Research Report

First Annual Evaluation Report of the Medicare Advantage Value-Based Insurance Design Model Test

2017, Year 1 of the Intervention

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Preface

In this annual report, we describe the RAND Corporation team's first year of findings from its evaluation of the Medicare Advantage Value-Based Insurance Design Model Test, initiated by the Center for Medicare and Medicaid Innovation (CMMI). This report will guide the RAND team's qualitative and quantitative data collection and analyses for the ongoing, multiyear evaluation. As currently planned, the model test will last for five years, starting in 2017. The evaluation will extend through early 2024 to allow the evaluation team to collect and analyze lagged data.

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Summary

Value-based insurance design (VBID) introduces financial incentives to encourage health plan enrollees to use high-value services. Examples of these incentives include reducing prescription drug copayments for individuals with chronic conditions to encourage medication adherence or reducing podiatry copayments for those with diabetes to encourage regular foot checks. The goals of VBID are to improve patient health through better disease control and to save money by reducing costly complications that can occur when chronic conditions are poorly managed.

Researchers at the University of Michigan developed VBID in 2001, initially focusing on cost sharing for prescription drugs and later expanding the concept to include all clinical services. Until recently, VBID had been implemented only for working-age populations, and the existing literature predominately focuses on approaches that reduce cost sharing for high-value prescription drugs.

The RAND Corporation is evaluating a five-year VBID model test that the Center for Medicare and Medicaid Innovation (CMMI) is currently implementing in the Medicare Advantage (MA) program. The evaluation will assess whether VBID can increase use of high-value services; reduce use of avoidable services; improve quality of care; and, ultimately, improve health outcomes and reduce spending. In this report, we describe evaluation results from 2017, the first year of the MA VBID model test.

CMMI MA VBID Model Test

In 2015, CMMI announced a voluntary VBID model test for private insurance companies offering MA insurance coverage, which are referred to as MA Parent Organizations (POs). The model test began on January 1, 2017. Before that date, POs were prevented from offering VBID by a "uniformity requirement," which specified that each MA insurance plan, or plan benefit package (PBP), must be offered to all beneficiaries "at a uniform premium, with uniform benefits and cost sharing throughout the plan's service area" (CMS, 2012). To implement the VBID model test, CMMI waived the uniformity requirement for qualified POs in seven states: Arizona, Indiana, Iowa, Massachusetts, Oregon, Pennsylvania, and Tennessee.

Participating POs could implement VBID benefits for beneficiaries with one or more of the following conditions: chronic obstructive pulmonary disease (COPD), congestive heart failure (CHF), coronary artery disease, diabetes, hypertension, mood disorder, and past stroke. POs could implement one or more VBID approaches, including reduced cost sharing for beneficiaries who used high-value services, sought care from high-value providers, or participated in disease management or related programs. POs also could offer supplemental benefits (e.g., nutrition services, transportation) to beneficiaries. Participating POs agreed to be monitored,

to report data on VBID-eligible beneficiaries to the Centers for Medicare and Medicaid Services (CMS), to certify that their proposed approaches would produce savings for CMS within five years, and to participate in the evaluation.

Results

VBID Approaches Implemented

In 2017, the participating POs were Aetna, Blue Cross Blue Shield of Massachusetts, Fallon Community Health Plan, Geisinger Health Plan, Highmark, Independence Blue Cross, Indiana University Health Plan, Tufts Associated Health Maintenance Organization, and The University of Pittsburgh Medical Center Health Plan. Table S.1 lists the VBID approaches these POs implemented. We substitute letters for PO names in Table S.1 to preserve confidentiality. Participating POs targeted COPD, CHF, diabetes, and hypertension. Two POs did not have beneficiary participation requirements, meaning that all beneficiaries with the targeted condition were eligible to receive VBID benefits. The remaining seven POs required beneficia-

Table S.1
VBID Approaches of 2017 Participants

PO	Condition(s) Targeted	VBID Approach	Description
A	Diabetes	Reduced cost sharing, contingent on participation in CM/DM	Provided quarterly rebates (up to $200 annually) for incurred cost sharing for primary care, endocrinology, foot care, and eye exams if beneficiaries completed specific preventive screenings (termed a "scorecard")
B	Diabetes and/or COPD	Reduced cost sharing for high-value providers and supplemental benefits, contingent on participating in CM/DM	Beneficiaries with at least quarterly contact with a care manager received reduced copayments for primary and specialty care providers designated as "high value" and reduced or zero-dollar copays for supplemental benefits
C	CHF and COPD or CHF and diabetes	Reduced cost sharing, contingent on participation in CM/DM	Provided quarterly rebates for incurred cost sharing for beneficiaries who completed up to six CM/DM activities
D	Hypertension	Reduced copays for high-value services	Eliminated cost sharing for select hypertension drugs, which included waiving the deductible and any cost sharing incurred in the coverage-gap or catastrophic-benefit phases
E	COPD	Reduced cost sharing, contingent on participation in CM/DM	Waived copayments for pulmonology, cardiology, sleep medicine, and palliative care visits; also waived cost sharing for some labs and durable medical equipment, including pulmonary function tests, sleep studies, CT scans for the chest, and oxygen supplies, contingent on CM/DM participation
F	COPD and CHF	Reduced cost sharing, contingent on participation in CM/DM	Waived copayments for primary care physician visits and reduced copayments for visits to cardiologists and pulmonologists, contingent on CM/DM participation
G	CHF	Reduced cost sharing, contingent on participation in CM/DM	Waived copayments for visits to primary care providers, cardiologists, and for select generic prescription drugs, contingent on CM/DM participation
H	Diabetes and CHF	Reduced copays for high-value services	Reduced copayments for visits with cardiologists, endocrinologists, and podiatrists
I	CHF	Additional supplemental benefits, contingent on participation in CM/DM	Provided free blood pressure cuffs and scale, contingent on CM/DM participation

NOTE: CT = computed tomography.

ries to complete care management or disease management (CM/DM) requirements to receive VBID benefits. All POs allowed beneficiaries to opt out at any time and to re-enter by calling their insurers.

Most POs lowered cost sharing for high-value services as part of their VBID designs, often reducing copays for specialist (n = 6) and primary care (n = 4) visits because they thought these changes would improve access to care. Two POs provided supplemental benefits, and one lowered cost sharing for visits with high-value providers. Only two POs reduced cost sharing for drugs—the only VBID approach for which the literature provides robust support.

Two POs used rebates to reimburse beneficiaries for cost sharing, rather than reducing copays at the point of service. Rebates previously have not been tested in VBID, and because beneficiaries must pay full cost sharing up front, some beneficiaries might be deterred from seeking high-value care. However, POs reported that rebates might be more rewarding for beneficiaries and were easier to administer because they did not require coordination with providers.

Participation in the VBID Model Test

Nine out of 23 eligible POs entered PBPs into the model test. Five participating POs were located in Pennsylvania, three in Massachusetts, and one in Indiana. Most participating POs were state-based insurance providers; there was one national participant. Three of the nine participants were Blue Cross and/or Blue Shield affiliates.

VBID-eligible but nonparticipating POs cited various reasons for not joining the model test, including lack of evidence about how best to design VBID interventions for MA populations; uncertain return on investment (ROI); concerns related to tracking VBID benefits and beneficiaries; and concerns about the design of the VBID model test itself, such as limited flexibility in designing benefits, restrictions on marketing the model test to potential enrollees, and regulatory and compliance issues. Many nonparticipants believed that they were already providing high-quality care.

In contrast, participating POs said they joined the model test because VBID's goals were consistent with their own organizational priorities, it had the potential to improve beneficiary outcomes and care quality, and it provided an opportunity to innovate and experiment with benefit design. Some participating POs viewed ROI as a secondary concern and were not deterred by the lack of evidence about VBID in Medicare populations.

POs typically entered more than one PBP into the model test and implemented the same VBID intervention in all of them. Participating PBPs tended to have higher average enrollment (9,924 versus 4,749 beneficiaries), lower average out-of-pocket spending maximums ($4,427 versus $6,079), and higher beneficiary mean age (76.7 versus 73.5) than eligible but nonparticipating PBPs in Indiana, Massachusetts, and Pennsylvania.

Implementation Experiences

POs with simpler VBID designs reported better implementation experiences and fewer implementation challenges. Common implementation barriers included the need to establish new workflows and lines of communication among departments whose staff usually do not have to work together (e.g., enrollment, nursing, CM/DM) and the need to work closely with outside vendors (e.g., to print new identification cards). Several POs reported challenges associated with tracking two different sets of benefits—one for VBID-participating beneficiaries and another for nonparticipating beneficiaries. Tracking often required modifying information technol-

ogy (IT) systems and, in some cases, issuing new identification cards. Some POs reported IT challenges associated with coordinating alternative cost-sharing arrangements with providers.

POs with positive implementation experiences described engaging relevant internal stakeholders throughout the VBID design and implementation stages. In general, POs noted the importance of implementation facilitators, such as a dedicated VBID implementation leader, cross-departmental collaboration, and open lines of communication with CMS.

Beneficiary Participation in VBID

Most participating POs required beneficiaries to complete CM/DM requirements to receive VBID benefits. Across all participating POs, 61 percent of eligible beneficiaries participated in the model, 35 percent were in POs with participation requirements and did not complete those requirements, and 4 percent opted out (Table S.2). Among POs with participation requirements, only 30 percent of eligible beneficiaries participated; the remaining eligible beneficiaries either failed to meet CM/DM requirements (63 percent) or opted out of the model test (7 percent). POs E and I reported higher participation in the administrative data used to generate Table S.2 than they did in other documentation provided to RAND and CMS. When we drop those POs from the analysis, we find that 68 percent of eligible beneficiaries in POs with participation requirements failed to complete those requirements.

Relatively low participation raises concerns that beneficiaries who did not participate were systematically different from those who did. We found little evidence of such selection. VBID-eligible beneficiaries who met CM/DM requirements had higher average risk scores than those who opted out of the model test (1.8 versus 1.5). Otherwise, we found few differences.

Table S.2
Beneficiary Participation in VBID Among 2017 Participants

POs	Participation Requirements?	Percentage of Eligible Beneficiaries Who Participated in VBID	Percentage of Eligible Beneficiaries Who Did Not Complete Participation Requirements	Percentage of Eligible Beneficiaries Who Opted Out of VBID
A	Yes	30.9	67.5	1.6
B	Yes	56.3	26.3	17.4
C	Yes	6.6	85.2	8.2
D	No	100.0	N/A	0.0
E	Yes	98.5	0.0	1.5
F	Yes	20.0	79.0	1.1
G	Yes	18.6	79.6	1.8
H	No	99.3	N/A	0.4
I	Yes	99.9	0.0	0.1
All POs	N/A	61.1	35.0	4.0
POs with participation requirements	Yes	29.6	63.3	7.1

NOTES: Not all rows may add to 100 percent because of rounding. POs with participation requirements compelled beneficiaries to take steps to receive VBID benefits. Beneficiaries who did not participate in the model failed to take such steps by, for example, not engaging with CM/DM. Those who opted out told their POs that they did not wish to participate. N/A = not applicable.

Factors that May Have Affected Beneficiary Participation

Low participation may reflect low awareness of VBID among eligible beneficiaries. In the 2017 MA and Prescription Drug Plan (PDP) Consumer Assessment of Healthcare Providers and Systems (MA and PDP CAHPS) survey fielded shortly after the model test began, only about 9 percent of VBID-eligible beneficiaries reported having been offered reduced cost sharing or extra benefits because of a health condition. However, the wording of the two questions added to the survey to assess VBID benefits did not fully reflect the CM/DM requirements adopted by most participating POs.

Some POs reported that CMS marketing restrictions reduced beneficiary awareness. Others reported that the beneficiary participation requirements they implemented for 2017, such as completing a health assessment survey, may have reduced participation. One PO planned to revise participation requirements to make it easier for beneficiaries to meet them. POs also reported that some beneficiaries did not understand why they were selected to participate or did not agree that they had the condition making them eligible for VBID benefits.

Enrollment Trends

Although POs were not permitted to advertise VBID to potential enrollees, it is possible that participating POs enacted other, simultaneous changes to beneficiary outreach or benefit design that may have affected enrollment trends. We conducted analyses to determine whether participating POs experienced changes in enrollment trends in 2017 relative to a matched comparison group. We found no evidence that VBID affected beneficiary enrollment for 2017.

Plan Bids

The standardized bid for a given PBP represents the cost of insuring a Medicare beneficiary through that PBP, after standardizing for such risk factors as age and health status. We found that the combined, standardized bid for MA and prescription drug (PD) coverage for VBID-participating MA-PD PBPs fell by 1.5 percent in 2017 relative to a matched comparison group ($p = 0.13$). We considered whether revenue to plans declined in VBID-participating PBPs relative to the comparison group after adjusting bids to account for beneficiary risk scores and rebates. We found no evidence that the model affected total plan revenue in 2017. POs submitted 2017 bids before implementing VBID, thus their bids did not reflect actual experience with the model. In future years, we will assess how POs' experiences with the VBID model test affect their bid trajectories.

Moving Forward

The MA VBID model test provides an opportunity to understand how VBID will affect outcomes for the Medicare population and to determine whether VBID approaches can improve health and reduce spending in Medicare. This report is the first report that the RAND team will provide as part of the MA VBID model test evaluation. To date, we have answered questions about how participating POs have designed their VBID programs; perceived barriers that kept some POs from joining the test; perceived benefits that motivated other POs to join the test; and beneficiary participation in the first year of the model test. We also have analyzed the model's effect on enrollment and plan bids.

However, there are many outcomes that we have not evaluated because complete data are not yet available. For example, MA encounter data and prescription drug event data are not final until up to 18 months after the end of the plan year, so utilization for 2017 cannot be evaluated until 2019. With additional years of data, we will be able to analyze how the model affects outcomes, including health care utilization, PBP and Medicare spending, health care quality, and patient experiences of care.

In future reports, we will also address policy changes that may affect PO participation and the trajectory of the VBID model test over time. In 2018, CMS allowed PBPs in additional states to enter the model test and permitted POs to offer VBID benefits for more conditions, including rheumatoid arthritis and dementia. In 2019, CMS will expand the model further by adding more states and by permitting POs to offer VBID benefits for any condition, contingent on CMS approval. CMS has reinterpreted the uniformity requirement, making it possible for POs to implement VBID-like approaches outside of the model test. We will address these issues as we learn how the changes affect model participation.

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Abbreviations

ACA	Patient Protection and Affordable Care Act
ANOC	Annual Notification of Changes
CAD	coronary artery disease
CAHPS	Consumer Assessment of Healthcare Providers and Systems
CHF	congestive heart failure
CM	care management
CMMI	Center for Medicare and Medicaid Innovation
CMS	Centers for Medicare and Medicaid Services
COPD	chronic obstructive pulmonary disease
C-SNP	Chronic Condition Special Needs Plan
CY	calendar year
DM	disease management
DME	durable medical equipment
E&M	evaluation and management
ED	emergency department
EGWP	Employer Group Waiver Plan
EOC	Evidence of Coverage
FFS	fee-for-service
HCC	Hierarchal Condition Category
HEDIS	Healthcare Effectiveness Data and Information Set
HMO	Health Maintenance Organization
HMO-POS	Health Maintenance Organization with a point-of-service option
HPMS	Health Plan Management System
IDR	Integrated Data Repository

IT	information technology
LIS	Low-Income Subsidy
MA	Medicare Advantage
MAO	Medicare Advantage Organization
MARx	Medicare Advantage and Prescription Drug
MMP	Medicare-Medicaid Plan
NPPO	nonparticipating parent organization
OACT	Centers for Medicare and Medicaid Services Office of the Actuary
OOP	out of pocket
PBM	pharmacy benefit manager
PBP	plan benefit package
PCP	primary care provider
PD	prescription drug
PDE	prescription drug event
PDP	Prescription Drug Plan
PMPM	per member per month
PO	Parent Organization
PPO	Preferred Provider Organization
RAPS	Risk Adjustment Processing System
ROI	return on investment
SNP	Special Needs Plan
VBID	value-based insurance design

CHAPTER ONE

Introduction

Despite evidence that high-value services prevent downstream health complications, use of such services is low among patients with chronic diseases (Berwick, Nolan, and Whittington, 2008). For example, only 60 percent of those with hypertension take their prescribed medications regularly (Chowdhury et al., 2013). Patient out-of-pocket (OOP) costs often are described as a barrier to accessing needed care, especially for those with chronic conditions (Piette, Heisler, and Wagner, 2004). Value-based insurance design (VBID) is intended to remove or reduce financial barriers that can prevent people from receiving beneficial care, often by reducing patient cost sharing for high-value services (e.g., antihypertensive medication for those with high blood pressure, eye and foot exams for those with diabetes, cardiology visits for those with heart disease). VBID is targeted so that patients who receive the greatest benefit from a treatment or service receive the greatest cost reductions. For this reason, VBID often is directed at patients with chronic diseases for which specific treatments are known to be effective (Chernew, Rosen, and Fendrick, 2007).

Although VBID increasingly is used in the employer insurance market, it has not been implemented or tested in a population of individuals ages 65 and older. However, under the authority granted to the Centers for Medicare and Medicaid Services (CMS) under Section 1115A of the Social Security Act,[1] the Center for Medicare and Medicaid Innovation (CMMI) within CMS is currently conducting a VBID model test. The test allows Parent Organizations (POs) in select states to implement VBID in one or more of their plan benefit packages (PBPs) by reducing cost sharing for high-value services or providers, reducing cost sharing for enrollees participating in disease management (DM) or related programs, or covering additional benefits. VBID programs must be targeted to enrollees with specific chronic conditions and must be offered uniformly to all beneficiaries meeting the eligibility criteria. Table 1.1 defines key terms associated with the Medicare Advantage (MA) program.

The RAND Corporation is currently under contract to evaluate the VBID model test, which began in 2017 and is ongoing. The evaluation of the VBID model test will inform whether implementing VBID in MA can reduce utilization of low-value, inappropriate, or avoidable services; improve quality of care and patients' control of their illnesses; and ultimately improve health outcomes and patient experience for MA beneficiaries. The evaluation will assess whether the VBID approach reduces total Medicare expenditures by lowering plan bids and premiums. The evaluation will also assess whether there is a positive return on investment (ROI) for MA plans that adopt VBID, and whether the ROI varies based on plans' implementation decisions.

[1] U.S.C., Title 42, Section 1315a; this was added by Section 3021 of the Affordable Care Act.

Table 1.1
MA-Related Terms

Term	Definition
Parent Organization (PO)	A legal entity with a controlling interest in one or more Medicare Advantage Organizations (MAOs)
Medicare Advantage Organization (MAO)	An insurer that offers MA plan benefit packages (PBPs)
Contract	A suite of PBPs offered by the same MAO and governed by the same agreement with CMS
Plan benefit package (PBP)	A specific MA insurance plan

In this report, we describe evaluation results to date. We summarize information from qualitative interviews with participating and nonparticipating POs and from quantitative analyses that assess differences between participating and nonparticipating PBPs and eligible and ineligible beneficiaries. We analyze whether there are differences among eligible beneficiaries who participated in the test, opted out of it, or failed to complete VBID requirements. These analyses identify barriers and facilitators to VBID participation, approaches to VBID implementation, and differences between participating and nonparticipating PBPs and beneficiaries. We also have selected matched comparison groups and replicated the algorithms that POs used to identify eligible beneficiaries, setting the stage for future work that will estimate how VBID affects such outcomes as utilization, costs, and health care quality.

Background on VBID

VBID offers financial incentives to encourage patients to use high-value care, typically by reducing patient OOP copays for high-value therapies and services. There are theoretical reasons to expect that VBID could improve disease control, enhance beneficiary health outcomes, and reduce costs, but the empirical evidence is still evolving. Below, we summarize the literature on VBID, as well as other literature that has considered financial incentives to encourage high-value care or healthy behaviors.

Changes in Cost Sharing for Prescription Drugs

Much of the evidence of the impact of VBID comes from interventions that have tailored cost sharing for prescription drugs to encourage use of high-value therapies, primarily in working-age populations (Choudhry, Fischer, Smith, et al., 2014; Choudhry, Avorn, et al., 2011; Maciejewski et al., 2014; Gibson, Wang, et al., 2011; Choudhry, Fischer, Avorn, et al., 2010; and Yeung et al., 2017). In general, the literature finds that VBID can improve adherence to treatment regimens and lead to other positive impacts on health-related process measures (Tang et al., 2014). For example, in a commercially insured population of individuals under age 65, Choudhry, Avorn, and colleagues (2011) found that eliminating cost sharing for heart disease–related drugs for patients with a recent myocardial infarction improved one-year adherence by 4 to 6 percentage points. Gibson, Wang, et al. (2011) found that a VBID intervention that reduced coinsurance rates for high-value drugs in a commercially insured population increased adherence to these medications by 1.8 percentage points over a three-year period. Another study found that a VBID program increased adherence to high-value medications by 2.7 to 3.4 percent while reducing hospital admissions (Maciejewski et al., 2014).

Yeung and colleagues (2017) analyzed a value-based formulary that assigned cost-effective drugs to lower cost-sharing tiers and found net reductions in drug spending, but found no changes in overall utilization or nonmedication spending.

Care Management and Disease Management Approaches

Although early VBID approaches primarily focused on reducing cost sharing for high-value services (typically prescription drugs), recent VBID models have incorporated care management or disease management (CM/DM) into the approach. There is some evidence that reduced cost sharing for services, in combination with CM/DM programs, has more success in improving medication adherence than CM/DM alone (Chernew, Shah, et al., 2008; Gibson, Wang, et al., 2011; Peaslee et al., 2016). However, studies have found mixed evidence of savings, even when VBID is coupled with CM/DM. Gibson, Mahoney, et al. (2011) found that lower copayments for certain drugs coupled with CM/DM resulted in lower spending on diabetes-related care; however, the study found no effect on overall medical spending. Hirth et al. (2016) found that a VBID program that included both lower copays for high-value services and incentives for wellness activities improved medication adherence and preventive screenings, but increased annual medical spending by $730 to $960 per enrollee in the first two years following implementation. However, Maeng and colleagues (2016) found that a comprehensive CM/DM intervention implemented alongside $0 copayments for high-value drugs yielded a positive return of $1.80 for every dollar invested in the program. In an analysis of 76 employer-based VBID plans, Choudhry, Fischer, Smith, and colleagues (2014) found that VBID programs that incorporated a wellness program had stronger medication adherence effects, while programs that incorporated a CM/DM component had weaker adherence effects.

Changes in Cost Sharing for Other Services

Broader literature has considered the effects of changes in cost sharing for high-value services, regardless of patients' disease status. Studies generally have shown that higher cost sharing is associated with lower service utilization, although the effects may vary by service category (Newhouse and the Insurance Experiment Group, 1993; Haviland et al., 2016). For example, among private-sector employees and dependents, Shah et al. (2011) found that higher copayments for specialty care greatly decreased utilization, while eliminating copayments for primary care led to no change in utilization of primary care services. In a group of working-age marketplace enrollees, Beech et al. (2017) found that access to free primary care did not increase primary care utilization relative to matched comparators. Within a population aged 18 to 64, Han et al. (2015) found that the Patient Protection and Affordable Care Act's (ACA's) requirement that health plans must cover preventive services without patient cost sharing led to increased utilization of blood pressure screenings, cholesterol screenings, and flu vaccinations, but had no effect on cancer screenings.

Within the Medicare population, Goodwin and Anderson (2012) found that a 1997 policy change that waived Part B deductibles for mammography and pap smears increased mammography rates by 20 to 25 percent. Other studies have shown that the ACA's preventive services requirements, which also eliminated cost sharing for Medicare enrollees, led to increases in mammography rates among women ages 65 and over, increases in colonoscopy screenings among men ages 66 to 75, and increases in cholesterol checks among all individuals over age 65 (Sabatino et al., 2016; Hamman and Kapinos, 2015; Han et al., 2015).

Cash Incentives to Encourage Use of High-Value Services

Emerging literature suggests that cash incentives might encourage use of high-value services (Sutherland, Christianson, and Leatherman, 2008; Troxel and Volpp, 2012). In a randomized controlled trial of low-income individuals offered $0, $25, and $50 incentives to visit a primary care provider (PCP), those in the $25 and $50 incentive groups were 36 and 56 percent more likely to visit a PCP within six months, respectively, than those in the $0 group (Bradley and Neumark, 2017). Blumenthal et al. (2013) reviewed three Medicaid programs that gave beneficiaries cash incentives for participating in behaviors such as wellness visits, smoking cessation, and preventive screenings. The authors concluded that the programs had the potential to affect health behaviors, but they were impeded by such factors as beneficiary and provider confusion and the lack of a robust evaluation plan. Because of the range of cash incentive programs implemented and the lack of rigorous evaluation, it is difficult to draw general conclusions about these approaches. However, Bradley, Neumark, and Walker (2017) observe that—in some cases—spending may initially increase, not only because of the cost of the incentive program, but also because of short-run increases in service utilization.

Potential for Savings

For VBID to generate savings, the costs of providing high-value treatments must be outweighed by downstream savings resulting from reduced complications. Studies that simulated VBID's effects on the Medicare population suggest that VBID could produce savings. For example, Davidoff and colleagues (2012) estimated that savings associated with reduced statin copays for Medicare beneficiaries with diabetes could range from $249 to $415 per patient over a three-year period. Another VBID simulation in the Medicare population estimated a positive ROI for congestive heart failure (CHF), but not for diabetes or chronic obstructive pulmonary disease (COPD) (Fendrick et al., 2016). Despite these relatively favorable findings in simulation studies, empirical studies of the commercial population have found limited evidence of savings (Tang et al., 2014; Chernew, Juster, et al., 2010; Gibson, Maclean, et al., 2015; Musich, Wang, and Hawkins, 2015). Reviews of the literature have concluded that, although VBID improves utilization of targeted services and medication adherence, there is scant evidence of short-term effects on medical utilization, spending, or patient health (Tang et al., 2014; Gibson, Maclean, et al., 2015; Lee et al., 2013).

Summary of the Literature

The literature suggests that financial incentives can change behavior (e.g., by motivating people to adhere to treatment regimens or to obtain recommended screenings). However, the literature does not provide strong evidence that financial incentives will reduce health care costs. Much of the literature focuses on the working-age population, a group that spends less on health care than the Medicare population, and which may have fewer opportunities for cost savings. Many studies have followed patients for a relatively short period (e.g., two to three years), limiting researchers' ability to gauge how VBID affects utilization and spending over the long term. The MA VBID intervention provides an opportunity to understand how changing financial incentives for the Medicare population might affect patient behaviors, utilization, and costs.

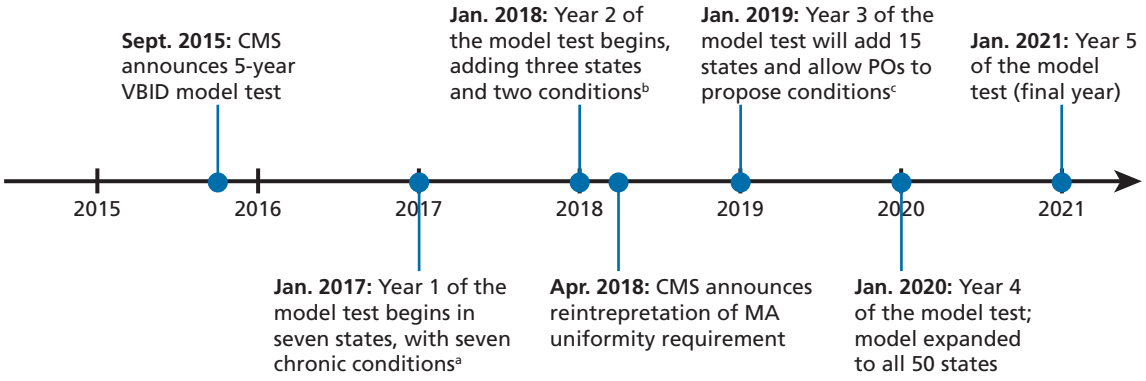
Design of the VBID Model Test in 2017

The VBID model test allows POs to structure enrollee cost sharing and other elements of benefit design to encourage the use of high-value care. The model test began on January 1, 2017, and will run for five years, through December 2021. Figure 1.1 provides a timeline of the model test.

For the 2017 plan year, participating plans had to meet specific criteria:

- The plan type must be a Health Maintenance Organization (HMO), Health Maintenance Organization with a point-of-service option (HMO-POS), or local Preferred Provider Organization (PPO).
- The plan must not be a Special Needs Plan (SNP), Medicare-Medicaid Plan (MMP) or other demonstration plan, Regional PPO, cost plan, Private Fee-For-Service Plan, Medical Savings Account plan, or Employer Group Waiver Plan (EGWP).
- All or part of the plan's service area must lie within one of the model test states.
- The plan must have at least 2,000 enrollees in a model test state.
- At least 50 percent of the plan's total enrollment must reside in the model test states.
- The plan must be offered in no more than two states.
- The plan must have been offered in at least three annual coordinated election (open enrollment) periods prior to the open enrollment period for calendar year (CY) 2017.
- The organization offering the plan must not be under sanction by CMS as described in 42 C.F.R. §422.750 and 42 C.F.R. §423.750.
- The organization offering the plan must not be an outlier in CMS's Past Performance Review.
- The plan must have at least a three-star overall quality rating for CY 2015 (plans that are not rated due to newness or low enrollment do not qualify).
- The plan must not have a "consistently low performing" icon on the Medicare Plan Finder.

Figure 1.1
Timeline for the MA VBID Model Test



[a] Eligible states are AZ, IN, IA, MA, OR, PA, and TN. Eligible conditions are diabetes, CHF, COPD, past stroke, hypertension, coronary artery disease (CAD), and mood disorders.
[b] Newly eligible states are AL, MI, and TX. Newly eligible conditions are rheumatoid arthritis and dementia.
[c] Newly eligible states are CA, CO, FL, GA, HI, ME, MN, MT, NC, ND, NJ, NM, SD, VA, and WV.

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- The plan's proposed intervention must meet the VBID design criteria, including targeting patients with the allowed conditions and adhering to the four permissible intervention approaches.[2]

CMS reserved the right to make exceptions to the eligibility criteria on a case-by-case basis. In 2017, the most common exception was to allow PBPs with fewer than 2,000 enrollees to participate if at least one other participating PBP in the same PO met the size threshold.[3]

In 2017, the model was available to plans in seven states: Arizona, Indiana, Iowa, Massachusetts, Pennsylvania, Oregon, and Tennessee. CMS selected states that generally represented the MA market, seeking to include areas with high and low average Medicare expenditures, urban and rural regions, high and low prevalence of low-income subsidies, and a range of MA participation rates. In selecting states, CMS also considered whether appropriate comparison states might exist for the purpose of evaluation (CMMI, 2015b). Participating POs could offer VBID benefits to enrollees with one or more of seven allowed conditions: COPD, CHF, CAD, diabetes, hypertension, mood disorders, and past stroke. PBPs must offer all beneficiaries with the selected conditions the opportunity to participate. CMS provided specific lists of ICD-10 codes to formalize how each condition could be defined.

The interventions that POs designed had to reflect one or more of these approaches:

1. reduced cost sharing for high-value services
2. reduced cost sharing for high-value providers
3. reduced cost sharing, contingent on beneficiary participation in CM/DM
4. provision of additional supplemental benefits, such as transportation services, nutritional services, or post-acute care.

POs were prohibited from highlighting VBID when marketing plans to potential beneficiaries. Furthermore, POs could not increase cost sharing or reduce benefits for targeted enrollees, nor could they make changes that would decrease benefits for nontargeted enrollees. These restrictions ruled out the possibility of VBID interventions that increased cost sharing for low-value services. As a condition of participation, CMS required PBPs to document that VBID would produce net savings to the Medicare program over the five-year life cycle of the model.

As Figure 1.1 illustrates, participation requirements and other aspects of the VBID model test have evolved over time. CMS has expanded eligibility to additional states, added new target conditions (e.g., rheumatoid arthritis, dementia), and will relax marketing restrictions effective in 2019. CMS recently reinterpreted a uniformity requirement that MA PBPs must be offered "at a uniform premium, with uniform benefits and cost sharing throughout the plan's service area" (CMS, 2012). In 2017 and 2018, this requirement precluded MA insurers from offering VBID outside of the model test. However, in April 2018, CMS clarified that "access to services (or specific cost sharing and/or deductibles for services or items) that is tied to disease state in a manner that ensures that similarly situated individuals are treated uniformly will be considered consistent with the uniformity requirement" (CMS, 2018a). This reinterpretation will allow insurers to offer VBID-like benefits in 2019 and later years without participating in the model

[2] This information was adapted from CMMI, 2015b, p. 12.

[3] Ten out of 45 PBPs that participated in 2017 had fewer than 2,000 enrollees.

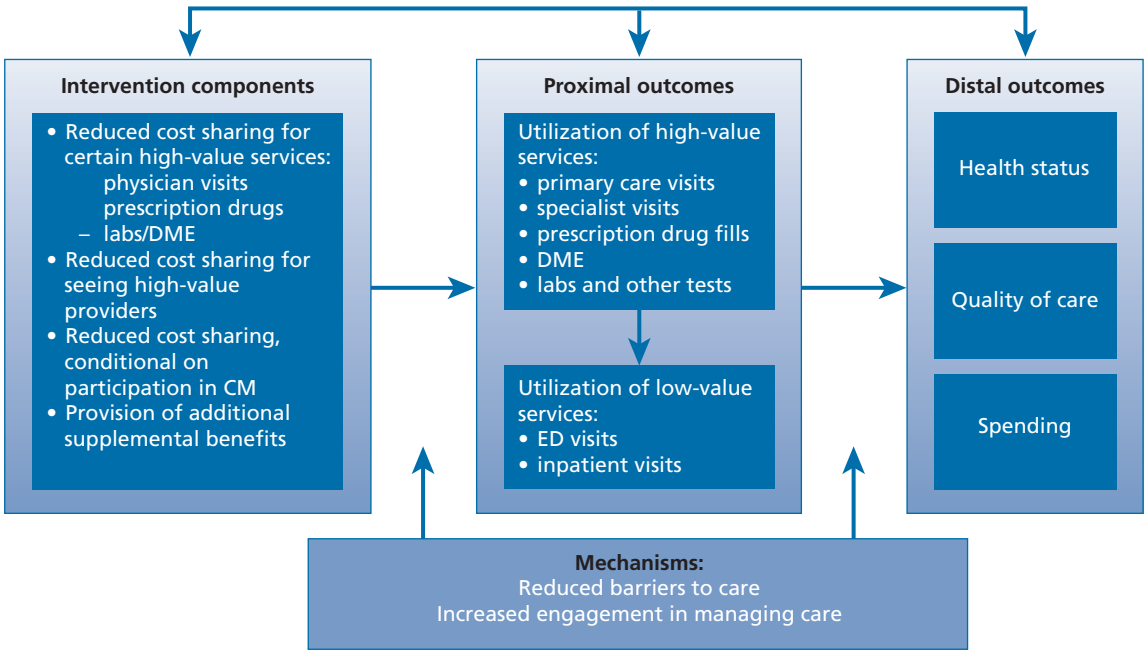
test, but only for Part C benefits (e.g., hospital and physician visits) and not Part D benefits (prescription drugs). We will address these changes in more detail in subsequent reports.

Conceptual Model

VBID aims to reduce financial barriers to receiving care and improve the coordination and management of targeted conditions, ultimately enhancing quality of care, improving health status, and reducing spending. Figure 1.2 describes how VBID might affect outcomes.

The intervention components—such as reduced cost sharing for physician visits—encourage beneficiaries to use high-value care. If successful, VBID should change utilization patterns, leading to increased use of high-value services and reduced use of low-value services (labeled "proximal outcomes" in Figure 1.2). These changes in utilization patterns, in turn, may affect the "distal outcomes" that the model targets, including health status (e.g., disease control, self-reported health), quality of care, and spending. VBID works through at least two distinct mechanisms: reduced financial barriers to receiving care and increased beneficiary engagement in CM/DM. All four of the VBID approaches allowed by CMS reduce financial barriers to receiving care, but only the third approach—reduced cost sharing conditional on beneficiary participation in CM/DM—seeks to increase beneficiaries' engagement in managing their conditions.

Figure 1.2
VBID Intervention Flow Diagram



NOTE: DME = durable medical equipment. ED = emergency department.

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Research Approach for Year 1 of the Evaluation

We evaluated Year 1 of the VBID model test using a mixed methods approach, combining qualitative and quantitative methods. Qualitative methods included interviews with representatives from participating and nonparticipating POs and reviews of POs' VBID application materials in order to (1) explain participation in VBID; (2) describe VBID approaches implemented by participating POs; and (3) detail early implementation experiences, such as the implementation barriers participating POs faced and what strategies they used to overcome those barriers (see Appendix A for more information on the qualitative methods used in this report). Between February and March 2017, we conducted telephone interviews with nonparticipating POs. We conducted in-person site visits with four participating POs and spoke to another four participating POs by phone between June and September 2017. Typically, we spoke with one to five representatives from each PO. The PO representatives we interviewed held a variety of positions, including Medicare product specialists, Medicare compliance officers, actuarial directors, directors of regulatory affairs, CM directors and staff, informatics specialists, and medical directors of government programs.

Our quantitative analyses used CMS data sources and the Area Health Resources File to compare participating PBPs with eligible, nonparticipating PBPs to understand whether there are systematic differences suggesting that POs selectively entered PBPs into the model. We also compared VBID-eligible beneficiaries who participated in the model with eligible beneficiaries who did not participate to understand whether people selectively opted out or failed to complete participation requirements. Understanding whether beneficiaries opted out or failed to engage with the model addresses the question of whether the inducements offered by VBID in the form of reduced cost sharing are sufficient to encourage behavior changes in the target population. We identified VBID-eligible beneficiaries and their participation statuses based on data reported to CMS by participating POs.

