JOHNS HOPKINS
BLOOMBERG SCHOOL
of PUBLIC HEALTH

April 5, 2024

To whom it may concern,

Please find attached my economic report on Preferred Provider Networks in the context of pharmacies in Canada.

Sincerely,

Mark Meiselbach

Mark K. Meiselbach
Assistant Professor
Johns Hopkins Bloomberg School of Public Health
Department of Health Policy and Management
624 North Broadway, Baltimore, MD 21205

A. Background and qualifications

I am a tenure-track Assistant Professor and health economist at Johns Hopkins Bloomberg School of Public Health in the Department of Health Policy and Management. The Bloomberg School of Public Health is ranked as the top school of public health in the United States and its Department of Health Policy and Management is ranked as the top department of health policy according to US News and World Report. I also completed my PhD in Health Economics & Policy at Johns Hopkins.

My research agenda focuses entirely on the private provision of health insurance. I study how policies, regulations, and market conditions affect the decisions made by private insurers and the downstream potential benefits or consequences of those decision on individuals' health and financial well-being. To date, I have 44 peer-reviewed publications in leading health economics, policy, and medical journals, including the *Journal of Health Economics, Health Affairs, JAMA-Internal Medicine* and the *American Journal of Managed Care.* A particular focus of my work is on the formation of provider networks, including studying how networks are formed, the prices agreed upon between providers and insurers, and how networks affect access to health care resources for enrollees, especially when those resources may be scarce and when enrollees have complex medical needs. This work has received media attention, including by the *New York Times*, *NPR,* and *Modern Healthcare.* My full CV is included in Addendum A.

B. Scope of this report

This report reflects my view on **Preferred Provider Networks (PPNs)** in the context of pharmacies in Canada from an economic perspective, drawing on the relevant literature wherever possible. In this report, I focus on PPNs that either 1) completely restrict access to a narrowed set

of providers that contract directly with the insurer or Pharmacy Benefit Manager (PBM) or 2) require greater cost-sharing for patients to utilize an out-of-network pharmacy. I begin the report by first discussing C) the economic mechanisms through which PPNs can theoretically lower drug spending, then D) why potential drug spending savings may not translate to lower consumer costs, E) the potential consequences of PPNs in the Canadian context, F) discussing regulatory options, and ending with G) a summary of my views based on this economic analysis.

C. The economic mechanisms through which PPNs can theoretically lower drug spending.

Pharmacy PPNs have been linked to lower total drug spending in the US context (Starc and Swanson 2021). Specifically, in the context of the privately administered drug benefit for older adults in the US ("Medicare Part D"), pharmacy PPNs were linked to an approximate 2% reduction in drug spending. Similarly sized reductions in spending have been observed when provider networks are narrowed in other care settings, including physician and hospital networks, where there has been a comparatively greater amount of academic literature (Mazurenko, Taylor, and Menachemi 2022; Wallace 2023; Gruber and McKnight 2016; Ho, Katherine 2009; Prager 2020; Atwood and Lo Sasso 2016). However, to my knowledge, no such relationship has been documented in the context of pharmacy PPNs in Canada in the academic literature.

Spending reductions, when achieved in the context of pharmacy PPNs, can be achieved primarily through **three economic mechanisms**:

1. Steering patients to lower cost pharmacies
2. Lowering negotiated prices between pharmacies and insurers/PBMs
3. Limiting utilization by generating barriers to care

I discuss each of these mechanisms below, including the existing evidence and considerations underlying these mechanisms.

1. Steering patients to lower cost pharmacies

Pharmacy PPNs impose costs to patients in order to control and restrict their decision of pharmacies. PPNs will contract with a particular set of pharmacies that are designated as "preferred." PPNs will then often either refuse to cover prescription fills from pharmacies outside of the preferred network or require substantially higher out-of-pocket costs for patients in the form of higher coinsurance, copays, or deductible limits. In the Part D context, out-of-pocket costs to patients can often be two to three times higher at nonpreferred pharmacies compared to preferred pharmacies (Xu, Trish, and Joyce 2022). In turn, these financial incentives have been found to impact patients' decisions, steering them towards preferred pharmacies (Xu, Trish, and Joyce 2022; Starc and Swanson 2021). However, there is limited evidence that this steering results in the utilization of higher quality pharmacies and thus there is no evidence of improved health outcomes as a result of steering, to my knowledge.

In the context of physician and hospital provider networks, which can be applied by analogy to pharmacy PPNs, quality has been assessed through outcome measures that including readmissions and mortality rates, finding no improvement in these measures (Gruber and McKnight 2016; Haeder, Weimer, and Mukamel 2015; Mazurenko, Taylor, and Menachemi 2022). In fact, research has found narrower provider networks to be associated with lower patient satisfaction with their plans, particularly among rural enrollees (Fortney et al. 2001).

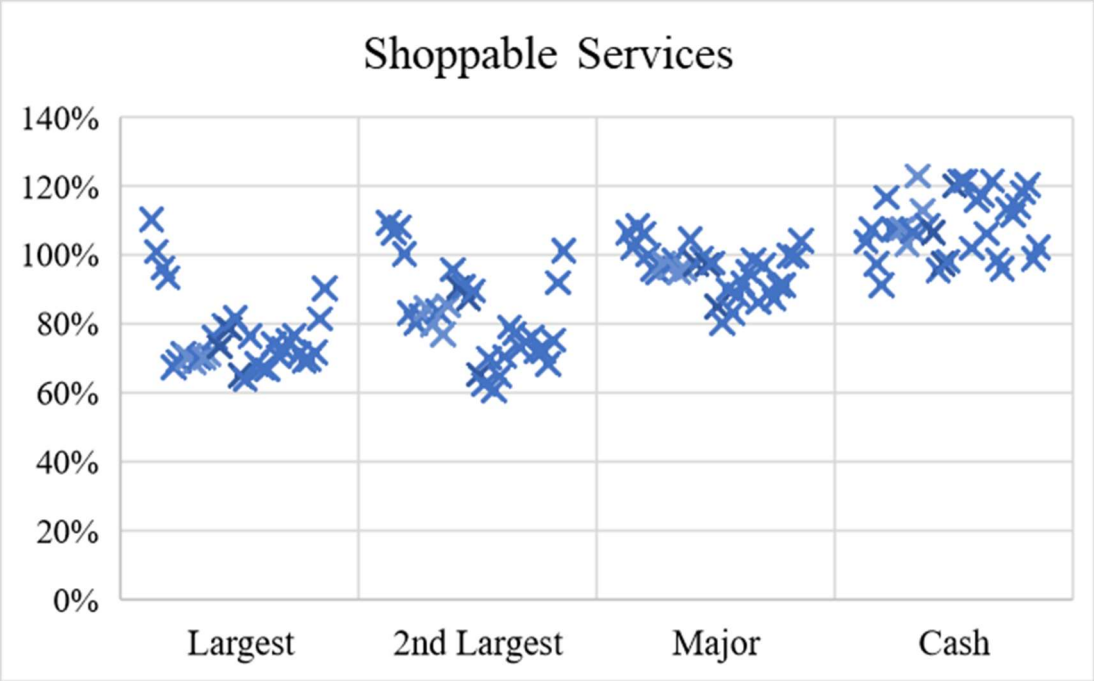
2. Lowering negotiated prices between pharmacies and PBMs

As a result of this ability to steer patients through network design and cost structure, PBMs and insurers may be able to negotiate lower fees with pharmacies (Starc and Swanson 2021; Ho, Katherine 2009; Ghili 2021; Gowrisankaran, Nevo, and Town 2015; Ho, Kate and Lee 2019). On the one hand, insurers can offer to steer patients to a particular pharmacy in exchange for lower prices, in the form of lower dispensing fees and drug markups. They can do so by giving that pharmacy "preferred" status in the PPN, giving patients financial incentives to visit the pharmacy as opposed to others. On the other hand, they can also threaten to exclude the pharmacy from the network, making it more challenging and financially onerous for patients to visit the pharmacy.

As discussed above, PPNs have been shown to affect which pharmacies patients use (Xu, Trish, and Joyce 2022) and, thus, the threat of PPN exclusion has real implications for the cost of patient care. Naturally, insurers covering a larger volume of potential patients in a provider's market are likely to command even greater discounts since they may be able to steer a greater number of patients towards or away from the pharmacy. This phenomenon is well-documented in the United States, where it has been consistently found that insurers with greater market share command lower hospital prices (Wang et al. 2024; Cooper et al. 2019; Craig, Ericson, and Starc 2021; Scheffler and Arnold 2017; Barrette, Gowrisankaran, and Town 2020). See **Figure 1** from my recent work, where we find a clear upward trend in prices (y-axis, prices as a % prices for of non-major insurers) with diminishing insurer market power depending on if the insurer was the largest, second largest, another major insurer (not largest or second largest), and patients paying in cash (x-axis). In regression analysis, we find that the largest insurers paid 23% lower prices compared to other insurers. However, it is not necessarily the case that these cost savings are

passed through to consumers, especially when private insurance markets are concentrated (see greater discussion of this point in Section D).

Figure 1. Relationship between Commercial Insurance Prices and Insurer Market Power from Wang, Meiselbach, Xu, et al. (2023)



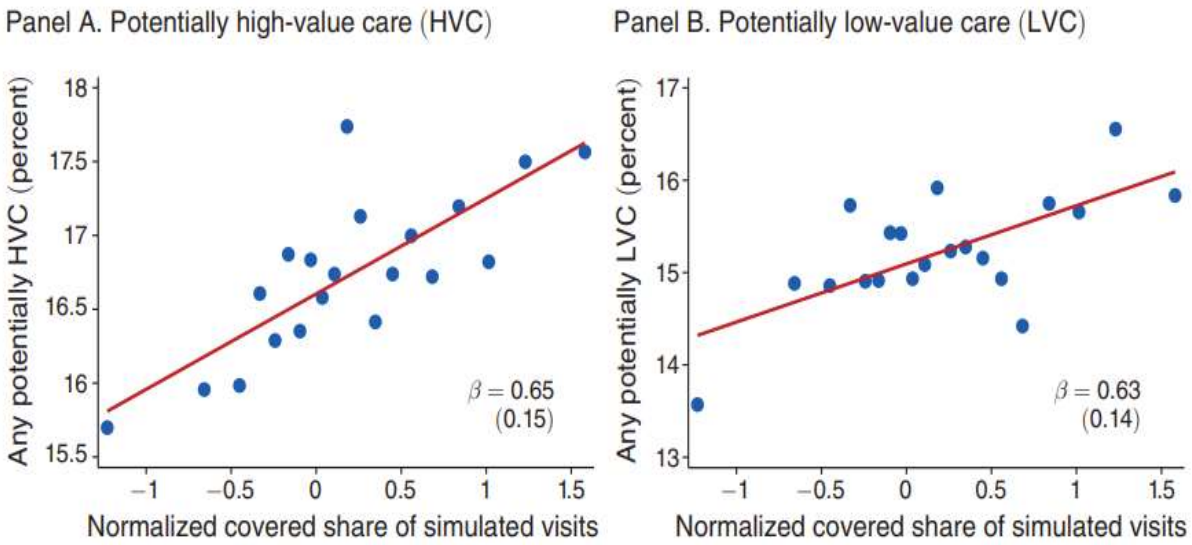
Source: Figure 1, Panel A, Wang Y, Meiselbach MK, Xu J, Bai G, Anderson G. Do Insurers With Greater Market Power Negotiate Consistently Lower Prices for Hospital Care? Evidence From Hospital Price Transparency Data. Medical Care Research and Review. 2024;81(1):78-84. doi:10.1177/10775587231193475.

