Assessing the Value of D-SNP Enrollment for Partial-Benefit Dually Eligible Individuals Who Switch to Full-Benefit Status—Final Report

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Summary

This study sheds light on the extent to which enrollment in Medicare Advantage (MA) Dual Eligible Special Needs Plans (D-SNPs) improves outcomes for partial-benefit dually eligible (PBDE) individuals who become full-benefit dually eligible (FBDE) individuals. Among PBDE individuals who transitioned to FBDE status from 2018–2019, we found that relative to PBDE individuals with similar demographic characteristics and health status who were enrolled in fee-for-service (FFS) Medicare or regular (non–D-SNP) MA plans, those who were enrolled in D-SNPs had (1) lower rates of acute hospitalization and post-acute skilled nursing facility (SNF) use in the month *before* their switch to FBDE status and (2) greater use of home- and community-based services (HCBS) and less use of institutional care in the month of the switch through two months *after* their switch to FBDE status. Our results do not account for other differences between PBDE enrollees in D-SNPs compared to those in other Medicare coverage types, such as functional status or other underlying factors that may precipitate a transition in Medicaid benefit status and affect health outcomes. Our results also are not generalizable to the broader PBDE population or to utilization over longer periods before or after the switch in dual eligibility status than those examined in this study. Despite these limitations, our results indicate that D-SNP enrollment may benefit the estimated 2.7 percent of all dually eligible individuals who switch from PBDE to FBDE status each year, particularly with respect to lower use of institutional care after they become eligible for full Medicaid benefits. Currently, some states do not allow PBDE individuals to enroll in D-SNPs, and researchers, policymakers and advocates have debated whether D-SNP enrollment provide any potential benefit for PBDE individuals. These findings provide some evidence that PBDE individuals who switch to FBDE status may benefit from care models like D-SNPs that provide additional care coordination, but those benefits should be further explored in future research and considered carefully alongside other relevant factors (for example, differences in functional status and behavioral health needs among those with different types of Medicare coverage; favorable selection and coding intensity for individuals in D-SNPs versus other coverage types; and length of follow-up periods after PBDE individuals become FBDEs) when states determine D-SNP enrollment options for PBDE populations.

I. Introduction

D-SNPs are MA plans designed to meet the special needs of people who are dually eligible for Medicare and Medicaid. At a minimum, federal law requires D-SNPs to coordinate Medicare and Medicaid benefits and provide care coordination services for their members.[2] As of May 2023, D-SNPs were available in 45

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[2] The Medicare Improvements for Patients and Providers Act of 2008, as amended by the Affordable Care Act of 2010, requires all MA D-SNPs to contract with the state Medicaid agency in each state in which they operate. At a minimum, the contract must meet the requirements at 42 CFR 422.107, including a description of how the D-SNP

states and District of Columbia, with about 5.4 million dually eligible individuals enrolled (Centers for Medicare & Medicaid Services [CMS] 2023).

Key Findings

- Among all switchers in 2018, 7.3 percent used Medicare-covered SNF services in the month before the switch from PBDE to FBDE status, 9.9 percent used hospital services in the month before the switch, and 10.5 percent had an emergency department (ED) visit in the month before the switch. Within the month of the switch through two months following the switch, 22.5 percent of switchers began using Medicaid-covered HCBS, and 14.1 percent began using institutional care. Results were similar in 2019, although the percentages were slightly lower for all service use except for HCBS use, which was similar over the two years.
- In regression models that adjusted for individual characteristics, PBDE D-SNP enrollees' use of Medicare-covered SNF and hospital services in the month before the switch to FBDE status was **statistically significantly lower** than that of PBDE individuals enrolled in regular MA plans and FFS Medicare.
- In regression models that adjusted for individual characteristics, PBDE D-SNP enrollees' use of Medicaid-covered HCBS in the month of the switch through two months after the switch to FBDE status was **statistically significantly higher** than that of their counterparts enrolled in regular MA plans and FFS Medicare, and PBDE D-SNP enrollees' use of Medicaid-covered institutional care in the month of the switch through two months after the switch was **statistically significantly lower** than that of their counterparts in regular MA plans and FFS Medicare. The differences in service use between individuals in different plan types were larger for institutional care than for HCBS.
- Rates of service use varied across subgroups of switchers (age groups, male versus female sex categories, racial and ethnic groups, original reason for Medicare entitlement [age, disability, or end-stage renal disease [ESRD]], and urban versus rural residence), but we found few notable differences from our main results across subgroups in the patterns of service use by Medicare coverage type.◢

Among states in which D-SNPs operate, most allow both FBDE and PBDE individuals to enroll in D-SNPs, but some states restrict D-SNP enrollment to FBDE individuals. FBDE and PBDE individuals are eligible for both Medicare and Medicaid, but FBDE individuals are eligible for full Medicaid benefits, while PBDE individuals are eligible only for Medicaid coverage of Medicare premiums and, in some cases, Medicare cost sharing through a Medicare Savings Program (MSP). PBDE individuals are not

will "coordinate the delivery of Medicaid benefits for individuals who are eligible for such services." In addition, federal law requires D-SNPs to set forth a model of care that meets SNP model-of-care standards and has earned approval from the National Committee for Quality Assurance. See the model-of-care standards at https://snpmoc.ncqa.org/resources-for-snps/scoring-guidelines/.

eligible for other state Medicaid benefits.[3,4] From 2018–2019, PBDE individuals constituted about 31 percent of all dually eligible individuals, and an estimated 2.7 percent of all dually eligible individuals switched from PBDE to FBDE status each year (Lei and Wysocki 2023).[5]

Although PBDE individuals generally have slightly higher income and resources than FBDE individuals, the two groups exhibit similar demographics and social needs and use acute care at similar rates (ATI Advisory 2021). However, FBDE individuals typically have higher functional needs, with FBDE individuals nearly three times more likely than PBDE individuals to have three or more limitations in activities of daily living (ADL) (29 versus 11 percent, respectively) (Medicare Payment Advisory Commission [MedPAC] and Medicaid and CHIP Payment and Access Commission [MACPAC] 2023).

Policymakers, researchers, health plans, advocates, and other interested groups have debated for several years whether PBDE individuals should be allowed to enroll in D-SNPs. In its 2019 Report to Congress, MedPAC argued that, because Medicaid coverage for PBDE individuals is so limited and involves no or few benefits that lend themselves to coordination with Medicare, PBDE individuals should either (1) not be allowed to enroll in D-SNPs at all or (2) be covered in plans separate from those enrolling FBDE individuals (MedPAC 2019). MedPAC reiterated this point in January 2023, noting, "Both options would make higher levels of integration more feasible because all D-SNP enrollees (under the first option) or all enrollees in certain D-SNPs (under the second option) would be full-benefit dual eligible beneficiaries, who use far more Medicaid services and thus stand to benefit the most from integrated care" (MedPAC 2023a).

Proponents advocating for D-SNPs' enrollment of PBDEs contend that D-SNPs might be able to help slow or prevent a decline in health and function for PBDE individuals by providing care coordination and specialized supplemental benefits before such individuals transition to FBDE status (and, in some cases, even help prevent a transition to FBDE status), potentially promoting better outcomes for PBDE individuals and generating cost savings for states and the federal government over the long run.[6] Although

[3] Some FBDE individuals may also qualify for MSP benefits, but others may not. For more information about categories of full- and partial-benefit dual eligibility, see https://www.cms.gov/Medicare-Medicaid-Coordination/Medicare-and-Medicaid-Coordination/Medicare-Medicaid-Coordination-Office/Downloads/MedicareMedicaidEnrolleeCategories.pdf.

[4] In 2021, seven states restricted D-SNP enrollment to FBDE individuals, and 38 states allowed PBDE individuals to enroll in D-SNPs (Mathematica's analysis of states' 2021 contracts with D-SNPs). Of the 38 states that allowed PBDE individuals to enroll in D-SNPs in 2021, three (Pennsylvania, Tennessee, and Virginia) required D-SNPs to use separate plan benefit packages to serve full- and partial-benefit dually eligible members.

[5] We categorized enrollees as switchers when they had one month classified as PBDE individuals and the subsequent month classified as FBDE individuals. In 2018, we identified 12,187,318 dually eligible individuals, 312,132 of which (about 2.6 percent of total) switched from PBDE to FBDE status (Lei and Wysocki 2023). In 2019, we identified 12,337,027 dually eligible individuals, 352,876 of which (about 2.9 percent of total) switched from PBDE to FBDE status (Lei and Wysocki 2023).

[6] MA Special Needs Plans, including D-SNPs, are required to operate with Models of Care and provide levels of care coordination not provided by other MA plans or within traditional FFS Medicare (MACPAC 2021). In addition, even though other MA plans may provide supplemental benefits, D-SNPs may provide supplemental benefits that cater specifically to dually eligible populations (MACPAC 2021; ATI Advisory 2021). For more information about D-SNPs' Models of Care and supplemental benefits, see https://integratedcareresourcecenter.com/webinar/leveraging-dual-eligible-special-needs-plan-d-snp-models-care-enhance-enrollee-care.

the share of all PBDEs who become eligible for full Medicaid benefits each year is relatively small,[7] D-SNPs may provide important benefits to this group if the care coordination services and supplemental benefits provided by D-SNPs do, in fact, achieve these goals.