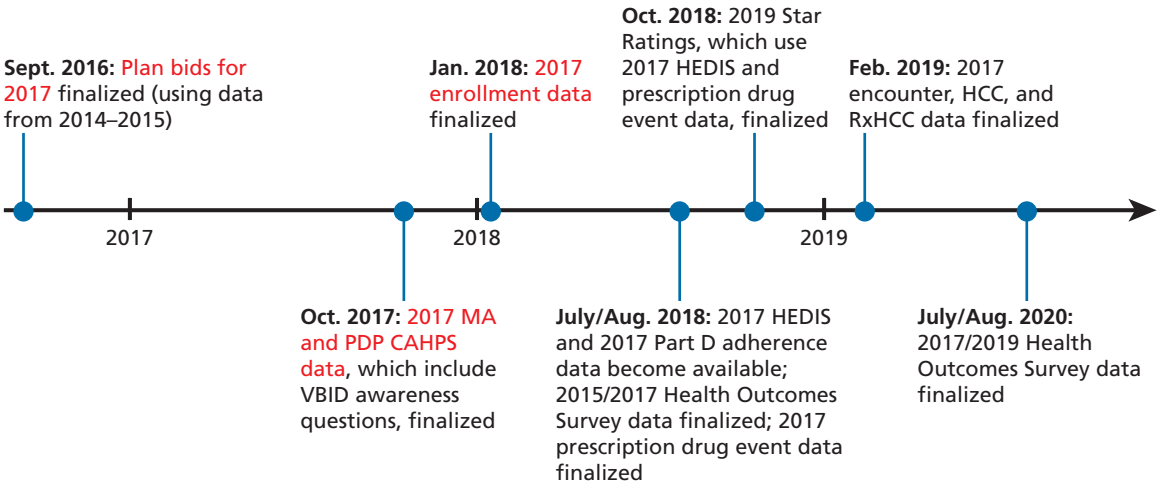
Ultimately, we will evaluate the effect of the VBID model by using a difference-in-differences approach to assess whether trends in key outcomes for VBID-participating PBPs and beneficiaries improved after VBID was implemented relative to trends for a matched comparison group. However, 2017 data for many outcomes of interest will not be finalized until 2019 (see Figure 1.3).

In this report, we estimate VBID's impact on four outcomes for which complete 2017 data existed at the time of this writing: awareness of the model (measured using beneficiaries' self-reports of having been offered a lower copay or additional benefits because of a health condition), enrollment in VBID plans, 2017 plan bids, and 2017 projected revenue to plans. In future reports we will analyze the model's effects on other outcomes, including utilization, quality of care, and beneficiary health.

Organization of This Report

Our report contains eight chapters, each organized around specific research questions (Table 1.2). In Chapter Two, we describe the VBID interventions implemented during the first year of the model test, based on our review of VBID applications and interviews with representatives from VBID-participating POs. In Chapter Three, we describe the level of PO participation in the VBID model test. We use the results of the interviews with nonpartici-

Figure 1.3
Timeline for Release of Final 2017 Data



NOTE: Data sets in red were available for this report. CAHPS = Consumer Assessment of Healthcare Providers and Systems. HEDIS = Healthcare Effectiveness Data and Information Set. HCC = Hierarchical Condition Category. RxHCC = Prescription Drug Hierarchical Condition Category.

RAND *RR2421-1.3*

pating POs to document why they declined to participate, and we rely on the interviews with VBID participants to discuss solutions they developed (if any) to overcome these challenges. We also describe the differences between PBPs that have and have not been entered into the model. In Chapter Four, we describe participating POs' early implementation experiences. In Chapter Five, we analyze differences between participating and eligible nonparticipating beneficiaries; eligible nonparticipating beneficiaries either opted out of the model test or did not take actions to meet POs' participation requirements (such as meeting with a care manager or completing preventive screenings). In Chapter Six, we report analyses focused on beneficiary awareness of the VBID model in 2017 and enrollment trends among participating and nonparticipating PBPs. In Chapter Seven, we describe how VBID affected 2017 plan bids. Finally, in Chapter Eight, we summarize our findings.

At the end of this report, we provide six appendices that contain details on our methods. Appendices A and B describe qualitative methods and Appendix C describes the data sources used for our quantitative analyses. Appendix D discusses the matching strategy, Appendix E explains the enrollment analysis, and Appendix F describes the analysis of plan bids and revenue to plans.

Table 1.2
Organizational Structure and Research Questions Addressed in This Report

Report Chapter	Goals	Methods	Research Questions
2. 2017 MA VBID Interventions	To understand what VBID strategies POs chose	Analysis of VBID application materials; interviews with participating POs	• What VBID approaches did POs implement, and why?
3. PO Participation in the Model Test	To understand why some POs did or did not participate in the model test	Interviews with VBID-participating and nonparticipating POs	• What motivated participation in the model? • What changes could CMS make to encourage participation?
4. POs' Early Implementation Experiences	To understand POs' implementation experiences	Interviews with participating POs	• How did implementation go? • What were the barriers and facilitators to implementation?
5. Beneficiary Participation in the VBID Model Test	To understand the extent to which beneficiaries participated in the model and to assess whether there is evidence for "selection bias"	Descriptive comparison of participating and nonparticipating beneficiaries	• How many eligible beneficiaries opted not to participate in the model, or did not complete CM/DM requirements? • Were nonparticipating beneficiaries different from participating beneficiaries?
6. The Impact of VBID on Beneficiary Awareness and Enrollment	To assess eligible beneficiaries' awareness of their VBID benefits	Analysis of MA and PDP CAHPS data	• Were VBID-eligible beneficiaries in VBID-participating PBPs more likely than those in a comparison group to report that their health plans offered VBID benefits? • Did enrollment increase or decrease in VBID-participating PBPs in 2017?
7. The Impact of VBID on 2017 Plan Bids and Revenue to Plans	To determine whether VBID affected plan bids	Analysis of plan bid data from CMS	• Did VBID reduce plan bids and revenue to plans in the first year of the model test?
8. Conclusions and Implications	To highlight key implications	Synthesis of previous chapters	• How can the model be strengthened in future years?

NOTE: PDP = Prescription Drug Plan.

CHAPTER TWO

2017 MA VBID Interventions

In this chapter, we briefly summarize the VBID interventions that POs implemented during the first year of the model test. To do so, we reviewed POs' model test application materials and conducted interviews with representatives of POs that participated in the 2017 model test. (We describe our interview methods in more detail in Appendix A.) In 2017, the participating POs were Aetna, Blue Cross and Blue Shield of Massachusetts, Fallon Community Health Plan, Geisinger Health System, Highmark Health, Independence Health Group, Indiana University Health, Tufts Associated Health Maintenance Organization, and The University of Pittsburgh Medical Center Health System. We have de-identified PO names to protect confidentiality. We use letters throughout this report when referring to specific POs (e.g., PO A, PO B).

2017 VBID Approaches

PO A focused its VBID intervention on beneficiaries with diabetes, offering quarterly rebates (up to $200 annually) for incurred Part C cost sharing for primary care visits, endocrinologist visits, foot care visits, and certain eye exam visits with an ophthalmologist or optometrist. Beneficiaries had to complete specific preventive care activities listed on a scorecard to receive rebates. These preventive care activities were (1) a hemoglobin test, (2) a lipid profile, (3) an eye exam, and (4) a urine test. PO A did not require VBID-eligible beneficiaries to participate in CM/DM activities other than completing the four required screenings. Although all beneficiaries with a diabetes diagnosis were eligible for the program, they did not receive VBID benefits unless they completed the required screenings.

PO B focused its VBID intervention on beneficiaries with diabetes and/or COPD. It opted to combine three VBID approaches: reduced cost sharing for seeking care from high-value providers, reduced cost sharing conditional on participation in CM/DM activities, and the provision of additional supplemental benefits. Beneficiaries must have had contact with a care manager each quarter to receive VBID benefits. Eligible beneficiaries could receive $0 copayments for up to four office visits per year to primary care providers and $10 copayments for up to four office visits per year to specialty care providers who are designated as high-value providers. In addition, PO B offered new supplemental benefits, including one diabetic retinal photograph per year, one periodontal maintenance procedure per year, periodontal scaling and root planning, and four periodontal surgical procedures during a lifetime, all of which were provided at no cost to VBID-eligible beneficiaries. PO B also reduced copays for several existing supplemental benefits, such as $5 copays for transportation for up to 48 one-way trips to medical appointments per year, and reduced coinsurance for diabetic testing supplies to

5 percent. Although all beneficiaries with eligible diagnoses are automatically enrolled in the VBID program, they must maintain quarterly contact with a care manager who assesses the right level of CM/DM for each beneficiary to receive VBID benefits. These CM/DM activities can include wellness coaching (e.g., for weight loss or smoking cessation); disease education programs that promote self-care; or more-intensive case management that would involve a higher level of service, such as initiating regular communication between the beneficiary and his or her providers or in-home assessments to manage social and economic needs.

PO C focused its VBID intervention on beneficiaries with CHF who also have diabetes and/or COPD. It chose to offer quarterly rebates to beneficiaries for incurred Part C cost sharing if they completed up to six CM/DM activities. All beneficiaries were required to complete a health assessment survey and a personal health review with a care manager. They could then choose up to four quarterly personalized CM/DM or wellness activities, including weight loss counseling, smoking cessation, and disease education. For each completed activity, beneficiaries earned $25 that was then applied to any incurred Part C cost sharing, up to $150 annually. Rebate checks were mailed to beneficiaries on a quarterly basis, but only if they incurred cost sharing during that quarter. Participation in CM/DM was a condition for receiving Part C cost-sharing reimbursements. Although the CM/DM and wellness program activities were available prior to the start of VBID, the VBID program introduced financial incentives to motivate beneficiaries to participate. Eligible beneficiaries were required to enroll in the program by beginning the initial health assessment survey.

PO D eliminated cost sharing for hypertension drugs on tiers 1 through 3, which included waiving the deductible and any cost sharing incurred in the coverage-gap or catastrophic-benefit phases. Hypertension drugs on other tiers (such as tiers 4 or 5) were subject to the usual cost sharing. All beneficiaries who filled a prescription for one of the eligible hypertension medications qualified for waived cost sharing for these medications. Beneficiaries did not need a diagnosis of hypertension to qualify for reduced cost sharing, as long as they filled a prescription for an eligible drug. Eligible beneficiaries, including all beneficiaries who filled a qualified prescription, were enrolled automatically into VBID and received VBID benefits.

PO E focused its VBID intervention on beneficiaries with COPD, eliminating copayments for certain high-value services if beneficiaries participated in CM/DM. PO E waived copayments for any visit to pulmonologists or cardiologists, as well as for sleep medicine and palliative care visits, and eliminated cost sharing for pulmonary rehab visits. PO E also eliminated cost sharing for some labs and DME, including pulmonary function tests, sleep studies, computed tomography (CT) scans for the chest, and oxygen supplies. Beneficiaries were required to participate in CM/DM to receive VBID benefits. CM was provided by PO staff embedded in primary care physician practices and was tailored to the needs of the beneficiary. Required activities and the level of interaction with CM/DM staff depended on the beneficiary's need level. Activities included care plan development, medication reconciliation, and disease-specific education. Eligible beneficiaries were required to confirm their willingness to participate in CM/DM in order to enroll in VBID.

PO F focused its VBID intervention on beneficiaries with CHF and/or COPD. It chose to reduce or waive cost sharing for certain high-value services if beneficiaries participated in CM/DM. PO F eliminated copayments for PCP visits and reduced copayments to $10 or $20 for visits to cardiologists and pulmonologists, depending on the PBP. Beneficiaries were required to participate in CM/DM to receive VBID benefits. The frequency and type of CM/DM activities were tailored to the beneficiary's need level. Activities included in-home assess-

ments, regular calls with CM/DM staff, and disease-specific education. Eligible beneficiaries were required to confirm their willingness to participate in CM/DM in order to enroll in VBID.

PO G focused its VBID intervention on beneficiaries with CHF. It eliminated copayments for visits to PCPs and cardiologists and for select generic prescription drugs related to treating CHF (on tier 1, copayments decreased to $0 from $7). Beneficiaries were required to participate in CM/DM that was developed specifically for the VBID model test (using components of some preexisting CM/DM programs) in order to receive VBID benefits. The CM/DM staff created a care plan tailored to each beneficiary's level of need. Required activities included communicating with CM/DM staff, in-home assessments, an annual medication review, medication adherence, quarterly visits to a PCP, and an annual visit to a cardiologist. Eligible beneficiaries were required to confirm their willingness to participate in CM/DM in their initial conversation with a care manager in order to enroll in VBID.

PO H focused its VBID intervention on beneficiaries with both CHF and diabetes. It reduced copayments for any visit to particular specialists: cardiologists (copayment decreased to $10), endocrinologists (copayment decreased to $10), and podiatrists (copayment decreased to $5). Beneficiaries were automatically enrolled into VBID and were not required to participate in CM/DM to receive VBID benefits.

PO I focused its intervention on beneficiaries with CHF and provided them with free weight scales, blood pressure cuffs, and pulse oximeters (supplemental benefits) that could be remotely monitored by CM/DM staff. Beneficiaries were required to agree to participate in the remote monitoring in order to receive the free supplemental benefits. Disease education and CM/DM needs were assessed on an individual basis, depending on the severity of illness.

Analysis of VBID Approaches Implemented in 2017

Table 2.1 summarizes the differences and similarities in VBID approaches implemented by all nine participating POs. Five POs selected reduced cost sharing contingent on fulfilling some participation requirements, and two selected reduced cost sharing for high-value services without participation requirements. The remaining two POs combined approaches: One offered additional supplemental benefits while asking beneficiaries to participate in CM/DM activities; the other offered a complex package combining reduced cost sharing for high-value providers, reduced cost sharing for high-value services contingent on beneficiary participation in CM/DM, and additional supplemental benefits.

Table 2.1
2017 VBID Approach Components

	PO								
Intervention Characteristics	**A**	**B**	**C[a]**	**D**	**E**	**F**	**G**	**H**	**I**
Condition(s)	Diabetes	Diabetes and/or COPD	CHF and diabetes and/or COPD	Hyper-tension	COPD	COPD and/or CHF	CHF	Diabetes and CHF	CHF
VBID approach[b]	3	2, 3, 4	3	1	3	3	3	1	4
Participation requirements	Scorecard[c]	CM/DM	CM/DM	None	CM/DM	CM/DM	CM/DM	None	CM/DM
PCP visits	X	X				X	X		
Specialist visits	X	X			X	X	X	X	
Drugs				X			X		
Diagnostics/ DME		X			X				
High-value providers		X							
Supplemental benefits		X							X
Cost-sharing rebates	X		X						

[a] PO C offered rebates for any incurred Part C cost sharing.

[b] VBID approaches are (1) reduced cost sharing for high-value services, (2) reduced cost sharing for high-value providers, (3) reduced cost sharing contingent on beneficiary participation in CM/DM, or (4) provision of additional supplemental benefits.

[c] "Scorecard" refers to completion of four preventive services.

Clinical Conditions

POs implemented the same intervention across all of their VBID-participating PBPs. The most commonly selected clinical conditions were CHF, diabetes, and COPD; only one participant selected hypertension. Four POs included two to three eligible conditions. Of these, two POs required beneficiaries to have more than one eligible condition. Participants chose eligible conditions based on five main factors:

1. **Population size:** Most POs discussed a trade-off between selecting conditions with higher numbers of beneficiaries and managing their VBID programs. Larger POs used a comorbidity requirement to narrow their VBID population; smaller POs targeted conditions with higher prevalence to define a relatively large VBID population.
2. **Potential to reduce the use of low-value care:** Some participating POs targeted conditions that were driving the use of expensive services, such as hospitalizations.
3. **Ability to fill in existing gaps in care:** Several POs noted that they selected conditions for which they did not have any structured programs or for which they had programs with low levels of beneficiary participation.
4. **Potential to reduce long-term disease progression:** Some POs chose conditions for which they could intervene earlier in the disease progression pathway to better affect health outcomes.
5. **Meaningfulness to members:** Several participating POs mentioned choosing diseases with symptoms that negatively affect beneficiaries' daily activities, such as CHF.

PO Thoughts on Beneficiary Population Size

We want [the VBID beneficiary population] to be large enough to be relevant, but we want it small enough to manage and minimize potential loss. (PO C)

VBID Approach Components

POs could design their interventions using one or more of four approaches outlined in the model test announcement: (1) reduced cost sharing for high-value services, (2) reduced cost sharing for high-value providers, (3) reduced cost sharing conditional on participation in CM/DM, and (4) additional supplemental benefits. Some of these approaches overlap. For example, the first approach allows POs to reduce cost sharing for high-value services, and the third approach requires that beneficiaries participate in CM/DM as a condition of receiving reduced cost sharing for high-value services. The difference between these approaches is the requirement that beneficiaries participate in CM/DM or other activities to receive reduced cost sharing. The approaches are not necessarily mutually exclusive, and two POs combined multiple approaches, further blurring these distinctions. Below, we discuss how participating POs implemented each of the four VBID approaches outlined by CMS.

Reduced Cost Sharing for High-Value Services

Seven VBID participants chose to reduce cost sharing for high-value services. Two POs implemented reduced cost sharing for high-value services without other requirements; five made reduced cost sharing contingent on participation in CM/DM. In most cases (five out of nine),

POs reduced cost sharing for more than one type of high-value service as part of their VBID interventions. The targeted services included

- **physician visits:** Six participating POs opted to lower cost sharing for specialists, based on assumptions that this would improve access to care and CM/DM for chronic diseases. Four POs included reduced or eliminated cost sharing for PCP visits as part of their interventions because they felt that reducing or eliminating copays would help improve access to care. PO E lowered copayments for both specialists and primary care physicians to improve coordination, stating "[w]e felt like we needed to better align with our specialty providers and then in turn that alignment would link back to primary care. . . . It just becomes a better, more solid link."
- **Part D:** Two POs, D and G, reduced cost sharing for drugs as part of their VBID designs, with the goal of increasing medication adherence. PO D reduced cost sharing for hypertension medications on tiers 1 to 3 of its formulary for all beneficiaries, although the intervention was designed to target those with hypertension primarily. Approximately 90 percent of beneficiaries with hypertension filled at least one targeted prescription in 2017. PO G targeted select generic prescriptions related to treating CHF; approximately 83 percent of VBID-eligible beneficiaries filled at least one targeted prescription in 2017.[1] Other POs cited perceived implementation costs and administrative burden as primary reasons for not implementing a Part D intervention. Most POs use a pharmacy benefit manager (PBM) who negotiates prices with manufacturers and pharmacies, develops the drug formulary, and pays claims. Several POs said that coordinating with the PBM for VBID added a layer of complexity: "That was one of the considerations of why we didn't do drugs, because that touches yet another vendor, which would need to incur costs for any implementation" (PO H). Other participants reported that their formularies were already designed to support adherence to chronic disease medications.
- **diagnostics and/or DME:** Two participating POs included reduced cost sharing for diagnostic tests (e.g., sleep studies) or DME (e.g., diabetic supplies) to remove financial barriers to access.

PO Thoughts on Primary Care Copayments

Primary care doctors have said that for years: "Why don't you just get rid of primary care co-pays entirely? Make sure that patients will see us." We know that there is a strong correlation between primary care visit rates and lower utilization metrics of inpatient [services and emergency room]. I've already done those correlations. But it's very hard to make the numbers work if we get rid of primary care co-pays for everybody, it's many millions of dollars. (PO F)

[1] These analyses are preliminary because the 2017 encounter data are not fully complete and are subject to change. The numerator is the number of beneficiaries who filled at least one VBID-targeted medication prescription, and the denominator is the share of VBID-eligible beneficiaries as indicated in the CMS Medicare Advantage Prescription Drug (MARx) data system. PO D allowed anyone who filled a prescription to be eligible for reduced cost sharing, and 66 percent of all beneficiaries filled at least one of the targeted prescriptions. For this analysis, we restricted the MARx-indicated eligible beneficiaries to those who also had a diagnosis of hypertension.

Reduced Cost Sharing for High-Value Providers

PO B offered reduced cost sharing for care received from high-value providers. Initially, PO B intended to classify any provider (regardless of specialty) as "high-value" if it scored more than 50 points (out of 100) on a four-part scale that included quality and efficiency metrics, practice change certifications, and the capacity to implement best-practice protocols. However, data availability hindered the PO's ability to implement the algorithm as intended. For PCPs, the PO revised its methodology so that the top 50 percent of providers were deemed high-value, regardless of the number of points scored. For specialists, the PO classified 100 percent of providers in the fields of endocrinology, ophthalmology, nephrology, pulmonology, and podiatry as high-value.

Reduced Cost Sharing Conditional on Participation in CM/DM

Seven POs made VBID benefits contingent on fulfilling CM/DM requirements, including one PO that adopted a "scorecard" approach that required beneficiaries to engage in preventive screenings. Six of the POs reduced cost sharing for high-value services or providers for beneficiaries who participated in CM/DM programs; the seventh offered supplemental services to CM/DM participants. POs typically viewed CM/DM itself as a high-value service and wanted to encourage greater use of such programs: "I think we want [beneficiaries] to understand that what's at the end of the rainbow is not getting your copays waived, it's having better outcomes, living a healthier life, achieving your personal health goals," said a representative of PO G.

All participating POs with CM/DM requirements had existing CM/DM programs, but some programs that focused on individuals at high risk for excessive or avoidable utilization had not been used frequently. Participants thought that engaging healthier members in CM/DM programs might facilitate intervening earlier in the care progression process. They hypothesized that engaging patients in their own care with guidance from a care manager would improve health outcomes.

Two POs with CM/DM programs chose to send rebate checks for incurred cost sharing rather than reducing copays at the point of service. They felt that rebates were easier to administer because they do not require interactions with providers. Rebates are a departure from previous VBID approaches for working-age adult populations that reduced cost sharing at the point of service; they resemble wellness program incentives that encourage participants to engage more actively in the process of managing their health. The POs that used rebates reported that rebates were better motivators for changing health behaviors: "You feel like you've been rewarded, you feel like you've gotten something even though you've actually spent it in cost sharing. Beneficiaries feel like they've gotten something. And then that keeps them engaged further and further" (PO C).

PO Thoughts on Participation in CM/DM

We really believe that this care coordination and care management resource, coupled with removing the barriers around [the] benefit, is important to long-term sustainability. (PO E)

Additional Supplemental Benefits

The interventions of two POs included providing supplemental benefits not covered under original Medicare benefits. One PO offered transportation benefits to reduce nonclinical barriers to accessing care. This PO also included some dental and foot care benefits not covered under Medicare. Another PO offered free blood pressure cuffs and scales. Because this PO did not participate in our interviews, we do not know their motivation for offering these benefits.

PO Thoughts on Additional Supplemental Benefits

We had one person tell us how she's staying with [VBID] for the transportation [benefit]. Every time she went somewhere, she was paying at least 10 bucks and [in addition, she felt that she] had to take her family to dinner. So now she's just paying 10 bucks for a round trip. (PO B)

Beneficiary VBID Notification, Participation, and CM Requirements

Notifying Beneficiaries of VBID Benefits

POs were required to mail a letter notifying beneficiaries of their VBID benefits as soon as they became eligible for the program. Because 2017 was the first year of the test, some POs waited until January 2017 to inform eligible members about VBID benefits; others sent VBID information to their eligible beneficiaries with annual mailings before the open enrollment period in the fall of 2016 or shortly thereafter. Beneficiaries were deemed eligible for VBID if they (1) were enrolled in one of the VBID-participating PBPs offered by a VBID-participating PO; (2) had the appropriate diagnosis codes; and (3) met any additional PO-specific eligibility criteria. In Appendix D, we describe each PO's process for identifying eligible beneficiaries.

VBID Participation Requirements

Some POs required VBID-eligible beneficiaries to satisfy program participation requirements before receiving VBID benefits. The presence of participation requirements affected the number of eligible beneficiaries who participated in the VBID model test and who received VBID benefits (see Chapter Five); this consideration may affect quantitative analyses of VBID's impact in future years. In POs D and H—the only two POs that did not have participation requirements—beneficiaries did not have to do anything to receive reduced cost sharing or other VBID benefits.

In the seven POs with participation requirements, beneficiaries were required to contact the PO or respond to the PO's attempts to contact them and agree to participate in certain activities to receive and/or retain VBID benefits. Five POs required participation in CM/DM as a condition for receiving reduced cost sharing on targeted services, one required participation in CM/DM in order to receive supplemental benefits, and another required beneficiaries to receive four preventive screenings to qualify for a cost-sharing rebate. POs with participation requirements may have sent follow-up mailings or phoned beneficiaries in addition to mailing information about VBID benefits to make sure beneficiaries were aware of the program and understood its requirements.

CM/DM Requirements

There was some variation in the number and type of CM/DM activities that POs required beneficiaries to complete before receiving VBID benefits. Typically, beneficiaries were required to engage with a care manager quarterly either by telephone, in person, or via some combination of the two. POs offered in-home visits to beneficiaries who found it hard to travel or use the telephone. All participating POs said that they tried to tailor CM/DM activities to the beneficiaries' needs. No PO required beneficiaries to achieve certain health outcomes in order to remain enrolled; however, all expected beneficiaries' compliance with CM/DM requirements to remain eligible for VBID benefits.

All VBID participants allowed beneficiaries to opt out at any time by calling either the enrollment or member services departments. Beneficiaries could rejoin the VBID program by calling the PO. During the first year of the model test, POs were still developing their communication strategies, and this will be a focus of our second-year interviews with POs. We will explore how communication may affect beneficiary participation in VBID in later reports.

Summary

POs that participated in VBID in 2017 chose to focus their VBID interventions on four of the seven eligible conditions: CHF, diabetes, COPD, and hypertension. Four POs used comorbidities to define a VBID-eligible population of beneficiaries of a manageable size. The vast majority of VBID-participating POs required participation in CM/DM or related activities as a condition for receiving VBID benefits, which meant that they adopted an active opt-in approach for beneficiary enrollment into this model test.

Reducing cost sharing for high-value services conditional on participation in CM/DM was the most popular VBID approach. POs selecting this approach viewed CM/DM as a mechanism for encouraging beneficiaries to change their health behaviors, and POs used lower cost sharing as an incentive to encourage beneficiaries to participate in CM/DM. Only two VBID-participating POs included Part D intervention components; the majority of participants preferred to reduce or eliminate cost sharing for specialist and/or primary care visits. Only one PO chose to focus its VBID intervention on reduced cost sharing for visits to high-value providers. This PO also had the most complex intervention design, which combined high-value providers, high-value services, and supplemental benefits, with benefits conditional on participating in CM/DM.

CHAPTER THREE

PO Participation in the Model Test

Out of 23 POs with VBID-eligible PBPs, nine participated in the VBID model test in 2017. Although POs in seven states (Arizona, Indiana, Iowa, Massachusetts, Oregon, Pennsylvania, and Tennessee) were eligible to join, participants were located in only three of these states (Indiana, Massachusetts, and Pennsylvania). VBID-participating POs did not receive any additional payments from CMS to incentivize participation in the model.

We asked the representatives of VBID-participating POs to explain why they joined the model test during our interviews to understand why participation in the model test was low. In spring 2017, we also conducted semi-structured telephone interviews with ten eligible but nonparticipating POs, including two large national POs with a presence in several states and eight regional POs. We also reviewed written comments that CMMI received in 2017 from nonparticipating POs about the VBID model test. We describe our interview methods in Appendix A. We have de-identified PO names to maintain confidentiality. We have used "NPPO" for VBID nonparticipants and "PO" for VBID participants.

We considered qualitative differences between the motivations of participating and nonparticipating POs to join VBID, examined whether there were key differences in organizational characteristics, and analyzed whether the PBPs that participating POs entered into the model test were descriptively different from PBPs in VBID-eligible states that were not entered into the model test. These analyses are useful for understanding whether there were some POs that were more likely to join than others, whether the beneficiary population in VBID-participating PBPs differed from the beneficiary population in nonparticipating PBPs, and whether VBID-participating PBPs had different benefit designs than nonparticipating PBPs.

Why Did VBID Participants Choose to Join the Model Test?

Our interviews with 2017 VBID participants revealed four main reasons for joining the test:

1. VBID's goals were consistent with the POs' priorities.
2. VBID had the potential to benefit beneficiaries, providers, and POs.
3. VBID provided an opportunity to innovate within the MA program.
4. VBID offered an opportunity to experiment with benefit design.

We discuss each reason for joining the test in more detail below.

Consistency of VBID's Goals with POs' Priorities

VBID participants stated that they were interested in VBID because its goals were consistent with their organizations' priorities of reducing spending and improving quality of care. Representatives of four POs viewed their VBID participation as an opportunity to offer customizable care for beneficiaries. A representative of PO C explained that "[VBID] was consistent with our values. . . . It was an opportunity to tailor a program to our members' unique needs." The PO H representative added, "[w]e're really enthusiastic about enabling patients with chronic conditions to obtain quality care at this reduced cost, which could potentially avoid more expensive care down the road. The VBID pilot gives us the opportunity to do exactly that."

Some POs said that the opportunity to improve care for beneficiaries with chronic conditions was more important than increasing their revenue, and they reported that VBID was a useful vehicle for achieving this aim. A representative of PO C emphasized this: "[I]f you think back to why we chose the program, we didn't choose it to optimize revenue; it was to improve care and improve quality." A representative from PO F also noted the opportunity to increase the PO's Star Ratings by reducing the readmission rate for chronic conditions that have traditionally been difficult to improve.

Potential to Benefit Beneficiaries, Providers, and POs

Participants commented on VBID's potential to reduce structural barriers to care and to increase beneficiary engagement by encouraging members to proactively manage their condition(s) and to build stronger relationships with their health care providers. Beneficiaries would be more satisfied with improved care quality, providers would be in closer contact with beneficiaries, and POs would benefit from reduced utilization of low-value services. This would lead to what a representative of PO A described as a win-win situation: "I think we wanted to provide a good quality product that really met some evidence-based medicine and standards of care. And a good conduit for conversations with their primary care physician as well, because these are the things [they] should be focused on too."

POs also reported viewing VBID as an opportunity to address structural barriers, such as cost of care, that could directly benefit both MA beneficiaries and POs. One representative of PO C noted that "[o]ur mission is to enhance the health and wellbeing of the people in the communities that we serve. . . . We have our eye on the triple aim, and we're particularly interested in any way that we can identify social determinants of health that might create barriers to care. . . ."

Opportunity to Innovate within the MA Program

Participants reported thinking that VBID would give them an opportunity to innovate within MA and to lead and shape the future of benefit design. As a PO F representative stated, "[w]e regarded this offer from CMS as innovative, different, a little liberating. . . . [It gave us] some flexibility and help[ed] target a population that needed more coordinated care and that also might have more expensive claims if not well coordinated." Others said that they decided to participate because "VBID could be a game-changer and that's why we have to really invest in it."

Opportunity to Experiment with Benefit Design

Participating POs wanted to use the model test to experiment with benefit design and to determine whether VBID benefits should be rolled out to their other PBPs. Several POs stressed

that testing whether VBID would work in the MA population was itself an important goal. As a representative of PO E explained, "[w]e're trying to inform the policy . . . the policy question is whether or not this should be deployed . . . across the country. In my opinion, a success of the program is basically getting to the right answer—[this does] work or this does not work." Because POs approached their participation as an experiment, several of them did not include all eligible PBPs in VBID, stressing the need to test the model's feasibility before expanding to additional PBPs. "We are still holding over 7,000 members kind of actively participating in VBID," said a representative from PO B. "We said that's a pretty good pilot size, and we don't really feel the need to just kind of add complexity to create change to the program by adding additional PBPs."

Why Did Some POs Choose Not to Join the VBID Model Test?

VBID participants seemed to be willing to take risks by participating in the model test and expressed a desire to be at the forefront of MA benefit design; POs that decided not to join the model test were more cautious and risk-averse regarding experimentation with benefit design. In the following sections, we highlight four main barriers to joining the VBID model test.

Lack of Information on VBID in MA

Eight out of ten nonparticipating POs we interviewed were concerned that this "intervention wouldn't work" because there was no evidence base for VBID in the MA population. Nonparticipating POs required more information to make assumptions, particularly about changes in utilization and savings. One representative of NPPO I stated,

> I have not seen any evidence that says, "hey, you've got these members in your VBID model and because you have reduced cost and they're utilizing the benefit you want them to use, you have a 20-percent-higher risk score or a 50-percent-higher risk score" or whatever that percentage might be. Some sort of statistics like that would probably help sway us either in the direction of offering or not offering VBID.[1]

POs wanted to see how current VBID participants structured their VBID offerings. For example, one representative from NPPO J asked, "[h]ow did they structure their VBID benefit for their population? How many members are in their population?" The representative thought that, even with sensitive information redacted, answers to such questions would be useful to POs that were trying to figure out a way to design their VBID interventions.

Perceived Low ROI

Seven out of ten VBID nonparticipants we interviewed considered the potential lack of ROI as a barrier. As a representative from NPPO A put it, "we were actually going to apply initially and then decided not to after a thorough analysis with our actuaries . . . [who determined that] the cost savings were not enough to pay for what we had intended with the program." Interviewees reported feeling that the potential returns were relatively low and that the implementa-

[1] Although we did not follow the discussion of risk scores further during this interview, it appears that this interviewee anticipated that VBID might provide POs with more opportunities to code diagnoses. Our quantitative evaluation considers whether VBID is associated with changes in risk scores over time.

tion and administrative costs of VBID were too high, especially for POs that wanted to include a robust CM/DM component administered by a vendor (e.g., NPPO B).

For NPPO F, a national organization, lack of an ROI focused more on quality than cost outcomes: "[I]f we look at medication adherence in one of the [eligible clinical conditions], we perform very well. . . . So, the room for improvement around a particular diagnosis, around a particular medication narrows. . . . We could only make a one- or two-percent improvement on our already great quality score."

Actuaries from both regional and national organizations reported having a hard time doing ROI analyses because they did not have enough information about assumptions required for the actuarial models. A representative from NPPO A noted that "[o]ur actuaries were even struggling a little because they weren't sure how to model the returns because nobody had done this before. And so we were all taking metrics that we thought we could possibly see a return on, and I think it's probably a longer-term return."

Indeed, some organizations were concerned about the inability to project the impact of VBID on utilization, cost, and premiums for the first year while also showing net savings to CMS and no net increase in beneficiary costs over the course of five years, all of which are required by CMMI. A representative from NPPO H explained, "[o]n depression . . . we can make an assumption on the amount of additional visits we're going to get and what this is going to cost us in terms of the copay revenue, but then, if we have more mental health visits, we are also going to get more prescriptions in depression . . . it got very complicated very quickly in terms of how we are thinking about some of the stuff."

Managing VBID Beneficiaries and Benefits

Representatives of seven organizations we interviewed expressed concerns about administering two sets of benefits to beneficiaries within the same PBP. Under VBID, beneficiaries in the same PBP may get different benefits, depending on their diagnoses. Moreover, being diagnosed with an eligible condition mid-year may trigger a change in benefits. An observation from NPPO H captures these concerns: "How do you identify those [VBID-eligible] members specifically and be able to administer those benefits to them specifically and not to the general population or vice versa? [How do you] make sure that we are able to track the claims? [How do you] make sure [the benefits] are administered exactly the way that we submitted in the bid, no more, no less?"

Maintaining two sets of benefits within a single PBP creates a number of administrative challenges for POs. Representatives of at least three organizations stated that VBID requires creating a "plan within a plan." A representative from NPPO D explained that "[VBID] would require us, under one PBP, to have to manage two sets of benefits for members."

Smaller regional nonparticipating POs were particularly concerned about their ability to implement and administer VBID once it is designed. As a representative from NPPO I put it, one of the concerns is "operationally be[ing] able to have the systems, the people, and the processes in place to be effective and efficient." A representative from NPPO H raised a concern about the ability "to configure the [claims] system to be able to administer [VBID] properly." Even large national players with sophisticated information technology (IT) systems raised concerns about benefit management.

Finally, in their written comments to CMMI, representatives from NPPO K and NPPO L expressed concerns about managing beneficiaries who decided to opt out of the program. Representatives from both organizations said that it was not clear how enrolled beneficiaries "will

PO Thoughts on Administering VBID Benefits

From an administrative perspective, there are costs associated with administering the VBID pilot: the requirements to provide several benefit packages . . . separate annual notices of change and evidences of coverage, [and] separate mailings. [All of this] requires an ability to identify these folks in a very timely way and move them into a specific benefit group in our membership systems, so they can access the benefits they need in a very timely way. All of that is challenging for us to administer and does come with a cost. (NPPO F)

notify the appropriate parties of their desire to not participate in the model. Will enrollees be required to notify CMS, the plan, or both entities of their decision to opt out of the model? Will that individual remain enrolled in the plan participating in the model, or will they have to enroll in a nonparticipating plan?"

Concerns About the Design of the VBID Model Test

Nonparticipating POs mentioned three aspects of the VBID model test that negatively affected their willingness to participate: (1) limited flexibility in designing VBID interventions, (2) marketing restrictions, and (3) regulatory and compliance concerns.

Limited Flexibility in Designing VBID Interventions

Several nonparticipants stated that they would have more interest in the model test if CMMI offered greater flexibility in defining target beneficiaries. In particular, nonparticipants expressed an interest in (1) offering VBID interventions that are customized to the needs of specific sub-populations (NPPO K and NPPO L); (2) making SNPs eligible for VBID because "they are the ones that we struggle with the most on some of the quality metrics" (NPPO A); (3) allowing organizations to suggest conditions they want to focus on, such as depression or arthritis (NPPO N); and (4) adding conditions for which publicly available CMS "data show a high level of low/no-value care," including low-back pain care, ophthalmology care, and end-of-life care (NPPO M). We note, however, that depression is a VBID-eligible condition included under mood disorders, and that the model test expressly prohibits testing higher copayments for low-value services. Starting in 2019, CMS will allow SNPs to participate in the VBID model test and will allow POs to include any condition in the model, contingent on CMS approval.

A representative from NPPO F suggested that CMMI should allow VBID participants to propose their own intervention designs:

> I think it would be nice that if we do have a great idea that's hampered by the way the benefits are designed, if we could just be able to submit and say this is the idea, this is who would be covered, and this is what we think the impact would be, rather than trying to fit it into one of the pre-carved out buckets. . . this just might make it more appetizing for organizations like ours.

Marketing Restrictions

Five POs we interviewed were concerned about marketing restrictions related to VBID. Representatives from NPPO F reported wishing that they could have advertised their participation in VBID to further distinguish themselves from competitors. NPPO K and NPPO L echoed these concerns: "Organizations should be rewarded for their willingness to participate in the model test and should not be limited in their ability to communicate VBID options to enrollees."

A representative from NPPO B also raised concerns about not allowing POs to market VBID benefits via providers using a data-driven marketing approach: "[providers] can help us market this plan to people that would fit the category with the diagnosis. We really found that using providers in this sort of way is pretty helpful."

All five organizations that discussed marketing restrictions worried that VBID communication guidance could create confusion among beneficiaries, which might be particularly pronounced in situations in which beneficiaries communicate with each other, such as when both husband and wife are members of the same PBP but get different benefits. A representative from NPPO A explained: "We could have a husband and wife, and the wife qualified based on her chronic conditions for the transportation benefit, you know, these extra things, and then the husband doesn't, and they are both on the same plan. So how do you explain that? That would have become a source of dissatisfaction, which could then negatively impact us across the board."

Some interviewees also raised concerns about confusion if a prospective enrollee called a PO during the annual enrollment period. A representative from NPPO H said:

> It's my understanding, a plan can't really talk about [VBID benefits] until it's actually effective. So a prospect calls you and asks you questions about [VBID benefits] and you can only give them limited information . . . [they can say,] "I understand that you can't really talk about it, but maybe that's cool. . . . I want to join," or they'll say, "You are not really answering my questions, that upsets me, so I'm not going to join your plan."