3. Limiting utilization by generating barriers to care

PPNs can limit overall spending on drugs, not only through decreased prices, but also by limiting utilization. Limited PPNs may often require that patients travel further (Haeder, Weimer, and Mukamel 2015; Gruber and McKnight 2016), wait longer (Haeder, Weimer, and Mukamel 2016), or potentially see providers that they would not prefer to see if there were no constraints. Further, provider "directories" which patients refer to in order to find out which providers are preferred can sometimes be inaccurate (Zhu et al. 2022; Ludomirsky et al. 2022; Burman, Haeder, and Xu 2023). Together, these mechanisms impose "hassle costs" on patients that may reduce their overall utilization (Wallace 2023).

In turn, narrow networks are linked to lower utilization (Gruber and McKnight 2016; Atwood and Lo Sasso 2016; Wallace 2023). Utilization reductions are driven by indiscriminate reductions in both "high-value" services (e.g., recommended preventative care such as screenings, use of statins) and "low-value" services (e.g., certain imaging and laboratory tests). See **Figure 2** below from Wallace (2023), which finds a similarly sized positive correlation between the breadth of provider networks (x-axis) and the use of high-value care (HVC, panel A) and low-value care (LVC, panel B) (y-axis). Namely, one standard deviation decreases in the provider network breadth (i.e., the share of providers in network) led to an approximate 4% reduction in the use of high-value care. Narrow provider networks limit patient access to both high- and low-value care, which reduces spending through reduced access for patients.

Figure 2. Relationship between Network Breadth and Use of High-Value Care (HVC) and Low-Value Care (LVC) from Wallace (2023)



Source: Figure 4, page 496, Wallace, Jacob. 2023. "What does a Provider Network do? Evidence from Random Assignment in Medicaid Managed Care." American Economic Journal: Economic Policy 15 (1): 473-509. doi:10.1257/pol.20210162. https://www.aeaweb.org/articles?id=10.1257/pol.20210162.

In the absence of substantial regulations, diminished access is likely to be borne by the most vulnerable populations. In particular, those that are most likely to be affected are those with the

greatest health care needs, requiring (often multiple) medications for chronic conditions, and individuals living in rural areas with already-diminished access to providers. Provider continuity is a valued aspect of insurance design (Drake, Ryan, and Dowd 2022; Schwab 2018), particularly valued among those with the greatest medical needs (Shepard 2022). As will be discussed in greater detail below (in Section E), network-driven care discontinuities can also result in reduced access to care and worsened health outcomes (Staiger 2022; Bayliss et al. 2015; Hussey et al. 2014).

D. Why reductions in drug spending may not necessarily be passed on to consumers.

There is limited evidence that diminished drug expenditures resulting PPNs would necessarily be passed on to lower premiums and/or lower out-of-pocket costs for consumers in the context of private insurance in Canada. Absent regulation that requires insurers pay a minimum Medical Loss Ratio (MLR) – defined as the proportion of premiums revenue insurers spend on medical care, and/or meaningful competition between PBMs – there is no guarantee that reduced expenditures will result in reduced expenditures for employers and patients.

While more recent data is not readily available, estimates from 2014 indicate that at that time MLRs were decreasing over time in Canada, and were already, substantially below the 85% threshold required of regulated large group plans in the United States (Law, Kratzer, and Dhalla 2014). MLRs also become challenging to interpret in the context of vertically integrated insurers and pharmacies, which are prevalent in the Canadian landscape, as medical expenditures are also revenues to the vertically integrated organization.

When insurance markets are concentrated, giving employers and people who get insurance from their employers fewer options, insurers charge higher premiums than they would otherwise to

employers (Trish and Herring 2015; Ho, Kate and Lee 2017). Therefore, if insurer and/or PBM markets are not competitive, reductions in drug expenditures achieved through PPNs could simply result in improved profit margins for insurers rather than diminished premiums and out-of-pocket expenditures for individuals. Limited insurance market competition is consistent with the most recent MLR data available in Canada.

E. Potential consequences that could result from pharmacy PPNs in Canada.

In addition to potential reductions in drug expenditures, there may be potential unintended consequences from restricted pharmacy PPNs in Canada. In particular, vertical integration in the Canadian pharmacy marketplace combined with PPNs may have long-term implications for access, competition, and drug costs. In recent years, there has been a growth in the prevalence of insurers/PBMs vertically integrated with pharmacies. For example, major insurer Sun Life, responsible for covering millions of lives in Canada, recently announced its investment in Simpill Health Group Inc., operating as Pillway, an online pharmacy (Sun Life Financial Inc 2023). Express Scripts Canada (ESC), one of Canada's two largest PBMs, has already been operating in this way, offering its own pharmacy in addition to determining pharmacy PPNs for enrollees (Express Scripts Canada 2024). Additionally, GreenShield recently acquired NKS Health, a specialty pharmacy, and The Health Depot, a digital pharmacy (GreenShield 2022).

Namely, the continued growth of PPNs, in conjunction with vertical integration in Canadian pharmacy marketplace, could:

1. Lead to care disruptions
2. Restrict competition and choice in pharmacy markets
3. Result in long-term increases in drug costs

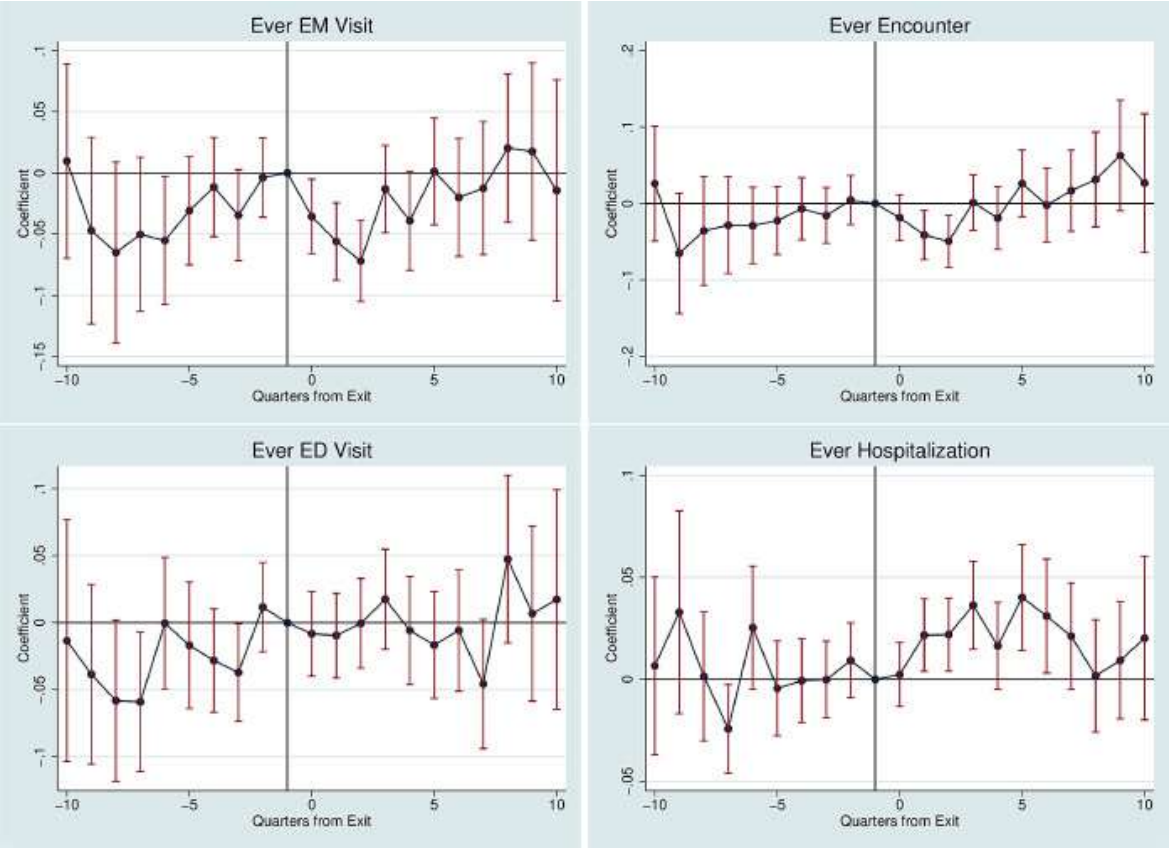
Each of these potential consequences is discussed below, including the existing evidence and considerations.

1. Network-driven discontinuities in care can lead to care disruptions and potential adverse health outcomes.

PBMs and insurers can change their pharmacy networks from year to year and/or employers can switch insurers year to year, leading to changes in pharmacy networks for enrollees. Changes to pharmacy networks, and thus which pharmacies enrollees have access to, can result in discontinuities in care as patients might lose access to their primary pharmacy. In other settings, these have led to care disruptions that can result in potential adverse health outcomes (Staiger 2022; Schwab 2018; Bayliss et al. 2015; Hussey et al. 2014). **Figure 3** Staiger (2022) shows change over time before and after a patient's frequent health care provider leaves a provider network in having a primary care/evaluation and management visit (top left), ever having an health care encounter (top right), having an emergency department visit (bottom left), and hospitalization (bottom right) in patients with chronic conditions. When a key provider leaves a patients insurance plan's provider network, this leads to a 5% reduction in having a primary care evaluation and management visit and a close to 50% *increase* in the probability of having a hospitalization, representing an approximate $12,394 estimated increase in hospitalization costs.

Care continuity has been found to be associated with lower overall costs in other work as well, especially in patients with more complex illness an chronic diseases (Bayliss et al. 2015; Hussey et al. 2014). Network-driven care discontinuities are likely to harm the most vulnerable and complex patients to the greatest degree. In the context of PPNs, this harm could manifest in the form of prescription errors, poor medication management, improper adherence to medication, all of which could result in increased acute care utilization and worse overall health.

