Evaluation of the Rural Community Hospital Demonstration

CCA Extension Final Report (Covering 2016–2021)

Centers for Medicare & Medicaid Services

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Evaluation of the Rural Community Hospital Demonstration

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The Rural Community Hospital Demonstration (RCHD)

The Rural Community Hospital Demonstration (RCHD) was authorized under the Medicare Prescription Drug, Improvement, and Modernization Act (MMA) of 2003. The goal of this demonstration is to improve the financial health of small rural hospitals by offering the potential for higher Medicare payments for covered inpatient hospital services.

Eligibility Criteria

To participate, hospitals must:

- Be in a rural area
- Have fewer than 51 beds
- Operate a 24-hour emergency department
- Not qualify as a Critical Access Hospital

Demonstration Extensions

Under the initial, five-year MMA authorization, the demonstration was implemented in the 10 least populated states, and within those states, only up to 15 hospitals could participate. After it, the RCHD has been extended three times:

- By the Patient Protection and Affordable Care Act ACA (2010) – Expanded to 20 least densely populated states, up to 30 hospitals.
- By the 21st Century Cures Act CCA (2016) – Opened to all states, with priority to the 20 least densely populated.
- By the Consolidated Appropriations Act CAA (2021) – Extended for another five years.

This Report

This report focuses on the CCA extension period, covering 26 hospitals active as of FY 2021. In this report, as in *Interim Report Two,* RCHD hospitals are divided into two groups: *new* hospitals and *continuing* hospitals.

The distribution of these 2 types of hospitals is:

- 12 *new* hospitals (i.e., joined under CCA and their first exposure to RCHD)
- 14 *continuing* hospitals (i.e., joined under prior MMA or ACA RCHD extensions)

Evaluation Goals

This final report uses Medicare cost reports (available through FY 2021), interviews with hospital representatives, and other data sources to:

- Describe the characteristics of active RCHD hospitals as of FY 2021,[1] *before* they joined the demonstration.
- Describe the RCHD payments hospitals received between FYs 2005 and 2021.
- Assess financial impacts on:
  - **Medicare margins** (i.e., inpatient alone and combined [inpatient and outpatient] margins)
  - **Operating and total profit margins**, which include non-Medicare revenue and costs
  - **Other Medicare revenue indicators** (e.g., Medicare share of inpatient discharges)
  - **Other financial health indicators** (e.g., days cash on hand, debt ratios)
- This evaluation report covers the same topic areas covered by previous interim reports, but differs from previous interim reports in the following ways:
  - It uses a different sample of hospitals.
  - It uses a different baseline period than the one used in *Interim Report One.*
  - It includes public health emergency (PHE) years due to the Covid-19 pandemic.

RCHD Payment Methodology

RCHD hospitals are paid based on **costs**, not standard Medicare rates and are implemented as a 5-year cycle of Base Year + 4 subsequent years. *Continuing* hospitals are then 're-based' and the cycle repeats:

- **Year 1 (Base Year)**: Paid for reasonable costs of care for Medicare beneficiaries treated for inpatient acute care and swing-bed stays.
- **Subsequent 4 Years**: Paid the lesser of actual costs or a **target amount** (adjusted for inflation, case-mix, and discharges).
- **Rebase Year**: Applies to hospitals continuing into a new extension period. Paid for reasonable costs of care for Medicare beneficiaries treated for inpatient acute care and swing-bed stays.

[1] At the time the quantitative analyses were conducted, verified cost report data was only available up to FY 2021.

RCHD payments are composed of a payment for acute inpatient stays and a payment for swing-bed stays, which are calculated separately. A swing bed is an acute care bed used to furnish either acute or skilled nursing facility (SNF)-level care.[2]

Data and Methods

- **Quantitative**: Medicare cost reports were analyzed using descriptive statistics and multivariate difference-in-differences (DID) regressions with a comparison group comprised of similar non-participant hospitals. Regressions included control variables for the incidence of Covid-19, including deaths per 1,000 population, cases per 1,000 population, and percentage of inpatient beds occupied by suspected or confirmed Covid-19 patients. Additionally, we calculated the effects of the RCHD prior to the PHE and during the pandemic years.
- **Qualitative**: Interviews with hospital executives conducted in FY 2021.

Key Findings

- **Before joining the RCHD**: Participant hospitals had lower Medicare margins than non-participants indicating that Medicare payments did not cover the costs of providing care.
- **After joining the RCHD:** Participant hospitals received higher payments for acute care and swing-bed inpatient services than they would have received under either IPPS or SNF PPS. Additional payments hospitals received under the RCHD varied substantially. The impact of these additional payments on hospital finances is as follows:
  - **RCHD impacts for *New* Hospitals**: *New* hospitals experienced large but not statistically significant *Medicare margin increases* overall; gains were significant pre-COVID, but not during the pandemic. These margin increases indicate that Medicare payments were closer to covering the costs of providing care.
  - **RCHD impacts for *Continuing* Hospitals**: Prior improvements in Medicare margins were maintained but there were no new gains beyond the ones experienced during ACA period. Gains were significant pre-COVID, but not during the pandemic. There were no changes to total profit margins for these hospitals.

Hospitals Characteristics Prior to Joining the Demonstration

- **RCHD hospitals compared to non-participants:**

[2] Centers for Medicare & Medicaid Services. (2018, October). *Report to Congress: Rural Community Hospital Demonstration,* p. 8. https://innovation.cms.gov/files/reports/rch-rtc.pdf

  - Prior to joining the RCHD, all participant hospitals had negative or substantially lower Medicare inpatient margins compared to non-participating hospitals. This suggests that hospitals joined the demonstration to improve their Medicare financial performance.
  - Had older capital infrastructure.
  - Were more likely to be non-profits, have higher inpatient discharges, and treat more clinically complex patients.
  - Were more likely to be in less densely populated, wealthier, and more educated counties.
  - Were less likely to be in Competitive markets (defined as having three or more hospitals within 35 miles).
- ***Continuing* versus *new* RCHD hospitals:**
  - Had higher total profit and operating margins indicating a relatively stronger financial position. However, they still faced challenges with negative Medicare inpatient and combined margins.
  - Were more likely to operate in Competitive markets.
  - Were more likely to be in counties that were slightly younger, less educated, and less affluent (based on lower unemployment rates and higher median home values).

Payments RCHD Hospitals Received

- ***New* Hospitals:** Received approximately $1.62M higher payments than what they would have received under IPPS (33% higher than IPPS). These additional payments helped improve hospitals' Medicare inpatient margins bringing them closer to break-even, although they remained negative . Medicare combined margins also improved slightly but stayed negative.
- ***Continuing* Hospitals**: Received approximately $2.68M higher payments than what they would have received under IPPS (48% higher than IPPS). These payments helped hospitals move closer to breaking even on their Medicare inpatient margins.
- **Variation:** Payment increases varied widely across hospitals.

Impact of the RCHD on Key Hospital Financial Measures

- ***New* RCHD Hospitals**: Participation led to large but not statistically significant increases in Medicare inpatient and combined margins during the CCA period. These gains were statistically significant before COVID, but not during the pandemic, resulting in no significant overall effect for the full period.

- ***Continuing* RCHD Hospitals**: No additional margin improvements were observed beyond those seen during the ACA period which were maintained. However, pre-COVID data showed statistically significant gains, likely due to rebasing. These gains were not sustained during the pandemic.
- **Pandemic Impact:** Hospital leaders cited rising costs and reduced service utilization during COVID as key factors that weakened overall financial performance.
- **Demonstration Value**: Despite financial challenges, many hospitals credited the RCHD with helping to stabilize operations and prevent deeper losses, especially those operating with negative margins.
- **Swing-Bed Revenue:** New hospitals saw an increase in Medicare swing-bed revenue share. Interviews with hospital administrators confirmed that swing beds were viewed as financially beneficial and often central to the decision to remain in the demonstration.

Overall Assessment: Findings for this report mostly align with earlier reports, suggesting the RCHD has reached a steady state in its financial impact and has achieved its goal of offering a mechanism for improved financial viability for RCH hospitals. *Continuing* hospitals maintained Medicare inpatient margins near break-even during the CCA extension, while new hospitals saw an improvement in their margins due to first time participation in the Demonstration. The COVID-19 pandemic dampened these effects, particularly for new participants.

1.0 Introduction

The Rural Community Hospital Demonstration (RCHD) was authorized under the Medicare Prescription Drug, Improvement, and Modernization Act (MMA) of 2003 to "test the feasibility and advisability of the establishment of rural community hospitals to furnish covered inpatient hospital services to Medicare beneficiaries."[3] The goal of the demonstration is to strengthen the financial condition of small, rural community hospitals and help them to meet the needs of Medicare beneficiaries who reside in their market areas by providing the potential for higher Medicare payments for covered inpatient hospital services. Rural hospitals with fewer than 51 beds that maintained a 24-hour emergency department and that were ineligible to be designated a Critical Access Hospital (CAH) were eligible for the demonstration. Since its original authorization, the demonstration has been extended three times: (1) by the Patient Protection and Affordable Care Act (ACA) of 2010; (2) the 21st Century Cures Act (CCA) of 2016; and (3) the Consolidated Appropriations Act (CAA) of 2021.

Under the initial five-year MMA authorization, the demonstration was implemented in the 10 least populated states, with participation limited to 15 hospitals. The ACA extended the demonstration for another five years, expanding eligibility to the 20 least densely populated states and increasing the cap to 30 participating hospitals. The CCA authorized the demonstration for another five years, allowing hospitals from any state to participate, while giving priority to those in the 20 least densely populated states. The CAA of 2021 authorized the demonstration for another five years and is currently in effect.

In September 2019, the Centers for Medicare and Medicaid Services (CMS) selected IMPAQ International, LLC (now American Institutes for Research [AIR]), to evaluate the RCHD under the CCA authorization extension.[4] The evaluation team includes AIR, Mission Analytics Group, and an advisory group of subject matter experts from the Healthcare Financial Management Association (HFMA) and the University of Iowa's Rural Policy Research Institute (RUPRI) Center for Rural Health Policy Analysis.

[3] Centers for Medicare and Medicaid Services. (2017). *Rural Community Hospital Demonstration request for applications: Frequently asked questions*. https://www.cms.gov/priorities/innovation/files/x/rch-faqs.pdf

[4] The results of the first evaluation of the RCHD are reported in the *Interim Evaluation Report of the Rural Community Hospital Demonstration* (unpublished report submitted August 30, 2011, to CMS), which studied the experience of RCHD hospitals under the initial MMA authorization. The results of the second evaluation, which focused on the experience under the ACA extension, can be found in the October 2018 *Report to Congress*, available at https://www.cms.gov/priorities/innovation/Files/reports/rch-rtc.pdf, and in the *Rural Community Hospital Demonstration Evaluation: Expansion under the Affordable Care Act, Final Report* (unpublished report submitted September 13, 2017, to CMS).

1.1 What This Evaluation Covers

This report uses the latest available hospital cost report data of the 26 RCHD hospitals that were active in the demonstration as of Fiscal Year (FY) 2021 complemented with information from interviews with hospital administrators to do the following:

- Describe the characteristics of these RCHD hospitals before they joined the demonstration and compare them to eligible non-participant hospitals.
- Calculate the payments these RCHD hospitals received under the demonstration. RCHD payments are calculated *over* (or *under*) what hospitals would have received if they had not been part of the RCHD (i.e., over the amounts hospitals would have received under Medicare's Inpatient Prospective Payment System [IPPS] and Skilled Nursing Facility [SNF] Prospective Payment System [PPS]) for swing-bed stays.
- Estimate the impact of the RCHD on hospitals' financial condition using a difference-in-differences (DID) approach. The report uses a comparison group of non-participant hospitals, with characteristics similar to those of participants at baseline, to examine the impact of the RCHD on key hospital financial outcomes. These outcomes are classified according to the following five categories:
    1. Medicare margins[5] (i.e., Medicare inpatient margins and Medicare combined [inpatient and outpatient] margins);
    2. Overall profitability margins[6] (i.e., total profit margins [inclusive of non-operating/non-patient care revenues] and operating margins);
    3. A capital investment indicator (age of the plant, which measures the financial age of the fixed assets of the hospital).
    4. Medicare revenue indicators (Medicare share of inpatient discharges, Medicare share of inpatient days, and Medicare swing-bed revenue share); and
    5. Other financial indicators (days cash on hand, long-term debt to capitalization ratio, ratio of salaries to net patient revenue, and hospital full-time equivalents [FTEs] per occupied bed).

It should be noted that the results included in this report are not comparable to the results of *Interim Report Two* for the following reasons:

[5] Medicare margins are a measure of the extent to which Medicare reimbursements cover the cost of providing care for Medicare beneficiaries. A positive margin indicates a profit is made.

[6] Similar to Medicare margins, total profit margins include all other income sources beyond Medicare. Operating margins express the proportion of a hospital's patient care and related services to its total operating revenue. A positive margin indicates a profit is made.

- This *Final Evaluation Report* includes RCHD hospitals that were active as of federal FY 2021 (n=26), whereas *Interim Report Two* includes RCHD hospitals that were active as of FY 2019 (n=29).
- This *Final Evaluation Report* covers the entire CCA authorization extension period to the extent possible[7], whereas *Interim Report Two* included data up to FY 2018 which included results for only one CCA authorization extension year.

A detailed description of the differences in research questions between *Interim Report One* and *Interim Report Two,* which also apply to this *Final Evaluation Report,* can be found in the *Second Evaluation Design Report*.[8]

The remainder of this introduction describes the RCHD payment methodology, the evaluation research questions that will be answered, and the conceptual model. **Sections 2.0** through **4.0** describe the evaluation results for each topic area and the appendices provide additional supplementary information.

1.2 The RCHD Payment Methodology

Hospitals in the RCHD are paid differently than how they would be paid under the standard IPPS, which pays nationally standardized rates per discharge, adjusted for patient case-mix, market conditions, and other factors. Participating hospitals in the demonstration instead use a cost-based payment methodology for acute inpatient stays in the first year and afterward, annual payments based on trended acute inpatient costs in subsequent years. A hospital's first year in the demonstration is referred to as its **base year** and, in this year, a hospital is paid on the basis of reasonable costs of care for Medicare beneficiaries treated for inpatient acute care or swing-bed stays. In the years following the base year, hospitals are paid the lesser of reasonable costs or a target amount. The target amount is calculated as a hospital's Medicare acute inpatient cost per diem in the base year adjusted for inflation using the PPS market basket update factor, the change in the hospital's case-mix relative to the base year, and the number of Medicare inpatient discharges.

Hospitals that continue their participation in a demonstration extension are paid on the basis of reasonable costs of care for Medicare beneficiaries treated for inpatient acute care or swing-bed stays in the first year of participation during the extension period. This first year of the continued participation period is referred to as the **rebase year**. The updated target amount for

[7] For hospitals that started the CCA authorization period on FYs 2015, 2016, or 2017 (N = 14), this evaluation covers the entire CCA period. For hospitals that started the CCA authorization period on FY 2018 (N = 12), this evaluation covers four of the five years of the CCA authorization phase.

[8] Interim Report two is available at: https://www.cms.gov/priorities/innovation/data-and-reports/2023/rchd-2nd-interim-report

the demonstration extension period for each hospital is calculated as the hospital's Medicare acute inpatient cost per diem in the rebased year adjusted for inflation using the PPS market basket update factor, the change in the hospital's case-mix relative to the rebase year, and the number of Medicare inpatient discharges.

RCHD payments are composed of a payment for acute inpatient stays and a payment for swing-bed stays, and these payments are calculated separately. A swing bed is an acute care bed used to furnish either acute or SNF-level care.[9]

1.2.1 Reasonable Costs

Under the RCHD payment methodology, reasonable costs are calculated separately for both acute and swing-bed services. The swing-bed payment methodology itself blends costs for acute care *and* swing-bed services. Because costs for acute beds are generally much higher, blending the two makes swing-bed reimbursement under the RCHD higher than swing-bed reimbursement outside of the RCHD. This payment structure is not unique to the demonstration; rather, it is also a feature of the CAH payment methodology.

1.2.2 Target Amounts in Years After the Base (or Rebase) Year

The target amounts for each participating hospital are calculated annually after the base year by the Medicare Administrative Contractors (MACs). The methodology MACs use to calculate acute care service target amounts is very similar to the methodology MACs use to calculate swing-bed service target amounts. Target amounts for both types of services are determined by adjusting upward the average cost per discharge in the base year by three adjustors:

- The PPS update factor, to account for inflation (IPPS or SNF PPS, depending on the target amount being calculated).[10]
- A case-mix index (CMI) adjustment (current year index relative to base year index), based on changes in disease severity among the hospital's Medicare patients. A separate CMI for acute care and swing-bed services is used depending on the target amount being calculated.
- The number of Medicare discharges (acute or swing-bed discharges depending on the target amount being calculated) in the current year (volume).

