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# Evaluation of the IAH Demonstration Final Report



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*August 2026*

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Contract Number:  
75FCMC19D0091/75FCMC23F0002

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# Table of Contents

|          |                                                                                  |           |
|----------|----------------------------------------------------------------------------------|-----------|
| <b>1</b> | <b>Background on the IAH demonstration and evaluation .....</b>                  | <b>5</b>  |
|          | 1.1. Participating practices and beneficiaries .....                             | 5         |
|          | 1.2. Overview of the evaluation .....                                            | 7         |
|          | 1.3. General approach to HBPC and changes made during<br>the demonstration ..... | 9         |
|          | 1.4. Organization of this report and levels of evidence used for results .....   | 11        |
| <b>2</b> | <b>Did IAH improve access to services? .....</b>                                 | <b>12</b> |
|          | 2.1. Performance-year analysis .....                                             | 12        |
|          | 2.2. Three-year analysis of IAH beneficiaries new to HBPC .....                  | 13        |
| <b>3</b> | <b>Did IAH improve efficiency of care? .....</b>                                 | <b>16</b> |
|          | 3.1. Performance-year analysis .....                                             | 16        |
|          | 3.2. Three-year analysis of IAH beneficiaries new to HBPC .....                  | 17        |
| <b>4</b> | <b>Were IAH beneficiaries and caregivers satisfied? .....</b>                    | <b>18</b> |
| <b>5</b> | <b>How did IAH practices perform on quality measures? .....</b>                  | <b>19</b> |
| <b>6</b> | <b>Did IAH improve coordination of care? .....</b>                               | <b>21</b> |
| <b>7</b> | <b>Did IAH reduce ED and hospital use? .....</b>                                 | <b>23</b> |
|          | 7.1. Outpatient ED visits .....                                                  | 23        |
|          | 7.1.1. Performance-year analysis .....                                           | 23        |
|          | 7.1.2. Three-year analysis of IAH beneficiaries new to HBPC .....                | 24        |
|          | 7.2. Hospital admissions .....                                                   | 25        |
|          | 7.2.1. Performance-year analysis .....                                           | 25        |
|          | 7.2.2. Three-year analysis of IAH beneficiaries new to HBPC .....                | 26        |
| <b>8</b> | <b>What were the best practices associated with<br/>better outcomes? .....</b>   | <b>28</b> |

|           |                                                                                                                                                 |           |
|-----------|-------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
| <b>9</b>  | <b>Did IAH reduce Medicare spending before accounting for incentive payments? .....</b>                                                         | <b>29</b> |
|           | 9.1. Performance-year analysis .....                                                                                                            | 29        |
|           | 9.2. Three-year analysis of IAH beneficiaries new to HBPC .....                                                                                 | 32        |
| <b>10</b> | <b>Did IAH reduce Medicare spending net of incentive payments? .....</b>                                                                        | <b>35</b> |
| <b>11</b> | <b>Did IAH improve health outcomes? .....</b>                                                                                                   | <b>36</b> |
|           | 11.1. Days at home and entry into a nursing home .....                                                                                          | 36        |
|           | 11.1.1. Performance-year analysis .....                                                                                                         | 36        |
|           | 11.1.2. Three-year analysis of IAH beneficiaries new to HBPC .....                                                                              | 37        |
|           | 11.2. Death.....                                                                                                                                | 38        |
|           | 11.2.1. Performance-year analysis.....                                                                                                          | 38        |
|           | 11.2.2. Three-year analysis of IAH beneficiaries new to HBPC .....                                                                              | 38        |
| <b>12</b> | <b>Conclusion .....</b>                                                                                                                         | <b>40</b> |
|           | 12.1. How did starting HBPC from an IAH practice during the demonstration affect spending, hospital use, and health outcomes?.....              | 40        |
|           | 12.2. How did IAH practices' opportunity to earn performance-based incentive payments affect spending, hospital use, and health outcomes? ..... | 41        |
|           | 12.3. What value did the IAH demonstration provide to CMS? .....                                                                                | 41        |
|           | 12.4. What value did the IAH demonstration provide to IAH practices? .....                                                                      | 41        |
|           | <b>Endnotes .....</b>                                                                                                                           | <b>43</b> |

# Background on the IAH demonstration and evaluation

The Independence at Home (IAH) demonstration was a Congressionally mandated test of whether home-based primary care (HBPC) and a payment incentive for HBPC practices reduced hospital and emergency department (ED) use, lowered Medicare spending, and improved health outcomes. The demonstration was limited to beneficiaries in traditional Medicare who were chronically ill and needed help with daily activities, such as eating and dressing. Appendix A presents the legislation that created IAH.

The IAH demonstration began in 2012 and lasted 10 years, ending in 2023. It was intended to last three years, but Congress extended it three times (see Appendix B for a timeline of the demonstration).

## Report summaries

Please refer to the following resources for an overview of findings:

### [Findings at a Glance](#) | 2 pages

Concise visual summary of key findings

### [Executive Summary](#) | 5 pages

High-level summary of the demonstration, evaluation methods, and results



## The IAH demonstration had two components

### ***HBPC from a practice specializing in HBPC***

HBPC refers to primary care services that primary care clinicians provide in a beneficiary's home rather than in an office-based clinic. Practices that participated in IAH had been providing HBPC for years before the demonstration began in 2012.

### ***The opportunity for a practice specializing in HBPC to earn performance-based incentive payments annually***

This payment incentive was new under the demonstration.

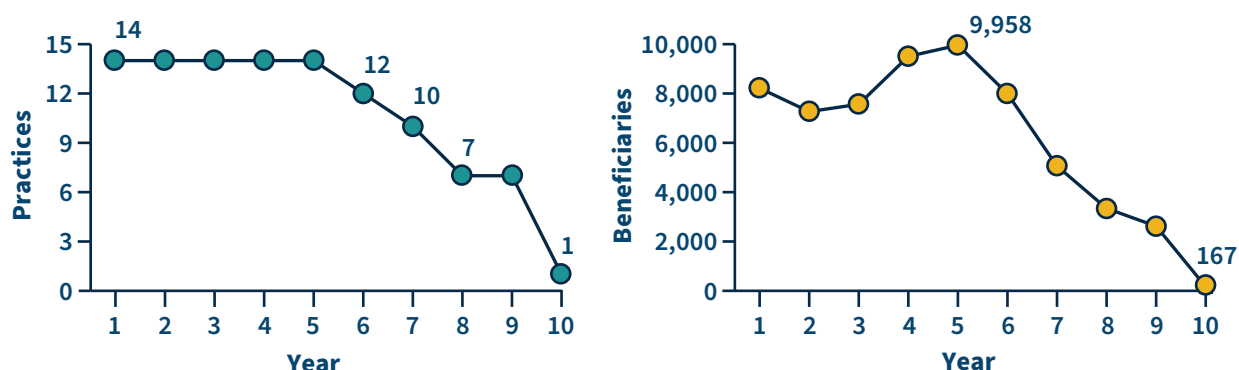
## 1.1. Participating practices and beneficiaries

**Demonstration practices had to have experience delivering HBPC, staff who were available at all hours, and teams led by physicians or nurse practitioners** (see Appendix B for practice eligibility requirements). The Centers for Medicare & Medicaid Services (CMS) accepted 18 participants, which we refer to as IAH practices. Four of the 18 practices left the demonstration before Year 4 (Appendix Exhibit B.3). The evaluation excludes these four practices in all years.

Congress raised the maximum number of beneficiaries from 10,000 to 15,000 starting in Year 6 and 20,000 starting in Year 8. This increase did not lead to an increased number of IAH beneficiaries in the evaluation because additional practices began to leave the demonstration after Year 5 (Exhibit 1.1), and the two- to three-year extensions of the demonstration did not provide enough time for CMS to recruit more practices.

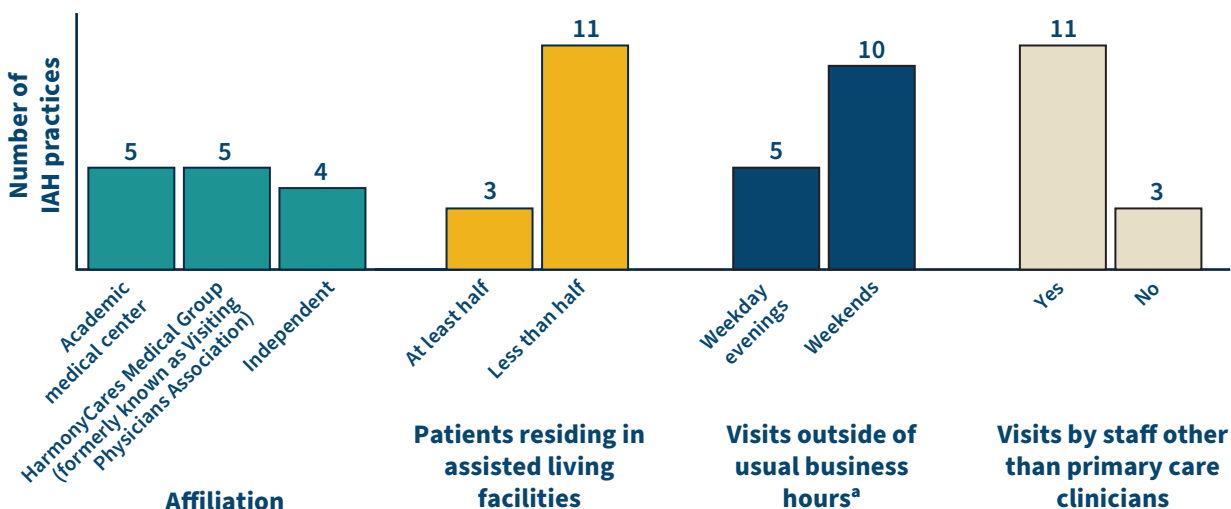
**The 14 practices in the evaluation differed substantially** in their approaches to providing HBPC and in their characteristics (Exhibit 1.2; see Appendix B for details).

**Exhibit 1.1.** The number of IAH practices and beneficiaries in the evaluation decreased starting in Year 6



Source: IAH demonstration data and Medicare claims, 2012–2023.

**Exhibit 1.2.** Characteristics of IAH practices in the evaluation



Source: Information gathered from IAH practices by Mathematica in 2017 and 2019 and Medicare claims, 2015–2016.

<sup>a</sup> Practices could have provided visits during weekday evenings, weekends, both, or neither.

**IAH beneficiaries were much more disabled and sicker than the average Medicare beneficiary.** To be part of IAH, beneficiaries had to meet eligibility criteria related to their health and use of health care. These criteria were established in the demonstration’s authorizing statute and included needing help from another person with at least two activities of daily living, such as bathing and walking, and having a hospital admission and post-acute care in the prior 12 months (see Appendix B for beneficiary eligibility requirements). IAH beneficiaries included a mix of (1) those who were new to HBPC and (2) those who were existing patients of the IAH practice before the demonstration began or before meeting IAH eligibility criteria.

## 1.2. Overview of the evaluation

Mathematica, an independent contractor, analyzed claims, survey, and interview data to determine whether IAH met its goals of reducing hospital and ED use, lowering Medicare spending, and improving health outcomes (see Appendix C for details on claims data and Appendix E for details on survey and interview data). Those goals could have been met in different ways, based on the components of IAH (Exhibit 1.3).

**Exhibit 1.3.** *How IAH could have improved outcomes*

| Component of the IAH demonstration                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | How the component of IAH could have improved outcomes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>HBPC from a practice specializing in HBPC</b></p> <p>Practices that participated in IAH had been providing HBPC for years before the demonstration began in 2012. HBPC refers to primary care services that primary care clinicians provide in a beneficiary’s home rather than in an office-based clinic. HBPC can occur in a private home, assisted living facility, or other group residence. It differs from home health services, which focus on medical care for recovery and rehabilitation and are provided by registered nurses, licensed practical nurses, and therapists.</p> | <p><b>IAH practices’ general approach to providing HBPC may have reduced spending and improved health outcomes.</b></p> <p>HBPC brought health care services directly to beneficiaries who had difficulty leaving their homes. Being in the home allowed clinicians to see potential health risks and social needs firsthand and to address them before health problems worsened. It also may have helped build better communication and trust between beneficiaries, caregivers, and clinicians. These factors could have increased access to care and improved coordination of care compared to what the beneficiaries would have received from traditional office-based primary care practices. These improvements in care could have reduced Medicare spending and improved health outcomes.</p> |
| <p><b>The opportunity for a practice specializing in HBPC to earn performance-based incentive payments annually</b></p> <p>Under the demonstration, IAH practices could earn an incentive payment if:</p> <ul style="list-style-type: none"> <li>■ Their beneficiaries’ Medicare spending was less than a spending target, and</li> <li>■ They met specified thresholds on selected quality measures</li> </ul>                                                                                                                                                                                | <p><b>The demonstration payment incentive may have motivated practices to improve how they delivered HBPC, which may have reduced spending and improved health outcomes.</b></p> <p>The amount of incentive payment earned annually reflected IAH beneficiaries’ total Medicare spending and performance on quality measures. If IAH practices made changes that increased access to care and improved quality of care, then the demonstration could have improved health outcomes and reduced Medicare spending beyond any effects of the practices’ general approach to HBPC that predated the demonstration.</p>                                                                                                                                                                                  |

**Note:** See Appendix Exhibit B.8 for additional description of mechanisms that could have led to better outcomes.



Because the demonstration included a new opportunity for practices specializing in HBPC to earn performance-based incentive payments annually, the evaluation needed to produce results that aligned with (1) the timing of annual performance year incentive payments and (2) the patients of IAH practices included in those payment calculations. Consequently, we conducted a performance-year analysis that included outcomes of a mix of new and existing IAH beneficiaries who met IAH eligibility criteria in all performance years, which was the focus of previous reports. As described in Exhibit 1.3, that analysis examines the effect of the demonstration—that is, how the opportunity for practices specializing in HBPC to earn performance-based incentive payments affected outcomes.

