrics of health-system performance. This imbalance between spending and performance suggests a clear need for reform based on the experiences of other successful universal health-care systems.

The first two publications in this series (Globerman, 2020; Esmail, 2021) document how Canada's current approach to private health insurance and activity-based funding (for hospitals) contrasts with the policies pursued by other successful universal health-care systems, thereby identifying them as areas for possible reform. The findings of the current study similarly suggest that Canada is a relative outlier in its approach to patient cost-sharing and should consider reform that would allow provinces to experiment with, and design, a system that requires patients to share directly in the cost of medical care, while protecting vulnerable populations in order to reduce social-welfare loss.

Patients in Canada are currently fully covered for the costs of insured medical services; that is, patients are not billed for any portion of their care. Economic theory suggests that the distorting effects of such first-dollar insurance coverage can lead to excess demand for medical care accompanied by social-welfare loss. In Canada, the rationing of services through long wait times are one by-product of excess demand.

Unfortunately, although economic theory suggests that cost-sharing mechanisms—particularly co-insurance payments—may serve as a tool to mitigate the magnitude of social-welfare loss, Canada is part of a small minority of countries (6 out of the 28 examined in this report) that either entirely eschew cost-sharing by patients or do not generally expect patients to share in the cost of treatment (except for specific situations and purely private options) for core medical services within their standard universal health-care framework. By contrast, the vast majority of universal health-care systems around the world (22 of 28) expect patients to share in either the cost of outpatient primary care, outpatient specialist care, or acute inpatient care (though the latter is relatively less common) through deductibles (rarely), co-insurance charges and co-payments. Of course, the nature and degree of these cost-sharing mechanisms (as well as the accompanying safety nets) can vary considerably.

One reason for the wide-spread adoption of cost-sharing is their theoretical ability to reduce or temper the demand for unnecessary health-care services. Empirical studies broadly confirm that cost-sharing mechanisms can reduce the use of ambulatory care without necessarily resulting in adverse consequences for the population.

However, because the tempering effect of cost-sharing extends to both essential and non-essential care, and because the impact of such payments can result in larger reductions for vulnerable groups, it is important to protect vulnerable populations. Particular care should be taken to avoid large deductibles for mental-health care and essential pharmaceuticals. This conforms with the approach taken by 8 successful universal health-care countries, which employ generous safety nets, set annual caps on out-of-pocket spending, and ensure exemptions for at-risk populations.

More generally, empirical evidence suggests that cost-sharing mechanisms should not be looked at as a tool for overall cost-savings in the short-run, [87] but rather, if designed correctly, as a tool to encougage the appropriate use of medical services and reduce the magnitude of rationing because of excess demand. This is somewhat supported by the correlation coefficients calculated in this study, which suggest countries that employ cost-sharing mechanisms may have shorter wait times for elective treatment.

Unfortunately, despite their theoretical ability to reduce social-welfare loss, and their widespread adoption by other universal health care systems, cost-sharing mechanisms for medically necessary care are explicitly prohibited by the *Canada Health Act* and will result in financial penalties for provinces found in violation. The findings presented in this publication suggest that Canada would benefit from implementing reforms that would allow provinces to experiment with, and design, a system that requires patients to directly share in the cost of specific kinds of medical care, while protecting vulnerable populations in order to reduce social-welfare loss.

[87] Cost-sharing should, however, reduce the discounted present value of health-care expenditures, other things constant.

Appendix 1—Conditions and Benefits for Chronically Ill Status in Belgium

Conditions	Benefit or lump sum
Your health insurance fund automatically grants you the status: If you have a minimum of €300 in health expenditure (indexed amount) per quarter for 8 consecutive quarters, these 8 quarters constituting 2 calendar years. Health expenses include both the part paid by the mutual insurance company and your personal part. OR Benefiting from the Chronic Illness Plan, which requires: [1] your share in the cost of your health benefits (co-payment) amounted to €450 per year during this calendar year and during the previous calendar year (if you benefit from the increased intervention, this amount is €365) AND	Reduced Maximum Allowable Billing (MAB) ceiling: €100
[2] You find yourself in a situation of dependence during this calendar year: ▪ You have received an agreement from the medical consultant, for a period of 6 months, for physiotherapy treatment relating to a serious pathology. ▪ You meet the medical conditions to obtain the right to increased family allowances. ▪ You have stayed in a hospital for a total of at least 120 days during the calendar year concerned and the previous year, or you have been admitted at least 6 times during this same period.	Lump Sum: €318.23
[3] You find yourself in a situation of dependence during this calendar year: ▪ You meet the conditions to receive the integration allowance, or the allowance for assistance to the elderly, for the person with a disability whose degree of autonomy has been set at 12 points at least under the law of February 27, 1987 on allowances for disabled people. ▪ You benefit from an allowance for the assistance of a third person within the framework of the law of June 27, 1969 relating to the granting of allowances to the handicapped. ▪ You benefit from an allowance granted to the holder with dependents due to the need for the help of a third person or a fixed allowance for the help of a third person.	Lump Sum: €477.37
[4] You find yourself in a situation of dependence during this calendar year: ▪ You have received an agreement from a medical consultant, for a period of at least 3 months, for nursing treatment giving rise to the payment of the B or C packages.	Lump Sum: €636.47

Sources: NIHDI/INAMI, 2019b, 2020b.

