

MAY 6, 2020

# HPC POLICY BRIEF

## The Nurse Practitioner Workforce and Its Role in the Massachusetts Health Care Delivery System

Nurse practitioners have been identified by federal and state policy makers as **critical** to the ability of the **health care** delivery system to care for patients in the **COVID-19 pandemic**.

### INTRODUCTION

Nurse practitioners (NPs) are registered nurses who have completed additional education (masters or doctoral level) and advanced clinical training to be able to serve various key roles in the health care delivery system including that of primary care provider (PCP). They comprise a rapidly growing workforce, having expanded from 90,000 in 2010 to 190,000 nationally (including more than 6,000 in Massachusetts) by 2017.<sup>1</sup> Projections suggest that while there was roughly one NP for every six physicians in 2016, that ratio will rise to more than one NP for every three physicians by 2030 – and even higher than that in primary care.<sup>2</sup> Most NPs receive broad training consistent with primary care practice, and approximately 50% ultimately practice as PCPs.<sup>3</sup> (Other common specialties include general acute care/hospitalist, cardiology, and surgical specialties).

In Massachusetts, NPs are the largest of five categories of recognized advanced practice registered nurses (APRNs) which also include certified nurse-midwives, certified registered nurse anesthetists, psychiatric clinical nurse specialists,<sup>i</sup> and clinical nurse specialists. Scope of practice (SOP) laws are state-specific laws governing certain health care provider types, including APRNs, that define legal boundaries and operational practice restrictions to balance concerns of safety, access, costs, and competition. Under Massachusetts state law, an NP can be recognized and deliver care as a PCP, and carriers must allow patients to choose an NP as their PCP.<sup>4</sup> Notwithstanding, Massachusetts has among the most restrictive SOP laws in the country – although they have been temporarily suspended due to the novel Coronavirus (COVID-19) pandemic<sup>5</sup> (see call-out: **Role of APRNs in National COVID-19 Response**).

### ROLE OF APRNs IN NATIONAL COVID-19 RESPONSE

APRNs have been identified as critical to the ability of the health care delivery system to care for patients in the COVID-19 pandemic. Both federal and state policy makers have taken swift action to remove SOP limitations and other barriers to expand caregiver capacity in the inpatient, outpatient, and post-acute settings, as well as through telehealth.

On March 24, 2020, U.S. Health and Human Services Secretary Alex Azar urged states to lift SOP restrictions for APRNs.<sup>6</sup> The Centers for Medicare and Medicaid Services (CMS) includes NPs as qualified providers in its expanded telehealth waiver and also relaxed supervision requirements for certified registered nurse anesthetists to expand capacity to provide ventilation and anesthesiology services.<sup>7</sup> Additionally, the federal Coronavirus Aid, Relief, and Economic Security Act (H.R. 748) ("CARES Act") permanently authorizes NPs (and physicians assistants) to order home health care services for Medicare patients in a manner consistent with state law.

In Massachusetts, Department of Public Health Commissioner Monica Bharel issued an Order on March 26, 2020, authorizing NPs with two years of supervised practice or practice in another jurisdiction to prescribe without supervision during the state of emergency, and relaxing written collaboration agreement requirements.<sup>8</sup> This action aligns the Commonwealth, at least temporarily, with other New England states. Several other states, such as New Jersey, New York, Kentucky, Louisiana, and Wisconsin, have similarly acted to temporarily suspend or waive some or all APRN practice requirements.<sup>9</sup>

<sup>i</sup> Most states only authorize four categories of APRNs, and do not have a special category for Psychiatric Clinical Nurse Specialists (PCNS). For more information about Massachusetts APRNs: <https://www.mass.gov/service-details/learn-about-advanced-practice-registered-nurses-aprn>

A growing body of research has found **adverse effects** (and no positive effects) of **SOP restrictions**

Approximately **6,200** NPs were professionally **active in MA** as of 2019

Massachusetts is one of 22 states, and the only New England state, that requires NPs to maintain a collaborative practice agreement with a supervising physician in order to practice and prescribe medications (agreements for which physicians often charge fees and for which there may be limited oversight).