However, little is known about the extent to which D-SNP enrollment improves outcomes for PBDE individuals who become FBDE individuals. To understand more fully whether D-SNP enrollment benefits PBDE individuals who transition to FBDE status ("switchers"), as compared to switchers who are enrolled in FFS Medicare or regular (non–D-SNP) MA plans, we pose the following research questions:

1. What share of individuals who transitioned from PBDE to FBDE status in 2018 and 2019 (switchers):
   a. Had a Medicare-covered SNF stay, acute hospital stay, or ED visit in the month preceding the switch to FBDE status?
   b. Began using Medicaid-covered long-term services and supports (LTSS) (HCBS or institutional care) immediately after the switch to FBDE status?[8]

2. How did use of services differ for switchers enrolled in D-SNPs, regular MA plans,[9] and FFS Medicare:
   a. For Medicare-covered SNF stays, acute hospitalizations, and ED visits in the month before the switch to FBDE status?
   b. For Medicaid-covered HCBS or institutional care used immediately after the switch to FBDE status?

3. How did service use patterns by Medicare coverage type (D-SNPs, regular MA plans, and FFS Medicare) vary across subgroups of switchers (for example, different racial and ethnic groups and people with different original reasons for Medicare entitlement, such as age, disability, or ESRD)?

We identified 553,662 PBDE individuals who switched to FBDE status in 2018 and 2019, and we conducted descriptive and regression analyses to answer the above research questions. Specifically, we identified the switchers who were enrolled in D-SNPs, regular MA plans, or FFS Medicare before the switch and compared switchers' use of Medicare-covered acute care and post-acute care services immediately before and their use of Medicaid-covered LTSS immediately after the switch from PBDE to FBDE status. In all regression analyses, we adjusted for several observed enrollee characteristics that could be potential confounders, including age group, sex, race and ethnicity, original reason for Medicare entitlement, urbanity, and Hierarchical Condition Category (HCC) score. However, other factors that we could not control for as well as potential data quality issues may affect our results. We discuss these and other limitations in the Limitations section of this report.

[7] One analysis found that 6 percent of PBDE individuals in January 2013 were eligible for full Medicaid benefits one year later and that about 10 percent were eligible for full Medicaid benefits three years later (MedPAC 2018). Our analyses from the 2018 and 2019 data indicate that, on average, 2.7 percent of all dually eligible individuals switched from PBDE to FBDE status each year (Lei and Wysocki 2023).

[8] The time period for these LTSS outcomes consists of the month of the switch through two months following the switch.

[9] Regular MA plans are defined as non–D-SNP MA plans as well as Chronic SNPs (C-SNPs) and Institutional (I-SNPs). The study population excluded enrollees in the Program of All-Inclusive Care for the Elderly programs or Medicare-Medicaid plans before switching from partial-benefit status to full-benefit status.

In the rest of this report, we describe the study population (Section II), summarize the analytic methods we used to address the research questions (Section III), present findings for both the full sample and subgroups (Section IV), and discuss policy implications, limitations, and conclusions (Section V).

II. Data and study population

A. Data sources

The main data sources for the study were Medicare and Medicaid administrative data, which we used to identify the sample of switchers, individual characteristics, and outcomes in 2018 and 2019. Specifically, we used the following files:

- Medicare Beneficiary Summary File (MBSF) Base file: For identification of switchers and their Medicare coverage type before the switch, individual characteristics, and date of death
- Medicare Inpatient (FFS), Inpatient (Encounter), Outpatient (FFS), Outpatient (Encounter), Skilled Nursing Facility (FFS), and Skilled Nursing Facility (Encounter) data: For identification of acute and post-acute care use (acute hospitalizations, outpatient ED visits, and post-acute SNF stays) as well as for identification of HCC scores
- Medicaid Transformed Medicaid Statistical Information System (T-MSIS) Analytic Files (TAF) Long Term Care (LT) file and TAF Other Services (OT) file: For identification of Medicaid-covered LTSS use (HCBS and institutional care)

In addition, we used the following:

- CMS Special Needs Plan Comprehensive Reports and MA Contract Service Area by State and County reports to identify the contract and plan ID numbers of D-SNPs and non–D-SNP MA plans in 2018 and 2019 and to identify Medicare coverage type before the switch
- U.S. Census data to obtain information about whether each individual's residence county was rural or urban

B. Study population

Our study population consisted of 553,662 switchers in 2018 and 2019. Among those people, 86,277 (15.6 percent) were enrolled in D-SNPs before the switch, 126,143 (22.8 percent) were enrolled in a non–D-SNP MA plan before the switch, and 341,242 (61.6 percent) were enrolled in FFS Medicare before the switch (Table 1).

Table 1. Study sample: Individuals who switched from PBDE status to FBDE status in 2018 and 2019, overall and by Medicare coverage type

	Total number of switchers	D-SNP		Regular MA		FFS Medicare	
Year	Number	Number	Percent	Number	Percent	Number	Percent
Overall	553,662	86,277	15.6	126,143	22.8	341,242	61.6
2018	255,403	37,210	14.6	58,735	23.0	159,458	62.4
2019	298,259	49,067	16.5	67,408	22.6	181,784	60.9

Source: Mathematica's analysis of 2018–2019 MBSF data and CMS SNP Comprehensive Reports and MA Contract Service Area by State and County reports.

Notes: PBDE individuals were Medicare enrollees with at least one month of partial-benefit coverage in the year. FBDE individuals were those who had full-benefit coverage for all months with dual eligibility of the year.

We categorized enrollees as switchers when they had one month classified as PBDEs and the subsequent month classified as FBDEs. We excluded Medicare enrollees in U.S. territories. We excluded enrollees in the Program of All-Inclusive Care for the Elderly programs or Medicare-Medicaid plans before switching from partial-benefit status to full-benefit status. We also excluded enrollees from states that did not have D-SNPs in 2018 and 2019 (Alaska, Illinois, Nevada, New Hampshire, North Dakota, South Dakota, Vermont, and Wyoming) and states that allowed FBDE individuals to enroll in D-SNPs only in those years (Arizona, Hawaii, Idaho, Massachusetts, Minnesota, New Jersey, and Oregon).

CMS = Centers for Medicare & Medicaid Services; D-SNP = Dual Eligible Special Needs Plan; FBDE = full-benefit dually eligible; FFS = fee for service; MA = Medicare Advantage; MBSF = Medicare Beneficiary Summary File; PBDE = partial-benefit dually eligible; SNP = Special Needs Plan.

III. Methods

A. Measures

Outcome measures

- **Acute care and post-acute care use.** We created binary indicators for (1) any acute hospitalization (short-stay acute care and critical access hospital admissions), (2) any outpatient ED visit (not followed by an inpatient hospitalization admission),[10] and (3) any Medicare post-acute SNF stay.[11] We defined these binary indicators for switchers in the month before the switch to FBDE because use of such high-cost services might induce eligibility for FBDE status by reducing a PBDE individual's income or assets to FBDE standards.[12]
- **LTSS use.** We created binary indicators for (1) Medicaid HCBS and (2) institutional care use for switchers within three months after their transition to FBDE status (the month when the switch from

[10] To prevent double counting, we counted emergency department visits with overlapping dates as one visit. Our data include fewer than 11 enrollees with outpatient stays that began before our study period (2018) and ended during our study period (2018 or 2019).

[11] A small number of SNF stays included in the total utilization counts exceeded 365 days.

[12] All Medicare FFS claims measures excluded claims flagged as not paid by Medicare. All Medicare encounter measures excluded encounters not marked as the final action claim.

PBDE to FBDE status occurs and the two months following the switch).[13] We examined a three-month period because we expect that, in some cases, some time may elapse before those switching from PBDE to FBDE status are deemed eligible for Medicaid LTSS and begin using these services.[14] In addition, given that we cannot know the specific date in a month when an individual switched from partial-benefit to full-benefit status,[15] we created a longer observation window for LTSS use.[16]

Medicare coverage type

- We created a categorical variable to measure the type of Medicare coverage in the month before the switch, including D-SNPs, regular MA plans, and FFS Medicare (Lei and Wysocki 2023). This categorical variable is the main explanatory variable that we used to identify how outcomes differed for switchers enrolled in D-SNPs and those enrolled in FFS Medicare or regular (non–D-SNP) MA plans. Within the D-SNP coverage type, we did not distinguish integrated D-SNPs (such as "fully" or "highly" integrated D-SNPs [FIDE SNPs and HIDE SNPs, respectively]) that may provide Medicaid benefits to at least some FBDE enrollees from less integrated ("coordination only") D-SNPs.

Individual characteristics

- We created variables to identify specific characteristics for each switcher in our sample, including age group (younger than 65, 65 to 74, 75 to 84, and 85 and older), sex (male and female), race and ethnicity (non-Hispanic White, non-Hispanic Black, Hispanic, and other), the individual's original reason for Medicare entitlement (age, disability, or end-stage renal disease [ESRD]), and urbanity (whether the individual resides in an urban or rural county) (Lei and Wysocki 2023). We used these characteristics in two ways: (1) as controls in all regression analyses to adjust for characteristics of enrollees in D-SNPs compared to those in other Medicare coverage types and (2) in supplementary

[13] We defined the Medicaid HCBS outcome indicator by using the 16 service categories included in the HCBS taxonomy Mathematica has developed for use with TAF data, which includes the following service categories: Case Management; Round-the-Clock Services; Supported Employment; Day Services; Nursing; Home-Delivered Meals; Home-Based Services; Caregiver Support; Other Mental Health and Behavioral Health Services; Other Health and Therapeutic Services; Services Supporting Participant Direction; Participant Training; Equipment, Technology, and Modifications; Non-Medical Transportation; Community Transition Services; and Other. We defined the Medicaid institutional care use outcome indicator as any custodial stay in a nursing facility where Medicaid was the primary payer.