Complexity and variations in benefit design may confuse beneficiaries and providers alike. One representative of NPPO G said, "[w]e don't want to make things so complicated for providers that they can't figure out what copay to collect. If they're collecting the wrong

PO Thoughts on Marketing Restrictions

VBID almost looks like something you have to keep a secret for a while . . . and so what we understood from the communications guidance is you can't really use that to try to attract new members. And once members come on board, you can run the data to see who fits in this model and then send them something to tell them they qualify for the program. (NPPO D)

[VBID] is a hidden benefit. We can't promote it. And we can only promote it to the members by sending them a letter. Our fear is that people don't know enough about it because it's just not in the material that [they're used to looking at—the Annual Notification of Changes (ANOC) and Evidence of Coverage (EOC)]. We would like people to know more about it because it's so hidden. . . . It's a secret. (PO A)

copay when a member comes in for the visit, the provider is confused, the member is confused, people don't know what's going on."

Regulatory and Compliance Concerns

Four organizations mentioned regulatory and compliance concerns. "Regulatory burden can be somewhat costly," said a representative from NPPO C, "but quite frankly, and I think you will find this in most places, we view that as just a cost of doing business." Others raised concerns about the perceived "unknowns about what the requirements will be from CMS to prove that we are actually saving money through this program" (NPPO H) and were nervous that compliance requirements were "a little bit more cumbersome than the regular Medicare lines of business" (NPPO I). There was also a perception that by participating in VBID, "plans are putting themselves somewhat at risk because there is [an] extra sort of mandatory reporting, [which] . . . create[s] new areas of audit exposure for plans. If those things don't go well, then you've put yourself at risk for sanctions, or compliance findings" (NPPO A).

Descriptive Differences Between Participating and Nonparticipating POs

In addition to considering qualitative differences between participating and nonparticipating POs, we examined whether there were differences on key organizational characteristics, such as whether the organization was a Blue Cross and/or Blue Shield affiliate; a for-profit or nonprofit entity; or whether the organization's service area is state-only, regional (2–4 states), or national (5 or more) states. We compared participating POs with nonparticipating POs with eligible PBPs. Relative to participating POs, nonparticipants were less likely to be not-for-profit and less likely to be state-level (as opposed to regional or national) organizations. Participants were no more likely to be Blue Cross and/or Blue Shield affiliates than nonparticipants.

Descriptive Differences Between Participating and Nonparticipating PBPs

We also analyzed whether the PBPs that participating POs entered into the model test were descriptively different from eligible PBPs that were not entered. Table 3.1 provides the means and standard deviations of PBP-level characteristics comparing participating and nonparticipating PBPs in states with at least one participating PBP.

These analyses suggest that VBID-participating PBPs have beneficiary populations and benefit designs that differ from those of nonparticipating plans. On average, beneficiaries in participating PBPs tend to live in higher-income communities, be older, and have higher risk scores than beneficiaries in nonparticipating plans. Participating PBPs also have substantially lower OOP maximums than nonparticipating PBPs, indicating differences in benefit design.

POs entered PBPs primarily in their HMO contracts. Of the 12 contracts with participating PBPs in Year 1, three are PPO contracts. Many participating POs indicated that they included PBPs in their HMO products because they generally have more control over shaping beneficiary utilization patterns than in their PPO products.

The higher median county-level income in areas where VBID-participating PBPs are offered, coupled with the lower OOP maximums among participating PBPs, could help explain why participating PBPs tended to choose interventions that included CM/DM in addi-

Table 3.1
Characteristics of Participating and Nonparticipating PBPs

Measures	Participating PBPs	Nonparticipating PBPs[a]
Number of PBPs	45	107
County level		
Population over 65 (%)	0.15 (0.02)	0.15 (0.02)
Median household income ($)	57,861 (10,664)	53,644* (10,610)
Medicare spending (per capita) ($)	10,137 (776)	9,442* (912)
PBP or PO level		
OOP maximum	4,427 (1,238)	6,079* (1,126)
PO market penetration (%)	0.33 (0.12)	0.37 (0.13)
Enrollment	9,924 (11,610)	4,749* (6,329)
Beneficiary level		
Age (mean)	76.74 (4.21)	73.52* (3.57)
Gender (% male)	0.46 (0.10)	0.45 (0.07)
Race/ethnicity (%)		
White	0.91 (0.06)	0.88* (0.10)
Black	0.04 (0.05)	0.07* (0.08)
Hispanic	0.02 (0.01)	0.03* (0.02)
Dually eligible for Medicare and Medicaid (%)	0.06 (0.03)	0.10* (0.06)
Risk score (HCC)	1.12 (0.24)	1.03* (0.15)
Chronic conditions (%)[b]		
Cancer	0.12 (0.04)	0.10* (0.03)
CHF	0.11 (0.05)	0.09* (0.03)
COPD	0.12 (0.04)	0.12 (0.03)
Diabetes	0.22 (0.06)	0.24 (0.04)

NOTES: Standard deviations are in parentheses. Data are from 2016 and were compiled by the authors.
* Statistically significant difference from the mean of participating PBPs using two-sample *t*-tests. Significant difference defined as p-value < 0.05.

[a] Nonparticipating PBPs in states with at least one participating PBP.

[b] Chronic conditions shown for this analysis are drawn from the HCC flags used to construct the beneficiary risk score.

tion to reduced cost sharing. On their own, changes in cost sharing may have limited impact if beneficiaries are relatively affluent, or if cost sharing for high-value services is already low. In fact, as noted in Chapter Two, many POs reported that financial incentives alone would not be enough to change behavior.

Summary

Our interviews suggest that VBID-participating POs joined the model to experiment with benefit design to improve beneficiaries' health outcomes and quality of care. Some POs were not deterred by the lack of evidence about VBID in Medicare populations. Nonparticipating POs tended to have a more conservative outlook, preferring to take a "wait and see" approach.

In some cases, nonparticipants felt that they were already providing high-quality care and were reluctant to experiment, given uncertainties.

The main barriers to joining the model test were a perceived lack of information about VBID in MA, an expectation of low ROI, concerns over administrative and IT hurdles, and concerns about model test requirements. Furthermore, PBPs entered into the model test by participating POs tended to serve somewhat different types of beneficiaries than nonparticipating PBPs. These results suggest four considerations that may affect the willingness of POs to adopt VBID approaches.

Evidence Is Important

Many nonparticipating POs cited uncertainty about ROI as a key reason for their nonparticipation. The current lack of evidence of VBID's effects in the MA population leaves POs with little information from which to calculate the expected impact on their bottom lines. The VBID model test is likely to generate useful data on the effects of VBID in the MA population, but results of our evaluation will not be available for several years.

Nonetheless, the experiences of current VBID participants described in this report may provide useful information to nonparticipants who are contemplating future participation. It may be particularly helpful to know how VBID participants designed their benefits, what implementation challenges they experienced, how they surmounted these hurdles, and, finally, whether they were able to achieve a positive ROI.

Technological Barriers Can Be Significant

Many VBID nonparticipants had concerns about their abilities to manage VBID benefits and the need to invest in IT systems to enroll beneficiaries into VBID, track their benefits, and pay the correct amounts to providers. As we show in the next chapter, these barriers concerned VBID participants as well. These logistical and implementation challenges, although not insurmountable, may deter POs from offering VBID benefits until appropriate changes to their IT systems are implemented and tested.

Model Test Requirements Matter

VBID nonparticipants indicated that they would be more likely to join the model test if additional flexibility was offered in designing and targeting benefits, marketing restrictions were relaxed, and compliance requirements were less burdensome. CMS has sought to adjust the model test to alleviate participation barriers by allowing POs to target additional conditions and by extending eligibility to Chronic Condition Special Needs Plans (C-SNPs) starting in 2019.

POs May Have Been Selective in Choosing which PBPs to Enter into the Model Test

Some evidence suggests that participating POs entered the model test based on strategic considerations, such as preferences for being innovative. Indeed, participating PBPs differed in important ways from eligible PBPs that did not participate. These results highlight the need to address selection when conducting quantitative analyses, an issue we discuss more thoroughly in Appendix D.

CHAPTER FOUR

POs' Early Implementation Experiences

Participating POs began implementing their VBID interventions on January 1, 2017. During our interviews with VBID participants, we asked open-ended questions about implementation challenges POs encountered and strategies they used to overcome them. Below, we briefly describe POs' implementation experiences, barriers, facilitators, and suggestions for improving the model test. A more detailed description of these results and additional quotations from the interviews can be found in Appendix B.

Perceived Ease of Implementation

POs had different perspectives about ease of implementation. Half of the VBID participants we interviewed considered implementation to be a "heavy lift"; the other half felt that the lift was minimal. All of the participating POs who considered VBID implementation to be burdensome required VBID-eligible beneficiaries to participate in CM/DM.

Some POs that viewed VBID implementation as burdensome compared it with "launching a new product" (PO B) or "doing a startup" (PO F). The burden largely stemmed from the need to track the participation status of VBID-eligible beneficiaries or the need to coordinate the efforts of multiple departments involved in implementation.

Four POs described implementation as not burdensome. These POs implemented relatively simple interventions that relied on already available resources. They suggested three reasons why the implementation was not too difficult: (1) relying on intervention components originally developed for commercial lines of business (PO C); (2) designing VBID intervention with administrative costs in mind (PO H); and (3) using a consistent, step-by-step approach to implementation (PO D). However, POs that reported thinking that implementation was easy cited identifying eligible beneficiaries and keeping track of multiple benefit structures within the same PBPs as areas that required focus and attention.

PO Thoughts on Ease of Implementation

One of the fundamental things about Medicare is that for the most part, you don't have anyone moving in and out of a plan during the year. So, January 1 to [December 31], if you signed up with this plan, unless you have some special enrollment period or you die, you are in that plan. We're much more used to [transitions] on our employer groups, people may be coming in and out, because they get hired or fired . . . and VBID kind of introduces people coming in and out of this process. (PO B)

In the time that [VBID] came up, we had a lot of budgets locked down in terms of what dollars were available to build things. . . . A lot of the VBID is being managed by existing resources. We didn't hire more resources to do it. Well, a lot of that was really by design, and the VBID demonstration that we elected to pursue was because we knew we were probably going to be in a position to need to manage something with existing resources. (PO H)

Implementation Barriers

All of the participating POs mentioned implementation challenges. Six of the most commonly encountered challenges were

1. establishing new workflows and lines of communication
2. managing two sets of benefits for beneficiaries
3. stressing IT systems because of parallel benefits structures
4. dealing with confusing communication and marketing restrictions
5. addressing poor health literacy among some beneficiaries
6. identifying providers or services eligible for reduced cost sharing.

We describe each challenge in more detail in the sections below.

Establishing New Workflows and Lines of Communication

Four POs had to create new workflows and/or lines of communication to identify and track benefits of VBID-eligible and VBID-participating beneficiaries because doing so required participation of staff from multiple departments. In some instances, departments involved in the VBID model test did not have much experience working together, so they had to learn how other departments worked, what their roles in the VBID intervention would be, and how information should be shared between departments. A representative of PO E stated: "The enrollment staff know how to enroll a member, get him in the right program, [and] make sure transactions [go] to CMS. But in this case, they need to understand what is happening in the medical management section of it so they can understand how it is going to affect them downstream." In other instances, POs had to coordinate with outside vendors that managed prescription drug benefits, printed beneficiary ID cards, or managed dental benefits to ensure smooth operation of the VBID model test.

Managing Two Sets of Benefits for Beneficiaries

POs had to deal with the "plan within a plan" challenge or had to administer two sets of benefits within their VBID-participating PBPs. This was a completely new concept for their Medicare lines of business. Prior to the VBID model test, all beneficiaries enrolled in a given PBP had the same level of benefits, regardless of their clinical conditions or participation in CM/DM activities, and POs built their systems to reflect a uniform benefit.

VBID implementation also required POs to develop a way to move beneficiaries in and out of the pool of VBID-participating beneficiaries. Doing so was of particular concern to POs that required beneficiaries to participate in CM/DM activities to receive VBID benefits. Moving beneficiaries in and out of the pool was also mentioned as a reason why some eligible POs decided not to participate in VBID (see Chapter Three). The majority of participating POs essentially created separate internal groups in their IT systems to flag VBID participants. A representative from PO C explained this separation process: "We duplicated the existing structure of our benefits and made a separate benefit structure. . . . I think you can't underestimate the ability to separate these members from your existing membership, even though it is not a true separation in any fashion; it is just a quick indication. It is easy for member services to see that this particular member is part of the VBID program." Creating VBID flags within internal IT systems allowed POs to identify VBID-eligible beneficiaries and report their participation status to CMS, which helped address the "plan within a plan" challenge. Another approach to address this challenge was to change the benefit structure for all beneficiaries. This approach was unique to PO D, which used Part D claims to identify eligible beneficiaries.

PO Thoughts on Managing Two Sets of Benefits

Normally, a benefit design is structured around a plan. . . . VBID is a different model that has nothing to do with the plan you picked. It has to do with the diagnosis that you have. (PO D)

Stressing IT Systems Because of Parallel Benefits Structures

Some participants reported doing a lot of IT work "to support the difference in cost share levels because our Medicare systems are built per the rules [that require POs to] only offer the same copay for all individuals in contract PBPs. We had to undo that logic" (PO G). Others had to modify multiple systems in an attempt to automate management of VBID enrollment and benefits. POs that required CM/DM participation had to update their CM/DM systems to handle additional tasks, such as changes in enrollment. A representative from PO B noted that "[p]rior to the VBID model, our care management system never really managed enrollment or drove enrollment or your benefit package, whereas now VBID is driving enrollment change."

The main infrastructure investments that participants had to make required creating links between systems that did not previously communicate with each other. However, even with the investments in IT systems, several POs reported that some enrollment- and claims-related processes, including the identification of correct copay amounts, had to be performed manually.

PO Thoughts on Stressing IT Systems

I think it was about 15 different applications that were touched throughout all of this. So, we had to make changes system-wise, enterprise-wise, which of course when you have ongoing systems, you have to ensure the pieces align appropriately. So, I started in November, so I believe the work for the project started some time earlier in the year, maybe August. (PO B)

Dealing with Confusing Communication and Marketing Restrictions

Communication restrictions created confusion about VBID benefits among eligible beneficiaries because several POs participating in the test did not inform beneficiaries about the new benefits until January 2017, several months after the Annual Notification of Changes (ANOC) and Evidence of Coverage (EOC) materials had been sent. Because beneficiaries are used to receiving all information about their benefits in their ANOC/EOC, getting another letter in January confused beneficiaries, perhaps prompting many of them to throw it out as junk mail (PO B).

Moreover, VBID marketing requirements prevented participating POs from advertising their VBID benefits to prospective beneficiaries or from publicly discussing their participation in the model test. Participants reported feeling that these restrictions were burdensome. VBID marketing restrictions also limited POs' abilities to test their communication and marketing materials before sending them to beneficiaries. One PO reported not being able to answer media questions about VBID as a challenge.

Addressing Poor Health Literacy Among Some Beneficiaries

At least five VBID-participating POs reported that some beneficiaries did not understand why they were selected to participate in this program and what additional benefits they would receive. Some beneficiaries did not agree that they had the condition that was making them eligible to receive VBID benefits; therefore, they wanted to confirm their eligibility or to opt out of VBID. PO B noted that "[w]e've had some members who have expressed concern over both diabetes and COPD and [the fact that] they've been flagged. . . . I think in some cases, they will [say,] 'Well, yeah, I use [a] rescue inhaler four times a week. Can I do this? But I don't have COPD.'"

PO representatives said they tried to confirm diagnoses with their medical informatics teams and educate beneficiaries, but some beneficiaries still declined to participate. Some POs also found it difficult to explain VBID and the VBID-specific benefits to their beneficiaries.

Identifying Providers or Services Eligible for Reduced Cost Sharing

Identifying VBID-eligible providers—especially those deemed high-value providers—or services to include in the VBID intervention design was challenging for some participants. Previous experiments with VBID in the commercial sector have focused on changes in drug benefit design, which may be easier to implement with discrete national drug codes identifying each drug. PO B representatives said that their original approach to defining high-value providers was dependent on certain quality metrics and other practice certification information that they thought would be available. However, much of the data did not materialize, and the definition had to be adjusted to accommodate the data that were available.

PO B was also concerned about ensuring access to care because it needed to have enough providers of certain types to be able to rank them according to quality and still provide access. To resolve this problem, PO B classified most or all of the specialists in certain categories (e.g., podiatrists) as high-value providers. PO B also was not sure whether beneficiaries would switch to high-value providers, because the reasons for changing providers often depend on such factors as patient history with the current provider, provider locations, and wait times—not on criteria used to determine the high-value-provider status.

Another challenge concerned multidisciplinary practices that include PCPs and specialists. Instead of billing as cardiologists or rheumatologists, specialists in such practices use multidisciplinary billing codes. As a result, a VBID beneficiary may be charged the wrong copayment. PO E noted that beneficiaries do not necessarily distinguish provider types in the way a health plan would. Beneficiaries expected that a visit to their cardiologist would reduce cost sharing, but it may not have done so if the PO had not included the specific provider in its definition of a cardiologist eligible for reduced cost sharing.

Implementation Facilitators

According to participating POs, four specific factors facilitated VBID implementation:

1. simple and easy-to-implement intervention designs that rely on existing resources
2. cross-departmental collaboration
3. support of VBID project leadership
4. open lines of communication with CMS.

We discuss these factors in more detail in the following sections.

Simple and Easy-to-Implement Intervention Designs That Rely on Existing Resources

Several participants reported that they designed relatively simple VBID interventions that did not require substantial additional investments and could be implemented quickly. "We wanted to make sure that we were doing something that was manageable within our systems and manageable administratively and also something that we could understand the impact on and then expand the products" (PO D). POs also reported relying on existing resources where possible, including CM/DM programs, processes used in commercial lines of business, and staff.

PO Thoughts on the Cost of the Intervention

Overall, most of the spend, 90 cents on every dollar, is going into medical care. The administrative costs, if you're at 10 percent and you are adding a little here and there, we do not think there is as much additional costs from doing the program. We do think you might be redeploying some of the medical staff to spend a little bit more time with these people, but it was not significant enough to make a big deal about it. (PO A)

Cross-Departmental Collaboration

Most POs involved staff who would be managing the VBID benefits in VBID design and implementation. They suggested that implementation success was predicated on the efficiency of the cross-departmental teams that met regularly and made all implementation decisions jointly. For example, to make VBID-related decisions, representatives of PO B "sat down with everyone involved with all the different teams, all the different areas and kind of agree[d] on [decisions]." To facilitate information exchange between departments, PO B created a Sharepoint site to house all VBID-related communication.

Support of VBID Project Leadership

Having a dedicated VBID project leader or a VBID project management team with dedicated time for the project facilitated implementation. For example, PO A had a VBID project leader and an associate who jointly developed the PO's VBID application and who "worked with all of the departments to build the application." They managed the process to make sure that the departments did what they are supposed to do: "We kind of oversee the process to make sure things are happening." According to a VBID project manager from PO D, preparing for the VBID kick-off required a lot of dedication and time, which paid off once the intervention began.

Open Lines of Communication with CMS

All VBID-participating POs appreciated having open lines of communication with CMS and CMS's timeliness in responding to their questions, either by email or telephone. CMS's responsiveness was especially valued given the short period of time that POs had to implement their VBID designs.

Feedback to CMS

At the end of each interview, we asked participants whether they had any feedback for CMMI that may make it easier to implement VBID or that might make VBID more attractive to the POs that have not yet joined the model test. Participants' feedback focused on the following four topics:

1. communication with POs
2. timing of the VBID applications
3. additional flexibility as part of the VBID model test
4. relaxed marketing restrictions.

We discuss each topic in more detail in the following sections.

Communication with POs

POs need to understand how CMS plans to audit POs participating in the model test. A representative from PO D explained, "[we need] a better understanding of what kind of data in the future we are going to need to provide [for the evaluation] so that we can prepare for that and what will be the manner by which we will collect that data."

CMS could provide audit guides and protocols so that expectations are clear to the POs over the course of the model test. PO A observed, "[b]ecause if you're going to be audited, it's kind of a nice idea, especially with a new program, to kind of have that guide to say, 'This is what we're going to be looking at.'"

POs would benefit from templates for some of the required materials, such as the ANOCs and EOCs for the model test participants. Representatives of PO B stated that CMS typically "dictates what communications need to look like exactly, what has to be included in them, the structure, the layout, etc. But we didn't have any of that for [VBID]."

VBID-related communication can be more effective. A representative from PO H suggested that, instead of communicating updates about VBID via the model test website, CMS should consider using the Health Plan Management System (HPMS): "[M]aybe providing details and updates through HPMS in the standardized communication forms would be helpful. It could be in like a VBID-specific section and that may actually help [clear up] confusion."

Timing of the VBID Applications

CMS could improve the VBID application process and its timing. Several participants offered suggestions that would alleviate the application burden many felt from the compressed timeline. All but one of the POs suggested aligning applications of returning POs with the bid cycle. "Anything that can be done to shrink that time to read and bring that VBID application closer to the bid filing," said a PO F representative, "would definitely be beneficial to the plan to give us that many more weeks or months to collect experience data upon which to make program changes."

Conversely, PO A maintained that it was ideal to have the VBID application due in advance of the bid process: "while it was a time commitment up front, in the end, it worked out in a very smooth way. It was nice to get approved for VBID and then to be able to work on operationalizing that into the formal bids for the following year."

CMS could provide prepopulated applications for returning POs. A representative from PO A said

> We suggest if a plan is just simply rolling over their intervention to the next year that they can have an option where a plan can simply list "no changes" in each section of the application instead of repopulating the entire application with the same information as the previous year . . . or if the plan is just making a minor global change to the intervention, if they could add a question that speaks to that particular global change and plans can simply list the change to answer that question and not repopulate the entire application.

Additional Flexibility as Part of the VBID Model Test

POs wanted flexibility to adjust the intervention as beneficiaries' needs were identified and to modify the intervention based on early implementation experiences. POs submitted their 2017 VBID applications in January 2016, a year before they implemented their interventions. It was difficult for POs to anticipate the nuances of the future implementation during the application process. One challenge was the inability to add procedure codes to the list of eligible services under VBID, which contributed to beneficiary confusion. If clinical teams missed a specific code, the PO had to get permission from CMS to add it. This permission could be difficult to get. In the case of oxygen equipment, "[CMS] was a bit hesitant to approve that [code] for us. I think we did get approval for the 2018 bids, but they are not allowing us to apply it prior to that period" (PO E).

POs wanted more flexibility in determining which PBPs are eligible to participate in VBID. For example, PO H discussed potentially lifting the restriction that PBPs had to be in operation for three or more years to be eligible for VBID participation. They noted that their lowest-cost PDP was not eligible for VBID because it was too new. "Members are almost forced between choosing the VBID benefit where they have the lower cost shares on the specialist versus the discounted [prescription] co-pays. . . maybe loosening the age restriction for plans that are eligible would help alleviate this type of issue" (PO H).

The list of VBID-eligible clinical conditions could be expanded. "At this point, we would be supportive of CMS expanding the list from where kind of our clinician-led care pathways were taking us," said a PO B representative.

A PO G representative suggested removing the requirement that POs must demonstrate cost savings. This representative felt that CMS's initial guidance set the bar too high for the actuarial work: "It seemed like the expectations were for something where we didn't have the experience [to be able to demonstrate cost savings]."

Relaxing Marketing Restrictions

Being able to talk with members before they chose a specific product might have allowed beneficiaries to make better plan choices. Most POs commented on how the marketing restrictions presented a challenge when communicating with beneficiaries. POs found it inconvenient that they could not advertise or communicate with beneficiaries about the VBID intervention until after the open enrollment period. If POs had been able to advertise, "[b]eneficiaries would have been able to make a more informed decision about the plan that fits best for them," said a representative from PO H.

Changes Made for 2018 and 2019

In response to feedback from POs, the request for 2019 applications incorporates some of the POs' suggestions for increased flexibility. The 2019 model test will allow POs to target a subset of diagnosis codes within a given eligible condition and will also allow them the flexibility to target other conditions. POs also are allowed to combine multiple VBID approaches (e.g., conditional participation and supplemental benefits). The model also will allow additional PBP types into the model test, primarily C-SNPs (see CMMI, 2017).

Two other policy changes occurred in 2018 that will affect the ability of more POs to use VBID-style designs. The first was the passage of the Balanced Budget Act, which contains a provision to expand the VBID model test to all 50 states in 2020 (U.S. Congress, 2018). The second was a regular rulemaking process in which CMS reinterpreted the uniformity rule to allow all POs to experiment with VBID-style designs outside of the model test. This rule change also relaxed the marketing restrictions for POs with VBID in and outside of the model test.

Summary

The VBID model test gives participants an opportunity to design their own interventions within a set of predetermined parameters. It was not surprising that VBID participants reported implementation challenges, given the novelty of tailored benefit design in Medicare. POs with simpler intervention designs that used components designed for other purposes reported less-challenging implementation experiences. The PO with the most complex VBID design experienced the most challenges, but reported that it had overcome them within six months.

VBID participants reported some of the same challenges that VBID nonparticipants cited as the reasons they decided not to join this model test, including management of two sets of benefits for beneficiaries within the same PBP and VBID communication and marketing restrictions. VBID participants were able to overcome the technical challenge of keeping track of VBID beneficiaries and their benefits, but they felt that communication and marketing restrictions negatively affected beneficiary awareness of the VBID benefits and restricted POs' ability to inform beneficiaries and other relevant stakeholders about them.

Designing VBID interventions with ease of implementation in mind, engaging relevant internal stakeholders early on and throughout the VBID design and implementation stages, and having a dedicated VBID implementation leader who can quickly obtain answers to VBID-related questions from CMS all facilitated implementation success. By engaging the representatives of different departments whose work may be affected by the VBID intervention early on, participants were able to identify ways to resolve many implementation challenges.

CHAPTER FIVE

Beneficiary Participation in the VBID Model

In this chapter, we describe the characteristics of VBID-eligible beneficiaries and assess how they differ from ineligible beneficiaries. Then, after limiting the analyses to eligible beneficiaries, we estimate VBID participation rates, accounting for the fact that some beneficiaries opted out of the model test and others did not complete participation requirements (e.g., completing a scorecard, meeting with a care manager). Finally, we analyze whether VBID-participating beneficiaries differ from eligible nonparticipants.

Beneficiary Eligibility for the VBID Model

The VBID model test requires POs to define a set of eligibility criteria based on diagnosis codes and to offer VBID benefits to all beneficiaries who meet these criteria. We expect VBID-eligible beneficiaries to be different from ineligible beneficiaries because VBID targets individuals with chronic conditions. To better understand these differences, we compared demographic characteristics, including age, gender, dual eligibility, race/ethnicity, and HCC risk score, for VBID-eligible and ineligible beneficiaries in VBID-participating PBPs. We determined eligibility based on insurer reports, as submitted through the CMS Medicare Advantage Prescription Drug (MARx) data system. Table 5.1 shows the results of this comparison.

Beneficiaries in VBID-participating PBPs who are eligible for VBID benefits are different from ineligible beneficiaries across most comparisons. Eligible beneficiaries are generally older, more likely to be male, more likely to be white or Hispanic, and more likely to be dually eligible for Medicare and Medicaid. Eligible beneficiaries also have, on average, significantly higher risk scores (1.5 versus 0.9) and are more likely to have cancer, CHF, COPD, and diabetes.

Because CHF, COPD, and diabetes are targeted by one or more VBID-participating POs, it is not surprising that a higher proportion of eligible beneficiaries have these conditions. We do not expect all ineligible beneficiaries to be free of the VBID conditions, because not all POs targeted the same conditions. For example, PO A focused on beneficiaries with diabetes, but ineligible beneficiaries from PO A may or may not have CHF or COPD. Furthermore, the diagnoses shown in Table 5.1 were reported using HCC flags, which differ from the encounter diagnoses POs used to identify eligible beneficiaries.[1]

[1] Although in theory the HCC flags would reflect the same diagnoses as the encounter data, they are drawn from different data sources—such as electronic health records—and thus may not align perfectly.

Table 5.1
Comparison of Eligible Versus Ineligible Beneficiaries in Participating VBID PBPs, 2017

	VBID-Eligible Beneficiaries	Ineligible Beneficiaries Enrolled in VBID PBPs
Number of beneficiaries	96, 053	294,928
Age	75.7	74.2*
Gender (% male)	46.6	41.0*
Race/ethnicity (%)		
White	91.1	90.4*
Black	3.9	4.7*
Asian/Pacific Islander	1.5	1.6*
Native American/Alaska Native	0.2	0.2
Hispanic	1.7	1.5*
Multiple races	1.6	1.6*
Dually eligible for Medicare and Medicaid (%)	7.5	5.8*
Risk score (HCC)	1.5	0.9*
Chronic conditions (%)[a]		
Cancer	14.2	12.1*
CHF	26.5	5.2*
COPD	26.8	7.8*
Diabetes	40.3	19.2*

NOTES: Data reflect VBID eligibility as of December 2017 and were extracted from the MARx data system in May 2018. Data in rows may not add to 100 percent due to rounding.

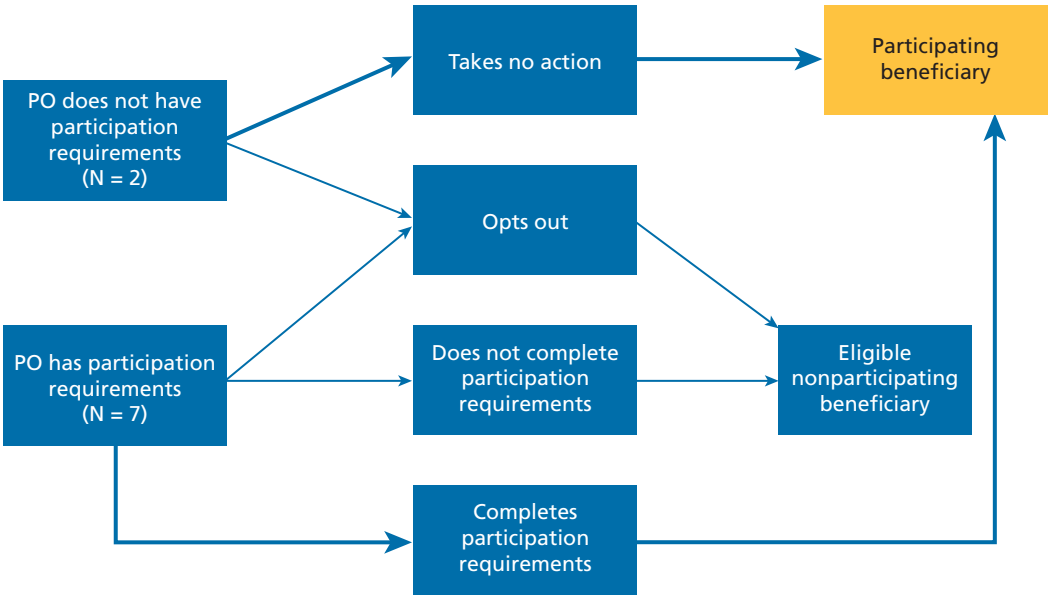
* Statistically significant difference from mean for VBID-eligible beneficiaries, using two-sample *t*-tests or chi-square tests for continuous and categorical variables, respectively. Significant difference defined as p-value < 0.05.

[a] Chronic conditions shown for this analysis are drawn from the HCC flags used to construct the beneficiary risk score.

Beneficiary Participation in the VBID Model

Eligible beneficiaries were not required to participate in the model test and could opt out by calling their plans. Furthermore, seven of the nine POs implemented VBID programs that required eligible beneficiaries to take active steps to receive VBID benefits, such as completing a set of preventive services or agreeing to participate in CM. In these POs, beneficiaries who did not complete participation requirements were unable to receive VBID benefits, even if they were eligible for VBID based on their diagnoses. Figure 5.1 illustrates the pathways through which beneficiaries can participate in the VBID model. Participating beneficiaries can receive VBID benefits, such as cost-sharing reductions for high-value care, while nonparticipating beneficiaries cannot receive these benefits. However, it is not necessarily clear that all VBID-participating beneficiaries will receive VBID benefits. For example, it is possible that some beneficiaries could complete CM/DM requirements without seeing a specialist or switching to

Figure 5.1
Participation Pathway for VBID-Eligible Beneficiaries



RAND *RR2421-5.1*

a high-value provider; therefore, they would not see a financial benefit related to their participation in VBID. We have not analyzed the share of participating beneficiaries who received VBID benefits, because the encounter and Part D event data reflecting 2017 utilization are not yet finalized.

Table 5.2 shows beneficiary participation rates for POs without participation requirements, POs with participation requirements, and all POs in the VBID model test (regardless of participation requirements). The information is based on beneficiary participation status as reported through the CMS MARx data system. Reporting VBID eligibility status via MARx was a new reporting requirement for VBID POs, and there may have been misinterpretations regarding the data submission process that could have yielded inaccurate estimates of beneficiary participation. Regardless, this is the one source of data that allows us to glimpse the level of participation among VBID-eligible beneficiaries.

Between the two POs without beneficiary participation requirements, virtually all eligible beneficiaries participated in the model test, with only a handful of individuals (around 0.1 percent) opting out. Across all POs with beneficiary participation requirements, about 30 percent of eligible beneficiaries participated, 63 percent did not complete requirements, and 7 percent opted out. However, there is substantial variation across POs with participation requirements in terms of the share of eligible beneficiaries who participated in the model test, ranging from almost 7 percent (PO C) to nearly 100 percent (PO I).

The low participation rate for PO C might be explained by the requirement that beneficiaries answer at least one question on a personal health assessment survey to indicate their willingness to participate in VBID. This survey could have been completed online or by mail. PO C reported that many beneficiaries found this survey to be too lengthy and burdensome. In contrast to PO C, POs E and I reported close to 100-percent participation. However, separate documentation provided by these POs to RAND and CMS indicated lower participation

Table 5.2
Engagement with VBID Benefits Among Eligible Beneficiaries, 2017

PO	Number of Eligible Beneficiaries Based on Diagnoses	Percentage of Eligible Beneficiaries Who Participated	Percentage of Eligible Beneficiaries Who Did Not Complete Participation Requirements	Percentage of Eligible Beneficiaries Who Opted Out
POs without participation requirements	43,059	99.9	N/A	0.1
D	35,614	100.0	N/A	0.0
H	7,445	99.3	N/A	0.4
POs with participation requirements	52,994	29.6	63.3	7.1
A	1,327	30.9	67.5	1.6
B	12,500	56.3	26.3	17.4
C	16,034	6.6	85.2	8.2
E	1,577	98.5	0.0	1.5
F	17,287	20.0	79.0	1.1
G	2,586	18.6	79.6	1.8
I	1,683	99.9	0.0	0.1
All POs	96,053	61.1	35.0	4.0

NOTES: Data reflect VBID eligibility as of December 2017 and were extracted from MARx in May 2018. N/A = not applicable. POs E and I appear to have misreported beneficiaries' participation statuses. When we exclude POs E and I from the analyses, we find that 25 percent of beneficiaries in POs with active requirements participated, 67.5 percent did not meet requirements, and 7.5 percent opted out.

rates, suggesting that POs E and I may have reported erroneously to MARx. When we exclude POs E and I from the analysis, we find that 25 percent of eligible beneficiaries in POs with participation requirements participated in the test, nearly 68 percent did not complete participation requirements, and almost 8 percent opted out (see note in Table 5.2).

Across all POs (both with and without participation requirements), 61 percent of enrollees participated in the model test, 35 percent were in POs with participation requirements and did not complete those requirements, and 4 percent opted out of the VBID model. Most beneficiaries who opted out of the model test were enrolled in POs that had participation requirements.

Eligible Participants Versus Eligible Nonparticipants

The relatively low participation rate among beneficiaries in POs with active participation requirements raises concerns about beneficiary selection into the model. For example, beneficiaries who participate in the model may be more motivated to improve their health statuses than nonparticipating beneficiaries. Furthermore, participation requirements may make it difficult for some types of beneficiaries—such as those who are older and sicker—to participate in the model. While we cannot observe behavioral characteristics like motivation, we can analyze whether participating beneficiaries are demographically different from nonparticipants. In Table 5.3, we report demographic characteristics for VBID-eligible beneficiaries by their participation statuses. Because of the low opt-out rate among plans without participation require-

Table 5.3
Participating and Nonparticipating Beneficiaries in POs with Participation Requirements, 2017

	Completed Requirements	Did Not Complete Requirements	Opted Out
Number of beneficiaries	15,671	33,557	3,766
Age	76.5	76.9*	76.5
Gender (% male)	45.9	48.2*	46.5
Race/ethnicity (%)			
White	93.1	93.3	94.9*
Black	3.4	2.8*	2.2*
Asian/Pacific Islander	0.6	0.9*	0.3*
American Indian/Alaska Native	0.2	0.2*	0.2
Hispanic	1.2	1.4*	1.0*
Multiple races	1.6	1.6	1.5*
Dually eligible for Medicare and Medicaid (%)	8.8	9.0	7.2*
Risk score (HCC)	1.8	1.8	1.5*
Cancer[a]	15.7	15.2	14.0*

NOTE: Percentages in rows may not add to 100 due to rounding. POs A, B, C, E, F, G, and I had participation requirements.

* Statistically significant difference from those that completed requirements. Significance is defined as $p < 0.05$ using two-sample *t*-tests or chi-square tests.

[a] The cancer indicator is drawn from the HCC flags used to construct the beneficiary risk score.

ments, we focus on the seven POs that required beneficiaries to take active steps to receive VBID benefits. We also report a sensitivity analysis that excludes POs E and I, because of the possible data reporting problems mentioned above.

In general, we observe few differences between VBID-participating beneficiaries and those who did not complete participation requirements. Nonparticipants were slightly older and more likely to be male than VBID-participating beneficiaries, and there were some statistically significant differences in racial composition. However, the sizes of the estimated differences are generally very small, suggesting that they might not be meaningful.

Beneficiaries who opted out of the model were less likely to be dually eligible (8.8 versus 7.2 percent), had slightly lower risk scores (1.8 versus 1.5), and had a lower probability of having cancer (15.7 percent versus 14.0 percent) than beneficiaries who participated in the model test. However, we observe no differences in risk scores for beneficiaries who completed participation requirements compared with beneficiaries who did not complete requirements. Results are similar when we exclude POs E and I from the sample (not shown).

Summary

Within VBID-participating PBPs, eligible beneficiaries were more likely to be older, male, and to have one or more selected chronic conditions than ineligible beneficiaries. We expected such differences because VBID eligibility status is contingent on having a chronic condition.