A growing body of research has found adverse effects (and no positive effects) of SOP restrictions, generally concluding that they are not evidence-based and limit the capacity of the health care system to fully respond to the needs of the population it serves.<sup>10</sup> For example, recent studies have found that when NPs are granted full practice authority, access to primary care increases (as measured by respondents stating they have a usual source of care, had a checkup in the past year, and had an ability to get appointments when needed), emergency department visits and avoidable hospitalizations decrease, and NPs are more likely to work in underserved areas and in primary care settings.<sup>11, 12, 13, 14, 15</sup>

In addition to being high quality - one study of Medicare patients managed by NPs found fewer preventable hospitalizations, readmissions, and ED visits compared to patients managed by physicians - care provided by NPs is also less costly.<sup>16</sup> Specifically, Medicare pays NPs 85% of what it pays physicians,

and private insurers typically also pay less, though the amount varies. An exception, however, is a billing scenario termed “incident to” billing, in which certain patient visits with NPs or physician assistants (PAs) are billed by (“incident to”) a supervising physician at the physician’s payment rate (see call-out: **“Incident to” Billing**).

This brief describes the NP workforce and the current role of NPs within the Massachusetts health care system, including findings on the populations they serve, how they are being used across provider organizations, and findings on health care spending and billing practices. It is intended to inform policies governing the role of NPs, SOP laws, and the delivery of primary care to Massachusetts residents.

## NURSE PRACTITIONERS IN MA

Approximately 6,200 NPs were professionally active in Massachusetts as of 2019.<sup>ii</sup> (There were around 37,000 physicians practicing in the state in 2019).<sup>17</sup> NPs work in a myriad of capacities, including in acute care hospitals, specialty care practices, management roles, and research, but approximately half practice as PCPs. This analysis focuses on the latter, using as its primary data source insurance claims data for commercially insured individuals (2015-2017) as

### “INCIDENT TO” BILLING

Upon its creation in 1965, Medicare established a provision for the billing of services performed on behalf of a physician at the physician’s usual fee under certain circumstances.<sup>18</sup> These circumstances include that the care is on a continuing basis for a given patient (i.e., not an initial patient visit) and that the physician be present in the office suite and able to directly furnish assistance if needed. Although the provision did not likely envision its use for NP or PA-provided care (these professions did not exist before 1965), NPs and PAs were not permitted to directly bill Medicare until 1998 and thus “incident to” billing became commonplace.

Currently, NPs bill Medicare and private insurers in two ways: either (1) directly, or (2) “incident to” a physician. The relative proportion of each billing type is not fully known because a visit billed “incident to” a physician often cannot be distinguished in a medical claim from a visit provided and billed by that physician without NP involvement. However, billing guidelines from private insurers can direct supervising physicians to report an indicator (called a “modifier”) in medical claims, which allows for direct identification of “incident to” billing.

In 2019, the Medicare Payment Advisory Commission (MedPAC) estimated, using inference from scenarios in which “incident to” billing is either allowed or disallowed, that roughly 43% of NP-provided continuing evaluation and management office visits were billed “incident to” a physician, along with 31% of similar visits provided by PAs. In its 2019 report, MedPAC recommended eliminating “incident to” billing for APRNs and PAs and requiring them to bill Medicare directly.<sup>18</sup>

ii The Bureau of Labor Statistics’ survey of employers as reported in the Occupational and Employment Statistics series counted 6,200 Nurse Practitioners in Massachusetts as of 2018. <https://www.bls.gov/oes/2018/may/oes291171.htm>. Kaiser State Health Facts, based on data from a commercial provider list vendor reports, using a commercial provider list, reports 6,264 NPs in Massachusetts as of March, 2019. <https://www.kff.org/other/state-indicator/total-number-of-nurse-practitioners-by-gender/>

The number of NPs acting as PCPs in MA grew from **4.7% to 6.1%** between 2015 and 2017

well as enrollees in one of several large MassHealth managed care plans (2016 only), as observed in the Massachusetts All-Payer Claims Database (APCD).<sup>iii</sup>

NPs are identified directly in claims data when they bill an insurer for a service, in which case their national provider identifier (NPI) must be recorded on the claim. NPs are also identified indirectly (without an NPI number) through use of a “modifier” indicated on the claim record when they provide a service that is billed “incident to” a physician.<sup>iv</sup> The HPC used two provider datasets for the analysis that contain additional information about NPs and can be linked to the APCD because they also contain the NPI: (1) a commercial provider directory obtained via IQVIA, Inc. that the HPC maintains<sup>v</sup>, and (2) the National Plan and Provider Enumeration System (NPPES) maintained by CMS.