[14] Before receiving Medicaid-covered HCBS or institutional care, an individual must be deemed eligible through a level-of-care assessment by state Medicaid staff members or their delegates, in addition to being determined eligible based on financial eligibility criteria.

[15] Some states allow Medicaid eligibility group changes to take place in the middle of a month, making it possible that some individuals switched from PBDE to FBDE status on the first day of a month, while others may have switched later in the month. However, we cannot identify in MBSF data the specific date when an individual switched from PBDE to FBDE status because information regarding FBDE or PBDE status is reported only on a monthly basis in MBSF. For example, if an individual had PBDE status in March 2019 and FBDE status in April 2019, we would identify that individual as a switcher, with April as the month of the switch and March as the month before the switch. However, we would not know whether that individual switched to FBDE status as of April 1, April 10, or some later date in April; we would know only that the switch took place in April.

[16] We included only switchers through December 2019. Accordingly, the LTSS outcomes would be at most measured through February 2020 to avoid the potential for skewed results attributable to unexpected patterns of health care use in response to the COVID-19 pandemic and public health emergency starting in March 2020.

regression analyses to analyze differences in utilization across subgroups defined by these characteristics.

- We used diagnosis codes from both Medicare FFS claims and encounter data to define the HCC score in the month before the switch month to adjust for health status in all regression analyses.

B. Statistical analysis

For Research Question 1 (percentage of switchers using SNF, hospital, and ED services before the switch and LTSS after the switch), we produced descriptive statistics for all outcomes by coverage type.

For Research Question 2 (variation in service use patterns before and after the switch by Medicare coverage type), we conducted both descriptive and regression analyses:

- We first examined descriptive statistics for all outcomes in the relevant months before or after the switch, overall and within each coverage type. We used Chi-square and ANOVA tests to compare the differences among D-SNP, regular MA, and FFS Medicare enrollees for categorical and continuous variables, respectively.
- For switchers. we then used linear probability models (Appendix A) to examine the association between Medicare coverage types (D-SNPs, regular MA plans, and FFS Medicare) and (1) Medicare-covered acute and post-acute service outcomes (acute hospitalizations, outpatient ED visits, and post-acute SNF stays) and (2) Medicaid-covered LTSS outcomes (HCBS and institutional care), adjusting for individual characteristics (age group, sex, race and ethnicity, original reason for Medicare entitlement, urbanity, and HCC score). We also included state and year fixed effects to account for potential geographic variation and time-based trends in outcomes.
- For the Medicaid-covered LTSS outcomes, which we measured after the switch to FBDE status, we conducted sensitivity analyses to determine whether the results were robust after accounting for differential mortality across coverage types.[17] We created a binary variable to measure mortality among switchers within three months after the transition to FBDE status. We checked the robustness of our results by (1) including mortality as a control variable in our regressions and (2) weighting our regressions by the proportion of months that an individual was alive during the outcome period (month of the switch and two months following the switch from PBDE to FBDE status).

For Research Question 3 (disparities in service use patterns), we conducted descriptive and regression analyses stratified by age group, sex, race and ethnicity, original reason for Medicare entitlement, and residence in a rural versus urban area.

IV. Results

A. Research Question 1: Percentage of switchers using SNF, hospital, and ED services *before* the switch and LTSS *after* the switch (unadjusted)

Before controlling for differences in enrollee characteristics, we compared the unadjusted acute care and LTSS utilization rates of switchers in different types of Medicare coverage. Among all switchers in 2018,

[17] If individuals in certain plan types were more likely to die after transitioning to FBDE status, that could bias the observed relationship between coverage type and post-switch outcomes.

7.3 percent used SNF services in the month before the switch from PBDE to FBDE status, 9.9 percent used hospital services in the month before the switch, and 10.5 percent made an ED visit in the month before the switch. Within the month of the switch through two months following the switch, 22.5 percent of switchers began using HCBS, and 14.1 percent began using institutional care (row 1 in Table 2 for these statistics).

Table 2. Descriptive statistics: Unadjusted acute care, post-acute care, and LTSS use before and after a switch from PBDE to FBDE status in 2018 and 2019, overall and by Medicare coverage type

	Acute and post-acute care use in the month before the switch (percent)						Medicaid LTSS use within three months after the switch (percent)			
Medicare coverage	SNF		Hospitalization		ED		HCBS		Institutional care	
	2018	2019	2018	2019	2018	2019	2018	2019	2018	2019
Overall	7.3	6.2	9.9	8.7	10.5	10.1	22.5	22.5	14.1	12.4
D-SNP	4.2	4.3	7.4	7.1	9.9	10.2	19.0	21.9	8.5	8.4
Regular MA	7.5	7.0	11.6	10.7	10.9	11.1	23.7	25.5	16.3	15.3
FFS Medicare	7.9	6.5	9.9	8.4	10.5	9.7	22.8	21.6	14.6	12.4

Notes: Study sample switchers included individuals who switched from PBDE status to FBDE status in 2018 and 2019. PBDE individuals were Medicare enrollees with at least one month of partial-benefit coverage in the year. FBDE individuals were those who had full-benefit coverage for all months with dual eligibility of the year. We categorized enrollees as switchers when they had one month classified as PBDEs and the subsequent month classified as FBDEs. See text and table notes to Table 1 for more details about sample construction. Percentages displayed in this table are unadjusted descriptive statistics.

We defined acute and post-acute care use before the switch as services used in the month preceding the switch from PBDE to FBDE status. We defined Medicaid LTSS use after the switch as services used in the month of the switch and two months following the switch from PBDE to FBDE status.

D-SNP = Dual Eligible Special Needs Plan; ED = emergency department; FBDE = full-benefit dually eligible; FFS = fee for service; HCBS = home- and community-based services; LTSS = long-term services and supports; MA = Medicare Advantage; PBDE = partial-benefit dually eligible; SNF = skilled nursing facility.

Among switchers in 2019, the results were similar to those for 2018, although the percentages were slightly lower for SNF and hospital use and ED visits: 6.2, 8.7, and 10.1 percent of individuals had SNF use, hospital use, and an ED visit, respectively, in the month before the switch. The same proportion of individuals in 2019 and 2018 (22.5 percent) began using HCBS within the month of the switch through two months following the switch, and slightly fewer individuals in 2019 than in 2018 (12.4 versus 14.1 percent) began using institutional care (row 1 in Table 2).

B. Research Question 2: Variation in service use patterns before and after the switch from PBDE to FBDE status by Medicare coverage type

Unadjusted rates of service use

In 2018, before any adjustments for differences in enrollee characteristics across Medicare coverage types, all types of service use were lower for switchers enrolled in D-SNPs compared to service use for switchers in regular MA plans and traditional FFS Medicare. The differences were statistically significant (rows 2 through 4 in Table 2).

Results were similar in 2019, except that people enrolled in D-SNPs had slightly higher ED use before the switch and slightly higher HCBS use after the switch compared to people in traditional FFS Medicare (rows 2 through 4 in Table 2).

The generally lower unadjusted service use rates for PBDE individuals in D-SNPs immediately before and after switching to FBDE status likely reflect better health status among switchers in those plans than among those in regular MA plans, as indicated by an average HCC score among D-SNP enrollees that ranged between 1.85 and 1.90 in 2018 and 2019, respectively, compared to 2.11 to 2.13 for those enrolled in regular MA plans based on descriptive comparisons (Appendix Table B.1). However, switchers in D-SNPs had average HCC scores similar to those of switchers in FFS Medicare, which were 1.90 and 1.84 in 2018 and 2019, respectively. More switchers in D-SNPs were under the age of 65 than switchers in regular MA plans, but fewer switchers in D-SNPs were age 85 and older than those in both regular MA plans and FFS Medicare. These differences underscore the need to adjust for health status, age, and other characteristics among switchers with each type of Medicare coverage; the adjusted rates for primary outcomes of interest are described below.