[9] CMS. (2018, October). *Report to Congress: Rural Community Hospital Demonstration,* p. 8. https://www.cms.gov/priorities/innovation/files/reports/rch-rtc.pdf

[10] In this report, "year" refers to the 12-month cost reporting period. Different hospitals may have cost reporting periods that start and end on different dates. The IPPS update is the market basket adjustment CMS implements annually to update the operating rate component of the IPPS. The market basket index measures the price increases for goods and services hospitals buy to provide patient care. https://www.cms.gov/newsroom/fact-sheets/fy-2023-hospital-inpatient-prospective-payment-system-ipps-and-long-term-care-hospitals-ltch-pps

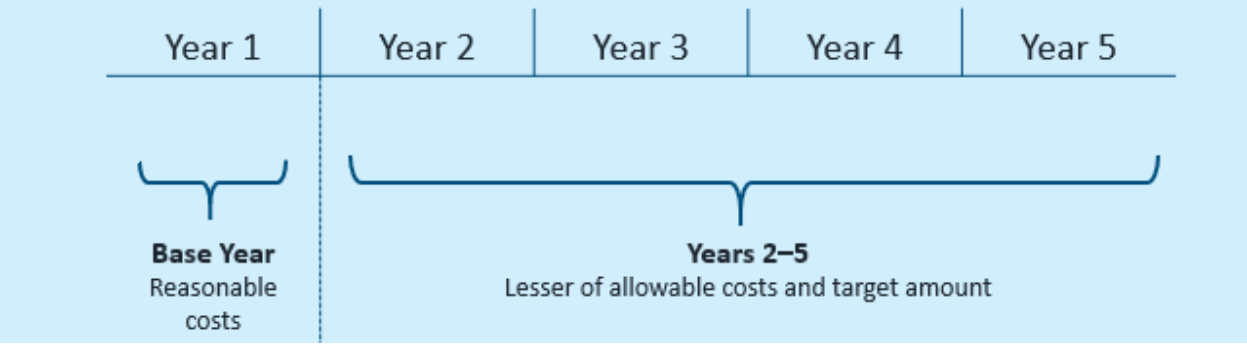
1.2.3 RCHD Payments

In each year after the base (or rebase) year, RCHD payments for both inpatient acute care and swing-bed services are equal to the lesser of two values: current year costs *or* the hospital's target amount. We note that the methodology used to calculate swing-bed costs results in substantially higher payment under the RCHD for swing beds compared to the payment that would have been made under the SNF PPS, which is the traditional payment mechanism for swing beds. Moreover, because Medicare represents a larger proportion of swing-bed days than other payers, the allocation attributes more overall costs to Medicare and fewer costs to other payers.[11] Because swing-bed reimbursements under the RCHD are higher than swing-bed reimbursements outside of the RCHD, participants may have an incentive to provide more SNF services to Medicare patients in swing beds to the extent possible.[12]

Because RCHD hospitals receive payments for inpatient hospital services based on a "reasonable cost" methodology, they are not eligible to receive IPPS add-on payments, such as the low-volume payment adjustment.[13]

In addition, because RCHD payments are required to be budget-neutral, IPPS payments to all non-RCHD hospitals are reduced each year to reflect the total amount of RCHD payments that exceed IPPS payments. This reduction is minimal given the small scale of this demonstration. **Exhibit 1.1** gives an overview of the RCHD payment methodology.

Exhibit 1.1: Overview of the RCHD Payment Methodology



The higher RCHD payment is appealing to hospitals that have Medicare inpatient costs higher than their IPPS reimbursement (i.e., negative inpatient margins). Although this is infrequent,

[11] CMS. (2018, October). *Report to Congress: Rural Community Hospital Demonstration,* p. 8. https://www.cms.gov/priorities/innovation/files/reports/rch-rtc.pdf

[12] The RCHD payment methodology and a detailed explanation of why hospitals stand to gain by delivering more care to Medicare patients in swing beds rather than acute care beds are provided in Section A.2 of Appendix A.

[13] The low-volume adjustment is discussed in more detail in Section A.1.4 of Appendix A.

sometimes RCHD payments are lower than the IPPS payments (the RCHD payment methodology is described in further detail in Appendix **Section A.2**).

1.2.4 Rebasing

Similarly to base years, in rebase years participant hospitals are paid on the basis of their rebased reasonable costs for inpatient services delivered in acute care beds or swing beds. Target amounts in subsequent years are calculated by adjusting upward the rebase year cost by the PPS update factor to account for inflation, a CMI adjustment, and the number of Medicare discharges. Each reauthorizing statute requires updating the base year, which in this report we call *rebasing*.

As described in **Exhibit 1.2**, under the initial MMA authorization, hospitals had base years beginning in FY 2005 or FY 2009, depending on when they joined the RCHD. Under the ACA extension, hospitals that started participating in FY 2005 were rebased to FY 2010, and those that started in FY 2009 were rebased to FY 2011. Hospitals were paid based on their costs in the rebased years.

Hospitals joining for the first time under the ACA extension had base years in FY 2011 or FY 2012, depending on when their hospital fiscal year began. Under the CCA extension, hospitals that initially joined the RCHD in FY 2005 and FY 2009 were rebased to FY 2015 and FY 2016, and hospitals that initially joined the RCHD in FY 2011 and FY 2012 were rebased to FY 2016 and FY 2017. Under the CAA extension, the base year will be the first 12 months falling within the new five-year demonstration period.

Exhibit 1.2: Rebase Years for Hospitals Continuing Participation in RCHD Under the ACA and CCA, by Initial RCHD Authorization

Authorization	Base Year	Rebase Year Under ACA	Rebase Year Under CCA
MMA Authorization	FY 2005	FY 2010	FY 2015
	FY 2009	FY 2011	FY 2016
ACA Extension	FY 2011	N/A	FY 2016
	FY 2012	N/A	FY 2017
CCA Extension	FY 2018	N/A	N/A

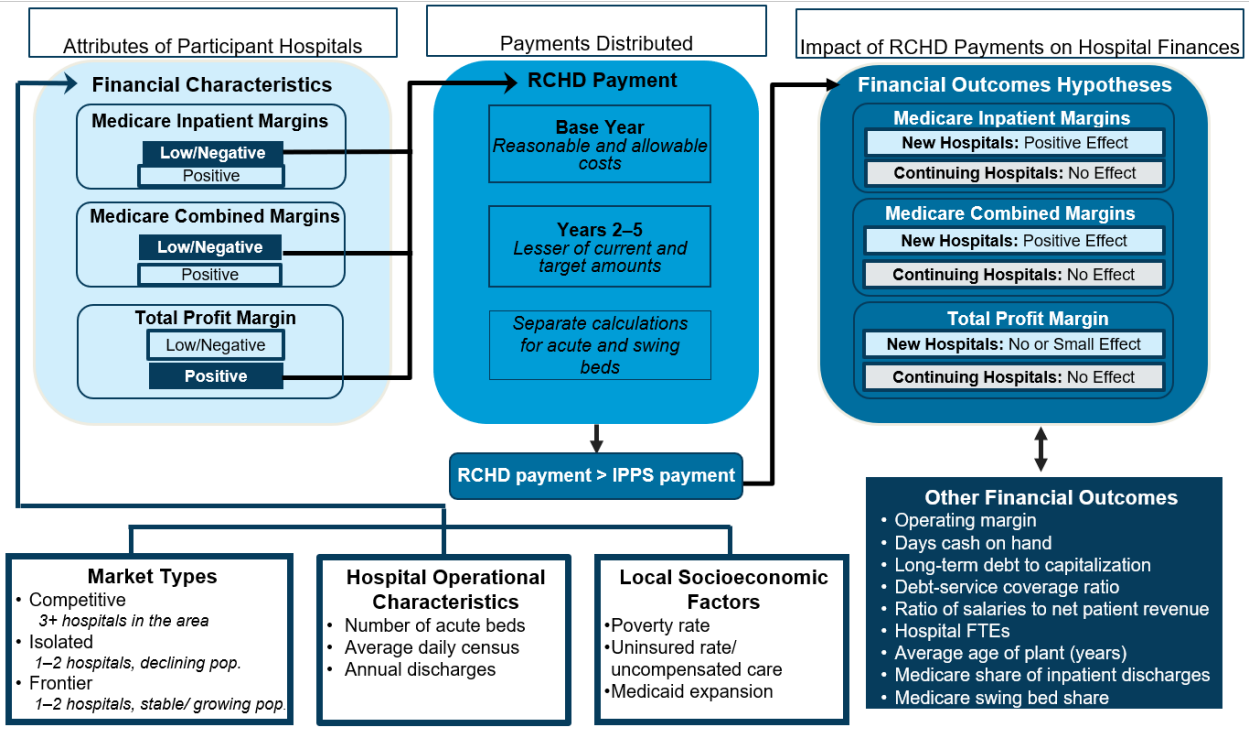
Appendix **Section A.1** describes other payment mechanisms that are available to small rural hospitals, in addition to RCHD.

1.3 Conceptual Model for the RCHD Evaluation

The conceptual model shown in **Exhibit 1.3** illustrates the relevant factors identified in the 2018 *Report to Congress* and previous interim reports (*Interim Report One* and *Interim Report Two*) for hospitals' decision to participate in the RCHD, how participation in the demonstration affects hospitals' payments for inpatient stays, and the hypothetical effects that RCHD payments can have on hospitals' overall financial condition.

In this report, as in *Interim Report Two,* RCHD hospitals are divided into two groups: *new* hospitals, a group including hospitals that first joined the demonstration in FY 2018 (i.e., CCA authorization hospitals) and *continuing* hospitals, or hospitals that first joined the demonstration under the initial MMA authorization (either in FYs 2005 or 2009) or the prior ACA authorization extension (either in FYs 2011 or 2012).

Exhibit 1.3: RCHD Evaluation Conceptual Model



Abbreviations. FTE, Full-Time Equivalent; IPPS, Inpatient Prospective Payment System; RCHD, Rural Community Hospital Demonstration.

Notes. The effect of the RCHD on total profit margins is unclear, as there is not a strong connection between Medicare inpatient margins, the outcome most directly affected by the RCHD, and a hospital's total profit margins.

1.3.1 Decision to Participate in the RCHD

Findings from prior reports, reflected on the left-hand side of the conceptual model in dark highlighted boxes, show that the RCHD attracted predominantly hospitals with low or negative Medicare inpatient margins. However, RCHD participants' *overall* financial condition was not necessarily weaker than that of eligible non-participant hospitals, as reflected by their total profit margins, which include revenues and costs from all payers, as well as additional revenue from contributions, public appropriation and other government transfers, investments, and income from subsidiaries or affiliates. Following the approach we used for previous interim reports, the attributes of participants and non-participants will be examined under **Topic Area 1 (TPA-1)** in this report.

1.3.2 RCHD Payments to Hospitals

The middle box in the center of the conceptual model reflects the findings in the 2018 *Report to Congress* and previous interim reports that hospitals that participated in the RCHD received, on average, higher Medicare inpatient payments than what they would have received under the IPPS or SNF PPS. Following the approach that we used for previous interim reports, the RCHD payments to hospitals will be examined under **Topic Area 2** (**TPA-2**) in this report, albeit using a different group of RCHD hospitals (those that were active as of FY 2021) from previous reports.

1.3.3 Impact of the RCHD on Hospitals' Financial Condition

The right-hand side of the conceptual model shows the potential impact of the RCHD on hospitals' financial margins. In this evaluation, the impact of the RCHD on hospitals' financial condition will be examined under **Topic Area 3** (**TPA-3**). The demonstration is expected to affect Medicare inpatient margins most directly through higher additional Medicare inpatient payments. Medicare combined margins are also expected to improve, as they are the sum of Medicare inpatient and outpatient margins. However, the magnitude of this improvement will depend on how large Medicare inpatient revenue and costs are relative to Medicare outpatient revenue or cost.

The impact of the demonstration on total profit margins is uncertain, as total profit margins also include revenues and costs for all payers in addition to investment income. Indeed, previous evidence shows that Medicare margins are largely unrelated to hospitals' total profit margins.[14] Other financial indicators could also improve depending on how hospitals use the additional RCHD payments they receive. The full list of outcomes that we examine in this *Final Evaluation Report* is shown in Appendix **Exhibit A7.1**.

[14] Zapata, D., Rao, T., Gooptu, A., Swete, C., Yoffe, M., Wood-Palmer, D., O'Brien, M. (P.), Coombs, E., Theobald, N., & Crane, E. (2022, December). *Evaluation of the Rural Community Hospital Demonstration: Interim Report Two (Covering 2016–2018)*. American Institutes for Research; Mission Analytics. Prepared for the Center for Medicare & Medicaid Innovation, Centers for Medicare & Medicaid Services. https://www.cms.gov/priorities/innovation/data-and-reports/2023/rchd-2nd-interim-report

The conceptual model is affected at every stage by contextual characteristics that include the type of market in which hospitals operate, hospitals' operational characteristics, and local socioeconomic factors (the lower part of the conceptual model). In addition, effects might vary depending on when hospitals first join the demonstration. We describe these factors in more detail in the following sections.

1.3.4 Hospital Operational Characteristics

Hospitals' operational characteristics, such as the number of swing-bed discharges or average cost per discharge, can influence the size of the RCHD payments hospitals receive. For example, **Section 1.2** describes RCHD target amounts for each hospital are a function of the average cost per discharge in the base year, a case-mix adjustment, and the number of Medicare discharges in a given payment year. All these elements can potentially affect the size of the RCHD reimbursement hospitals receive. For example, multivariate regression analysis conducted in *Interim Report One* shows that hospitals with higher discharges and costs per discharge during their base or rebase year had on average higher additional RCHD payments.

Following the approach used in previous interim reports, this report will analyze hospital characteristics for participant and non-participant hospitals to describe how participants compare to non-participants. These characteristics will also be used to select a comparison group of similar non-participant hospitals and as covariates to estimate the impact of the RCHD on hospitals' financial condition.

1.3.5 Market Typology – Competitive, Frontier, and Isolated markets

Following the approach used in the 2018 *Report to Congress* and previous interim reports, we summarize the contextual characteristics of hospitals in terms of population demographics, economic conditions, and the local health care systems by classifying hospitals as being in Competitive, Frontier, or Isolated markets. These three categories are based on the number of nearby hospitals and whether the population in the area is declining. According to the 2018 *Report to Congress,* the financial condition of hospitals eligible for the RCHD varied by the type of market where the hospital was located. Hospitals in Competitive markets tended to have more robust margins, reflecting their larger market populations, but this was tempered by the presence of a larger number of competing hospitals. Hospitals in Frontier markets with growing populations and limited competition exhibited the strongest total profit margins. Hospitals in Isolated markets, which tend to have smaller and shrinking populations, had the most tenuous finances.[15]

[15] MedPAC. (2001, June). *Report to the Congress: Medicare in Rural America,* p. 34. https://www.medpac.gov/wp-content/uploads/import_data/scrape_files/docs/default-source/reports/Jun01_Entire_report.pdf

In this report, we follow the approach used in the 2018 *Report to Congress* and previous interim reports and define Competitive markets as those that have three or more hospitals within 35 miles, Frontier markets as those that have low levels of competition (a maximum of two hospitals within 35 miles) and stable or growing county-level population growth over a five-year period, and Isolated markets as those that have low levels of competition and declining county-level population growth over a five-year period.[16] In Competitive and Frontier markets the additional resources hospitals receive through the RCHD may have a multiplicative effect that allows the hospital to serve more patients and improve its financial condition. In contrast, hospitals in Isolated markets serve areas with shrinking populations that tend to be more economically disadvantaged. The RCHD might prevent hospital closures in Isolated areas, but the multiplicative effect of the demonstration is more limited, as there is more limited room for expanding their patient population.

Findings from *Interim Report One* show that the increases in Medicare inpatient margins for hospitals in both Competitive and Frontier markets were relatively similar in magnitude. There was no evidence of an increase in Medicare inpatient margins for hospitals in Isolated markets. However, we do not consider the evidence for Isolated hospitals reliable due to the very small number of RCHD hospitals in this market category.

1.3.6 Local Socioeconomic Factors

The market typology is a useful way to classify hospitals in different and distinct groups depending on a few salient characteristics of the markets in which they operate. However, there are other socioeconomic factors not fully captured by this market typology that could also affect hospitals' financial conditions.

For example, as shown graphically in the conceptual model (**Exhibit 1.3**), a state's poverty rate and the proportion of uninsured residents could mean that a hospital provides more uncompensated care than hospitals that operate in more economically stable states. These factors also interact with a hospital's market typology and operational characteristics, as shown in the conceptual model. Variables that measure local socioeconomic factors are listed in Appendix **Exhibit A7.2** and will be analyzed under TPA-1 (Attributes) to describe how participants and non-participants compare. Following the approach we used in previous interim reports, a subset of these characteristics will be used to select a comparison group of similar non-participant hospitals and to serve as covariates to estimate the impact of the RCHD on hospitals' financial condition, as described in Appendix **Section A.7.1.2.3.**

[16] CAHs must also be located in a state that participates in the State Flex Program, under which they can be certified as CAHs. Currently, all but five states participate in the Flex Program.