Since this final report includes data from all 10 years of IAH, the number of IAH beneficiaries who were new to HBPC was large enough for the evaluation to conduct an additional analysis. This three-year analysis examined the effects of starting HBPC with an IAH practice during the IAH demonstration on outcomes for up to three years. Exhibit 1.4 shows core differences between the two analyses.

**Exhibit 1.4.** *Analyses used to evaluate the IAH demonstration*

|                              | <b>Performance-year analysis of new and existing users of HBPC</b>                                                                                                              | <b>Three-year analysis of IAH beneficiaries new to HBPC</b>                                                                                                                                                                       |
|------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Purpose</b>               | To measure the effects of the changes IAH practices made in how they delivered HBPC in response to the opportunity to earn performance-based payments                           | To measure the effects of starting HBPC with an IAH practice during the IAH demonstration                                                                                                                                         |
| <b>Timing</b>                | Conducted annually to align with the timing of annual incentive payments; included in previous IAH annual reports, with effects averaged across all 10 years in this report     | Conducted toward the end of the evaluation to maximize the number of new users of HBPC; included for the first time in this report                                                                                                |
| <b>Study period</b>          | 2012–2023                                                                                                                                                                       | 2013–2022                                                                                                                                                                                                                         |
| <b>Study population</b>      | New and existing users of HBPC who met IAH eligibility requirements; about one-quarter were new users of HBPC                                                                   | New users of HBPC who met IAH eligibility requirements                                                                                                                                                                            |
| <b>Length of observation</b> | Each beneficiary was observed each performance year and could be observed in subsequent years by meeting eligibility requirements again.                                        | Each beneficiary was observed up to three years after starting HBPC from an IAH practice, regardless of whether they continued to receive HBPC.                                                                                   |
| <b>Sample size</b>           | Year 1: 8,216      Year 6: 7,993<br>Year 2: 7,266      Year 7: 5,058<br>Year 3: 7,564      Year 8: 3,342<br>Year 4: 9,504      Year 9: 2,620<br>Year 5: 9,958      Year 10: 167 | First year after starting HBPC: 9,783, of whom 100% received HBPC from an IAH practice<br>Second year: 6,552, of whom 63% received HBPC from an IAH practice<br>Third year: 4,294, of whom 52% received HBPC from an IAH practice |



|                         | Performance-year analysis of new and existing users of HBPC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Three-year analysis of IAH beneficiaries new to HBPC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Study design</b>     | Difference-in-differences <i>cross-sectional</i> study: a cross-sectional study uses the same criteria to identify beneficiaries separately for each year in the demonstration, plus one year before the demonstration. The evaluation measured the difference between (1) the change in outcomes for groups of IAH beneficiaries (new and existing HBPC users) from the year before the demonstration to each performance year, and (2) the change in outcomes for matched comparison groups over the same period. As such, this analysis removes any effects of IAH practices' general approach to HBPC that did not change after the demonstration began. | Difference-in-differences <i>cohort</i> study: a cohort study identifies a group of beneficiaries as of a specific date and measures outcomes for those same beneficiaries before and after that date. The evaluation measured the difference between (1) the change in outcomes before and after starting HBPC for beneficiaries who started HBPC with an IAH practice during the demonstration, and (2) the change in outcomes for a matched comparison group who did not start HBPC over the same period. As such, this analysis captured effects of IAH practices' general approach to HBPC (in place before the demonstration began) and effects of changes IAH practices made in how they delivered HBPC because of the demonstration. |
| <b>Comparison group</b> | Beneficiaries with similar health status and demographic characteristics who lived in the same geographic areas as IAH beneficiaries but did not receive HBPC. A new comparison group was selected for each performance year and for the year before the demonstration.                                                                                                                                                                                                                                                                                                                                                                                      | Beneficiaries with similar health status and demographic characteristics who lived in the same geographic areas as IAH beneficiaries but did not receive HBPC in the first year. A small percentage of the comparison group received HBPC from another practice in the second year (11%) or third year (15%). The comparison group was selected once.                                                                                                                                                                                                                                                                                                                                                                                        |

Note: See Appendices C and D for more information about the data, sample, and methods for these two analyses.

### 1.3. General approach to HBPC and changes made during the demonstration

Participation in the demonstration did not explicitly require IAH practices to make specific care delivery changes. However, the demonstration provided a performance-based payment incentive for IAH practices to change how they delivered HBPC. IAH practices could attempt to qualify for this extra payment annually by making changes to care delivery that would reduce their beneficiaries' Medicare spending and meet required thresholds for quality measures.

In response to this incentive, the fourteen practices each made some minor adjustments that they hoped would allow them to become aware of their beneficiaries' hospital admissions and ED visits and reduce hospital and ED use. However, practices reported they continued their prior approach to delivering HBPC with relatively minor adjustments to their long-established approach (Exhibit 1.5).

**Exhibit 1.5.** *IAH practices continued their general approach to delivering HBPC during the demonstration with minor adjustments*

**Practices reported that their general approach to delivering HBPC was unchanged from before the demonstration began.**

Important features of how IAH practices delivered HBPC before and during the demonstration included:

- Used multi-disciplinary teams, which typically included physicians, nurse practitioners, nurses, and sometimes additional staff such as physician assistants and social workers.
- Provided frequent home visits to identify and address problems before they worsened.
- Developed strong relationships with beneficiaries and caregivers.
- Obtained information from the home that could not be obtained during an office visit, such as how beneficiaries stored and managed their medications.
- Collaborated closely with home health agencies to care for acute and chronic conditions.

**Practices reported making minor adjustments to their long-standing approach to delivering HBPC to try to reduce hospital and ED use in response to the demonstration.**

When asked about how they used IAH incentive payments, most practice administrators viewed IAH payments as one additional source of funding used to support care delivery activities, rather than the sole driver behind new initiatives. Common changes that some practices made during the demonstration (and, in some cases, later stopped) included:

- Implemented formal processes to identify beneficiaries at high risk for hospital use.
- Provided follow-up phone calls with their beneficiaries at highest risk between HBPC visits with the goal of preventing or promptly treating exacerbations of their chronic conditions.
- Improved processes for handling after-hours calls from beneficiaries and caregivers, such as collecting beneficiaries' concerns in a standardized way and disseminating the information to the beneficiary's care team to enable timely decision-making and follow-up.
- Joined health information exchanges to track beneficiaries' hospital and ED use.

Because these changes were minor adjustments to how practices provided HBPC before the demonstration, we expected the effects of those changes on spending and other outcomes to be small.

## 1.4 Organization of this report and levels of evidence used for results

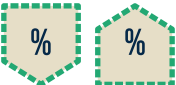
We organized this report around 10 topics identified by the IAH authorizing legislation to be analyzed as part of the IAH evaluation. These topics are:

- Did IAH improve access to services ([Chapter 2](#))?
- Did IAH improve efficiency of care ([Chapter 3](#))?
- Were IAH beneficiaries and caregivers satisfied ([Chapter 4](#))?
- How did IAH practices perform on quality measures ([Chapter 5](#))?
- Did IAH improve coordination of care ([Chapter 6](#))?
- Did IAH reduce ED and hospital use ([Chapter 7](#))?
- What were the best practices associated with better outcomes ([Chapter 8](#))?
- Did IAH reduce Medicare spending before accounting for incentive payments? ([Chapter 9](#))
- Did IAH reduce Medicare spending net of incentive payments? ([Chapter 10](#))?
- Did IAH improve health outcomes? ([Chapter 11](#))?

Throughout this report, we show results from the performance-year analysis first because these results are most directly comparable to previous reports. Then we show results from the three-year analysis of IAH beneficiaries new to HBPC.

We describe results from both analyses using four levels of evidence, each of which corresponds to a different icon and different terminology (Exhibit 1.6). For example, in cases in which the supporting evidence was strong, we note that IAH increased (or decreased) the outcome. Statistical significance was part of the criteria we used to assess strength of evidence, with  $p < 0.10$  as the threshold. We describe other criteria we used to assess strength of evidence in Appendix C.

**Exhibit 1.6.** Levels of evidence used in this report

| Icon                                                                                | Level of evidence                                         | Strength of supporting evidence as to whether IAH caused a change in the outcome |
|-------------------------------------------------------------------------------------|-----------------------------------------------------------|----------------------------------------------------------------------------------|
|  | IAH <b>increased/decreased</b> the outcome                | <b>Strong</b> evidence that IAH caused a change in the outcome                   |
|  | IAH <b>may have increased/decreased</b> the outcome       | <b>Moderate</b> evidence that IAH caused a change in the outcome                 |
|  | IAH <b>probably did not increase/decrease</b> the outcome | <b>Weak</b> evidence that IAH caused a change in the outcome                     |
|  | IAH <b>did not increase/decrease</b> the outcome          | <b>Strong</b> evidence that IAH did not cause a change in the outcome            |

Note: See Appendix C for a description of the criteria we used to assess strength of evidence.

# Did IAH improve access to services?

**The demonstration probably did not increase primary care visits because it did not change IAH practices' general approach to HBPC for new and existing users of HBPC.** Primary care visits include visits with primary care clinicians at home as well as in offices and clinics. The estimated increase of 7.4% was equivalent to less than one extra visit (0.7) per beneficiary per year. Evidence that the demonstration caused an increase in primary care visits was weak.

For beneficiaries new to HBPC, **starting HBPC during the demonstration greatly increased primary care visits.** The estimated increase of 154.1% percent in the first year was equivalent to seven extra visits per beneficiary per year. As part of their long-standing approach to delivering HBPC, IAH practices provided frequent home visits to identify and address health problems before they worsened.

## 2.1. Performance-year analysis

### Primary care visits



**Over 10 years, the demonstration probably did not increase primary care visits** as measured by the change in visits for HBPC users relative to the change over the same period for similar beneficiaries who did not receive HBPC. Primary care visits include visits both at home and at office-based practices with primary care clinicians.

Although there was a relatively large increase in primary care visits (7.4% or 0.7 visits per beneficiary, not statistically significant), IAH probably did not cause this change for three reasons. First, because IAH was a small demonstration, the results were vulnerable to being influenced by individual practices. In the case of primary care visits, removing one practice lowered the 10-year average increase in the remaining practices from 7.4% to 1.8% (see Practice C in Appendix Exhibit C.24). In cases where a result changed substantially after removing one practice from the analysis, our confidence in the result among all practices decreased (see Appendix C.7 for more details). Second, the results may represent a continuation of trends that predated the demonstration, not an effect of the demonstration. Primary care visits increased for IAH beneficiaries in the two years before the demonstration and decreased for beneficiaries in the comparison group. If this trend continued during the demonstration, it could have accounted for much of the 7.4% increase. Finally, interview data support the conclusion that the demonstration probably did not increase primary care visits. IAH administrators and clinicians reported that their general approach to HBPC was unchanged, and they did not report increasing the frequency of primary care visits because of the demonstration.

### Why did a demonstration focused on HBPC probably not increase primary care visits?

The performance-year analysis measured the effects of changes in care delivery that IAH practices made in response to the opportunity to earn performance-based incentive payments. The minor adjustments that practices reported making to how they delivered HBPC included follow-up phone calls with beneficiaries at high risk for hospital use; typically,

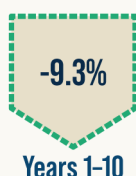


Key:



these phone calls did not qualify for reimbursement under traditional Medicare as primary care visits. The demonstration did not increase primary care visits because IAH practices already offered frequent primary care visits as part of their general approach to providing HBPC before the demonstration began.

### Specialty care visits



**The demonstration may have decreased specialty care visits.** As with primary care visits, we measured specialty care visits made in an outpatient clinic, office, or the beneficiary's home (not visits during hospitalizations or other inpatient stays). The reduction of -9.3% (-0.4 visits per beneficiary) was large and consistent across the six years when all or most of the 14 practices participated in the demonstration, though it was not statistically significant (Appendix Exhibit C.30).

The IAH payment incentive may have led some practices to reduce referrals to specialists. This reduction could have occurred if IAH clinicians thought that reducing specialty visits would simplify or otherwise improve care for IAH beneficiaries in ways that reduced total spending and could result in larger incentive payments. However, IAH clinicians and administrators did not mention in interviews that their practice explicitly tried to decrease specialist visits.