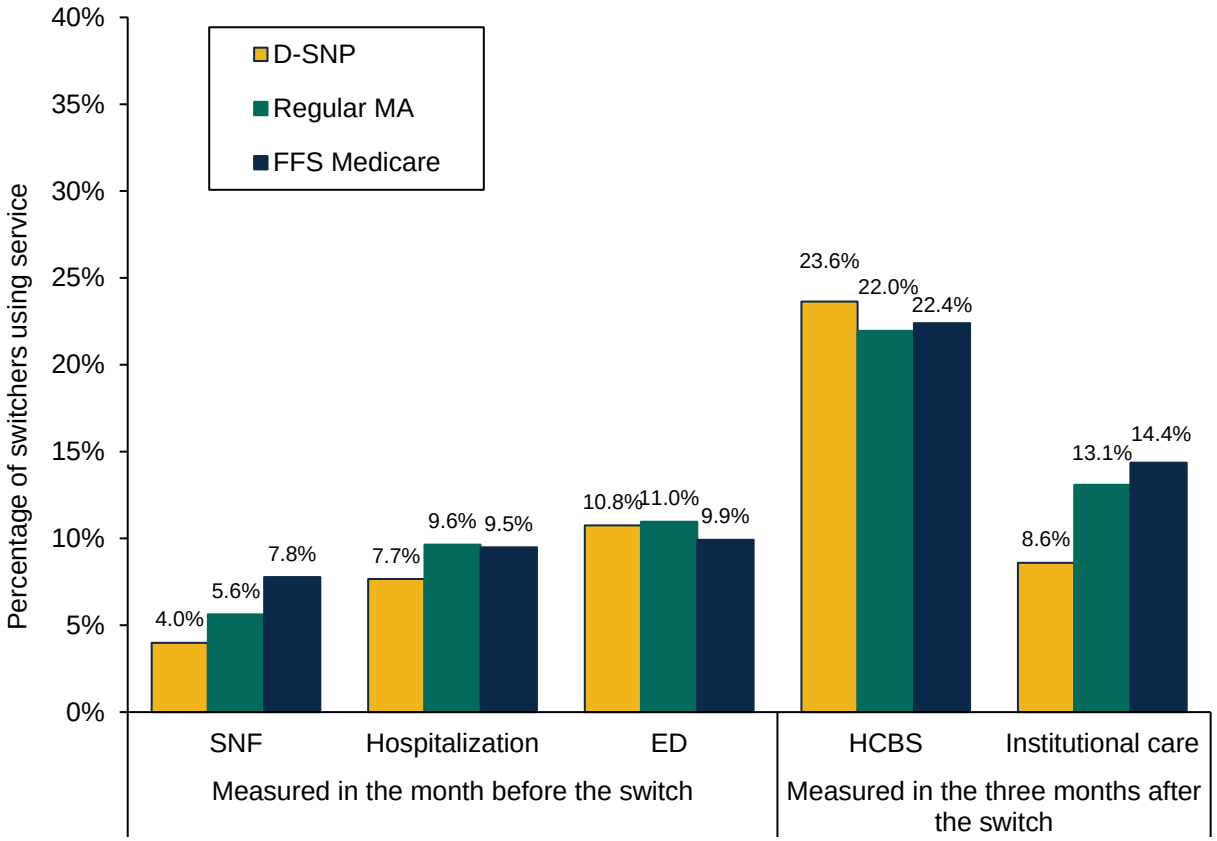
Regression-adjusted rates of service use

Statistically significant lower SNF and hospital use among D-SNP enrollees before the switch

Compared to individuals in FFS Medicare and regular MA plans, PBDE D-SNP enrollees had the lowest predicted rates of both SNF and hospital use before switching to FBDE status, after adjusting for age, sex, race and ethnicity, original reason for Medicare entitlement, urbanity, and health status (HCC score). The differences were statistically significant. Relative to mean values of respective outcomes, switchers in D-SNPs had 25 percent lower use of SNF services than switchers in regular MA plans and 57 percent lower use of SNF services than switchers in FFS Medicare. These percentage differences represent 2 to 4 percentage-point differences in the level of predicted SNF utilization rates across coverage types (Figure 1). Switchers in D-SNPs also had 22 and 20 percent lower predicted rates of hospital use than their counterparts in regular MA plans and FFS Medicare, respectively. These differences for predicted hospitalization rates were all less than 2 percentage points across coverage types (Figure 1).

There was little (although statistically significant) variation in ED use among switchers across different coverage types, but switchers in FFS Medicare had a slightly lower predicted rate of ED use (9.9 percent) than those in D-SNPs (10.7 percent) and regular MA plans (11.0 percent) (Figure 1).

Figure 1. Regression-adjusted percentage of switchers using each service in the overall sample by Medicare coverage type



Notes: Study sample switchers included individuals who switched from PBDE status to FBDE status in 2018 and 2019. PBDE individuals were Medicare enrollees with at least one month of partial-benefit coverage in the year. FBDE individuals were those who had full-benefit coverage for all months with dual eligibility of the year. We categorized enrollees as switchers when they had one month classified as PBDEs and the subsequent month classified as FBDEs. See text and table note to Table 1 for more detail on sample construction.

All differences between the plan types for each outcome are statistically significant.

D-SNP = Dual Eligible Special Needs Plan; ED = emergency department; FBDE = full-benefit dually eligible; FFS = fee for service; HCBS = home- and community-based services; MA = Medicare Advantage; PBDE = partial-benefit dually eligible; SNF = skilled nursing facility.

Statistically significant higher use of Medicaid HCBS and lower use of Medicaid institutional care among D-SNP enrollees after the switch, with smaller differences for HCBS and larger differences for institutional care

Once we adjusted for differences in enrollee characteristics across coverage types, PBDE individuals who enrolled in D-SNPs before a switch to FBDE status had both the highest predicted rate for HCBS and the lowest predicted rate for institutional care after their switch to FBDE status. Relative to mean values of respective outcomes, switchers in D-SNPs had an 8 percent higher use of HCBS than their counterparts in regular MA plans and a 6 percent higher use of HCBS than their counterparts in FFS Medicare, but the levels of predicted HCBS utilization rates within each coverage type were all within 2 percentage points

of each other, so the differences were small (Figure 1). By contrast, switchers in D-SNPs had 35 and 46 percent lower use of institutional care after their switch to FBDE status than their counterparts in regular MA plans and those in FFS Medicare, respectively, reflecting 5 to 6 percentage-point differences in the level of predicted institutional care utilization rates across coverage types (Figure 1). The results were robust when accounting for differences in mortality across Medicare coverage type (Appendix Tables B.2 and B.3).

C. Research Question 3: Disparities in service use patterns

On average, we found that the unadjusted rates of service use were higher for people who were older, non-Hispanic White, and residing in rural areas. People whose original reason for Medicare entitlement was age 65 and older had the highest use of SNF and institutional care, while those whose original reason for entitlement was ESRD had the highest use of hospitalization, ED, and HCBS (Appendix Table B.4).

After we adjusted for individual characteristics,[18] we found that service use patterns by Medicare coverage type in individual subgroups were similar to those in the overall sample, with a few exceptions as follows:

- Among non-Hispanic White switchers, use of HCBS after the switch to FBDE status was similar for those enrolled in D-SNPs and regular MA plans, even though HCBS use was higher for switchers enrolled in D-SNPs in the overall sample (Appendix Figure B.1). In other words, the pattern observed among switchers in other racial and ethnic groups (where HCBS use was highest among those enrolled in D-SNPs) was not noticeable among non-Hispanic White enrollees (where HCBS use was similar for those in D-SNPs and regular MA plans).
- Among switchers whose original reason for Medicare entitlement was ESRD (9,024 individuals), use of SNF services before the switch to FBDE status was slightly higher among those enrolled in D-SNPs compared to those enrolled in regular MA plans, and use of institutional care after the switch was slightly higher among those enrolled in D-SNPs compared to those enrolled in regular MA plans and FFS Medicare (Appendix Figure B.2). These results differ from the results for the overall sample, where switchers in D-SNPs had lower use of SNF and institutional care than those in the other coverage types.

V. Discussion, limitations, and conclusion

A. Discussion

Among PBDE individuals who transitioned to FBDE status from 2018–2019,we found that, relative to PBDE individuals with similar demographic characteristics and health status who were enrolled in FFS Medicare or regular (non–D-SNP) MA plans, those who were enrolled in D-SNPs had lower rates of acute hospitalization and post-acute SNF use in the month before their switch to FBDE status. They also had higher rates of HCBS use and lower rates of institutional care use in the month of the switch through two months *after* their switch to FBDE status. These outcome patterns by Medicare coverage types were largely similar across the subgroups of switchers (age groups, sex, race and ethnicity, original reason for Medicare entitlement, and whether individuals resided in a rural versus urban area). Currently, some states do not allow PBDE individuals to enroll in D-SNPs, and researchers, policymakers and advocates

[18] For each of the subgroup analyses, we adjusted for all the characteristics that we controlled for in the main regression except for the characteristic that defined the subgroup.

have debated whether D-SNP enrollment provide any potential benefit for PBDE individuals. Our results suggest that D-SNP enrollment may benefit the estimated 2.7 percent of all dually eligible individuals who switch from PBDE to FBDE status each year through lower use of institutional care after they become eligible for full Medicaid benefits.

Although there is little previous evidence regarding health and LTSS outcomes for PBDE individuals in D-SNPs, one recent study found patterns that align with our findings (Elevance Health 2023). That study found that all PBDE individuals enrolled in D-SNPs generally had lower rates of acute hospitalization and SNF use compared to those enrolled in FFS Medicare or regular MA plans.[19] No prior studies have examined LTSS use patterns among individuals who switch from PBDE to FBDE status, but another study that focused only on FBDE individuals found that FBDE enrollees in any type of integrated care plan (D-SNP, FIDE SNP, or Program of All-Inclusive Care for the Elderly) were less likely to be institutionalized, and those in D-SNPs or FIDE SNPs were more likely to use HCBS than those in regular, non-integrated MA plans (Feng et al. 2021).