Across all participating POs, nearly 40 percent of eligible beneficiaries either opted out of the VBID model or failed to complete participation requirements. When we limited the

sample to POs with active participation requirements, slightly more than 70 percent of eligible beneficiaries either did not meet the participation requirements or opted out of the model test. These findings raise concerns that participating beneficiaries may be different from nonparticipating beneficiaries in VBID-participating POs; for example, participating beneficiaries may be more motivated to improve their health. In addition, participation requirements may have kept some eligible beneficiaries, such as older and sicker individuals, from participating in the model. Interestingly, when we analyze observable characteristics, we find relatively few meaningful differences between eligible beneficiaries that participated in the model test and eligible beneficiaries who did not complete requirements or opted out. Nevertheless, there could be important unobserved differences between participating and nonparticipating eligible beneficiaries, especially given that meeting participation criteria may require self-motivation, organizational skills, willingness to comply with recommendations, and other characteristics that are both difficult to measure and plausibly correlated with long-term health and spending outcomes.

In our future quantitative analysis, we will use an intent-to-treat framework—in which we compare outcomes for all eligible beneficiaries, regardless of participation status, to outcomes for a matched comparison group—to reduce concerns about selection into the model.

CHAPTER SIX

The Impact of VBID on Beneficiary Awareness and Enrollment

As we discussed in the introduction, there are relatively few 2017 outcomes that can be evaluated for this report, because final data do not become available until late 2018 or early 2019. However, final 2017 data for three key outcomes—awareness of VBID benefits, enrollment in VBID-participating plans, and 2017 PBP bids—became available by mid 2018. In this chapter, we describe how VBID affects two of these outcomes: awareness of VBID benefits and enrollment in VBID-participating plans. We compare outcomes for VBID-participating PBPs and beneficiaries with those of matched comparators, which we identified using the methods described in Appendix D. In Chapter Seven, we report analyses for 2017 PBP bids.

A key challenge of this analysis is that PBPs were not randomly assigned to the VBID program, and instead elected to participate. This nonrandom selection process raises the possibility that the VBID-participating PBPs may differ systematically from other PBPs. As a solution to this problem, we identified a set of comparison PBPs that are similar to the VBID-participating PBPs. For each VBID-participating PBP, we identified a comparison PBP with similar observable characteristics. We then used propensity score–matching techniques to match VBID-participating and comparison PBPs.

For the comparison PBPs, we used PBPs in states that were not selected to participate in VBID. The use of out-of-state matches helps us ensure that we are not comparing VBID-participating PBPs with PBPs that actively chose not to participate in VBID. Instead, our matching approach allows us to identify similar plans that would have likely participated in VBID if doing so was an option. Appendix D provides the full details of our propensity score approach.

To identify the comparison PBPs, we used several plan and geographic-market characteristics. A full list of these characteristics is shown in Table D.2 in Appendix D, but they include county-level demographics for the counties in which each PBP has enrollees, plan benefit design, PO market penetration, enrollment, and beneficiary demographics (age, gender, race/ethnicity, dual eligible population, chronic conditions, and risk scores). As shown in Table D.3 in Appendix D, the VBID-participating and comparison PBPs are similar across these characteristics. We assessed the differences in these characteristics using the standardized difference, which measures the standard deviation difference in each characteristic between the VBID-participating and comparison PBPs. We present standardized differences rather than *t*-tests because the standardized differences are not influenced by sample size (Rosenbaum and Rubin, 1985; Austin, 2009).

In theory, VBID affects outcomes by giving beneficiaries financial incentives to better manage their chronic conditions. POs are required to communicate information about the

VBID program to eligible beneficiaries, and awareness of VBID benefits is likely a critical first step in engaging with the model and responding to its incentives.

Examining the impact of VBID on enrollment is important for two reasons. First, finding that the VBID model leads to changes in PBP-level enrollment will potentially introduce statistical bias into our evaluation of how the VBID model affects other metrics if the beneficiaries switching into or out of VBID-eligible PBPs are different from other beneficiaries. For example, if the VBID model leads less healthy individuals to switch to a non-VBID PBP, then we may misattribute any improvements in patient health to the VBID model, rather than to the changing composition of beneficiaries. Second, finding that the VBID model influences patient enrollment in VBID-participating PBPs would shed light on how MA beneficiaries value the VBID model's benefits. Finding that VBID participation increases PBP enrollment would suggest that beneficiaries value the VBID model compared with alternative PBPs, while finding decreases in enrollment would suggest that the VBID model might introduce unnecessary complexity to MA benefits. Because PBPs were prohibited from marketing VBID to beneficiaries, we anticipate limited effects on enrollment.

Beneficiary Awareness of VBID Benefits

CMS added two questions to the MA and PDP CAHPS survey to assess awareness of the benefits of the VBID model for the 2017 survey administration. The two questions are worded as follows:

- **Question 1:** A copay is the amount of money you pay at the time of a visit to a doctor's office or clinic. In the last six months, did your health plan offer to lower the amount of your copay because you have a health condition (like high blood pressure)?
  - Answer options: Yes; No; I am not sure; I do not have a copay; I do not have a health condition; I was offered a lower copay for another reason
- **Question 2:** Your health plan benefits are the types of health care and services you can get under the plan. In the last six months, did your health plan offer you extra benefits because you have a health condition (like high blood pressure)?
  - Answer options: Yes; No; I am not sure; I do not have a health condition; I was offered extra benefits for another reason.

MA CAHPS is fielded to a representative sample of MA beneficiaries selected at the contract (not the PBP) level. The survey is not targeted to VBID-participating PBPs or beneficiaries. As a result, most beneficiaries who were asked about VBID as part of the CAHPS survey were not part of the VBID model test. Nevertheless, the VBID-related CAHPS questions were intended to get a preliminary sense of beneficiaries' awareness of VBID benefits. We analyzed the CAHPS responses by comparing responses among VBID-eligible beneficiaries in participating PBPs with those of ineligible beneficiaries in participating PBPs and with those of beneficiaries in matched-comparison PBPs.

Table 6.1 displays our results. The data suggest that VBID-eligible beneficiaries were more likely to report being offered a lower copay due to their health condition or to report being offered extra benefits than other beneficiaries. However, the share of VBID-eligible ben-

Table 6.1
Awareness of VBID Benefits

	VBID-Eligible Beneficiaries	All Beneficiaries in VBID-Participating PBPs	All Beneficiaries in Matched-Comparison PBPs
Question 1: Did your health plan offer to lower your copay? (percentage responding yes)	9.1% (N = 913)	4.0% (N = 4,799)	2.0% (N = 5,337)
Question 2: Did your health plan offer you extra benefits? (percentage responding yes)	9.4% (N = 901)	4.9% (N = 4,814)	4.1% (N = 5,362)

NOTES: Data are from the 2017 MA and PDP CAHPS survey. We identified VBID-eligible beneficiaries based on PO reporting to the CMS MARx system.

eficiaries who reported VBID-related benefit changes is quite low—less than 10 percent for both measures.

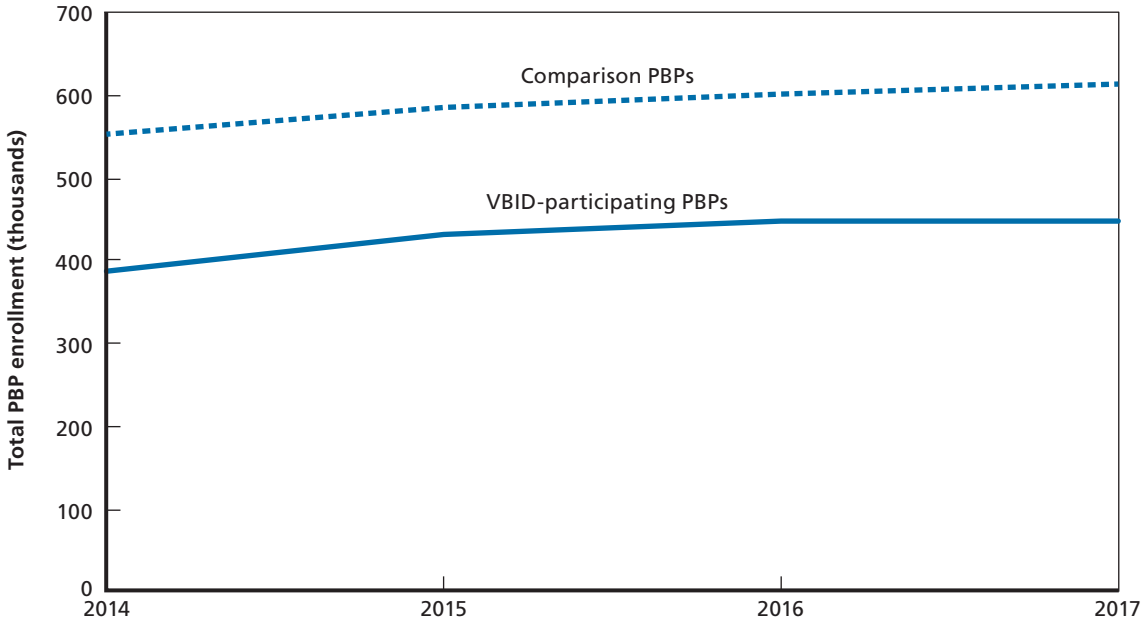
The CAHPS survey was fielded from March through June of 2017, or approximately three to five months after the VBID model went into effect. Although we restricted the sample to beneficiaries who were identified as eligible in MARx as of the end of February 2017, some individuals might not have heard about the model at the time the survey was fielded. Furthermore, the wording of the questions—which were written before POs submitted their VBID applications—might not capture the design of the VBID model accurately for some POs. For example, most VBID interventions incentivized participation in CM/DM, which is not reflected in the wording of the questions. When we compared CAHPS responses across POs, we could not detect meaningful differences based on VBID intervention design; however, these analyses were limited by small sample size. These data suggest relatively low awareness of VBID benefits; however, limitations associated with the timing of the CAHPS survey and the wording of the CAHPS questions make it difficult to draw strong conclusions from this analysis.

Enrollment Results

We used beneficiary-level monthly enrollment data to determine how VBID affected PBP enrollment. We examined trends in both total PBP enrollment and new PBP enrollment in VBID-participating PBPs and the set of matched-comparison PBPs described in Chapter Five. In this section, we present the enrollment trends comparing the two sets of PBPs. We present the results of a difference-in-differences regression approach designed to conduct an in-depth analysis of enrollment in Appendix E. The results in Appendix E are similar to the results presented here. In addition, Appendix E shows enrollment trends for beneficiaries with the four chronic conditions targeted by VBID-participating POs in 2017—COPD, CHF, diabetes, and hypertension. The results for beneficiaries with these conditions are similar to the main results discussed below.

Figure 6.1 shows trends in total enrollment for VBID-participating and comparison PBPs from 2014 through 2017. For both sets of PBPs, enrollment trends are similar over the 2014–2017 period. In particular, there is no visual evidence of differential enrollment trends between the VBID-participating and comparison PBPs in 2017, the year of VBID implementation. In

Figure 6.1
Trends in Total Enrollment Between VBID and Non-VBID PBPs



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regression analyses, we found no statistically significant differences in 2017 enrollment trends for VBID-participating versus nonparticipating PBPs. Our regressions are underpowered to identify differences in enrollment between VBID-participating and comparison PBPs below a 9,400 difference in enrollment; however, our analysis finds that the VBID program led to a non–statistically significant decrease of 301 enrollees between the VBID-participating and comparison PBPs—a minimal change, regardless of statistical power.

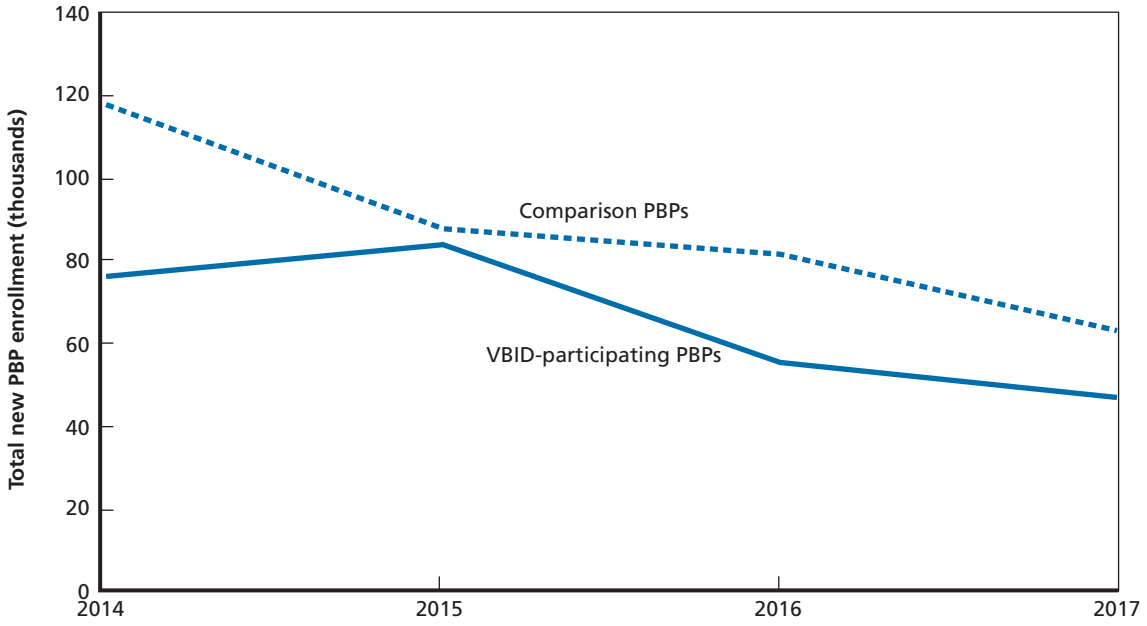
Figure 6.2 shows trends in new enrollment for treatment and comparison PBPs. *New enrollees* are those who were not enrolled in the PBP in the previous year because they were under the age of 65 or enrolled in a different PBP or fee-for-service Medicare. We did not find statistical evidence of differential trends in new enrollment between the VBID-participating and comparison plans in regression analyses (see Appendix E for details).

Summary

In 2017, few VBID-eligible beneficiaries reported being offered reduced cost sharing or additional supplemental benefits due to their health conditions. While these results suggest low awareness of the VBID model's benefits, the wording of the questions—which did not fully reflect the CM/DM approach adopted by most participating POs—may have been confusing to beneficiaries. Furthermore, although we limited the CAHPS analyses to individuals who were identified as VBID-eligible before the survey was fielded, some beneficiaries may not have received outreach from PBPs at the time the survey was fielded.

Our enrollment results suggest that implementation of the VBID model was not associated with changes in PBP-level enrollment or new enrollment. The enrollment findings are not

Figure 6.2
Trends in New Enrollment Between VBID and Non-VBID PBPs



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surprising, given that marketing restrictions precluded POs from advertising VBID during the open enrollment period, and given that the awareness questions suggest limited knowledge of the model. The lack of an effect on enrollment reduces concern about statistical bias that could occur if beneficiaries selectively switched into participating PBPs to take advantage of VBID benefits. We will revisit the awareness and enrollment analyses in future years to determine whether beneficiaries become more aware of VBID over time and whether VBID begins to affect enrollment decisions.

CHAPTER SEVEN

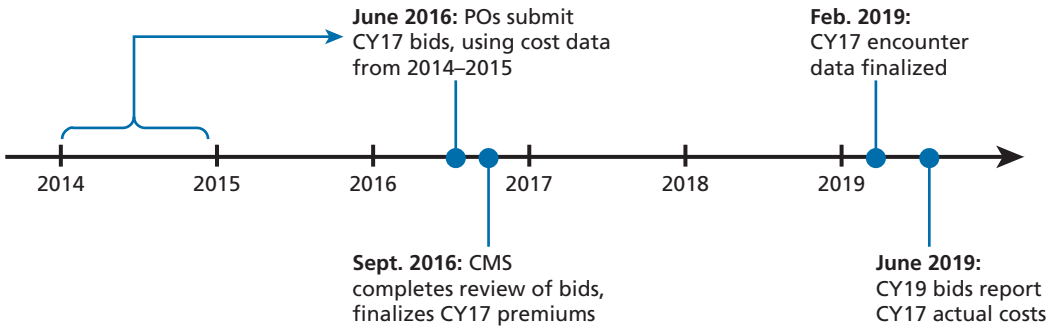
The Impact of VBID on 2017 Plan Bids and Revenue to Plans

The previous chapters focused on the preliminary PBP and beneficiary experiences with VBID, but did not examine how VBID can change CMS or PBP spending. A primary goal of VBID is to use cost-sharing mechanisms to increase the use of high-value care, which in turn can reduce costly complications and lead to downstream savings for PBPs and CMS. At the same time, PBPs that implement VBID may increase their plan bids in order to pay for the VBID benefits.

In this chapter, we examine the effects of VBID on standardized PBP bids and revenue to plans by comparing standardized bids and plan revenue for VBID and non-VBID PBPs both before and after the implementation of VBID, in 2014–2016 and 2017, respectively. The standardized bid captures the expected costs of a PBP to cover an average-risk enrollee. Plans are paid the standardized bid multiplied by an enrollee risk score, which adjusts for enrollee health status, plus any rebates (Piper and Millican, 2017). The rebates are a portion of the PBP bid that is below the benchmark bid and are shared with the PBP plan as a way to incentivize PBPs to bid competitively. PBPs with higher quality ratings receive a larger portion, from 50 percent to 70 percent, of the difference between their bid and the benchmark bid. PBPs must return the rebate allocations to the enrollee in the form of supplemental benefits or lower premiums (Medicare Payment Advisory Commission [MedPAC], 2017). Thus, revenue to plans may diverge from plan bids because of changes in risk scores or rebate amounts.

PBPs submit plan bids and projected risk scores to CMS in June for the next calendar year (Figure 7.1). The 2017 bids were submitted to CMS in June 2016, and when making the bids, PBPs did not have any actual data on the effects of VBID on costs or savings. Thus, any change in bids between the VBID-participating and comparison PBPs will be based on the

Figure 7.1
Timeline for Bid Submissions



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expected savings or costs of implementing VBID, rather than the realized savings or costs. Because PBPs had to project cost savings to participate in the VBID program, participating PBPs may tend to expect that VBID will lead to savings—these expectations may be reflected in plan bids. Encounter data describing beneficiaries' utilization patterns for 2017 will be finalized in early 2019 and will be reported in plan bids for 2020.

To examine the effects of VBID participation on PBP bids and revenue, we used PBP-level data provided by the CMS Office of the Actuary (OACT) on plan bids, projected risk scores, and rebates. We used these data to define total PBP per-member per-month (PMPM) bids and revenue to plans over the 2014–2017 period. Many PBPs have separate subsegments, which are typically based on geography, that have different premiums and cost-sharing within the same PBP. Thus, bid information is reported at the PBP segment level, while the VBID program is at the PBP level. We used enrollment weights to aggregate the PBP segment–level data from OACT into PBP-level bids, projected risk scores, and rebates. *PBP bids* were defined as the standardized plan bid, while *revenue to plans* was defined as the amount that would be paid to plans after accounting for differences in projected enrollee risk scores and rebates. This revenue measure captures the direct subsidy from CMS and beneficiary premiums, but does not account for revenues stemming from the low-income subsidy, risk corridor payments, or reinsurance. Because the majority of VBID-participating PBPs (32 out of 45) were MA-Prescription Drug (PD) plans, our primary analysis considers the MA-PD standardized bids and plan revenue for MA-PD PBPs. MA-PD PBPs cover Medicare Part A (inpatient hospital, home health, and nursing care), Part B (all other medical care), and Part D (prescription drug) benefits. Standalone MA plans do not cover Part D benefits.

We defined the MA-PD bid and cost variables as the following:

$$\textit{MA-PD Standardized Bid} = \textit{Standardized Part C Bid} + \textit{Standardized Part D Bid}$$

$$\textit{MA-PD Revenue to Plans} = (\textit{Standardized Part C Bid} \times \textit{Projected Risk Score} + \textit{MA Rebate}) + (\textit{Standardized Part D Bid} \times \textit{Part D Risk Score} + \textit{Supplemental Part D Premium})$$

To test for differences in bids and revenues between the VBID-participating and out-of-state comparison PBPs, we compared the unadjusted trends in average bids and revenues, and used difference-in-differences regressions to statistically test for differences in bid and revenue trends following the 2017 implementation of VBID. An important validity requirement for difference-in-differences regressions is that the pre-VBID trends between the two sets of PBPs are parallel. This requirement was not initially met. As a solution, we weighted observations in the comparison group to ensure that trends in pre-2017 plan bids were similar to those among VBID-participating PBPs. A full description of this weighting approach is described in Appendix D. We use these weights in the regression analyses and to report descriptive trends.

As sensitivity tests, we also separately examined Part C bids and revenues for PBPs with and without Part D benefits and Part D bids and revenues for MA-PD PBPs. Separating Part C and Part D outcomes might shed light on whether any changes in bids or revenues are driven by projected changes in drug spending or utilization. Furthermore, looking at Part C alone allows us to compare results to the 13 MA-only PBPs that offered VBID. The results of these sensitivity analyses are similar to the main MA-PD results, and we report them in Appendix F.

Descriptive Results

Figure 7.2 shows trends in combined Part C and Part D standardized bids for both VBID-participating and comparison MA-PD PBPs from 2014 through 2017. Both sets of PBPs have similar pre-VBID trends in standardized bids. Between 2014 and 2015, bids for VBID-participating PBPs decreased by $57 and by $63 for the comparison PBPs.

Between 2015 and 2016, there was a $16 and an $18 increase for VBID-participating and comparison PBPs, respectively. Between 2016 and 2017, there was an $8 and a $22 increase for VBID-participating and comparison PBPs, respectively. These dollar changes translate to small changes in standardized bids relative to the baseline MA-PD standardized bids. For both groups, there is an approximately 7-percent decrease in average bids between 2014 and 2015 and an approximately 2-percent increase in average bids between 2015 and 2016. Between 2016 and 2017, the first year of VBID implementation, the combined Part C and Part D bids increased by an average of 0.9 percent for the VBID-participating PBPs and 2.6 percent for the comparison PBPs, a difference of 1.7 percentage points. These results suggest that VBID-participating PBPs experienced modest reductions in 2017 standardized plan bids relative to matched comparators.

In Appendix F, we use difference-in-differences regressions to statistically test the difference in bids between the VBID-participating PBPs and the comparison PBPs. When focusing on the combined Part C and Part D bids for MA-PDs, we find that following the implementation of VBID, the participating PBPs reduced their bids by $12.82 (95-percent confidence interval: −$29.82 to $4.06) compared with the comparison PBPs. Based on the average 2016 standardized bid of $840 for the VBID-participating PBPs, the $12.82 decrease translates to a 1.5-percent reduction in standardized bids, which is close to the unadjusted results in

Figure 7.2
Trends in Standardized MA-PD PMPM Bids Between VBID and Non-VBID PBPs

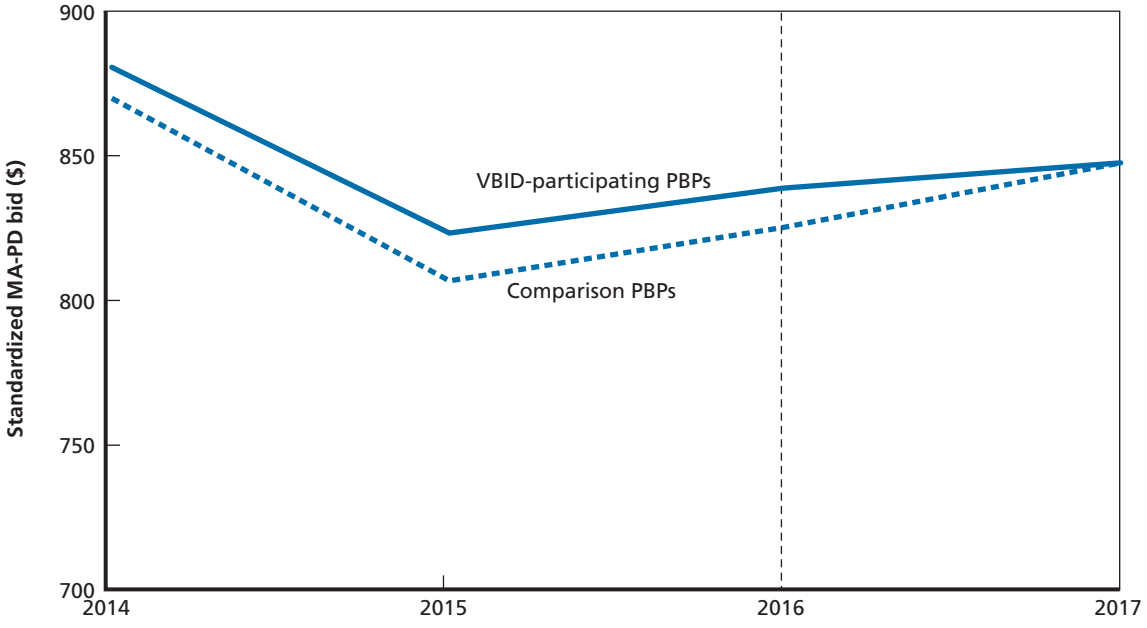

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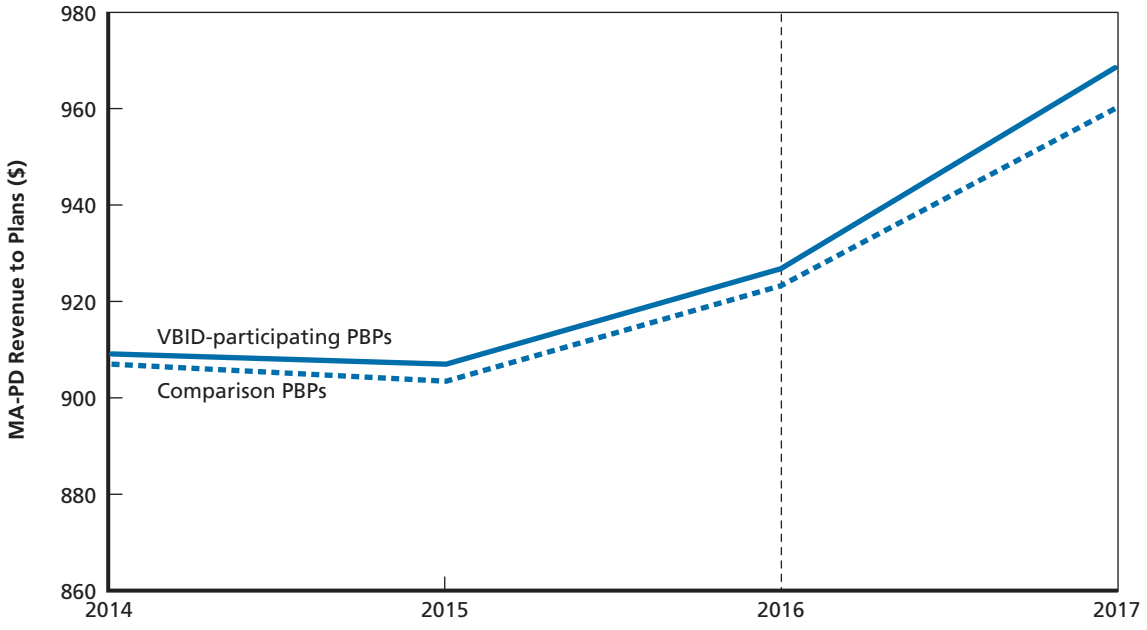
Figure 7.2. In Appendix F, we also examine differences in Part C bids for MA-PD and stand-alone Part C plans, and Part D bids for MA-PD PBPs. We find a negative, but not statistically significant, relationship between VBID participation and PBP bids for these other bid measures.

Figure 7.3 shows trends in the combined Part C and Part D PMPM revenue to plans for VBID-participating and comparison MA-PD PBPs. For both sets of MA-PD PBPs, revenue to plans was flat between 2014 and 2015, increased by approximately 2 percent between 2015 and 2016, and increased by 4 percent between 2016 and the 2017 implementation of VBID. Between 2014 and 2015, plan revenue decreased by $2 for VBID-participating PBPs and $3 for the comparison PBPs. Between 2015 and 2016, plan revenue increased by $20 for both plans. Between 2016 and 2017, there was a $41 and $37 increase for VBID-participating and comparison PBPs, respectively.

Because the trends are nearly identical between the VBID-participating and comparison PBPs, both before and after the 2017 implementation of VBID, we do not find visual evidence that VBID changed PBP revenue. Importantly for our difference-in-differences analysis, the pre-2017 trends between the VBID-participating and comparison PBPs are parallel.

The regression results in Appendix F do not find any difference in combined Part C and D revenue trends before and after the 2017 implementation of VBID between the VBID-participating and comparison MA-PD PBPs, which is consistent with the descriptive trends described above. Specifically, we estimate that PMPM revenue to plans increased by $4.70, but the confidence interval is very wide, ranging from −$24.70 to $34.11. Furthermore, given that average PMPM revenue to plans is around $950, an increase of $4.70 is small, regardless of the confidence interval. The results in Appendix F also separately examine the impact of VBID on Part C revenue between MA-PD and stand-alone MA plans and Part D revenue for MA-PD

Figure 7.3
Trends in MA-PD PMPM Revenue Between VBID and Non-VBID PBPs



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plans, as with the analysis of plan bids. For each revenue measure, we do not find that VBID participation has any impact on PBP revenue.

Summary

Participating PBPs might update their bids to accommodate either the expenses associated with implementing VBID or the benefits and savings that accrue because of VBID. Revenue to plans depends not only on plan bids, but also on risk scores and rebate amounts, which may be affected by participation in VBID.

In this chapter, we examined the impacts of VBID participation on PBP-level bids and revenue to plans. We found that VBID led to small reductions in PBP bids, with a 95-percent confidence interval that overlaps zero. However, because these bids were based on data from 2014 and 2015, they do not yet reflect PBPs' actual experiences with the VBID model. Similarly, the risk score and rebate amounts that we used to calculate plan revenue are based on projections, and will be reconciled once complete 2017 encounter data become available. Participating POs may adjust their bids over time to reflect their actual experience. Furthermore, because VBID involves an upfront investment (e.g., lower cost-sharing) with the expectation that spending may decline in the future (e.g., because of fewer complications), some POs may not expect to recoup significant savings for a few years. For these reasons, it will be important to reexamine the effect of VBID on bids, plan revenue, and costs to CMS once PBPs have more experience with the VBID program, and to assess whether 2017 actual costs, risk scores, and rebates aligned with PBPs' projections.

CHAPTER EIGHT

Conclusions and Implications

The VBID model test represents the first time that VBID has been implemented and evaluated for the Medicare population. The prior literature primarily focuses on employer-sponsored VBID programs, implemented in a working-age population. Because MA beneficiaries are older and have more complex health care needs, there may be more opportunity for the MA VBID program to improve the health of beneficiaries, enhance the quality of care they receive, and reduce Medicare spending. However, in some cases, POs' VBID participation requirements may be too burdensome for Medicare beneficiaries, who may be unwilling or unable to join the model test or to meet these participation requirements. Similarly, intervention designs may be too complicated for beneficiaries to comprehend, which may lower intervention uptake and limit any positive impacts on care quality and costs. In this report, we analyzed MA VBID experiences and outcomes for 2017, the first year of the model test. We describe several key findings from our analysis below.

Key Findings

Participating POs Differ from Nonparticipants

Although participating POs were enthusiastic about the model, fewer than half of POs with eligible PBPs chose to participate in the model test. Participants were located in three of the seven states in which VBID was permitted: Indiana, Massachusetts, and Pennsylvania. Although CMS allowed POs to offer VBID to beneficiaries with seven conditions, POs limited their VBID interventions to four conditions: CHF, COPD, diabetes, and hypertension.

Nonparticipating POs were concerned that the ROI associated with implementing VBID was uncertain and preferred to wait for more evidence before entering the model test. Importantly, CMS provided no financial incentives to POs that joined the model, so risk-averse POs had limited financial incentive to participate. Many nonparticipating POs also reported believing they were already providing high-quality care to beneficiaries.

In contrast, participating POs were interested in being at the forefront of benefit design and appreciated the opportunity to experiment with approaches to encourage high-value care. They often cited improvements to beneficiary health as their primary motivation for joining the VBID model test, and—compared with nonparticipants—were less focused on ROI. PBPs entered by participating POs were demographically different from nonparticipating PBPs in states where VBID was permitted, tending to have older beneficiaries, higher enrollment, and lower OOP maximum limits on beneficiary costs.

Both participating and nonparticipating POs cited technological barriers as a challenge to implementing VBID. In some cases, participants had to create a "plan within a plan" to implement VBID benefits, which required them to issue new insurance ID cards and coordinate alternative cost-sharing arrangements with providers. Participating POs that reported feeling that VBID implementation went smoothly tended to choose simpler interventions and build on existing capabilities. POs that issued benefits via rebates rather than through reduced cost sharing at the point of service did not need to coordinate benefits with providers' billing systems.

The inability to market VBID benefits to enrollees was viewed as a limitation of the model by both participating and nonparticipating POs. Without being able to advertise VBID, POs were unable to use the model to attract and retain enrollees—a potential drawback for some POs, given the lack of financial incentives to join the test. Some POs felt the inability to market also led to beneficiary confusion, because beneficiaries were not aware of the benefits until after they made enrollment decisions. POs feared that information provided to beneficiaries outside of the open enrollment cycle might have been perceived as "junk mail" and disregarded.

MA VBID Approaches Differ from Previously Tested Models

The VBID interventions that POs are implementing are different from VBID interventions that previously have been tested in the commercial sector in three important ways. First, most MA VBID interventions focused on copayment reductions for primary care and specialty visits rather than for prescription drugs, a common intervention in the commercial market. Evidence from prescription drug–related interventions suggests that making medications more affordable increases drug adherence, creating a clear path to improved health outcomes. It is less clear whether increasing visits to health care providers will lead to measurable and clinically meaningful changes in outcomes, although POs have hypothesized that more-frequent interactions with providers could reduce costly complications. For example, regular foot checks for people with diabetes could reduce the likelihood of a future amputation. POs reported perceived difficulties with implementing prescription drug–focused interventions, such as the need to coordinate with PBMs. Some POs also reported that their drug formularies are designed to promote adherence with low copayments for generic drugs. It is difficult to compare drug cost sharing in MA with commerical plans because of such issues as the Medicare Part D coverage gap, differential use of copayments versus coinsurance, and differences in OOP limits.[1] However, data from the Kaiser Family Foundation suggest that MA-PD plans are more likely to have zero cost sharing for generic drugs compared with commerical plans (Claxton et al., 2017; Cubanski, Damico, and Neuman, 2017). Thirteen of the 45 PBPs that were entered into the model test were MA-only plans; for these PBPs, there is no role for a prescription drug intervention.

Second, the majority of MA VBID interventions required eligible beneficiaries to participate in CM/DM or related activities as a precondition for receiving VBID benefits. Such requirements have not traditionally been part of VBID programs, and the evidence for their effectiveness is limited, although these are also being tested in the commercial market (Hirth

[1] The Medicare Part D coverage gap, also known as the "doughnut hole," refers to a benefit structure in which beneficiary cost-sharing temporarily increases after total spending reaches a pre-specified amount. For more information, see CMS, undated(a).

et al., 2016). Participating POs stressed the clinical importance of CM/DM, stating that financial incentives alone may not motivate MA beneficiaries to change their health behaviors. It is possible that participating POs have already structured benefits to encourage use of high-value care, and, in fact, it is not always necessary to use VBID to achieve this goal. Some POs reported that, in the course of developing their VBID interventions, they identified opportunities to reduce cost sharing for all beneficiaries in a manner that could promote health and reduce spending. For example, one PO moved a drug used to treat CHF to tier 1 of its formulary for all beneficiaries, after actuarial calculations suggested that this change would be affordable and value-enhancing. In many cases, POs viewed CM/DM as the core component of their interventions, as opposed to reductions in cost sharing. However, onerous or confusing CM/DM requirements could make it difficult for older and higher-acuity patients to participate in the VBID model test, which could lower the impact of this model on care quality and costs. Reassuringly, we found no evidence that beneficiaries who failed to engage with CM/DM requirements were older or had higher risk scores than beneficiaries who did not participate in the model. CMS may wish to monitor VBID programs with CM/DM components to ensure that they do not lead to inequities in benefit design.

Third, two of nine participating plans provided VBID benefits via rebates, rather than reducing cost sharing at the point of service. This is a novel approach that reduced the need for participating POs to coordinate with providers' IT systems and allowed POs to remind beneficiaries about their participation in VBID. POs argued that rebates reward beneficiaries for engaging with care managers, and provide a fresh, unexpected nudge to think about health when the check arrives in the mail. However, it is uncertain whether rebates will have the desired effect on beneficiaries' health care utilization. The economics literature suggests that people are more incentivized by immediate than future rewards, potentially limiting the power of rebates to motivate behavioral change (Green, Fry, and Myerson, 1994; Chapman and Elstein, 1995; Critchfield and Kollins, 2013). Furthermore, by design, previous VBID interventions in the commercial market focused on reducing financial barriers to seeking necessary care. In POs that rely on rebates, however, beneficiaries must pay full cost sharing at the point of service, which could pose a hardship for those with financial constraints.

Beneficiary Participation in the Model Was Relatively Low

Nearly 40 percent of eligible beneficiaries did not participate in the VBID model test. Eligible but nonparticipating beneficiaries either actively opted out or did not meet VBID participation requirements, such as regularly interacting with a care manager. When we limit the analysis to the seven POs that had participation requirements, the share of eligible beneficiaries who did not participate in the VBID model increased to 70 percent.

Low participation rates might be attributable to low awareness of the model or onerous participation requirements. In the 2017 MA and PDP CAHPS survey, only about 9 percent of VBID-eligible beneficiaries responded that they were offered lower copays or extra benefits due to a health condition. However, the CAHPS questions may understate awareness, because the survey was fielded early in the year, and the question wording did not fully reflect the CM/DM requirements adopted by most participating POs. At least one PO reported that its 2017 participation requirements proved to be burdensome for enrollees; for subsequent plan years, that PO revised its VBID approach to increase beneficiary engagement.

Low participation rates raise several concerns for the evaluation. First, it is possible that certain types of beneficiaries—such as those who are older or who have greater health needs—

may have found it difficult to meet VBID participation requirements. However, we found no evidence that there were meaningful demographic differences in participants and nonparticipants, reducing concern about this possibility.

A second concern about low participation is that those who participated may be more motivated to improve their health than nonparticipants. If this is the case, then future analyses comparing VBID participants with matched nonparticipants could yield inaccurate results—for example, attributing changes in outcomes to the VBID model, rather than to underlying differences in unobserved factors such as motivation, desire to improve health, or willingness to make lifestyle changes. To address this possibility, we will use an "intent-to-treat" approach when considering outcomes. The intent-to-treat approach involves comparing all VBID-eligible beneficiaries, regardless of participation status, to matched comparators.

A final concern about the low participation rates is that if few eligible beneficiaries participate, the model may have a limited impact on outcomes, such as beneficiary health and costs to CMS. To increase beneficiary participation, POs could review outreach protocols to ensure that they are effective and revisit participation requirements to ensure that they are clear and not overly burdensome for beneficiaries.