## 2.2. Three-year analysis of IAH beneficiaries new to HBPC

### Primary care visits



**Starting HBPC during the demonstration led to a large increase in the number of primary care visits.** The increase was largest in the first year after starting HBPC (154.1% or 7.3 visits per year more than in similar beneficiaries who did not receive HBPC in the first year, statistically significant; Exhibit 2.1). In the year before starting HBPC, IAH beneficiaries averaged a primary care visit every 11 weeks. In the year after starting HBPC,

they averaged a primary care visit about every five weeks (Appendix Exhibit D.9). The increases remained large and statistically significant in the second and third years (between 100% and 120%, or between five and six visits per year).

Providing visits at home rather than in an office immediately increased access to primary care for many beneficiaries—especially for those who did not have reliable, affordable transportation or who had difficulty leaving the home (for example, due to mobility issues or dementia). In addition to regular visits, IAH practices prioritized meeting urgent care needs in the home. In a survey of IAH beneficiaries and their caregivers, the vast majority of beneficiaries (87.4%) and caregivers (89.0%) reported having no trouble obtaining in-home care that they needed from the IAH practice.<sup>i</sup>

**"[I go out to see my patients] once a month, about. And some of these people need it just to keep them on track.... They just need to be really kept on top of their medicines and symptoms and signs of something going wrong. And just continuous education.... Even if you spend 30 minutes or an hour, you still need more time."**

— IAH clinician



Key:

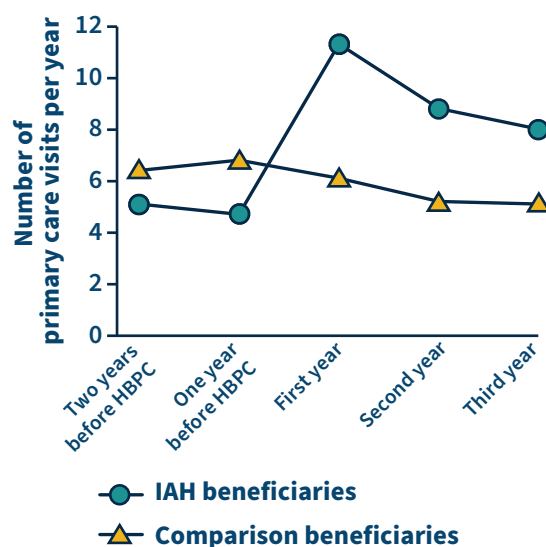


### Why did the three-year analysis produce such different results regarding effects of IAH on primary care visits compared with the performance-year analysis?

The only way the evaluation could examine how starting HBPC affected primary care visits was to compare the number of primary care visits received by the same group of beneficiaries before and after starting HBPC. This was the approach we used for the three-year analysis but not the performance-year analysis (see Exhibit 1.4 for details).

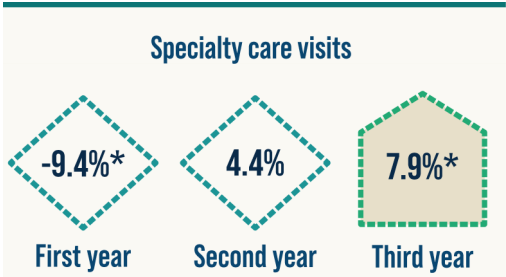
As shown in Exhibit 2.1, beneficiaries received many more visits after starting HBPC than they had before starting HBPC. We expected this increase because IAH practices scheduled frequent regular visits with their patients as part of their long-standing approach to HBPC. Increases were largest in the first year because beneficiaries needed more attention after experiencing a health shock that led them to begin HBPC.

**Exhibit 2.1.** Starting HBPC during the demonstration led to a large increase in the number of primary care visits



Source: IAH demonstration data and Medicare claims, 2011–2022.

The increase was smaller in the second and third years after starting HBPC, perhaps because fewer beneficiaries in the IAH group continued to receive HBPC over time. All IAH beneficiaries received at least one HBPC visit in the first year, by definition (see Appendix D for details). Among IAH beneficiaries who were alive and in traditional Medicare at the beginning of the second year after starting HBPC, 63 percent had an HBPC visit from an IAH practice in the second year. The figure was 52 percent among those who were alive and in traditional Medicare at the beginning of the third year. In the analysis, we included data for all IAH beneficiaries who were alive and in traditional Medicare in a given year, even if they did not receive an HBPC visit from an IAH practice in that year. With this approach, we provide results that are applicable to all beneficiaries who started HBPC—not just those who continued receiving HBPC after year—and enhance the usefulness of the results for two reasons. First, it is plausible that the beneficiaries who remained in HBPC are those for whom HBPC was most successful at improving outcomes, such as reducing hospital admissions. Second, it is possible that HBPC received in one year could have effects on outcomes the next year. For more information about the sensitivity of our results to this decision, see Appendix D (Exhibit D.6).



Instead, it may represent a continuation of trends that predated beneficiaries’ entry into HBPC (Appendix Exhibit D.10).

Starting HBPC during the demonstration may have increased specialty care visits in the third year (7.9%, statistically significant), perhaps by connecting beneficiaries with specialists. Most IAH beneficiaries who needed medical care outside the home reported that they got a lot of help or some help (72%) from the IAH practice when making plans to seek medical care outside the home. For example, some practices followed up with beneficiaries and specialists after a referral to make sure an appointment was scheduled and the beneficiary had transportation.

**Starting HBPC during the demonstration probably did not decrease specialty care visits in any year and may have increased them in the third year.** Although we found a large, statistically significant decrease (–9.4%) in specialty care visits in the first year after beneficiaries started HBPC, we are not confident that this result represents an effect of HBPC or an effect of changes practices made in response to the IAH demonstration.

Key:

%

%

%

%

%



**The demonstration reduced spending for some types of imaging such as ultrasounds and x-rays, but did not reduce spending for testing or advanced imaging such as MRIs and CT scans.** IAH practices may have aimed to reduce some unnecessary imaging as a response to new incentives to lower costs during the demonstration.

For beneficiaries new to HBPC, **starting HBPC during the demonstration greatly increased spending on some types of imaging and on testing.** Several IAH practices arranged for IAH beneficiaries to receive ultrasounds, x-rays, and lab tests at home after starting HBPC as part of their approach to delivering HBPC.

## 3.1. Performance-year analysis

Advanced imaging  
spending



Years 1-10

Testing spending



Years 1-10

Other imaging  
spending



Years 1-10

**Over 10 years, the demonstration did not reduce spending for advanced imaging or testing, but did reduce other imaging spending.** These results strongly suggest that the demonstration did not affect spending for advanced imaging and testing.

The results were small (-1.1% or -\$3 per beneficiary per month [PBPM], and -2.9% or -\$24 PBPM, respectively), not statistically significant, and consistently close to zero across performance years (Appendix Exhibit C.29). During interviews, none of the IAH practice leaders reported focusing on reducing unnecessary imaging or testing during the demonstration to reduce spending.

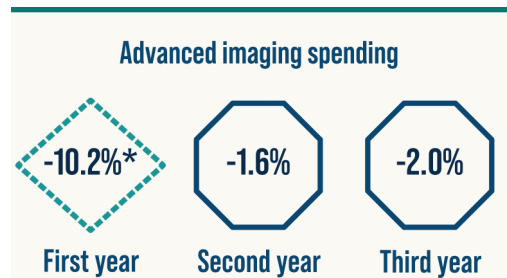
However, the demonstration did reduce spending for other imaging, such as for x-rays, by about -10.0% (-\$61 PBPM) relative to an average spending of \$549 PBPM among IAH beneficiaries in the year before the demonstration began. This reduction was statistically significant and was supported by strong evidence, including consistently growing effects over the 10 performance years (Appendix Exhibit C.29). The demonstration could have reduced spending for some types of imaging if IAH clinicians tried to reduce duplication over time. For example, at least one IAH practice gained access to the medical records from their IAH beneficiaries' hospital stays, allowing them to see exactly which scans the beneficiary received while admitted. The decrease in spending for other imaging came from declines for the IAH group relative to mostly unchanged spending for the comparison group, which supports the notion that IAH practices tried to reduce other imaging services (Appendix Exhibit C.29).



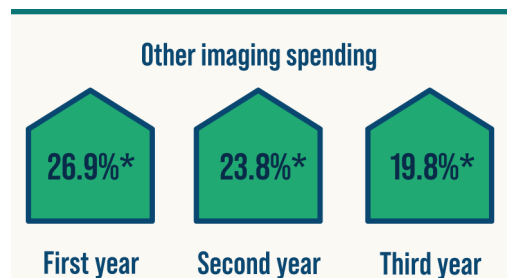
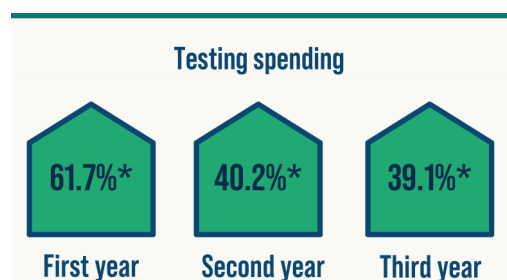
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## 3.2. Three-year analysis of IAH beneficiaries new to HBPC



and third years, receiving HBPC during the demonstration did not affect advanced imaging spending—results were small (around -2%, or less than \$10 PBPM) and not statistically significant (Appendix Exhibit D.11).



beneficiaries to receive these services at home was a feature of IAH practices' general approach to HBPC before and during the demonstration. Therefore, it was not surprising that there was an increase in the use of testing and other imaging spending for beneficiaries new to HBPC and not for beneficiaries who may have previously received care from an IAH practice.

**Starting HBPC during the demonstration probably did not reduce advanced imaging spending in the first year after beneficiaries started HBPC** (-10.2%, or -\$46 PBPM). This reduction was large and statistically significant. However, we are not confident that the reduction was caused by starting HBPC during the demonstration because it may represent a continuation of trends that predated beneficiaries' entry into HBPC. In the second

**Starting HBPC during the demonstration increased spending on testing and other imaging** by statistically significant amounts in all three years after beneficiaries started HBPC. Increases were large in all years, though they decreased slightly over time. For example, starting HBPC increased spending for testing by 61.7% (\$356 PBPM) in the first year and by about 40% in the second and third years, relative to a mean of \$577 PBPM among IAH beneficiaries the year before they started HBPC (Appendix Exhibit D.12). These increases may suggest that IAH beneficiaries had unmet needs when they started HBPC and that IAH practices addressed some of these needs. For example, several IAH practices arranged for IAH beneficiaries to receive lab tests, x-rays, and ultrasounds at home because many beneficiaries faced difficulty leaving home. Arranging for

## Were IAH beneficiaries and caregivers satisfied?

**IAH beneficiaries were generally satisfied with the care they received from IAH practices during the demonstration.**

Almost all (93%) of beneficiaries reported being very satisfied or satisfied with care they received in the past six months. Satisfaction was also high among caregivers.

In a survey conducted early in the demonstration, 50.2% of beneficiaries reported being very satisfied with the overall quality of care they had received from their IAH practice in the past six months. An additional 42.7% reported being satisfied. Results were similar for caregivers—51.7% were very satisfied and 41.4% were satisfied. Most IAH beneficiaries (72.5%) and caregivers (71.7%) had a strong preference for HBPC compared with receiving ambulatory care in an office or clinic. In addition, 91.4% of caregivers reported having great confidence in the primary care team. Appendix E provides details about the IAH beneficiary and caregiver surveys.

**"I like the privacy and I'm not sitting in a room filled with people and their germs...[the IAH clinician is] not always in a rush like doctor's offices."**

— IAH beneficiary

**"I am truly satisfied and impressed with the amount of care and consideration that this program provides for my mother and for my family's peace of mind. All staff are caring and very compassionate. I only wished we knew of this service much earlier."**

— Caregiver of an IAH beneficiary

# How did IAH practices perform on quality measures?

***In most years, at least half of the practices that qualified for an IAH incentive payment could have earned a larger payment by meeting the performance threshold for more quality measures.***

- Better submission of documentation for the three quality measures reported by the practices could have resulted in earning larger incentive payments. Poor performance on the three quality measures reported by practices accounted for almost all the failure to earn maximum payments. One challenge with meeting the performance threshold for these measures was receiving timely notification about beneficiaries' ED visits and hospital admissions.
- Most IAH practices consistently met the required thresholds for incentive payment purposes for the three claims-based quality measures of potentially avoidable hospital and ED use and readmissions across nearly all years. However, the evaluation's analysis of whether the demonstration resulted in a change in performance for similar measures showed that the demonstration did not reduce potentially avoidable ED use, though it may have reduced potentially avoidable hospital admissions and unplanned readmissions.

The IAH payment incentive was designed to motivate practices to improve their performance. Practices qualified for an incentive payment annually if their beneficiaries' Medicare spending was less than a spending target and if they met minimum quality performance standards. Practices earned different levels of the maximum possible payment depending on their performance on six quality measures (Exhibit 5.1). Practices that met the performance threshold for three, four, five, or six quality measures were awarded 50%, 67%, 83%, or 100% of the maximum payment in that year, respectively. (See Appendix C for more details about incentive payment calculation.)

## **Performance was considerably worse on practice-reported measures than claims-based measures.**

For 48-hour follow-up contact and medication reconciliation, fewer than half of the practices met the performance threshold in any year (Exhibit 5.2 and Appendix Exhibit E.2). Nearly all practices met the performance threshold for the quality measure on documenting patient preferences in the first four performance years, but only 29% of practices did so in Years 8 and 9. However, practices had consistently high performance on the three claims-based measures, with at least 80% of practices meeting the performance thresholds in each year.