One potential explanation for our findings is that D-SNPs coordinate care in ways that help PBDE individuals avoid unnecessary use of hospital and nursing home care while remaining in their homes or community-based settings. Compared to FFS Medicare, D-SNPs (as is the case with regular MA plans) may be incentivized to reduce unnecessary use of costly services by, for example, requiring prior authorization or using other interventions because of the financial incentives inherent in capitation payment. Unlike FFS Medicare and regular MA plans, however, D-SNPs must also provide enrollees with care coordination services that include assessments of members' needs, development of person-centered care plans, and use of interdisciplinary care teams, which might help D-SNPs better manage a broader range of services than FFS Medicare or regular MA plans.[20] Once PBDE individuals become FBDE individuals and are deemed eligible for Medicaid-covered LTSS,[21] D-SNP care coordinators may also help link those enrollees to HCBS and thus minimize long-term use of nursing facilities. However, some key limitations to our study (see the Limitations section below) suggest that more work is needed to understand the role of care coordination in D-SNPs' lower use of hospital and nursing home care and higher use of homes or community-based care compared to other types of Medicare coverage.

We also considered the possibility that the ability of D-SNPs and regular MA plans to offer supplemental benefits could explain our findings. For many years, D-SNPs (and regular MA plans) have been able to offer health-related supplemental benefits, such as vision, hearing, and dental services, that are not covered by FFS Medicare. Some evidence points to a relationship between the provision of certain health-related supplemental benefits, such as preventive dental services, and lower rates of ED visits (for example, Singhal et al. 2015). Beginning in calendar year 2019, with full implementation in 2020, MA plans (including D-SNPs) have also had the option to offer an expanded set of supplemental benefits,

[19] Elevance Health (2023) found that PBDE individuals in D-SNPs had similar rates of hospitalization compared to PBDE individuals in regular MA plans, a finding that differs from our finding for acute hospitalization. The difference could be explained by the different measurement periods for the outcome and the unique service use patterns of switchers in our study relative to the general PBDE population in the Elevance Health study.

[20] More information about care coordination in D-SNPs is available at https://www.integratedcareresourcecenter.com/sites/default/files/ICRC%20D-SNP%20Care%20Coordination%20Webinar_FINAL_updated%2004242023.pdf.

[21] Some people qualify for Medicaid in their state based on eligibility for LTSS. It is possible that D-SNPs, particularly those with an aligned Medicaid managed LTSS plan in which individuals can enroll once they become a FBDE, help PBDE individuals establish eligibility for Medicaid via an LTSS eligibility pathway.

some of which could be used to help PBDE populations remain in their homes longer as they age or become more disabled.[22] These benefits include in-home support services, support for caregivers, and adult day care, which could reduce nursing home admission rates. However, D-SNPs and MA plans began to offer these new, expanded supplemental benefits only in 2019, and, in 2020, few plans offered the new benefits (Kornfield et al. 2021).[23] Even in 2021 and 2022, the majority of these expanded supplemental benefits were available to 5 percent or fewer of D-SNP enrollees, although 15 percent of D-SNP enrollees had access to in-home supportive services in 2021 and 20 percent in 2022 (Friedman and Yeh 2022). Consequently, the timing and limited reach of the newer benefits do not explain our findings in 2018 and 2019.

Some people may also note that D-SNPs can design supplemental benefit packages specifically for their dually eligible members while regular MA plans must design benefit packages that appeal to a broader array of plan enrollees, many of whom are not dually eligible. In addition, D-SNPs can serve FBDE and PBDE individuals through separate plan benefit packages (MACPAC 2021; MedPAC 2019; Shea et al. 2023b), facilitating PBDE individuals' access to the potential benefits of D-SNP enrollment while still enabling FBDE D-SNP enrollees to reap the benefits of exclusively aligned enrollment in fully integrated plans (Shea et al. 2023a).[24] However, during our study period, very few states required D-SNPs to offer separate plan benefit packages for FBDE and PBDE members. Therefore, many of the switchers in our sample were likely to have been enrolled in D-SNPs that were designed to meet the needs of FBDE populations rather than the needs of PBDE enrollees.

[22] For more information about the supplemental benefits that began in 2019 and 2020, see https://www.hhs.gov/guidance/sites/default/files/hhs-guidance-documents/hpms%2520memo%2520primarily%2520health%2520related%25204-27-18_127.pdf; https://www.hhs.gov/guidance/sites/default/files/hhs-guidance-documents/hpms%2520memo%2520uniformity%2520requirements%25204-27-18_127.pdf; https://www.hhs.gov/guidance/sites/default/files/hhs-guidance-documents/Supplemental_Benefits_Chronically_Ill_HPMS_042419.pdf.

[23] More recently, evidence suggests that D-SNPs were more likely than other MA plans to offer these new expanded benefits. For example, in 2022, 20 percent of D-SNPs made available in-home support services compared to 12 percent of regular MA plans; 14 percent offered bathroom safety devices compared to 9 percent of regular MA plans; and about one-third of all D-SNP enrollees were in plans that offered food and produce compared to about 10 percent of regular MA plans (Freed et al. 2022). D-SNPs can afford to offer such benefits "because the rebate payments they receive from CMS when they bid below regional spending benchmarks tend to be higher than rebates for other MA plans" (Klein and Hostetter 2022). Rebate payments to MA plans have increased in recent years, partly in response to incentives for MA plans to document all diagnoses in order to raise enrollee risk scores, which generate higher rebate amounts (Freed et al. 2022).

[24] There are two main advantages to requiring D-SNPs to use separate plan benefit packages for FBDE and PBDE individuals. First, a D-SNP designed for FBDE individuals assumes that the D-SNP members will be eligible for full Medicaid benefits and therefore would not necessarily need supplemental benefits that might mimic benefits offered through the state's Medicaid program. By contrast, a D-SNP designed specifically for PBDE individuals could offer such benefits as supplemental benefits, and those benefits may be particularly helpful in supporting PBDE individuals in remaining at home as they age or become more disabled. Second, a D-SNP designed for FBDE individuals may include a deductible and other cost-sharing amounts that Medicaid typically covers for FBDE individuals, but that could be expensive for PBDE individuals not in a Qualified Medicare Beneficiary program, who would be responsible for covering their own cost sharing.

B. Limitations

Our analyses provide important insights into the potential value of D-SNPs for PBDE individuals who switch to FBDE status; however, there are several limitations to our study:

- Our results do not necessarily generalize to the entire PBDE population because PBDE individuals who switch to FBDE status may have unique characteristics that distinguish them from other PBDE individuals. In particular, PBDE individuals who switch to FBDE status do so because their income and/or assets, or their functional status, decline to levels that qualify them for full Medicaid benefits. However, little is known about how PBDE individuals who switch to FBDE and those who remain PBDE differ in terms of their characteristics. For example, the functional ability of PBDE individuals who switch to FBDE status may differ from that of PBDE individuals who do not switch to FBDE status, but there is no national data source with complete information about the functional status of Medicare enrollees that distinguishes between full- and partial-benefit dual eligibility and Medicare coverage type (enrollment in D-SNPs versus regular MA plans or FFS Medicare).
- Our findings do not account for other potential differences between PBDE enrollees in D-SNPs compared to PBDE enrollees in other Medicare coverage types; for example, there is no national data source on functional status and behavioral health status (Roberts and Mellor 2022). Although we used the HCC score to control for health status in our models,[25] it is impossible to determine if the score accurately captures differences in health status across enrollees in different plan types, in the presence of favorable selection and higher coding intensity common in MA plans (MedPAC 2023b, 2023c). Relative to FFS Medicare, coding intensity in MA is higher for PBDE individuals (14.5 percent) and for FBDE individuals (11.3 percent) than for MA enrollees with no Medicaid benefits (10.2 percent) (MedPAC 2023d). Nevertheless, because D-SNPs are not expected to have more favorable selection or coding intensity than other MA plans, favorable selection and coding intensity cannot explain the differences observed between switchers in D-SNPs and switchers in regular MA plans.
- We examined LTSS use only over a short period of time after the switch, and we did not examine acute or post-acute care after the switch. Future studies could examine utilization over longer periods to see whether our findings persist and whether the benefits of D-SNP enrollment that we observed in this study hold over time.
- MA encounter data have only recently become publicly available, and the quality and completeness of those data may vary by service type. Similarly, Medicaid data quality varies across states, potentially affecting the reliability of LTSS outcome results. Specifically, actual rates of nursing facility and HCBS use in some states may be higher than estimated.
- We are unable to determine the pathways through which PBDE individuals become FBDE individuals.[26] For example, PBDE individuals might become FBDE individuals through increasing disability, thereby qualifying them for Medicaid HCBS. If switchers in D-SNPs followed this HCBS-

[25] We looked at HCC scores before the switch. We are unable to determine if people in different coverage types had different health trajectories leading up to the time of their switch to full Medicaid coverage.

