NORC at the University of Chicago

The Pennsylvania Rural Health Model (PARHM)

Second Annual Evaluation Report Appendix

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Appendix A. Qualitative Methods and Analysis

Data Sources

This report draws on two qualitative data sources: 1) Model documents and 2) virtual site visits and interviews (45-90-minute interviews using videoconference software).

Model Documents. The research team conducted a systematic review of the Model documentation (e.g., Model agreement, Model budgets, contracts, and hospital transformation plans). These documents informed key informant outreach and interview guide development.

Virtual Site Visits and Interviews. The purpose of the virtual site visits was to obtain firsthand information about the implementation of the Model, motivations to participate, Model-associated outcomes, challenges, and suggestions for improvement. The research team used a purposive sampling approach to select Model implementation partners and the team members with a set of distinct roles (e.g., leadership, clinical leaders, clinicians) associated with each participating hospital. Document review also informed the relevant hospital team member roles at each site. The final list of key informants included individuals from the following categories (number of individuals):

- Implementation partners involved with the Model (e.g., DOH, state offices, agencies, technical experts) (9)
- Cohort 2 participating hospital leadership and staff (22)
- Cohort 1 participating hospital leadership (2)
- Non-participating hospital leadership (2)
- Community partners (2)
- Participating commercial payers (6)

The team developed semi-structured interview guides for the virtual site visits based on each category of key informants and tailored these interview guides in advance of each interview or virtual site visit. **Exhibit A.1** includes informant types and associated topics.

A two- or three-person team conducted 43 video interviews from May through November 2021. A senior member of the team facilitated each interview using a semi-structured interview guide, and a research analyst took detailed notes during each interview. Each interview was recorded with the participants' consent and professionally transcribed following the interviews.

Appendix Exhibit A.1. Interview Topics by Informant Type

Informant Type	Interview Topics
Commonwealth leadership	▪ Perspectives on Model design and development ▪ Barriers and facilitators to Model implementation, including participant recruitment, global budgets, development of hospital transformation plans ▪ Engagement with hospital and payer participants ▪ Use of program data to monitor program ▪ Perspective on Model effectiveness ▪ Lessons learned and sustainability of program
Hospital leadership	▪ Motivation for participating in the Model ▪ Process for decision-making and stakeholder engagement ▪ Experiences with global budget planning implementation ▪ Experiences with hospital transformation plan implementation ▪ Perspectives on technical support and assistance ▪ Model impact on hospital staffing and hospital leadership ▪ Suggestions for the Center for Medicare & Medicaid Innovation and advice to other rural hospitals
Hospital staff	▪ Experiences with planning and implementing hospital transformation activities and initiatives ▪ Engagement with community partners and technical assistance providers ▪ Changes and outcomes since the implementation of transformation activities ▪ Barriers and facilitators to Model implementation
Community partners	▪ Relationship to the hospital and awareness of the hospital's involvement in the Model ▪ Designated roles and activities in the implementation of the Model ▪ Experiences with collaborating with other community organizations and technical assistance providers ▪ Barriers and facilitators to collaboration efforts ▪ Perspectives on Model impact on community
Commercial payers	▪ Background and involvement with the Model ▪ Motivation for participating in the Model and discussion on the approval process ▪ Perspectives on Model implementation and hospital readiness ▪ Perspectives on global budget and sustainability ▪ Model impact on financial stabilization and quality of care
Implementation partners	▪ Approaches to technical assistance ▪ Perspectives on the Model effectiveness and hospital readiness ▪ Barriers and facilitators to Model implementation and technical assistance ▪ Lessons learned and potential areas of improvement

Analytic Methods

Codebook Development. Using the interview guides and research questions, the team developed an initial set of codes and then updated the codebook with emerging themes throughout the analysis. The analysis employed both inductive and deductive methods to examine implementation partner, hospital, and payer participant perspectives on the implementation, financial, organizational, and programmatic features of the Model. As part of the initial data collection efforts each year, the team reviewed and refined the codebook to account for the complexity of the Model and associated changes relevant to participants' implementation experience.