Appendix 2—Personal Contributions for Care in the Netherlands

Care	Personal contribution in 2019	Personal contribution in 2020
Hearing aids	For 18 years and older: 25% of the costs	For 18 years and older: 25% of the costs
Dentures:removable and complete	25% of the costs	25% of the costs
Dentures: removable and complete dentures on implants	For the lower jaw: 10% of the costs For the maxilla: 8% of the costs	For the lower jaw: 10% of the costs For the maxilla: 8% of the costs
Dentures: repairs or transfer (rebasing) of removable and complete dentures	10% of the costs	10% of the costs
Shoes: orthopedic or allergen free	Up to 16 years: €65.50 per pair 16 years and older: €131 per pair	Up to 16 years: €63.50 per pair 16 years and older: €127 per pair
Wigs	All costs above €436	All costs above €443
Contact lenses	€58.50 per lens for lenses that last longer than 1 year. If the lenses last 3 years, you pay €58.50 per lens once in those 3 years €58.50 per lens, for lenses that last less than 1 year, with a maximum of €117 per calendar year. If you need new lenses 3 times in a year, you only pay €58.50 per lens once that year.	€59 per lens for lenses that last longer than 1 year. If the lenses last 3 years, you pay €59 per lens once in those 3 years; €59 per lens, for lenses that last less than 1 year, with a maximum of €118 per calendar year. If you need new lenses 3 times in a year, you only pay €59 per lens that year.
Lenses	Up to the age of 18: €58.50 per lens, with a maximum of €117 per calendar year	Up to the age of 18: €59 per lens, with a maximum of €118 per calendar year
Maternity care at home	€4.40 per hour	€ 4.50 per hour
Maternity care in an institution (maternity hotel, birth center, etc.). You want to give birth in the institution, but this is not medically necessary.	You pay at least per day: €17.50 for the mother and €17.50 per baby. Depending on the institution, an amount may be added. Is the rate of the institution higher than €125 per day? Then you also pay the amount above that €125.	You pay at least per day: €18 for the mother and €18 per baby. Depending on the institution, an amount may be added. Is the rate of the institution higher than €127.50 per day? Then you also pay the amount above that € 127.50.
Patient transport by car or public transport (not by ambulance)	€103 per calendar year	€105 per calendar year
Medicines	Contact your health insurer to find out if you have to pay a personal contribution for a medicine. And whether there are cheaper comparable drugs. Read more about the reimbursement of medicines. Medicines with the same active ingredient are grouped if they are interchangeable. A maximum reimbursement from the basic insurance applies per group of medicines. If the price of a medicine is higher than this reimbursement, you pay a personal contribution.	Contact your health insurer to find out if you have to pay a personal contribution for a medicine. And whether there are cheaper comparable drugs. Read more about the reimbursement of medicines. Medicines with the same active ingredient are grouped if they are interchangeable. A maximum reimbursement from the basic insurance applies per group of medicines. If the price of a medicine is higher than this reimbursement, you pay a personal contribution.

Source: National Government of The Netherlands, 2019c.

Appendix 3—Lists of Countries Ranked in the Three Reports Used in this Study

Euro Health Consumer Index 2018 (Bjornberg and Phang, 2019)	*Commonwealth Fund 2017* (Schneider, Sarnak, Squires, Shah, and Doty, 2017)	*Health: Provincial and Territorial Ranking* (Conference Board of Canada, 2015)
Switzerland	**United Kingdom**	**Switzerland**
Netherlands	**Australia**	**Sweden**
Norway	**Netherlands**	*British Columbia*
Denmark	**New Zealand**	**Australia**
Belgium	**Norway**	**Norway**
Finland	Sweden	**France**
Luxembourg	Switzerland	*Ontario*
Sweden	Germany	Japan
Austria	Canada	Netherlands
Iceland	United States	Canada
France		*Quebec*
Germany		*Prince Edward Island*
Portugal		*Alberta*
Czech Republic		Germany
Estonia		Finland
United Kingdom		United Kingdom
Slovakia		*New Brunswick*
Serbia		Austria
Spain		Ireland
Italy		Belgium
Slovenia		Denmark
Ireland		*Nova Scotia*
Montenegro		*Manitoba*
Croatia		*Saskatchewan*
North Macedonia		Uinited States
Cyprus		*Newfoundland & Labrador*
Malta		*Yukon*
Lithuania		*North West Territories*
Greece		*Nunavut*
Latvia		
Bulgaria		
Poland		
Hungary		
Romania		
Albania		

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Acknowledgments

The authors wish to thank the Lotte & John Hecht Memorial Foundation for its generous support of this project. They would also like to thank three anonymous peer reviewers for many helpful comments and suggestions on an earlier draft.

Any remaining errors or oversights are the sole responsibility of the authors. As the researchers have worked independently, the views and conclusions expressed in this study do not necessarily reflect those of the Board of Directors of the Fraser Institute, the staff, or supporters.

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ISBN

978-0-88975-700-4

Citation

Bacchus Barua and Mackenzie Moir (2022). *Understanding Universal Health Care Reform Options: Cost-Sharing for Patients*. Fraser Institute. <http://www.fraserinstitute.org>.

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