## **Exhibit 5.1. Quality measures used to calculate IAH incentive payments**

| Claims-based measures                                                                                                              |
|------------------------------------------------------------------------------------------------------------------------------------|
| Hospital admissions for diabetes, CHF, and COPD less than or equal to average utilization in a similar population                  |
| All-cause hospital readmissions within 30 days less than or equal to average utilization in a similar population                   |
| ED visits for diabetes, CHF, and COPD less than or equal to average utilization in a similar population                            |
| Practice-reported measures                                                                                                         |
| Patient preferences documented annually for at least 80 percent of IAH patients                                                    |
| Follow-up contact within 48 hours of hospital admissions, hospital discharges, and ED visits for at least 50 percent of the events |
| Medication reconciliation in the home within 48 hours of hospital discharges and ED visits for at least 50 percent of the events   |

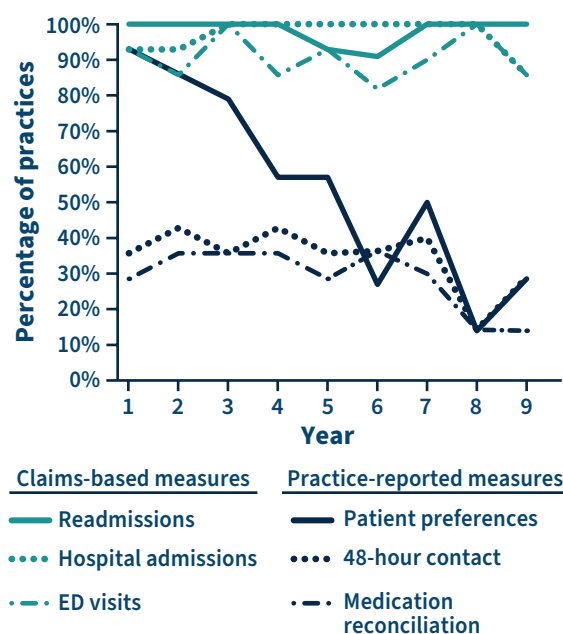
CHF = congestive heart failure;  
COPD = chronic obstructive pulmonary disease;  
ED = emergency department.

**In most years, at least half of the practices that qualified for an incentive payment could have earned a larger payment by meeting the performance threshold for more quality measures.** For example, among the 10 practices that qualified for an incentive payment in Year 6 based on their beneficiaries' spending results, six practices earned 50% of their maximum payment, and one practice earned no payment (Appendix Exhibit E.3). Only three practices earned 100% of their maximum payment in that year. Some barriers may explain why practices did not perform well on practice-reported quality measures.

- **Lack of timely information about hospital admissions and ED visits posed a major challenge to meeting the timing component of the 48-hour follow-up contact and medication reconciliation measures.** When IAH began, practices did not have automatic electronic notification of hospital admissions and ED visits from local hospitals. Without automatic electronic notification, practices found it difficult or impossible to become aware of their beneficiaries' hospital admissions and ED visits. Some practices expanded their use of electronic health records or electronic health information exchanges to obtain timely notifications.<sup>11</sup> Others relied on beneficiaries or caregivers notifying them about discharges, which often did not happen.
- **Quality measure performance and reporting posed a burden for some practices.** These barriers were theoretically more within practices' control, suggesting that IAH did not provide a sufficient incentive to drive changes in care delivery. As one example, some IAH practices underreported performance on some measures because their electronic health record system made it difficult to accurately document and report some services they provided. As another example, four practices did not offer visits during the weekend, which limited their ability to follow up within 48 hours with beneficiaries discharged on Fridays.

**Most IAH practices consistently met required thresholds for the three claims-based quality measures of hospital and ED use** across nearly all years. The performance-year analysis of similar measures showed that the demonstration probably did not reduce potentially avoidable ED use but may have reduced potentially avoidable hospital admissions and readmissions, as we discuss later in the report. Differences in these results occurred because of differences in the methodologies used to calculate quality measure performance as part of calculating incentive payments and to conduct the evaluation. The quality measure methodology required practices to outperform a benchmark. By contrast, the performance-year analysis assessed whether practices improved relative to their own pre-demonstration performance, after accounting for the change in the outcome over the same period among the comparison group. Because nearly all practices met the required thresholds for the three claims-based quality measures of hospital and ED use beginning with performance Year 1, these measures did not provide an incentive to the practices to improve their performance.

**Exhibit 5.2.** Percentage of practices that met performance thresholds for IAH quality measures, by year



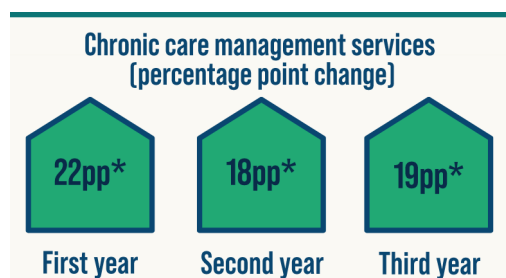
Source: IAH demonstration data.

Notes: Year 10 was excluded because only one practice participated.

For beneficiaries new to HBPC, **starting HBPC during the demonstration greatly increased use of chronic care management services, which is a measure of care coordination.** Collaboration with home health agencies about acute and chronic conditions was a key component of IAH practices' general approach to HBPC.

Because IAH beneficiaries were chronically ill, needed help with daily activities, and were recently hospitalized, coordinating care and managing chronic conditions were essential to stabilizing their health.

In 2014, Medicare began reimbursing chronic care management (CCM) services, which includes managing transitions (such as from hospital to home) and coordinating with other clinicians. This change took place during the demonstration, so we could not study CCM in the performance-year analysis (which compared outcomes during the demonstration to outcomes in the year before the demonstration). Instead, to understand whether receiving HBPC during the demonstration increased the uptake of CCM, we studied care coordination among beneficiaries who started receiving HBPC after Medicare began reimbursing these services (see Appendix Exhibit D.14 for details).



**Starting HBPC during the demonstration increased CCM immediately and consistently over time.** Increases ranged from 18 to 22 percentage points (more than 500%) and were statistically significant in all years (Exhibit 6.1). These increases reflect very low uptake of CCM in the comparison group. In each year after starting HBPC, IAH beneficiaries were more than twice as likely to receive CCM as the comparison group (Appendix Exhibit D.14).

**Collaboration with home health agencies to coordinate the care of acute and chronic conditions was a key component of IAH practices' general approach to HBPC.** During interviews, home health agency providers described having strong working relationships with IAH practices that differed from how they typically worked with office-based primary care practices. For example, these home health agencies communicated with a single point of contact at the IAH practice—usually someone who knew the beneficiaries firsthand. Also, IAH clinicians consulted with home health agency providers on efforts to keep beneficiaries in their homes and avoid unnecessary hospital and ED use. (In [Chapter 8](#), we examine effects on spending on home health services.) IAH practices' approach to collaborating closely with home health agencies predated the demonstration.



Key:

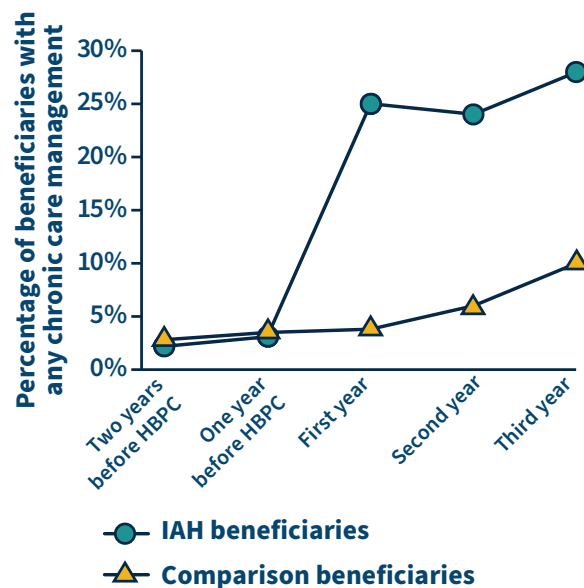




**"[With the IAH practice], the communication is more effective than most of the other practices.... [The IAH practice] knows and trusts our judgment... they are quick to respond to us."**

— Home health provider

**Exhibit 6.1.** Starting HBPC during the demonstration led to a large increase in the percentage of beneficiaries who received CCM



Source: IAH demonstration data and Medicare claims, 2011–2022



# Did IAH reduce ED and hospital use?

**The demonstration probably did not lead to new reductions in ED and hospital use among new and existing users of HBPC.** IAH practices focused on helping beneficiaries avoid the ED and the hospital long before the demonstration began. Practices made only minor changes to their long-established approach to delivering HBPC to try to reduce ED and hospital use after the demonstration began.

For beneficiaries new to HBPC, **starting HBPC during the demonstration led to a reduction in ED use that grew over time and reduced hospital use in the first two years.**

## 7.1. Outpatient ED visits

### 7.1.1. Performance-year analysis

#### Outpatient ED visits



Years 1-10

#### Potentially avoidable ED visits



Years 1-10

**Over 10 years, the demonstration did not reduce total outpatient ED visits or potentially avoidable outpatient ED visits.** Outpatient ED visits are ED visits that did not result in hospital admissions. Potentially avoidable ED visits are outpatient ED visits that might have been prevented by high quality primary care for conditions such as diabetes. For both measures, there was strong evidence that changes practices made to

HBPC delivery during the demonstration did not reduce outpatient ED visits. Average effects across the 10 years were small and not statistically significant (about -2% to 2%). Results were consistent across performance years (Appendix Exhibit C.31).

The performance-year analysis showed that the demonstration did not reduce outpatient ED visits for two main reasons. First, IAH practices focused on helping beneficiaries avoid the ED long before the demonstration began as part of their general approach to HBPC. The changes practices made to try to further reduce ED use in response to the payment incentive were relatively minor and not particularly effective. For example, several IAH practices reported stepping up activities to educate beneficiaries and caregivers about calling the practice before going to the ED if they were unsure if the problem was serious. Examples of new activities in this area were using memory enhancers such as bracelets and refrigerator magnets. But practices reported that the aids were unsuccessful in materially changing behavior. Practices continued to improve care management, but specific changes to those strategies were minor after joining IAH.

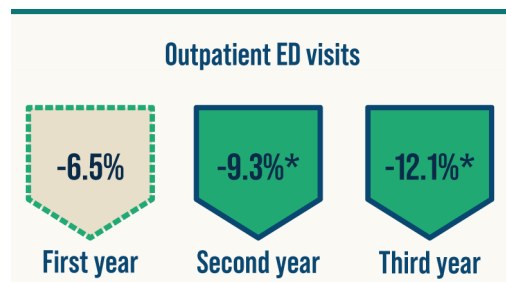
Second, a sizeable minority of beneficiaries and caregivers we surveyed preferred to visit the ED instead of contacting the IAH practice when they were unsure whether a health problem was serious. Common reasons were because they thought the ED provides better and more convenient care, even during a weekday.<sup>iii</sup>



Key:



## 7.1.2. Three-year analysis of IAH beneficiaries new to HBPC

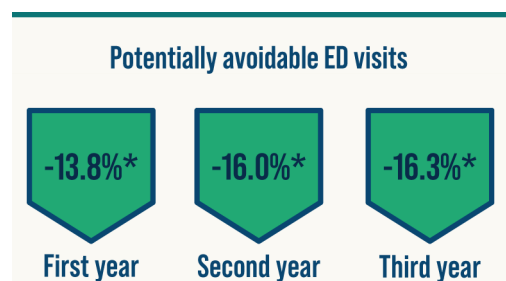


**Starting HBPC during the demonstration led to reductions in outpatient ED use that increased over time.** In the first year after beneficiaries started HBPC, starting HBPC may have reduced outpatient ED visits by -6.5% (not statistically significant). In the second year, HBPC reduced outpatient ED visits by -9.3%, a statistically significant decrease. The reduction was larger still (-12.1%, statistically significant) in the third year

(Appendix Exhibit D.15). The growing reductions over the three-year period may reflect the fact that it takes time to develop trusted relationships and effective communication between beneficiaries, caregivers, and clinicians after beneficiaries start HBPC. In other words, developing a trusting relationship through one or two years of HBPC may have led more beneficiaries to contact the IAH practice rather than going to the ED.<sup>iii</sup>

**"Yes, we can take care of this here, you don't have to go to the hospital—we can get somebody out here with a chest x-ray...we're going to take care of it, and we'll do exactly the same thing that they would do at the hospital."**

— IAH clinician



**Starting HBPC during the demonstration reduced potentially avoidable ED visits in all three years after beneficiaries started HBPC.** These reductions of about -14% to -16% were statistically significant (Appendix Exhibit D.15). These large, consistent reductions show that HBPC from IAH practices reduced the need for emergency care for conditions such as high blood pressure—even in the second and third years, by which time

beneficiaries were established patients of an IAH practice. According to IAH practices, reducing ED visits and hospital admissions required a team-based approach to care, including staff from home health agencies (as we described in [Chapter 6](#)). IAH practices used the same team-based approach to delivering HBPC before and during the demonstration. Because IAH practices' team-based approach to care did not change during the demonstration, the performance-year analysis did not measure effects of this approach to HBPC. However, the team-based approach was part of the contrast between office-based care and HBPC measured by the three-year analysis.