Evidence for Impact Is Limited, But Most Data Are Not Yet Available

Complete data for many 2017 outcomes, including utilization, prescription drug fills, health plan quality, and beneficiary health outcomes, will not be available until 2019. However, data on 2017 plan bids and enrollment are currently available, and we used difference-in-differences models to assess VBID's impact on these outcomes.

Although POs were not permitted to advertise VBID to potential enrollees, it is possible that enrollees heard about the model through external sources (e.g., a provider), or that VBID-participating PBPs made other simultaneous changes to benefit design or marketing strategies that affected enrollment trends. However, when we compared enrollment trends for VBID-participating PBPs with matched comparators, we found no evidence that the introduction of VBID in 2017 affected total or new enrollment. These results are not surprising given the marketing restrictions that were in effect during the 2017 open enrollment period. VBID may have stronger effects on enrollment in future years, especially if CMS relaxes marketing restrictions, knowledge of the program spreads through word-of-mouth, or rates of disenrollment decline among beneficiaries exposed to the VBID model. We will continue to monitor enrollment trends to assess whether they change as the program matures.

We also analyzed whether VBID affected 2017 plan bids or revenue to plans. The plan bid is a standardized number that reflects the cost of insuring a typical Medicare enrollee in a given PBP. However, MA PBPs are reimbursed based on an adjusted bid that accounts for enrollee health status, and PBPs are eligible for rebates from CMS if their bids are lower than a published benchmark. Thus, in addition to analyzing plan bids, we also analyzed projected plan revenue after adjusting the bids by each PBP's projected average risk score (a measure that accounts for beneficiary health status) and rebates. We found that bids for MA-PD PBPs declined by about $13 PMPM, a reduction of about 1.5 percent ($p = 0.13$). Revenue to plans increased very slightly (by about $5 PMPM), but these results were not statistically significant. Results were similar for MA-only PBPs. Bids and projected risk scores for 2017 were based on experience from prior years and reflect POs' expectations about VBID's effects as opposed to actual VBID outcomes. In the future, it may be possible to analyze VBID's effects on 2017 actual costs, which will be reported to CMS in plan bid documentation for 2020.

Moving Forward

The MA VBID model test provides an exciting opportunity to understand how VBID will affect outcomes for the Medicare population and determine whether VBID can improve health outcomes and reduce spending in Medicare. Our evaluation to date answers questions about how participating POs have designed their VBID programs; perceived barriers that kept some POs from joining the test; perceived benefits that motivated other POs to join; and beneficiary participation in 2017. We have also set the stage for future work that will assess the effect of VBID on health care utilization, health outcomes, patient experiences of care, and health spending.

As the MA VBID model test moves forward, with more POs, more conditions, and more flexibility in requirements, the RAND team's evaluation will continue using a mixed methods approach that integrates qualitative and quantitative data to shed light on these and other issues that may arise in the course of the model test's implementation.

APPENDIX A

Qualitative Data Collection and Analysis Methods

This appendix describes the methods used to sample participants, conduct interviews, and analyze the qualitative data presented in Chapters Two through Four of this report. We conducted semi-structured interviews with both eligible but nonparticipating POs and VBID-participating POs.

Data Collection from VBID-Participating POs

We conducted a series of semi-structured interviews with Year 1 VBID participants to better understand the VBID intervention designs participating POs implemented, why they decided to join the VBID model test, why and how they designed their VBID interventions, and what their early implementation experiences were. These interviews were designed to help us answer the following evaluation questions:

1. What types of VBIDs do POs implement, and why?
2. What are the most common populations targeted for VBID interventions? Why?
3. What barriers were encountered in implementing VBID? What strategies were used to overcome these barriers?
4. What is the potential to scale the VBID model nationally? Why?

We invited all nine VBID participants for either in-person or telephone interviews. Eight POs agreed to participate. We interviewed a total of 73 representatives across these eight POs. We allowed each PO to select representatives who were the most knowledgeable about VBID implementation. Interviewed representatives held a variety of positions, including Medicare product specialists, Medicare compliance officers, actuarial directors, directors of regulatory affairs, CM directors and staff, informatics specialists, and medical directors of government programs.

Between June and September 2017, two researchers conducted individual or small-group interviews with VBID participants that lasted for approximately 60 to 90 minutes. Small-group interviews contained two to six participants. We interviewed representatives of the four POs during in-person site visits; representatives of the other four were interviewed by telephone. Interviews followed a semi-structured format covering such topics as

- the organization's prior experience with CMS interventions, innovative health care payment and service delivery models, and VBID in other contexts

- the implementation of other benefit design or utilization management changes that might impact VBID outcomes
- reasons for and decisionmaking about participating in the VBID model
- reasons for and consequences related to decisions on whether to include all eligible PBPs in the VBID model test
- reasons for choosing a particular benefit design, beneficiary population, and particular PBPs
- resources needed to implement VBID (e.g., hiring new staff, upgrading the IT system)
- implementation issues, such as changes to IT infrastructure, claims processing, etc.
- strategies used to overcome any implementation challenges
- early implementation achievements
- anticipated mechanisms through which the VBID model may affect health care quality and costs
- expected VBID outcomes
- anticipated impact of VBID participation on beneficiary enrollment and retention
- characteristics of CM/DM programs used in VBID
- thoughts on ways to improve the VBID model.

We supplemented these semi-structured interviews with a review of POs' VBID application materials. Results of these interviews are presented in Chapters Two, Three, and Four; a more-detailed analysis of these data can be found in Appendix B.

Data Collection from Nonparticipating POs

In February and March 2017, we conducted a series of telephone interviews with the representatives of VBID-eligible but nonparticipating POs to answer the following evaluation questions:

1. Are participating POs different from those that chose not to participate?
2. What are the reasons why some POs chose not to participate?
3. What barriers did some POs encounter that prevented them from participating in the VBID model test?

Because the applications are due in January for the following year, we knew in January 2017 who the eligible but nonparticipating POs were for the first two years of the model test (2017 and 2018). We sampled a portion of the eligible but nonparticipating POs to find out why they chose not to participate in either 2017 or 2018. We identified all POs eligible to participate in the model tests in 2017 and 2018 by applying the VBID eligibility criteria to publicly available PO data (see Appendix D for details on identifying the eligible POs).

CMMI was and is willing to relax VBID eligibility criteria upon consultation with the POs. For example, it allowed PBPs with fewer than 2,000 beneficiaries, as long as another PBP within the same contract was also participating and had more than 2,000 beneficiaries. As such, we also included five POs that technically did not meet all VBID eligibility criteria, but were in touch with CMMI about potential participation in the VBID model test during the first VBID application period.

From this group of 43 unique POs in both Years 1 and 2 of the model test (38 eligible POs and five additional POs that had contacted CMMI about participating), we contacted the 29 largest nonparticipating POs, starting with national organizations that operated in multiple VBID-eligible states. We then sequentially reached out to the larger regional or state-based POs, trying to ensure that we spoke with organizations from all eligible states. Fourteen POs did not respond to our invitation, and five declined to be interviewed. Among those declining, two had previously provided comments to CMS, and three provided written statements about their reasons for not joining VBID. The ten nonparticipating POs that responded to our request comprised two large national and eight regional POs.

In total, we interviewed 24 representatives from these ten organizations. These representatives held a variety of positions, including Medicare compliance officers, actuarial directors, directors of regulatory affairs, and medical directors of government programs. All participants were involved in making the decision not to participate in VBID.

Two researchers conducted each interview by telephone. Each interview lasted for approximately 45 minutes and followed a semi-structured protocol that focused on such topics as

- the organization's prior experience with CMS's interventions, health care payment and service delivery models, and VBID in other contexts
- awareness of the VBID model intervention
- reasons for not joining the VBID model test
- thoughts on joining the VBID model test in the future
- suggestions for CMS on ways to improve the VBID model test.

We supplemented these semi-structured interviews with the analysis of written comments from nonparticipating POs about VBID that were previously submitted to CMMI in response to a request for feedback about the model test or to us in response to our invitation to participate in the interviews. Results of this qualitative data collection are presented in Chapter Three of this report.

Analysis of the Interview Data

All interviews were audio-recorded and transcribed. The RAND Institutional Review Board determined this study to be exempt from review. For both sets of interviews, we developed a codebook based on the main topics addressed as part of each interview protocol. Four authors who are experienced qualitative researchers used MAXQDA, a qualitative data analysis software program, to code each transcript and identify key themes (MAXQDA, 1989–2018). The coding team blindly double-coded two interviews with VBID nonparticipants and four interviews with VBID participants and discussed and resolved any discrepancies. All other interviews were coded by one person and reviewed by another. Any further coding discrepancies were resolved during weekly team meetings.

We developed key themes through identifying commonly addressed topics in consultation with the entire team. We also highlighted issues identified as significant concerns, even if only by one PO.

APPENDIX B

Results of Qualitative Interviews with VBID Participants

Introduction

In this appendix, we provide detail to supplement the analysis of our interviews with VBID-participating POs. We describe participating POs' rationales for choosing different VBID approaches, early implementation experiences, implementation barriers and facilitators, and the intervention outcomes they expect to achieve. PO names have been de-identified by replacing names with letters (e.g., PO A, PO B) to preserve confidentiality.

Rationale for VBID Design Choices

Clinical Conditions

The most commonly selected conditions were CHF, diabetes, and COPD; only one PO selected hypertension (see Table 2.1 in Chapter Two). Although four of the nine POs included two or three eligible conditions, only two of them required beneficiaries to have more than one eligible condition. POs chose eligible conditions based on five main factors: (1) population size, (2) potential to reduce adverse events, (3) filling in gaps in care, (4) potential to reduce long-term disease progression, and (5) meaningfulness to members.

POs used conditions to determine the desirable VBID population size. Most POs discussed a trade-off between selecting conditions with larger numbers of beneficiaries and the possibility that VBID may end up not being successful: "We want it [the VBID beneficiary population] to be large enough to be relevant, but we want it small enough to manage and minimize potential loss" (PO C).

To achieve this balance, some of the larger POs used a comorbidity requirement to narrow their VBID population. PO H explained:

> [J]ust focusing on diabetes—that's a very large book of business. Since this is a pilot program, we wanted to kind of understand what were the implications of our intervention. So, we chose to implement this program for members who had both congestive heart failure and diabetes. . . . [W]e felt that that was a good number to be able to measure the outcomes of the intervention, but at the same time, it wasn't [so] humongous that the pilot program would be difficult for us to manage as a plan.

In contrast, for smaller POs, finding the right population size meant targeting conditions with higher prevalence, as a representative from PO A noted: "Volume is important for us as a small plan. . . . We eliminated the conditions that we found [for which] we didn't have a lot of members."

POs targeted conditions that were driving the use of expensive services, such as hospitalizations. After examining its top diagnoses for inpatient admissions, PO F focused its VBID intervention on beneficiaries with CHF and/or COPD: "[T]hey're always up there, despite everything we have done [through] the years to try to manage this." PO G explained that it also chose CHF because of the utilization among beneficiaries with this condition:

> [C]ongestive heart failure sort of was the sweet spot of a condition. We were seeing a great deal of utilization, disease progression, admissions and readmissions, [and] emergency room visits. So, we felt that there were enough interventions and future interventions that we can contemplate where we could have a real impact on congestive heart failure.

Several POs noted that they selected conditions where there were gaps in care. A PO D representative stated that "it made the most sense to target an intervention that we don't really have any structured programs around." A PO E representative said that, while they already had programs in place to target their chosen population, engagement with those programs was low: "[W]e can use [VBID] as an incentive to promote the care management program that exists today."

Some POs also chose conditions where they could intervene earlier in the disease progression pathway. As a representative from PO C noted: "We wanted to target a vulnerable population that could improve." A representative from PO A explained, "[d]iabetes generally leads to a lot of other comorbidities down the road. If you can control that, it gives you the best cost savings, potentially long term." PO C expressed a similar rationale for selecting a condition that is related to several other conditions: "[I]f you address hypertension in somebody, you are going to [affect] their CHF and their diabetes because if the hypertension is better controlled, they are less likely to have kidney disease and progression."

Several POs mentioned choosing diseases and interventions that would be meaningful to beneficiaries. In explaining their rationale for focusing the VBID intervention on beneficiaries with CHF, PO G explained that beneficiaries may be more aware of some conditions than others:

> Not everybody feels hypertension or diabetes, but they certainly know when they are struggling to ambulate, to play with their grandkids, [or] perform certain activities of daily living. That's really the outcome we are looking toward—that they live longer, healthier lives and are able to manage their condition[s] in an ideal fashion.

VBID Approaches and Components Chosen by POs

PO VBID designs varied widely in terms of their complexity and the services targeted for cost-sharing reductions. As we noted in Chapter Two, there is some overlap between the approaches, particularly approaches one and three. While the first approach allows POs to reduce cost sharing for high-value services, the third approach requires that beneficiaries participate in CM/DM as a condition to receiving reduced cost sharing for high-value services.

Reduced Cost Sharing for High-Value Services

Two POs reduced cost sharing for high-value services. Another five reduced cost sharing for specific high-value services, contingent on participation in CM/DM. The most common high-value services targeted for reduced cost sharing were specialist visits—six POs included them as part of their VBID design. Four POs considered primary care visits to be a high-value service. Two POs included prescription drugs as part of their intervention, and two POs included diagnostics and/or DME (e.g., oxygen for beneficiaries with COPD). POs may have included more than one of these services as part of their interventions.

Physician Visits as High-Value Services

The six POs that chose to lower cost sharing for specialists reported hoping that it would improve access to care and CM/DM for chronic diseases. A PO H representative added that he or she hoped that improving access to specialists would improve outcomes for beneficiaries: "We want to see these members who are chronically ill and have CHF and diabetes go more often to these three specialist types so they don't end up with inpatient hospital visits or don't end up going to the ER unexpectedly."

Four POs included reduced cost sharing for PCP visits as part of their VBID intervention design because they felt that reduced or eliminated copays would help improve access to care.

> Primary care doctors have said that for years: "Why don't you just get rid of primary care co-pays entirely? Make sure that patients will see us." We know that there is a strong correlation between primary care visit rates and lower utilization metrics of inpatient [services and] ER. I've already done those correlations. But it's very hard to make the numbers work if we get rid of primary care co-pays for everybody, it's many millions of dollars. (PO F)

PO E lowered copayments for both specialists and primary care physicians to improve coordination: "We felt like we needed to better align with our specialty providers and then, in turn, that alignment would link back to primary care. . . . It just becomes a better, more solid link" (PO E). Moreover, PO B wanted to use the VBID model to test whether the PO should roll out reduced copayments for PCPs to the rest of their beneficiaries: "So I think on the PCP side that is something that we are piloting. We have got a PBP that also has $0 PCP co-pays. So, this was an opportunity to take that out to one of our biggest plan designs to continue that test."

Although the majority of VBID participants included physician visits, not all of them did so. The POs that did not include either specialist or PCP visits as part of their VBID designs wanted to focus on other aspects of the care pathway. For example, one PO wanted to improve medication adherence. In addition, some POs were concerned about the potential difficulty of communicating the appropriate copayment amount that providers should charge participating beneficiaries at the point of service.

Part D

Only two POs chose to incorporate Part D into their VBID interventions, and only one focused solely on eliminating medication copays. The main reason for choosing a Part D intervention was to improve adherence to chronic disease medications. A PO G representative explained:

> [I]t's important for [beneficiaries] to be taking their medications. So, we wanted to remove any barriers, even if it was a $2 generic co-pay on Tier One. We felt that if we could remove that barrier to that member taking their medication on a regular basis and becoming adherent to their medications, that alone could help reduce ER visits or readmissions.

For PO D, which eliminated copays for specified hypertensive medications for all MA beneficiaries in the PBP, the Part D intervention was also administratively easy to implement. "I truly feel like the Part D intervention made the most sense in terms of just eliminating the copay [for all beneficiaries]. Because we wanted something that allowed us to be able to operationalize in a short amount of time" (PO D). This PO representative felt that if the model test ever ended prematurely, their Part D intervention would be easier to maintain than other types of interventions: "[T]hat would cause a disruption with our members. . . . We wanted to pick an intervention that was financially low risk, and we felt that this one was low on the upside maybe, but very low on the downside."

Even though prescription drug benefits are an easy target for VBID interventions in the commercial sector, only two POs chose to include medications as part of their VBID designs. POs provided four reasons why they did not include Part D in their VBID interventions.

1. **Perceived implementation costs and administrative burden were the primary reasons.** Most POs contract out the management of their pharmacy benefit to a PBM, who negotiates prices with manufacturers and pharmacies, develops the formulary, and pays claims. Several POs said coordinating with the PBM for VBID added a layer of complexity: "That was one of the considerations of why we didn't do drugs because that touches yet another vendor, which would need to incur costs for any implementation" (PO H). Representatives from PO B stated that the cost to administer a VBID benefit from their PBM was prohibitive: "The pharmacy benefit [implementation cost] may have been one to two times the price of implementing the whole VBID program." Finally, PO E representatives were not sure if their PBM had the IT systems to implement the benefit:

   > Our PBM had expressed some concerns, and this ties into the Society of Actuaries' articles from like 2009, where they basically just say configuration systems don't do well with clinically nuanced benefits**.** Even today, I think there's lot of manual processes that go along with that and our PBM basically said that they were unable to support us in this effort.

2. **Some POs felt that their formularies were already designed to support adherence to chronic disease medications.** As a representative from PO A put it, "[o]ur drug cost for generics is $1, so it's just hard to go from $1 to zero. It doesn't make a big difference."
3. **Characteristics of PDPs particular to Medicare Part D's benefit also deterred POs from pursuing Part D interventions.** For example, one PO wanted to implement VBID in just a few segments of one PBP, but Part D PBPs cannot be segmented in the same way as MA PBPs.[1] Additionally, Part D requires that OOP payments for drugs

[1] MA allows POs to "segment" PBPs within their approved service area. This means that the PO can offer different cost-sharing designs or premiums for the same PBP for particular geographic areas within their service area.

follow a structured format.[2] One of the POs using rebates explored integrating Part D into their intervention, but offering a rebate would have required readjudicating claims to accurately reflect the member's true OOP cost. The PBM also would have charged them a fee for each reprocessed claim, making a Part D intervention too expensive for this PO.

4. **One PO representative was concerned about communicating the correct benefit information to the pharmacy at the point of sale:** "From a compliance standpoint, I can guarantee you, as generous as CMS is, there would be high consequences [if] someone had a real medical impact and was not able to get the drugs in a timely way or not able to get the drug at [the] right price, and so on" (PO B).

Diagnostics and/or DME

Two POs included some DME and diagnostic tests specific to the chosen condition largely to remove financial barriers to access. As a PO E representative explained, "[w]e know that patients save their oxygen. . . . If they're supposed to be on four liters, they may turn it back to two so [that] it lasts longer, right?. . . . [Beneficiaries] don't often use their oxygen the way they're supposed to."

High-Value Providers

Only one PO included high-value providers in its VBID design. PO B chose to combine three approaches: reduced cost sharing for high-value providers, reduced cost sharing for beneficiaries fulfilling CM requirements, and provision of supplemental benefits. One PO reported feeling that it could drive better outcomes for beneficiaries with high-value providers: "[We are] trying to make sure that we're sending [beneficiaries] to providers that we believe are really focused on managing diabetes and COPD in a way that we think is right for our members" (PO B).

Providers (primary and specialty) were deemed "high value" if they scored more than 50 points (out of 100) on a four-part quality scale. The scale, which was developed by PO B, included quality metrics and efficiency.

The proposed system awarded points to physician practices based on quality (using external metrics, such as Healthcare Effectiveness Data and Information Set [HEDIS] measures), efficiency (risk-adjusted cost per member), achieving practice change certifications, and whether the practice could implement best-practice care protocols along with the staffing needed to launch these care coordination activities. We describe some of the challenges PO B faced in implementing its quality ranking system in the implementation discussion later in this appendix.

High-value providers were the least popular approach to VBID. Participating POs gave three reasons why they did not want to include high-value providers as part of their VBID designs:

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[2] The standard benefit design for 2018 includes a $405 deductible and 25-percent coinsurance up to $3,750, at which point beneficiaries enter the coverage gap. In the gap, beneficiaries must pay 44 percent of generic drug costs and 35 percent of brand name drug costs until they reach $5,000 in OOP spending. After this point, the beneficiary enters the catastrophic phase, where they pay 5 percent of all drug costs.

1. **POs could not operationalize a definition of high-value providers in time for the initial application.** POs reported that developing such a definition was too complicated and challenging, given the brief window between the model announcement in September 2015 and the January 2016 application deadline: "[W]e wanted to make sure that we have a clear criter[ion] for what a high-value provider was and at that point in time, the criteria were not as clear and it's evolving" (PO C). The model test announcement also encouraged POs to use "independent, external metrics" to develop their definitions (CMMI, 2015a), an approach that added to the complexity of developing a definition in a short time frame:

   > You can't just kind of make up your own internal scoring system for who's high value and who's low value. . . . We had identified some concerns, and I think, ultimately, painted the picture that you can't just pick and choose who's high value. (PO E)

2. **The geographic dispersion of providers, coupled with MA's access requirements, constrained PO selection of high-value providers.** MA's access rules require that benefits be "available and accessible" throughout the PO service area.[3] Meeting these requirements under a high-value provider system was a concern: "So, if we said that only doctors were high value depending upon what geography we put it in, you know, each member has to drive [farther] to get to the high value one" (PO E). A PO D representative explained that they are still exploring the high-value-provider approach, but have similar concerns regarding the access requirements:

   > [T]he challenge there was that the provider groups don't easily match CMS county service areas. So, we would only in one particular county be able to provide a subset of members in that county access to the intervention. So, we were in discussions with the provider [group that] was motivated to do it, but those discussions kind of died on the vine unfortunately. So, we're still talking with that particular provider and may to try to do something in 2019.

3. **One PO reported worries that it did not have a key provider group with which to partner on developing the high-value provider intervention:** "[T]here's a lot of fluctuation around here about providers being purchased by outside entities, and it's just a lot of moving targets" (PO A).

Reduced Cost Sharing for High-Value Services Contingent on Fulfilling Participation Requirements

Seven of the nine POs required beneficiary participation as part of their VBID design. Six required participation in CM/DM as a condition for receiving reduced cost sharing on targeted services. The seventh, PO A, required beneficiaries with diabetes to receive four preventive screenings (HbA1c test, fasting lipid profile, urine analysis, and an eye exam, collectively called the "scorecard") in exchange for rebates on cost sharing incurred for visits to receive these services.

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[3] See the MA guidance on network adequacy (CMS, 2017a).

POs generally viewed CM/DM as the high-value service that they wanted to target because they hypothesized that CM/DM activities can help improve beneficiary- and PO-level outcomes. "I think we want [beneficiaries] to understand that what's at the end of the rainbow is not getting your co-pays waived, it's having better outcomes, living a healthier life, achieving your personal health goals," said a representative of PO G. A representative from PO E similarly noted, "[w]e really believe that this care coordination and care management resource, coupled with removing the barriers around [the] benefit, is important to long-term sustainability."

All of the POs had existing CM programs targeting individuals at high risk for excessive or avoidable utilization, but the programs frequently were not used. POs used reduced or eliminated cost sharing on other services as a carrot to increase participation in CM. A representative of PO F explained:

> [N]ot only did the VBID program allow us to remove a barrier to care, but it also allowed us to put a little bit of an incentive out there for members to participate in our care management program. We know that there are benefits to care management, but I think often selling members on it can be a little challenging because this does require a little bit of extra work on their part.

POs thought that engaging healthier members in CM programs might facilitate intervening earlier in the disease progression process. "I think [our care management program] really has helped some members engage with us who may have not ever wanted to pick up the phone before. For me, that's the most exciting. I think we're getting some different people into care management" (PO F). The same PO F representative also noted that intervening earlier should pay off in the long run:

> [VBID has] identified a group of members that we didn't know too much about . . . because they're not complex at this point in time. We hadn't really touched them. So, it's giving us an opportunity to touch an additional group of people, earlier on in their disease onset, with the hope that the care management education and quarterly follow up for this group, the lighter care management touch, will slow their disease process because they'll be engaged in healthy behaviors.

POs wanted beneficiaries to become more engaged in their own care. PO A required beneficiaries to complete a scorecard to facilitate patient-provider partnerships: "We have used the score card as a way to notify doctors that their members were in need of services and to try to encourage members to get the services that they need." This PO did not report feeling that CM/DM was appropriate for the entire diabetic population, some of whom might be managing the disease just fine on their own. They did report that requiring a set of activities in CM/DM might be too onerous for beneficiaries, which might have decreased the number who agreed to participate.

CM/DM Programs

The types of CM/DM activities offered and the extent of required contacts with the care manager varied across POs. Every PO's CM/DM strategy included activities that could be tailored to beneficiary needs. Activities ranged from (1) weight-loss or smoking-cessation activities typically included in wellness programs, to (2) disease-specific education, including

coaching sessions and medication reconciliation and adherence education, to (3) working with an assigned case manager who helped the beneficiary coordinate care with multiple providers, hospitals, and the PO; provided more-intensive education and counselling; or offered in-home services, such as a home assessment to identify any hazards, specifically those that might increase the likelihood of falls.

POs varied in the number of activities required to receive VBID benefits. The scorecard approach mentioned earlier required the receipt of four preventive services. POs with CM/DM requirements typically asked their beneficiaries to maintain quarterly contact with the CM/DM staff in order to maintain their VBID eligibility, unless the staff felt that more-frequent contact was needed. For example, PO C also required beneficiaries to fill out a health assessment survey as an initial step, a personal health review as a second step, and then encouraged beneficiaries to participate in up to four additional quarterly CM/DM activities. All participating POs stated that they try to tailor CM/DM activities to the beneficiary's needs and they do not require that beneficiaries achieve certain health outcomes.

Nearly all of the POs used existing CM/DM infrastructures to implement their VBID interventions. CM/DM staff were usually trained in motivational interviewing techniques and were not necessarily nurses or other trained medical staff. For higher-risk beneficiaries, POs often used more highly trained staff, such as registered nurses or social workers, to assist beneficiaries. Depending on the PO, CM/DM staff might be embedded within practices to help beneficiaries face-to-face and interface directly with providers.

CM/DM activities are delivered by telephone, in-person, or via some combination of the two. POs would accommodate beneficiaries who found it difficult to travel or use the telephone by offering in-home visits. PO G explained:

> [The in-home assessment is] a visit from a nurse practitioner that spans [a] couple, [or a] few hours in the home taking a comprehensive medical history, doing a physical examination, medication reconciliation, small risk evaluations—really assessing the home environment, the caregiver environment. We find it to be of great value in identifying conditions and situations that would present challenges to their lives. Having that be a required component gives us a tremendous window into their living situation.

A growing number of provider groups conduct their own CM/DM activities. Some POs found it challenging to decide whether to count those activities as VBID CM/DM activities, noting that it can be confusing for the beneficiary to receive calls or visits from CM/DM staff from both the provider's office and the PO. The POs are working to better coordinate these activities.

Rebates

Two POs with participation requirements chose to implement rebates for incurred cost sharing rather than reducing cost sharing at the point of service. Respondents from these two POs felt that rebates were easier to administer because they do not require interactions with providers. They also thought rebates were more rewarding for beneficiaries.

A respondent from PO C stated that rebates are better motivators for beneficiaries to change their health behaviors: "You feel like you've been rewarded, you feel like you've gotten something even though you've actually spent it in cost sharing. Beneficiaries feel like they've gotten something. And then that keeps them engaged further and further."

Supplemental Benefits

Two POs chose to include supplemental benefits as part of their interventions. PO B included supplemental benefits to reduce any nonclinical barriers to accessing care, such as transportation, which can be a problem for elderly or disabled beneficiaries if they are dependent on family members or public transportation. "[W]e had one person tell us how she's staying with [VBID] for the transportation [benefit]. Every time she went somewhere, she was paying at least 10 bucks and [in addition, she felt that she] had to take her family to dinner. So now she's just paying 10 bucks for a round trip" (PO B.) PO I also targeted supplemental benefits, but it did not participate in our interviews.

The POs that did not include supplemental benefits as part of their VBID designs were largely concerned about the operational or implementation challenges pertaining to specific supplemental benefits. Indeed, several POs mentioned transportation services or meal services as potentially interesting supplemental benefits, but had not included them in their interventions because of operational considerations, such as being in a rural area. A representative from PO E observed: "[We have] a strong desire to add transportation benefits in some way, shape, or form. But, we don't have taxis; we don't have Ubers; and there is really no public transit system around. So, there's just a lot of operational challenges that will prevent us from doing any type of transportation system."

Beneficiary Participation in the VBID Model Test

VBID Uptake Among Beneficiaries

Two POs without participation requirements reported high levels of beneficiary participation in VBID, with very few beneficiaries opting out of the program: "The upfront enrollment worked really smoothly for us to get the members in," said respondents from PO D. A representative from PO D added: "Out of all people that received notice of VBID . . . I would say only one person opted out."

POs with participation requirements reported mixed experiences with VBID because they had either more participants than expected or fewer. To illustrate, a respondent from PO B said that VBID participation exceeded their expectations:

> We more than doubled our expectation for how many members will be engaged in the program. . . . For me, that's a real sign that in the past, people didn't necessarily choose to engage on a regular basis with their care. . . . I think pairing benefits with that engagement gave them a reason to have the discussion for the first time in a way that is very concrete.

In contrast, PO G stated that only about one-third of the eligible beneficiaries had enrolled in VBID: "[G]iven that the VBID program design offers real legitimate financial advantages to the beneficiary, things like I can go see my cardiologist for free as opposed to paying a $40 co-pay, I think that the teams thought that we would have a higher participation rate."

Two POs cited possible operational challenges that contributed to low beneficiary participation. PO E struggled with having accurate contact information for beneficiaries: "I think that by April of this year maybe we were only able to contact roughly three-quarters of the people that were supposed to be targeted." PO C thought that its initial required health assessment may have been too burdensome for beneficiaries, which might have caused a number of

them to not engage from the start. "[T]he reason we did that as a first step, and we said we want the members to raise their hand, is because we are using this [enrollment into VBID] as a member engagement tool. . . . We didn't want to auto-enroll people into the program because [engagement], I think, is a driver for behavior change" (PO C). After the surveys went out, this PO learned that it was too long from beneficiaries' perspectives and that they needed to shorten it for next year. "We realized that our biggest drop off was from the identification [of eligible beneficiaries to those completing the self-assessment survey]" (PO C).

Reasons for Opting Out

All POs allowed VBID-participating beneficiaries to opt out at any time, or to re-enter if they have opted out, by calling the PO. Nonetheless, POs reported that very few beneficiaries opted out. According to our interviewees, beneficiaries gave two main reasons for opting out: not wanting to be labelled as having a certain disease and not wanting to be tracked or followed as part of CM/DM.

Some interviewees thought that beneficiaries' decisions not to participate stemmed from their low levels of health literacy. Several POs reported hearing from beneficiaries that they did not think of themselves as having the eligible condition: "[W]e saw some members, kind of, almost in denial about their conditions: 'Oh, I don't have diabetes; I have a blood sugar issue, so I shouldn't be in this program'" (PO H). A participant from another PO stated that beneficiaries may not like to think of themselves as having a certain illness: "[T]hey don't want to be targeted as someone with diabetes. Like with anything else, if you have a condition and if you're not comfortable with that condition, or you've just been diagnosed, you might not want to be part of a program that actually says that you have it" (PO A).

Several POs noted that beneficiaries did not want to be tracked by the PO. As a representative of PO F explained, "[we have] four documented responses where the members weren't pleased about being auto-enrolled into the program for the simple fact that they want to be the controller of their own health care information, what plan they are on, and what plan they're not on."

Other reasons for not participating included wanting to pay copayments, being afraid of changing benefits, and voicing concerns over eligibility for other programs. A representative of PO D said that one of their members had opted out because she wanted to pay her copayments: "She wanted to pay her fair share because she could afford to." A PO H representative stated that some beneficiaries just did not want any changes to their benefits: "[They] were kind of anxious for any kind of change. 'I'm happy with my plan. Don't change anything. I don't want to be put in extra programs.'" PO F noted that a small number of beneficiaries wanted to opt out because having the increased income would affect their eligibility for housing programs:

> One thing that was brought up . . . that was not something that I think anyone had thought up before was people who are enrolling in the program, their health care costs are going down, and some of them are claiming at least that it's affecting their eligibility for other benefits . . . like housing and things like that. I am not sure of the validity of those concerns, but it's something that at least was reported to us from care management.

POs noted that they try to convince beneficiaries not to opt out, and predicted that beneficiaries will choose to opt back in once they realize the full benefits of the program. "[W]hat we found since the reimbursement checks have gone out, [is that] we actually see a spike in our

people who are opting back in. So, I don't know if that is word-of-mouth or if it is members talking, but we do see members opting [back] in" (PO C).

Early Implementation Experiences

Overall Perceptions of Implementation

POs had different perspectives about the ease of implementation. One-half of the VBID participants considered implementation to be a "heavy lift"; the other half felt that the lift was minimal. All POs who considered VBID implementation to be burdensome required VBID-eligible beneficiaries to participate in CM/DM.

Heavy Lift

Two of the four POs that viewed VBID implementation as burdensome compared it to "launching a new product" (PO B) or "doing a startup" (PO F). Both of these POs developed elaborate workflow diagrams that depicted how departments would identify, track, and manage the benefits for VBID-participating beneficiaries and that delineated relationships between departments affected by the changes required to implement VBID.

According to a PO B representative, the VBID implementation burden largely stemmed from the need to track the participation status of VBID-eligible beneficiaries. Beneficiary management in VBID is similar to how commercial insurers handle this issue. One representative explained:

> One of the fundamental things about Medicare is that for the most part, you don't have anyone moving in and out of a plan during the year. So, January 1 to [December 31], if you signed up with this plan, unless you have some special enrollment period or you die, you are in that plan. We're much more used to on our employer group basis, people may be coming in and out, because they get hired or fired . . . and VBID kind of introduces people coming in and out of this process. (PO B)

The burden of implementing VBID can be attributed to the need to coordinate the efforts of multiple departments involved in implementation. As a representative of PO F described:

> I got flow charts of the implementation plan and all the departments that were affected, what they had to do, and how many meetings they had to have over a six- to eight-month period for implementation. My conclusion from that is anything we need to do is hard. . . . I would not have anticipated seven departments having the work flows affected and all the coordination between decisions made by each department.

Moreover, the novelty of the VBID intervention, which gave POs flexibility in designing their benefit structures, meant that POs had to spend a lot of time and resources to implement VBID according to CMS model test rules. A representative from PO E explained:

> I mean it was a lift because it's not something that we have normally done. So, it was new, and it was the first time. We're still trying to make sure we are administering a program correctly. I would not suggest that we feel like this is at a point where we're probably saving anybody any money with the amount of research we are putting behind it.

Another PO that viewed VBID implementation as "a fairly significant lift" cited IT system changes, new workflow creation, and staff training as factors that made implementation burdensome:

> It was a fairly significant lift. We obviously [had] IT cost associated with implementing it. We needed to have the work done from our IT teams. Then we had to update or create all the workflows and educate the teams on the workflows, because it's not just the case management team, it's all of our shared services. So, our member services teams, our claims teams, provider teams, the PBMs as well. So there had to be workflows done for anyone across the organization that [may be] touching one of the VBID members. (PO G)

Minimal Lift

At the other end of the VBID implementation spectrum, four POs felt that implementation was not burdensome and required a "minimal lift."

> Honestly, I've been implementing projects for some years . . . this is one of the most flawless projects that I've implemented. There weren't any problems with the PBM. . . . I would say that once the light turned on, it was flawless, it was seamless—there weren't any issues, there weren't any concerns . . . nothing broke, people weren't calling angry about their copays. (PO D)

However, even POs that thought implementation was easy cited beneficiary enrollment as an area that required their focus and attention "because you now have to add that [VBID] code, which is not a huge lift, but it changes processes to make sure it is working" (PO A).

POs suggested three reasons why VBID implementation was fairly easy. First, two POs cited their reliance on VBID intervention components originally developed for their commercial lines of business. A representative from PO C explained: "I'd say we were lucky that the commercial product has an incentive platform that we were able to utilize, so that took a lot of the administrative burden." Similarly, a representative from PO A stated that the use of scorecards "is a component of our existing programs." Second, as noted earlier, PO H designed VBID with administrative costs in mind, which helped them implement the intervention without major problems.

> In the time that [VBID] came up, we had a lot of budgets locked down in terms of what dollars were available to build things. . . . A lot of the VBID is being managed by existing resources. We didn't hire more resources to do it. Well, a lot of that was really by design, and the VBID demonstration that we elected to pursue was because we knew we were probably going to be in a position to need to manage something with existing resources. (PO H)

Finally, a representative of PO D cited his or her previous implementation experience and a step-by-step approach to implementation: "I treated this as another project that we implemented and approached it in that way, meaning that we reviewed the guidance, we established what the rules were, we implemented what we needed to do, and we documented it in [the] way we would document any other process."

Implementation Barriers

Although half of participating POs thought that their VBID implementation went smoothly, all of them mentioned at least some implementation challenges. We discuss six of the most commonly encountered challenges in more detail in the sections below.

Establishing New Workflows and Lines of Communication

Four POs had to create new workflows and/or lines of communication to identify and track benefits of VBID-eligible and VBID-participating beneficiaries because doing so required participation of staff from multiple departments.

> There are many departments that are involved in this . . . our enrollment department is getting these people enrolled in the right divisions . . . or different categories so they can be identified when they are coming through in claims. Then our marketing team makes sure that all this is communicated, so [that] the letters . . . when [beneficiaries] are eligible, when they are not eligible, when they dis-enroll [are sent out on time]. Also [beneficiaries] receive a benefit card every quarter that they can present at their doctors' office visits so that their PCPs know that they have the VBID benefits. We have marketing involved, and we have our case management department involved. . . . Nurses are assigned to these patients, and they are working with them one-on-one to make sure they understand their conditions (PO E).

In some instances, departments involved in the VBID model test did not have much experience working together to design or implement an intervention. Therefore, they had to learn how other departments work, what their role in the VBID intervention would be, and how the information should be shared between the departments that typically do not interact. A representative of PO E explained:

> Generally, we don't have nurses involved in benefits. . . . Their role is to understand what the member needs clinically. Now VBID is asking that they understand the benefits, so that's education for them. . . . The enrollment staff know how to enroll a member, get him in the right program, make sure transactions [go] to CMS. But in this case, they need to understand what is happening in the medical management section of it so they can understand how it is going to affect them downstream.