1.3.6.1 Effect of the Public Health Emergency

Most of CMS' demonstrations and models were affected by unexpected changes in health care delivery associated with the Covid-19 pandemic. The impact of the pandemic on rural hospitals may vary depending on factors such as increased costs for personnel, personal protective equipment, restrictions on discretionary procedures, and the number of cases of Covid in each hospital area. We account for the effects of the public health emergency (PHE) in two ways, as described in more detail in Appendix **Section A.7.1**. First, multivariate regression analysis will include control variables for the incidence of Covid-19, such as case rates, hospitalizations, deaths, and/or community transmission indicators. Second, we separate the impact estimates in a pre-PHE estimate, which will measure the impact of the RCHD prior to the PHE, and a post-PHE estimate, which will measure the impact of the RCHD during the pandemic years. The start of the PHE occurred during the years covered in this report.

1.4 RCHD Evaluation Research Questions and Analytical Approach Overview

The overarching goal of the RCHD evaluation is to examine the effects of the RCHD on Medicare payments and hospitals' financial conditions. Not all the questions answered in *Interim Report One* were further analyzed in *Interim Report Two* due to the shorter period of analysis used for that report. In addition, the research questions included in *Interim Report One* were revised to reflect changes in CMS's research priorities. Research questions are still grouped into the following three topic areas (TPAs) used in *Interim Report One* and *Interim Report Two*:

- **TPA-1 (Attributes):**

  Attributes of participant hospitals compared to eligible non-participant hospitals—This TPA characterizes RCHD hospitals in terms of their financial status and their operational and contextual characteristics and contrasts those characteristics with those of eligible non-participant hospitals.

- **TPA-2 (Payments):**

  Payments distributed—This TPA describes the additional RCHD payments (relative to IPPS) RCHD hospitals received.

- **TPA-3 (Impacts):**

  Impact of the RCHD payments on hospital finances—This TPA estimates the impact of the RCHD on hospitals' financial condition using a quasi-experimental approach.

Exhibit 1.4 describes the data sources and analytic approaches we used to answer each of the research questions in this report.

Exhibit 1.4: Data Sources and Analytical Approach for *the Final Evaluation Report's* Research Questions

Research Topic Area and Question	Data Type/ Source	Analytic Approach
TPA-1: Attributes of participant hospitals compared to eligible non-participant hospitals		
a. What are the characteristics of participant hospitals, and how are they related to the design of the payment approach? Are other market or hospital factors important for understanding the characteristics of participant hospitals?	Document Review Interviews HCRIS SEER	Thematic Analysis Descriptive Statistics
b. How do participant hospitals compare with eligible but non-participant hospitals in terms of market area, staffing, utilization, and margins?	HCRIS SEER	Descriptive Statistics
c. If any hospitals left the demonstration, what were their reasons for doing so?	*Interim Report One* Findings	Summary of Results of *Interim Report One* Findings
TPA-2: Payments distributed		
a. What payments were distributed under the demonstration to participant hospitals relative to what they would otherwise have received under IPPS?[a]	Settled Cost Reports HCRIS	Descriptive Statistics
b. Does the size of the RCHD payment vary by the organizational characteristics of hospitals (e.g., swing beds, independent vs. multi-chain hospital, base year costs)?[b]	*Interim Report One* Findings	Summary of Results of *Interim Report One* Findings
TPA-3: Impact of the RCHD payments on hospital finances		
a. How did participation in the CCA authorization extension affect the financial condition of continuing and new participant hospitals?	HCRIS SEER	Descriptive Statistics
b. How does the impact of the RCHD payments on the financial condition of continuing and new participant hospitals compare to the financial condition of eligible and similar non-participant hospitals during the CCA authorization extension?	Interviews HCRIS SEER	Thematic Analysis Multivariate DID Analysis
c. What share of RCHD hospital revenues (Medicare and total) are derived from SNF swing beds, and how has this share changed since the start of the CCA authorization extension?	Interviews HCRIS SEER	Thematic Analysis Multivariate DID Analysis

Abbreviations. CCA, 21st Century Cures Act; DID, Difference-in-Differences; HCRIS, Healthcare Cost Report Information System; IPPS, Inpatient Prospective Payment System; SEER, Surveillance, Epidemiology, and End Results; SNF, Skilled Nursing Facility.

Notes. a Data ranges from federal FYs 2005 to 2018; b data ranges from federal FYs 2005 to 2017.

1.5 Hospitals Included in This Evaluation Report

This report focuses on the 26 RCHD hospitals active as of FY 2021.[17] **Exhibit 1.5** shows how many of these hospitals are classified as *new* versus *continuing* and the authorization when they first joined.

Exhibit 1.5: Categorization of RCHD Hospitals in This Report

Interim Report Group	Original Authorization	Number of Hospitals
Continuing Participant Hospitals	MMA	4
	ACA	10
New Participant Hospitals	CCA	12
All Participant Hospitals (Continuing + New)	MMA, ACA, or CCA	26

Exhibit 1.6 shows the distribution of *continuing* (dark blue triangles) and *new* (light blue triangles) hospitals located across the country. As mentioned above, the continuing hospitals include the MMA authorization allowed hospitals located in the 10 least densely populated states[18] and the ACA extension expanded eligibility to the 20 least densely populated[19] states. The CCA authorization opened participation in the demonstration to hospitals in all states nationwide, giving preference to the 20 least populated states. Despite these changes in eligibility over time, *continuing* RCHD hospitals (dark blue triangles) and *new* RCHD hospitals (light blue triangles) tend to come from the same states. Appendix **Exhibit A2** lists the names of all the hospitals included in this report. In addition, *Interim Report Two* includes information from second round interviews with representatives from nine participant hospitals[20] and from the first-round interviews with representatives of 26 hospitals. The results of first round interviews were initially discussed in *Interim Report One*.

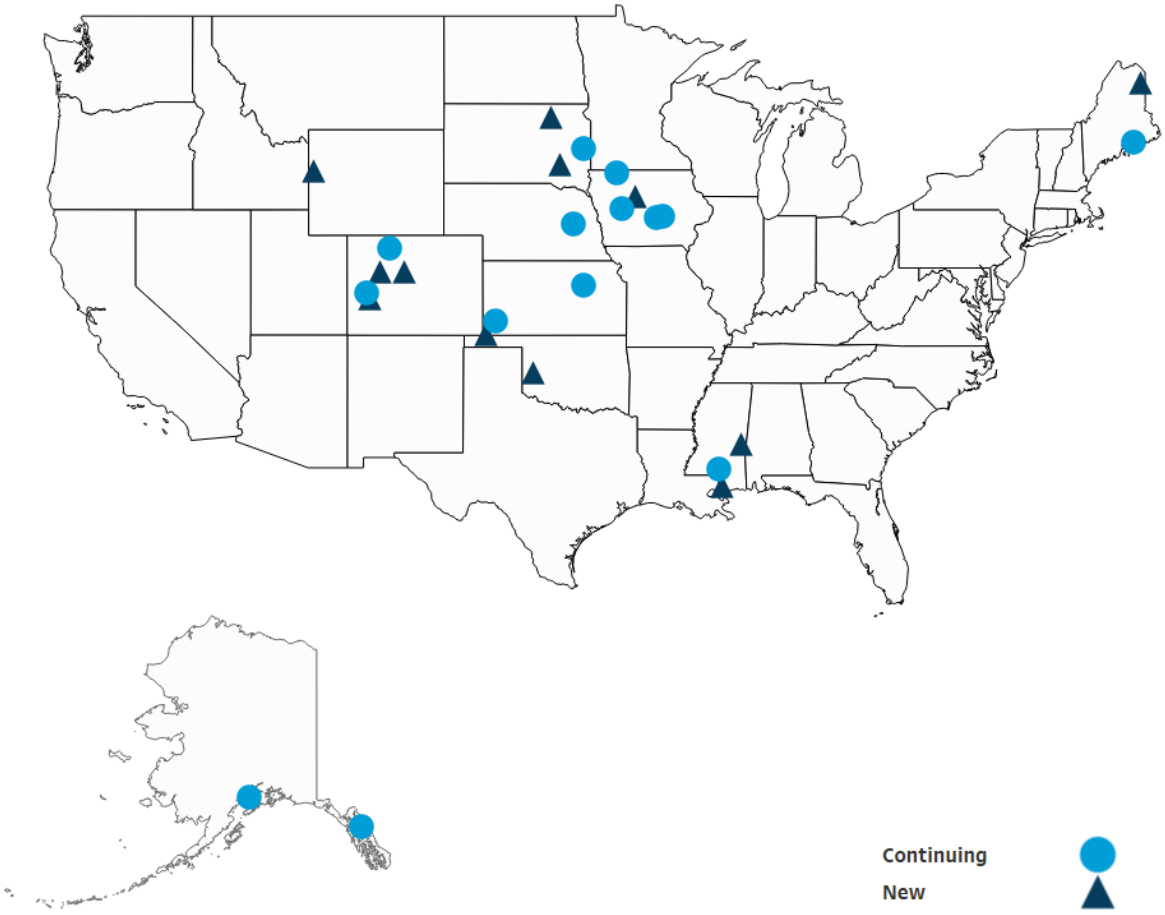
[17] For reference, *Interim Report One* used quantitative information from the 33 participant hospitals that first joined the RCHD under the MMA (17 hospitals) and ACA (16 hospitals) authorizations. *Interim Report Two* used quantitative information from 29 participant hospitals that first joined the RCHD under the MMA (4 hospitals), ACA (13 hospitals) and CCA (12 hospitals) authorizations.

[18] The 10 initially eligible states were Alaska, Idaho, Montana, Nebraska, Nevada, New Mexico, North Dakota, South Dakota, Utah, and Wyoming.

[19] The ACA extension expanded the list of eligible states to include Arizona, Arkansas, Colorado, Iowa, Kansas, Maine, Minnesota, Mississippi, Oklahoma, and Oregon.

[20] Under the original qualitative approach described in the Evaluation Design Report (EDR) for *Interim Report One*, we planned to interview nine exiting hospitals for *Interim Report Two*. However, after that EDR was submitted and approved, the RCHD was extended one more time. All participant hospitals extended their participation under the new authorization, which required us to adopt a new criterion to select which hospitals we would interview. That criterion is described in Section 2.1.

Exhibit 1.6: Location and Status of Participant Hospitals in the RCHD as of FY 2021



Notes. The different shades in the map denote the first RCHD authorization that allowed the state to participate in the demonstration.

1.5.1 Reference Groups

It is important to note that the research questions in TPA-1 (Attributes), TPA-2 (Payments), and TPA-3 (Impact) describe results relative to different reference groups. While the reference group under each TPA is the most appropriate to answer the research questions in that TPA, care should be taken when comparing results across TPAs. TPA-1 describes results relative to non-participant eligible hospitals, TPA-2 describes results relative to RCHD hospitals themselves, and TPA-3 describes results relative to rigorously constructed comparison groups. **Exhibit A3** in Appendix A describes the reference groups that are used for each topic area in more detail.

1.6 Period of Analysis

The overall period of analysis for this report includes FY 2002 to FY 2021,[21] three more years than *Interim Report Two*. However, the period of analysis varies depending on the TPA being analyzed, as described in detail in **Exhibits A3** and **A4** in Appendix A. TPA-1 analyzes the baseline period for each hospital, which is three years prior to them joining the demonstration, TPA-2 analyzes payments during the entire demonstration period (FYs 2005 to 20210), and TPA-3 during the CCA authorization phase (FYs 2015 to 2021).

[21] Hospital cost reports correspond to one hospital cost reporting period. Each hospital can select its own cost reporting period, typically the hospital's fiscal year. Cost reports occasionally cover longer or shorter periods if hospitals change their fiscal years. The start and end dates of cost reports differ by hospital. In this report, cost reports are grouped based on the federal FY associated with the start date of the hospital's cost reporting period. For example, hospitals with cost reporting start dates between October 1, 2017, and September 30, 2018, will be assigned to FY 2018.

2.0 Attributes of Participant Hospitals Compared to Eligible Non-Participant Hospitals (TPA-1)

TPA-1 examines the baseline period characteristics prior to a hospital joining the RCHD for the first time. A similar analysis of the baseline period was conducted in *Interim Report Two*. The *Final Report* and the *Interim Two* have small differences related to the number of report included.[22] Despite these differences, the TPA-1 key findings in this *Final Report* are very similar to the ones in *Interim Report Two.*

2.1 TPA-1 Key Findings

This section describes the characteristics of participant RCHD hospitals compared to eligible non-participants prior to joining the demonstration. In addition, it describes the characteristics of two types of RCHD hospitals – *continuing* and *new* RCHD hospitals before joining the demonstration.

Prior to joining the RCHD, *all* (*new* and *continuing*) RCHD hospitals earned less from Medicare inpatient care (lower Medicare inpatient margins) compared to non-participating hospitals. This suggests RCHD hospitals joined to improve Medicare financial performance. [23]

In addition, RCHD hospitals were older facilities and more often non-profit organizations as compared to non-participating hospitals.

Comparing *new* to *continuing* RCHD hospitals prior to joining the RCHD, *new* RCHD hospitals were generally less financially strong than *continuing* ones and more likely to operate in remote (Frontier) markets. *New* hospitals tended to serve slightly larger, older, and more affluent communities, and were more often located in states that did not expand Medicaid under the ACA. As a result, they may face greater pressure to maximize non-Medicaid revenue streams.

New RCHD hospitals differ from *continuing* ones—most notably, they're more often located in states that did not expand Medicaid under the ACA. As a result, these hospitals face greater pressure to boost revenue from non-Medicaid sources due to limited Medicaid funding.

[22] In this *Final Report* we exclude baseline cost reports belonging to three *continuing* RCHD hospitals that have left the RCHD between FY 2018 and FY 2021. Therefore, the baseline averages for *continuing* hospitals have changed in some cases. In addition, some of the cost reports may have been audited and settled in this *Final Report*. Therefore, baseline averages have in some cases changed slightly for *new* hospitals.

[23] This is expected, as the RCHD payment methodology has the potential to provide higher inpatient reimbursement than traditional Medicare reimbursement. In general, prior to joining the demonstration, ***new* RCHD hospitals were in a slightly weaker** overall financial position than *continuing* RCHD hospitals.

2.2 Characteristics of Participant Hospitals Prior to Joining the RCHD

This section describes the characteristics of participant hospitals prior to joining the RCHD.[24] RCHD hospitals are stratified into *continuing* and *new* hospitals.[25] Appendix **Exhibit A2** presents the full list of RCHD hospitals actively participating in the demonstration in FY 2021. Appendix **Exhibit C4** is the source for the comparisons mentioned below and provides further details regarding participant hospital characteristics during the pre-demonstration period. For more details see Appendix **Exhibit C1**, **Exhibit C4**, **Exhibit C6**, **Exhibit C7**, **Exhibit C8,** and **Exhibit C9.**

2.2.1 Medicare Margins for Continuing and New RCHD Hospitals

Before joining the demonstration,

- Both *continuing* and *new* participant hospitals had negative Medicare inpatient and combined margins.
- Medicare inpatient margins were higher for new hospitals than for continuing hospitals. However, new hospitals had lower Medicare combined margins. Since inpatient margins were stronger for new hospitals, this suggests their outpatient margins were weaker compared to those of continuing hospitals.

2.2.2 Overall Profitability Margins for Continuing and New RCHD Hospitals

Before joining the demonstration,

- *New* RCHD hospitals were in a more difficult financial condition than *continuing* RCHD hospitals.
- Operating margins of *new* RCHD hospitals were lower as compared to *continuing* RCHD hospitals (however this difference is not statistically significant)
- Total profit margins of *new* hospitals were also lower as compared to *continuing* hospitals (however this difference is not statistically significant). For *new* hospitals, the average total profit margins were negative and lower than *continuing* hospitals for two reasons—the outsized effect of an outlier hospital and a larger number of financially weak hospitals.[26]

[24] The pre-demonstration period is described in **Section 1.6**

[25] As described in Section 1 (Introduction) *continuing* hospitals are those that first joined the RCHD during the MMA authorization or ACA extension and continued their participation during the CCA extension. *New* hospitals are those that first joined the demonstration during the CCA authorization extension.

[26] First, one of the *new* participant hospitals (RCHD Hospital A) had a total profit margin of -100.0 percent in one of the years prior to joining the demonstration (FY 2015). RCHD Hospital A's negative profit margin is a significant outlier as the average total profit margin would be close to 0.3 percent if RCHD Hospital A was excluded from the *new* RCHD hospital sample. During the interviews, RCHD Hospital A reported that they faced financial troubles due to the loss of revenue-generating providers and high costs associated with contract clinicians and the purchase of new equipment. The hospital has since stabilized financially, in part due to new management. Second, after excluding RCHD Hospital A, the average total profit margin for *new* hospitals compared to *continuing* hospitals was still low (0.4 percent vs. 3.2 percent) because more *new* hospitals (58.0 percent) had negative profit margins prior to joining the RCHD than *continuing* hospitals (50.0 percent).