Figure 3. Relationship between Provider Exit from Network and Health Care Service Use from Staiger (2022)



Source: Figure 3, page 12, Staiger, Becky. 2022. " Disruptions to the Patient-Provider Relationship and Patient Utilization and Outcomes: Evidence from Medicaid Managed Care." Journal of Health Economics, 81 (2022): doi: https://doi.org/10.1016/j.jhealeco.2021.102574

Absent network adequacy regulations, which typically require that networks include at least a minimum number of providers in geographic areas where their enrollees live, these negative consequences are likely to be most acute for people living in rural areas. If a pharmacy is dropped from a rural enrollee's PPN, there will most likely be fewer (or possibly no) other proximal pharmacies. In Canada, rural populations are generally older, less affluent, and experience a greater prevalence of chronic illness (Wilson et al. 2020). Network-driven disruptions would likely disproportionately harm this population. At a minimum, network adequacy regulations are requisite to ensure access for rural populations (see section F for a discussion of regulatory options).

2. Pharmacy PPNs restrict choice for beneficiaries and could potentially restrict competition.

Inherently, pharmacy PPNs limit choice by design. This is how PPNs affect steering (Xu, Trish, and Joyce 2022) and ultimately how they are able to bargain for lower prices with pharmacies (Starc and Swanson 2021). However, when PPNs are determined through exclusive, national, state, or provincial contracts between insurers/PBMs and pharmacy chains, this can ultimately reduce competition. This is of particular concern when either 1) there are large nationally (or state/provincially) dominant pharmacy chains and/or 2) pharmacies are vertically integrated with the insurers/PBMs that determine the networks.

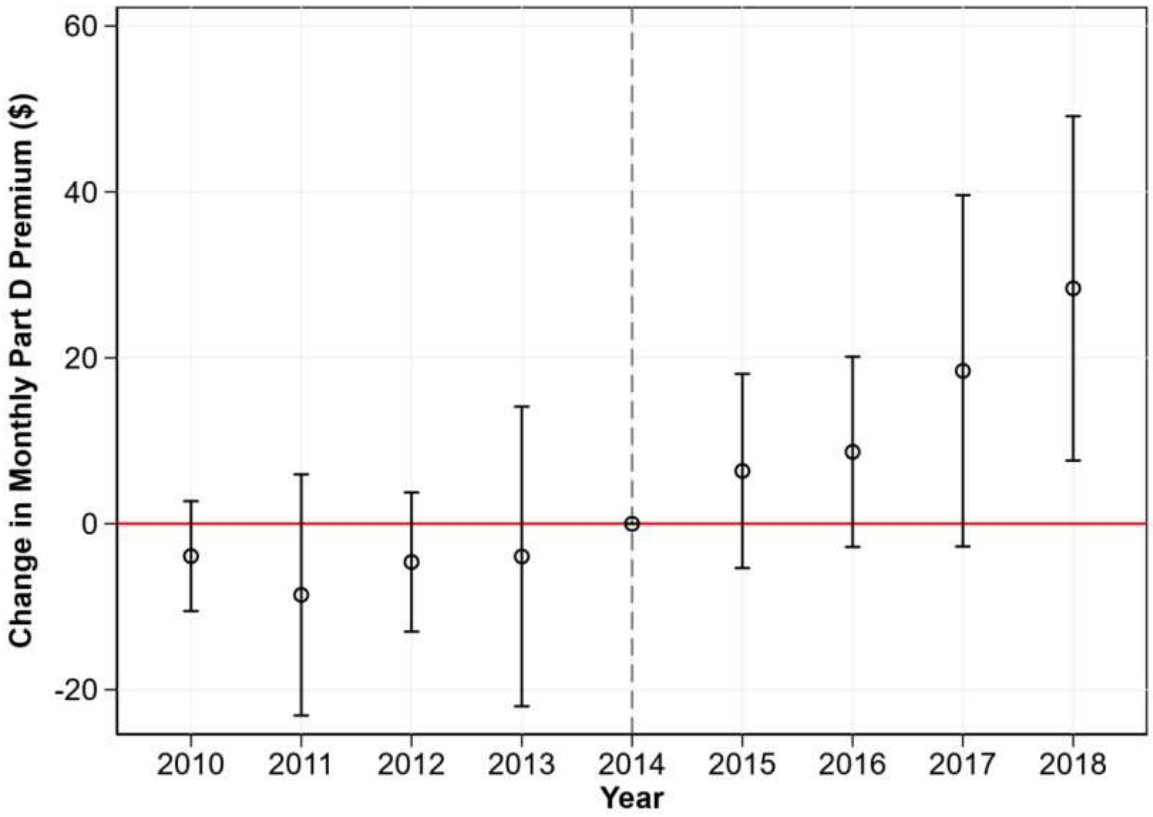
Both concerns are present in Canadian pharmacy markets. Large pharmacy chains can negotiate national or provincial contracts with insurers/PBMs, which is inherently unavailable to local pharmacies. After the national contract is negotiated, insurers/PBMs may not give smaller, local pharmacies the opportunity to negotiate preferred status (Klick and Wright 2015), especially in markets where large chains already have a major presence. This behavior is already beginning to occur in Canada. Though Manulife has retracted the deal following public criticism, its initial deal to only fill certain specialty drugs at Loblaw associated pharmacies is an example of this behavior (Benchetrit 2024).

When pharmacies are vertically integrated, insurers/PBMs have clear financial incentives to steer patients to the pharmacies that they, themselves, own within that vertically integrated framework. Insurers can boost their vertically integrated pharmacy business by steering patients to their own locations and creating strong disincentives for patients to visit competitor pharmacies. This too could lead insurers to forego contract negotiations with competitor pharmacies and/or drive up prices for competing insurers, counteracting the economic arguments in favor of PPNs (i.e., that

insurers will use PPNs to bargain for lower prices by having pharmacies offer competing rates). This is of particular concern in concentrated insurance markets such as Ontario (and Canada as a whole), where vertically integrated insurers and pharmacies could steer a substantial share of the patients in the market, and meaningfully financially harm competitor pharmacies.

It has been documented in the United States context that vertical integration between in pharmacy benefits can drive up premiums for competing insurance plans. See **Figure 4** which shows changes in monthly Medicare Part D premiums for competing plans following the merger between UnitedHealth, a major insurer in the United States, and a major PBM, Catamaran (Gray, Alpert, and Sood 2023). The demonstrated increase represents an approximate 36% increase in pharmacy benefit premiums for competing plans.

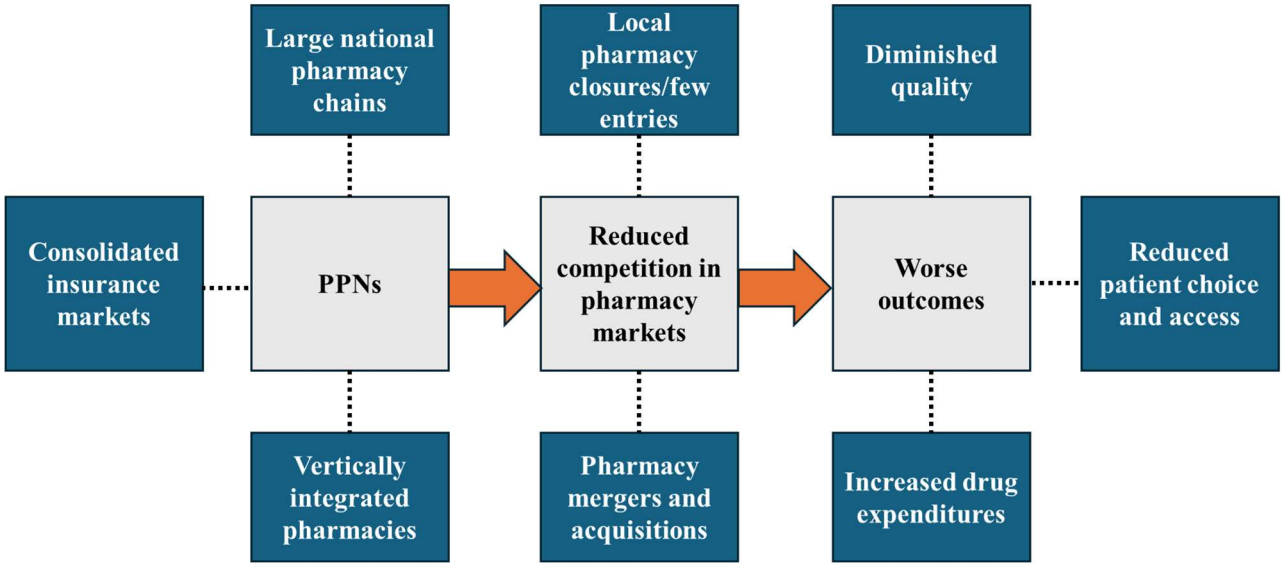
Figure 4. Premium Changes for Competing Plans following Vertical Integration between Insurer and PBM



Similar dynamics also occur when there is vertical integration between insurers/PBMs and pharmacies. In the United States, a class action lawsuit has been brought against Cigna alleging that Express Scripts, Cigna's PBM and pharmacy, was charging higher fees and reimbursing competing pharmacies at a lower rate (Pierson 2023). These same phenomena may occur in Canada, with GreenShield vertically integrated with NKS Health and The Health Depot, specialty and digital pharmacy companies, and Express Scripts Canada playing a leading role in the PBM and pharmacy markets. GreenShield, for example, has a strong incentive to steer patients to its own vertically integrated pharmacies and very little incentive to allow other pharmacies to serve its 6 million enrollees (GreenShield 2023).

In turn, a lack of opportunity for network participation among local pharmacies and PPNs steering away from these pharmacies could result in a loss of patient volume, ultimately leading to pharmacy closures. Similarly, exclusive PPN contracts could discourage the entry of new pharmacies. The existence of PPNs also gives further impetus for pharmacies to consolidate, through mergers and acquisitions of pharmacies, as further consolidation can give pharmacies greater negotiating leverage over insurers/PBMs (David, Simon, and White 2002). Finally, PPNs also encourage vertical integration. Jointly, all of these mechanisms reduce competition in the long run, which can result in higher costs, lower quality, and reduced choice and access for patients, as is discussed next. See **Figure 5** demonstrating the conceptual relationship between market structure, including the presence of large national chains and vertically integrated pharmacies, competition, and long-term outcomes, including costs, quality, and patient choice and access.

Figure 5. Conceptual Relationship between Market Context, PPNs, and Long-Term Outcomes



3. Reductions in competition in the pharmacy market could result in long-term increases in drug spending, diminished quality, and patient access and choice.