In some instances, POs had to coordinate not only with their own internal departments, but also with outside vendors, including companies that manage prescription drug benefits, print beneficiary ID cards, or manage dental benefits. This was particularly challenging for PO B, which combined multiple VBID approaches, included dental services as a supplementary benefit, and required beneficiaries to participate in CM/DM. A representative from PO B remarked:

> Every time [VBID-eligible beneficiaries change their VBID participation status based on their completion of required CM activities, their internal VBID] group number changes, and an ID card is updated and sent back. So, when they go into VBID and when they come back [out] of VBID if there are any compulsory changes, they are getting new ID cards. So, coordinating with that vendor system to make sure that the ID card [is] generated appropriately [can be a challenge]. Then we also have marketing vendors involved [who send] VBID benefit kits. . . . Another group we had to interact with [was a] dental company. [We had

> to] talk to them at the beginning of the year to say, "All right, here is the plan for this PBP, and here's the plan for this PBP, and that's all the communication we needed."

Similarly, both of the POs that offered Part D benefits had to work with their PBMs to ensure smooth operation of the VBID model test. A representative from PO D explained, "[w]e worked together through how we would execute it, and we incorporated it into our annual testing plan and process. It did enhance our workload in terms of testing review, but everything seemed to go fine."

Managing Two Benefits Packages for VBID Beneficiaries

All participating POs had to administer two sets of benefits within their VBID-participating PBPs. This is a completely new concept for their Medicare lines of business. Typically, all beneficiaries enrolled in a given PBP would have the same level of benefits, regardless of their clinical condition or participation in CM/DM activities, and POs have built their systems around that concept. Waiving benefit uniformity required a fundamental change in benefit administration. One representative from PO D described this shift:

> Normally a benefit design is structured around a plan, and creating a subset of membership with a different benefit design based on diagnosis, logistically, was a bit of a challenge to think through. We were able to execute it, and I'm very comfortable with the way we did it, but it's not consistent with how we do the rest of our business. . . . VBID is a different model that has nothing to do with the plan you picked. It has to do with the diagnosis that you have.

In addition to managing two sets of benefits within the same PBP, implementation also required POs to develop a way to move beneficiaries out of the pool of VBID-participating beneficiaries if they wanted to stop participating. The need to move beneficiaries from one group to another was of particular concern to POs that required beneficiaries to participate in CM/DM to receive VBID benefits, as a representative from PO G explained:

> We had to put a different process in place to meet the requirement that we identify who was eligible for the program but had not yet enrolled into the program. CMMI calls those the "unearned" population. . . . We had to put in place extra steps within our case management team, in our enrollment area to identify individuals who have enrolled into the PBPs, who then have a diagnosis of CHF, and get them moved into that unearned group. Additionally, if they agree to participate in the program—our program is an opt-in, so the members are not automatically enrolled once they are identified as CHF members—they are not automatically given the cost share reduction. They have to agree to participate in our comprehensive case management program. Once they do it, they are eligible for the cost share reduction. So, it's layering in that process and ensuring that the members move smoothly across what I'll call "standard enrollment," to "unearned," to what CMS called the "earned" group.

Moving beneficiaries from one group to another proved to be logistically challenging; it was of particular concern to representatives of POs that decided not to participate in VBID (see Chapter Two). The majority of participating POs essentially "segmented" beneficiaries or created separate internal groups in their IT systems to flag VBID participants. A representative from PO C explained this segmentation process:

> From an administration standpoint, we made a really good decision really early on. . . . We actually segmented this membership. We duplicated the existing structure of our benefits and made a separate benefit structure . . . separate might not be the right word, but that's how we have a dedicated line for these members. I think you can't underestimate the ability to separate these members from your existing membership, even though it is not a true separation in any fashion; it is just a quick indication. It is easy for member services to see that this particular member is part of the VBID program.

A representative from PO E explained the creation of a separate VBID group:

> We identify [VBID-eligible] members on a monthly basis based on claims data and some of the supplemental data. Once these members are identified, they are moved into what we refer to as "VBID-specific groups." They are kind of separated out from the non-VBID members. . . . Then all these newly identified VBID members would receive the notice of VBID . . . they'll also receive a new ID card. The ID card has the word "varies" in front of the specialist co-pay instead of like a $14 co-pay or $10 co-pay. What that does is the "varies" helps at point of service when the member goes to visit their specialist, that will prompt the person at the front desk to look up their co-pay in our system that lists the [correct] co-pay [for a given beneficiary].

Creating VBID flags within internal IT systems allowed participating POs to quickly identify VBID-eligible beneficiaries and report their participation status to CMS, helping to address the "plan within a plan" challenge. To quote a representative from PO B, "[w]e do have flags, so we know which members are in VBID. So, if a VBID member comes to somebody in our disease management program . . . they know that they are eligible for VBID and they are enrolled in our VBID program."

According to one representative from PO E, using this approach to identify and track VBID beneficiaries might be feasible in Medicare only; it might not be applicable to employer-sponsored commercial VBID POs because of the way beneficiaries are enrolled in these POs.

> In Medicare, you enroll an individual as an individual. So, I am both the subscriber and the only member on that contract. If you wanted to move me from a division that charged $5 for an office visit to a benefit designed to charge $0 for an office visit, you can do that and there is no impact on others [on my contract]. In the [commercial] context where I am the subscriber, but my wife and four kids are members on my contract, if you move me into that division where the office co-pay went from $5 to $0, you have now also moved [my dependents'] benefit from $5 to $0. You can't segregate me from the rest of the people on my contract.

Another approach to keeping track of separate benefit structures for VBID beneficiaries was to change the benefit structure for all beneficiaries. This approach was unique to PO D, which identified eligible beneficiaries using Part D claims:

> The way we set [VBID] up is actually everybody gets the $0 co-pay, because it's based on the drug sell. So, once they fill a drug, they are eligible for the $0 co-pay until they opt out . . . operationally it's easier, it's a better operational process for us to do it this way. So, everybody starts in a VBID plan until they opt out. We still use the medical and the drug plan data to understand who we need to mail the VBID notification to.

PO D tracked separate benefits for beneficiaries who opted out of the VBID model test. However, only a few beneficiaries chose to do so.

Managing Parallel Benefit Structures Stressed IT Systems

The need to create different benefits structures for VBID-participating and nonparticipating beneficiaries within the same PBP also placed substantial demands on POs' IT systems. According to a representative from PO G, they did a lot of IT work "to support the difference in cost share levels because our Medicare systems are built per the rules [that require POs to] only offer the same co-pay for all individuals in contract PBPs. We had to undo that logic."

Some POs had to modify multiple systems to automate management of the VBID enrollment and benefits:

> I think it was about 15 different applications that were touched throughout all of this. So, we had to make changes system-wise, enterprise-wise, which of course when you have ongoing systems, you have to ensure the pieces align appropriately. So, I started in November, so I believe the work for the project started some time earlier in the year, maybe August. (PO B)

POs that required CM/DM participation had to update their CM/DM systems to handle additional tasks. "Prior to the VBID model, our care management system never really managed enrollment or drove enrollment or your benefit package, whereas now VBID is driving enrollment changes" (PO B).

The main infrastructure investments that POs had to make required creating links between systems that did not previously communicate with each other. Another representative of PO B explained:

> [We had to make sure that] systems that had not necessarily talked to each other in that way before now have to communicate seamlessly. So, the member identification comes out of diagnosis, which now needs to be [communicated to] enrollment and therefore ID cards and all of those processes [need to be completed]. Then, if someone is opting in and out, actually [we] now need to feed [this information to] a care management system, not just whether someone is in a plan and eligible for [our PO] or not, but if they're actually eligible or not for the VBID. [This is an] additional touch. If someone stops talking to you, that system now needs to talk to our eligibility system to say this person is no longer involved. So, I wouldn't say there was a single smoking gun. (PO B)

Several POs reported that some enrollment- and claims-related processes had to be performed manually, even after investments in IT systems. A representative from PO E explained:

> It was a big manual process for our enrollment department . . . because they have to manually move the member [into VBID]. We do that on a weekly basis, pull data, send it to them, here's the people that need to go. We had to set up extra divisions [within our IT systems] because we needed to isolate these people in our system, so it required some extra configuration.

Similarly, identifying correct copays for some POs had to be done manually at the time claims were being processed:

> We want to make sure that the cost sharing is applied appropriately. . . . There are system limitations in regards to our claim system. . . . There is some manual work to make sure that we were not charging a co-pay when there shouldn't be [one]. . . . We're looking at the claim and removing cost sharing to make sure that there is no double co-pay for the member. (PO F)

Communication and Marketing Restrictions

POs were required to notify beneficiaries of their VBID benefits as soon as they became eligible for the program. Some POs waited until January 2017 to inform eligible members about VBID benefits; others sent VBID information with annual mailings before the open enrollment period or shortly after. Moreover, VBID marketing and communications requirements restricted participating POs from advertising their VBID benefits to prospective beneficiaries or from publicly discussing their participation in the model test. POs reported feeling that these communication and marketing restrictions were burdensome.

Communication restrictions created confusion about VBID benefits among eligible beneficiaries because several POs did not inform beneficiaries about the new benefits until January 2017, several months after the ANOC and EOC materials had been sent. A representative of PO A explained:

> [VBID] is a hidden benefit. We can't promote it. And we can only promote it to the members by sending them a letter. Our fear is that people don't know enough about it because it's just not in the material that [they're used to looking at—the ANOC/EOC]. We would like people to know more about it because it's so hidden. . . . It's a secret.

Moreover, beneficiaries are used to receiving all the information about their benefits in their ANOC/EOC. Getting another letter in January confused beneficiaries and many of them threw it out as junk mail, according to representatives of PO B. These participants described a mismatch in the timing of when notices of VBID benefits were sent out and when care managers started calling beneficiaries to invite them to participate in VBID:

> We couldn't send out any mailings prior to [January 1]. We started making the calls at the beginning of the year. We were running into some complications because the members had no idea what we were talking about. . . . There was total confusion. We were going back and we were asked for things we [already] mailed. . . . [Even if beneficiaries received] the communication, they threw it away.

VBID marketing restrictions also limited POs' abilities to test their communication and marketing materials before sending them to beneficiaries. A representative of PO C explained:

> You can't do it to your target audience. We couldn't actually say, okay, this is the target audience, let's do some testing, which is normally what you would do with a marketing program. So, instead, we did a lot of market research about testing that other people had done.

One PO representative reported not being able to answer questions from the media about VBID:

> We got a number of requests [from the media]; however, based on CMS's regulations, we weren't really able to talk about the program. This was definitely a challenge and not so much on the [PO] side, but probably more so on the media side, as they were asking for information that we could not release. We really can't market the VBID programs to our members or anyone. [PO E]

Poor Health Literacy Among Some Beneficiaries

At least five POs reported having some beneficiaries who did not understand why they were selected to participate in this program and what additional benefits they would receive. Some beneficiaries did not agree that they had a particular diagnosis that made them eligible to receive VBID benefits and therefore either wanted to confirm their eligibility or wanted to opt out of VBID. A representative from PO B explained:

> We've had some members who have expressed concern over both diabetes and COPD and [the fact that] they've been flagged . . . I think in some cases, they will [say,] "Well, yeah, I use [a] rescue inhaler four times a week. Can I do this? But I don't have COPD." And we would call that an opt-out if a member says, "I don't have this, I don't want to be a part of the program," we will let them disenroll and if at some point their doctor has a conversation and they decide that they do want to engage with us as a diabetic or COPD member, they're welcome to do so.

Indeed, POs found it surprising that beneficiaries taking medication for diabetes, for example, were not aware that they had diabetes. A representative from PO C explained:

> On this confusion of conditions, that's really not something that I had ever thought about. It is really unexpected news to me. The first time they've seen it is on the packet that they've received saying, you know, you are eligible because you . . . have one of these conditions or a combination of these conditions. . . . And the confusion led them to call the member services to clarify that they don't have the diabetes. . . . This is what the member would say, "I only take a pill for my sugar. I don't take any injections." So, they don't feel that they have diabetes because they are on oral medication for their diabetes and they are not on an insulin.

POs said that they tried to confirm diagnoses with their medical informatics teams and educate beneficiaries, but some beneficiaries still declined to participate.

Some POs also found it difficult to explain VBID and VBID-specific benefits to their beneficiaries. Representatives from PO B said that they spent considerable time educating beneficiaries on their benefits to illustrate how benefits are different under VBID: "[S]o I think just the step one is making sure people are aware of what VBID is. Like many of us, insurance is not the highest interest category. It is for me, but we're geeks like that. So, I think for a lot of people, they might not have had a very good understanding of where their benefits were to begin with."

Identifying Providers or Services Eligible for Reduced Cost Sharing

A few of the POs highlighted issues with identifying the types of providers or specific visits that were eligible for reduced cost sharing as part of their VBID interventions. One PO had

challenges in identifying high-value providers as part of its intervention; two other POs had difficulty identifying the full range of providers or visit types eligible for reduced cost sharing.

PO B was the only participating PO that chose to include high-value providers in its VBID intervention design. Representatives said that their original approach to defining high-value providers was dependent on certain quality metrics and other practice certification information that they thought would be available: "In the proposal, we set out a very good theoretical framework for a section of quality of providers, but it was stuff that we knew wasn't available when we did it, but we expect[ed] it to be available by the time of implementation." However, much of the data did not materialize and the definition had to be adjusted to accommodate available data. The PO B representative continued:

> [I]t's eas[ier] to [use the definition of high-value providers] with some types of providers than others. So for PCPs, we had a good information base, but of course for specialist providers, it's a bit more tricky. . . . I always pick on podiatrists for this—they don't have quality measures for podiatrists. . . . [So we made] them all high-value. . . . If someone needs, especially a diabetic, to go [to a podiatrist], we would rather not create any barriers to access at this point. . . . One of the things we really didn't want to do was to start giving people doubts about the VBID program by saying, "Well, only a small section of the specialists are available even if we believe those are the highest quality."

PO B also encountered this issue with ensuring access to care: "We wanted to make sure the program was as accessible as possible for members." This PO needed to have enough providers of certain types to be able to rank them according to quality, yet still provide access. PO B found that, for some specialists, there were not enough providers throughout the service area to be able to create a high-value distinction because not enough beneficiaries would have access to the specialist type. PO B classified most or all of the specialists in certain categories (e.g., podiatrists) as high-value providers to solve this problem. PO B was also uncertain about whether beneficiaries would actually switch to the high-value providers: "It's really hard to convince anyone to switch providers, but we have had beneficiaries call in to say, 'I'm interested in the high-value provider, help me find one.'" PO B representatives noted that the reasons beneficiaries change providers depend on such factors as history with their current provider, provider locations, and wait times.

Another challenge related to provider identification concerned multidisciplinary practices that include PCPs and specialists. Specialists in such practices often bill not as cardiologists or rheumatologists, but rather using multidisciplinary billing codes. Not billing as a cardiology or rheumatology visit means that a VBID beneficiary might be charged the wrong copayment. A representative of PO H explained:

> We needed to work with our claims vendor on how multi-specialty providers are able to identify cardiologists, endocrinologists, and podiatrists that may be included under the bigger category of multi-specialty. . . . What could happen is you could have a multi-specialty group that could employ PCPs, they could also have cardiologists. So, when those providers are actually in our provider file, the specialty type is multi-specialty. When a provider bills, he needs to bill both the multi-specialty and his specific specialty code. In this instance, he was acting as a cardiologist. . . . We have to make sure that for multi-specialty, the lower co-pay is being taken if [a provider is] acting as a cardiologist for [the] member that is part of VBID.

PO E noted that beneficiaries do not necessarily distinguish provider types in the same way a health insurer would. Beneficiaries expected that their visits to their "cardiologist" should have reduced cost sharing, but it may not have done so if the PO had not included the provider in its definition of a cardiologist eligible for reduced cost sharing:

> [W]e would have a definition of cardiologist, but there's many types of cardiologists. You have a cardiac surgeon, you can have an interventional cardiologist. . . . But to the member, if they're having a heart issue, they go to a cardiologist. They don't care whether it's one who does surgery. So, somebody that has COPD may have seen a cardiac surgeon at one point, but then they're always followed by that person. So, they don't change cardiologists, so that's confusing to the member. (PO E)

Implementation Facilitators

According to the representatives of participating POs, four factors facilitated VBID implementation: simple and easy-to-implement intervention designs that rely on existing resources, cross-departmental collaboration, support of VBID project leadership, and open lines of communication with CMS.

Simple, Easy-to-Implement Intervention Designs

POs with simple VBID designs generally reported fewer implementation challenges. Indeed, several POs reported that they designed their VBID interventions with complexity in mind, as a representative from PO D explained:

> We've been a longtime advocate to CMS for its value-based design benefit, but we also wanted to make sure that we were doing something that was manageable within our systems and manageable administratively and also something that we could understand the impact on and then expand the products.

Several POs said that they deliberately designed their VBID interventions so that they would not require substantial additional investments. A representative of PO A explained: "We needed to come up with something that would not add additional resources and cost to the actual program that we have now." As one respondent noted, "[c]ertainly, the cost of implementation was a consideration in the design in the first place" (PO H).

POs relied on existing resources where possible, including CM/DM programs, processes used in commercial lines of business, and staff. For example, PO A said that their use of scorecards "wasn't completely new, which was a nice thing. Whenever you can piggy back on what you already have, it's kind of a bonus in reality." PO C representatives reported using quarterly copay reimbursement procedures, which were originally developed for their commercial line of business to incentivize the behavior change in beneficiaries.

POs A and E reported repurposing existing staff to implement VBID. However, this required the POs to invest in training these staff members. To use the words of a representative of PO C, "[t]raining was a big component of [our VBID implementation]. We make sure that we really touch the key areas: member services, enrollment, care management, complaints and grievances." When asked to comment on the implementation costs, a representative of PO A stated that they were not high, but required staff redeployment:

> Overall, most of the spend, ninety cents on every dollar, is going into medical care. The administrative costs, if you're at ten percent and you are adding a little here and there, we do not think there is as much additional costs from doing the program. We do think you might be redeploying some of the medical staff to spend a little bit more time with these people, but it was not significant enough to make a big deal about it.

Cross-Departmental Collaboration

Most POs reported feeling that staff who would be managing the VBID benefits should participate in the VBID design and implementation. Doing so facilitated implementation of the intervention. As a representative of PO B put it, "[w]e touched every area of this company." According to a representative of PO D, VBID implementation required "having representatives of the Medicare operations, pharmacy operations, Medicare markets products, [and] the risk assessment team at the table." Such cross-functional engagement encouraged transparency between departments. "One of the biggest things that made the project better," a representative of PO E said, "was just being open and transparent between the teams, instead of working in silos. It's crucial to the success of this [intervention]."

The implementation success was also predicated on the efficiency of the processes used to facilitate the work of these cross-functional teams: "[The process] was managed pretty well in terms of agendas, notes, really holding folks accountable and productive. It's a combination of the folks and how it's managed, but it kind of goes hand in hand" (PO D). To make VBID-related decisions, representatives of PO B sat "down with everyone involved with all the different teams, all the different areas and kind of agree[d] on" the decisions they were making. To facilitate information exchange between departments, PO B created a Sharepoint site to house all VBID-related communication.

Finally, according to a representative of PO A, each department had to own VBID: "Every department took their piece and really delved in to make sure that they understood exactly what their elements were, what they're responsible for, and how to implement it. And they're still working towards making sure that that's happening."

Support of VBID Project Leadership

The support of executive leadership was a key driver of participation in the VBID model test and later implementation. "Many of the senior leaders have done pilots for CMS before, and I will say all immediately recognized the opportunity . . . to have a direct influence on where this was headed in the future," noted a PO B representative.

In addition to key executive leadership, another implementation facilitator discussed by participating POs was having either a dedicated VBID project leader or a VBID project management team with dedicated time for the project. To illustrate, PO A had a VBID project leader and an associate who jointly developed their VBID application and "worked with all of the departments to build the application." They managed the process to make sure that the departments did what they were supposed to do. Other POs had VBID project management teams that were responsible for the VBID application, design, and implementation: "We had a project management team for this specifically . . . [s]o that [information about VBID] was pretty easily communicated through all of the departments. Each department has individual stakeholders that attended weekly meetings. . . . There were weekly meetings set up just to make sure everyone is on the same page."

According to a VBID project manager from PO D, the process of preparing for the VBID kick-off required a lot of dedication and time, which paid off once the intervention began:

> It really started heating up between August and December [2016]. A good 50 percent of my time was spent on it. . . . I really nurtured it. I really didn't want it to break. . . . It had a lot of risk, because if you didn't nurture it, it could've gone horribly. I did spend a good amount of time personally on it. I had an associate on my team [who spent an] equal amount of time [on it]. . . . I was running the project plan, the meeting minutes, the agendas, follow-ups. I was helping with the documentation of the [VBID notice]. All that stuff that goes along with it as well.

Open Lines of Communication with CMS

Because VBID is a new idea for MA, POs had a lot of questions about what they could and could not do during the VBID design and implementation processes. All of the POs appreciated having open lines of communication with CMS and CMS's timeliness in responding to their questions, either by email or telephone. A representative of PO D explained:

> I was playing project manager, expert, and it was just me. I was doing all types of stuff on top of that. So, because it was so new, and I didn't have all the answers. . . . CMS had a mailbox to ask questions to—if you had very complex questions, and they were very responsive. So, we were able to get any questions that we didn't know from the guidance [answered] relatively quickly.

Given the short period of time that POs had to implement their VBID designs, receiving responses to questions quickly was greatly appreciated:

> Like I said, anything that we had questions about, CMMI got right back to us. We had the transaction codes and wanted to make sure that we were sending transactions back and forth correctly to CMS. We got that straightened out in the very beginning. You want to be clear if you're starting something new, to make sure that you're understanding everything. (PO A)

Expected Outcomes

Overall, POs expected that the VBID components they had selected would reduce barriers to receiving care and improve the coordination and management of targeted conditions, subsequently increasing beneficiaries' use of high-value services (e.g., specialty care visits) and reducing the use of high-cost, low-value care (e.g., unnecessary ED visits and hospital stays). They expected achievement of these proximal outcomes would then help participating POs improve their beneficiary health status, care quality, and beneficiary experiences, as well as lower POs' health care spending. Indeed, the underlying rationale for any PO's design decision was to ultimately achieve better clinical, quality, and—consequently—cost outcomes. "We are tailoring these plans and benefits to try to get better clinical outcomes and therefore better cost outcomes," said a representative of PO G. Improved health status and better care quality may, in turn, influence utilization of the services.

Intervention Mechanisms

We learned from our interviews that there are two mechanisms through which the VBID intervention is expected to lead to desired outcomes: (1) the reduction of barriers to care and (2) increased engagement in managing selected medical conditions. Both mechanisms help explain how the intervention components are expected to affect both the proximal and distal outcomes.

Six POs described their expectation that by lowering copays for high-value services and providers and/or offering supplemental benefits they are removing the cost barrier to seeking care, which would increase the utilization of such high-value services as primary care visits, specialty provider visits, or prescription drugs. In turn, this should decrease the use of low-value services, such as emergency room visits and inpatient hospital stays. As a representative from PO F explained: "[A] more short-term impact . . . [is that] the PCP visits and specialist visits would increase if the assumption is that the co-pays might be a barrier." Similarly, the expectation is that VBID-participating beneficiaries would become more educated on the benefits of going to their primary care physicians or specialists (high-value service for routine care) instead of going to an emergency room (low-value service for routine care):

> Hopefully next year we'll be able to see that as a result of this behavior change where they think of their PCP and the endocrinologist for their condition before they go to the ER or before they just get hospitalized, you know, hopefully we can prevent the bigger problems. And they will think, "If something happens or I have something coming up, I'm going to go see my PCP. They just did my test a month ago. Let's just keep up with the PCP." That's why we're hoping that there will be somebody overseeing [the beneficiaries] for the remainder of the year. (PO A)

For many POs, the lower copayments were not the sole mechanism to improve the utilization of high-value services (proximal outcome) and therefore improve the distal outcomes of health or spending. Awareness and management of chronic conditions are the reasons many POs included CM/DM as a high-value service they offer as part of their VBID interventions. One representative of PO F noted:

> It's not just about getting people a reduced co-pay to come into the office, but it really is getting them more engaged in their health. . . . I mean, we know that there are benefits to care management, but I think often selling members on it can be a little challenging because this does require a little bit of extra work on their part to engage with our care managers and go through whatever program they're put into, and this VBID program allowed us to sort of put a little incentive out there for them to participate.

PO B added that "the magic of VBID" is the "human touch" of care managers who can encourage beneficiaries to take better care of their own health.

Proximal Outcomes

Although initial results of the quantitative evaluation of the VBID model test will not be available until 2019 because of the lag in claims data, POs we interviewed reported feeling that this intervention is progressing well and has already positively affected utilization of targeted services. Some interviewees cited anecdotal evidence suggesting that VBID is already helping beneficiaries reduce barriers to receiving high-value services:

> We have lots of good patient stories of members saying for the first time in years they're wearing oxygen again. They're going to see their specialists. We've had a lot of members doing pulmonary rehab. Before VBID, pulmonary rehab for this population had a copay, and that was just not a priority, something that they would not always do because of the cost. (PO E)

Three POs have already observed an increase in specialist visits and a notable decrease in inpatient admissions, which are trends they expect will continue. A PO H representative stated that "that [reduction] is in line with our rationale of where we want to see these members who are chronically ill and have CHF and diabetes go more often to these three specialist types, so that they don't end up with inpatient hospital visits or don't end up going to the [emergency room]." Nonetheless, a representative from PO B said a reduction in hospitalizations would be an advantageous spillover effect, but is not an *a priori* expected outcome. For the majority of POs, tipping the scale away from high-cost care and toward preventive and specialty care is the expected key result of VBID.

Distal Outcomes

Health Status

Although POs expect to see an increase in the use of high-value services and a reduction in the use of low-value care (proximal outcomes), they do not expect immediate and substantial improvements in beneficiary health status, given participant age and current health status. As a PO C representative put it, "recovery is not what we'll be interested in seeing," but instead, "seeing improvements in the [disease] trajectory, because whatever intervention you do, people are going to keep getting sicker." Therefore, POs see VBID as a means of slowing disease progression as opposed to "curing" chronic conditions among their beneficiary populations:

> We live our whole lives and eventually, you are going to get sick, have a heart attack and die. And so, it is that creep of time, if you start doing the right thing it takes a little bit of time. You could start doing the right thing tomorrow and still have the effects from smoking or being a little bit overweight. It will take more and more time to play out over the course of time as people get a little bit healthier. (PO A)

Nonetheless, our interviewees gave several examples of how participation in CM/DM activities positively affected beneficiary health. For example, a PO F representative described how VBID allowed him or her to intervene early for one beneficiary before she became very ill: "[The] nurse called [the beneficiary] and found out that the medication regimen the person was on . . . she wasn't doing [it] correctly and because of the nurse intervention in the diseases assessment, she was able to kind of really impact how the patient was using her medications and as a result was more active physically."

Quality of Care

One of the aims of the VBID model test is to improve care quality and to reduce health care costs. According to our interviewees, POs operationalize measuring quality of care through the HEDIS and other measures that feed into the Star Ratings.[4] The Star Ratings are an over-

[4] HEDIS is a set of measures of plan quality maintained by the National Committee for Quality Assurance. For more information, see National Committee for Quality Assurance (undated).

all measure of PO quality that include how well the PO manages certain conditions and interacts with beneficiaries and how beneficiaries rate their experiences with the PO.

POs thought that improvements in Star Ratings would be a beneficial but not a central goal of their participation in VBID. PO D and PO H reported their hope that VBID will bring modest upward movement in their scores. "It would be a pleasant outcome if these beneficiaries were managed better and the risk was captured better and, you know, Star Ratings were better, but that was not the primary driver," stated a PO H representative.

One component of the Star Ratings is beneficiary experience, which is measured with the CAHPS surveys that POs in general hope will improve under VBID. Most POs reported that beneficiary experiences thus far have been positive: "[VBID] sounds too good to be true. I've had to do a lot of phone calls with members trying to encourage them that this is real, we're not scamming you" (PO E). One other PO representative reported that he or she had already received some calls from members saying that the program was wonderful and that they wished that the PO would add other services to be eligible for reduced cost sharing—particularly some prescription drugs.

However, PO B reported concerns that CAHPS scores could be adversely impacted if VBID confused beneficiaries:

> Because this is a pilot and I think CMS wants to make sure that we're not isolating the VBID beneficiaries, I think there has been some confusion in the roll out of how VBID membership will impact our actual Star Ratings. . . . There is a train of thought that they should be removed from the Star Ratings because there is a special program and that's not fair to the plans, the rest of the contracts because you know that these beneficiaries should probably be more engaged. I think from our side, we're saying but these are the beneficiaries that are probably more engaged and chose to participate, so taking them out of our data could be problematic.

Finally, although PO A was less concerned with reaching five stars, its representatives noted that if other plans are improving, then "standing still could mean falling behind" in the greater market.

Spending

POs we interviewed made it clear that improving care quality and health outcomes is more important than potential downstream cost savings, which they believe are likely to be minimal. As a PO A representative put it, a "worst-case scenario" would be losing the VBID implementation costs, but "the benefits are if you can really do something that is going to help the population longer term, [such as] better quality of life, lower long-term costs, those are all good things."

Indeed, multiple POs mentioned an expectation of modest downstream cost savings (i.e., after year three of the test), which will result from decreases in hospitalizations and ED use. These savings will eventually offset the administrative costs of implementing VBID. A PO H representative, however, was unsure about cost savings, saying, "[w]e really built our cost analysis as though these members would go [to see a specialist] as often as we think they should; I don't think we've gotten there yet. We've seen a more gradual uptake than what we set as our initial expectation."

Thoughts on the Future of the VBID Model Test

POs could not comment on the future of the VBID model test when we spoke to them in the summer of 2017, approximately halfway through the first year of the model test. As a PO G representative explained, "[s]o, we've made good faith efforts to kind of forecast this stuff, and we're planning on monitoring the outcomes as they emerge, and course correcting as necessary." All POs said that they need to see the actual data before making any decisions or comments related to VBID. A representative of PO D stated that they are "not expecting to have credible data until sometime in the very late third quarter or early fourth quarter" to be able to comment on whether they would change their VBID approaches, sustain their participation in VBID, or scale-up their interventions (e.g., expand to other PBPs, include additional services or conditions).

POs reported feeling that their participation in the model test will provide useful data for other POs. One PO noted that insurance companies are in the business of taking calculated risks, and that VBID is a useful experiment from their perspective:

> We're certainly willing to go down the road of a demonstration to figure out if our hypothesis is true or not. I guess if our hypothesis is inaccurate, which is that by sending members to their specialists more we can reduce their inpatient hospitalization and their high-cost care; I guess that's a failure to say, okay, well, we proved that we were wrong. But I think that is not necessarily a failure, right? That's just proving that one didn't work and there is still some value to that. (PO H)

The RAND team will explore the questions related to VBID sustainability and scale-up during subsequent waves of qualitative data collection. Subsequent follow-up with POs will include a review of how POs are measuring progress toward their expected outcomes and whether this impacts the sustainability or scalability of the VBID intervention.

APPENDIX C

Data Sources

The quantitative analyses shown in this report and the accompanying appendices draw from numerous data sources. Table C.1 lists each of the data sets, provides a brief description of the data, and specifies the analyses for which each data source was used.

Table C.1
Data Sources Used in the Quantitative Analyses in This Report

Data Source	Description	Analyses for Which Data Were Used
Beneficiary-level data		
MA encounter	Administrative data submitted by POs to CMS, with information on medical services and diagnoses	Beneficiary eligibility algorithm
Part D prescription drug event (PDE)	Prescription drug fill and payment data for beneficiaries enrolled in Part D	Beneficiary eligibility algorithm
Beneficiary Fact (BENE_FCT) table	Beneficiary demographic and MA PBP enrollment data	Comparisons of participating and nonparticipating beneficiaries; plan matching; enrollment
Beneficiary risk score	Used to risk-adjust monthly MA payments to reflect expected costs because of beneficiary characteristics	Comparisons of participating and nonparticipating beneficiaries; plan matching
MA and PDP CAHPS	Two supplemental questions from annual survey data on patient experience with MA and PDP contracts	Beneficiary awareness
MARx VBID data	Beneficiaries identified as eligible for the VBID model test, as submitted by participating POs	Comparisons of participating and nonparticipating beneficiaries
Risk Adjustment Processing System (RAPS)	Diagnosis information submitted by POs and used to calculate beneficiary risk scores	Beneficiary eligibility algorithm
Medicare Bayesian Improved Surname Geocoding Version 2.0	Improves administrative racial/ethnic information by estimating a vector of six race/ethnicity probabilities	Plan matching
PBP- or contract-level data		
Enrollment*	PBP-level MA enrollment within a state	Identification of VBID-eligible PBPs; Plan matching
Bid information	PBP-level bids	Parallel trends
Plan benefit packages*	Premiums, covered benefits, and cost sharing	Plan matching
MA contract info file*	Information on PBP characteristics (e.g., plan type)	Identification of VBID-eligible PBPs
MA service area file*	County and state-level service area for PBPs	Identification of VBID-eligible PBPs

Table C.1—Continued

Data Source	Description	Analyses for Which Data Were Used
Past performance review outlier results	Information on POs placed under sanction based on past performance	Identification of VBID-eligible PBPs
Star Ratings*	Contract-level Star Ratings, with stars ranging from zero to five for individual measures and the overall rating	Identification of VBID-eligible PBPs; Parallel trends
Other data sources		
Area health resources file	County-level data on provider supply and composition, health spending, and household income	Plan matching

NOTE: Asterisks indicate that data sets are publicly available.

APPENDIX D

Approach to Matching PBPs and Beneficiaries

In this appendix, we describe how we identified the PBP-level comparison group used to analyze awareness, enrollment, and plan bids. While Chapters Six and Seven present results using an out-of-state comparison group, we also considered the possibility of using a within-state comparison group. Matching for both the out-of-state and the within-state comparison groups are discussed below. Although we have not identified comparison groups at the beneficiary level at this time, this appendix discusses our approach to replicating POs' beneficiary eligibility algorithms. Applying these algorithms will be a critical first step in selecting comparison beneficiaries, allowing us to determine which beneficiaries in comparison plans would have been eligible for VBID, had it been offered to them.

In this appendix, we first discuss how we limited the universe of potential comparators to PBPs that would have been eligible for the VBID model test if it were offered in their states. Next, we discuss the matching approach used to identify comparison PBPs for the out-of-state and within-state comparison groups. We then describe power for detecting differences for the out-of-state and within-state groups and assess whether the parallel trend assumption—a critical assumption underlying difference-in-differences models—holds for key VBID outcomes. Because the parallel trend assumption fails in some cases, we discuss approaches to address this challenge. Finally, we describe criteria used by POs to identify eligible beneficiaries and report results after replicating these criteria.

Applying VBID Eligibility Criteria to PBPs

To create a matched-comparison group, we first had to determine which PBPs would have been eligible for the VBID model if it were available to them. We used the September 1, 2015, CMS criteria to identify PBPs in both VBID-participating and control states that would be considered eligible to offer MA VBID benefits. However, we modified the minimum enrollment size requirement (2,000 enrollees) to reflect the fact that CMS allowed some smaller PBPs to participate as long as they were in a contract with a larger plan.[1] Table D.1 shows the criteria we used to identify eligible PBPs.

[1] CMS reserved the right to grant exceptions to the criteria, and some were relaxed in approving 2017 plans. We do not account for any exceptions other than the minimum enrollment exception in identifying eligible plans.

Table D.1
Criteria and Data Sources Used to Identify Eligible Plans for 2017

Criteria Category	Specific Criteria	Data Set Used for Identification	Date
Plan type	Must be HMO, HMO-POS, or local PPO	Contract info file (PBP, state, county level)	July 2016
Plan type	Not SNP, MMP, demo, RPPO, cost, PFFS, MSA, or EGWP	Contract info file (PBP, state, county level)	July 2016
Service area	All or partly within a given state	Service area file (contract, state, county level)	July 2016
Enrollment	Minimum 2,000 enrollees in at least one PBP within the same contract and state	Enrollment file (PBP, state, county level)	July 2016
Enrollment	At least 50 percent of the plan's total enrollment resides in the state	Enrollment file (PBP, state, county level)	July 2016
Service area	Plan was offered in no more than two states	Service area file (contract, state, county level)	July 2016
Experience	Offered in at least three annual open enrollment periods prior to that for CY 2017	Contract info file (PBP, state, county level)	July 2016
Sanctions	Organization offering plan is not under sanction by CMS	2015 Star Ratings spring release, summary rating tab, sanction deduction column	Spring 2015
Performance	Organization offering plan is not an outlier in CMS's past performance review	Past performance review outlier results	Spring 2016
Star Ratings	Plan has at least a three-star overall rating for CY 2016[a]	2015 Star Ratings spring release, summary rating tab	Spring 2015
Performance	Plan does not have "consistently low performing" icon on Medicare plan finder	2015 Star Ratings spring release, low performing contracts tab	Spring 2015

SOURCE: All of these data were publicly available at CMS, 2017b; CMS, 2018b; and CMS, undated(b).

NOTE: RPPO = Regional Preferred Provider Organization. PFFS = private fee-for-service. MSA = medical savings account.

[a] Plans that are not rated because of newness or low enrollment do not qualify. We began by merging the service area, enrollment, and contract files together for each year, dropping observations that excluded plan or organization types (these are mutually exclusive, so dropping excluded organization types keeps only the desired plan types of HMOs and local PPOs). Then we created a set of flags, such as the number of states in which the contract is offered and whether the contract had been in operation for less than three years. We then merged in the performance information from the Star Ratings files and the outlier list. Plans not meeting the full list of criteria are ineligible.

Approach to Matching Participating and Nonparticipating PBPs

MA PBPs were not randomly selected to participate in the VBID model; thus, participating MA PBPs may differ in significant and potentially unobservable ways from those that chose not to participate. We used propensity score matching methods to adjust for any observed differences between participating and nonparticipating PBPs. We specifically implemented a greedy nearest neighbor propensity score match using the R package Matching (Sekhon, 2011). A greedy matching approach cycles through each VBID PBP, finds the best match for that PBP from the yet-to-be matched comparison PBPs, and does not reassess the match. That is, once two PBPs are matched, the algorithm does not change its mind. The general approach is to match VBID-participating PBPs with PBPs that are not participating in VBID. We initially considered three different comparison groups: (1) PBPs outside VBID states, (2) PBPs in VBID states that did not elect to participate in the VBID model, and (3) PBPs in VBID states in the same PO as VBID-participating PBPs. We immediately ruled out the third com-

parison group because only 22 of the 45 participating PBPs had potential comparison PBPs in both the same state and PO. Although we retained the within-state matching approach as an option, our qualitative interviews suggested that there likely are important unobservable differences between participating and eligible but nonparticipating PBPs. For example, eligible nonparticipants seemed more risk-averse and concerned about ROI than participating POs, while participating POs expressed enthusiasm about the opportunity to be at the forefront of MA benefit design. These differences suggest that the out-of-state comparison group might be preferable to the within-state comparison group. Because out-of-state PBPs were ineligible to participate in the VBID model, the out-of-state comparison group might be more likely than the within-state comparison group to contain POs that share VBID participants' innovation-focused philosophy.