Key:



## 7.2. Hospital admissions

### 7.2.1. Performance-year analysis

#### Hospital admissions



Years 1-10

**Over 10 years, the demonstration probably did not reduce total hospital admissions.** The average observed effect was small (-2.3% or -41 admissions per 1,000 beneficiaries) and not statistically significant nor consistent over time (Appendix Exhibit C.31). During the demonstration, there was no consistent growth or decline in hospital admissions for IAH or comparison group beneficiaries.

#### Potentially avoidable hospital admissions



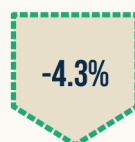
Years 1-10

#### Hospital admissions preceded by an ED visit



Years 1-10

#### Unplanned readmissions



Years 1-10

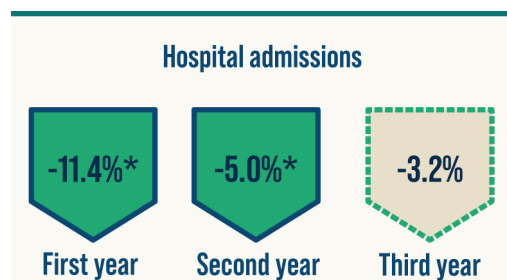
**The demonstration may have reduced the subset of hospital admissions that were potentially avoidable and those that were preceded by an ED visit, as well as the probability of an unplanned readmission.** Over 10 years, the demonstration may have reduced potentially avoid-

able admissions by -3.9% (-18 admissions per 1,000 beneficiaries, not statistically significant) and admissions preceded by an ED visit by -5.8% (-83 admissions per 1,000 beneficiaries, statistically significant). The fact that the demonstration may have reduced admissions preceded by an ED visit but did not reduce outpatient ED visits suggests that some IAH practices may have been successful at keeping some of their sickest beneficiaries from going to the ED—those who were most likely to end up admitted to the hospital after an ED visit. Also, the demonstration may have reduced the probability of unplanned readmissions by about -4.3% (-0.69 percentage points). Although the result over 10 years was not statistically significant, yearly effects were large in Years 2 through 5 and statistically significant in Year 3 (Appendix Exhibit C.31). However, for all three of these outcomes, results were driven by effects in a single practice, which limited our confidence that the demonstration led to a reduction in these admissions or in readmissions (Appendix Exhibit C.24, see [Chapter 9](#) for details).

**Practices reported minor efforts to try to reduce hospital use during IAH,** as we described in Exhibit 1.5. For example, some practices implemented formal processes to identify beneficiaries at high risk for hospital use and provided telephone follow-up calls by care team members (such as nurses or medical assistants) between HBPC visits. However, these efforts represented only relatively minor changes to IAH practices' long-established approach to delivering HBPC, which is probably why the performance-year analysis found only weak to moderate evidence of changes in hospital use. Furthermore, IAH practice administrators themselves did not view IAH payments as the primary driver for funding new initiatives, but rather as one source of additional funding used to support care delivery activities (Exhibit 1.5).

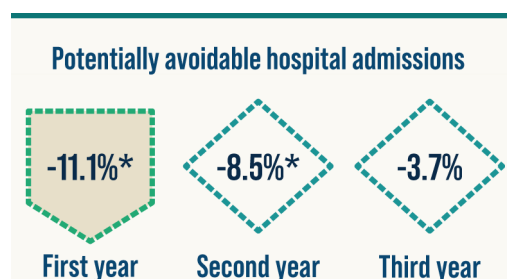


## 7.2.2. Three-year analysis of IAH beneficiaries new to HBPC



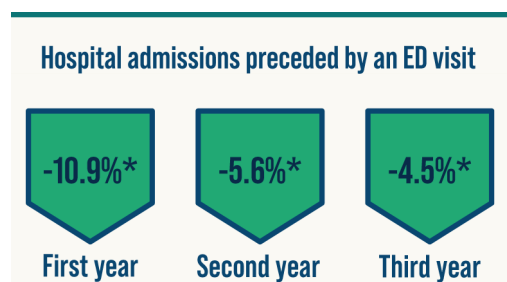
**Starting HBPC during the demonstration reduced hospital admissions in the first two years after beneficiaries started HBPC.** The reduction was largest in the first year at -11.4% (-283 per 1,000 beneficiaries, statistically significant). The reduction decreased in the second and third years, to -5.0% (-123 per 1,000 beneficiaries, statistically significant) and -3.2% (not statistically significant), respectively (Appendix Exhibit D.16). IAH

practices' general approach to HBPC may have been especially effective at reducing hospital admissions in the first year after starting HBPC because at that time beneficiaries were unusually frail and recovering from the recent hospital admission that made them eligible for the demonstration.

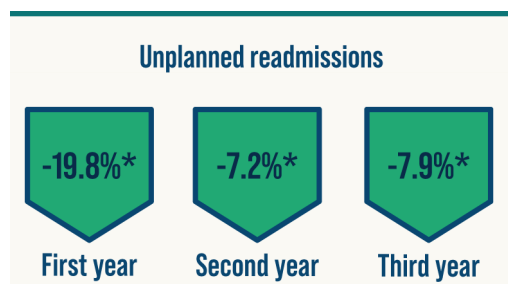


**Starting HBPC during the demonstration may have reduced potentially avoidable hospital admissions in the first year after beneficiaries started HBPC.** The reduction in the first year of -11.1% (-50 per 1,000 beneficiaries) was statistically significant. However, starting HBPC probably did not reduce potentially avoidable admissions in the second and third years. The result in the second year was a large decrease (-8.5%, statistically

significant), but we do not have confidence that starting HBPC during the demonstration caused this decrease. It may represent a continuation of trends that predated starting HBPC. Specifically, in the two years before IAH beneficiaries started receiving HBPC, potentially avoidable hospital admissions increased more slowly in the IAH group than in the comparison group (Appendix Exhibit D.16). If these trends continued after the IAH group started HBPC, potentially avoidable hospital admission rates in the IAH group would have appeared to decrease relative to the comparison group, without the decrease being caused by starting HBPC. In the first year, the decrease in potentially avoidable hospital admissions was so large that continuing trends could not explain it. However, by the second and third years, the decrease was small enough that it could have been explained by continuing trends.



**Starting HBPC during the demonstration reduced hospital admissions preceded by an ED visit in all three years after beneficiaries started HBPC.** The reductions decreased from -10.9% (-211 per 1,000 beneficiaries) in the first year to -4.5% (-87 per 1,000 beneficiaries) in the third year and were statistically significant in all years (Appendix Exhibit D.16). Large, persistent reductions in hospital admissions preceded by an ED visit reflected decreases generally found for all hospital admissions and outpatient ED visits.



**Starting HBPC during the demonstration decreased the probability of unplanned readmissions in all three years after beneficiaries began receiving HBPC from an IAH practice.** Reductions were largest (-19.8%, or -5.1 percentage points) in the first year but still large (about -7% to -8%) and statistically significant in the second and third years (Appendix Exhibit D.17). Reductions in hospital admissions may have contributed to reductions

in the probability of unplanned readmissions because fewer hospital admissions create fewer opportunities to be readmitted.

**IAH practices' general approach to delivering HBPC is the reason the three-year analysis showed much larger reductions** in hospital admissions and readmissions than the performance-year analysis. As part of their general approach to HBPC, IAH practices provided frequent primary care visits and prioritized meeting urgent care needs in the home for years before the demonstration began. According to IAH practices, frequent visits and addressing urgent care needs at home helped them to build trust with beneficiaries and caregivers, and these trusting relationships were essential to reducing hospital admissions. Only the three-year analysis measured outcomes before and after beneficiaries were exposed to IAH practices' general approach to HBPC, which allowed us to assess the effectiveness of this approach.

**"[HBPC from the IAH practice is] better than going to the ER. It keeps me out of the hospital and connected to a team."**

— IAH beneficiary

**"It avoided a lot of trips to the ER and hospitalization. [I am] very thankful that there are doctors who still make house calls."**

— Caregiver of an IAH beneficiary



Key:



# What were the best practices associated with better outcomes?

**Several strategies IAH practices used to deliver HBPC were associated with larger reductions in potentially avoidable hospital admissions for beneficiaries starting HBPC during the demonstration.** Examples included clinicians conducting fewer HBPC visits per day and non-clinician staff providing visits in the home, such as nurses.

We identified care delivery strategies and activities that may contribute to fewer potentially avoidable hospital admissions for IAH beneficiaries new to HBPC (see Appendix E for details about the best practices analysis). We focused on potentially avoidable hospital admissions because these admissions incur high costs for Medicare and can sometimes be avoided through high-quality, timely primary care. Additionally, hospital admissions may negatively affect older adults, in some cases leading to functional decline, adverse drug reactions, delirium, and sometimes even permanent disability and nursing home placement.<sup>iv</sup> Starting HBPC during the demonstration reduced potentially avoidable hospital admissions in the first year after beneficiaries started HBPC (see [Chapter 7](#) for details).

**Among 15 strategies, six were associated with larger reductions in potentially avoidable hospital admissions, and we refer to these six strategies as best practices** (Exhibit 8.1 and Appendix Exhibit E.4). One example is lower daily clinician caseloads. Practices whose clinicians had three to seven beneficiary visits per day reduced potentially avoidable hospital admissions by 122 per 1,000 beneficiaries in the first year after beneficiaries started HBPC. By contrast, practices whose clinicians had eight to 15 visits per day had a much smaller reduction—only 34 admissions per 1,000. The difference between the two groups was statistically significant. Also, it aligned with the expectation that lower clinician caseloads allow for more focused, individualized care, which may be more effective in reducing these hospital admissions.

Of the 14 IAH practices, six implemented most of these best practices (at least four of the six best practices). Most of these six practices were academic medical centers, whereas the remaining eight were mostly independent practices or members of the HarmonyCares Medical Group (Appendix Exhibit E.5).

## Exhibit 8.1. Best practices associated with larger reductions in potentially avoidable hospital admissions



### Lower daily clinician caseload

3 to 7 patients per day, compared with 8 to 15



### Smaller clinician panel sizes

40 to 149 patients per clinician, compared with 150 to 200



### Having nurse practitioners or physician assistants conduct at least half of the HBPC visits

with less than half provided by physicians



### Providing visits in the home by non-physician staff

such as registered nurses, social workers, and chaplains



### Providing patient visits in settings outside the home

such as in a SNF or hospital



### Using remote monitoring technology

such as to monitor patients' blood pressure or blood sugar levels

SNF = skilled nursing facility.



# Did IAH reduce Medicare spending before accounting for incentive payments?

**The demonstration may have reduced total Medicare spending by a moderate amount before incentive payments.** However, two-thirds of that reduction was because of a large practice that stopped participating in IAH and stopped providing HBPC after Year 5. Still, the demonstration reduced spending among one group of beneficiaries: those who were both dually eligible for Medicaid and needed help with most or all daily activities, such as eating and dressing.

**For beneficiaries new to HBPC, starting HBPC during the demonstration greatly reduced total Medicare spending in the first year, but this effect did not continue.** Starting HBPC during the demonstration reduced spending only among beneficiaries who needed help with most or all activities of daily living, regardless of whether they were dually eligible for Medicaid.

## 9.1. Performance-year analysis

Total spending before  
incentive payments



Years 1-10

Over 10 years, the demonstration may have reduced total spending by a moderate amount before accounting for incentive payments (-4.9%, or -\$211 PBPM). However, two-thirds of that reduction was because of a large practice that stopped participating in IAH and stopped providing HBPC after Year 5 (Appendix Exhibit C.24).

**How did a single IAH practice reduce our confidence in some of the evaluation results, including reductions in spending and reductions in some hospital admissions?**

- The reduction in total spending was much smaller when one practice was excluded (-1.7%, Practice P, Appendix Exhibit C.24). Because of the small size of the demonstration, results could be strongly influenced by individual practices.
- Nearly all the reduction in unplanned readmissions and about half of the reduction in potentially avoidable hospital admissions and admissions preceded by an ED visit were driven by that same practice. For example, the reduction in readmissions was -4.3% when all practices were included, compared with -0.2% when Practice P was excluded.
- In interviews, an administrator from this practice reported that participation in the demonstration did not lead the practice to make major changes in care delivery, and that the administrator did not expect the practice to earn incentive payments through IAH. Because of this, the drastic changes in results when excluding this practice make it more difficult to conclude that the demonstration led to reductions in spending and some types of hospital use on average across 10 years.