The long-term consequences of diminished competition in health care provider markets are well-documented. In short, reduced provider market competition is likely to result in greater drug expenditures and diminished quality of care. With less competition in the pharmacy market in the long-term, national pharmacy chains can demand higher prices from insurers/PBMs. The effects of consolidation and vertical integration in provider markets on costs are very well-documented and conclusively lead to higher costs for consumers. (Gaynor, Ho, and Town 2015; Cooper et al. 2019; Arnold and Whaley 2020; Gowrisankaran, Nevo, and Town 2015; Curto, Sinaiko, and Rosenthal 2022). Greater consolidation in Canadian pharmacy markets, driven by the incentives and dynamics of PPNs, could therefore lead to long-term increases in drug expenditures.

With respect to quality, there is evidence that consolidation in provider markets can lead to worse quality of care (Beaulieu et al. 2020). Greater consolidation inherently limits patient choice. When a narrower set of providers controls a greater share of the market, this results in patients

having fewer options to choose from. This increased consolidation and diminished choice has been shown to limit access across multiple settings, with a substantial economic literature finding that increased provider market consolidation results in diminished access for patients (Avdic 2016; Zhang et al. 2021; Buchmueller, Jacobson, and Wold 2006). Greater consolidation in Canadian pharmacy markets would result in less competition, which may include less competition on providing quality services.

F. Regulation of PPNs.

Where PPNs and other health insurance provider networks occur, they are often regulated to mitigate their potential harms to patient access. In the US, regulations fall into one of two primary categories, including 1) network adequacy regulation requiring at least a minimum number of pharmacies are in-network for enrollees in a given area and 2) any-willing-provider laws (and relatedly, "freedom-of-choice" laws) that allow any provider to join a network if they are willing to meet the terms of the network's membership.

1. Network adequacy regulations.

Nearly every managed care insurance market in the United States is subject to network adequacy regulations (National Conference of State Legislatures 2023). The regulations typically require plans meet both qualitative (e.g., that network can provider services in a "timely manner") and quantitative standards (e.g., that networks including above a minimum number of providers of a given specialty for each enrollee). Medicare Part D plans, pharmacy benefit plans for older adults in the US, for example, must maintain retail pharmacy networks that provide convenient access to:

- 90 percent of beneficiaries residing in urban areas have access to network pharmacies within 2 miles of their residence;
- 90 percent of beneficiaries residing in suburban areas have access to network pharmacies within 5 miles of their residence; and
- 70 percent of beneficiaries residing in rural areas have access to a network pharmacy within 15 miles of their residence.

However, these regulations only regulate the entirety of the pharmacy network and not which pharmacies are preferred via cost-sharing incentives for patients. An analysis found that roughly half of PPNs actually met the above standards, when considering their preferred pharmacies (CMS 2015). Meaningful network adequacy regulation considers patient cost-sharing arrangements to ensure affordable access. This is important when pharmacies are vertically integrated with insurers and insurers have little incentive to enable enrollees to access competitor pharmacies. Insurers that are vertically integrated with pharmacies, such as GreenShield with NKS Health and The Health Depot, can leverage PPNs and cost-sharing structures to strongly incentivize patients to visit their own vertically integrated pharmacies. If regulation does not consider the cost-sharing structures, it may not meaningfully regulate patient access.

Nevertheless, network adequacy regulations have proven challenging to enforce and have not necessarily been linked to better access (Ndumele, Cohen, and Cleary 2017; Hu et al. 2023). Though network adequacy regulations regulating a narrow set of providers have been linked to broader network directories for some provider types (Meiselbach et al. 2023), network directories can often contain inaccurate information or include providers that do not actively see patients in that plan (Zhu et al. 2022; Ludomirsky et al. 2022; Haeder, Weimer, and Mukamel 2016). This may hinder the relationship between network adequacy and access for patients. In

addition to reporting network directories, auditing procedures have been used to monitor patient experiences and ensure listed providers actively accept patients from the plans that have them in their networks.

2. Any-willing-provider laws.

Another regulatory framework is imposed through any-willing-provider laws or freedom-of-choice laws. Any-willing-provider laws require that insurers include pharmacies in their networks so long as pharmacies agree to the terms of the network. For example, insurers can require that any participating pharmacy meet their fee schedule. In this way, these laws allow any pharmacy to participate, including independent local pharmacies, which ensures patient choice. They allow insurers to manage costs via price controls and contract terms. Freedom-of-choice laws, on the other hand, allow patients to visit any pharmacy they want regardless of their network status with their insurer. Any-willing-provider laws are include a cost-containing mechanism, relative to freedom-of-choice laws, while allowing independent pharmacies the opportunity to participate in networks without negotiated contracts. More than half of states in the United States have some form of any-willing-provider law. The economic concerns for costs, quality, and patient access and choice, raised in Section E, would be mitigated by regulation in Canadian pharmacy markets, such as any-willing-provider laws.

G. Summary.

In summary, though PPNs have been found to reduce drug expenditures in some contexts in the United States, there are significant concerns that they could limit patient choice and access, result in lower quality care, limit competition, and ultimately drive up costs in Canada absent

regulation. These concerns are heightened by the presence of consolidated pharmacy markets and vertical integration between insurers and pharmacy chains.

References

Arnold, Daniel and Christopher Whaley. 2020. *Who Pays for Health Care Costs? the Effects of Health Care Prices on Wages*. Rochester, NY. doi:10.2139/ssrn.3657598. https://papers.ssrn.com/abstract=3657598.

Atwood, Alicia and Anthony T. Lo Sasso. 2016. "The Effect of Narrow Provider Networks on Health Care Use." *Journal of Health Economics* 50 (-12): 86-98. doi:10.1016/j.jhealeco.2016.09.007.

Avdic, Daniel. 2016. "Improving Efficiency Or Impairing Access? Health Care Consolidation and Quality of Care: Evidence from Emergency Hospital Closures in Sweden." *Journal of Health Economics* 48 (-07): 44-60. doi:10.1016/j.jhealeco.2016.02.002.

Barrette, Eric, Gautam Gowrisankaran, and Robert Town. 2020. "Countervailing Market Power and Hospital Competition." *NBER Working Paper* (April). http://www.nber.org/papers/w27005.

Bayliss, Elizabeth A., Jennifer L. Ellis, Jo Ann Shoup, Chan Zeng, Deanna B. McQuillan, and John F. Steiner. 2015. "Effect of Continuity of Care on Hospital Utilization for Seniors with Multiple Medical Conditions in an Integrated Health Care System." *The Annals of Family Medicine* 13 (2) (/03/01): 123-129. doi:10.1370/afm.1739. https://www.annfammed.org/content/13/2/123.

Beaulieu, Nancy D., Leemore S. Dafny, Bruce E. Landon, Jesse B. Dalton, Ifedayo Kuye, and J. Michael McWilliams. 2020. "Changes in Quality of Care After Hospital Mergers and Acquisitions." *The New England Journal of Medicine* 382 (1) (-01-02): 51-59. doi:10.1056/NEJMsa1901383.

Benchetrit, J. 2024. "Manulife Will Cover Specialty Drugs Filled at any Pharmacy Following Backlash to Loblaw Deal ." *Cbc*, Feb 5,. Manulife will cover specialty drugs filled at any pharmacy following backlash to Loblaw deal.

Buchmueller, Thomas C., Mireille Jacobson, and Cheryl Wold. 2006. "How Far to the Hospital? the Effect of Hospital Closures on Access to Care." *Journal of Health Economics* 25 (4) (-07): 740-761. doi:10.1016/j.jhealeco.2005.10.006.

Burman, A., S. F. Haeder, and W. Y. Xu. 2023. "Provider Directory Inaccuracy and Timely Access for Mental Health Car." *American Journal of Managed Care* 29 (2) (Feb): 96-102.

CMS. 2015. *Analysis of Part D Beneficiary Access to Preferred Cost Sharing Pharmacies (PCSPs)*.

Cooper, Z., S. V. Craig, M. Gaynor, and J. Van Reenen. 2019. "The Price Ain't Right? Hospital Prices and Health Spending on the Privately Insured." *The Quarterly Journal of Economics* 134 (1): 51-107.

Craig, Stuart V., Keith Marzilli Ericson, and Amanda Starc. 2021. "How Important is Price Variation between Health Insurers?" *Journal of Health Economics* 77 (-05): 102423. doi:10.1016/j.jhealeco.2021.102423.

Curto, Vilsa, Anna D. Sinaiko, and Meredith B. Rosenthal. 2022. "Price Effects of Vertical Integration and Joint Contracting between Physicians and Hospitals." *Health Affairs (Project Hope)* 41 (5) (May 1,): 741-750. doi:10.1377/hlthaff.2021.00727. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10249654/.

David, Dranove, Carol J. Simon, and William D. White. 2002. "Is Managed Care Leading to Consolidation in Health-Care Markets?" *Health Services Research* 37 (3) (June 1,): 573-594. doi:10.1111/1475-6773.00038. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1434652/.

Drake, Coleman, Conor Ryan, and Bryan Dowd. 2022. "Sources of Inertia in the Individual Health Insurance Market." *Journal of Public Economics* 208 (April 1,): 104622. doi:10.1016/j.jpubeco.2022.104622. https://www.sciencedirect.com/science/article/pii/S004727272200024X.

Express Scripts Canada. "Express Scripts Canada.", accessed Mar 12, 2024, https://express-scripts.ca.

Fortney, J., J. C. Thill, M. Zhang, N. Duan, and K. Rost. 2001. "Provider Choice and Utility Loss due to Selective Contracting in Rural and Urban Areas." *Medical Care Research and Review: MCRR* 58 (1) (-03): 60-75. doi:10.1177/107755870105800104.

Gaynor, Martin, Kate Ho, and Robert J. Town. 2015. "The Industrial Organization of Health-Care Markets." *Journal of Economic Literature* 53 (2) (/06): 235-284. doi:10.1257/jel.53.2.235. https://www.aeaweb.org/articles?id=10.1257/jel.53.2.235.

Ghili, S. 2021. "Network Formation and Bargaining in Vertical Markets: The Case of Narrow Networks in Health Insurance." *Ssrn* (Sep 1,). https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3904373.

Gowrisankaran, Gautam, Aviv Nevo, and Robert Town. 2015. "Mergers when Prices are Negotiated: Evidence from the Hospital Industry." *American Economic Review* 105 (1) (/01): 172-203. doi:10.1257/aer.20130223. https://www.aeaweb.org/articles?id=10.1257/aer.20130223.

Gray, C., A. E. Alpert, and N. Sood. 2023. "Disadvantaging Rivals: Vertical Integration in the Pharmaceutical Market ." *NBER Working Paper 31536* (Aug,). https://www.nber.org/papers/w31536.