Table D.2 lists the characteristics we used to match VBID-participating and comparison PBPs, along with the data source and year for each characteristic. We performed the matching using a propensity score approach for each of the potential comparison groups. We used logistic regression predicting VBID PBP participation to estimate propensity scores. For the out-of-state comparison group, we used one-to-one matching without replacement so that every VBID-participating PBP is matched to a single and unique comparison PBP. For the in-state comparison group, we used one-to-one matching with replacement so that multiple VBID-participating PBPs could be matched to the same comparison PBP. Matching with replace-

Table D.2
Characteristics Used to Match Comparison PBPs

Variable	Data Source	Year
County-level measures		
Percentage of population over 65	Area health resource file	2016
Median household income	Area health resource file	2016
Medicare spending (per capita)	Area health resource file	2016
PBP or PO measures		
OOP maximum	Plan benefit package data	2016
PO market penetration	MA enrollment file	2016
Enrollment size	Beneficiary fact table	2016
Beneficiary-level measures		
Mean age	Beneficiary fact table	2016
Percentage male	Beneficiary fact table	2016
Percentage non-Hispanic white	Medicare Bayesian improved surname geocoding version 2.0	2016
Percentage non-Hispanic black	Medicare Bayesian improved surname geocoding version 2.0	2016
Percentage Hispanic	Medicare Bayesian improved surname geocoding version 2.0	2016
Percentage dually eligible for Medicare and Medicaid	Beneficiary fact table	2016
Percentage with each of four chronic and comorbid conditions (CHF, diabetes, COPD, cancer)	Beneficiary risk score data	2016
Mean risk score	Beneficiary risk score data	2016

ment was necessary because the pool of potential comparison PBPs is much smaller when restricting attention to the PBPs within the same VBID state.

Table D.3 provides the means and standard deviations of the characteristics for VBID-participating PBPs and the two potential comparison groups. We find large differences in the means between the groups, with VBID PBPs tending to be older and with a higher percentage of white beneficiaries, fewer dual-eligible beneficiaries, lower OOP maximums, and serving beneficiaries in counties with higher Medicare spending.

Table D.4 summarizes the balance of the characteristics before and after matching. The average absolute standardized difference before matching is 0.85 for the out-of-state comparison group and 0.58 for the within-state comparison group.[2] After matching, these are reduced to 0.31 and 0.20, respectively. This indicates that matching improved the similarity between the comparison groups and the VBID-participating PBPs. Standardized differences of 0.2, 0.5, and 0.8 are considered small, medium, and large, and evaluations often target 0.2 as a

Table D.3
Mean and Standard Deviation Characteristics Prior to Matching

Measures	Participating PBPs	Nonparticipating PBPs Outside VBID States[a]	Nonparticipating PBPs in VBID States[a]
Number of PBPs	45	243	107
County level			
Population over 65 (%)	0.15 (0.02)	0.14* (0.02)	0.15 (0.02)
Median household income (log)	10.95 (0.19)	10.85* (0.18)	10.87* (0.19)
Medicare spending (log)	9.22 (0.08)	9.10* (0.17)	9.15* (0.10)
PBP or PO			
OOP maximum (log)	8.36 (0.26)	8.54* (0.33)	8.69* (0.22)
PO market penetration	0.33 (0.12)	0.36 (0.11)	0.37 (0.13)
Enrollment (log)	8.45 (1.45)	8.30 (1.37)	7.66* (1.43)
Beneficiary level			
Age (mean)	76.74 (4.21)	73.45* (3.22)	73.52* (3.57)
Male (%)	0.46 (0.10)	0.46 (0.09)	0.45 (0.07)
Race/white (%)	0.91 (0.06)	0.82* (0.18)	0.88* (0.10)
Race/black (%)	0.04 (0.05)	0.09* (0.11)	0.07* (0.08)
Race/Hispanic (%)	0.02 (0.01)	0.04* (0.07)	0.03* (0.02)
Dually eligible for Medicare and Medicaid (%)	0.06 (0.03)	0.12* (0.11)	0.10* (0.06)
Risk score (mean)	1.12 (0.24)	1.03* (0.15)	1.03* (0.15)
COPD (%)	0.12 (0.04)	0.12 (0.04)	0.12 (0.03)
CHF (%)	0.11 (0.05)	0.10* (0.03)	0.09* (0.03)
Diabetes (%)	0.22 (0.06)	0.24 (0.05)	0.24 (0.04)
Cancer (%)	0.12 (0.04)	0.09* (0.03)	0.10* (0.03)

NOTE: Standard deviations are in parentheses.

* Statistically significant difference from mean of participating PBPs using two-sample t-tests. Significant difference defined as p-value < 0.05.

[a] *VBID states* refers to states with at least one participating PBP.

[2] The *standardized difference* is the mean of VBID-participating PBPs minus the mean of the comparison PBPs divided by the standard deviation of the VBID-participating PBPs.

Table D.4
Standardized Differences of Characteristics Before and After Matching

Measures	Outside State Before Matching	Within State Before Matching	Outside State After Matching	Within State After Matching
Number of plans				
VBID	45	45	45	45
Comparison	243	107	45	25
County level				
Percentage of the population over 65	0.48	–0.19	0.10	0.02
Median household income (log)	0.51	0.39	0.57	0.01
Medicare spending (log)	1.51	0.93	1.05	0.33
Plan or PO				
OOP maximum (log)	–0.68	–1.27	0.10	–0.68
PO market penetration	–0.22	–0.28	0.07	0.00
Enrollment (log)	0.10	0.54	–0.24	0.41
Beneficiary level				
Dually eligible for Medicare and Medicaid (%)	–1.70	–1.27	–0.53	–0.28
Age (mean)	0.78	0.76	0.45	0.19
Male (%)	–0.05	0.04	–0.03	0.20
Race/white (%)	1.58	0.61	0.41	–0.14
Race/black (%)	–1.11	–0.55	–0.43	0.09
Race/Hispanic (%)	–3.81	–1.30	–0.20	–0.27
COPD (%)	–0.01	0.09	0.03	–0.08
CHF (%)	0.32	0.36	0.23	0.13
Diabetes (%)	–0.26	–0.23	0.06	–0.25
Cancer (%)	0.90	0.70	0.57	0.17
Risk score (mean)	0.38	0.36	0.28	0.18

threshold for determining whether the matched comparison group is similar to the treatment group (Austin, 2009). However, there is no consensus as to what constitutes a sufficiently small standardized difference, with others suggesting thresholds as low as 0.03, 0.05, or 0.10 (Caliendo and Kopeinig, 2008; Austin and Stuart, 2015; Normand et al., 2001). Regardless of the exact threshold, it is clear that important differences between our groups remain even after matching. While the within-state match provides better balance, it includes only 25 matched PBPs because we matched with replacement for the within-state match to accommodate the smaller pool of potential comparison PBPs. We considered matching without replacement for the within-state match, but only 41 of the 45 participating PBPs can be matched, and the average absolute standardized difference is 0.44 (these results are not included in Table D.4).

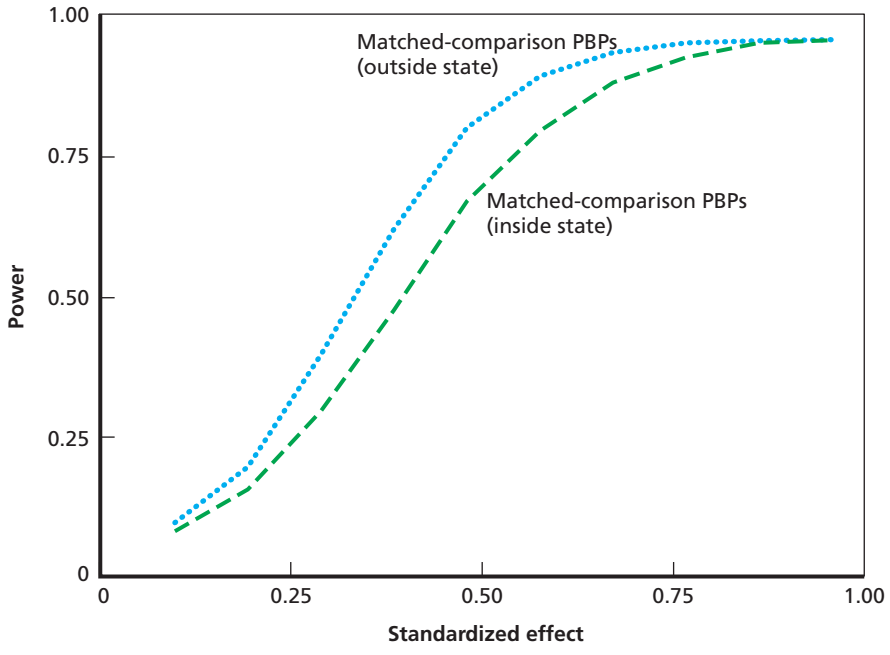
Some important observed differences remain between treatment and control PBPs after matching. For example, VBID-participating PBPs serve beneficiaries in counties that have higher Medicare spending and a higher median income compared with the matched comparison PBPs (standardized difference of 1.05 and 0.57, respectively). Other remaining differences include VBID-participating PBPs serving a lower proportion of beneficiaries that are dual eli-

gible, a higher proportion of beneficiaries that are white, a higher proportion of older beneficiaries, and a higher proportion of beneficiaries diagnosed with cancer (standardized differences of −0.53, 0.41, 0.45, and 0.57, respectively). We account for any differences between treatment and control PBPs that remain after matching by using a difference-in-differences model.

Power for Detecting Differences Between Matched PBPs

The comparison group that is composed of PBPs in the same state as a VBID-participating PBP provides better balance, as shown in Table D.4. This improved balance is coupled with a loss of power because of matching with replacement. The smaller number of comparison PBPs reduces our ability to detect differences between participating and matched-comparison PBPs. We conducted a simple power analysis for a difference-in-differences analysis to illustrate the difference in power expected between the potential comparison groups. The simulation-based power analysis made a series of assumptions, including that year-to-year PBP-level outcomes are independent once accounting for the mean. Figure D.1 illustrates these results. Power is low for both approaches, because only 45 PBPs participated in 2017. However, with the out-of-state group, we have more power to detect differences. For example, with the out-of-state group, we have 80-percent power to detect a standardized difference of roughly 50 percent; with the within-state group, we have 80-percent power to detect a standardized difference of roughly 65 percent.

Figure D.1
Comparison of Power for a Difference-in-Differences Analysis Using Two Difference Comparison Groups



RAND *RR2421-D.1*

Considering the tradeoff between power and balance, we identified the out-of-state match as our primary comparison group to ensure that all VBID-participating PBPs are represented and to maximize the number of comparison PBPs.

Assessment of Parallel Trends Assumption

We accounted for any differences between VBID and matched comparison PBPs using difference-in-differences analyses. The difference-in-differences approach analyzes whether trends for treated and nontreated observations diverged after the intervention (in this case, VBID). The approach should account for both observed and unobserved differences between treatment and comparison PBPs. However, a key assumption of the difference-in-differences analysis is that—without the intervention—trends in outcomes between treated and comparison PBPs would have been similar. This assumption must hold for our final control group, which will match PBPs and beneficiaries within PBPs. Since the beneficiary-level match has yet to be implemented, we assessed the parallel trends assumption using only the PBP-level match.

To test the parallel trends assumption, we assessed whether trends for key outcome variables were similar before the model test was implemented. Let y_{pt} be the outcome for PBP p at year t, and let $VBID_p$ be an indicator that the pth PBP is a VBID-participating PBP. We consider three years of data prior to implementation of the test model, so that $t \in \{2014,2015,2016\}$. Our model for assessing the parallel trends assumption is given by:

$$y_{pt} = \beta_0 + \beta_1 VBID_p + \alpha_t + VBID_p \times \gamma_t + \eta_p + \varepsilon_{pt}, \qquad \text{(Eq. D.1)}$$

where α_t is a year effect with $\alpha_{2014} = 0$, $VBID_p \times \gamma_t$ is an interaction between time and VBID participation with $\gamma_{2014} = 0$, and η_p is a PBP-level random effect capturing correlation of repeated measurements of the PBP across time. The test of parallel trends tested that $H_0 : \gamma_t = 0$ for all $t \in \{2014,2015,2016\}$.

Because of the breadth of the evaluation in terms of the number of outcome measures being assessed, we selected a representative set of outcomes measures to assess the parallel trends assumption. Specifically, we selected one measure from each of the six evaluation domains, focusing on measures that were theoretically important given our conceptual model and applicable to a broad range of VBID interventions. The measures were selected by members of the research team prior to conducting the parallel trends analyses presented below. Some PBPs were consolidated into a single PBP between 2014 and 2016. For the parallel trends analyses, we aggregated PBPs in 2014 and 2015 based on their 2016 PBP assignment to ensure a consistent unit of analysis across time.

Table D.5 summarizes the assessment of parallel trends from 2014 to 2016 prior to any beneficiary-level matching, and it includes a rationale for each measure that we analyzed. There is some evidence of a departure from parallel trends based on the model fit. For the out-of-state comparison group, p values are smaller than 0.10 for utilization, plan bids, and patient experience. For the within-state comparison group, the p-value is below 0.10 for enrollment. While the p-values are slightly higher for the within-state comparison group, this may reflect

Table D.5
Selected PBP-Level Outcome Measures Used in the Assessment of Parallel Trends

Evaluation Domain	Measure	Rationale for Choice of Measure	*p*-Value (Outside State)	*p*-Value (Inside State)
Utilization	Count of deduplicated inpatient hospitalizations per beneficiary year	VBID is hypothesized to reduce avoidable hospitalizations; approximately 38.6 percent of Medicare spending for people ages 65 and over is attributable to hospital inpatient services, more than any other major service category.[a]	0.02	0.47
Plan bids	Total Part C bid	Plan bids are a succinct measure of what it costs the federal government to insure MA beneficiaries.	0.04	0.10
Plan quality	Overall Star Rating	Star Ratings are a validated summary measure of health plan quality.	0.47	0.25
Health status	Risk score	The risk score is a summary measure of patient health status that is expressed in numeric form and is designed to be comparable across conditions.	0.20	0.51
Patient experience	Overall beneficiary rating of health plan from CAHPS	This is a validated summary measure of patient experience.	0.08	0.67
Enrollment	Total plan enrollment	Total enrollment is a straightforward measure of the number of beneficiaries in the PBP; changes over time in total enrollment could indicate that the PBP has become more or less desirable to beneficiaries.	0.98	0.07

[a] Agency for Healthcare Research and Quality, 2016.

lower power, because this comparison approach required us to match plans with replacements (hence reducing sample size).

Table D.6 provides the estimated coefficients measuring differences in trends from 2014 to 2016 comparing PBPs participating in VBID with matched-comparison PBPs (corresponding to the coefficients γ_t in the model).

We graphically evaluated the parallel trends assumption prior to any beneficiary-level matching in addition to performing these statistical tests. Figures D.2 through D.7 plot the average of each of the outcome measures by year and by VBID group. Overall, the trends appear to be similar across time for many of the outcomes. Notable departures include the Star Rating and total enrollment for the within-state comparison group and utilization and beneficiary rating of the health plan for the outside-of-state group.

The differences in trends observed in this appendix are prior to any beneficary-level matching. Once the beneficiary-level matching is implemented, we anticipate that the matched-comparison beneficiaries in the matched-comparison PBPs will be more similar to the beneficiaries in VBID-participating PBPs, which should account for any departures of parallel trends for outcomes such as utilization, which are measured at the beneficiary level. We will reassess the parallel trends assumption after the beneficary matching is complete using similar techniques.

Table D.6
Estimated Model Coefficients Measuring Differences in Trends for Comparison PBPs and VBID-Participating PBPs

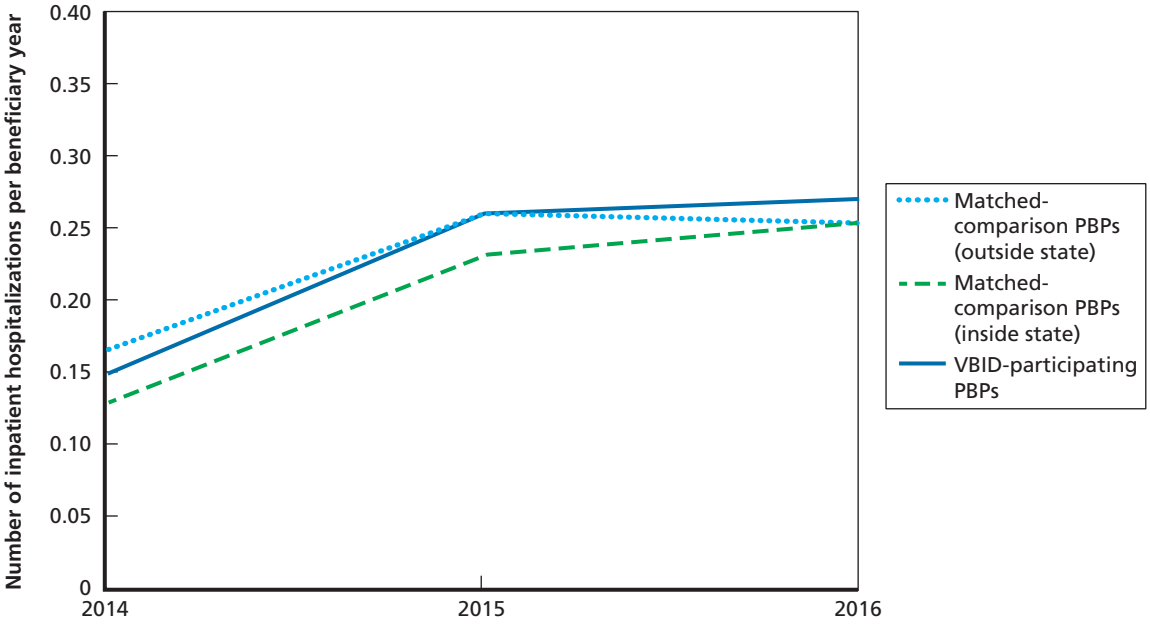
Measure	Year	Comparison Group	Estimate	p-Value
Utilization	2015	Outside state	0.016	0.22
Utilization	2016	Outside state	0.036	0.01
Utilization	2015	Inside state	0.010	0.73
Utilization	2016	Inside state	−0.003	0.96
Plan bids	2015	Outside state	−4	0.51
Plan bids	2016	Outside state	−16	0.02
Plan bids	2015	Inside state	−12	0.08
Plan bids	2016	Inside state	−17	0.03
Plan quality	2015	Outside state	0.074	0.45
Plan quality	2016	Outside state	0.129	0.29
Plan quality	2015	Inside state	−0.043	0.77
Plan quality	2016	Inside state	0.210	0.24
Health status	2015	Outside state	0.024	0.12
Health status	2016	Outside state	0.030	0.07
Health status	2015	Inside state	−0.001	0.98
Health status	2016	Inside state	−0.023	0.35
Patient experience	2015	Outside state	0.215	0.67
Patient experience	2016	Outside state	1.527	0.03
Patient experience	2015	Inside state	−0.473	0.55
Patient experience	2016	Inside state	0.049	0.94
Enrollment	2015	Outside state	−77	0.90
Enrollment	2016	Outside state	−188	0.85
Enrollment	2015	Inside state	1,562	0.03
Enrollment	2016	Inside state	1,883	0.06

Approach for Departures from the Parallel Trends Assumption

The assumption of parallel trends is critical to the validity of the difference-in-differences models that we apply in our analysis. However, as described above, this assumption did not hold for all of the outcomes we considered in Table D.6. To address this challenge, we considered alternative matching strategies that directly incorporate information about the trends in the outcomes. Next, we describe three general approaches that could be used to address the failure of the parallel trends assumption; we then discuss the specific approach we implemented for the plan bid analyses discussed in Chapter Seven.

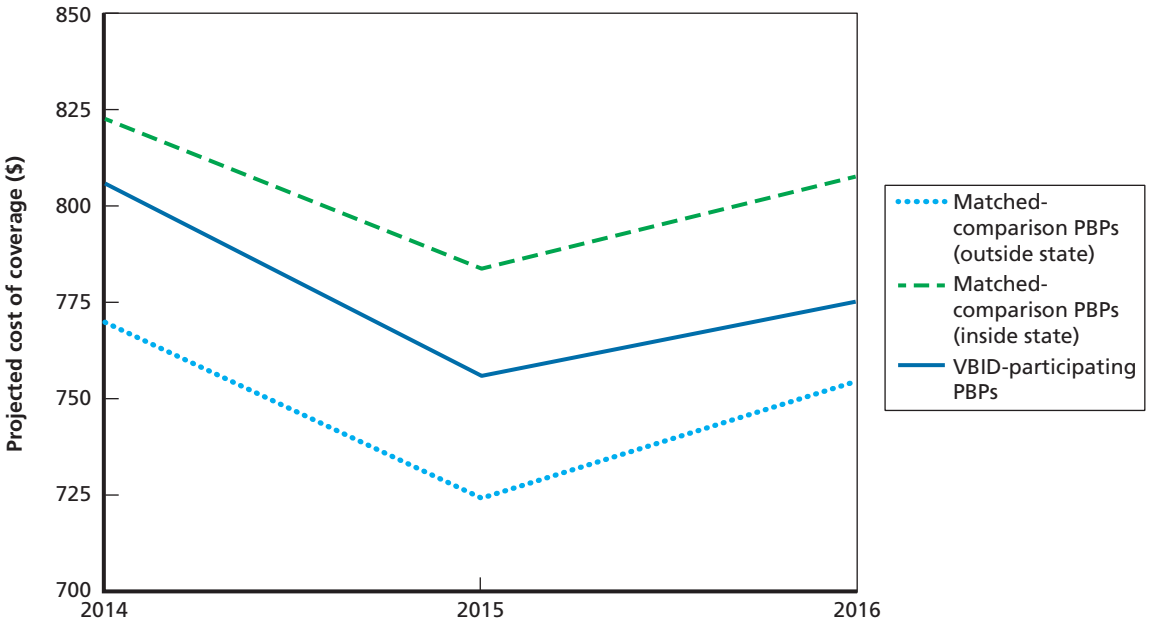
The first approach is to rematch the VBID PBPs to a set of comparison PBPs for each year of the study. The matched-comparison PBPs will change over the course of the study to ensure comparability of the PBPs over time. This approach has some practical benefits, including that it naturally allows for PBPs to join VBID, withdraw from VBID, consolidate, or dissolve with-

Figure D.2
PBP-Level Average of the Number of Deduplicated Inpatient Hospitalizations per Beneficiary Year, 2014–2016



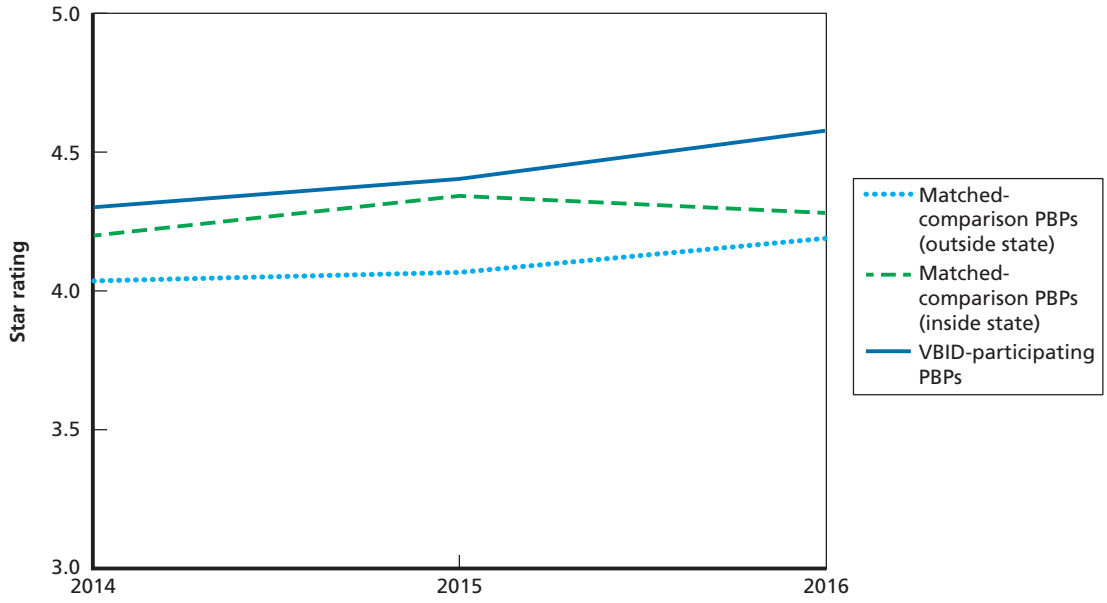
RAND *RR2421-D.2*

Figure D.3
PBP-Level Average of the Total Part C Bid, 2014–2016



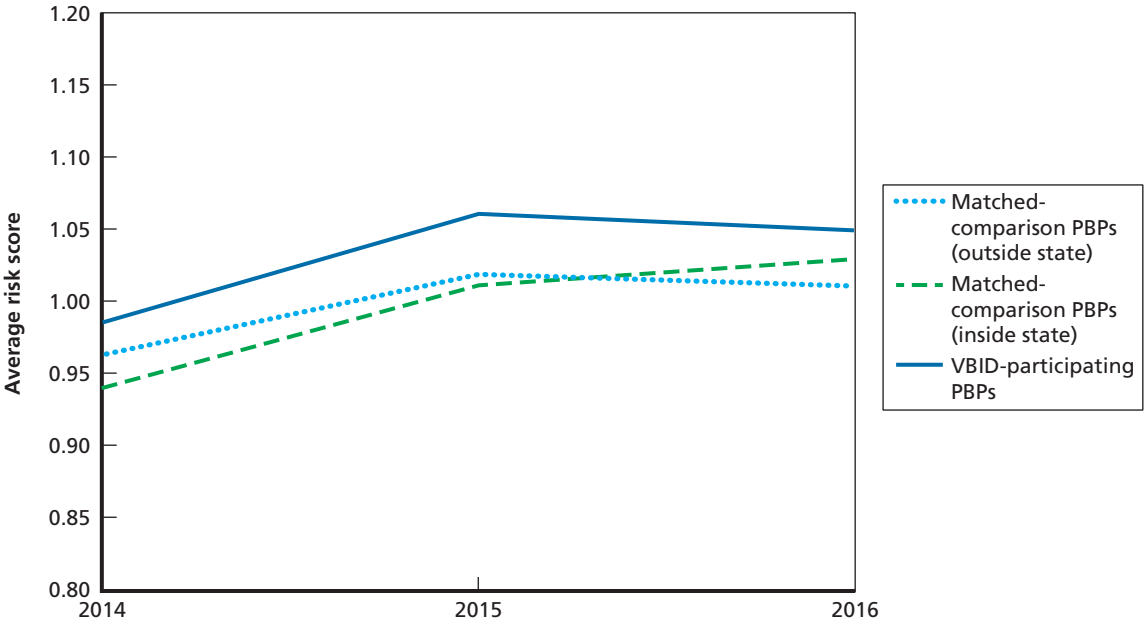
RAND *RR2421-D.3*

Figure D.4
PBP-Level Average of the Overall Star Rating, 2014–2016



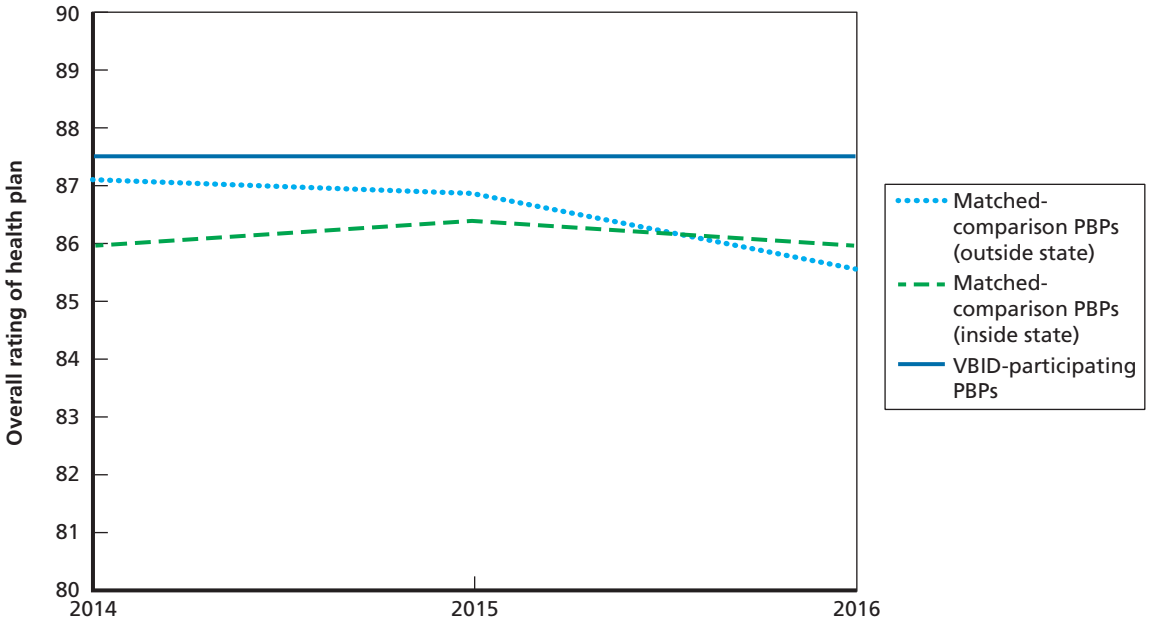
RAND *RR2421-D.4*

Figure D.5
PBP-Level Average of the Average Risk Score, 2014–2016



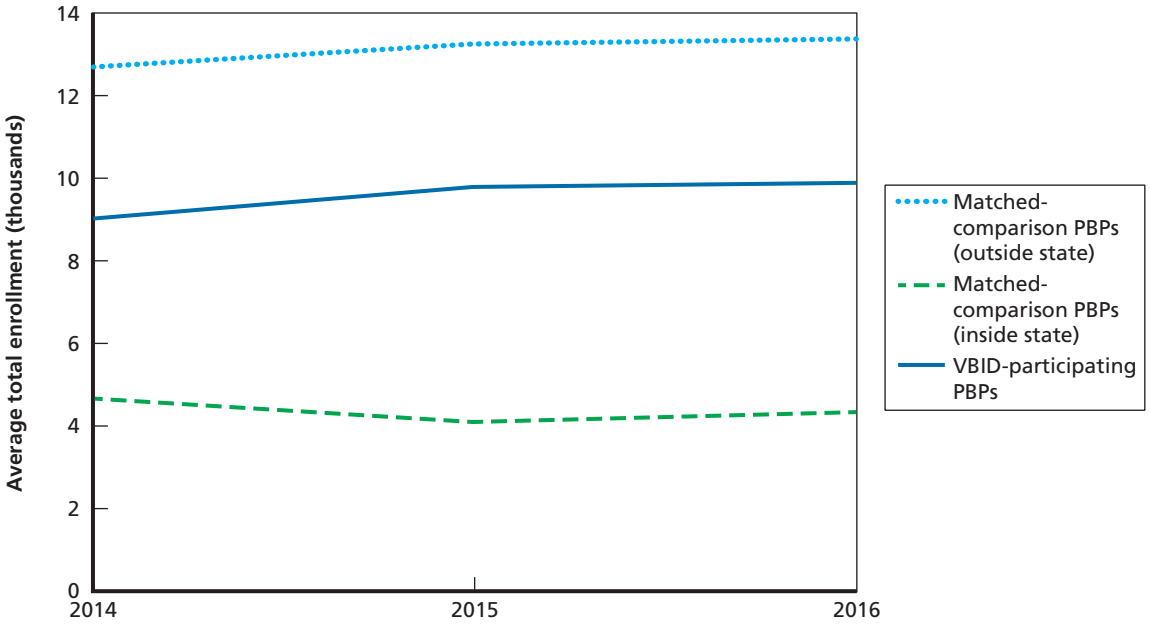
RAND *RR2421-D.5*

Figure D.6
PBP-Level Average of the Beneficiary Rating of Health Plans, 2014–2016



RAND *RR2421-D.6*

Figure D.7
PBP-Level Average of the Total Enrollment, 2014–2016



RAND *RR2421-D.7*

out modification. However, a limitation of this approach is that trends in outcomes cannot be used as part of the matching procedure. In technical terms, the characteristics used in the matching must be exogenous to VBID intervention (Stuart et al., 2014). Including the trends in the outcomes when matching every year would obscure the effect of VBID.

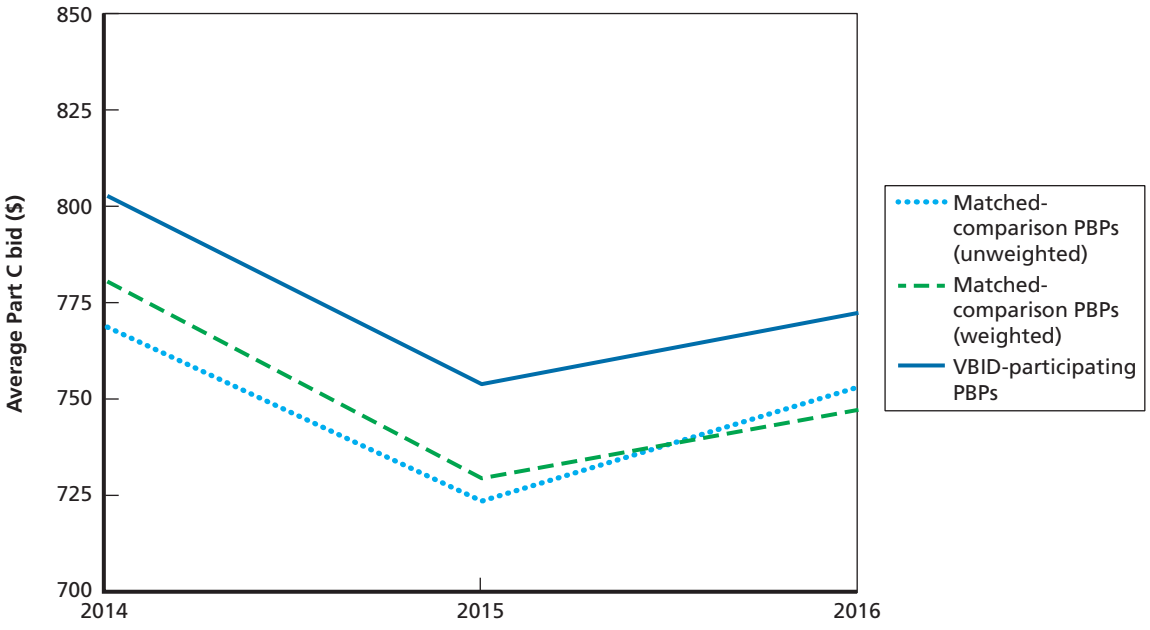
The second approach is to utilize the current matching strategy but expand the set of characteristics considered in the matching process to include outcomes from 2014 to 2016 (Schurrer et al., 2017). This approach directly attempts to find a single matched set of PBPs that balances baseline characteristics and matches the trends in the outcomes over time. A major limitation of this approach is that with the small number of PBPs under consideration, it is not feasible to incorporate three years of outcome data for every outcome. Specifically, the number of characteristics that would be included in the matching process would exceed the number of VBID PBPs. Either a different matched set would need to be constructed for each outcome, or only a small set of outcome data could be included in the matching.

A third approach is the synthetic controls method (Abadie, 2005), which uses an optimization algorithm to weight controls in a way that improves the chances that the parallel trends assumption will hold. This is achieved by weighting controls to match both the trends and levels of the outcomes in the treatment group. However, a limitation of this method is that approaches for statistical inference are underdeveloped, requiring resampling or other computationally intensive methods (such as permutation tests) to determine whether the results are statistically significant (Abadie, Diamond, and Hainmueller, 2010). The computational burden is a potential major issue in this study because of the large number of outcomes that are being evaluated. Furthermore, the inferential procedures would have to be repeated for each outcome.

We adopted a hybrid approach that combines aspects of the methods described by Stuart et al. (2014) and Abadie (2005). We start with the set of matched controls described earlier, which draws only from 2016 data. Then, for each outcome, the comparison PBPs are weighted to ensure that the trends in that outcome between VBID-participating PBPs and comparison PBPs are as similar as possible. We use propensity scores rather than optimization to derive the weights, like the approach described in Stuart et al. (2014). This avoids the inference issues of the synthetic control method by relying on propensity score theory instead. Our hybrid approach matches only *trends* in outcomes over time, rather than the *levels* of outcomes.

To verify that our proposed approach can be used to ensure that the parallel trends assumption holds, we applied the methodology to the out-of-state comparison group for Part C bids. Specifically, we fit a logistic regression predicting VBID participation based on the change in Part C bids from 2014 to 2015 and the change in Part C bids from 2014 to 2016. Propensity score weights were derived from this model to reweight the matched-comparison plans to ensure similar trends in the Part C bid from 2014 to 2016. The weights are defined as one for the VBID-participating PBPs and the odds of VBID participation based on the model for the matched-comparison PBPs. Prior to reweighting, the p-value for the parallel trends assumption for the out-of-state comparison group was 0.07. After reweighting, the p-value was 0.92, suggesting that the propensity score weighting approach reduced the differences in trends between the groups. In Figure D.8, we visually assessed the parallel trends before and after weighting. Trends are more similar after weighting the comparison group than before. This example highlights that when necessary, the PBP matching approach can be modified to improve the similarity of the trends between the VBID-participating PBPs and the matched-comparison PBPs.

Figure D.8
PBP-Level Average of the Total Part C Bid for the Out-of-State Comparison Group Before and After Weighting, 2014–2016



RAND *RR2421-D.8*

Approach to Matching Eligible Beneficiaries in Participating PBPs with Eligible Beneficiaries in Nonparticipating PBPs

In order to evaluate the effect of the VBID model test on beneficiary-level outcomes, we will match eligible beneficiaries in participating PBPs with beneficiaries who would be eligible for VBID, but who are enrolled in our matched control PBPs. The first step of this process has been to obtain detailed information from each PO regarding how they identify eligible beneficiaries. Table D.7 presents more detail on each PO's approach to identifying eligibility for their VBID model.

With one exception, all participating POs use the CMS list of ICD-9/10 diagnosis codes to identify beneficiaries with the conditions targeted by the POs. One PO also uses prescription fills of hypertension drugs to identify and include eligible beneficiaries. All POs use encounter data to identify eligible beneficiaries, and one PO also uses data submissions via the RAPS. POs differ on whether they include only paid encounters; whether they include certain claim types, such as inpatient or outpatient; and which types of encounters they require to indicate a diagnosis (e.g., evaluation and management, or E&M, encounters) when processing the encounter data. POs applied different look-back periods to identify beneficiaries who were eligible when the model started in 2017; some used a one-year look-back, covering all of 2016, while others used two years or some portion of 2015 and 2016. No POs required beneficiaries to be continuously enrolled during the look-back period in order to be eligible. Finally, to update the list of eligible beneficiaries during the model test, POs applied different frequencies of updates, such as monthly or quarterly, and different look-back periods for each update period (e.g., one month look-back).