[26] For example, some people become eligible for full Medicaid benefits after a hospital stay or SNF admission, which may involve high out-of-pocket costs causing them to spend down to Medicaid eligibility levels, while other people become more functionally impaired and qualify for LTSS via either a move into an institution or qualifying for HCBS; in some states, people who qualify for HCBS can qualify for full Medicaid benefits with higher income and assets than others who qualify for Medicaid benefits through other pathways.

related pathway to FBDE status at different rates from their counterparts in MA plans or FFS Medicare, this could explain the results in use of Medicaid LTSS after the switch.[27]

- FBDE individuals may experience different benefits from D-SNP enrollment than PBDE individuals, but we cannot draw any such conclusions from our study, given that we focused exclusively on SNF use, hospitalizations, and ED visits among PBDE individuals before their transition to FBDE status. In addition, because we assessed different outcomes before and after the switch, we cannot conclude what the switch from PBDE to FBDE status means for the relative benefits of D-SNPs when a person becomes an FBDE individual versus when the same person was a PBDE individual.
- As this is an observational study, we cannot make conclusive statements about causality or the underlying mechanisms that could drive potential differences in outcomes across coverage types.

C. Conclusion

Our findings suggest that PBDE individuals who are enrolled in D-SNPs and switch to FBDE status have lower use of hospital and SNF services in the month before the switch and higher use of HCBS and lower use of institutional care in the month of the switch through two months after the switch, when compared to their counterparts in FFS Medicare or regular MA plans. Our findings present some evidence that PBDE individuals who switch to FBDE status may benefit from models like D-SNPs that provide additional care coordination, but those benefits should be further explored in future research and considered carefully alongside other relevant factors when states determine D-SNP enrollment options for PBDE populations. Specifically, more research is needed to better understand how other factors affect these care patterns, including differences in functional status and behavioral health needs among those with different types of Medicare coverage. It is also important to further examine favorable selection and coding intensity for individuals in D-SNPs versus other coverage types. Finally, future research should investigate service utilization patterns over longer periods of time after PBDE individuals become FBDEs to determine whether the benefits of D-SNP enrollment that we observed in this study hold over time.

[27] For example, if D-SNP switchers were more likely to switch to FBDE status through HCBS-related pathways, we would expect to see D-SNP switchers using more HCBS than other switchers.

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Appendix A

Additional Detail on Methods

Regression model

To examine the regression-adjusted differences in outcomes by Medicare coverage type (Research Question 2), we estimated a model as in equation (1):

$$Y_{it} = cons + \alpha plan\_b4switch_{it} + \beta X_{it} + \delta STATE + \theta Year_{2019} + \varepsilon_{it} \text{ , where} \quad (1)$$

- Y_{it} refers to each of the following binary outcomes for switcher i in the year 2018 or 2019 (t): any acute hospitalization, any outpatient ED visit, any post-acute SNF stay, any HCBS and institutional care use, and mortality.
- $plan\_b4switch$ refers to the Medicare coverage type before the switch: D-SNPs (reference group), regular MA plans, and FFS Medicare; the corresponding coefficient would be $\alpha_{MA}, \alpha_{FFS}$.
- X refers to a set of other individual characteristics, including age group, sex, race and ethnicity, the original reason for Medicare entitlement, urbanity, and HCC score.
- $State$ refers to the state fixed effects.
- $Year_{2019}$ refers to the year fixed effects (reference year = 2018).
- ε_{it} represents the error term.

Using the regression estimates from equation (1), we then predicted the outcome for switchers enrolled in D-SNPs, regular MA plans, and FFS Medicare.

Specifically, we predicted the outcome for D-SNP, regular MA plan, and FFS Medicare enrollees by using equations (2), (3), and (4), respectively:

$$\widehat{Y_{it}} = cons + \hat{\beta} X_{it} + \hat{\delta} STATE + \hat{\theta} Year_{2019} \quad (2)$$

$$\widehat{Y_{it}} = cons + \hat{\boldsymbol{\alpha}}_{\boldsymbol{MA}} + \hat{\beta} X_{it} + \hat{\delta} STATE + \hat{\theta} Year_{2019} \quad (3)$$

$$\widehat{Y_{it}} = cons + \hat{\boldsymbol{\alpha}}_{\boldsymbol{FFS}} + \hat{\beta} X_{it} + \hat{\delta} STATE + \hat{\theta} Year_{2019} \quad (4)$$

To examine disparities in service use patterns (Research Question 3), we ran models (1) through (4) for each individual subgroup of interest (for example, non-Hispanic White; age as original reason for entitlement).

Appendix B

Supplemental Results

Descriptive characteristics of sample

Individual characteristics varied widely across Medicare coverage types. In both 2018 and 2019, compared to people enrolled in regular MA plans and FFS Medicare, enrollees in D-SNPs were disproportionately age 65 to 74 years, non-Hispanic Black, and residing in an urban area. In 2018, D-SNP enrollees had on average lower HCC scores than those in the other plan types; in 2019, D-SNP enrollees had slightly higher HCC scores than those in FFS but were still healthier than those in regular MA (Table B.1).

Table B.1. Descriptive statistics of study sample (switchers) enrolled in each Medicare coverage type before the switch (unadjusted)

	D-SNP		Regular MA		FFS Medicare	
Characteristic	**2018**	**2019**	**2018**	**2019**	**2018**	**2019**
Total number of switchers	37,210	49,067	58,735	67,408	159,458	181,784
Age (percent)						
Younger than 65	38.9	40.6	30.8	32.2	49.2	47.5
65 to 74	37.6	36.5	32.9	33.3	26.1	28.3
75 to 84	16.8	16.6	22.8	21.9	14.7	14.9
85 and older	6.7	6.3	13.5	12.6	10.0	9.3
Sex (percent)						
Male	62.7	62.9	63.9	63.6	58.2	58.6
Female	37.3	37.1	36.1	36.4	41.8	41.4
Race and ethnicity (percent)						
Non-Hispanic White	38.2	41.6	55.7	55.3	61.2	58.2
Non-Hispanic Black	31.7	32.1	21.1	22.3	21.1	23.7
Hispanic	22.9	19.8	18.1	16.8	11.9	11.3
Other[a]	7.2	6.5	5.1	5.6	5.8	6.8
Original reason for Medicare entitlement (percent)						
Age	44.7	41.7	51.7	49.8	36.3	37.7
Disability	55.0	58.0	47.9	49.8	61.2	60.0
ESRD	0.3	0.3	0.4	0.4	2.5	2.4
Urbanity (percent)						
Rural	3.2	4.8	7.1	8.0	11.6	11.0
Urban	96.8	95.2	92.9	92.0	88.4	89.0
Health status, mean (SD)						
HCC score	1.85 (1.66)	1.90 (1.68)	2.11 (1.77)	2.13 (1.81)	1.90 (1.80)	1.84 (1.76)

Source: Mathematica's analysis of 2018–2019 MBSF data and CMS SNP Comprehensive Reports and MA Contract Service Area by State and County reports.

Notes: Study sample switchers included individuals who switched from PBDE status to FBDE status in 2018 and 2019. PBDE individuals were Medicare enrollees with at least one month of partial-benefit coverage in the year. FBDE individuals were those who had full-benefit coverage for all months with dual eligibility of the year. We categorized enrollees as switchers when they had one month classified as PBDEs and the subsequent month classified as FBDEs. We excluded Medicare enrollees in U.S. territories. We excluded enrollees in the Program of All-Inclusive Care for the Elderly programs or Medicare-Medicaid plans before switching from partial-benefit status to full-benefit status. We also excluded enrollees from states that did not have D-SNPs (Alaska, Illinois, Nevada, New Hampshire, North Dakota, South Dakota, Vermont, and Wyoming) and states that allowed only FBDE individuals to enroll in D-SNPs (Arizona, Hawaii, Idaho, Massachusetts, Minnesota, New Jersey, and Oregon).

All differences between the plan types for each characteristic in each year are statistically significant.

CMS = Centers for Medicare & Medicaid Services; D-SNP = Dual Eligible Special Needs Plan; ESRD = end-stage renal disease; FBDE = full-benefit dually eligible; FFS = fee for service; MA = Medicare Advantage; MBSF = Medicare Beneficiary Summary File; PBDE = partial-benefit dually eligible; SD = standard deviation; SNP = Special Needs Plan.

[a] The race and ethnicity group labeled "Other" includes individuals who were Asian/Pacific Islander, American Indian/Alaska Native, other, or unknown race and ethnicity status.

Sensitivity checks: Adjusting for mortality in LTSS regressions

As described in Section III, if individuals in certain plan types were more likely to die after becoming an FBDE individual, that likelihood could bias the observed relationship between coverage type and LTSS outcomes. To examine such a possibility, we created a binary variable for mortality among switchers within three months after they became an FBDE individual. We ran sensitivity checks for our LTSS outcome models that adjusted for mortality and weighted them by the proportion of months that a switcher was alive during the outcome period (month of the switch and two months following the switch from PBDE to FBDE status). The results for LTSS use by Medicare coverage type were robust to adjusting for and weighting by mortality in the regressions (Tables B.2 and B.3).