NPs, 2,298 unique NPs billed for any primary care service in 2015, which grew to 2,625 in 2017, consistent with rapid growth in the NP workforce over this period.<sup>1</sup>

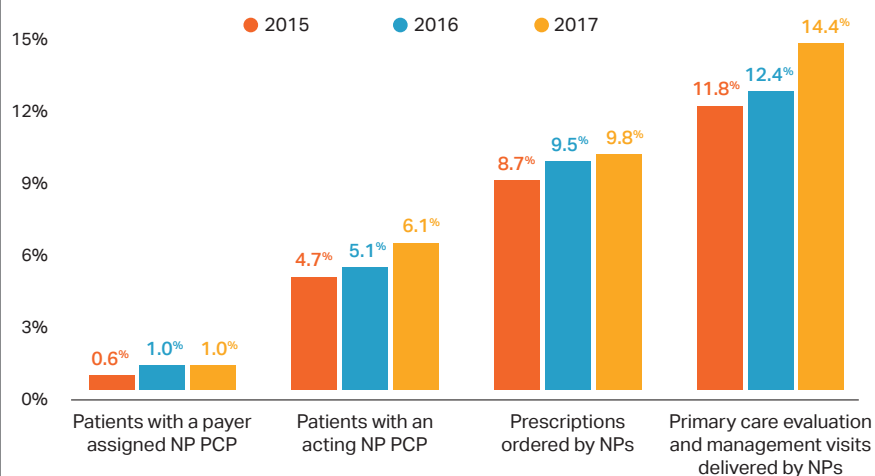
The HPC also examined claims data for insight into NPs as PCPs. Patient assignment to NPs as PCPs can be determined in claims data in two main ways: (1) for enrollees in HMO and point of service (POS) products where selection of a PCP is required, by payer record of the NPI of the NP assigned as PCP (“payer assigned NP PCP”), and (2) for enrollees in plans with a preferred provider organization (PPO) structure, by an attribution method which identifies an NP as PCP to a patient based on observations of who the patient predominantly sees for their primary care visits and services (“acting NP PCP”). Most of the analysis that follows uses the second method, which is based on actual service utilization to get a more realistic understanding of NPs’ role in primary care delivery.

First, the number of NPs acting as PCPs in Massachusetts grew between 2015 and 2017. **Figure 1** shows trends between 2015 and 2017 in the commercial claims data of several measures of involvement of NPs in patient care.

### FINDINGS ON NP INVOLVEMENT IN PRIMARY CARE DELIVERY IN MA

Of the roughly 6,000 NPs estimated to be working in Massachusetts between 2015 and 2017, the HPC was able to observe 4,726 NPs in the three years of data and an additional 51 NPs in the MassHealth managed care claims data (2016 only). Among these