Key:





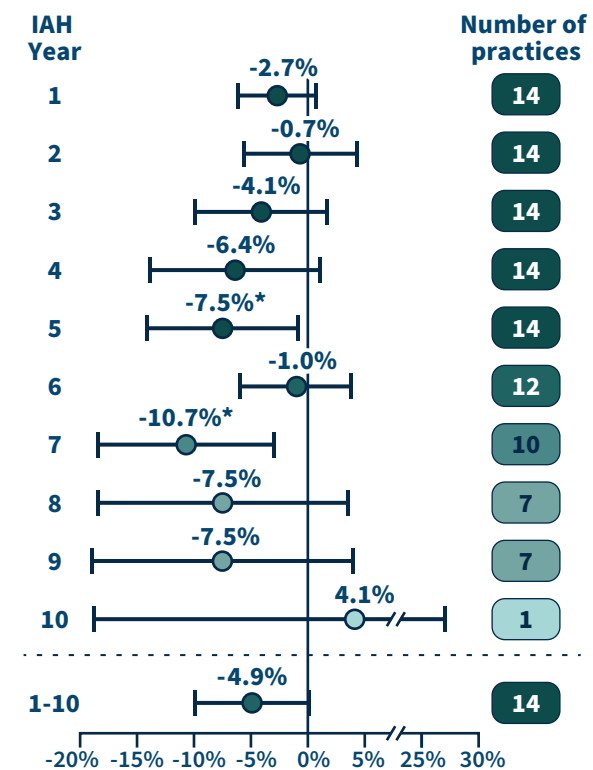
**Results for total spending differed substantially across performance years.** Prior to Year 7, reductions in total spending were either (1) small and not statistically significant (Exhibit 9.1), or (2) large because of the large practice that stopped participating in IAH after Year 5. Years 7 to 9 occurred during the COVID-19 pandemic, when reductions in spending grew.

### How did results differ during the COVID-19 pandemic?

The COVID-19 pandemic (2020–2022) overlapped with IAH Years 7, 8, and 9 and affected many aspects of health care during that time. Results from the performance-year analysis differed during the COVID-19 pandemic relative to most earlier years, particularly relative to the year before the pandemic, Year 6 (Exhibit 9.1). One explanation could involve a change in the effectiveness of HBPC delivered by the IAH practices participating in those years. HBPC may have been more effective during the pandemic because having a dedicated IAH practice overseeing a beneficiary's care may have been especially supportive during a disruptive period of time for the delivery of health care.

However, results during the pandemic had little influence on the average effect of the demonstration across all years because the demonstration had fewer practices and beneficiaries in those years. For example, the effect of the demonstration on spending across all 10 years was -4.9%, which was similar to the effect across Years 1 to 5 (-4.6%).<sup>v</sup>

**Exhibit 9.1.** Results for total spending differed substantially across performance years depending on which practices were participating



Source: IAH demonstration data and Medicare claims, 2010–2023.

Note: Effects in each year were estimated using the practices that participated in the demonstration during that year. The horizontal lines represent 90 percent confidence intervals. These results do not account for Medicare spending on IAH incentive payments.

\* The difference is statistically significant ( $p < 0.1$ ).

**If the demonstration reduced total spending, it was mostly inpatient spending (-7.1% or -\$122 PBPM; Exhibit 9.2).** Inpatient spending reflects spending for general and specialty hospitals and some rehabilitation facilities. However, as for total spending, the reduction in inpatient spending was not statistically significant and was heavily influenced by a single practice (-1.4% reduction without that practice, Appendix Exhibit C.24). Results for other spending categories are:

- IAH reduced spending on durable medical equipment (DME), which includes spending on medical devices and equipment such as wheelchairs, by a relatively large and consistent amount (-17.2%, or -\$25 PBPM). This reduction had a small influence on total spending because DME made up only about 3% of total spending for IAH beneficiaries.

- Relatively large reductions in outpatient spending (-11.2%, or -\$28 PBPM) were consistent over time and were statistically significant. However, this result may represent a continuation of trends that predated the demonstration, not an effect of the demonstration. Outpatient spending increased faster for beneficiaries in the comparison group in the two years before the demonstration than for IAH beneficiaries. If this trend continued during the demonstration, it could have accounted for much of the -11.2% reduction. This issue did not affect DME spending.
- The demonstration may have reduced clinician/supplier spending (-4.3% or -\$30 PBPM), but the reduction was not statistically significant.
- Effects on other spending categories were smaller or not statistically significant (Appendix Exhibit C.23). For example, the demonstration did not affect home health spending. This is because close collaboration with home health agencies was a feature of IAH practices' general approach to delivering HBPC, which predated the demonstration.

**The demonstration reduced total spending among beneficiaries who were both dually eligible for Medicaid and needed help with most or all daily activities.** Beneficiaries who were dually eligible for Medicare and Medicaid (low income) and who needed assistance from another person with all or nearly all daily activities such as eating and dressing accounted for about one-fifth of IAH beneficiaries and the comparison group across all 10 years. Among these beneficiaries, IAH reduced spending by about -12.4% (statistically significant; Exhibit 9.3, Appendix Exhibit C.27). Among all other beneficiaries, the spending reduction was just -1.0% (not statistically significant). The reduction of -12.4% was still large and statistically significant even after removing the practice that disproportionately affected spending (-9.7%). Therefore, the minor changes to HBPC delivery made by IAH practices overall in response to the demonstration appeared to be most effective for this high-needs group. Many IAH practices reported that they identified beneficiaries at high risk of hospital use for increased follow-up, which may have particularly been effective for reducing spending among low-income beneficiaries who needed assistance from another person with all or nearly all daily activities.

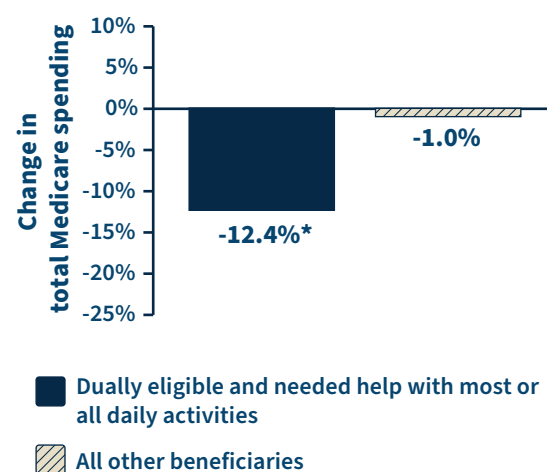
**Exhibit 9.2.** If the demonstration reduced total spending over 10 performance years, most was inpatient spending



Source: IAH demonstration data and Medicare claims, 2010–2023. Effect is per beneficiary per month (PBPM).

\* The difference is statistically significant ( $p < 0.1$ ).  
DME = durable medical equipment  
SNF = skilled nursing facility

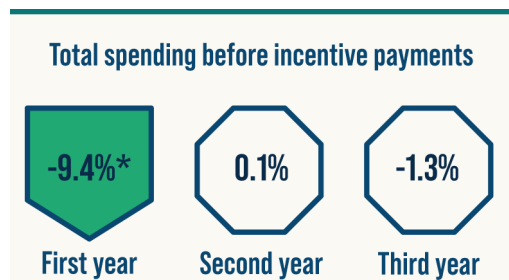
**Exhibit 9.3.** The demonstration probably reduced total spending among beneficiaries who were both low income and needed help with most or all daily activities over 10 performance years



Source: IAH demonstration data and Medicare claims, 2010–2023.

\* The difference is statistically significant ( $p < 0.1$ ).

## 9.2 Three-year analysis of IAH beneficiaries new to HBPC



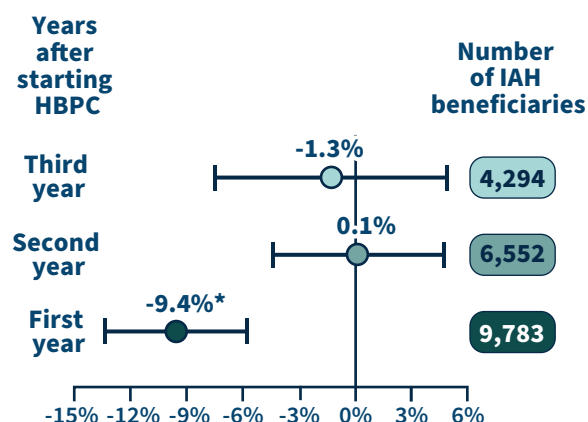
**Starting HBPC during the demonstration reduced total Medicare spending in the first year after beneficiaries started HBPC but did not affect total spending in the second and third years.** In the first year, starting HBPC during the demonstration reduced total Medicare spending by -9.4% more than for similar beneficiaries who did not receive HBPC in the first year (-\$501 PBPM, statistically significant; Exhibit 9.4). Across all beneficia-

ries, this reduction amounts to \$49.1 million (not accounting for incentive payments). By the third year, the reduction was only -1.3% and was not statistically significant (Appendix Exhibit D.18).

Unlike in the performance-year analysis, the spending reduction in the first year was not heavily influenced by any one practice, which increases our confidence that starting HBPC during the demonstration caused the decrease, rather than other unmeasured factors. However, one practice consistently performed worse than other practices. When we excluded this practice, reductions in spending were larger in all three years and were statistically significant in the third year (-3.8%, compared with -1.3% for all IAH practices; Appendix Exhibit D.22).

**IAH practices' general approach to providing HBPC probably caused most of the large spending reduction in the first year after starting HBPC.** Administrators and clinicians at IAH practices believed that the way they delivered HBPC had been reducing total Medicare spending long before the demonstration. They described ways that HBPC reduced spending, such as by identifying issues that a clinician could not have noticed in the office. Examples included the beneficiary being unable to recline in bed because of trouble breathing, a blood sugar machine lacking batteries, or the beneficiary not taking a nebulizer out of the packaging. IAH practices' general approach to HBPC may have been especially effective in the first year after starting HBPC because IAH beneficiaries in the three-year analysis were unusually frail and recovering from a recent hospital admission during that time.

**Exhibit 9.4.** Starting HBPC during the demonstration reduced Medicare spending substantially in the first year, but not in later years



Source: IAH demonstration data and Medicare claims, 2011–2022.

Note: These results do not account for Medicare spending on IAH incentive payments.

\* The difference is statistically significant ( $p < 0.1$ ).

**"Taking care of patients in their home saves Medicare money. Just from ER, hospitalization, just better managing their care."**

— IAH practice administrator



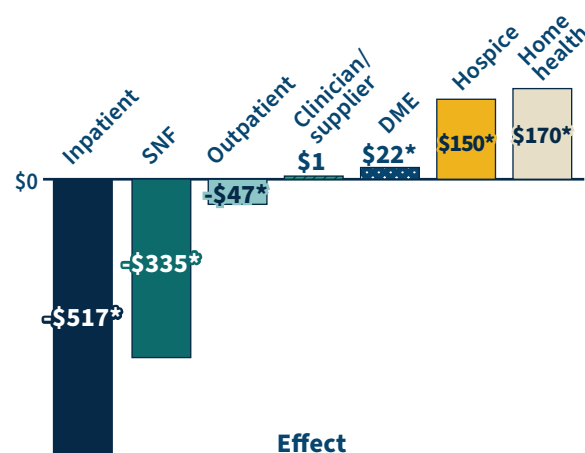
**IAH practices did not make substantial changes to how they delivered HBPC in response to the demonstration.** Early in the demonstration, most IAH practices experienced challenges simply identifying which of their beneficiaries were eligible for the demonstration. It also took IAH practices time to determine what care delivery changes to make; in the end, practices made minor changes aimed at improving their performance on the demonstration's quality measures, which focused on preventing hospital and ED use and increasing follow-up after hospital and ED visits. IAH practices introduced these minor changes gradually and sometimes ended or refined approaches that were unsuccessful. Therefore, if these changes affected total spending, those effects probably would have been larger for beneficiaries who started HBPC later in the demonstration. Yet starting HBPC reduced spending by about the same amount regardless of whether beneficiaries started early or later in the demonstration (Appendix Exhibit D.5). For this reason, it is unlikely that the minor changes IAH practices made in response to the demonstration caused the large reductions in spending among beneficiaries new to HBPC.

### Reductions in inpatient and SNF spending drove the reduction in total Medicare spending.

Starting HBPC during the demonstration led to a large reduction in inpatient spending in the first year after beneficiaries started HBPC (-20.5%, or -\$517 PBPM, statistically significant; Exhibit 9.5). Although reductions in hospital admissions were large and statistically significant in the second year, they did not translate into statistically significant reductions in inpatient spending. Neither reductions in hospital admissions nor reductions in inpatient spending were statistically significant in the third year. Decreases in SNF spending were largest in the first year at -28.8% (-\$335 PBPM, statistically significant) but were still large and statistically significant in the second and third years (Appendix Exhibit D.24).

**Increases in home health and hospice spending partially offset decreases in other spending.** IAH practices reported that coordination with home health agencies was an important part of preventing or responding to health problems (see [Chapter 6](#) for details). Increases in home health spending were largest in the first year at 33.6% (\$170 PBPM, statistically significant) but were still sizeable and statistically significant in the second and third years. Hospice spending also increased markedly in all three years (285%–390% or about \$150–\$200 PBPM, relative to an average of \$52 among IAH beneficiaries in the year before starting HBPC, statistically significant; Appendix Exhibit D.24). One reason that hospice spending increased is that IAH beneficiaries who died were more likely to use hospice services than beneficiaries in the comparison group who died, 69% vs 57% in the first year (Appendix Exhibit D.28). However, IAH beneficiaries who did not die were also more likely to use hospice services than beneficiaries in the comparison group who did not die, 10% vs 4% in the first year. One possible reason why hospice use was higher among beneficiaries new to HBPC is because trusting relationships with IAH clinicians facilitate conversations about beneficiaries' preferences for end-of-life care, including hospice (see [Chapter 11](#) for details).