Quality Assurance. The team reviewed all of the transcribed interviews for accuracy and quality. Once each transcript was reviewed, an analyst uploaded the transcript to the Dedoose software® to facilitate coding and analysis. Multiple team members coded the first set of interviews and met to discuss areas where the code application was unclear or inconsistent. This process served to improve the team's inter-coder reliability and identify any necessary revisions to the codebook.

Data Analysis. The team conducted thematic analysis of the data, identifying relevant themes and areas of convergence or divergence across the participants and implementation partners. The analysis involved a review of findings within and across codes to understand themes across different hospital types and from the perspective of participants and implementation partners.

Appendix B. Quality Measures

This appendix proposes a comprehensive set of measures and targets for population health outcomes, access, and quality in accordance with the framework and principles outlined in Section 15 of the Pennsylvania Rural Health Model State Agreement as amended and restated (thereafter, the “State Agreement”). These population health outcomes, access, and quality measures and targets will be evaluated under the Model and may also be used as the basis for the financial incentives for participant rural hospitals described in Section 15.c.

Appendix Exhibit B.1. PARHM Quality Measures and Targets

Chronic Conditions – Table 1

Model Goal Domain	Category (Quality, Population Health, or Access)	Measure	Steward	Identifier	Type	Data Source	Anticipated Payer Alignment
Chronic Conditions	Population Health	Inpatient and emergency department (ED) visit for ambulatory care-sensitive conditions	Agency for Health Care Research and Quality	Prevention Quality Indicator 92	Outcome	Claims	Medicare and potentially commercial & managed care payers

Target*: Year over year, the mean rate for rural geographic areas must close the gap with the national rural, non-PA mean rate.

- If the national rural, non-PA rate is decreasing, the rate for rural geographic areas should also decrease (at a rate equal to or greater than the national rural, non-PA rate).

Chronic Conditions – Table 2

Model Goal Domain	Category (Quality, Population Health, or Access)	Measure	Steward	Identifier	Type	Data Source	Anticipated Payer Alignment
Chronic Conditions	Quality	Hospital-Wide All-Cause Readmission	Centers for Medicare & Medicaid Services (CMS)	National Quality Forum 1769	Outcome	Claims	Medicare

Target*: Year over year, the mean rate for rural geographic areas must close the gap with the national rural, non-PA mean rate.

- If the national rural, non-PA rate is decreasing, the rate for rural geographic areas should also decrease (at a rate equal to or greater than the national rural, non-PA rate).

Chronic Conditions – Table 3

Model Goal Domain	Category (Quality, Population Health, or Access)	Measure	Steward	Identifier	Type	Data Source	Anticipated Payer Alignment
Chronic Conditions	Quality	Plan All-Cause Readmission	National Committee for Quality Assurance (NCQA)	HEDIS PCR	Outcome	Claims	Commercial & managed care payers

Target*: Year over year, the mean rate for rural geographic areas must close the gap with the national rural, non-PA mean rate.

- If the national rural, non-PA rate is decreasing, the rate for rural geographic areas should also decrease (at a rate equal to or greater than the national rural, non-PA rate).

Substance Use – Table 1

Model Goal Domain	Category (Quality, Population Health, or Access)	Measure	Steward	Identifier	Type	Data Source	Anticipated Payer Alignment
Substance Use	Quality	Use of Pharmacotherapy for Opioid Use Disorder (OUD)[1]	CMS	National Quality Forum 3400	Process	Claims	Medicare

Target*: Year over year, the mean rate for rural geographic areas must close the gap with the national rural, non-PA mean rate.

- If the national rural, non-PA rate is decreasing, the rate for rural geographic areas should also decrease (at a rate equal to or greater than the national rural, non-PA rate).

Substance Use – Table 2

Model Goal Domain	Category (Quality, Population Health, or Access)	Measure	Steward	Identifier	Type	Data Source	Anticipated Payer Alignment
Substance Use	Quality	Pharmacotherapy for OUD	NCQA	HEDIS POD	Process	Claims	Commercial & managed care payers

Target*: Year over year, the mean rate for rural geographic areas must close the gap with the national rural, non-PA mean rate.

- If the national rural, non-PA rate is decreasing, the rate for rural geographic areas should also decrease (at a rate equal to or greater than the national rural, non-PA rate).