**Figure 1. Role of nurse practitioners in primary care delivery, 2015-2017**

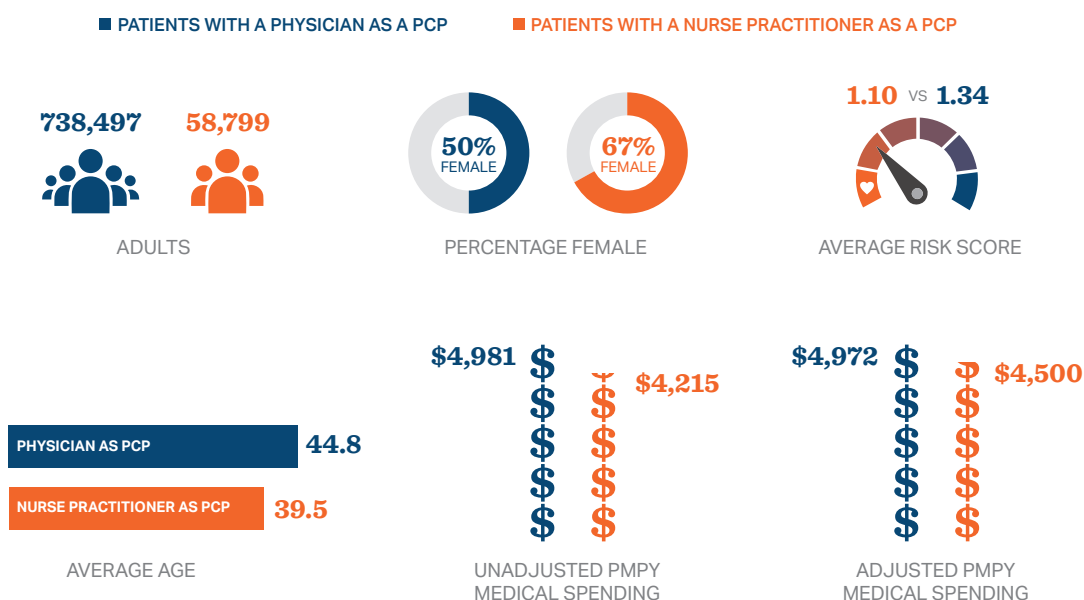


**NOTES:** Analyses comparing proportion of patients assigned by their payer to an NP and patients attributed to an NP through observed claims utilization exclude commercial patients with insurance from Anthem which does not report PCP assignments in claims data.

**SOURCES:** HPC analysis of All-Payer Claims Database, 2015-2017 including Blue Cross Blue Shield of Massachusetts, Tufts Health Plan, Harvard Pilgrim Health Plan, Anthem and Neighborhood Health Plan; Massachusetts Registry of Provider Organizations (RPO), IQVIA, Inc., and National Plan and Provider Enumeration System (NPPES).

- iii The commercial insurers included in the data are Blue Cross Blue Shield of Massachusetts, Tufts Health Plan, Harvard Pilgrim Health Plan, Anthem BCBS, and Neighborhood Health Plan (now AllWays Health Partners). The MassHealth managed care organizations included in the HPC’s 2016 data are Neighborhood Health Plan (now AllWays Health Partners), BMC Health-Net, and Tufts Health Public Plan. 2017 was the most recent year of claims data available to the HPC at the time of publication. Some payer and provider practices and policies regarding NPs may have changed since that time (for example, the use of “incident to” billing).
- iv Measures of NP involvement in care derived from the claims data that require identification of the NP who provided the service will be somewhat undercounted because of “incident to” billing in which case the NP is not identified.
- v IQVIA, Inc. is a commercial vendor that sells comprehensive lists of health care providers including information about their offices and worksites, NPIs, medical group and health system affiliations, and other address and identifying information.

**Figure 2.** Characteristics of adult patients with an NP as their PCP versus a physician



All measures of NP involvement in primary care in **Figure 1** increased between 2015 to 2017. Despite regulations that enable NPs to be selected as a patient’s PCP, only a small proportion of patients had an NP as their PCP according to insurer records (0.6% of patients in 2015 and 1.0% in 2017). However, five to six times as many patients had an NP providing most of their primary care based on analysis of utilization patterns. The percentage of commercial patients (for whom a PCP could be attributed) with an NP acting as their PCP increased from 4.7% in 2015 to 6.1% in 2017.<sup>vi</sup> The HPC also found an increase in prescriptions provided by NPs, from 8.7% of prescriptions in 2015 to 9.8% of prescriptions in 2017. Finally, the proportion of primary care evaluation and management (E&M) visits delivered by NPs rose from 11.8% in 2015 to 14.4% in 2017.

Second, the data show differences in the characteristics of patients who have NPs as their PCP compared to those with physicians (See **Figure 2**).

Adults with an NP as their PCP are more likely to be female (67% of patients with an NP PCP were female versus 50% of patients with a physician PCP

were female), younger (39.5 years old versus 44.8) and healthier based on average patient risk score (1.10 versus 1.34). A patient survey on provider preferences found similar results regarding patient age, showing a greater openness to an NP as PCP among younger patients, but did not find a difference in patient preferences between males and females.<sup>19</sup>

With respect to health care spending, prior literature has found lower spending among patients with an NP as their PCP, controlling for other patient characteristics.<sup>16</sup> Consistent with these findings, the HPC found that adults with an NP as their PCP in Massachusetts had 15% lower spending compared to adults with a physician as their PCP on average in 2017 (\$4,215 versus \$4,981). After adjusting for differences in patient demographics, health status, insurance provider, and other community-level variables, the spending difference narrowed to 9% but remained significant (\$4,500 versus \$4,972). Although there could be unobserved differences between patients who have an NP versus a physician as their PCP, this finding strongly suggests that increased NP involvement in patient care could reduce overall spending.