GreenShield. 2022. *Green Shield Expands Pharmacy Focus with Acquisitions of NKS Health and the Health Depot*. https://www.greenshield.ca/en-ca/blog/post/-green-shield-expands-pharmacy-focus-with-acquisitions-of-nks-health-and-the-health-depot.

GreenShield. 2023. *GreenShield Administration Releases 2023 Drug Trends Report: The Introduction of New Therapies Increase Utilization Rates*.

Gruber, Jonathan and Robin McKnight. 2016. "Controlling Health Care Costs through Limited Network Insurance Plans: Evidence from Massachusetts State Employees." *American Economic Journal: Economic Policy* 8 (2) (/05): 219-250. doi:10.1257/pol.20140335. https://www.aeaweb.org/articles?id=10.1257/pol.20140335.

Haeder, Simon F., David L. Weimer, and Dana B. Mukamel. 2015. "California Hospital Networks are Narrower in Marketplace than in Commercial Plans, but Access and Quality are Similar." *Health Affairs (Project Hope)* 34 (5) (-05): 741-748. doi:10.1377/hlthaff.2014.1406.

Haeder, Simon F., David L. Weimer, and Dana B. Mukamel. 2016. "Secret Shoppers Find Access to Providers and Network Accuracy Lacking for those in Marketplace and Commercial Plans." *Health Affairs (Project Hope)* 35 (7) (-07-01): 1160-1166. doi:10.1377/hlthaff.2015.1554.

Ho, Kate and Robin S. Lee. 2019. "Equilibrium Provider Networks: Bargaining and Exclusion in Health Care Markets." *American Economic Review* 109 (2) (/02): 473-522. doi:10.1257/aer.20171288. https://www.aeaweb.org/articles?id=10.1257/aer.20171288.

Ho, Kate and Robin S. Lee. 2017. "Insurer Competition in Health Care Markets." *Econometrica* 85 (2): 379-417. doi:10.3982/ECTA13570. https://onlinelibrary.wiley.com/doi/abs/10.3982/ECTA13570.

Ho, Katherine. 2009. "Insurer-Provider Networks in the Medical Care Market." *The American Economic Review* 99 (1) (-03): 393-430. doi:10.1257/aer.99.1.393.

Hu, Ju-Chen, Janet R. Cummings, Xu Ji, and Adam S. Wilk. 2023. "Evaluating Medicaid Managed Care Network Adequacy Standards and Associations with Specialty Care Access for Children." *Health Affairs (Project Hope)* 42 (6) (-06): 759-769. doi:10.1377/hlthaff.2022.01439.

Hussey, Peter S., Eric C. Schneider, Robert S. Rudin, D. Steven Fox, Julie Lai, and Craig Evan Pollack. 2014. "Continuity and the Costs of Care for Chronic Disease." *JAMA Internal Medicine* 174 (5) (-05): 742-748. doi:10.1001/jamainternmed.2014.245.

Klick, Jonathan and Joshua Wright. 2015. "The Effect of any Willing Provider and Freedom of Choice Laws on Prescription Drug Expenditures." *American Law & Economics Review* (-01-01). https://scholarship.law.upenn.edu/faculty_scholarship/438.

Law, Michael R., Jillian Kratzer, and Irfan A. Dhalla. 2014. "The Increasing Inefficiency of Private Health Insurance in Canada." *CMAJ : Canadian Medical Association Journal* 186 (12) (September 2,): E470-E474. doi:10.1503/cmaj.130913. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4150733/.

Ludomirsky, Avital B., William L. Schpero, Jacob Wallace, Anthony Lollo, Susannah Bernheim, Joseph S. Ross, and Chima D. Ndumele. 2022. "In Medicaid Managed Care Networks, Care is Highly Concentrated among A Small Percentage of Physicians." *Health Affairs (Project Hope)* 41 (5) (-05): 760-768. doi:10.1377/hlthaff.2021.01747.

Mazurenko, Olena, Heather L. Taylor, and Nir Menachemi. 2022. "The Impact of Narrow and Tiered Networks on Costs, Access, Quality, and Patient Steering: A Systematic Review." *Medical Care Research and Review : MCRR* 79 (5) (October 1,): 607-617. doi:10.1177/10775587211055923. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9817087/.

Meiselbach, Mark K., Coleman Drake, Jane M. Zhu, Brynna Manibusan, Dylan Nagy, Mark J. Sorbero, Brendan Saloner, Bradley D. Stein, and Daniel Polsky. 2023. "State Policy and the Breadth of Buprenorphine-Prescriber Networks in Medicaid Managed Care." *Medical Care Research and Review: MCRR* 80 (4) (-08): 423-432. doi:10.1177/10775587231167514.

National Conference of State Legislatures. "Health Insurance Network Adequacy Requirements.", last modified June 1, accessed Mar 20, 2024, https://www.ncsl.org/health/health-insurance-network-adequacy-requirements.

Ndumele, Chima D., Michael S. Cohen, and Paul D. Cleary. 2017. "Association of State Access Standards with Accessibility to Specialists for Medicaid Managed Care Enrollees." *JAMA Internal Medicine* 177 (10) (-10-01): 1445-1451. doi:10.1001/jamainternmed.2017.3766.

Pierson, B. 2023. "Express Scripts Conspired to Overcharge Pharmacies, Class Action Says ." *Reuters*, Oct 20,. https://www.reuters.com/legal/litigation/express-scripts-conspired-overcharge-pharmacies-class-action-says-2023-10-20/.

Prager, Elena. 2020. "Healthcare Demand Under Simple Prices: Evidence from Tiered Hospital Networks." *American Economic Journal: Applied Economics* 12 (4) (/10): 196-223. doi:10.1257/app.20180422. https://www.aeaweb.org/articles?id=10.1257/app.20180422.

Scheffler, Richard M. and Daniel R. Arnold. 2017. "Insurer Market Power Lowers Prices in Numerous Concentrated Provider Markets." *Health Affairs* 36 (9) (September 1,): 1539-1546. doi:10.1377/hlthaff.2017.0552. https://www.healthaffairs.org/doi/full/10.1377/hlthaff.2017.0552.

Schwab, Stephen D. 2018. "You had Me at Hello: The Effects of Disruptions to the Patient-Physician Relationship."University of Pennsylvania. https://www.proquest.com/dissertations-theses/you-had-me-at-hello-effects-disruptions-patient/docview/2055979662/se-2?accountid=11752

https://catalyst.library.jhu.edu/openurl/01JHU_INST/01JHU_INST:JHU?&genre=dissertations&issn=&title=You+Had+Me+at+Hello%253A+The+Effects+of+Disruptions+to+the+Patient-Physician+Relationship&volume=&issue=&date=2018&atitle=&spage=&sid=ProQuest+Dissertations+%2526+Theses+Global&author=Schwab.

Shepard, Mark. 2022. "Hospital Network Competition and Adverse Selection: Evidence from the Massachusetts Health Insurance Exchange." *American Economic Review* 112 (2) (/02): 578-615. doi:10.1257/aer.20201453. https://www.aeaweb.org/articles?id=10.1257/aer.20201453.

Staiger, Becky. 2022. "Disruptions to the Patient-Provider Relationship and Patient Utilization and Outcomes: Evidence from Medicaid Managed Care." *Journal of Health Economics* 81 (-01): 102574. doi:10.1016/j.jhealeco.2021.102574.

Starc, Amanda and Ashley Swanson. 2021. "Preferred Pharmacy Networks and Drug Costs." *American Economic Journal: Economic Policy* 13 (3) (/08): 406-446. doi:10.1257/pol.20180489. https://www.aeaweb.org/articles?id=10.1257/pol.20180489.

Sun Life Financial Inc. "Sun Life Invests in Virtual Pharmacy Pillway to make it Easier for Canadians to Live Healthier.", last modified Nov 28, accessed Mar 12, 2024, https://www.newswire.ca/news-releases/sun-life-invests-in-virtual-pharmacy-pillway-to-make-it-easier-for-canadians-to-live-healthier-842239578.html.

Trish, Erin E. and Bradley J. Herring. 2015. "How do Health Insurer Market Concentration and Bargaining Power with Hospitals Affect Health Insurance Premiums?" *Journal of Health Economics* 42 (Jul): 104-114. doi:10.1016/j.jhealeco.2015.03.009. https://www.sciencedirect.com/science/article/pii/S0167629615000375.

Wallace, Jacob. 2023. "What does a Provider Network do? Evidence from Random Assignment in Medicaid Managed Care." *American Economic Journal: Economic Policy* 15 (1) (/02): 473-509. doi:10.1257/pol.20210162. https://www.aeaweb.org/articles?id=10.1257/pol.20210162.

Wang, Yang, Mark K. Meiselbach, Jianhui Xu, Ge Bai, and Gerard Anderson. 2024. "Do Insurers with Greater Market Power Negotiate Consistently Lower Prices for Hospital Care? Evidence from Hospital Price Transparency Data." *Medical Care Research and Review: MCRR* 81 (1) (-02): 78-84. doi:10.1177/10775587231193475.

Wilson, C. Ruth, James Rourke, Ivy F. Oandasan, and Carmela Bosco. 2020. "Progress made on Access to Rural Health Care in Canada." *Canadian Family Physician* 66 (1) (January 1,): 31-36. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7012120/.

Xu, Jianhui, Erin Trish, and Geoffrey Joyce. 2022. "Pharmacy Switching in Response to Preferred Pharmacy Networks in Medicare Part D." *Health Services Research* 57 (5) (October 1,): 1112-1120. doi:10.1111/1475-6773.13973. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9441277/.

Zhang, Jonathan, Yiwei Chen, Liran Einav, Jonathan Levin, and Jay Bhattacharya. 2021. "Consolidation of Primary Care Physicians and its Impact on Healthcare Utilization." *Health Economics* 30 (6) (-06): 1361-1373. doi:10.1002/hec.4257.

Zhu, Jane M., Christina J. Charlesworth, Daniel Polsky, and K. John McConnell. 2022. "Phantom Networks: Discrepancies between Reported and Realized Mental Health Care Access in Oregon Medicaid." *Health Affairs (Project Hope)* 41 (7) (-07): 1013-1022. doi:10.1377/hlthaff.2022.00052.