**Exhibit 9.5.** Starting HBPC during the demonstration reduced inpatient and SNF spending and increased home health and hospice spending in the first year after starting HBPC



Source: IAH demonstration data and Medicare claims, 2011–2022. Effect is per beneficiary per month (PBPM).

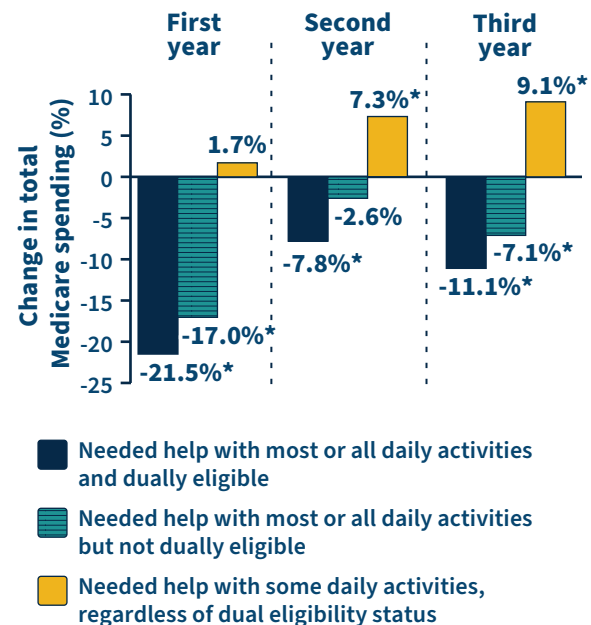
\* The difference is statistically significant ( $p < 0.1$ ).

DME = durable medical equipment

SNF = skilled nursing facility

**As in the performance-year analysis, the reduction in total Medicare spending was largest among beneficiaries who both had low income and needed help with most or all daily activities.** In the first year after starting HBPC, IAH reduced total Medicare spending among the 18% of beneficiaries who were both dually eligible for Medicare and Medicaid and required help from another person with most or all daily activities by -21.5% (-\$1,371 PBPM, statistically significant, Exhibit 9.6). Starting HBPC during the demonstration also greatly reduced total Medicare spending among the 45% of beneficiaries who required help with most or all daily activities but were not dually eligible (-17.0% in the first year, statistically significant). For both groups of beneficiaries who required help from another person with most or all daily activities, starting HBPC during the demonstration continued to reduce spending in the third year, though to a lesser degree than in the first year. These results underscore the effectiveness of HBPC from IAH practices among beneficiaries who needed help with most or all daily activities, such as eating and transferring in and out of bed. For more details, see Appendix Exhibit D.21.

**Exhibit 9.6.** Starting HBPC during the demonstration reduced spending for beneficiaries who needed help with most or all daily activities up to three years after starting HBPC



Source: IAH demonstration data and Medicare claims, 2011–2022.

\* The difference is statistically significant ( $p < 0.1$ ).



# Did IAH reduce Medicare spending net of incentive payments?

**The demonstration did not reduce total Medicare spending net of incentive payments.**

IAH incentive payments were a cost to CMS of running the demonstration. Because IAH practices were already delivering HBPC before the demonstration, the demonstration would have produced net savings to CMS only if the changes IAH practices made in response to the opportunity to earn performance-based incentive payments caused spending reductions that were larger than the incentive payments given to IAH practices.<sup>vi</sup>

**IAH practices' opportunity to earn performance-based incentive payments did not meaningfully reduce net Medicare spending across all 10 years.** To estimate the effects of the demonstration on Medicare spending net of incentive payments, we added incentive payments in each performance year to the estimated aggregate effect on Medicare spending (Exhibit 10.1). Because incentive payments were not limited to beneficiaries new to HBPC, we calculated net spending only using the performance-year analysis. The estimated reductions in spending after adding incentive payments had a large degree of uncertainty, ranging from a net spending decrease of \$161.9 million to a net spending increase of \$104.4 million. In fact, IAH did not reduce net Medicare spending by a statistically significant amount in any of the performance years.

**Exhibit 10.1.** IAH did not convincingly reduce net spending across all 10 years

| Performance year | Number of IAH practices | Medicare spending before accounting for incentive payments (in millions) |                         | Incentive payments to IAH practices (in millions) | Net Medicare spending after accounting for incentive payments (in millions) |                         |
|------------------|-------------------------|--------------------------------------------------------------------------|-------------------------|---------------------------------------------------|-----------------------------------------------------------------------------|-------------------------|
|                  |                         | Aggregate effect                                                         | 90% confidence interval |                                                   | Aggregate effect                                                            | 90% confidence interval |
| Year 1           | 14                      | -\$9.4                                                                   | -\$22.1, \$3.2          | \$11.7                                            | \$2.2                                                                       | -\$10.4, \$14.9         |
| Year 2           | 14                      | -\$2.2                                                                   | -\$18.1, \$13.8         | \$5.3                                             | \$3.2                                                                       | -\$12.8, \$19.1         |
| Year 3           | 14                      | -\$12.9                                                                  | -\$31.6, \$5.9          | \$7.2                                             | -\$5.6                                                                      | -\$24.4, \$13.1         |
| Year 4           | 14                      | -\$25.4                                                                  | -\$55.9, \$5.0          | \$8.1                                             | -\$17.3                                                                     | -\$47.8, \$13.1         |
| Year 5           | 14                      | -\$31.4*                                                                 | -\$59.8, -\$2.9         | \$6.9                                             | -\$24.5                                                                     | -\$52.9, \$3.9          |
| Year 6           | 12                      | -\$3.2                                                                   | -\$19.2, \$12.9         | \$11.1                                            | \$7.9                                                                       | -\$8.2, \$23.9          |
| Year 7           | 10                      | -\$22.6**                                                                | -\$39.3, -\$6.0         | \$18.5                                            | -\$4.2                                                                      | -\$20.8, \$12.5         |
| Year 8           | 7                       | -\$9.9                                                                   | -\$24.7, \$4.8          | \$12.5                                            | \$2.5                                                                       | -\$12.2, \$17.3         |
| Year 9           | 7                       | -\$8.0                                                                   | -\$20.5, \$4.5          | \$9.7                                             | \$1.6                                                                       | -\$10.8, \$14.1         |
| Year 10          | 1                       | -\$0.3                                                                   | -\$1.4, \$1.9           | \$5.1                                             | \$4.8                                                                       | \$3.4, \$6.8            |
| Total, all years |                         | -\$124.7                                                                 | -\$257.8, \$8.5         | \$96.0                                            | -\$28.7                                                                     | -\$161.9, \$104.4       |

Source: IAH demonstration data and Medicare claims, 2010–2023.

Notes: All numbers are in millions. Negative numbers denote spending decreases; positive numbers denote spending increases. Aggregate effect calculations before accounting for incentive payments are based on the beneficiary-level estimates shown in Appendix Exhibit C.23 and the number of IAH beneficiary-months in each year.

\*/\*\*/\*\* The difference is statistically significant at the 0.10/0.05/0.01 level.



**The demonstration did not reduce nursing home entry, nor did it affect beneficiary days at home.**

For beneficiaries new to HBPC, **starting HBPC during the demonstration greatly reduced nursing home entry in all years.** It also increased days at home in the first year by reducing hospital admissions and time in SNFs.

## 11.1. Days at home and entry into a nursing home

### 11.1.1. Performance-year analysis

#### Days at home



Years 1-10

**Over 10 years, the demonstration did not affect days at home.** The days at home outcome indicates the number of days in a year that a beneficiary was not in a hospital, an inpatient rehabilitation facility (such as a SNF), or an ED. Effects of the demonstration on days at home were small (less than 1%) and not statistically significant, with strong, consistent evidence of no effect across years (Appendix Exhibit C.35). A lack of effect on days at home is consistent with results from the performance-year analysis showing that the demonstration probably did not reduce hospital admissions nor SNF spending (as described in [Chapter 7](#) and [Chapter 9](#)).

#### Nursing home entry



Years 1-10

**The demonstration probably did not increase entry into a nursing home.**

IAH practice clinicians provided primary care at homes (private residences, assisted living facilities, and other group residences), not in nursing homes. Nursing homes are settings with full-time monitoring and medical care. Nursing homes differ from assisted living facilities, which encourage independence in a home-like environment while providing help with some activities such as bathing and medications. We examined nursing home entry in the evaluation because beneficiaries who entered a nursing home were removed from the calculation of IAH incentive payments, which could have led some

IAH practices to subtly encourage high-cost beneficiaries to enter a nursing home. On average, about 7.0% of IAH beneficiaries entered a nursing home in the year prior to the demonstration (in the year before the demonstration, the term “IAH beneficiaries” refers to beneficiaries who met IAH eligibility requirements and were new and existing users of HBPC at an IAH practice).

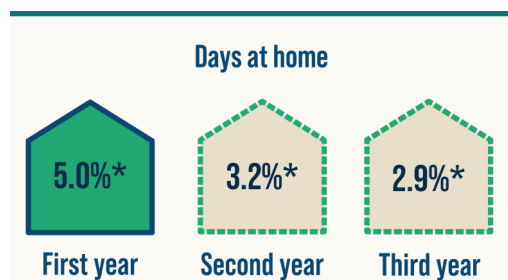
Although we estimated a large, statistically significant increase in nursing home entry over 10 years (9.3%), we considered the level of evidence weak for several reasons. First, the large increase was driven by a few unusual years and not part of a larger pattern (Appendix Exhibit C.33). Second, the annual rate of nursing home entry among IAH beneficiaries did not increase during the demonstration. Nursing home entry decreased among IAH beneficiaries during the demonstration; the 9.3% increase was driven by steeper decreases among beneficiaries in the comparison group. More specifically, the rate of nursing home entry for IAH beneficiaries declined from 7.9% in the year before the demonstration to 6.7% in Year 5; during the same period, the rate for beneficiaries in the comparison group declined from 14.3% to 12.9%. Finally, the trend of a small decrease in nursing home entry among the IAH group and a larger decrease among the comparison group was present in the two years before the demonstration, providing further evidence that the 9.3% increase was probably not caused by the demonstration.



Key:

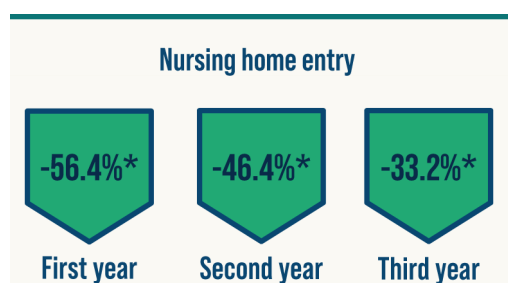


### 11.1.2. Three-year analysis of IAH beneficiaries new to HBPC



**Starting HBPC during the demonstration increased the percentage of days spent at home in the first year after beneficiaries began receiving HBPC** by a large and statistically significant amount (5.0%). Over time, the increase in days at home decreased to roughly 3% in the second and third years. Though smaller, these increases were statistically significant (Appendix Exhibit D.29). Increases in the percentage of days spent at home in the

first year after starting HBPC are consistent with the finding that starting HBPC during the demonstration decreased hospital admissions and SNF spending in that year in the three-year analysis because a day spent in the hospital or a SNF is not a day spent at home.



**Starting HBPC during the demonstration decreased nursing home entry in all three years after beneficiaries started HBPC.** Reductions were largest in the first year at -56.4% (-8.6 percentage points), relative to a nursing home entry rate of 15.3% among IAH beneficiaries in the year before they started HBPC. Although the magnitude of reductions declined over time to -33.2% by the third year, they were large and statistically signifi-

cant in all three years (Appendix Exhibit D.30). Starting HBPC during the demonstration may have reduced the risk of nursing home entry for at least two reasons:

- HBPC helps beneficiaries, caregivers, and clinicians develop a trusting relationship and communicate effectively. In turn, a trusting relationship may help clinicians better understand beneficiaries' and caregivers' goals for care, which may include them remaining at home as long as possible.
- During visits at home, IAH clinicians learn about obstacles beneficiaries face in managing their conditions, observe caregiver support and interactions with beneficiaries, and identify safety improvements that reduce the risk of falls. They can use this information to educate beneficiaries and caregivers and refer beneficiaries to community-based support services (such as Meals on Wheels) that help them remain in the home and avoid nursing home entry.



**Key:**



## 11.2. Death

### 11.2.1. Performance-year analysis

#### Performance-year analysis



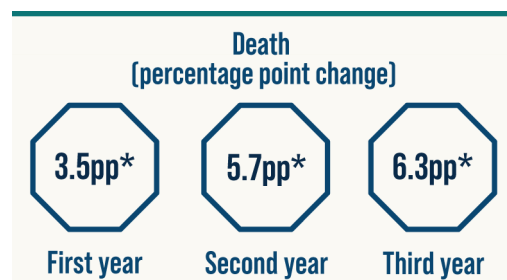
**Across all 10 years, IAH may have reduced the probability of dying.** The probability of death is high in this population. About 14.6% of IAH beneficiaries died in the year before the demonstration began. On average, over the full demonstration, the reduction in the probability of dying was moderate (-3.8% or -0.56 percentage points) but not statistically significant. However, results in some individual performance years were larger and statistically significant (Appendix Exhibit C.34).