**Increased NP involvement in patient care could reduce overall spending**

vi The HPC was not able to attribute a primary care provider to all patients observed in the claims data. For the commercial population in 2017, some patients could not be attributed because they did not have sufficient medical care utilization (21% of patients) and other patients could not be attributed because their determined PCP could not be identified in any other provider data (20% of patients).

NPs are **caring** for more **underserved populations**

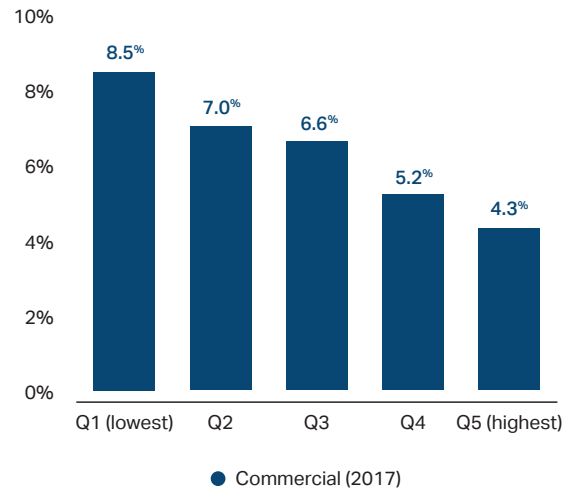
The HPC found evidence that Massachusetts NPs are more likely to provide care for underserved populations, consistent with prior literature. **Figure 3** explores patterns based on the income of the patient's community of residence.

Commercial patients in lower income communities are more likely to have an NP as their primary care provider. In fact, residents in areas with the fewest resources were nearly twice as likely (8.5%) to have an NP as their primary care provider than residents living in communities with the most resources (4.3%).

Using data from 2016 to analyze patterns by geographic area and insurance coverage status, the HPC found that, compared to commercially-insured residents, those with MassHealth coverage through a managed care organization (MCO) were more likely (6.9% versus 5.0%) to have an NP as their PCP (**Figure 4**).<sup>vii</sup> Further, across both commercial and MassHealth MCO patient populations, members living in rural areas were also more likely to have an NP as their primary care provider (this was also true for commercially-insured residents in 2017). MassHealth MCO members living in urban areas were

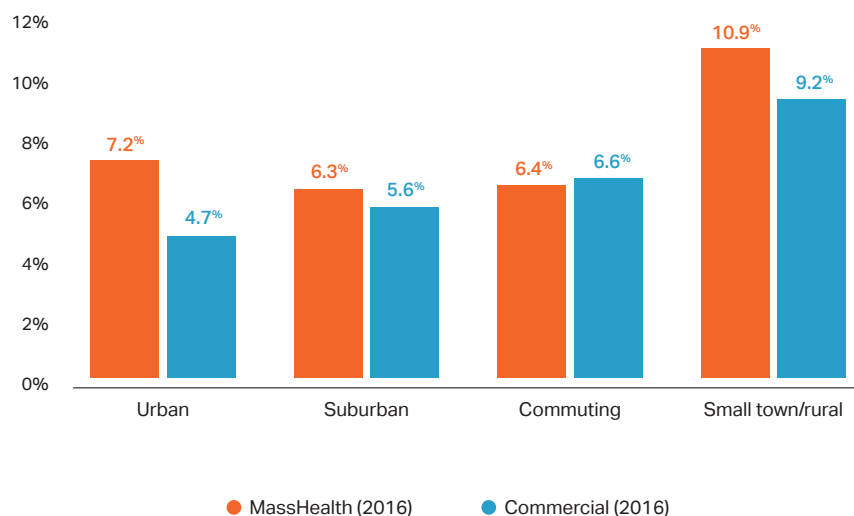
also somewhat more likely to have an NP as their PCP than those in suburban and commuting areas.