2.2.3 Financial Indicators for Continuing and New RCHD Hospitals

Before joining the demonstration, most financial indicators[27] for both *new* and *continuing* RCHD hospitals were similar. The differences observed were small and not statistically significant.

2.2.4 Hospital Characteristics for Continuing and New RCHD Hospitals

Before joining the demonstration,

- *Continuing* and *new* participants had some differences in hospital characteristics. Relative to *continuing* RCHD hospitals, *new* RCHD hospitals had statistically significant differences in numbers of beds (*new* hospitals had fewer beds) and patient populations (*new* hospitals had sicker patient populations). Despite having fewer beds, *new* hospitals had a similar average daily census and patient discharges to *continuing* hospitals. This signals that *new* hospitals had less revenue and fewer economies of scale as evidenced by their weaker overall profitability margins.
- A higher proportion of *new* hospitals were non-profit, had fewer acute care beds, and reported a higher case-mix index—likely reflecting differences in their market environments.

2.2.5 Market Area Characteristics for Continuing and New RCHD Hospitals

Before joining the demonstration,

- There were notable differences in the market area characteristics of communities served by *new* versus *continuing* RCHD hospitals before joining the demonstration. These differences may help explain why *new* hospitals perceived the value of the demonstration differently than *continuing* hospitals.
- *New* RCHD hospitals were more often located in Frontier markets and less often in Competitive markets, suggesting they may have greater market power than *continuing* hospitals. Nearly half of *new* hospitals interviewed reported limited competition, often due to offering a broader range of services than nearby facilities.

[27] Financial indicators include: Days cash on hand, Long-term debt to capitalization ratio, Ratio of salaries to net patient revenue, FTEs per adjusted occupied bed, Average age of physical plant, Medicare share if inpatient discharges, Medicare share of inpatient days, and Medicare swing-bed revenue share.

Hospital Markets Matter

As reported by one new hospital: "there's no competition up here. There's more work than all of us can accomplish."

Another *new* RCHD hospital noted had "no real significant competition" because there are no large hospitals nearby, and the ones of similar size (or smaller) are still at least 60 miles away.

A third RCHD hospital reported its market is "pretty contained," given that the nearest cities are over an hour away.

A fourth *new* RCHD hospital, located in Jackson, Wyoming, also reported that the hospital has "people driving 80, 100 miles on a regular basis coming here for inpatient surgery as well as outpatient services and diagnostics and oncology services."

- Even though *new* hospitals face less competition than *continuing* hospitals, *new* hospitals have lower Medicare combined margins, total profit margins, and operating margins, which could be the result of *new* hospitals being smaller and attending to sicker patients than *continuing* hospitals.

2.2.6 County and State Characteristics for Continuing and New RCHD Hospitals

Before joining the demonstration,

- *Continuing* versus *new* participants had some significant differences in state and county characteristics. These differences, however, were unlikely to result in dissimilar hospital Medicare margins during the demonstration. It is possible that the observed differences may have generated distinctive hospital operating and total margins. As a result, we include county and state characteristics when selecting a comparison group and as control variables in the multivariate DID analysis used to estimate the impact of the RCHD payments.
- *New* participant hospitals were generally located in counties with **larger, older, and slightly more educated populations, lower unemployment,** and **higher home values**. In addition, they were **less likely to be in states that had expanded Medicaid** under the ACA.

During interviews, four *new* RCHD participant hospitals mentioned that they struggle less with population base, but their staff struggle more with finding affordable housing and childcare in the vicinity. In contrast, many *continuing* RCHD hospitals reported being in areas with sluggish economies. Two *continuing* RCHD hospitals reported that declines in coal mining have negatively impacted their economies. Another *continuing* hospital noted that their market area

has experienced a shift away from professional to more "blue collar" jobs. Other *continuing* hospitals are in areas with economies that rely primarily on agriculture.

2.3 Characteristics of Participant vs. Non-Participant Hospitals Prior to Joining the RCHD

This section presents descriptive statistics showing the financial condition and hospital operational and contextual characteristics of RCHD hospitals (participants) relative to eligible non-participant hospitals during the pre-demonstration baseline years. [28]

For participant hospitals, results are presented separately for *continuing*, *new*, and all RCHD hospitals. Appendix **Section A.7.1.2.1** describes the approach we used to process this information.

The quantitative findings are supplemented by qualitative findings that often highlight additional nuances.

2.3.1 Hospitals' Financial Condition

This section compares the financial condition of *continuing* and *new* RCHD participant hospitals prior to joining the demonstration to the financial condition of eligible non-participant hospitals. For more details see Appendix **Exhibit C2** and **Exhibit A.7.1**.

Before joining the demonstration,

- Both *new* and *continuing* RCHD hospitals had lower Medicare inpatient margins compared to eligible non-participating hospitals.
- Across other financial indicators[29], *new* and *continuing* RCHD hospitals had stronger liquidity, and more efficient staffing, but operated with older capital infrastructure.

2.3.1.1 Hospital Margins

The demonstration attracted hospitals that had substantially lower Medicare margins (i.e., both Medicare inpatient and combined margins) and a wider range of overall financial conditions relative to non-participant hospitals. Low Medicare margins prior to joining the demonstration for both *new* and *continuing* hospitals were a motivating factor to join the demonstration.

Before joining the demonstration,

[28] For *continuing* RCHD hospitals that joined the demonstration during the original MMA authorization, the pre-demonstration years used are FYs 2002–2004.For *continuing* RCHD hospitals that joined the demonstration during the ACA extension, the pre-demonstration years used are FYs 2008–2010.For new RCHD hospitals joining the demonstration during the CCA extension, the pre-demonstration years used are FYs 2015–2017.

[29] Other financial indicators include: Days cash on hand, Long-term debt to capitalization ratio, Ratio of salaries to net patient revenue, FTEs per adjusted occupied bed, Average age of physical plant, Medicare share if inpatient discharges, Medicare share of inpatient days, and Medicare swing-bed revenue share.

- *Continuing* RCHD hospitals were in an overall stronger financial position (higher total profit and operational margins) compared to eligible non-participants. This is a result that is consistent with the findings of the 2018 *Report to Congress, Interim Report One*, and *Interim Report Two*. While the 2018 *Report to Congress* and *Interim Report One* use different RCHD hospitals for their analyses, *Interim Report Two* uses a slightly similar group of *continuing* RCHD hospitals, as mentioned in the introduction to this section.
- However, in contrast, *new* RCHD hospitals were in a similar overall financial position to eligible non-participants.

2.3.1.2 Other Financial Outcomes

While other financial outcomes such as Days Cash on Hand (DCOH) are indirect measures of the demonstration's impact, we compare their differences between RCHD and eligible non-participating hospitals prior to the demonstration, as these measures may be used as a point of sensitivity analyses for indirect effects of the demonstration.

Before joining the demonstration,

- Both *continuing* and *new* RCHD hospitals tended to be in an overall stronger financial position than non-participating hospitals even though their Medicare inpatient margins were lower.
- Both *continuing* and *new* RCHD hospitals exhibited higher liquidity (measured by DCOH) and higher staffing efficiency (measured by the ratio of salaries to net patient revenue) when compared to non-participant hospitals.
- Both *continuing* and *new* RCHD hospitals tended to have older assets (measured by age of plant) relative to eligible non-participants.

2.3.1.3 Medicare Revenue Indicators

Since the demonstration's focus is on providing financial viability to serve Medicare beneficiaries, hospitals struggling with low Medicare inpatient volume and revenue may have more of an incentive to join the demonstration. Therefore, we investigate whether there are differences in the Medicare revenue indicators between RCHD and eligible but non-participating hospitals prior to joining the demonstration.

Before joining the demonstration,

- *Continuing* RCHD hospitals had lower Medicare revenue indicators (measured by Medicare share of inpatient discharges and Medicare share of inpatient days) relative to non-participants. Since the RCHD demonstration aims to improve financial viability for hospitals serving Medicare beneficiaries, it's reasonable to expect that hospitals with weaker Medicare revenue indicators would be more motivated to join.

- In contrast, *new* RCHD hospitals had Medicare revenue indicators similar to those of non-participants, suggesting their motivation to join RCHD may have been different from continuing hospitals. For example, swing-bed reimbursement or strategic financial planning rather than immediate Medicare-related financial distress.

2.3.2 Hospital Operational and Contextual Characteristics

In this section, we examine the operational and contextual characteristics of RCHD participant and non-participant hospitals—at the hospital, market area, and county/state level—prior to hospitals joining the demonstration. We note characteristics that are overrepresented among participants because they may be important inputs for the matching algorithm in TPA-3.

In Appendix **Exhibit C3**, we present pre-demonstration period differences in hospital operational and contextual characteristics between RCHD hospital subgroups (*continuing* and *new* separately) and eligible non-participant hospitals, and the differences between *all* (*continuing* and *new* combined) RCHD hospitals and eligible non-participant hospitals.

2.3.2.1 Hospital Operational Characteristics

Hospital operational characteristics include organizational structure, patient volume, inpatient discharges, and case-mix severity. Within organizational structure, we analyzed health system membership and the distribution of hospitals' ownership across three mutually exclusive categories—non-profit, for-profit, or public.

2.3.2.2 Organizational Structure

Before joining the demonstration,

- Both *continuing* and *new* RCHD participant hospitals were significantly more likely than eligible non-participant hospitals to belong to health systems.
- However, comparing the composition of hospital ownership (for-profit, non-profit, and public) among all (*continuing* and *new*) RCHD participant hospitals to eligible non-participants shows that none of the *continuing* and *new* hospitals were for-profits and more *continuing* and *new* hospitals were non-profit hospitals.

2.3.2.3 Patient Volumes, Discharges, and Patient Profile

Before joining the demonstration,

- Both *continuing* and *new* RCHD participant hospitals had higher patient volume (measured by average daily censuses [ADCs] for acute care and Medicare, Medicaid, and total patient discharges).

- *Continuing* and *new* RCHD participant hospitals also had more medically complex patients (measured by a higher case-mix index). In contrast, *new* hospitals had a higher volume of swing beds (measured by ADCs) and were less likely to be DSHs. A hospital's DSH designation can vary over the years.

2.3.2.4 Market Area Characteristics

We examined the distribution of participants across three mutually exclusive market areas—Competitive markets, Frontier markets, and Isolated markets. Competitive markets are areas where three or more acute care hospitals operate. Hospitals in Frontier and Isolated markets have more market power and fewer than three hospitals in their market area. Frontier market areas differ from Isolated market areas in that the former have stable or growing populations, whereas the latter have declining populations. We defined the market area of a hospital as the 35-mile radius around the hospital.

Before joining the demonstration,

- More RCHD hospitals (*continuing* and *new*) were in Frontier market areas relative to eligible non-participant hospitals.
- In contrast, relative to eligible non-participant hospitals, fewer RCHD hospitals were in Competitive market areas.
- Relative to eligible non-participants, *continuing* hospitals were farther away from the nearest acute care hospital and had more CAHs within the market area.

2.3.2.5 County/State Characteristics

This section describes pre-demonstration county and state characteristics of participating hospitals compared to eligible non-participants with the goal of describing the local and state context that could affect the demand for hospital services. The sociodemographic composition of a hospital's market is related to its patient composition and the availability of local resources such as Meals on Wheels or Area Agencies on Aging. Hospitals in areas with higher median incomes and lower poverty rates may be more likely to attract patients with more generous insurance coverage, providing higher total profit margins.

Before joining the demonstration,

- Both *continuing* and *new* RCHD hospitals were located in less densely populated counties (county population and population per square mile) compared to non-participants.
- Both *continuing* and *new* RCHD participant hospitals were located in counties with residents who were (1) younger (measured by percentage over 65 years), (2) more educated (measured by percentage with a high school education or less), and (3) more affluent

(measured by percentage unemployed, percentage of residents below 150 percent of the poverty line, and median household income).

- More *continuing* hospitals were in states that had expanded Medicaid under the ACA since 2014 as compared to eligible non-participants.
- In contrast, similar shares of *new* hospitals and eligible non-participant hospitals were in states that had expanded Medicaid under the ACA since 2014. Hospitals in states expanding Medicaid may have a higher case-mix index due to more complex patient cases from a larger Medicaid-eligible population.

3.0 Additional Payments Received from Participation in the RCHD (TPA 2)

In TPA-2 **Sections 3.2.1, 3.2.2,** and **3.2.3,** we consider whether RCHD hospitals gain more in terms of reimbursements by participating as opposed to not participating in the RCHD. To answer this question, we take the difference between RCHD payments hospitals received for inpatient acute care and swing-bed services and the usual IPPS or SNF PPS payments hospitals would have received if they had not participated in the RCHD and present the difference—additional payments received from participation in the RCHD—averaged across participation hospitals for each FY.

In TPA-2 **Section 3.2.4**, we present a descriptive analysis exploring the relationship between the additional RCHD payments hospitals received and their base or rebase year inputs (costs per discharge, inpatient acute care discharges, swing-bed discharges) for the RCHD payment methodology and baseline market typology (Competitive, Frontier, or Isolated).

A similar analysis of the additional payments received from participation in the RCHD (**Sections 3.2.1, 3.2.2**, and **3.2.3**) was conducted in the prior *Interim Report Two*. In this *Final Report*, the findings in TPA-2 may change relative to *Interim Report Two* for the following reasons:

- In this *Final Report* we exclude cost reports belonging to three *continuing* RCHD hospitals that have left the RCHD between FY 2018 and FY 2021. Therefore, the averages for *continuing* hospitals have changed.
- Some of the cost reports may have been audited and settled in this *Final Report*. Therefore, the averages have changed in some cases, especially for later FYs such as FY 2017 and FY 2018.
- While in *Interim Report Two* we only included the CCA base year (FY 2018) for *new* hospitals, in this *Final Report*, we have included additional cost reports from non-base CCA years**.** The average additional payments for *new* hospitals have changed as now we have observations from non-base CCA years when hospitals are paid on the lesser of the target amount or the current year costs instead of being paid on the current year costs (explained in **1.2.3**).

Overall, as compared to Interim Report Two, the key findings in this Final Report are the same.

3.1 TPA-2 Key Findings

Participating hospitals received RCHD payments that were, in general, much higher than they would have received under IPPS.[30] This was true for both *new* and *continuing* RCHD hospitals, although there was significant variation across hospitals and years. The variation in additional RCHD payments over time could be explained by the change in the number of RCHD hospitals and the resulting compositional change over the years analyzed. *Continuing* and *new* RCHD hospitals had lower additional RCHD payments during the Covid-19 pandemic (FY 2020 and FY 2021). The differences in the RCHD payment methodology used to calculate payments during hospitals' base or rebase years (described in **3.2**) can affect both the variation in RCHD payments across hospitals and the variation in RCHD payments over time.

Other noteworthy findings from TPA-2 include the following:

- *Both Continuing* and *New* RCHD hospitals received annual payments for inpatient services[31] that were, on average, higher than what these hospitals would have received under Medicare IPPS.
- The magnitude of the additional RCHD payments across all RCHD hospitals varied significantly.
- Additional RCHD swing-bed payments over SNF PPS were higher for *new* hospitals compared to *continuing* RCHD hospitals between FY 2018 and FY 2021.
- *Continuing* and *new* hospitals with higher costs per discharge during the rebase or base years had higher additional RCHD payments in future participation years. This suggests that hospitals with higher Medicare costs per discharge tend to gain more financially from RCHD participation and are more likely to continue participation.
- *Continuing* and *new* hospitals with more Medicare inpatient acute care discharges during rebase or base years had higher additional RCHD payments in future participation years. The volume of Medicare discharges seems to determine a hospitals' financial gains. Therefore, hospitals in rural areas with a substantial or growing population are more likely to benefit from participating in the RCHD.
- *New* hospitals from Isolated markets at baseline had lower additional RCHD payments in future participation non-base years.

[30] Unless otherwise noted, "IPPS" includes both IPPS and SNF PPS payments.
[31] Inpatient services include acute care and swing-bed services.

3.2 Payments under the RCHD Relative to Payments under IPPS

This section describes the additional RCHD payments participant hospitals received for inpatient acute and swing-bed services over what hospitals would have received (i.e., the usual IPPS payments), as well as the variation of these additional payments across hospitals and overtime between FY 2005 and FY 2021. Understanding the variation of RCHD payments across hospitals and over time is important because while most RCHD hospitals receive higher RCHD payments than they would have received in the absence of the demonstration, some hospitals have left the demonstration when their payments were too low.

RCHD hospitals are stratified into *continuing* and *new* hospitals for the graphical analysis that reports average trends by year, and the distributional yearly results for *all* hospitals together are also presented.[32] **3.2.1** reports the findings for the total additional RCHD payment amounts, **3.2.2** separates out the additional RCHD swing-bed payments, and **3.2.3** separates out the additional RCHD acute care payments. **3.2.4** explores the relationship between RCHD payments received during the CCA phase and hospital organizational characteristics (e.g., base year costs, base year costs per discharge, base year acute care and swing-bed discharges, market typology).