Table B.2. Sensitivity check using mortality as control in regressions–predicted rates and 95 percent confidence intervals: LTSS use by individuals after their switch from PBDE to FBDE status in 2018 and 2019 by Medicare coverage type

Medicare coverage	Percent of switchers using HCBS within three months after the switch	Percent of switchers using institutional care within three months after the switch
D-SNP	23.6 (23.5–23.6)	8.6 (8.6–8.7)
Regular MA	22.0 (22.0–22.0)	13.1 (13.1–13.1)
FFS Medicare	22.4 (22.4–22.5)	14.4 (14.3–14.4)

Notes: Study sample switchers included individuals who switched from PBDE status to FBDE status in 2018 and 2019. PBDE individuals were Medicare enrollees with at least one month of partial-benefit coverage in the year. FBDE individuals were those who had full-benefit coverage for all months with dual eligibility of the year. We categorized enrollees as switchers when they had one month classified as PBDEs and the subsequent month classified as FBDEs. We excluded Medicare enrollees in U.S. territories. We excluded enrollees in the Program of All-Inclusive Care for the Elderly programs or Medicare-Medicaid plans before switching from partial-benefit status to full-benefit status. We also excluded enrollees from states that did not have D-SNPs (Alaska, Illinois, Nevada, New Hampshire, North Dakota, South Dakota, Vermont, and Wyoming) and states that allowed only FBDE individuals to enroll in D-SNPs (Arizona, Hawaii, Idaho, Massachusetts, Minnesota, New Jersey, and Oregon).

We defined Medicaid LTSS use after the switch as services used in the month of the switch and two months following the switch from PBDE to FBDE status.

All analyses controlled for the indicator of mortality within the month of the switch and two months following the switch from PBDE to FBDE status.

All differences between the plan types for each outcome are statistically significant.

D-SNP = Dual Eligible Special Needs Plan; FBDE = full-benefit dually eligible; FFS = fee for service; HCBS = home- and community-based services; LTSS = long-term services and supports; MA = Medicare Advantage; PBDE = partial-benefit dually eligible.

Table B.3. Sensitivity checks weighting regressions by mortality–predicted rates and 95 percent confidence intervals: LTSS use by individuals after their switch from PBDE to FBDE status in 2018 and 2019 by Medicare coverage type

Medicare coverage	Percent of switchers using HCBS within three months after the switch	Percent of switchers using institutional care within three months after the switch
D-SNP	23.8 (23.8–23.9)	8.6 (8.6–8.7)
Regular MA	22.2 (22.1–22.2)	13.1 (13.0–13.1)
FFS Medicare	22.6 (22.6–22.7)	14.4 (14.3–14.4)

Notes: Study sample switchers included individuals who switched from PBDE status to FBDE status in 2018 and 2019. PBDE individuals were Medicare enrollees with at least one month of partial-benefit coverage in the year. FBDE individuals were those who had full-benefit coverage for all months with dual eligibility of the year. We categorized enrollees as switchers when they had one month classified as PBDEs and the subsequent month classified as FBDEs. We excluded Medicare enrollees in U.S. territories. We excluded enrollees in the Program of All-Inclusive Care for the Elderly programs or Medicare-Medicaid plans before switching from partial-benefit status to full-benefit status. We also excluded enrollees from states that did not have D-SNPs (Alaska, Illinois, Nevada, New Hampshire, North Dakota, South Dakota, Vermont, and Wyoming) and states that allowed only FBDE individuals to enroll in D-SNPs (Arizona, Hawaii, Idaho, Massachusetts, Minnesota, New Jersey, and Oregon).

We defined Medicaid LTSS use after the switch as services used in the month of the switch and two months following the switch from PBDE to FBDE status.

We weighted all analyses by the proportion of the follow-up months (that is, the month of the switch and two months following the switch from PBDE to FBDE status) that the enrollee was alive. If the enrollee died during the month of the switch, then the weight = 0; if the enrollee died in the first month following the switch, then the weight = 0.33; if the enrollee died in the second month following the switch, then the weight = 0.66; if the enrollee died after two months following the switch, then the weight = 1.

All differences between the plan types for each outcome are statistically significant.

D-SNP = Dual Eligible Special Needs Plan; FBDE = full-benefit dually eligible; FFS = fee for service; HCBS = home- and community-based services; LTSS = long-term services and supports; MA = Medicare Advantage; PBDE = partial-benefit dually eligible.

Subgroup analyses: Descriptive statistics of outcomes

Service use was mostly higher for older age groups, people who were non-Hispanic White, and enrollees residing in rural areas when compared to the other subgroups for each of these characteristics (age group, race and ethnicity, and urbanity). Those whose original reason for Medicare entitlement was age had higher rates of SNF use and institutional care than those who qualified due to disability or ESRD, while those whose original reason for entitlement was ESRD had the highest rates of hospitalization, ED services, and HCBS (Table B.4).

Table B.4. Descriptive statistics: Acute care, post-acute care, and LTSS use by individuals before and after their switch from PBDE to FBDE status in 2018 and 2019 by demographic subgroup

Characteristic	Number of switchers in the demographic subgroup	Percent of switchers using acute and post-acute care in the month before the switch			Percent of switchers using Medicaid LTSS within three months after the switch	
		SNF	Hospitalization	ED	HCBS	Institutional care
Age						
Younger than 65	239,142	2.9	6.8	11.4	21.1	4.7
65 to 74	166,706	6.1	8.8	8.2	19.2	11.0
75 to 84	92,962	11.6	13.0	10.4	26.7	23.8
85 and older	54,852	16.8	14.7	11.4	31.2	38.6
Sex						
Male	219,679	6.5	9.7	10.0	21.5	12.2
Female	333,983	6.8	9.0	10.5	23.2	13.8
Race and ethnicity						
Non-Hispanic White	308,102	8.3	10.5	11.2	22.4	16.3
Non-Hispanic Black	131,646	5.7	9.1	10.9	22.1	10.8
Hispanic	79,575	4.1	6.5	7.9	24.0	8.4
Other[a]	34,339	2.8	4.8	5.5	21.4	5.0
Original reason for Medicare entitlement						
Age	227,409	9.3	10.2	8.6	21.6	19.6
Disability	317,229	4.8	8.3	11.4	22.9	8.7
ESRD	9,024	7.2	17.6	14.5	31.4	9.3
Urbanity						
Rural	51,566	8.1	11.0	13.6	22.8	16.4
Urban	502,096	6.6	9.1	10.0	22.5	12.8

Source: Mathematica's analysis of 2018–2019 MBSF data and CMS SNP Comprehensive Reports and MA Contract Service Area by State and County reports.

Notes: Study sample switchers include individuals who switched from PBDE status to FBDE status in 2018 and 2019. PBDE individuals were Medicare enrollees with at least one month of partial-benefit coverage in the year. FBDE individuals were those who had full-benefit coverage for all months with dual eligibility of the year. We categorized enrollees as switchers when they had one month classified as PBDEs and the subsequent month classified as FBDEs. We excluded Medicare enrollees in U.S. territories. We excluded enrollees the Program of All-Inclusive Care for the Elderly programs or Medicare-Medicaid plans before switching from partial-benefit status to full-benefit status. We also excluded enrollees from states that did not have D-SNPs (Alaska, Illinois, Nevada, New Hampshire, North Dakota, South Dakota, Vermont, and Wyoming) and states that allowed only FBDE individuals to enroll in D-SNPs (Arizona, Hawaii, Idaho, Massachusetts, Minnesota, New Jersey, and Oregon).

We defined acute and post-acute care use before the switch as services used in the month preceding the switch from PBDE to FBDE status. We defined Medicaid LTSS use after the switch as services used in the month of the switch and two months following the switch from PBDE to FBDE status.

D-SNP = Dual Eligible Special Needs Plan; ED = emergency department; ESRD = end-stage renal disease; FBDE = full-benefit dually eligible; FFS = fee for service; HCBS = home- and community-based services; LTSS = long-term services and supports; MA = Medicare Advantage; MBSF = Medicare Beneficiary Summary File; PBDE = partial-benefit dually eligible; SNF = skilled nursing facility.

Table B.4 (*continued*)

[a] The race and ethnicity group labeled “Other” includes individuals who were Asian/Pacific Islander, American Indian/Alaska Native, other, or unknown race and ethnicity status.

Supplemental figures

Figures B.1 and B.2 show that service use patterns by Medicare coverage type in individual subgroups were similar to those in the overall sample, with a few exceptions.