ADDENDUM A

CURRICULUM VITAE

Mark K. Meiselbach

PROFESSIONAL DATA

Business Address, Phone, & E-mail

Johns Hopkins Bloomberg School of Public Health

Johns Hopkins University

624 N. Broadway

Cell phone: (203) 505-2071

Email: mark.meiselbach@jhu.edu

Pronouns: He/him/his

EDUCATION AND TRAINING

PhD/2022	Johns Hopkins Bloomberg School of Public Health, Health Policy and Management
BS/2015	Tufts University, Quantitative Economics and Biology

PROFESSIONAL EXPERIENCE

Johns Hopkins University

Assistant Professor, Health Policy and Management, Johns Hopkins Bloomberg School of Public Health, 2022 – present

Other Non-JHU Professional Experience

Senior Analyst, Analysis Group, Inc., 2015-2018

PROFESSIONAL ACTIVITIES

Member	AcademyHealth, American Economic Association, American Society of Health Economists, Association for Public Policy Analysis and Management, International Health Economics Association

EDITORIAL AND OTHER PEER REVIEW ACTIVITIES

Peer Reviewer	*American Journal of Managed Care, Applied Health Economics and Health Policy*, *Drug and Alcohol Dependence, Health Affairs, Inquiry, Health Services Research, JAMA, Journal of Policy Analysis and Management, Network Open, Medical Care Research and Review, Milbank Quarterly*
Abstract Reviewer	*AcademyHealth Annual Research Meeting, American Society of Health Economists Annual Conference, NRSA Trainees Conference*

HONORS AND AWARDS

Best abstract in Health, Labor Markets, and the Economy, 2023 American Society of Health Economists Conference, 2023

Excellence in Teaching for Intermediate Health Economics, Bloomberg School of Public Health, 2023

Psychiatric Services Editor's Choice, Decision Science and Health Economics: Applications to Mental Health Services, 2022

Best Abstract of the Health Economics Interest Group, 2022 AcademyHealth Annual Research Meeting, 2022

Alan Gittelsohn Doctoral Scholarship for independent research that combines health policy and statistics, Johns Hopkins University, 2021

Predoctoral National Research Service Award Fellowship (T32), Agency for Healthcare Research and Quality, 2018-2022

Bronze Medal in Best Poster Competition, AMCP Managed Care & Specialty Pharmacy Annual Meeting, 2017

The Linda Datcher Loury Award in Economics for most outstanding thesis, Tufts University, 2015

The Charles G. Bludhorn Prize in Economics for outstanding scholastic ability, Tufts University, 2015

The Donald A. Cowdery Memorial Scholarship for leadership and high principle, Tufts University, 2015

PUBLICATIONS

Peer-Reviewed Journal Articles

** indicates a mentored student or post-doctoral fellow*

1. Marr J*, Polsky D, **Meiselbach MK**. Medicaid Managed Care Insurers with Greater Commercial Insurance Market Power Have Broader Physician Networks. Medical Care Research and Review. In press.
2. **Meiselbach MK**, Larweh ML*, Marr J*, Xu J. Overlap in Carriers and Networks in Medicaid and the Individual Marketplace: Implications for the Unwinding. Health Affairs. In press.
3. **Meiselbach MK**, Eisenberg MD. Financial Risk and the Decision of Small Employers to Self-Fund Health Insurance: Evidence from Stop Loss Regulation in California. American Journal of Health Economics. In press.
4. **Meiselbach MK**, Ettman CK, Shen K, Castrucci BC, Galea S. Unmet Need for Mental Health Care is Common Across Insurance Markets in the US. Health Affairs Scholar, March 2024. https://academic.oup.com/healthaffairsscholar/article/2/3/qxae032/7624289
5. Eddelbuettel JCP, Kennedy-Hendricks A, **Meiselbach MK**, Stuart EA, Huskamp H, Busch A, Hollander MA, Schilling C, Barry CL, Eisenberg MD. Changes in Healthcare Spending Attributable to High Deductible Health Plan Offer Among Enrollees with Comorbid Cardiovascular Disease and Substance Use Disorder. Journal of General Internal Medicine, March 2024. https://pubmed.ncbi.nlm.nih.gov/38459412/
6. Drake C, Nagy D, **Meiselbach MK**, Zhu JM, Saloner B, Stein BD, Polsky D. Racial and Ethnic Disparities in Geographic Access to Buprenorphine. Journal of Addiction Medicine, February 2024. https://journals.lww.com/journaladdictionmedicine/fulltext/9900/racial_and_ethnic_disparities_in_geographic.286.aspx
7. Cliff B, Eddelbuettel JCP, **Meiselbach MK**, Eisenberg MD. Deductible Imputation in Administrative Medical Claims Datasets. Health Services Research, January 2024. https://onlinelibrary.wiley.com/doi/10.1111/1475-6773.14278
8. **Meiselbach MK,** Marr J*, Wang Y. Trends in Enrollment in Self-Funded Employer-Sponsored Insurance. Health Affairs, January 2024. https://www.healthaffairs.org/doi/10.1377/hlthaff.2023.00690
9. Gibbons JN, Cram P, **Meiselbach MK**, Anderson G, Bai G. Comparison of Social Determinants of Health in Medicaid vs. Commercial Health Plans. Health Affairs Scholar, December 2023. https://academic.oup.com/healthaffairsscholar/article/1/6/qxad074/7478038
10. Marr J*, Wang Y, Xu J, Bai G, Anderson G, **Meiselbach MK**. Hospital Prices in Medicaid Managed Care. JAMA Network Open, November 2023. https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2812254
11. **Meiselbach MK**, Abraham J. Do Minimum Wage Laws affect Employer-Sponsored Insurance Provision? Journal of Health Economics, December 2023. https://doi.org/10.1016/j.jhealeco.2023.102825
12. Marr J*, **Meiselbach** MK, Polsky D. Growth in Medicare Advantage Participation among Commercial Insurers. American Journal of Managed Care, October 2023. https://www.ajmc.com/view/trends-in-medicare-advantage-participation-among-commercial-insurers
13. **Meiselbach MK**, Huskamp H, Eddelbuettel JCP, Kennedy-Hendricks A, Schilling C, Busch A, Stuart EA, Hollander MA, Barry CL, Eisenberg MD. Choice of High-

Deductible Health Plans among Enrollees with a Substance Use Disorder. Journal of Substance Use and Addiction Treatment, September 2023. https://www.jsatjournal.com/article/S2949-8759(23)00203-5/fulltext

14. Wang Y, **Meiselbach MK**, Xu J, Bai G, Anderson G. Do Insurers with Greater Market Power Negotiate Consistently Lower Prices for Hospital Care? Evidence from Hospital Price Transparency Data. Medical Care Research and Review. Medical Care Research and Review, August 2023. https://journals.sagepub.com/eprint/CMDYSGB2T4KK7UNPDF9P/full
15. **Meiselbach MK,** Wang Y, Xu J, Bai G, Anderson G Hospital Prices For Commercial Plans Are Twice Those For Medicare Advantage Plans When Negotiated By The Same Insurer. Health Affairs, August 2023. https://www.healthaffairs.org/doi/10.1377/hlthaff.2023.00039
16. Zhu JM, **Meiselbach MK**, Drake C, Polsky D. Psychiatrist Networks In Medicare Advantage Plans Are Substantially Narrower Than In Medicaid And ACA Markets. Health Affairs, July 2023. https://www.healthaffairs.org/doi/full/10.1377/hlthaff.2022.01547
17. Eddelbuettel JCP, Barry CL, Kennedy-Hendricks A, Busch A, Hollander MA, Huskamp H, **Meiselbach MK**, Schilling C, Stuart EA, Eisenberg MD. High Deductible Health Plans and Non-Fatal Opioid Overdose. Medical Care, July 2023. https://pubmed.ncbi.nlm.nih.gov/37449857/
18. Hollander MA, Kennedy-Hendricks A, Schilling C, **Meiselbach MK**, Stuart EA, Huskamp H, Busch A, Eddelbuettel JCP, Barry CL, Eisenberg MD. Do High-Deductible Health Plans Incentivize Changing the Timing of Substance Use Disorder Treatment? Medical Care Research and Review, June 2023. 10.1177/10775587231180667
19. Kennedy-Hendricks A, Eddelbuettel JCP, Bicket, MC, **Meiselbach MK**, Hollander MA, Busch A, Huskamp H, Stuart EA, Barry CL, Eisenberg MD. Impact of high deductible health plans on U.S. adults with chronic pain. American Journal of Preventive Medicine, May 2023. https://www.ajpmonline.org/article/S0749-3797(23)00227-1/fulltext
20. **Meiselbach MK**, Drake C, Zhu JM, Manibusan B, Nagy D, Sorbero MJ, Saloner B, Stein BD, Polsky D. State Policy and the Breadth of Buprenorphine-Prescriber Networks in Medicaid Managed Care. Medical Care Research and Review, April 2023. https://journals.sagepub.com/doi/10.1177/10775587231167514
21. Wang Y, **Meiselbach MK**, Cox JS, Anderson G, Bai G. The Relationships among Cash Prices, Negotiated Rates, and Chargemaster Prices for Shoppable Hospital Services. Health Affairs, April 2023. https://www.healthaffairs.org/doi/full/10.1377/hlthaff.2022.00977
22. Busch A, Kennedy-Hendricks A, Schilling C, Stuart EA, Hollander MA, **Meiselbach MK**, Barry CL, Huskamp H, Eisenberg MD. Measurement Approaches to Estimating Methadone Continuity in Opioid Use Disorder Care. Medical Care, March 2023. https://pubmed.ncbi.nlm.nih.gov/36917776/
23. Slade EP, Wu R*, **Meiselbach MK**, Polsky D. Psychiatric and Non-Psychiatric Provider Network Breadth in Dual-Eligible Special Needs Plans. Psychiatric Services, February 2023. https://ps.psychiatryonline.org/doi/full/10.1176/appi.ps.20220239