Exhibit 3.1 shows the trends in average additional payments and percent increases[33] in payments compared to IPPS. The averages are calculated over the group of *continuing* hospitals from FY 2005 through FY 2021 and separately for the group of *new* hospitals from FY 2018 through FY 2021. Appendix **Exhibit D1.A** and Appendix **Exhibit D1.B** expands on **Exhibit 3.1** by reporting distributional information for all hospitals in a table.

3.2.1 Additional RCHD Payments over IPPS, by Fiscal Year

In this section, we explore the distribution of hospitals' additional RCHD total payments, including both inpatient acute and swing-bed services, over what hospitals would have received under IPPS between FY 2005 and FY 2021 (**Exhibit 3.1**).

[32] As described in Section 1 (Introduction), *continuing* hospitals are those that first joined the RCHD during the MMA authorization or ACA extension and continued their participation during the CCA authorization extension. *New* hospitals are those that first joined the demonstration during the CCA authorization extension.

[33] Percentage increase in RCHD payments relative to IPPS = $\frac{RCHD_{Diff}}{IPPS+SNF\ PPS}$ where $RCHD_{Diff} = RCHD - (IPPS + SNF\ PPS)$.

Note that there are a few considerations when interpreting the results:

1. First, some of the variation in reimbursements within and across FYs could be due to some hospitals being on their base or rebase years. RCHD payments are likely to be higher in base or rebase years because hospitals are reimbursed on their allowable costs at those times.[34]
2. Second, the variation in additional RCHD payments among hospitals is influenced by several factors, including base or rebase year costs, changes in the number of participating hospitals over time. The overall sample size of RCHD hospitals increased from three in FY 2005 to 26 in FYs 2018 and 2019 and declined to 17 in FY 2021, with a marked increase in the number of RCHD hospitals starting in FY 2011. Because we are only reporting on hospital performance during the CCA extension (2016-2021), the sample of RCHD hospitals decreased after FY 2019 as a few *continuing* hospitals had cost reports from the CAA extension starting in FY 2020. Prior to FY 2011, the averages and distributions are calculated using only two to four hospitals, depending on the analysis.
3. Third, the variation in reimbursements may be the result of changes in the composition of *continuing* participant hospitals. Combined with the large sample size change in FY 2011, this means that shifts in the averages in FY 2011 should not necessarily be viewed as meaningful changes because any difference before and after FY 2011 would be especially affected by the change in the composition of the sample and should be interpreted with caution, as they may reflect changes in sample composition rather than meaningful changes in the demonstration.. As the characteristics of hospitals in the sample under analysis change, the across-year variation in payments can increase. As an example of how the composition of hospitals in the sample can affect the variation in RCHD payments hospitals receive, in *Interim Report One*, we found that hospitals with higher Medicare inpatient acute care discharges received higher additional RCHD payments over IPPS.
4. Finally, RCHD payments for *continuing* hospitals cover a long period of time (FYs 2005–2021), where the hospitals were exposed to significant changes in the macroeconomic conditions including the start for the Covid-19 pandemic and recession (2020-2021). These changes in the macroeconomic conditions can affect the overall trend for both *continuing* and *new* hospitals.

[34] FYs 2005, 2009, 2010, 2011, 2015, 2016, and 2017 were base or rebase years in which some *continuing* hospitals were paid on cost. FY 2018 was a base year for *new* hospitals, while *continuing* hospitals were in their non-rebase year, which means that *continuing* hospitals received payments equal to the lesser of target amount and actual cost.

3.2.1.1 Continuing RCHD Hospitals

On average, per hospital per year, RCHD payments to *continuing* hospitals were higher than what they would have received under IPPS although the additional payments often varied year to year. Potential drivers of the variation include:

- *Base or rebase year costs*. RCHD hospitals are reimbursed on reasonable costs during base or rebase years and the lesser of reasonable costs or a target amount in following 4 years. Several of the base or rebase years, where RCHD hospitals were paid on cost, had among the highest percentage increases in comparison to what they would have received under IPPS.
- *Changes in the number of RCHD hospitals over time*. Some of the changes in average additional payments over time are likely due to the different number of hospitals used for the analysis in each FY. The number of hospitals in each FY changed from three hospitals (FY 2005–FY 2008) to fourteen hospitals (FY 2012–FY 2015 and FY 2017) to five hospitals (FY 2021) depending on the hospitals that were part of the RCHD and the cost reports available at the time of this report. The RCHD payments were lower, on average, starting in FY 2011, but as discussed above, a large change in the number of hospitals means that a change in average additional payments should not be interpreted as a meaningful change in the program because it is likely attributable to the additional hospitals being different in general from the first three.
- *Macroeconomic conditions*. Changing macroeconomic conditions over time could have disproportionately affected patient volume in some hospital market areas, and consequently impacted RCHD additional payments. This is further evidenced in low additional RCHD payment amounts observed in FY 2020 and FY 2021 when hospitals were facing unexpected costs associated with the Covid-19 pandemic.[35]
- Because FYs 2020 and 2021 were non-rebase years for *continuing* hospitals in the CCA participation phase, hospitals whose actual costs exceeded their target amounts (determined by reasonable costs incurred from their pre-pandemic rebase year) were reimbursed at the lower target amount rather than for their actual expenses. This likely contributed to the sharp decline in the average additional RCHD payments observed across all *continuing* hospitals during those years.

[35] The covid-19 pandemic started to appear in the US by early 2020 and was declared a pandemic by the World Health Organization (WHO) by that March. By June there were 2 million cases in the US and by August was the third largest cause of death. https://www.cdc.gov/museum/timeline/covid19.html

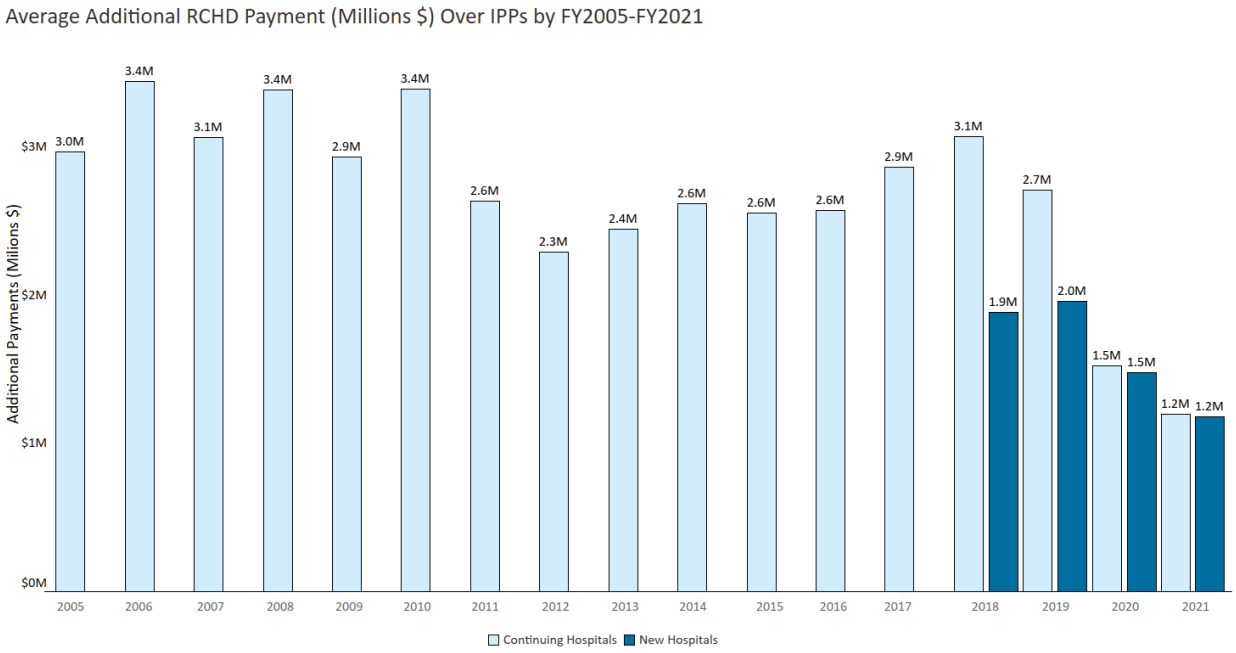
3.2.1.2 New RCHD Hospitals

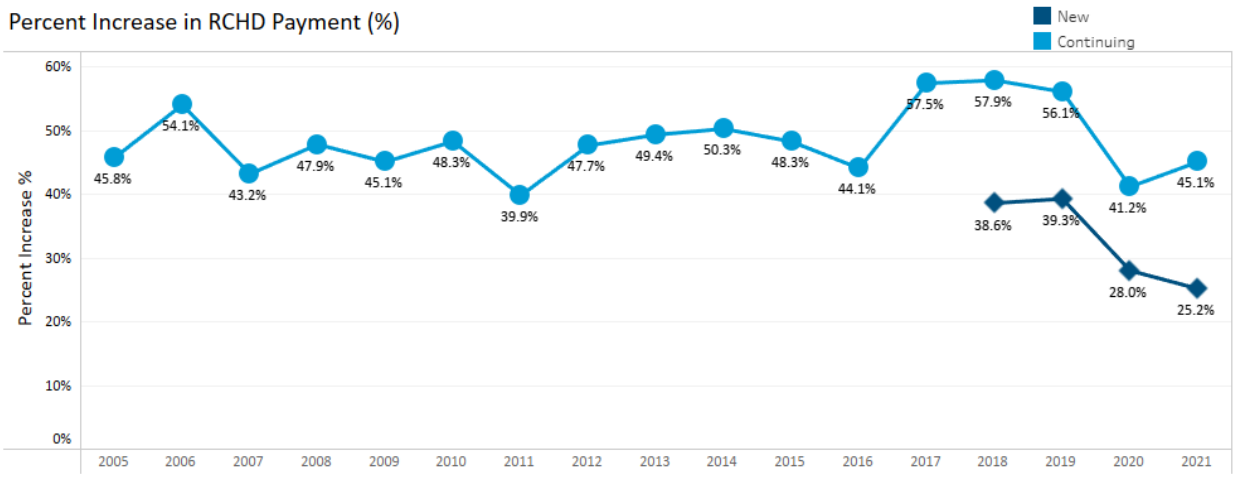
For new RCHD hospitals, RCHD payments were higher per hospital per year, on average, than what hospitals would have received under IPPS. The average percent increase in additional RCHD payments for new hospitals, however, was lower than for continuing hospitals.

According to the RCHD payment methodology, hospitals are paid on reasonable costs incurred in their base years, so it is surprising that RCHD payments in FY 2018 for new hospitals in their base year are lower than the payments of continuing hospitals not in their base year. Contextual information obtained from new hospital interviews provides some insight into why additional RCHD payments are lower in the base year (FY 2018) as compared to continuing hospitals:

- New hospitals indicated some concern that base year costs would not fully reflect their ongoing costs and operational changes. For example, one new RCHD hospital's base year did not include the costs associated with a recently hired second full-time clinician. Another new RCHD hospital added rural health clinics to its system prior to the base year, which shifted the allocation of costs away from inpatient care.
- It is possible that the cumulative effect of having some expenses excluded from their base year calculations contributed to lower RCHD payments for new hospitals relative to continuing hospitals.
- On average, new hospitals received lower additional RCHD payments in FYs 2020 and 2021 (COVID pandemic). This may be because their target amounts were based on reasonable costs incurred in the pre-pandemic base year (FY 2018). Consequently, hospitals with higher actual costs during the pandemic were still reimbursed at their pre-set target levels.

Exhibit 3.1: Additional RCHD Payments per Hospital





Number of Hospitals

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Continuing Hospitals	3	3	3	3	4	4	9	14	14	14	14	13	14	14	14	11	5
New Hospitals	0	0	0	0	0	0	0	0	0	0	0	0	0	12	12	12	12

Notes. (1) Data from 204 settled cost reports were used for this analysis. (2) The analysis included at least one cost report from unique RCHD hospitals. (3) "-" indicates that no hospitals were in that group in that year. Source: Hospital cost reports.

3.2.2 Additional RCHD Swing-Bed Payments over SNF PPS, by Fiscal Year

This section explores the distribution of hospitals' additional RCHD payments for swing-bed services over what hospitals would have received under SNF PPS between FY 2005 and FY 2021 using only the information from settled hospital cost reports with swing-bed discharges.[36]

Under the RCHD payment methodology, reasonable costs are calculated *separately* for acute and swing-bed services. However, because swing-bed costs are blended with acute care costs, RCHD reimbursements for swing-bed services can exceed actual costs—potentially resulting in higher payments than under SNF PPS. To assess whether this payment differential may have incentivized hospitals to increase swing-bed utilization, we analyzed the breakdown of additional payments by service type. This section focuses on swing-bed payments, while the next one focuses on acute care payments. [37]

The findings show that RCHD swing-bed payments were consistently higher than what hospitals would have received under SNF PPS. This applied to both *new* and *continuing* RCHD hospitals and represented a substantial per-hospital, per-year increase.

Appendix **Exhibit D2** illustrates these differences, showing the additional RCHD swing-bed payments over SNF PPS (highlighted in light blue) and the swing-bed share of additional RCHD payments over IPPS (shown as a line), separately for *new* and *continuing* hospitals. These calculations are based solely on hospitals with at least one swing-bed discharge. Appendix **Exhibits D3.A** and **D3.B** present similar data for all hospitals.[38]

3.2.3 Additional RCHD Acute Care Payments over IPPS, by Fiscal Year

As noted earlier, the RCHD payment methodology calculates reasonable costs separately for acute and swing-bed services. Building on the prior analysis of swing-bed payments, this section focuses on how RCHD payments for acute care services compare to what hospitals would have received under IPPS between FY 2005 and FY 2021.

On average, RCHD hospitals—both *new* and *continuing*—received higher acute care payments per hospital per year under the RCHD model than they would have under IPPS. This suggests

[36] Swing bed payments are determined through the SNF PPS. The Share of Additional RCHD Reimbursement from Swing Beds = $\frac{\text{Additional RCHD swing bed payments over SNF PPS}}{\text{Additional RCHD payments (acute care and swing bed) over IPPS plus SNF PPS}}$

[37] Under the RCHD payment methodology, reasonable costs are calculated separately for acute and swing-bed services. The swing-bed payment methodology itself blends costs for acute care *and* swing-bed services. Because costs for acute beds are generally much higher, blending the two together makes swing-bed reimbursement under the RCHD higher than swing-bed reimbursement outside of the RCHD. Previous reports, including the 2018 *Report to Congress* and *Interim Report One*, flagged this as a topic for additional study.

[38] A total of 166 hospital-year observations out of 204 were considered to have swing beds. Most observations report positive swing-bed discharges (greater than 0). Three cost reports (Central Peninsula Hospital in FY 2005, Great Plains Regional Medical Center in FY 2018, and St. John's Medical Center in FY 2018) reported no swing-bed discharges but positive swing-bed RCHD payments.

that participation in the RCHD generally resulted in financial gains for hospitals. However, there was considerable variation across hospitals and years in these payments. This variability underscores the importance of understanding how hospital characteristics and participation history may influence payment outcomes, which we explore in the next section.

Appendix **Exhibit D4** illustrates the additional RCHD acute care payments over IPPS (shown in light blue) for both new and continuing hospitals. Appendix **Exhibits D5.A** and **D5.B** provide further detail on the distribution of these payments per hospital across the full FY 2005–2021 period.

3.2.4 Relationship between Additional RCHD Payments and Payment Inputs During Base or Rebase Year and Baseline Market Typology

In *Interim Report One* we explored the relationship between the additional RCHD payments hospitals received and their base or rebase year inputs (i.e., costs per discharge, inpatient acute care discharges, swing-bed discharges) for the RCHD payment methodology and baseline market typology (Competitive, Frontier, or Isolated). We used a multivariate linear regression model to explore the relationship. The regression results from *Interim Report One* showed that:

1. Base or rebase year payment inputs were positively associated with additional RCHD payments. All relationships were statistically significant.
2. Frontier and Isolated market hospitals were negatively associated with additional RCHD payments as compared to hospitals in Competitive markets, but the relationship was not statistically significant.

In this report, we re-examined the relationship between additional RCHD payments and baseline market typology using a different methodology and sample of hospitals. The main differences between the analysis we conduct in this report and the one we conducted in *Interim Report One* are the following:

1. We limited cost reports to RCHD hospitals participating in the RCHD as of FY 2021, resulting in fewer cost reports compared to *Interim Report One*.
    a. In *Interim Report One*, we included both active RCHD hospitals participating as of FY 2017 as well as non-active RCHD hospitals not participating in the RCHD as of FY 2017.
2. We limited base or rebase year payment input observations from the RCHD hospital's cost report to those associated with CCA base or rebase years and excluded observations from cost reports associated with MMA and ACA base or rebase years.
    a. In *Interim Report One*, for *continuing* hospitals that joined RCHD during the MMA authorization, we included both base and rebase (at the start of the ACA extension) year observations. For *continuing* hospitals that joined RCHD during the ACA extension, we

included base year observations. *Interim Report One* did not include analysis of the CCA extension.