**Figure 3.** Percentage of commercial residents with an NP as their primary care provider, by income quintile of the patient's zip code



NOTES: Commercial patients attributed based on utilization.  
 SOURCES: HPC analysis of All-Payer Claims Database, 2017, RPO, IQVIA, Inc., and NPPES.

**Figure 4.** Percentage of patients with an NP as their primary care provider by geographic area and insurance coverage type, 2016



NOTES: Members attributed to primary care providers based on utilization patterns and not insurer-assignment.  
 SOURCES: HPC analysis of All-Payer Claims Database, RPO, IQVIA, Inc., and NPPES.

vii The HPC's analysis of the all-payer claims database only included MassHealth members that were enrolled in a managed care plan in 2016. The 2016 commercial data is used in this figure to provide an appropriate comparison of the attributed patient populations with NPs as PCPs.

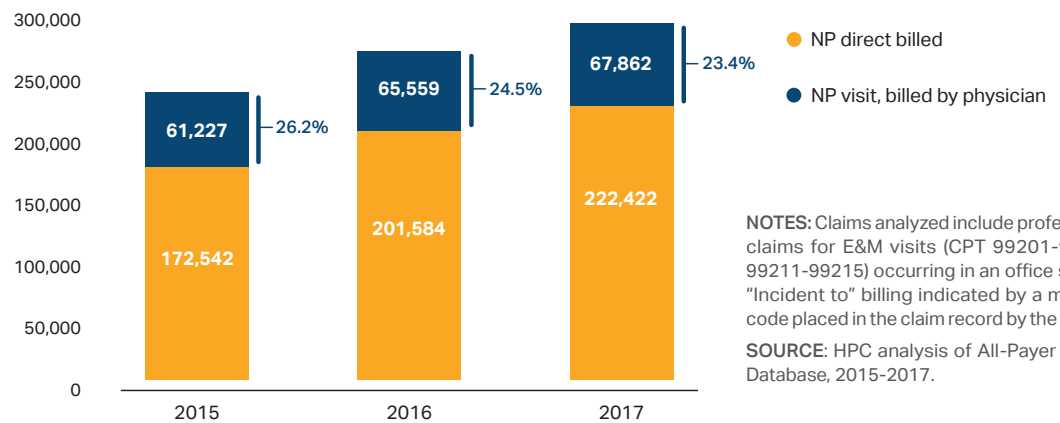
Finally, the HPC examined billing patterns of visits to NPs to understand differences in payment rates for visits to NPs relative to physicians, and whether the visits are billed to NPs directly, or to a supervising physician where the visit was provided by the NP (“incident to” billing) (**Figure 5**).

While 14.4% of all primary care E&M visits were billed directly by NPs in 2017, at least 23% of all NP visits were delivered by NPs but billed by physicians.<sup>viii</sup> The proportion of NP E&M visits billed by a physician fell slightly between 2015 and 2017 (26% to 23%) (**Figure 5**). Visits billed in this fashion

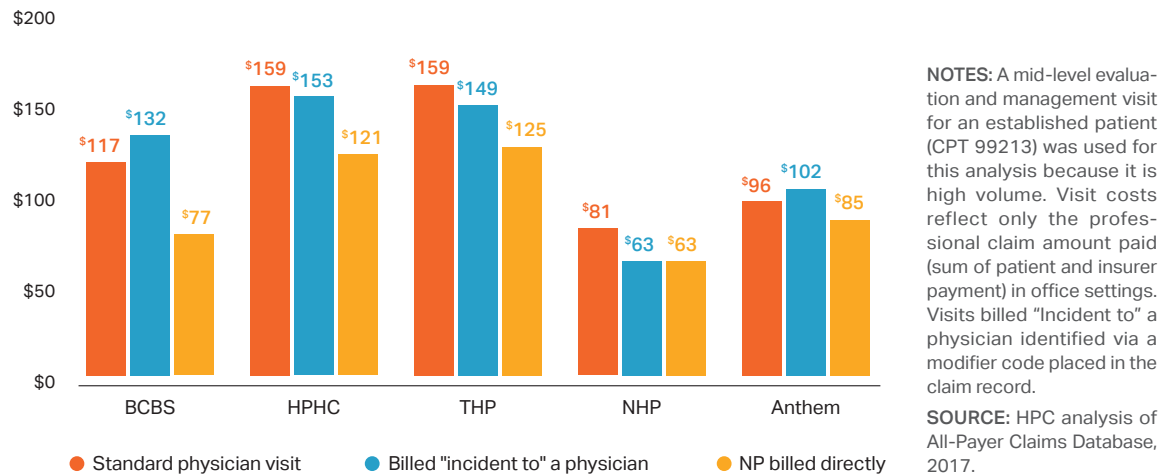
increase costs versus when NPs bill directly as these visits tend to be paid at higher rates (see **Figure 6**).