**The reduction in the probability of death was larger during the COVID-19 pandemic (IAH Years 7–9).** Through the demonstration's first six years (before the COVID-19 pandemic), the reduction in the probability of death was just -2.2 percent (not statistically significant). From Years 7-9, however, the reduction in the probability of death was larger, approximately -11.3%, and statistically significant. Previous IAH evaluation reports showed that COVID-19 diagnosis or related hospital admissions did not play a direct material role in the reduction.<sup>vii</sup>

Instead, IAH may have lowered the probability of dying during the COVID-19 pandemic as a result of more consistent primary care and more trust between beneficiaries and clinicians. Because IAH practices usually visited beneficiaries on a regular schedule (as we described in [Chapter 2](#)), IAH beneficiaries may have received more consistent care than beneficiaries in the comparison group during the COVID-19 pandemic. This regular care may have kept IAH beneficiaries relatively healthier and prevented serious complications of acute and chronic illnesses. Also, through the trust that IAH beneficiaries built with their IAH clinicians, they may have felt more comfortable seeking health care during the pandemic at a time when beneficiaries in the comparison group, who did not receive HBPC, may have been reluctant to seek care.

### 11.2.2. Three-year analysis of IAH beneficiaries new to HBPC

#### Three-year analysis of IAH beneficiaries new to HBPC



**Starting HBPC during the demonstration did not reduce death among beneficiaries new to HBPC.** In all three years, beneficiaries new to HBPC were more likely to die than members of the comparison group. Differences in the probability of death ranged from 3.5 to 6.3 percentage points (Appendix Exhibit D.31). We present results for death in the three-year analysis using percentage points rather than percentages because no

beneficiaries died before starting HBPC. Thus, we cannot calculate a percentage effect.

**Results from this analysis do not suggest that starting HBPC during the demonstration inappropriately caused beneficiaries to die more quickly,** for the following reasons:

1. It is not surprising that many IAH beneficiaries died soon after starting HBPC because they were in poor health when they began receiving HBPC.<sup>viii</sup> Over a quarter died within the first year. By the end of the second year, almost half had died, and by the end of the third year, over 60 percent had died. During interviews, some IAH clinicians stated that it was not uncommon for a new HBPC patient to die within a few weeks of their first HBPC visit.<sup>ix</sup>



Key:



2. We have much less confidence in the findings for death than for other outcomes in the three-year analysis. Because the three-year analysis followed the same beneficiaries before and after they started HBPC, there were no death rates before starting HBPC to compare to death rates after starting HBPC (see Appendix D for details). For this reason, we could not use rigorous statistical methods that allow us to separate the effects of starting HBPC during the demonstration from the effects of other factors that differed between the IAH and comparison groups and that might have differentially influenced death rates. As an example, it is possible that some IAH beneficiaries began HBPC because they preferred less aggressive care and more comfort care. If so, this preference could explain why more HBPC beneficiaries died.
3. Higher death rates for IAH beneficiaries may reflect appropriate care, such as use of hospice, which was much higher for IAH beneficiaries who were new to HBPC than for beneficiaries in the comparison group. Increased use of hospice could reflect patient preferences, as indicated above, as well as IAH clinicians' ability to develop trusting relationships with beneficiaries and caregivers by visiting them at home. Trust, as one IAH clinician said, is "the secret sauce." As part of developing trusting relationships, IAH clinicians could more effectively understand beneficiaries' wishes for care; where appropriate, they could discuss options for less aggressive care, including symptom management and hospice. A 2023 randomized clinical trial of patients new to HBPC reached similar conclusions after observing a substantially higher death rate among HBPC recipients than in the control group.<sup>x</sup>

IAH aimed to reduce Medicare spending and hospital and ED use and to improve health outcomes for traditional Medicare beneficiaries who were chronically ill and needed help with daily activities. IAH had two main components: HBPC from a practice specializing in HBPC and the opportunity for each practice to earn performance-based incentive payments. Appendix Exhibit D.32 summarizes results for all outcomes examined during the evaluation.

**Results from this evaluation apply only to beneficiaries who received HBPC from an IAH practice and met IAH eligibility requirements, because of the following reasons:**

- **IAH practices are not representative of other practices and clinicians that provide HBPC.** Nearly all IAH practices offer primary care in the home only, not also in an office. Nationally, many HBPC visits are provided by clinicians who do not specialize in HBPC.<sup>xi</sup> Practices that do specialize in HBPC vary in their characteristics, patient populations, and approaches to providing HBPC.<sup>xii</sup>
- **IAH beneficiaries are not representative of other Medicare beneficiaries or those who receive HBPC.** More than half of IAH beneficiaries needed help with most or all activities of daily living. Because of their poorer health, IAH beneficiaries' Medicare spending was five times as high as average spending among all traditional Medicare beneficiaries.<sup>xiii</sup> Even when compared with other traditional Medicare beneficiaries who used HBPC, IAH beneficiaries had considerably poorer health status.<sup>xiv</sup>

## 12.1. How did starting HBPC from an IAH practice during the demonstration affect spending, hospital use, and health outcomes?

Starting HBPC at an IAH practice during the demonstration greatly reduced total Medicare spending in the first year. IAH practices' general approach to HBPC, such as providing frequent visits at home to identify problems and developing strong relationships with beneficiaries and caregivers, was probably the major cause of these effects. HBPC helped keep beneficiaries out of the hospital and out of SNFs, in part by increasing beneficiaries' use of primary care and home health services.

The demonstration itself—that is, the opportunity to earn performance-based incentive payments—was probably not a major cause of these effects. A wide range of evidence supports this interpretation, such as interviews with the IAH practices and results from the performance-year analysis. The performance-year analysis measured effects of the opportunity to earn performance-based incentive payments and netted out effects of IAH practices' general approach to HBPC that predated the demonstration, and it found much smaller effects than the three-year analysis.

Among beneficiaries who needed help with most or all daily activities, especially those who were also dually eligible for Medicare and Medicaid, relatively large reductions in total Medicare spending continued into the third year after starting HBPC. Starting HBPC during the demonstration greatly reduced nursing home entry in all years, which means that HBPC allowed beneficiaries to remain in their homes longer than they would have otherwise. Starting HBPC also increased days at home in the first year by reducing hospital admissions and time in SNFs.

## **12.2. How did IAH practices' opportunity to earn performance-based incentive payments affect spending, hospital use, and health outcomes?**

IAH practices made minor adjustments to their long-established approach to delivering HBPC to try to reduce hospital and ED use in response to the IAH payment incentive. Examples of strategies used by some practices include implementing formal processes to identify beneficiaries at high risk for hospital use and improving processes for handling after-hours calls. However, these minor changes probably did not lead to new reductions in hospital and ED use beyond the reductions already caused by IAH practices' general approach to HBPC (discussed in the previous paragraph). After accounting for incentive payments, the reduction in net spending was small, about 1% of total Medicare spending for IAH beneficiaries, with a high degree of uncertainty. Consistent with a lack of effects on hospital and ED use and net spending in the performance year analysis, the minor changes the IAH practices made because of the demonstration did not reduce nursing home entry nor increase days at home. However, the demonstration reduced Medicare spending for beneficiaries who were both dually eligible for Medicaid and needed help with most or all daily activities, such as eating and dressing.

## **12.3. What value did the IAH demonstration provide to CMS?**

It is very likely that most of the reduction in Medicare spending caused by starting HBPC during the demonstration would have accrued to the Medicare program *even if the demonstration had not occurred*. IAH practices had been focusing on delivering HBPC to Medicare beneficiaries in ways that aimed to reduce Medicare spending and hospital use for years before the demonstration began in 2012. IAH practices' opportunity to earn performance-based incentive payments did not reduce Medicare savings net of those payments.

## **12.4. What value did the IAH demonstration provide to IAH practices?**

Some IAH practice leaders reported that their organizations had been losing money providing HBPC to traditional Medicare beneficiaries before the demonstration began in 2012. Concern about insufficient Medicare reimbursement for home visits was presumably one reason why Congress created the IAH demonstration.

Yet it was unlikely that incentive payments received through participating in the IAH demonstration kept IAH practices in business. Many IAH practice administrators viewed IAH payments as one additional source of funding used to support HBPC. In most years, at least half of the practices that qualified for an IAH incentive payment could have earned a larger payment by meeting the



performance threshold for more quality measures. Eleven of the 14 practices voluntarily withdrew their participation from the demonstration but continued providing HBPC, suggesting that IAH incentive payments were not essential to allowing these practices to continue providing HBPC. Several of these practices joined other alternative payment models.

### ***Key findings from the evaluation***

**The demonstration did not show conclusive evidence that the opportunity for IAH practices to receive an incentive payment reduced total spending nor improved other outcomes** for new and existing HBPC users relative to HBPC users' outcomes before the demonstration. IAH practices made only minor adjustments to their long-standing approach to delivering HBPC in response to the demonstration, which may explain the absence of meaningful changes in outcomes.

**Starting HBPC reduced total spending in the first year and improved other outcomes for a longer period for the one-quarter of IAH beneficiaries newly receiving HBPC.** These improvements were driven by the effect of IAH practices' general approach to HBPC on new HBPC users, which involved providing frequent visits at home to identify problems and developing strong relationships with beneficiaries and caregivers.

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# Endnotes

- <sup>i</sup> For more information about the data and methods for the IAH beneficiary and caregiver surveys, and for full results from these surveys, refer to the [evaluation report appendix covering Year 4](#) of the IAH demonstration.
- <sup>ii</sup> Health information exchanges allow the electronic sharing of healthcare information. They can be implemented at different levels, including a region (such as a metropolitan area), community, or hospital system.
- <sup>iii</sup> It is possible that beneficiary and caregiver preferences changed later in the demonstration or that new and existing HBPC users differed in their desire to go to the ED versus contact the IAH practice. Survey data were collected during performance Years 1 to 3 and were not analyzed separately for new versus existing HBPC users.
- <sup>iv</sup> Covinsky, K.E., R.M. Palmer, R.H. Fortinsky, S.R. Counsell, A.L. Stewart, D. Kresevic, C.J. Burant, and C.S. Landefeld. “Loss of Independence in Activities of Daily Living in Older Adults Hospitalized with Medical Illnesses: Increased Vulnerability with Age.” *Journal of the American Geriatrics Society*, vol. 51, 2003, pp. 451–458.
- <sup>v</sup> For more information about the effects of the demonstration during the COVID-19 pandemic, refer to the [evaluation reports](#) covering Years 7, 8, and 9 of the IAH demonstration.
- <sup>vi</sup> The other way that IAH could have caused new savings for CMS was if participating in the demonstration led IAH practices to expand their capacity and offer HBPC to a larger number of patients. We found no evidence that participating in IAH caused practices to serve more patients. For example, from Year 2 to Year 5, only six of the 14 practices that participated in the demonstration experienced an increase in the number of clinicians caring for IAH beneficiaries and an increase in the number of IAH beneficiaries. None of these practices reported expanding their capacity because of participation in IAH. Most of the six practices had joined an accountable care organization (ACO) by Year 5 and reported that they viewed IAH payments as one additional source of funding used to support HBPC, along with funds from ACO participation and other initiatives.
- <sup>vii</sup> For more information about results for the performance-year analysis during the COVID-19 pandemic, see evaluation reports covering IAH Years [7](#), [8](#), and [9](#).
- <sup>viii</sup> For example, almost half were moderately to severely frail, a condition associated with higher risk of death. See Appendix Exhibit D.3 for characteristics of the IAH group.
- <sup>ix</sup> We accounted for death rates in the analysis by selecting a comparison group that had the same death rate within the first three months as the IAH group. For more details, see Appendix D.
- <sup>x</sup> Federman, A.D., A. Brody, C.S. Ritchie, N. Egorova, A. Arora, S. Lubetsky, R. Goswami, et al. “Outcomes of Home-Based Primary Care for Homebound Older Adults: A Randomized Clinical Trial.” *Journal of the American Geriatrics Society*, vol. 71, 2023, pp. 443–454.
- <sup>xi</sup> Yao, N., K. Rose, V. LeBaron, F. Camacho, and P. Boling. “Increasing Role of Nurse Practitioners in House Call Programs.” *Journal of the American Geriatrics Society*, vol. 65, 2017, pp. 847–852.
- <sup>xii</sup> Leff, B., C.M. Weston, S. Garrigues, K. Patel, and C. Ritchie. “Home-Based Primary Care Practices in the United States: Current State and Quality Improvement Approaches.” *Journal of the American Geriatrics Society*, vol. 63, no. 5, 2015, pp. 963–969. <https://pubmed.ncbi.nlm.nih.gov/25940131/>.
- <sup>xiii</sup> Two years before the demonstration (2010 to 2011), average Medicare spending for beneficiaries of IAH practices who met IAH eligibility criteria was nearly \$53,000 per year. In 2010, average Medicare spending for all traditional Medicare beneficiaries was \$9,738. Centers for Medicare & Medicaid Services. “Chronic Conditions Among Medicare Beneficiaries, CMS Chartbook: 2012 Edition.” 2012. <https://www.cms.gov/research-statistics-data-and-systems/statistics-trends-and-reports/chronic-conditions/downloads/2012chartbook.pdf>.
- <sup>xiv</sup> As described in the [evaluation report appendix covering Year 6](#) of the IAH demonstration, in 2017, IAH beneficiaries had an average Hierarchical Condition Categories score of 4.1, whereas the average was 1.5 for all HBPC users.