3. We used additional RCHD payment observations from cost reports associated only with CCA non-base or non-rebase years.
    a. In *Interim Report One*, we did not distinguish between additional RCHD payments during the base or rebase year and the non-base or non-rebase year and included additional RCHD payment data from cost reports from all years a hospital participated in the RCHD.
4. We separately conduct the descriptive analysis for *continuing* and *new* hospitals in this *Final Report*.
    a. In *Interim Report One*, we did not separate hospitals as *continuing* or *new* based on whether the hospital joined the RCHD as part of the MMA authorization or the ACA extension.
5. We used a descriptive analysis because we used fewer cost reports as compared to *Interim Report One*. The smaller sample of cost reports can render regression coefficients unreliable.

As a result of all these differences, results from the descriptive analysis in this report are not directly comparable to results from *Interim Report One and should be regarded as a new and separate analysis*.

3.2.4.1 Descriptive Analysis of Base or Rebase Year Costs per Discharge and Non-Base or Non-Rebase Year Additional RCHD Payments

Hospitals with higher costs per discharge during their base or rebase year tend to receive higher target amounts, which in turn leads to greater additional RCHD payments in subsequent years. To explore this relationship, we examined whether hospitals with higher base or rebase year costs per discharge consistently received higher additional RCHD payments over time.

We ranked both new and continuing RCHD hospitals into terciles[39] based on their base or rebase year cost per discharge. Despite the small sample size—14 continuing and 12 new hospitals—the pattern was clear: those in the higher-cost terciles received more in additional RCHD payments during future participation years.

This finding aligns with results from Interim Report One, which also showed a positive association between base or rebase year costs per discharge and subsequent RCHD payments.

[39] Tercile 1 includes *new* and *continuing* hospitals with base or rebase year costs per discharge in the bottom third of the distribution; tercile 2 includes *new* and *continuing* hospitals with base or rebase year costs per discharge that were above the bottom third and below the top third of the distribution; tercile 3 includes *new* and *continuing* hospitals with base or rebase year costs per discharge that were in the upper third of the distribution

The implication is that initial cost levels play a significant role in shaping future payment trajectories under the RCHD mode

3.2.4.2 Descriptive Analysis of Base or Rebase Year Medicare Inpatient Acute Care Discharges and Non-Base or Non-Rebase Year Additional RCHD Payments

Just as higher costs per discharge can lead to greater RCHD payments, hospitals with more inpatient acute care discharges during their base or rebase year also tend to have higher overall costs—resulting in a higher target amount. This means that in future participation years, these hospitals are positioned to receive larger additional RCHD payments.

To examine this, we conducted a parallel analysis to the one we conducted to examine cost per discharge and ranked new and continuing RCHD hospitals by their base or rebase year inpatient discharge volumes. The trend was consistent: hospitals with higher discharge volumes during the base or rebase year received more in additional RCHD payments in subsequent years.

This mirrors findings from *Interim Report One*, which also showed a positive association between inpatient discharge volume in the base or rebase year and future RCHD payments. Together, these insights suggest that both cost and volume metrics in the initial year play a meaningful role in shaping payment outcomes under the RCHD model.[40]

3.2.4.3 Descriptive Analysis of Base or Rebase Year Medicare Swing-Bed Discharges and Non-Base or Non-Rebase Year Additional RCHD Payments

Unlike cost or inpatient discharge volume, it's unclear whether swing-bed discharge volume during the base or rebase year influences future RCHD payments. To explore this, we examined whether hospitals with higher Medicare swing-bed discharges in their base or rebase year received greater additional RCHD payments in subsequent years.

We ranked *new* and *continuing* RCHD hospitals into terciles based on their swing-bed discharge volumes. With a small sample—14 continuing and 12 new hospitals—the analysis showed no consistent relationship between swing-bed discharge volume and future additional RCHD payments.

This finding contrasts with *Interim Report One*, which had suggested a positive association between swing-bed discharges and future RCHD payments. The divergence may reflect

[40] Appendix **Exhibit D6** and Appendix **D7** represents additional RCHD payments in CCA non-base years by CCA base year cost per discharge terciles for *new* and *continuing* hospitals, respectively

differences in how swing-bed utilization translates into cost or target amount calculations under the RCHD model.[41]

3.2.4.4 Descriptive Analysis of Baseline Market Typology and CCA Non-Base or Non-Rebase Year Additional RCHD Payments

Hospitals located in Competitive and Frontier markets typically have higher discharge volumes than those in Isolated markets. To assess whether this translates into higher additional RCHD payments, we examined whether hospitals from Competitive and Frontier markets at baseline received greater payments in future participation years.

The analysis revealed that both *new* and *continuing* RCHD hospitals from Frontier markets at baseline received higher additional RCHD payments during non-base and non-rebase years. In contrast, *new* hospitals from Isolated markets at baseline tended to receive lower additional RCHD payments in non-base years.

This differs slightly from findings in *Interim Report One*, which showed a negative relationship between hospitals from Isolated markets and additional RCHD payments when compared to those from Competitive markets. The discrepancy may stem from differences in methodology: *Interim Report One* used a multivariate analysis that controlled for other influencing factors, while the current report relies on a bivariate descriptive approach that does not adjust for confounding variables.[42]

[41] Appendix **Exhibit D10** and Appendix **Exhibit D11** presents additional RCHD payments in CCA non-base years by CCA base year swing-bed discharge terciles for *new* and *continuing* hospitals, respectively.

[42] Appendix **Exhibit D12** presents additional RCHD payments in CCA non-base and non-rebase years by baseline *new* and *continuing* hospital market typology.

4.0 Impact of the RCHD Payments on Hospital Finances (TPA-3)

This section describes the impact of the RCHD on participant hospitals' financial conditions by integrating results from the quantitative analysis with insights from interviews with hospital staff.[43] The focus of this section is on participating hospitals' experiences during the CCA authorization extension phase of the demonstration. The sample of hospitals analyzed includes those that were active in the demonstration as of FY 2021. Results are shown separately for *continuing* and *new* hospitals.[44]

The impacts of the RCHD on hospitals' financial outcomes described in this section have a different interpretation for *continuing* versus *new* hospitals, and results are shown for both separately.

***Continuing* Hospitals**

Impact estimates show whether continued participation in the CCA authorization extension had any additional effect on hospitals' financial condition beyond the effect due to their participation in the prior ACA authorization extension.

***New* Hospitals**

Impact estimates for *new* hospitals show the effect of the RCHD on hospitals' financial condition relative to not participating in the demonstration.

Section 4.1 summarizes key findings. **Section 4.2** provides descriptive analyses of financial outcomes for RCHD and comparison hospitals during baseline and demonstration periods showing unadjusted pre-post changes. **Section 4.3** presents impact estimates using entropy balancing and DID regressions, supported by insights from hospital leader interviews. Findings in this report may differ from those in *Interim Report Two* for the following reasons:

- **Sample change.** The number of *continuing* hospitals dropped from 17 to 14 (total from 29 to 26) due to three hospitals exiting the RCHD before FY 2021.

[43] The quantitative methodology for this section is discussed in **Section 3.1.2.3**. Data sources for the regression outcomes, matching variables, and covariates are discussed in **Section 2**.

[44] To estimate these impacts, we used DID regressions and comparison groups of hospitals that were constructed to be similar to the RCHD hospitals on select characteristics measured at baseline, defined as three years prior to the start of the CCA authorization extension. For *continuing* hospitals, the baseline falls within the period when these hospitals were already participating in the demonstration under the prior ACA extension. For *new* hospitals, in contrast, the baseline falls prior to them joining the RCHD. In our analysis, after capping participation at FY 2021 and excluding the years a hospital participated in the CAA authorization extension, the demonstration period for *continuing* hospitals was between four and five years long, depending on when they started in the CCA phase (described in Appendix **Exhibit A.5**), while the demonstration period for *new* hospitals included four years because all *new* hospitals joined the RCHD at the same time. The DID regression analyses in this section also control for hospital and FY fixed effects and select contextual characteristics presented in **Exhibit 3.1**.

- **Expanded data.** This *Final Report* includes data through FY 2021 (*Interim Report Two* used data through FY 2018), with more settled cost reports even for earlier years.
- **Covid-19 analysis.** This is the first report to assess pandemic impacts, with controls added and results shown separately for pre- and post-COVID periods.
- **Non-base years for *new* hospitals.** *Final Report* analyzes non-base years for *new* hospitals, which wasn't possible in the previous report due to limited data.

4.1 TPA-3 Key Findings

The key findings for *continuing* and *new* hospitals, along with a summary of how results differ from *Interim Report Two*, are as follows:

- **For *continuing* RCHD hospitals, the results in this section show that on average:**
  - RCHD continuous participation maintained improvements from prior participation and did not result in any additional changes in Medicare inpatient and combined margins during the CCA authorization extension, relative to the changes hospitals already experienced during the ACA authorization extension. These results align with the findings in *Interim Report Two*.
  - RCHD participation during the CCA authorization extension in the pre-Covid period was associated with positive and statistically significant increases in Medicare inpatient and combined margins.
  - RCHD participation during the start of the Covid period did not result in similar significant changes to these margins relative to baseline, suggesting that any pre-covid gains were erased during the Covid period.
  - RCHD continuous participation did not result in any additional changes to total profit margins during the CCA extension.
  - In *Interim Report Two*, we observed that participation during the CCA authorization extension was associated with slightly lower total profit margins. With updated and extended data in this *Final Report*, this counter-intuitive finding is no longer present.
- **For *new* RCHD hospitals, the results in this section show that on average:**
  - RCHD participation resulted in large, but not statistically significant increases in hospitals' Medicare inpatient and combined margins during the CCA authorization extension. *Interim Report Two* findings showed large, positive, and statistically significant impacts of RCHD participation on Medicare inpatient and combined margins. It should be noted that collectively the increases the Medicare margins were from a much lower baseline that often did not achieve a break-even point and remained negative.

- RCHD participation in the pre-Covid period resulted in large and statistically significant increases in Medicare inpatient margins, which helped these hospitals get closer to the break-even point for Medicare inpatient margins, though the margins remained negative. RCHD participation during this period also resulted in large, positive, and statistically significant increases in Medicare combined margins.
  - However, the beneficial effects of RCHD participation on Medicare inpatient and combined margins were no longer observed during the Covid period.
- RCHD participation is associated with improvements in total profit margins and operating profit margins. However, it is unclear whether the increase in total profit margins is solely attributed to the demonstration. This is because RCHD led to positive, but not statistically significant changes in RCHD Medicare inpatient margins, which is the primary mechanism by which the demonstration would be expected to affect total profit margins. Without a strong, statistically significant effect on inpatient margins, it is difficult to draw a definitive connection between RCHD participation and improvements in total profit margins. The results observed for operating margins align with the findings in *Interim Report Two*, but the results for total profit margins differ from those observed in *Interim Report Two*, which show large, positive, but not statistically significant increases in total margins.
  - RCHD participation in the pre-Covid period resulted in statistically significant improvements in total profit margins and operating margins (details in Appendix E, **Exhibit E2.13**).
  - RCHD participation during the Covid period did not affect total profit margins, although operating margins continued to improve.
  - Total profit margins and operating margins are calculated from a large number of other income components across payers and sectors of the hospital and only bear a weak association with Medicare inpatient margins. As a result, increases in total profit margins cannot be conclusively determined to be solely driven by the improvement in Medicare inpatient margins.
- As in findings included in *Interim Report Two*, the RCHD was associated with a significant increase in the Medicare swing-bed revenue share. There was an increase in Medicare swing-bed revenue share during both the pre-Covid and Covid periods, with the impact being twice as large during the pre-Covid period.

- **In interviews, hospital leaders discussed cost increases and large shifts in service utilization because of the Covid-19 pandemic, which may have impacted hospitals' margins**. Nearly all RCHD hospitals faced higher costs during the pandemic due to staffing challenges and the need for Personal Protection Equipment (PPE) and ventilators. At the

same time, service utilization declined due to postponed elective procedures and patient diversions caused by staffing shortages.

- **In general, hospital leaders emphasized the importance of the demonstration in supporting their financial viability and service lines.** Some hospitals with negative margins said the demonstration helped reduce financial losses. However, declining inpatient volumes—driven by incentives favoring preventive and outpatient care—limited their ability to fully benefit.[45]
- **Hospital leaders expressed in interviews that they perceive swing beds to be an important aspect of their RCHD payments and, in some cases, central to their decision to continue with the demonstration.** Our quantitative findings indicate that *new* RCHD hospitals increase swing-bed utilization when they join the demonstration for the first time, though *continuing* hospitals do not further increase utilization beyond levels they had in the prior ACA authorization extension. Beyond their financial motivations, some hospitals reported that swing beds improve patient health outcomes by reducing hospital readmissions, maintaining higher quality of care, and/or stabilizing hospital bed utilization and staffing.

4.2 Descriptive Analysis of the Demonstration's Impact

These descriptive statistics provide context for interpreting the DID regression results in Section 4.3. They compare mean financial outcomes for RCHD and comparison hospitals across baseline and demonstration periods using bivariate t-tests. It should be noted that these results are descriptive and not causal.

4.2.1 Medicare Margins—Inpatient and Combined

This subsection reports descriptive results for Medicare inpatient and combined margins—the two most relevant metrics for this evaluation. Since RCHD directly affects inpatient reimbursement, inpatient margins are expected to show the most impact. Combined margins may also change, depending on each hospital's inpatient-to-outpatient Medicare revenue and cost mix.

4.2.1.1 Continuing RCHD Hospitals

Both *continuing* RCHD hospitals and their comparison group experienced a statistically significant increase in Medicare inpatient margins from the baseline to the demonstration period (Appendix **Exhibit E2.1**). However, Medicare combined margins did not show a

[45] Hospitals often spoke about the "shift to outpatient care" in the context of declining inpatient volume. Specific programs/payers were rarely mentioned, but contributing factors included a general shift in certain types of procedures that had been performed on an inpatient basis being performed on an outpatient basis (partially due to new technologies), payer rules/guidelines and pressures to perform more procedures on a less costly outpatient basis, and the growth of Accountable Care Organizations (ACOs) or other specific models that incentivize preventive/outpatient care.

statistically significant increase for either group during the same time frame. Trend graphs (Appendix **Exhibit E2.5**) show that Medicare inpatient margins for *continuing* RCHD hospitals were slightly below the break-even point during the baseline period and were around the break-even point during the demonstration period. However, combined Medicare margins declined slightly compared to comparison hospitals over the same period.

Higher Medicare inpatient and combined margins in relative year 1 likely reflect its status as the rebase year, when hospitals are reimbursed based on cost, a more favorable arrangement. In relative years 2–5, reimbursement is capped at the lower of cost or the target amount, leading to lower margins (**Section 1.2**).

Comparison group hospitals improved their Medicare margins during the demonstration period relative to baseline, whereas *continuing* RCHD hospitals generally did not (except for the rebase year). Moreover, during relative years 4 and 5, which coincided with the pandemic, comparison group hospitals continued to improve their Medicare inpatient margins relative to the baseline and prior demonstration years. These raw trend findings indicate that RCHD hospitals may have suffered financially during the pandemic, whereas comparison group hospitals may have benefitted from it, likely due to increased Medicare payments for COVID-19 care.[46] Several of the *continuing* RCHD hospitals are located in areas with especially acute workforce shortages, which may have negatively affected their margins during the pandemic years.[47]

In interviews, hospital leaders reported staffing challenges that raised costs. One hospital reported staff burnout led to early retirements or exits from healthcare,[48] while others lost staff to higher-paying travel jobs or due to vaccine and mask mandates. Staffing challenges existed pre-pandemic but worsened with increased competition, forcing hospitals to rely on costly travel staff or offer incentives to retain workers.[49]

4.2.1.2 New RCHD Hospitals

New RCHD hospitals improved Medicare inpatient margins by 16 percentage points and Medicare combined margins by 11 percentage points **(**Appendix **Exhibit E2.2**). Comparison hospitals saw slightly bigger gains, with Medicare inpatient margins increasing by 17 percentage

[46] Karim, S. A., Carroll, N. W., Song, P. H., & Atherly, A. (2024, April). *Assessing the impact of COVID-19 on rural hospitals*. American Hospital Association. https://www.aha.org/guidesreports/2024-04-04-assessing-impact-covid-19-rural-hospitals

[47] Ourada, J. (2022, March 29). Hundreds of Nebraskans couldn't get medical care during the latest COVID surge. Nebraska Public Media. https://nebraskapublicmedia.org/en/news/news-articles/hundreds-of-nebraskans-couldnt-get-medical-care-during-latest-covid-surge

[48] Rasmussen, A. (2021, August 18). Nursing shortage worsens in South Dakota at a time when COVID-19 is reemerging. *South Dakota News Watch*. https://www.sdnewswatch.org/nursing-shortage-worsens-in-south-dakota-at-a-time-when-covid-19-is-reemerging

[49] Heild, C. (2022, August 6). In New Mexico hospitals, lack of staffing looms in budget decisions. *Albuquerque Journal.* https://www.abqjournal.com/news/local/article_60a97e76-55f9-5029-99d6-a90a23047adc.html

points and Medicare combined margins increasing by 11 percentage points. Trend graphs (Appendix **Exhibit E2.5**) show that *new* RCHD hospitals approached break-even inpatient margins during the pre-COVID period (relative years 1 and 2),[50] meeting a key goal of the demonstration. However, margins declined in later years, even before the pandemic. While combined margins improved substantially after demonstration participation for new hospitals, they remained negative overall.