[1] All-payer reporting will use NQF 3400 as the measure, however, given the availability of data for Medicare FFS, pharmacotherapy for OUD will be collected using CMS' Integrated Data Repository data linked to Part D claims. Using this approach, performance for Medicare FFS will report an inverse value relative to NQF 3400 (i.e., percent of beneficiaries with OUD diagnosis with NO evidence of pharmacotherapy for OUD treatment, rather than percent of beneficiaries with OUD diagnosis with pharmacotherapy treatment administered, as stated for NQF 3400).

Substance Use – Table 3

Model Goal Domain	Category (Quality, Population Health, or Access)	Measure	Steward	Identifier	Type	Data Source	Anticipated Payer Alignment
Substance Use	Population Health	Risk of Continued Opioid Use	NCQA	HEDIS COU	Process	Claims	All payer

Target*: Year over year, the mean rate for rural geographic areas must close the gap with the national rural, non-PA mean rate.

- If the national rural, non-PA rate is decreasing, the rate for rural geographic areas should also decrease (at a rate equal to or greater than the national rural, non-PA rate).

Access – Table 1

Model Goal Domain	Category (Quality, Population Health, or Access)	Measure	Steward	Identifier	Type	Data Source	Anticipated Payer Alignment
Access	Quality	Follow-up after ED visit for patients with multiple chronic conditions	NCQA	HEDIS FMC	Process	Claims	All payer

Target*: Year over year, the mean rate for rural geographic areas must close the gap with the national rural, non-PA mean rate.

- If the national rural, non-PA rate is decreasing, the rate for rural geographic areas should also decrease (at a rate equal to or greater than the national rural, non-PA rate).

NOTE: *In the event that the national rural, non-PA rates are trending in a negative direction, a review for exogenous factors would be pursued to understand the cause, and the target would be adjusted appropriately.

Appendix C. Quantitative Methods and Analysis

This appendix includes additional information regarding the quantitative methods and analyses found in Chapters 2 (Model Participation) and 4 (Descriptive Assessment of Financial Performance and Interim Medicare Spending).

Market Area Definition

Our evaluation uses a market area definition based on each participating hospital's rural geographic area (RGA), which was defined as part of the Commonwealth's agreement with the Center for Medicare & Medicaid Innovation (CMMI). Each hospital's RGA is defined as the ZIP codes from which a participating hospital draws the majority of its patients.[1] The Model uses the RGA to inform key activities, including calculating total cost of care (TCOC) guardrails, monitoring participating hospitals' TCOC, monitoring leakage or unintended volume shifts and migration trends, monitoring trends in Medicare FFS enrollment and service area characteristics, and reporting population health quality metrics.[2]

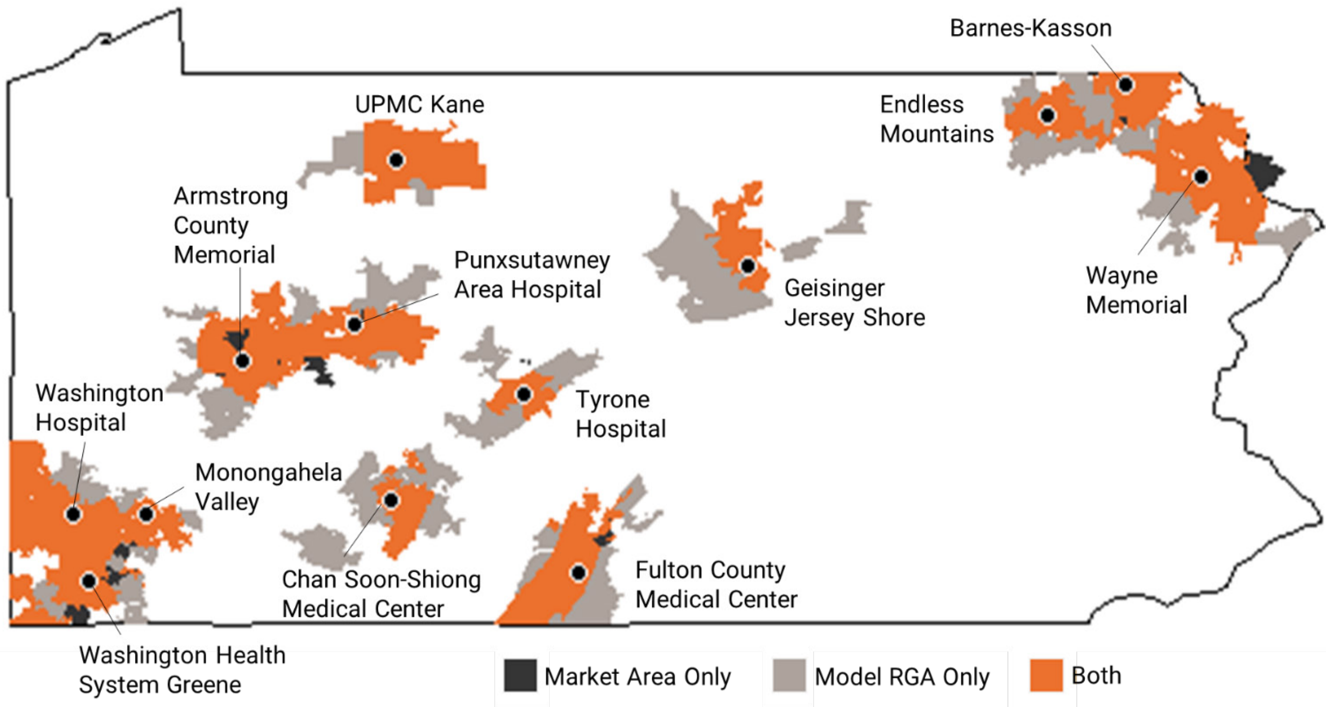
We use Medicare data to select ZIP codes for inclusion in the market area, calculated separately for each participating hospital. We define the market area using the following steps:

1) Using the Medicare Beneficiary Summary File for the year prior to each hospital joining the Model, select beneficiaries living in Pennsylvania ZIP codes.
2) For beneficiaries identified in step 1, pull all Medicare FFS claims that are included in the scope of the Model's global budget.
3) Using the claims identified in step 2, calculate the total revenue for the hospital in each Pennsylvania ZIP codes and rank in descending order.
4) Retain ZIP codes from step 3 that comprise at least 0.75 percent of a hospital's total revenue.
5) Using the claims identified in step 2, rank providers by total revenue in each Pennsylvania ZIP code.
6) Add any ZIP code wherein the hospital is one of the top two providers from step 5, if they are not already included in the list in step 4.

This market area definition includes areas where the hospital has the most market share and total revenue, which are the areas most likely to be affected by the Model's transformation activities. This narrow definition allows the evaluation to assess Model outcomes on areas directly targeted by Model activities, rather than effects on a broader geographical area. The Model's RGA follows the same steps 1 through 6 as listed above, but also includes all Pennsylvania ZIP codes that contribute to a

cumulative 75 percent of revenue for each hospital, which is a broader definition than the market area definition we are using for the evaluation. **Appendix Exhibit C.1** displays the overlap between the ZIP codes included in the evaluation's market area definition and the Model's RGA definition.

Appendix Exhibit C.1. Cohort 1 and Cohort 2 Market Area and Rural Geographic Areas



The choice of method for defining the hospital market area has a significant bearing on the analytic sample size. We utilized a modified version of the "blended logic" approach used by the Program Analysis Contractor to define the market areas because the market area definition struck a good balance between accounting for most of the participating hospitals' inpatient and outpatient overall revenue and the footprint of the hospitals, as measured by market share, in the selected market areas. **Appendix Exhibit C.2** presents the revenue and market share thresholds as well as the analytic sample size for the two participation scenarios. We also considered an alternative market area definition based on a lower market rank threshold because none of the ZIP codes for one hospital in participation scenario #2 met the market rank criteria.

Appendix Exhibit C.2. Defining Hospital Market Areas

Participation Scenario	Number of Participating Hospitals	Revenue Floor	Market Rank Threshold	Average Hospital Revenue Share	Average Hospital Market Share	Number of ZIP Codes	Number of Beneficiaries in Selected ZIP Codes
#1	17	0.75%	Rank <= 2	84%	27%	162	**81,106**
	17	0.75%	Rank <= 3	84%	27%	194	**98,334**
#2	24	0.75%	Rank <= 2	83%	25%	210	**111,958**
	24	0.75%	Rank <= 3	85%	23%	252	**133,816**

NOTES: Revenue Floor Threshold – The overall contribution of the ZIP code to the hospital's inpatient and outpatient revenue should exceed this threshold in order for the ZIP code to be selected; **Market Rank** Threshold – The hospitals' inpatient and outpatient services market share ranking should be at or lower than the specified rank; **Average Hospital Revenue Share** – Average of the hospitals' revenue share attributable to the pool of selected ZIP codes; **Average Hospital Market Share** – Average of the hospitals' average market share of the selected ZIP codes.