24. **Meiselbach MK**, Kennedy-Hendricks A, Schilling C, Busch A, Huskamp H, Stuart EA, Hollander MA, Barry CL, Eisenberg MD. High Deductible Health Plans and Spending among Families with a Substance Use Disorder. Drug and Alcohol Dependence, December 2022. https://www.sciencedirect.com/science/article/pii/S0376871622004185
25. Eisenberg MD, Kennedy-Hendricks A, Schilling C, Busch A, Huskamp H, Stuart EA, **Meiselbach MK**, Barry CL. The Impact of High-Deductible Health Plans on Service Use and Spending for Substance Use Disorders. American Journal of Managed Care, October 2022. https://www.ajmc.com/view/the-impact-of-hdhps-on-service-use-and-spending-for-substance-use-disorders
26. **Meiselbach MK**, Drake C, Saloner B, Zhu JM, Stein BD, Polsky D. Medicaid Managed Care: Access To Primary Care Providers Who Prescribe Buprenorphine. Health Affairs, June 2022. https://www.healthaffairs.org/doi/10.1377/hlthaff.2021.01719
27. Sen A, Singh Y, **Meiselbach MK**, Eisenberg MD, Anderson GF. Participation, Pricing, and Enrollment in a Health Insurance "Public Option": Evidence from Washington State's Cascade Care Program. The Milbank Quarterly, November 2021. https://onlinelibrary.wiley.com/doi/10.1111/1468-0009.12546
28. Schilling C, Kennedy-Hendricks A, Eisenberg MD, Busch A, Stuart EA, Huskamp H, **Meiselbach MK**, Barry CL. The Effects of High Deductible Health Plans on Enrollees with Mental Health Conditions with and without Co-Occurring Substance Use Disorder. Psychiatric Services, September 2021. https://ps.psychiatryonline.org/doi/10.1176/appi.ps.202000914
29. Kennedy-Hendricks A, Schilling C, Busch A, Stuart EA, Huskamp H, **Meiselbach MK**, Barry CL, Eisenberg MD. Difference-in-differences analysis evaluating high deductible health plan impact on continuity of buprenorphine treatment among enrollees with opioid use disorder. Journal of General Internal Medicine, August 2021. https://link.springer.com/article/10.1007/s11606-021-07094-9
30. Eisenberg MD, **Meiselbach MK**, Bai G, Sen A, Anderson GF. Most Large Self-insured Employers Lack Sufficient Market Power to Effectively Negotiate Hospital Prices. American Journal of Managed Care, July 2021. https://www.ajmc.com/view/large-self-insured-employers-lack-power-to-effectively-negotiate-hospital-prices
31. Sen A, **Meiselbach MK**, Anderson K, Polsky D. Network Breadth and Quality in the Medicare Advantage Program. JAMA Health Forum, July 2021. https://jamanetwork.com/journals/jama-health-forum/fullarticle/2782623
32. **Meiselbach MK**, Eisenberg MD, Bai G, Sen A, Anderson GF. Labor Market Concentration and Worker Contributions to Health Insurance Premiums. Medical Care Research and Review, May 2021. https://pubmed.ncbi.nlm.nih.gov/33957807/
33. Sen A, **Meiselbach MK**, Wang Y, Eisenberg M, Anderson GF. Frequency and Costs of Out-of-Network Bills for Outpatient Laboratory Services Among Privately Insured Patients. Journal of the American Medical Association Internal Medicine, April 2021. https://pubmed.ncbi.nlm.nih.gov/33900358/
34. **Meiselbach MK**, Bai G, Anderson GF. Charges of COVID-19 Diagnostic Testing and Antibody Testing Across Facility Types and States. Journal of General Internal Medicine. September 2020. https://link.springer.com/article/10.1007/s11606-020-06198-y

35. McInerney M, **Meiselbach MK**. The Impact of Recent Health Insurance Expansions on Weight-Related Outcomes: Distributional Effects and the Role of Private Insurance. Economics and Human Biology, 38. August 2020. https://pubmed.ncbi.nlm.nih.gov/32622182/
36. Deschamps MM, Theodore H, Christophe MI, Souroutzidis A, **Meiselbach MK**, Bell T, Perodin C, Anglade S, Devieux J, Cremieux P, Pape JW. Characteristics and psychological consequences of sexual assault in Haiti. Violence and Gender, 6(2). June 2019. https://www.liebertpub.com/doi/abs/10.1089/vio.2018.0005
37. Sunkureddi P, Latremouille-Viau D, **Meiselbach MK**, Xie J, Hur P, Joshi R. Characteristics of patients with psoriatic arthritis receiving secukinumab and reasons for initiation: a US retrospective medical chart review. Rheumatology and Therapy, 9(5):1-12. January 2019. https://link.springer.com/article/10.1007/s40744-018-0137-z
38. Joshi R, Latremouille-Viau D, **Meiselbach MK**, Xie J, Park Y, Sunkureddi P. Characterization of Patients with Ankylosing Spondylitis Receiving Secukinumab and Reasons for Initiating Treatment—A US Physician Survey and Retrospective Medical Chart Review. Drugs – Real World Outcomes, 17(5):1-9. January 2019. https://link.springer.com/article/10.1007/s40801-018-0146-9
39. Song J, Swallow E, Peeples M, **Meiselbach MK**, Signorovitch J, Said Q, Kohrman M, Korf B, Krueger D, Wong M, Sparagana S. Epilepsy treatment patterns among patients with tuberous sclerosis complex. Journal of the Neurological Sciences, 391:104-108. August 2018. https://www.ncbi.nlm.nih.gov/pubmed/30103955
40. Richterman A, Cheung HC, **Meiselbach MK**, Jerome G, Ternier R, Ivers LC. Risk Factors for Self-Reported Cholera Within HIV-Affected Households in Rural Haiti. Open Forum Infectious Diseases, 5(6): ofy127. May 2018. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6007289/
41. Fowler NR, Campbell NL, Pohl GM, Munsie LM, Kirson NY, Desai U, Trieschman EJ, **Meiselbach MK**, Andrews JS, Boustani M. Impact of Medicare Annual Wellness Visit on Detection of Cognitive Impairment: A Cohort Study. Journal of the American Geriatrics Society, 66(5):969-975. April 2018. https://www.ncbi.nlm.nih.gov/pubmed/29608782
42. Dell'Agnelo G, Desai U, Kirson NY, Wen J, **Meiselbach MK**, Reed CC, Belger M, Lenox-Smith A, Martinez C, Rasmussen J. Reliability of Coded Data to Identify Earliest Indications of Cognitive Decline, Cognitive Evaluation, and Alzheimer's disease Diagnosis: A Pilot Study in England. BMJ Open, 8(3): e019684. March 2018. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5875601/
43. Vogelzang NJ, Pal SK, Ghate SR, Li N, Swallow E, Peeples M, Zichlin ML, **Meiselbach MK**, Perez JR, Agarwal N. Real-world economic outcomes during time on treatment among patients who initiated sunitinib or pazopanib as first targeted therapy for advanced renal cell carcinoma: A retrospective analysis of Medicare claims data. Accepted for publication to the Journal of Managed Care & Specialty Pharmacy, 24(6):525-533. December 2017. https://www.jmcp.org/doi/10.18553/jmcp.2018.24.6.525
44. Vogelzang NJ, Pal SK, Ghate SR, Li N, Swallow E, Peeples M, Zichlin ML, **Meiselbach MK**, Perez JR, Agarwal N. Clinical and economic outcomes in elderly advanced renal cell carcinoma patients initiating pazopanib or sunitinib: A retrospective Medicare claims

analysis. Advances in Therapy, 11(3-4):112-117. November 2017. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5702370/

Under Review

1. **Meiselbach MK**, Eisenberg MD. Labor Market Concentration and Employee Health Benefits. *Revisions requested at the American Journal of Health Economics.*
2. Markell J*, **Meiselbach MK**. The Impact of Medicaid Expansion on State Expenditures During the COVID-19 Era. *Revisions requested at Health Services Research.*
3. **Meiselbach MK**, Eisenberg M. Banding Together to Lower the Cost of Health Care? An Empirical study of the Peak Health Alliance in Colorado.
4. Marr J*, Polsky D, **Meiselbach MK**. Price-shifting? Spillovers of Medicare Advantage Network Inclusion on Hospital Prices Paid by Commercial Insurers.
5. Wang Y, Marr J*, Xu J, **Meiselbach MK**. Commercial Insurers' Market Power and Hospital Prices in Medicaid Managed Care.

Other Publications

1. "Hospital Pricing Information Consistent Between Transparency-In-Coverage Data And Other Commercial Data Sources" with Yang Wang, Gerard Anderson, and Ge Bai. Health Affairs Forefront. 2023.
2. "Insurer Price Transparency Rule: What Has Been Disclosed?" with Ge Bai, Yang Wang, Jianhui Xu, Yuchen Wang, and Gerard Anderson. Health Affairs Forefront. 2023.
3. "Why Are Some Value-Based Programs Successful? Suggestions From One Study" with Gerard Anderson. JAMA Network Open, Invited Commentary. 2023.
4. "Medicare's Mental Health Care Problem" with Grace McCormack and Josephine Rohrer. Health Affairs Forefront, April 2024.

PRACTICE ACTIVITIES

Select Media Coverage of Research Works

1. Modern Healthcare. Why Medicare Advantage carriers are designing plans for minority groups. October 10, 2023. https://www.modernhealthcare.com/insurance/medicare-advantage-2024-scan-health-alignment-health
2. Fierce Healthcare. Hospitals often charge commercial plans double or more than MA for same services, study finds. August 9, 2023. https://www.fiercehealthcare.com/payers/hospitals-often-charge-commercial-plans-double-or-more-ma-same-services-study-finds
3. Axios. Why insurers are paying double for the same procedure in the same hospital. August 7, 2023. https://www.axios.com/2023/08/07/hospitals-insurers-charged-double-service
4. Becker's Hospital Review. Commercial payers can pay triple for the same procedure in the same hospital. August 8, 2023. https://www.beckershospitalreview.com/finance/commercial-payers-can-pay-triple-for-the-same-procedures-in-the-same-hospital.html

5. Leader's Edge. Can Employers Negotiate Hospital Costs? July 17, 2023. https://www.leadersedge.com/healthcare/can-employers-negotiate-hospital-costs
6. The New York Times. Medicare Advantage Plans Offer Few Psychiatrists. July 5, 2023. https://www.nytimes.com/2023/07/05/health/medicare-mental-health-shortage.html
7. Tradeoffs podcast. What Gas Stoves, Minimum Wage Laws and the Military Teach Us About Health Policy. June 8, 2023. https://www.npr.org/podcasts/1102295354/tradeoffs
8. Bloomberg Law. Hospitals Seen Falling Short in Disclosing Negotiated Prices. April 4, 2023. https://news.bloomberglaw.com/health-law-and-business/hospitals-seen-falling-short-in-disclosing-negotiated-prices
9. National Public Radio. The 1st public option health plan in the U.S. struggles to gain traction. February 21, 2022. https://www.npr.org/sections/health-shots/2022/02/21/1081913184/the-first-public-option-health-plan-in-the-u-s-struggles-to-gain-traction
10. USA Today. 'Hog wild': Insurers, consumers decry coronavirus test costs as labs charge up to $14,750. September 20, 2021. https://www.usatoday.com/story/news/health/2021/09/20/insurers-must-pay-full-cost-coronavirus-tests-under/8367397002/
11. Healthcare Dive. Large self-insured employers lack power in hospital price negotiations. July 16, 2021. https://www.healthcaredive.com/news/large-self-insured-employers-lack-power-in-hospital-price-negotiations/603390/
12. Bloomberg Government. Health Care Briefing. September 18, 2020. https://about.bgov.com/news/health-care-briefing-trumps-vaccine-promise-risks-letdown/
13. Modern Healthcare. COVID-19 test charges range from one cent to $14,750, study finds. September 15, 2020. https://www.modernhealthcare.com/finance/covid-19-test-charges-range-one-cent-14750-study-finds/
14. Houston Chronicle. Study: COVID-19 test costs range from one cent to $14,750. September 15, 2020. https://www.houstonchronicle.com/business/bizfeed/article/Study-COVID-19-test-costs-range-from-one-cent-to-15571393.php

Invited Talks with Policymakers and Practitioners

1. Presentation to Congressional Budget Office on "Price Transparency Research", Washington DC. June 2023.
2. Presentation to the Colorado Department of Regulatory Agencies Division of Insurance on "Collective Bargaining and Premiums in Private Insurance: An Evaluation of the Peak Health Alliance in Summit County, Colorado." July 2022 and March 2023. Virtual.
3. Presentation to California Health Care Coalition on "Employer Market Power and Hospital Prices." April 2021. Virtual.
4. Presentation to staff of US House Committee on Ways and Means Committee on "Lowering Commercial Prices Project" with Sen A, Bai G, Anderson G, and Eisenberg MD. November 2020. Virtual.