Figure B.1. Regression-adjusted percentage of switchers using each service by race and ethnicity and Medicare coverage type

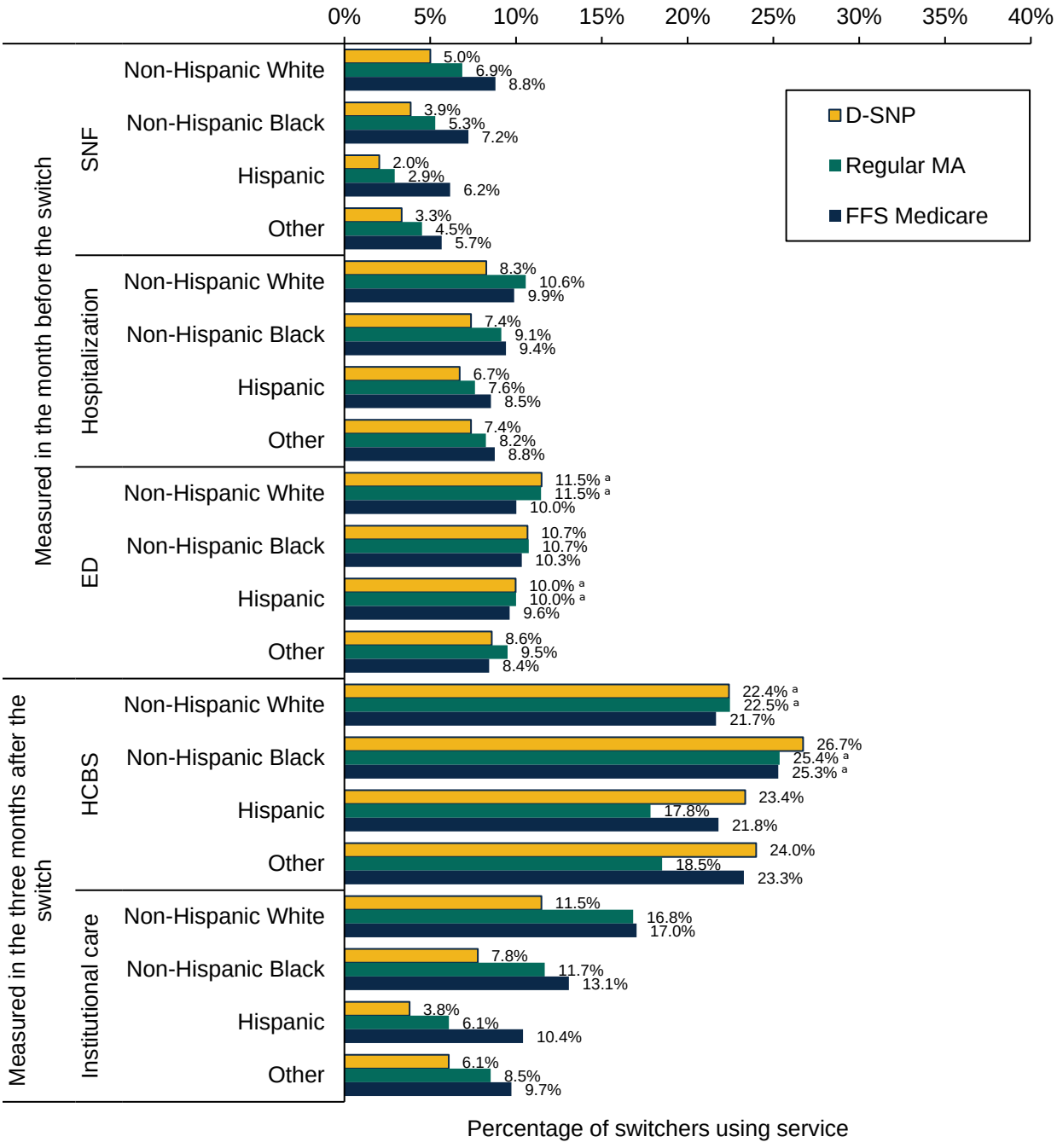


Figure B.1 (*continued*)

Notes: See Table B.4 for the sample size of each race and ethnicity category. Study sample switchers included individuals who switched from PBDE status to FBDE status in 2018 and 2019. PBDE individuals were Medicare enrollees with at least one month of partial-benefit coverage in the year. FBDE individuals were those who had full-benefit coverage for all months with dual eligibility of the year. We categorized enrollees as switchers when they had one month classified as PBDEs and the subsequent month classified as FBDEs. See text and table note to Table 1 for more detail on sample construction.

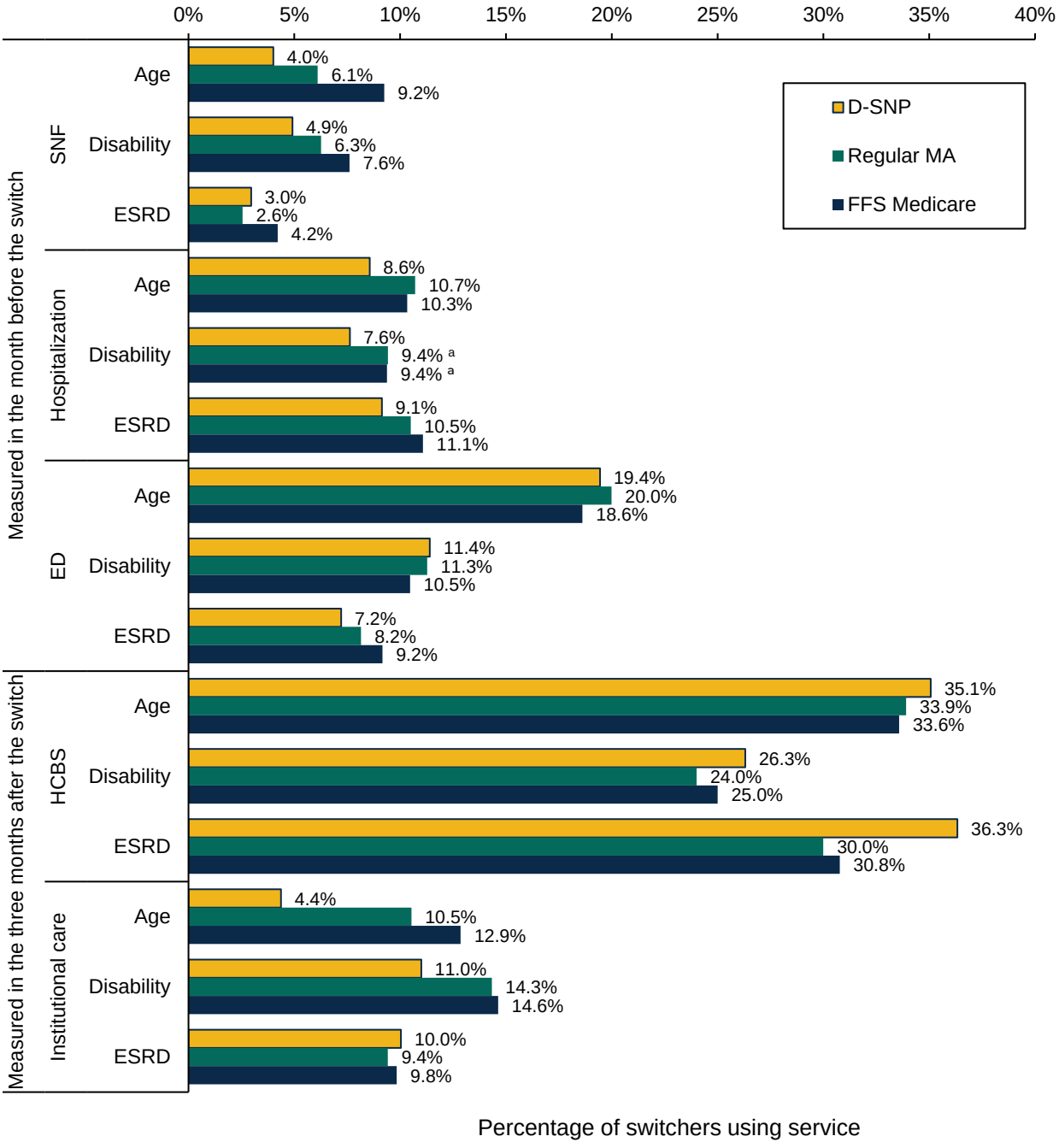
All differences between plan types for each outcome within each race and ethnicity subgroup are statistically significant except for the following:

- Differences for ED and HCBS between D-SNPs and regular MA are not statistically significant among non-Hispanic Whites.
- Difference for HCBS between regular MA and FFS Medicare is not statistically significant among non-Hispanic Blacks.
- Difference for ED between D-SNPs and regular MA is not statistically significant among Hispanics.

D-SNP = Dual Eligible Special Needs Plan; ED = emergency department; FBDE = full-benefit dually eligible; FFS = fee for service; HCBS = home- and community-based services; MA = Medicare Advantage; PBDE = partial-benefit dually eligible; SNF = skilled nursing facility.

[a] Difference between the two coverage types within the subgroup for that outcome is not statistically significant at the 5 percent significance level. The difference is not statistically significant if the two estimates' 95 percent confidence intervals overlap.

Figure B.2. Regression-adjusted percentage of switchers using each service by original reason for Medicare entitlement and Medicare coverage type



Notes: See Table B.4 for the sample size of each OREC category. Study sample switchers included individuals who switched from PBDE status to FBDE status in 2018 and 2019. PBDE individuals were Medicare enrollees with at least one month of partial-benefit coverage in the year. FBDE individuals were those who had full-benefit coverage for all months with dual eligibility of the year. We categorized enrollees as switchers when they had one month classified as PBDEs and the subsequent month classified as FBDEs. See text and table note to Table 1 for more detail on sample construction.

Figure B.2 (*continued*)

All differences between plan types for each outcome within each OREC subgroup are statistically significant except for the following:

- Difference for hospitalization between regular MA and FFS Medicare is not statistically significant among individuals whose original reason for entitlement was disability.

SNP = Dual Eligible Special Needs Plan; ED = emergency department; FBDE = full-benefit dually eligible; FFS = fee for service; HCBS = home- and community-based services; MA = Medicare Advantage; OREC = original reason for entitlement code; PBDE = partial-benefit dually eligible; SNF = skilled nursing facility.

[a] Difference between the two coverage types within the subgroup for that outcome is not statistically significant at the 5 percent significance level. The difference is not statistically significant if the two estimates' 95 percent confidence intervals overlap.