Data Sources

Appendix Exhibit C.3. Data Sources for Quantitative Analyses

Data	Years	Rationale	Source(s)
Medicare Parts A and B enrollment database and claims files	CY2013-CY2019	Assess Medicare fee-for-service interim payments, reimbursement, and service mix	Centers for Medicare & Medicaid Services (CMS) Chronic Conditions Warehouse Virtual Research Data Center
Medicare cost reports	FY2013-FY2018	Assess hospital profitability, liquidity, cost-based reimbursement, and capital, cost, and revenue structure	CMS
Pennsylvania Health Care Cost Containment Council (PHC4) files	FY2013-FY2018	Assess financial performance	PHC4 online database
Global budgets payments spreadsheets	CY2019	Assess Global Budget payments	CMS
American Hospital Association (AHA) Annual Survey	2014-2018	Identify characteristics of hospital participants	AHA

Specifications for the Descriptive Measures

Appendix Exhibit C.4. Specifications for Financial Performance Descriptive Measures

Measure	Specification
Total margins	Excess of revenues over expenses as a percentage of total revenue. Indicates the hospital's overall financial strength and ability to generate profits and resources required to invest in facilities, staff, and infrastructure. Formula: (Net Income / Total Revenue) Medicare Cost Report Data Elements: Worksheet G-3, Lines 3, 25, and 29
Salaries to net patient revenue	Salary expenses as a percentage of net patient revenue. Indicates the staffing efficiency of the hospital. Formula: (Salary expense / Net Patient Revenue) Medicare Cost Report Data Elements: Worksheet A, Column 1, Row 200; Worksheet G-3, Line 3
Days cash on hand	Indicates the participating hospitals' cash flow relative to the size of their expenses. Formula: (Cash + Temporary Investments + Investments) / ((Total Expenses – Depreciation) / Days in Period)) Medicare Cost Report Data Elements: Worksheet A, Column 2, Lines 1-3; Worksheet A Column 3, Line 200; Worksheet G, Column 1-4, Lines 1-2, 31
Long-term debt to capitalization ratio	Indicates the hospital's ability to sustain accumulated debt. Formula: (Long-Term Debt / (Long-Term Debt + Net Assets)) Medicare Cost Report Data Elements: Worksheet G, Column 1-4, Lines 40, 50, and 59

Appendix Exhibit C.5. Specifications for Spending and Utilization Descriptive Measures

Measure	Specification
Percent change in interim Medicare fee-for-service payments	The "Claim Payment Amount" field in the inpatient header file was used to determine the interim Medicare FFS payment. Payments are calculated on a per-episode basis. Using claims files, we anchored episodes to the admission date of an index hospitalization that meets the criteria for inclusion in the denominator.
Percent deviation from biweekly interim fee-for-service Medicare reimbursement	The "Claim Payment Amount" field in the inpatient header file was used to determine the interim Medicare FFS payment. Payments are calculated on a per-episode basis. Using claims files, we stratified the episodes into biweekly payment periods using the admission date of an index hospitalization that meets the criteria for inclusion in the denominator.
Share of total charges by revenue center	We utilized the "Allowed Charges" field in the inpatient and outpatient service line files to calculate total charges. We anchored episodes to the admission date indicated in the inpatient header file. The "Revenue Center" field was used to stratify services by revenue center.