Consultations or Collaborations with Policymakers, Community Groups, and Other Stakeholders

1. Co-Chair of the Maryland Health Benefit Exchange Standing Advisory Committee, 2023-present

PART II

TEACHING

Academic Advisees

Matthew Lavallee, PhD, 2023-present, PhD Advisor

Maisie Lewis, MPH/MBA, 2022-2023, HBHI Fellowship Mentor

Joseph Hydell, MPH/MBA, 2022-2023, MPH Capstone Advisor

Henry Maurice Larm Larweh, 2023, Diversity Summer Internship Program Mentor

Emmanuel Animashaun, 2023-2024, HBHI Fellowship Mentor

Preliminary Departmental Oral Exam Participation

Jenni Seale Reiff, Health Policy and Management, September 29th, 2022

Andrew Jopson, Health Policy and Management, February 13th, 2023

Jeffrey Marr, Health Policy and Management, November 8th, 2023

Jenny Markell, Health Policy and Management, April 4th, 2024

Dissertation Defense Participation

Sneha Lamba, Population and Family, April 11th, 2023

Yevgeniy Feyman, Boston University, September 18th, 2023

Instructor

Intermediate Health Economics, Johns Hopkins Bloomberg School of Public Health, 2023-present

Guest Lecture

"An Economic Framework for Health Insurance," guest lecture in Foundations in Health Policy I, 2023

"Economics of Moral Hazard," guest lecture in Advanced Health Economics at Johns Hopkins Bloomberg School of Public Health, 2023-2024

"Competition in Health Care Markets," guest lecture in Intermediate Health Economics at Johns Hopkins Bloomberg School of Public Health, 2021-2022

"Insurance Markets and Policy," guest lecture in Health Economics at Johns Hopkins Bloomberg School of Public Health, 2020 and 2021

RESEARCH GRANT PARTICIPATON

Agency: Hopkins Business of Health Initiative
Grant title: Leveraging Discontinuities in Network Adequacy Criteria to Evaluate the Effects of Provider Networks
PI: Mark Meiselbach
Dates: 01/01/2024-12/31/2024
Directs: $20,000

Agency: Arnold Ventures
Grant title: Price Transparency and Community Benefits
PI: Gerard Anderson (Co-I: Mark Meiselbach)
Dates: 12/1/2023-11/30/2025

Agency: Hopkins Business of Health Initiative
Grant title: Plans, Providers, and Patients, Oh My! Differences in Use of Life-Saving Treatment for Opioid Use Disorder between Commercial Insurance and Medicaid
PI: Mark Meiselbach (Multi-PI: Karen Shen, PhD)
Dates: 01/01/2023-12/31/2023
Directs: $25,000

Agency: Health Care Cost Institute and Bill & Melinda Gates Foundation
Grant title: Drug Utilization during the COVID-19 Pandemic: Differences by Drug Class and Gender
PI: Mark Meiselbach (Multi-PI: Ge Bai, PhD, CPA)
Dates: 08/01/2021-12/31/2022
Directs: $10,000

Agency: Arnold Ventures
Grant title: Lowering Health Care Prices in the Private Sector
PI: Gerard Anderson (Co-I: Mark Meiselbach)
Dates: 01/22/2021-12/30/2023
Directs: $982,613

Agency: NIDA R01DA044201
Grant Title: Consumer Directed Health Plans and Substance Use Disorder Treatment
PI: Matthew Eisenberg (multi-PI: Colleen Barry)
Dates: 9/30/2018-6/30/2022 (NCE through 2023)
Directs: $1,839,268

SERVICE

School
Co-organizer, Johns Hopkins Health Economics Seminar, 2022-present.
Committee member, PhD Admissions committee, 2023-present

University
Health Plan Request for Proposal and Strategy Workgroup, Johns Hopkins University, 2022.

PRESENTATIONS

Scientific Meetings
Spillover Effects of Medicare Advantage Participation on Commercial Hospital Prices: Evidence from Price Transparency Data. November 2023. Oral presentation. Atlanta, Georgia.

Minimum Wage Laws and the Design and Provision of Employer-Sponsored Health Insurance. Annual Meeting of the American Risk and Insurance Association. August 2023. Oral presentation. Washington, DC.

Differences in Prices Negotiated By the Same Insurer across Private- and Public-Sponsored Markets: Evidence from Hospital Price Transparency Data. 2023 International Health Economics Association World Congress. July 2023. Oral presentation. Cape Town, South Africa.

Stop Loss Regulation and the Prevalence of Self-Funded Insurance in Employer-Sponsored Insurance Markets. 2023 American Society of Health Economists Conference. June 2023. Oral presentation. St. Louis, Missouri.

Minimum Wage Laws and the Design and Provision of Employer-Sponsored Health Insurance. 2023 American Society of Health Economists Conference. June 2023. Oral presentation. St. Louis, Missouri.

Do Insurers with Greater Market Power Negotiate Consistently Lower Prices for Hospital Care? Evidence from Hospital Price Transparency Data. 2023 American Society of Health Economists Conference. June 2023. Oral presentation. St. Louis, Missouri.

Do Minimum Wage Laws affect Employer-Sponsored Insurance Provision? American Health Economics Conference. April 2023. Oral presentation. Philadelphia, Pennsylvania.

The Impact of State Policy on the Breadth of Buprenorphine-Prescriber Networks in Medicaid Managed Care. Sixteenth Workshop on Costs and Assessment in Psychiatry. March 2023. Oral presentation. Venice, Italy.

Labor Market Concentration and Employee Health Benefits. 2022 American Society of Health Economists Conference. June 2022. Oral presentation. Austin, Texas.

Collective Bargaining and Premiums in Private Insurance: An Evaluation of the Peak Health Alliance in Colorado. 2022 American Society of Health Economists Conference. June 2022. Oral presentation. Austin, Texas.

Access to Buprenorphine-Prescribing Primary Care Physicians in Medicaid Managed Care. 2022 NRSA Trainees Conference. May 2022. Oral presentation. Virtual.

Collective Bargaining and Premiums in Private Insurance: An Evaluation of the Peak Health Alliance in Summit County, Colorado. AcademyHealth 2022 Annual Research Meeting Health Economics Interest Group. May 2022. Oral presentation. Washington, DC.

The Impact of High Deductible Health Plans on Health Care Spending in Families with a Member Who Has a Substance Use Disorder. 2021 American Society of Health Economists Conference. June 2021. Oral presentation. Virtual.

Network Breadth and Quality Ratings in the Medicare Advantage Program. 2021 American Society of Health Economists Conference. June 2021. Oral presentation. Virtual.

The Impact of High Deductible Health Plans on Health Care Spending in Families with a Member Who Has a Substance Use Disorder. AcademyHealth 2021 Annual Research Meeting. June 2021. Poster presentation. Virtual.

Network Breadth and Quality Ratings in the Medicare Advantage Program. AcademyHealth 2021 Annual Research Meeting. June 2021. Poster presentation. Virtual.

The Impact of High Deductible Health Plans on Health Care Spending in Families with a Member Who Has a Substance Use Disorder. 2021 NRSA Trainees Conference. June 2021. Oral presentation. Virtual.

Network Breadth and Quality Ratings in the Medicare Advantage Program. 2021 NRSA Trainees Conference. June 2021. Poster presentation. Virtual.

The Impact of High Deductible Health Plans on Health Care Spending in Families with a Member Who Has a Substance Use Disorder. 2021 Association for Public Policy Analysis & Management Student Seminar. May 2021. Oral presentation. Virtual.

The Association between Labor Market Concentration and Hospital Pricing. Association for Public Policy Analysis & Management Fall Conference. November 2020. Oral presentation. Virtual.

The Association between Labor Market Concentration and Employer Contributions to Health Plan Premiums. 2020 American Society of Health Economists Conference. June 2020. Oral presentation. Canceled due to COVID-19.

The Frequency, Geographic Distribution, and Patient Burden of out-of-Network Laboratory Bills. AcademyHealth 2020 Annual Research Meeting. June 2020. Oral presentation. Canceled due to COVID-19.

The Frequency, Geographic Distribution, and Patient Burden of out-of-Network Laboratory Bills. AcademyHealth 2020 Annual Research Meeting. Poster presentation. Virtual.

Labor Market Concentration and Employer Contributions to Health Plan Premiums. AcademyHealth 2020 Annual Research Meeting. Poster presentation. Virtual.

Characteristics and psychological consequences of sexual assault in Haiti: a descriptive analysis of retrospective data from a sexual assault clinic in Port-au-Prince. Congress on Women's Health. April 2017. Poster presentation. Washington, DC.

The impact of Massachusetts healthcare reform on weight and exercise-related health behaviors among low-income individuals. American Society of Health Economists annual conference. June 2016. Poster presentation. Philadelphia, Pennsylvania.

Invited Seminars

Meiselbach, MK. January 2023. Minimum Wage Laws and the Design and Provision of Employer-Sponsored Health Insurance. University of Washington, PHEnOM seminar series. Virtual.

Meiselbach, MK. October 2022. Labor Market Concentration and Employee Health Benefits. Agency for Healthcare Research and Quality. Rockville, Maryland.

ADDITIONAL INFORMATION

Personal statement

My research focuses on privately managed insurance markets, including employer-sponsored insurance, Medicaid managed care, and Medicare Advantage. I study, first, what policy and market factors influence what private insurers and employers choose to offer in these markets, and second, how those choices influence the financial and physical well-being of enrollees. It is particularly important to me to understand how these choices affect enrollees with the greatest need for treatment, especially when access is scarce.

Keywords

Health Policy, Health Economics, Employer-Sponsored Health Insurance, Labor Economics, Managed Care, Mental Health, Substance Use Disorder