In 2017, the median commercial payment rate was \$133 for a physician-billed mid-level E&M visit. On average, the payment rate was approximately the same for most payers when the visit was provided by an NP but billed “incident to” a physician. However, if an NP billed for the visit directly, the payment rate varied from 66% (Blue Cross Blue Shield of Massachusetts) to 89% (Anthem) of the physician-billed rate. These lower visit costs surely contribute to the lower overall spending for patients attributed to NPs versus those attributed to physicians as noted in **Figure 2**.

**Figure 5. Extent of “Incident to” billing among commercial evaluation and management visit claims, 2015-2017**



**Figure 6. Visit cost varies by payer and billing provider across five commercial payers, 2017**



viii It is likely that not all claims billed “incident to” a physician include the modifier on the claim indicating it was delivered as such because of varying payer and provider practices. Thus, the prevalence of “incident to” billing is likely higher than shown in Figure 5.

Removal of **scope of practice** restrictions, such as those in MA, has been shown in other states to **improve primary care** access and **health outcomes** .....

## CONCLUSION AND RECOMMENDATIONS

Timely access to high quality care is essential to a well-functioning health system that prioritizes prevention and yields positive health outcomes equitably across the population. This is particularly true during the COVID-19 pandemic where health systems and clinician supply are especially strained by caring simultaneously for COVID-19 patients while also managing the health care needs of other patients (some of whom may be delaying care and exacerbating chronic conditions).

In contrast to slow growth in the supply of physician PCPs in recent years, the number of NPs has increased rapidly and is expected to continue to increase nationally and in Massachusetts. NPs have the potential to fill gaps in access to care, as shown in the analyses above, often working in underserved areas and with lower income populations. Importantly, several state administrations (including the Baker-Polito Administration in 2019) have proposed or passed legislation with the goal of increasing primary care spending as a proportion of all spending, most notably Rhode Island, which did so in 2010.<sup>20,21,22</sup>

Removal of SOP restrictions, such as those in Massachusetts, has been shown in other states to improve primary care access and health outcomes (through increasing NP supply and allowing NPs to practice more efficiently and effectively). The HPC has recommended eliminating such restrictions in its annual policy recommendations and reinforces that recommendation here.<sup>23,24,25</sup> As previously noted, the Baker-Polito Administration and numerous other states have temporarily suspended certain SOP restrictions in light of the COVID-19 pandemic. Restrictive SOP laws could be particularly disruptive during the COVID-19 (and future possible epidemics or pandemics) in which physicians may become ill or be redeployed for other critical duties and thus unable to comply with supervision requirements, leaving NPs legally unable to practice.

Additionally, the HPC recommends that payers and providers end the practice of “incident to” billing in accordance with MedPAC’s recent recommendation, echoed by numerous experts.<sup>16,26</sup> As shown in this report, the practice of “incident to” billing increases health care costs and yet there is no evidence that it increases quality of care. Furthermore, this billing

practice obscures accountability for the visit, which can interfere with payment systems that rely on claims data to establish the identity of the provider, as well as the reporting and tracking of quality and performance measures.<sup>27</sup>

Enacting these recommendations would enable the Commonwealth to make the fullest possible use of valuable provider resources, allowing providers to work at the top of their licenses and improve the quality and value of care in Massachusetts now and in the future.

## ENDNOTES

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The Massachusetts Health Policy Commission, an independent state agency, strives to advance a more transparent, accountable, and innovative health care system through independent policy leadership and innovative investment programs. The HPC's goal is better health and better care – at a lower cost – for all people across the Commonwealth. For more information about the HPC, please visit our website: [www.mass.gov/hpc](http://www.mass.gov/hpc)

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