Table D.7
Participating POs' Approaches to Identifying VBID-Eligible Beneficiaries

PO	Approach to Identifying Eligible Beneficiaries
PO A	• Source for diagnosis codes: CMS list of ICD-9/10 codes • Data source(s): encounter data – any diagnosis code (primary or otherwise) – excludes diagnoses from some lab claims • Initial lookback period: 10/1/2015–12/31/2016 – continuous enrollment requirement? No • Frequency of eligibility updates: quarterly with a look-back period always to October 2015 • Additional considerations: none
PO B	• Source for diagnosis codes: CMS list of ICD-9/10 codes • Data source(s): encounter data – any diagnosis code (primary or otherwise) – encounter must have been paid • Initial lookback period: 1/1/2015–12/31/2016 – continuous enrollment requirement? No • Frequency of eligibility updates: monthly with a rolling, 12-month look-back period • Additional considerations: none
PO C	• Source for diagnosis codes: CMS list of ICD-9/10 codes • Data source(s): encounter data – any diagnosis code (primary or otherwise) • Initial lookback period: 1/1/2015–12/31/2016 – continuous enrollment requirement? No • Frequency of eligibility updates: quarterly with quarterly look-back period • Additional considerations: none
PO D	• Source for diagnosis codes: CMS list of ICD-9/10 codes and any fill of an eligible hypertension drug • Data source(s): encounter data, PDE data – any diagnosis code (primary or otherwise) – encounter must have been paid • Initial look-back period: 1/1/2015–8/30/2016 – continuous enrollment requirement? No • Frequency of eligibility updates: quarterly with six-month look-back period • Additional considerations: none
PO E	• Source for diagnosis codes: CMS list of ICD-9/10 codes • Data source(s): encounter data – any diagnosis code (primary or otherwise) – at least two claims with specific E&M codes – encounter must have been paid • Initial look-back period: 1/1/2016–12/31/2016 – continuous enrollment requirement? No • Frequency of eligibility updates: weekly with a look-back period to January of the previous year • Additional considerations: none
PO F	• Source for diagnosis codes: CMS list of ICD-9/10 codes • Data source(s): encounter data – any diagnosis code (primary or otherwise) – at least one inpatient or two outpatient claims – encounter must have been paid – excludes institutionalized or hospice beneficiaries • Initial look-back period: 11/1/2015–12/31/2016 – continuous enrollment requirement? No • Frequency of eligibility updates: monthly with a rolling 14-month look-back period • Additional considerations: none
PO G	• Source for diagnosis codes: CMS list of ICD-9/10 codes • Data source(s): encounter data – any diagnosis code (primary or otherwise) – encounter must have been paid • Initial look-back period: 1/1/2016–12/31/2016 – continuous enrollment requirement? No • Frequency of eligibility updates: monthly, with monthly look-back • Additional considerations: none

Table D.7—Continued

PO	Approach to Identifying Eligible Beneficiaries
PO H	• Source for diagnosis codes: CMS list of ICD-9/10 codes • Data source(s): encounter data, RAPS data – any diagnosis code (primary or otherwise) – excludes ESRD and hospice beneficiaries • Initial look-back period: 1/1/2015–12/31/2016 – continuous enrollment requirement? No • Frequency of eligibility updates: monthly with a two-year look-back period • Additional considerations: none
PO I	• Source for diagnosis codes: CMS list of ICD-9/10 codes • Data source(s): encounter data – any diagnosis code (primary or otherwise) – encounter must have been paid • Initial look-back period: 1/1/2016–12/31/2016 – continuous enrollment requirement? No • Frequency of eligibility updates: quarterly with 12-month look-back period • Additional considerations: none

NOTE: ESRD = end-stage renal disease.

We replicated participating POs' approaches using the data that POs reported to CMS and based on the information from each participating PO about how they identify VBID-eligible beneficiaries. We compared beneficiaries identified as eligible by the POs via their MARx data submissions with the beneficiaries we identified using the beneficiary algorithms to determine whether we successfully replicated the algorithm.

Approach to Implementing the Beneficiary Eligibility Algorithms

Each PO's eligibility algorithm is different, but, as initially implemented by the RAND team, all algorithms include the following general characteristics:

1. Eligible beneficiaries must be enrolled in the VBID-participating PBP, with the following specific requirements as found in the beneficiary fact table within CMS's Integrated Data Repository (IDR):
   a. at least one month of enrollment during the initial look-back period
   b. beneficiary must be enrolled in the PBP for at least one month of 2017 (first year of VBID)
2. Eligible beneficiaries are identified using diagnosis codes for the selected conditions using the encounter data within the PO-specified initial look-back period, which occurred prior to implementation of VBID on January 1, 2017.

After initially running these algorithms, we found discrepancies between the list of eligible beneficiaries submitted by the POs via MARx and our implementation of the algorithms using administrative data (not shown). After reviewing the results for beneficiaries who were identified as eligible in one (but not both) of the sources from the initial look-back period, we took the following steps:

1. We assessed whether beneficiaries identified in only the encounter data appeared as eligible in MARx during at least one month in 2017 (e.g., were found and/or reported by the PO as being eligible at a date later than the initial look-back period). If a beneficiary appeared in MARx in this way, we consider them as identified as eligible.

2. For beneficiaries identified as eligible only in the MARx data during the initial look-back period, we expanded the dates for confirmed diagnoses to be at any point in 2017. If a beneficiary is identified as eligible after this date expansion, we consider them as identified as eligible in our implementation of the beneficiary eligibility algorithms.

Results from Implementation of the Beneficiary Eligibility Algorithms

Table D.8 presents the results comparing our implementation of the beneficiary algorithms with the PO-submitted data. We present three summaries of the agreement between our implementation of the beneficiary algorithms and the PO-submitted data:

1. **Agreement rate:** the percentage of beneficiaries identified as eligible in both data sources among those identified as eligible in either source
2. **Sensitivity:** the percentage of beneficiaries identified as eligible by our implementation of the algorithms among those identified as eligible in the PO-submitted MARx data
3. **Specificity:** the percentage of beneficiaries identified as ineligible by our implementation of the algorithms among those identified as ineligible using the PO-submitted MARx data.

The agreement rate among those identified as eligible in either source is high (80 percent or more) for seven of the nine beneficiary eligibility algorithms. The agreement rate is below 70 percent for the remaining two algorithms (PO E and PO I). We identified both of these POs as having possible reporting problems with their MARx submissions, because they reported that close to 100 percent of beneficiaries participated in the program despite having active enrollment requirements.

The sensitivity of our implementation of the beneficiary algorithms for replicating the PO-submitted eligibility status is above 90 percent for all but one of the algorithms (PO H), which has a sensitivity of 82.2 percent. This indicates that our implementation of the beneficiary algorithms identifies a high proportion of beneficiaries as eligible among those identified as such in the PO-submitted data. The specificity of our implementation of the beneficiary algorithms for replicating the PO-submitted eligibility status is above 94 percent for all but one of the algorithms (PO B), which has specificity of 91.9 percent. This indicates that our

Table D.8
Match Rate for Beneficiary Eligibility Algorithms Implemented with MA Encounter Data Compared with PO-Submitted Data, 2017

PO Name	Agreement Rate Between Algorithm and MARx Data Submissions (%)	Sensitivity (%)	Specificity (%)
PO A	94.8	95.4	99.8
PO B	87.5	99.0	91.9
PO C	87.2	91.0	99.4
PO D	97.6	100	98.7
PO E	61.8	90.8	95.5
PO F	83.4	90.7	97.4
PO G	85.6	95.6	97.5
PO H	80.0	82.2	99.6
PO I	68.4	94.5	94.9

implementation of the beneficiary algorithms identifies a high proportion of beneficiaries as ineligible among those identified as ineligible using the PO-submitted data.

The timing of data submission plays an important role in determining the total unique beneficiaries found across the two data sources and the total beneficiaries identified as eligible for these analyses. Our approach fixes the population as all unique beneficiaries identified in either data source for each PO's self-defined look-back period. Expanding the eligibility period to include more-recent data updates (for example, to incorporate the first quarters of 2017) yields a different population of beneficiaries, which we do not include in our analysis.

For each MAO, there were some beneficiaries that appeared either only in the encounter data or only in the MARx data. The two POs with the lowest agreement rates appeared to have interpreted MARx data submission rules differently from other POs. In both cases, almost 100 percent of eligible beneficiaries were reported to have completed participation requirements; however, in other documentation provided to RAND and CMS, it appeared that less than 100 percent of eligible beneficiaries participated in VBID.

Although there was high agreement between the MARx and the encounter data for most POs, we also assessed whether beneficiaries identified only in the encounter data or only in the MARx data were systematically different from those identified in both data sources. Table D.9 shows the VBID-level (rolled up across all participating POs) beneficiary characteristics comparisons for these three groups. Results indicate that beneficiaries only identified via encounter data are older, less likely to be male, and more likely to be dually eligible for Medicare and Medicaid. Beneficiaries only identified via the MARx data are also older, less likely to be male, and more likely to be black.

Within-PO comparisons (not shown) suggest varying patterns across POs in the differences for beneficiary characteristics. For example, some POs have statistically significantly higher rates of dually eligible beneficiaries found only in the encounter data, compared with beneficiaries who appear in both MARx and encounter data, while others do not. In addition, some POs do not show significant differences in average beneficiary age across the groups.

Table D.9
Beneficiaries Identified in Both MARx and Encounter Data, Only in MARx Data, and Only in Encounter Data

	Agreement Between MARx and Encounter Data	Only in Encounter Data	Only in MARx Data
Number of beneficiaries	90,016	6,160	5,826
Age	75.8	77.7*	77.1*
Gender (percentage male)	46.8	43.2*	43.2*
Race/ethnicity (%)[a]			
White	91.2	92.9*	89.1*
Black	3.9	3.4	6.1*
Asian/Pacific Islander	1.5	0.6*	1.3
Native American/Alaska Native	0.2	0.2	0.2
Hispanic	1.6	1.4*	1.7
Multiple races	1.6	1.6	1.6
Dually eligible for Medicare and Medicaid (%)	7.4	15.5*	7.3
Risk score (HCC)	1.5	1.6*	1.5
Chronic conditions (%)[b]			
Cancer	14.3	14.4	15.4*
CHF	26.5	25.5	25.8
COPD	27.1	32.4*	22.3*
Diabetes	41.0	29.5*	31.7*

* Statistically significant difference from beneficiaries found in both data sets, using two-sample *t*-tests or chi-square tests for continuous and categorical variables, respectively. (*Significant difference* is defined as p-value < 0.05).

[a] Percentages may not add to 100 due to rounding.

[b] Chronic conditions were identified using the HCC flags used to construct beneficiary risk scores.

APPENDIX E

Enrollment Analysis

Construction of Enrollment Measures

PBP-Level Enrollment

We defined *PBP-level enrollment* as the total number of MA beneficiaries enrolled at any month in each PBP in each year. As a sensitivity test, we also examined PBP enrollment during July of each calendar year to establish a fixed enrollment number. We selected July because it is a month when enrollment has generally stabilized. The correlation between the main measure of PBP enrollment and the July sensitivity test enrollment is 0.95. The unadjusted trends and regression results are nearly identical using the July metric, and so, for brevity, we only report the main enrollment measure.

PBP-level enrollment was constructed using the beneficiary-level enrollment data in the IDR. Analyses focused on VBID-participating PBPs and the matched-control PBPs. All PBP enrollees were included, regardless of VBID eligibility.

PBP-Level New Enrollment

The new enrollment variable, which measures the number of beneficiaries to newly enter a specific PBP, was also constructed using the IDR enrollment data. We define *new enrollment* as enrollment during year t in PBP j when the beneficiary was either previously enrolled in a different PBP, in Fee-for-Service (FFS) Medicare, or not yet eligible for Medicare. The beneficiary's status in each year was defined based on the previous calendar year. We excluded enrollees who were moved en masse by their insurer from one PBP to another because of consolidation or a change in PBP identification numbers. For each beneficiary, new enrollment in a PBP was defined as equal to zero if the beneficiary was enrolled in the same PBP in both years t and $t-1$, and one if the beneficiary was enrolled in another MA PBP, FFS Medicare, or not eligible for Medicare during year $t-1$. New enrollment in each PBP was defined using the same enrollment definitions (e.g., any enrollment and July enrollment) used to construct the PBP-level enrollment variable. The correlation between the main measure and the July measure is 0.91, so we only report the main measure of new enrollment.

Enrollment for Patients with Chronic Conditions

We identified beneficiaries with four chronic conditions—COPD, CHF, diabetes, and hypertension. Beneficiaries with these conditions were identified according to the following HCC codes—108 (COPD), 80 (CHF), 15–19 (diabetes), and 88 (hypertension). Among patients with these conditions, we calculated PBP-level enrollment and new enrollment.

Analysis

We assessed trends in enrollment in two ways. First, we examined the unadjusted trends in total enrollment and new enrollment. We report both aggregate enrollment, which is the sum across all VBID-participating and matched-comparison PBPs, and the average enrollment in participating and nonparticipating PBPs.

Next, we used linear difference-in-differences regressions to examine the statistical difference in enrollment trends between the VBID-participating and comparison PBPs. The regression results measure the change in enrollment for the VBID-participating PBPs before and after the 2017 implementation of VBID, relative to the nonparticipating PBPs. For both total enrollment and new enrollment, we estimate the regressions using both raw enrollment and log-transformed enrollment as the dependent variable. The log-transformation minimizes the influence of outliers and allows for a percentage interpretation of the regression coefficients. We included PBP fixed effects so the regression results allow for a within-PBP estimate of the effect of VBID participation on enrollment trends.

In particular, we estimated the following difference-in-differences regression:

$$enrollment_{jt} = \alpha + \beta_1 post_t + \delta\, post_t \times VBID_j + \theta\, plan_j + \varepsilon_{jt}\,, \qquad \text{(Eq. E.1)}$$

In this regression, $enrollment_{jt}$ represents each of the four enrollment-dependent variables—total enrollment, log-transformed total enrollment, new enrollment, and log-transformed new enrollment. The $post_t$ indicates the 2017 implementation of VBID, and the $VBID_j$ identifies the PBPs that participated in VBID. The δ on the interaction between the two terms gives the difference-in-differences estimate of the effect of VBID on PBP enrollment. It estimates the difference in PBP enrollment between the VBID-participating PBPs and comparison PBPs in 2017 relative to the differences in the 2014–2016 periods. The PBP fixed effects, denoted by $plan_j$, control for time-invariant differences between PBPs. The PBP fixed effects also negate the need for a main $VBID_j$ term in the regression equation. Similar results were obtained by including yearly interactions between year and VBID participation, which estimates the difference in each enrollment outcome for each year.

To assess differences in preimplementation trends, we also estimated a sensitivity test that replaces the term $post_t \times VBID_j$ with separate interactions for each year:

$$enrollment_{jt} = \alpha + \sum_t \beta_t year_t + \sum_t \delta_t year_t \times VBID_j + \theta\, plan_j + \varepsilon_{jt}\,, \qquad \text{(Eq. E.2)}$$

In this regression, the $year_t$ term denotes year fixed effects (i.e., separate indicators for the years 2015, 2016, and 2017, with 2014 as the reference year). The $\delta_t year_t \times VBID_j$ terms denote interactions with indicators for the years 2015, 2016, and 2017, with indicators for VBID participation. This sensitivity test allows us to test for differential trends in each enrollment outcome between the VBID-participating and comparison PBPs. Finding statistically significant δ_{2015} and δ_{2016} coefficients will indicate differential preimplementation trends between the two PBP types.

Detailed Results

Unadjusted Trends

Table E.1 presents unadjusted enrollment by year. Panel A aggregates the total number of enrollees across all VBID-participating and matched-control PBPs. Panel B presents the average PBP enrollment for each category. At both the aggregate and the PBP levels, these results show an approximately 10-percent increase in total enrollment between 2014 and 2015. However, over the 2015–2017 period, total enrollment changes by a maximum of 3 percentage points per year. Both participating PBPs and matched controls experienced decline in new enrollment between 2016 and 2017 (–15 percent for participating PBPs and –22 percent for matched-control PBPs).

Regression-Adjusted Trends

Table E.2 presents the regression-adjusted trends in VBID enrollment. The first column shows that, in 2017, following the introduction of VBID, there was a decrease of 301 beneficiary years for the VBID-participating PBPs relative to the comparison PBPs. However, this result is not statistically significant. When we convert the dependent variable to log enrollment (to reduce the influence of outlier values on results), the results in the second column show a decrease

Table E.1
Unadjusted Trends in PBP Enrollment

	VBID-Participating Plans				Matched-Comparison Plans			
Year	Total Enrollment	Percentage Change	New Enrollment	Percentage Change	Total Enrollment	Percentage Change	New Enrollment	Percentage Change
Panel A: Aggregate-Level Enrollment								
2014	388,906	N/A	76,300	N/A	554,328	N/A	117,954	N/A
2015	432,155	11%	83,796	10%	585,051	6%	88,117	–25%
2016	446,593	3%	55,457	–34%	603,596	3%	81,977	–7%
2017	449,297	1%	47,144	–15%	613,125	2%	63,671	–22%
Panel B: Plan-Level Enrollment								
2014	9,044	N/A	1,774	N/A	12,598	N/A	2,681	N/A
2015	9,822	9%	1,904	7%	13,297	6%	2,003	–25%
2016	9,924	1%	1,232	–35%	13,718	3%	1,863	–7%
2017	9,984	1%	1,048	–15%	13,935	2%	1,447	–22%

NOTE: N/A = not applicable.

Table E.2
Regression-Adjusted Trends in VBID Enrollment

Enrollment Measure	(1) Total Enrollment	(2) log(Total Enrollment)	(3) New Enrollment	(4) log(New Enrollment)
VBID X post	–301.4	–2.380%	104.9	–16.39%
	(–2,265 – 1,662)	(–16.83 – 14.58)	(–663.7 – 873.4)	(–41.43 – 19.36)
Observations	353	353	353	353
R-squared	0.976	0.978	0.829	0.897

NOTE: 95-percent confidence intervals are in parentheses. * $p < 0.05$

of approximately 2.4 percent, which is also not statistically significant. When looking at new enrollment (columns 3 and 4), we find a 105-beneficiary reduction in new enrollment in 2017 for VBID-participating PBPs relative to comparison PBPs, and a 16-percent reduction when we transform the dependent variable using logs. However, neither result is statistically significant.

Table E.3 presents the sensitivity test that we used to examine differential trends in 2015, 2016, and 2017. For each year, we do not find total enrollment results that are statistically significant at the $p < 0.05$ level. The magnitude of the coefficients is also small. Thus, we do not find evidence of nonparallel trends in the preimplementation period. Column 3 shows a non–statistically significant increase in new enrollment for the VBID-participating PBPs compared with the comparison PBPs. However, when measured using log-transformed new enrollment (column 4), we found a non-statistically significant *decrease* in new enrollment relative to new enrollment in 2014. The difference between the two new enrollment measures is consistent with the results of Table E.1, which shows stable trends in aggregate-level new enrollment but declining trends in plan-level new enrollment. This difference suggests that overall new enrollment remained constant, but the increase in new enrollment is isolated to a small number of plans and is not evenly distributed across plans.

Verification of Enrollment Trends

In previous analyses and in the main text of this report, we found an increase in total enrollment in both VBID-participating PBPs and matched-control PBPs between 2014 and 2017 and a decrease in new enrollment. At face value, these trends may appear contradictory. To better understand these patterns, we tracked all possible types of enrollment changes between 2014 and 2017 for VBID-participating PBPs and matched controls. These changes include

- **new enrollment:** beneficiaries who moved into the PBP from a prior status of enrolled in another PBP, Medicare FFS, or not eligible for Medicare
- **consolidated enrollment:** beneficiaries who were moved en masse into the PBP because of consolidation or changes in PBP identification numbers
- **disenrollment:** beneficiaries who left the PBP between years $t - 1$ and t because of moving to a different PBP, switching to Medicare FFS, or death
- **enrolled in previous year:** beneficiaries were enrolled in the PBP in both year t and year $t - 1$.

Table E.3
Regression-Adjusted Trends in VBID Enrollment: Yearly Enrollment Sensitivity Test

	(1)	(2)	(3)	(4)
Enrollment Measure	Total Enrollment	ln(Total Enrollment)	New Enrollment	ln(New Enrollment)
VBID x 2015	–145.1	–0.00426	657.3	–0.423*
	(–1,543 – 1,252)	(0.0553)	(–310.8 – 1,625)	(0.247)
VBID x 2016	–274.4	–0.0515	125.2	–0.622**
	(–2,519 – 1,971)	(0.0939)	(–1,247 – 1,497)	(0.269)
VBID x 2017	–430.9	–0.0426	356.5	–0.537*
	(–3,483 – 2,621)	(0.125)	(–1,030 – 1,743)	(0.292)
Observations	353	353	353	353
R-squared	0.976	0.978	0.837	0.909

NOTE: 95-percent confidence intervals are in parentheses. * $p < 0.05$

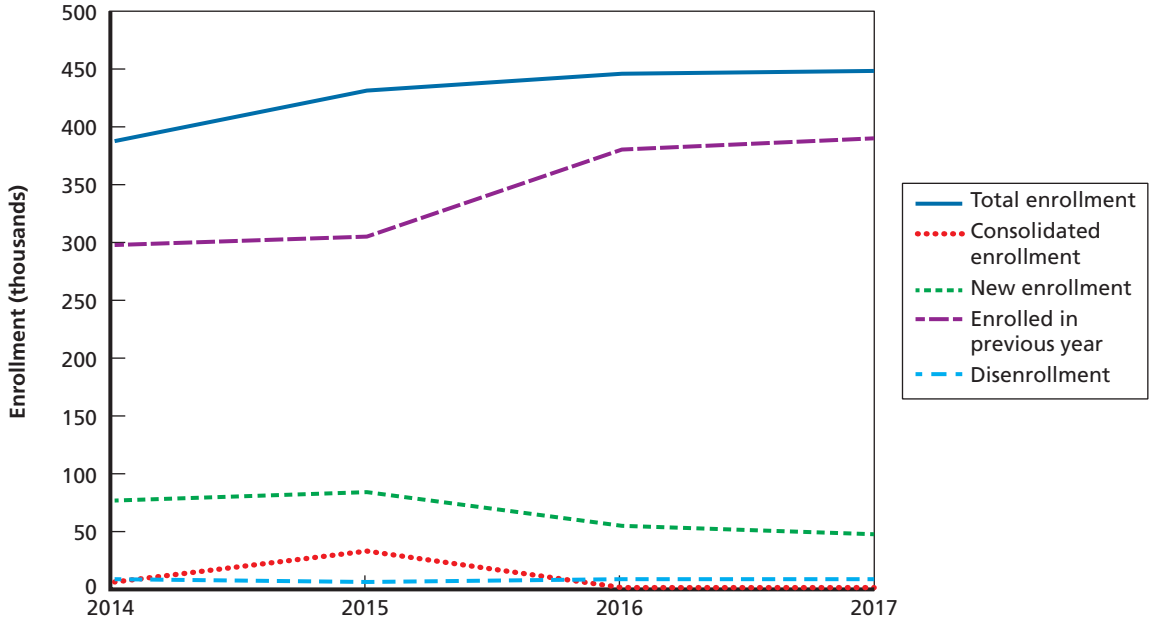
Figures E.1 and E.2 show trends in total enrollment and enrollment changes for VBID-participating PBPs (Figure E.1) and matched-comparison PBPs (Figure E.2). The figures clarify that total enrollment increases over time despite the declines in new enrollment because disenrollment is small compared with new enrollment and consolidated enrollment. The declines in new enrollment are consistent with the overall MA PBP population. Among PBPs that were not VBID participants or in the comparison group, there was an annual average 8.5-percent increase in total enrollment across the 2014 to 2017 period. However, there was a 7.3-percent reduction in average new enrollment. The increase in total enrollment coupled with the decrease in new enrollment is consistent with consolidation among PBPs during this period.

Enrollment Results by Chronic Condition

In addition to total enrollment, we also examined enrollment trends among beneficiaries with chronic conditions that are likely to be impacted by VBD—COPD, CHF, diabetes, and hypertension. As shown in Figure E.3, for all four chronic conditions, the trends in total enrollment between the VBID-participating and comparison PBPs are similar across the 2014–2017 period.

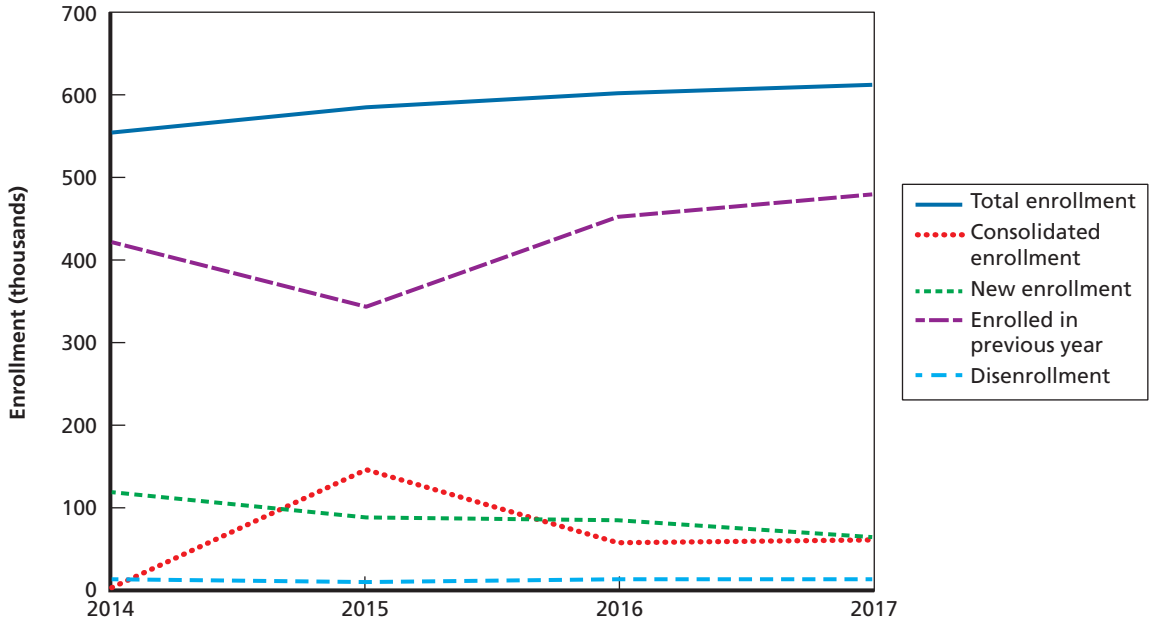
Table E.4 presents the regression-adjusted trends for patients with each of the four chronic conditions. Panels A, B, C, and D separately present results for patients with COPD, CHF, hypertension, and diabetes, respectively. For all four chronic conditions, we do not see any differential trends in total enrollment or new enrollment between the VBID-participating and comparison PBPs.

Figure E.1
Trends in Enrollment for VBID-Participating PBPs



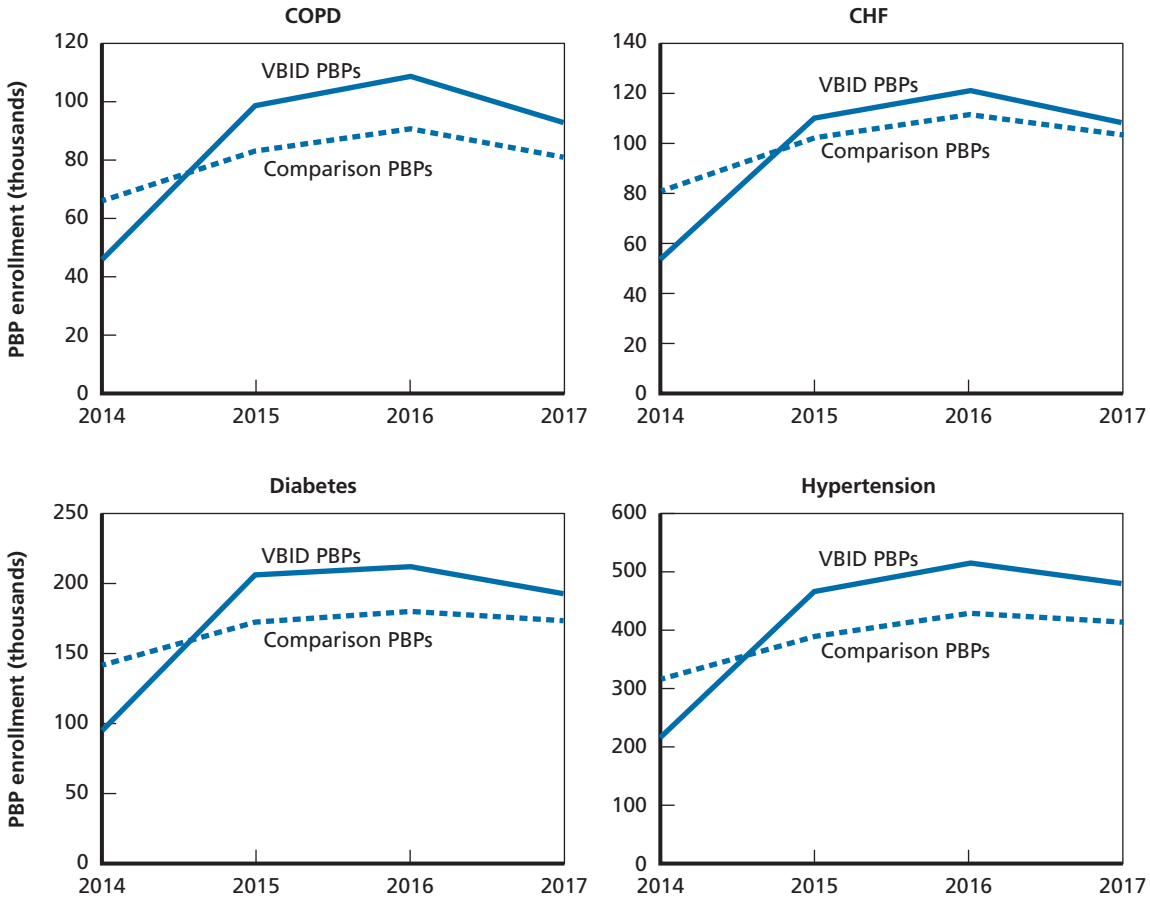
RAND *RR2421-E.1*

Figure E.2
Trends in Enrollment for Matched-Comparison PBPs



RAND *RR2421-E.2*

Figure E.3
Trends in Enrollment, by Chronic Condition Status



RAND *RR2421-E.3*

Table E.4
Regression-Adjusted Trends in VBID Enrollment Among Beneficiaries with Chronic Conditions

	(1)	(2)	(3)	(4)
Enrollment Measure	**Total Enrollment**	**log(Total Enrollment)**	**New Enrollment**	**log(New Enrollment)**
Panel A: COPD				
VBID X post	144.8	2.851%	–30.89	–4.882%
	(–281.3 – 571.0)	(–11.93 – 20.11)	(–145.7 – 83.97)	(–34.36 – 37.83)
Observations	353	353	353	353
R-squared	0.825	0.968	0.662	0.876
Panel B: CHF				
VBID X post	105.6	2.439%	–42.44	1.756%
	(–443.6 – 654.8)	(–12.33 – 19.70)	(–188.1 – 103.2)	(–27.75 – 43.31)
Observations	353	353	353	353
R-squared	0.839	0.970	0.714	0.896
Panel C: Diabetes				
VBID X post	230.0	–0.0104%	–115.9	–12.71%
	(–737.4 – 1,197)	(–13.98 – 16.22)	(–451.6 – 219.7)	(–40.57 – 28.21)
Observations	353	353	353	353
R-squared	0.832	0.972	0.653	0.887
Panel D: Hypertension				
VBID X post	811.4	1.045%	–173.6	–10.97%
	(–1,930 – 3,553)	(–12.37 – 16.51)	(–839.3 – 492.0)	(–39.43 – 30.88)
Observations	353	353	353	353
R-squared	0.828	0.970	0.645	0.891

NOTE: 95-percent confidence intervals are in parentheses. * $p < 0.05$.

APPENDIX F

Analysis of Plan Bids and Revenue to Plans

As part of the VBID evaluation, we received PBP-level data from the CMS OACT on plan bids, projected risk scores, and rebates. We used these data to define total PBP PMPM bids and plan revenue over the 2014–2017 period. Many PBPs have separate subsegments, which are typically geography-based, that have different premiums and cost sharing within the same PBP. Thus, bid information is reported at the PBP segment level, while the VBID program is at the PBP level. We used enrollment weights to aggregate the PBP segment-level data from OACT into PBP-level bids, projected risk scores, and rebates. *PBP bids* were defined as the standardized plan bid, while *revenue to plans* was defined as the amount that would be paid to plans after accounting for differences in projected enrollee risk scores and rebates. Using the OACT data from 2014 to 2017, we constructed PBP bids and revenue as:

1. *Part C Bid = Standardized Part C Bid*
2. *Part C Revenue to Plans = Standardized Part C Bid × MA Risk Score + Rebate*
3. *Part D Bid = Standardized Part D Bid Amount*
4. *Part D Revenue to Plans = Standardized Part D Bid × Part D Risk Score + Supplemental Part D Premium*
5. *MA-PD Standardized Bid = Standardized Part C Bid + Standardized Part D Bid*
6. *MA-PD Revenue to Plans = (Standardized Part C Bid × Risk Score + MA Rebate) + (Standardized Part D Bid × Part D Risk Score + Supplemental Part D Premium).*

Our primary results use the definitions in numbers 5 and 6. We consider the definitions in numbers 1 through 4 in sensitivity tests. For the Part C bids (1) and revenue to plans (2), we separately examine MA-PDs and standalone MA plans. However, in 2016, the year before VBID implementation, both types of plans had similar Part C bids and revenue. There was only a \$5.3 (p = 0.78) difference in Part C bids and a \$22.7 (p = 0.63) difference in Part C revenue. This similarity suggests that MA-PD and standalone MA plans have similar bid and revenue structures.

One limitation of this analysis is that we do not include the Part D Low-Income Subsidy (LIS) payments, which are additional payments that CMS makes to PBPs to cover the premiums and cost sharing of low-income enrollees. The LIS payments are not based on PBP bids, and thus only affect revenue to plans. We also do not account for revenue stemming from reinsurance or risk corridor payments. Because we do not include these payments in our revenue measure, we may be underrepresenting revenue to plans. This concern is amplified if LIS enrollment is related to VBID participation. If LIS enrollment is independent of the VBID program, then the undercounting of revenue is likely to equally impact VBID-participating

and comparison PBPs and will thus be differenced out. However, if LIS enrollees actively select VBID-participating PBPs, then excluding LIS payments from plan revenue may underrepresent the actual impact of the VBID program on revenue.

Finally, Equation 6 might double-count the MA Rebate to the extent the plan applied any portion of the rebate to buying down the Supplemental Part D Premium.

Difference-in-Differences Regression

To estimate the effects of VBID participation on PBP bids and revenue to plans, we estimated the following linear differences-in-differences regression:

$$y_{jt} = \alpha + \delta VBID_j \times post_t + \beta_1 year_t + \beta_2 plan_j + \varepsilon_{jt} , \quad \text{(Eq. F.1)}$$

In this expression, y_{jt} measures the bid and revenue variables defined above. $VBID_j$ is an indicator for the PBPs that participated in VBID. The $post_t$ variable measures the 2017 implementation of VBID. The δ regression coefficient gives the difference-in-differences effect of VBID participation on each outcome. Intuitively, the effect measures the differential trend in each outcome between the VBID-participating and comparison PBPs before and after the implementation of VBID. We included year and PBP fixed effects to control for time trends and time-invariant differences across plans, respectively. We weighted the results to ensure parallel pre-trends using the method discussed in Appendix D.

Regression Results

As shown in Table F.1, we observe a small, $12.82 (95-percent confidence interval: −$29.70 to $4.06), decrease in bids for VBID-participating PBPs. This decrease is almost identical to the unadjusted descriptive results in the main text (Figure 7.2). This decrease is driven by the reductions in Part C bids for both MA-PD and MA-only plans, but these reductions are also

Table F.1
Regression-Adjusted Trends in PBP Bids

	(1)	(2)	(3)	(4)
	Total Bid (C + D) MA-PD PBPs	Part C Bids MA-PD PBPs	Part C Bids MA Only PBPs	Part D Bids MA-PD PBPs
VBID X post	–12.82	–11.58	–17.09	–0.209
	(8.451)	(8.535)	(8.252)	(2.619)
Observations	264	264	84	264
R-squared	0.945	0.931	0.962	0.855

NOTE: Robust standard errors in parentheses.

not statistically significant. Among the PBPs that offer both a Part C and Part D plan, we do not observe any difference in Part D bids based on VBID participation.

Table F.2 shows that participation in VBID is not linked to increases in PBP revenue. For the combined revenue, Part C revenue for MA-PD PBPs, Part C revenue for PBPs without a Part D plan, and Part D revenue for MA-PD PBPs, we do not observe any change in plan revenue. The lack of an effect is consistent with the unadjusted results in the main text (Figure 7.2). Thus, we do not find any evidence that VBID participation influences PBP revenue.

To reconcile the $12.82 reduction in Table F.1 and the $4.70 increase in revenue shown in Table F.2, we decomposed the separate components of the revenue (Part C risk score, Part D risk score, Part C rebate, and Part D supplemental premium). We used each component as a dependent variable and estimated the same difference-in-differences regression as above. These results show a 2.2-percentage point increase in the Part C risk score (95-percent confidence interval: −0.3 to 4.7 percentage points), a 1.6-percentage point increase in the Part D risk score (95-percent confidence interval: −0.3 to 3.5 percentage points), and no change in the Part C rebate ($4.2 increase, 95-percent confidence interval: −$3.9 to $12.3) and Part D supplemental premium ($0.14 decrease, 95-percent confidence interval: −$3.43 to $3.14). These results suggest that the increases in Part C and Part D risk scores offset the decrease in PBP bids.

Table F.2
Regression-Adjusted Trends in PBP Revenue

	(1)	(2)	(3)	(4)
	Total Revenue (C + D) MA-PD PBPs	Part C Revenue MA-PD PBPs	Part C Revenue MA Only PBPs	Part D Revenue MA-PD PBPs
VBID X post	4.70	–3.10	42.73	0.47
	(14.72)	(13.09)	(25.55)	(3.578)
Observations	264	264	84	264
R-squared	0.960	0.960	0.976	0.842

NOTE: Robust standard errors in parentheses.

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