In interviews, *new* hospitals expressed feedback similar to that of *continuing* RCHD hospitals about the importance of the RCHD in supporting their overall viability. While the demonstration mostly supports overall viability and general operations, some hospitals specifically mentioned its importance in supporting staffing and infrastructure improvements.

4.2.2 Overall Profitability Margins

This section discusses total profit margins and operating margins, which include all revenues streams and reimbursements from all payers,[51] separately for *continuing* and *new* hospitals. Operating margins include income and expenses from patient care, both Medicare and non-Medicare. Total profit margins additionally include other types of revenue such as contributions; public appropriations; and other government transfers, investments, and income from subsidiaries or affiliates.

The RCHD demonstration may improve hospital total margins by increasing Medicare margin revenue, but its impact is likely limited. Previous analysis by the Medicare Payment Advisory Commission (MedPAC) shows that there is little relationship between hospitals' total profit margins and their Medicare margins[52] because Medicare income is only one component of a hospital's total income stream.[53] In addition, no single data source reports all revenue streams for a given hospital and its related organizations, and hospital cost reports lack critical details

[50] The average of demonstration period Medicare inpatient margins for *new* RCHD hospitals was -4 percent, while the margin average was positive during the pre-Covid period. Hospitals receive cost-based reimbursement during their first year of participation (or base year), suggesting that average Medicare inpatient margins should be 0 percent for new hospitals. However, it is possible for RCHD hospitals with swing beds to have Medicare inpatient margins that are greater than 0 percent due to the RCHD's reimbursement methodology for swing beds (see Appendix A for further explanation), which is something that has been documented in previous evaluation reports.

[51] Dalton, K., & Slifkin, R. (2003). *A primer on interpreting hospital margins.* North Carolina Rural Health Research and Policy Analysis Center, Cecil G. Sheps Center for Health Services Research. https://www.shepscenter.unc.edu/wp-content/uploads/2014/10//Primer.pdf

[52] MedPAC. (2003). *Relationship among Medicare inpatient, overall Medicare, and total margins for hospitals.*

[53] MedPAC. (2004, March). Assessing payment adequacy and updating payments in fee-for-service Medicare. In MedPAC, *Report to the Congress: Medicare payment policy* (pp. 55–204). https://www.medpac.gov/wp-content/uploads/import_data/scrape_files/docs/default-source/reports/Mar04_Entire_reportv3.pdf

that are necessary to capture all the inputs comprehensively that make up a hospital's total margins.[54]

4.2.2.1 Continuing RCHD Hospitals

Continuing RCHD hospitals decreased total profit margins by 3 percentage points between the baseline and demonstration periods, while comparison group saw an increase (Appendix **Exhibit E2.1**), suggesting continuing RCHD hospitals may be more affected by non-Medicare financial pressures. In addition, operating margins for *continuing* RCHD hospitals decreased during the CCA authorization extension, with no change for comparison group hospitals. Trend graphs (Appendix **Exhibit E2.5**) show that total profit margins for *continuing* RCHD hospitals stayed below break-even for the first four years of the CCA extension, rising above break-even in year five. Appendix **Exhibit E2.7** reveals that these declines occurred in different years across hospitals, suggesting varied non-Medicare factors, not a single event like the pandemic. Similarly, operating margins fluctuated, pointing to external influences beyond Medicare.

In interviews, some *continuing* RCHD hospitals with negative margins said the demonstration helped prevent even greater losses. However, not all *continuing* hospitals operated at a loss, and two hospitals reported that, if not for the demonstration, they would have been at an operating loss and that the demonstration remained essential for "tweener"[55] hospitals, which did not otherwise qualify for CAH status. However, one hospital reported that RCHD payments have declined over time, partly due to a shift from inpatient to outpatient services.

4.2.2.2 New RCHD Hospitals

Total profit margins increased for *new* RCHD hospitals during the demonstration (Appendix **Exhibit E2.2**). However, this may not be due to Medicare margin improvements, as Medicare inpatient margins declined in relative years 3 and 4 while total margins rose. The deviation between the two margins could be on account of Covid-19 provider relief funds and other financial support made available to rural hospitals during years 2020 and 2021—such transfers would increase total profit margins but not Medicare inpatient margins.[56] In interviews, several hospitals noted that the Coronavirus Aid, Relief, and Economic Security Act (CARES Act) funding

[54] Kane, N. M., & Magnus, S. A. (2001). The Medicare Cost Report and the limits of hospital accountability: Improving financial accounting data. *Journal of Health Politics, Policy and Law, 26*(1), 81–105.

[55] In the literature, "tweener" hospitals refer to facilities too large to be considered CAHs (which have 25 beds or fewer) and too small to be rural referral centers (which have 275 beds or more or meet alternative criteria which may include source and volume of patient admissions) which face unique challenges. For one instance, see Bryant, A., Canary, L., & Mester, S. (2020). *NRHA policy paper: "Tweener" hospital crisis*. National Rural Health Association (NRHA). https://www.ruralhealth.us/getmedia/c28ee028-3a7f-44f4-8af0-8e9d2ba94e5a/2020-NRHA-Policy-Document-Tweener-Hosptials-Crisis-FINAL.pdf.

[56] Karim, S. A., Carroll, N. W., Song, P. H., & Atherly, A. (2024, April). *Assessing the impact of COVID-19 on rural hospitals*. American Hospital Association. https://www.aha.org/guidesreports/2024-04-04-assessing-impact-covid-19-rural-hospitals

helped mitigate the cost burden of Covid-19-related activities. In addition, most hospitals engaged in cost-cutting activities. Hospitals minimized quality-improvement efforts, and associated data analysis, unrelated to the pandemic. Planned facility renovations or purchases were also delayed unless deemed necessary for the pandemic. Operating margins remained relatively stable during the demonstration period for *new* RCHD hospitals (Appendix **Exhibit E2.2** and **Exhibit E2.5**).

In interviews, many *new* hospitals said the demonstration improved their financial position. One hospital noted it helped sustain services, though it didn't fully eliminate losses. Overall, the demonstration may not ensure positive margins, but it helps reduce losses and supports essential services like behavioral health and obstetrics, especially in rural areas.

4.2.3 Other (Non-Margin) Outcomes

Descriptive statistics for the non-margin financial outcomes are reported in Appendix **Exhibit E2.3** and **Exhibit E2.4**, for *continuing* and *new* hospitals, respectively. Appendix E contains the trends graphs for these outcomes. In general, these statistics do not show statistically significant changes for either *continuing* or *new* RCHD hospitals for any of the outcomes between the baseline and the demonstration periods. On the other hand, statistically significant changes were observed for comparison group hospitals for some outcomes. One notable change for comparison group hospitals is a decrease in the Medicare share of inpatient days, which indicates that these hospitals reduced their dependence on Medicare over the demonstration period.

4.3 Difference-in-Differences Analysis of the Demonstration's Impact

This section discusses the results from estimating the DID model outlined in Appendix **Section A.7.1.2.3** (equation [2]). As mentioned in the introduction to this section, results are presented and discussed separately for *continuing* and *new* hospitals because DID regressions for each group of hospitals investigated different hypotheses.

To understand the impact of the pandemic on RCHD hospitals, we used equation [3] in Appendix **Section A.7.1.2.3** to separately estimate CCA-phase RCHD impacts during demonstration years prior to the pandemic and during years affected by the pandemic. These differential impacts are discussed in this section, with additional information available in Appendix **Exhibits D19** and **D20**.

Appendix D also includes comparison group quality checks (**Section D.1**), robustness tests (**Section D.3**), and changes to alternative reimbursement systems for small rural hospitals (**Section D.4**).

4.3.1 Medicare Margins—Inpatient and Combined

This section presents the effects that the RCHD had on Medicare inpatient margins and Medicare combined margins.

4.3.1.1 Continuing Hospitals

Medicare inpatient margins The DID results for *continuing* RCHD hospitals (**Exhibit 4.1**) show that participating in the CCA authorization extension phase did not statistically significantly change hospitals' Medicare inpatient margins relative to the changes hospitals already experienced due to their prior participation in the ACA phase. However, this overall result masks heterogeneity experienced by these hospitals during the pre-Covid and Covid periods.

- ***Pre-Covid period.*** Participation during the CCA authorization extension in the pre-Covid period was associated with positive and statistically significant increases in Medicare inpatient margins for these hospitals, relative to the increases experienced during the ACA phase. This finding is in contrast to findings reported in *Interim Report Two,* wherein no additional benefits of continued participation were observed for RCHD hospitals.
- ***Covid period.*** Participation during the Covid period did not result in any changes to Medicare inpatient margins.

Medicare combined margins. Findings for Medicare combined margins mirror the findings for Medicare inpatient margins.

Exhibit 4.1: Difference-in-Differences Results: No Overall Change in RCHD and Comparison Hospital Medicare Margins During the CCA Authorization Extension for Continuing Hospitals

Measure	Medicare Inpatient Margin	Medicare Combined Margin
A. Overall Impact		
Average Impact Estimate	2	3
90% Confidence Interval	(-2, 6)	(-1, 6)
Standard Error	(2)	(2)
Regression *p*-value	[0.51]	[0.20]
Randomization Inference *p*-value	[0.66]	[0.45]
Baseline Mean for RCHD Hospitals	-3%	-16%
Average Impact Estimate as a Percentage of the RCHD Group Baseline Mean	60%	17%
B. Pre-Covid Impact		
Average Impact Estimate	2^^^	3^^

Measure	Medicare Inpatient Margin	Medicare Combined Margin
Regression *p*-value	[0.34]	[0.22]
Randomization Inference *p*-value	[0.00]	[0.02]
Average Impact Estimate as a Percentage of the RCHD Group Baseline Mean	85%	16%
C. Post-Covid Impact		
Average Impact Estimate	-2	4
Regression *p*-value	[0.67]	[0.36]
Randomization Inference *p*-value	[0.39]	[0.80]
Average Impact Estimate as a Percentage of the RCHD Group Baseline Mean	-65%	22%
Sample Size in Hospital-Years[§]	7,011	7,013
Number of RCHD Hospitals	14	14
Number of Comparison Hospitals	351	351

Notes: Impact estimates, standard errors, and 90% confidence intervals are in % terms. Standard errors, clustered at the hospital level and robust to heteroscedasticity, are in parentheses. *** indicates statistical significance at the 1% level, ** at the 5% level, and * at the 10% level, using traditional inference. ^^^ indicates statistical significance at the 1% level, ^^ at the 5% level, and ^ at the 10% level, using randomization inference. The comparison group was defined using an entropy balancing method. [§] Differences in sample sizes across outcomes may exist on account of missing data for some outcomes. Regression *p*-values and randomization inference *p*-values are complementary and reflect two ways of establishing inference. When inconsistent, randomization inference *p*-values take precedence over regression *p*-values in this report, as the former are more appropriate for small samples.

4.3.1.2 New RCHD Hospitals

Medicare inpatient margins. The DID results for *new* RCHD hospitals (**Exhibit 4.2**) show that hospitals participating in the RCHD did not experience statistically significant increases in their Medicare inpatient margins during the CCA authorization extension as a whole. The lack of statistically significant improvements in inpatient margins as a result of participation in the RCHD masks the heterogeneity of results observed during the pre-Covid and Covid periods.

- ***Pre-Covid period.*** During the pre-Covid period, the RCHD resulted in large, positive, and statistically significant increases in *new* hospitals' Medicare inpatient margins. This aligns with the demonstration's goal of helping hospitals move closer to break-even. It is important to note that the pre-Covid period includes the CCA base year for these hospitals. During the base year hospitals are paid on cost and thus can experience the largest increase in their Medicare inpatient margins.

- ***Covid period.*** The improvements to Medicare inpatient margins were no longer observed during the Covid period.

Medicare combined margins. Findings for Medicare combined margins mirror the findings for Medicare inpatient margins (**Exhibit 4.2**). The DID results for *new* RCHD hospitals show that RCHD participation was not associated with increases in Medicare combined margins.

- ***Pre-Covid period.*** During the pre-Covid period, the RCHD resulted in large, positive, and statistically significant increases in *new* hospitals' Medicare combined margins.
- ***Covid period.*** As with Medicare inpatient margins, the improvements in Medicare combined margins were no longer observed during the Covid period. In interviews, virtually all hospitals reported they **experienced cost increases due to the pandemic**. PPE, disinfectant materials, and ventilators were purchased to reduce transmission risk across staff and patients. A handful of hospitals reported extra costs from treating COVID-19 patients, including unused medications, temporary testing spaces, and isolation rooms. They also faced staffing challenges and supply chain issues, which drove up overall expenses.

In addition to facing increased costs, hospitals experienced large shifts in service utilization. Hospitals reduced elective procedures due to COVID-19 risks and supply shortages. Some saw lower demand from fewer tourists, while others had to divert patients due to staffing shortages. At the same time, several hospitals treated severely ill COVID-19 patients, which, though small in number, placed a heavy strain on rural facilities due to the high cost and labor intensity of inpatient care.

Exhibit 4.2: Difference-in-Differences Results: New RCHD Hospitals' Medicare Margins Did Not Change When Considering the Full Post-Demonstration Period

Measure	Medicare Inpatient Margin	Medicare Combined Margin
A. Overall Impact		
Average Impact Estimate	8	5
90% Confidence Interval	(-8, 24)	(-5, 16)
Standard Error	(10)	(6)
Regression *p*-value	[0.43]	[0.38]
Randomization Inference *p*-value	[0.13]	[0.26]
Baseline Mean for RCHD Hospitals	-20%	-26%
Average Impact Estimate as a Percentage of the RCHD Group Baseline Mean	40%	21%
B. Pre-Covid Impact		
Average Impact Estimate	14^^^	9^^
Regression *p*-value	[0.19]	[0.15]
Randomization Inference *p*-value	[0.01]	[0.05]

Measure	Medicare Inpatient Margin	Medicare Combined Margin
Average Impact Estimate as a Percentage of the RCHD Group Baseline Mean	73%	35%
C. Post-Covid Impact		
Average Impact Estimate	-5	-2
Regression *p*-value	[0.60]	[0.81]
Randomization Inference *p*-value	[0.52]	[0.81]
Average Impact Estimate as a Percentage of the RCHD Group Baseline Mean	-24%	-6%
Sample Size in Hospital-Years[§]	2,135	2,136
Number of RCHD Hospitals	12	12
Number of Comparison Hospitals	309	309

Notes: Impact estimates, standard errors, and 90% confidence intervals are in % terms. Standard errors, clustered at the hospital level and robust to heteroscedasticity, are in parentheses. *** indicates statistical significance at the 1% level, ** at the 5% level, and * at the 10% level, using traditional inference. ^^^ indicates statistical significance at the 1% level, ^^ at the 5% level, and ^ at the 10% level, using randomization inference. The comparison group was defined using an entropy balancing method. [§] Differences in sample sizes across outcomes may exist on account of missing data for some outcomes. Regression *p*-values and randomization inference *p*-values are complementary and reflect two ways of establishing inference. When inconsistent, randomization inference *p*-values take precedence over regression *p*-values in this report, as the former are more appropriate for small samples.

4.3.2 Overall Profitability Margins

This section discusses the impact estimates of the RCHD on total profit margins, operating margins, and other non-margin outcomes.

4.3.2.1 Continuing RCHD Hospitals

The DID results for *continuing* RCHD hospitals (**Exhibit 4.3**) show that continued participation in the demonstration did not affect their total profit margins (per randomization inference *p*-values) or their operating margins.

- ***Pre-Covid period. Exhibit 4.3*** also shows statistically significant declines (per randomization inference) in total profit and operating margins. As discussed in **Section 4.2.2**, the decline in total profit margins is likely unrelated to the demonstration. Trend analysis by hospital (Appendix **Exhibit E2.7**) shows these declines occurred in different years across RCHD hospitals, suggesting multiple external or non-Medicare factors rather than a single event like the pandemic. The concurrent drop in operating margins points to revenue losses or cost increases tied to patient care.
- ***Covid period.*** The declines in total profit margins, relative to the comparison group, are no longer observed during the Covid period, whereas the operating margins decline is still observed during this period.

Exhibit 4.3: Difference-in-Differences Results: Overall Profitability Margins for Continuing RCHD Hospitals Did Not Experience a Statistically Significant Change During the CCA Authorization Extension

Measure	Total Profit Margin	Operating Margin
A. Overall Impact		
Average Impact Estimate	-4*	-2
90% Confidence Interval	(-7, -0)	(-6, 1)
Standard Error	(2)	(2)
Regression *p*-value	[0.08]	[0.25]
Randomization Inference *p*-value	[0.21]	[0.55]
Baseline Mean for RCHD Hospitals	1%	-2%
Average Impact Estimate as a Percentage of the RCHD Group Baseline Mean	-425%	-144%
B. Pre-Covid Impact		
Average Impact Estimate	-3^^	-3^^^
Regression *p*-value	[0.11]	[0.20]
Randomization Inference *p*-value	[0.05]	[0.01]
Average Impact Estimate as a Percentage of the RCHD Group Baseline Mean	-377%	-153%
C. Post-Covid Impact		
Average Impact Estimate	-6*	-2^^
Regression *p*-value	[0.08]	[0.65]
Randomization Inference *p*-value	[0.17]	[0.03]
Average Impact Estimate as a Percentage of the RCHD Group Baseline Mean	-668%	-98%
Sample Size in Hospital-Years[§]	7,005	7,005
Number of RCHD Hospitals	14	14
Number of Comparison Hospitals	351	351

Notes: Impact estimates, standard errors, and 90% confidence intervals are in % terms. Standard errors, clustered at the hospital level and robust to heteroscedasticity, are in parentheses. *** indicates statistical significance at the 1% level, ** at the 5% level, and * at the 10% level, using traditional inference. ^^^ indicates statistical significance at the 1% level, ^^ at the 5% level, and ^ at the 10% level, using randomization inference. The comparison group was defined using an entropy balancing method. [§] Differences in sample sizes across outcomes may exist on account of missing data for some outcomes. Regression *p*-values and randomization inference *p*-values are complementary and reflect two ways of establishing inference. When inconsistent, randomization inference *p*-values take precedence over regression *p*-values in this report, as the former are more appropriate for small samples.

Interview insights help explain these findings. *Continuing* RCHD hospitals noted national trends—like shifting inpatient procedures to outpatient and faster discharge practices—reduced overall discharges. Some faced unique challenges, such as losing key providers, referring complex cases to larger hospitals, or struggling with low Medicare Advantage reimbursement rates, especially when serving mostly Medicare patients.

4.3.2.2 New RCHD Hospitals

Total profit margins. **Exhibit 4.4** shows that *new* hospitals participating in the RCHD significantly increased their total profit margins.

- ***Pre-Covid period.*** Total profit margins for *new* RCHD hospitals experienced a statistically significant increase during the pre-Covid period.
- ***Covid period.*** During the Covid period, total profit margins for these hospitals also increased, but this increase was not statistically significant.

Operating margins. Similarly, *new* RCHD hospitals' operating margins increased significantly. This effect was similar in both the pre-Covid and Covid periods.

In sum, during the pre-Covid demonstration period all four profitability margins—Medicare inpatient, Medicare combined, total profit, and operating margins—improved for *new* RCHD hospitals. During the part of the demonstration period that coincided with Covid, total profit margins and operating margins increased, with only the latter being statistically significant, while Medicare margins did not improve. Hence, during Covid, RCHD hospitals were not profitable on the Medicare front but seem to have benefited from other sources of revenue, such as Covid relief funds and revenue from other payers.

It is also notable that during the CCA authorization demonstration period, total profit margins increased for *new* hospitals but declined for continuing hospitals. In both cases, changes to total profit margins are not likely to be related to the demonstration because these changes are not consistently accompanied by changes in Medicare inpatient margins that occur in the same direction.

For *new* hospitals, total profit margins increased relative to baseline in both the pre-Covid and Covid periods, while Medicare inpatient margins only increased during the pre-Covid period. For *continuing* hospitals, total profit margins decreased relative to baseline in the pre-Covid period, while Medicare inpatient margins increased in the pre-Covid period. While both total profit and Medicare inpatient margins decreased without statistical significance during the Covid period, the decline in total profit margins was much larger.

Exhibit 4.4: Difference-in-Differences Results: Total Profit and Operating Margins for New Hospitals Improved under the Demonstration

Measure	Total Profit Margin	Operating Margin
(A) Overall Impact		
Average Impact Estimate	7^	12*^^
90% Confidence Interval	(-2, 16)	(2, 23)
Standard Error	(6)	(6)
Regression *p*-value	[0.22]	[0.06]
Randomization Inference *p*-value	[0.10]	[0.04]
Baseline Mean for RCHD Hospitals	-3%	-8%
Average Impact Estimate as a Percentage of the RCHD Group Baseline Mean	211%	158%
(B) Pre-Covid Impact		
Average Impact Estimate	7^	13^^**
Regression *p*-value	[0.14]	[0.04]
Randomization Inference *p*-value	[0.09]	[0.04]
Average Impact Estimate as a Percentage of the RCHD Group Baseline Mean	225	163
(C) Post-Covid Impact		
Average Impact Estimate	6	12^
Regression *p*-value	[0.42]	[0.13]
Randomization Inference *p*-value	[0.24]	[0.07]
Average Impact Estimate as a Percentage of the RCHD Group Baseline Mean	185	148
Sample Size in Hospital-Years[§]	2,135	2,135
Number of RCHD Hospitals	12	12
Number of Comparison Hospitals	309	309

Notes: Impact estimates, standard errors, and 90% confidence intervals are in % terms. Standard errors, clustered at the hospital level and robust to heteroscedasticity, are in parentheses. *** indicates statistical significance at the 1% level, ** at the 5% level, and * at the 10% level, using traditional inference. ^^^ indicates statistical significance at the 1% level, ^^ at the 5% level, and ^ at the 10% level, using randomization inference. The comparison group was defined using an entropy balancing method. [§]Differences in sample sizes across outcomes may exist on account of missing data for some outcomes. Regression *p*-values and randomization inference *p*-values are complementary and reflect two ways of establishing inference. When inconsistent, randomization inference *p*-values take precedence over regression *p*-values in this report, as the former are more appropriate for small samples.

4.3.3 Other (Non-Margin) Outcomes

DID results for other financial outcomes are reported for *continuing* and *new* hospitals in Appendix **Exhibits E2.8** and **E2.9**, respectively. DID results for Medicare revenue indicators are reported for *continuing* and *new* hospitals in Appendix **Exhibits E2.13** and **E3.1**, respectively.

4.3.3.1 *Continuing* RCHD Hospitals

Statistically significant changes for most non-margin outcomes were not observed, except for a small decrease in the Medicare share of inpatient discharges. The finding is similar to the one in *Interim Report Two*.

4.3.3.2 *New* RCHD Hospitals

For *new* RCHD hospitals, a statistically significant decrease in average age of plant and long-term debt to capitalization ratio (Appendix **Exhibit E2.9**) and a statistically significant increase in Medicare swing-bed revenue share (Appendix **Exhibit E2.11**) were observed. The Medicare swing-bed revenue share outcome is discussed further in **Section 4.3.4**. Since the parallel trends test for the average age of plant outcome did not pass for *new* hospitals, we do not consider this impact estimate to be causally associated with the RCHD. The long-term debt to capitalization ratio for *new* RCHD hospitals significantly decreased relative to comparison group hospitals,[57] driven by one hospital's outlier in relative year 3; excluding it, the effect is no longer significant.

We also observe that new hospitals' ratio of salaries to net patient revenue decreased, though this result is likely a mechanical artifact from increased patient revenues under the demonstration, and the result is not statistically significant per randomization inference *p*-values (Appendix **Exhibit E2.9**). The Medicare share of inpatient discharges for *new* hospitals also increased (Appendix **Exhibit E2.11**).

4.3.4 Swing-Bed Reimbursement under the Demonstration

Under the RCHD model, hospitals can receive higher payments for Medicare swing beds than under SNF PPS, sometimes even exceeding the cost of care. Since swing-bed use can improve Medicare inpatient margins, it's important to assess whether the demonstration influences hospitals' swing-bed utilization and increases the share of Medicare revenue from these services.

We find that *continuing* RCHD hospitals did not increase their Medicare share of revenue from swing beds compared to the previous period. However, *new* RCHD hospitals saw a notable

[57] Traditional inference *p*-values are statistically significant at the 10 percent level, and randomization inference *p*-values are statistically significant at the 5 percent level.

increase in swing bed revenue during the demonstration. In interviews, hospital leaders acknowledged the financial benefits but also emphasized that decisions around swing bed use were driven by local needs, not just financial incentives.

4.3.4.1 Continuing RCHD Hospitals

Both descriptive analysis (Appendix **Exhibit E2.3**) and the DID regressions (Appendix **Exhibit E2.10**) indicate that *continuing* RCHD hospitals did not increase their Medicare share of revenue from swing beds relative to their share under the previous authorization period. *Continuing* hospitals derived a relatively large share of Medicare inpatient revenues from swing beds during the ACA authorization extension (around 16 percent), and this trend remained stable during their demonstration participation under the CCA extension.

Interviews with continuing RCHD hospital leaders highlighted the importance of swing beds to their RCHD payments. In one health system, a hospital with swing beds stayed in the demonstration, while another without them withdrew. Another hospital linked payment fluctuations directly to changes in swing-bed use, showing their significant financial impact.

> "Swing beds were probably the main reason we entered [the demonstration] because back at that time, we had a large number of swing beds. Now there's an unrelated entity that provides short-term rehab and long-term care. Now our swing beds dropped quite a bit. That's made quite a difference in us choosing whether to remain in the program or go with low volume . . ."
>
> *– RCHD hospital administrator*

Several hospitals reported competition for swing-bed patients with nearby facilities. One saw RCHD swing-bed payments drop, then rise, as a neighboring SNF opened and later closed. Others noted that local competition limited referrals, with patients preferring larger centers or new long-term care options. In contrast, one hospital expected swing-bed use to grow due to staffing shortages and limited availability at nearby facilities.

Some *continuing* RCHD hospitals viewed swing beds as less impactful on their payments. Limited use was often due to local factors like nearby nursing homes, physician preferences, and shorter hospital stays. One hospital noted declining overall service use, while another said swing beds hadn't been financially beneficial, leading physicians to prefer home health care. One participant emphasized that care decisions were based on patient needs, not financial strategy. Another hospital found that swing beds helped stabilize bed use and staffing. Overall, hospitals consider both financial and local factors when deciding on swing-bed use.

4.3.4.2 New RCHD Hospitals

DID regression results (Appendix **Exhibit E2.11**) show that *new* hospitals' Medicare swing-bed revenue share increased by 7 percentage points relative to comparison group hospitals.[58] This is likely explained by the RCHD swing-bed payment methodology, which results in improved hospital Medicare inpatient margins if hospitals substitute Medicare acute care beds for swing beds (see **Section 1.2** and Appendix A for an explanation).

Like *continuing* hospitals, *new* RCHD hospitals with swing beds often reported that these beds significantly boosted their RCHD payments. One hospital said most of its care involved swing beds, while another saw increased payments after receiving a waiver to bypass the three-day stay rule through its ACO. One hospital noted, "the swing-bed portion of this [demonstration] makes it work for us." Beyond finances, hospitals also cited improved patient outcomes, such as fewer readmissions and better continuity of care.

Most new hospitals anticipated growth in their swing-bed utilization. Factors contributing to this growth included inadequate staffing and/or limited facilities at local long-term care facilities, perceived financial benefit of swing beds for RCHD hospitals, and community need for swing beds and different levels of care.

While swing beds were generally viewed positively, some *new* hospitals reported financial concerns. One saw a community need but couldn't justify the cost. Others noted rising swing-bed expenses not fully reflected in base-year payments. Still, most hospitals saw swing beds as important for both community care and financial performance under the RCHD.

4.3.5 Hospitals' Perspectives on Trends Influencing Service Utilization, Benefits of the RCHD, and Recommendations for CMS

Service utilization trends. Hospital leaders noted that local factors shape discharge trends. While some expect rising admissions due to service expansions and aging populations, most described inpatient care as financially unsustainable. Many cited the shift to outpatient procedures as lowering ADC and discharge rates. One administrator warned this trend could limit future RCHD gains, despite the hospital owning most local outpatient facilities.

> ". . . it really forces hospitals to have to compete with for-profit, oftentimes physician-owned, outpatient surgery centers."

[58] Traditional inference *p*-values are statistically significant at the 5 percent level, and randomization inference *p*-values are statistically significant at the 1 percent level.

Hospitals noted that local factors often accelerate the shift to outpatient care. One mountain town hospital saw many orthopedic trauma cases from outdoor activities, but most were treated outpatient, limiting inpatient revenue. Another hospital linked a slight ADC decline to both outpatient shifts and changes in bed type use. Only one hospital described an internal effort to reduce discharges—home care for high-need patients to avoid hospitalization—while also noting that complex cases often go to urban centers. Many hospitals highlighted telehealth's rapid growth during the pandemic, driven by expanded reimbursement and rural access needs, especially for specialty care. Telehealth is expected to remain a key service, particularly where onsite specialists are not financially viable.

> "During Covid, we experienced the greatest accelerated adoption and growth of telemedicine, primarily because it was a service that was paid for, where previously it wasn't. And that was bought from Medicare as well as commercial payers." – RCHD hospital administrator

Benefits of the RCHD. Both *new* and *continuing* hospitals viewed the demonstration as vital to financial stability and sustaining essential, often unprofitable, services. Most used the funds to support overall operations rather than specific initiatives. Some hospitals credited the demonstration with enabling infrastructure upgrades, service line expansions, and recruitment of specialists. It also helped maintain critical services like ICU, ambulance, mental health, and dialysis—often the only local providers. Hospitals emphasized that the demonstration's impact varied based on local context, payer mix, and competitiveness. Several noted that the Medicare-focused payment model offered flexibility to support services for non-Medicare patients, such as obstetrics. One remote Alaskan hospital highlighted the program's role in maintaining self-sufficiency, while another in Iowa credited it with preserving regional obstetric care.

Recommendations for CMS. Hospitals emphasized that the demonstration didn't replace the need for cost-control. One hospital with 90% Medicare/Medicaid patients benefited financially but stressed ongoing cost efforts. Some recommended changes if the program becomes permanent, such as allowing PPS payments for SCH-eligible RCHD hospitals when higher than base year costs. One hospital even considered leaving due to financial concerns.

Many hospitals supported making the RCHD permanent to ensure stability and long-term planning. Others suggested expanding CAH eligibility or aligning RCHD reimbursement more closely with the CAH model, including outpatient cost-based payments. Without permanence, some hospitals lack contingency plans—one noted it might face ownership changes or service cuts without continued support.

5.0 Conclusion

This final evaluation report presents the first comprehensive quantitative and qualitative analysis of the CCA authorization period, covering five years of data for 14 participant hospitals and four years for the remaining 12 participant hospitals. In contrast, *Interim Report One* analyzed the MMA and ACA authorization periods, while *Interim Report Two* covered only the first year of the CCA authorization period. This final evaluation report also covers hospital cost reports from FYs 2020 and 2021, a period when healthcare systems and finances in the U.S. were under extreme stress due to start of the Covid-19 pandemic.

The results in this report do not show statistically significant changes in Medicare inpatient and combined margins for *new* hospitals which differs from the findings in earlier reports (*Interim Reports One* and *Two).* Those earlier reports, which analyzed different hospitals and time periods, found that first-time participation in the RCHD increased hospitals' Medicare inpatient and combined margins regardless of authorization period.

The difference in findings for *new* participating RCHD hospitals between this final report and earlier reports suggest that these hospitals were more severely affected by the pandemic than comparison hospitals, in ways not fully captured by the variables included in our DID regressions. These regressions incorporated county-level COVID-19 death and case rates per 1,000 population, and state-level percentages of inpatient beds occupied by suspected or confirmed COVID-19 patients. The pre-COVID increases in Medicare inpatient and combined margins for *new* RCHD hospitals compared to their peers disappeared during the pandemic, supporting this interpretation. Hospital leaders also reported cost increases and changes in service utilization due to the pandemic, which may have negatively affected margins.

For *continuing* hospitals, this report and the prior *Interim Report Two* show that participating in the CCA extension, after prior participation in ACA authorization extension, maintained prior improvements and did not result in any additional changes in hospitals' Medicare inpatient or combined margins relative to the changes hospitals already experienced during the ACA period.

This report also finds no change in RCHD total profit margins for *new* hospitals after joining the demonstration, but statistically significant increases for *continuing* hospitals. This increase is unexpected, as there was no corresponding improvement in Medicare inpatient margins, suggesting the gain is likely not driven by the RCHD but from other income streams. Results in earlier reports suggested that any improvement observed among participant hospitals in Medicare inpatient margins were not sufficient to affect total profit margins.

Hospital representatives reported that the demonstration supported overall operations and existing service lines. Many expressed support for making the RCHD permanent to provide consistent support to rural hospitals and to enable long-term financial planning. Few hospitals did have solid contingency plans if CMS were to discontinue the demonstration.

Taken together, the results in this and earlier evaluation reports provide some evidence of the RCHD value for hospital finances. First time participation increases Medicare inpatient margins and brings hospitals closer to break-even levels. Continued participation does not yield additional gains but allows hospitals to maintain the margin improvements achieved when they first joined the demonstration and for that reason function as an important lifeline in the fiscal viability for these types of eligible rural hospitals.

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