Appendix D. Quantitative Measure Tables

Appendix Exhibit D.1. Financial Performance and Interim Medicare FFS Payments for Cohort 1 (2019), Cohort 2 (2020) Hospital Participants and Eligible Nonparticipants (2013-2019)

Measure	Cohort	Hospital Type	2013	2014	2015	2016	2017	2018	2019	2020	Data Source
Average Total Margin (%)	Eligible Non-Participant	CAH	-2.19%	3.10%	-0.79%	1.35%	3.70%	9.58%	-	-	Medicare Cost Reports
	Cohort 1	CAH	5.95%	-0.22%	-5.74%	-6.82%	-9.19%	-6.63%	-	-	Medicare Cost Reports
	Cohort 2	CAH	3.93%	-2.33%	-2.87%	-0.35%	-5.49%	-4.94%	-	-	Medicare Cost Reports
	Eligible Non-Participant	PPS	4.24%	1.30%	0.83%	3.53%	1.84%	3.54%	-	-	Medicare Cost Reports
	Cohort 1	PPS	3.94%	0.65%	-4.87%	-3.07%	-4.92%	-6.80%	-	-	Medicare Cost Reports
	Cohort 2	PPS	0.79%	-2.92%	2.10%	-1.23%	0.76%	2.17%	-	-	Medicare Cost Reports
Average Operating Margin (%)	Eligible Non-Participant	CAH	-9.37%	-2.54%	-3.59%	-2.89%	0.35%	0.47%	-	-	Medicare Cost Reports
	Cohort 1	CAH	-3.38%	-12.20%	-7.55%	-8.13%	-9.06%	-9.52%	-	-	Medicare Cost Reports
	Cohort 2	CAH	1.77%	-4.69%	-5.46%	-5.23%	-10.35%	-10.60%	-	-	Medicare Cost Reports
	Eligible Non-Participant	PPS	-0.74%	0.62%	0.90%	4.42%	0.02%	1.00%	-	-	Medicare Cost Reports
	Cohort 1	PPS	-2.34%	-1.97%	-6.39%	-53.61%	-65.44%	-74.94%	-	-	Medicare Cost Reports
	Cohort 2	PPS	-5.95%	-6.06%	1.06%	-5.90%	-6.74%	-3.00%	-	-	Medicare Cost Reports
Total Costs - Inpatient Routine Service Costs ($)	Eligible Non-Participant	CAH	23,740,780.00	25,469,696.00	27,364,261.00	27,374,695.00	27,601,386.00	27,028,577.00	-	-	Medicare Cost Reports
	Cohort 1	CAH	5,766,042.00	5,610,847.00	5,865,078.00	5,531,810.00	5,769,036.00	6,144,844.00	-	-	Medicare Cost Reports
	Cohort 2	CAH	5,571,155.00	5,690,988.00	5,907,648.00	5,804,884.00	6,017,583.00	5,596,945.00	-	-	Medicare Cost Reports
	Eligible Non-Participant	PPS	645,275,278.00	634,282,194.00	656,564,953.00	655,229,362.00	678,845,606.00	652,299,315.00	-	-	Medicare Cost Reports

Measure	Cohort	Hospital Type	2013	2014	2015	2016	2017	2018	2019	2020	Data Source
	Cohort 1	PPS	8,748,475.00	9,312,654.00	11,317,767.00	9,261,093.00	9,726,853.00	8,424,260.00	-	-	Medicare Cost Reports
	Cohort 2	PPS	59,074,322.00	60,020,060.00	61,466,815.00	61,732,120.00	60,414,074.00	58,739,911.00	-	-	Medicare Cost Reports
Total Costs - Outpatient Service Costs ($)	Eligible Non-Participant	CAH	24,847,000.00	26,151,344.00	30,444,442.00	34,881,247.00	37,052,945.00	38,821,662.00	-	-	Medicare Cost Reports
	Cohort 1	CAH	4,140,702.00	4,560,065.00	4,869,041.00	4,945,152.00	5,015,495.00	5,542,354.00	-	-	Medicare Cost Reports
	Cohort 2	CAH	3,889,987.00	3,044,946.00	3,677,739.00	4,993,998.00	5,451,307.00	5,690,561.00	-	-	Medicare Cost Reports
	Eligible Non-Participant	PPS	232,452,180.00	233,270,624.00	239,147,713.00	251,365,969.00	275,356,700.00	287,522,528.00	-	-	Medicare Cost Reports
	Cohort 1	PPS	4,990,619.00	5,873,880.00	5,622,350.00	5,441,286.00	6,317,653.00	5,972,370.00	-	-	Medicare Cost Reports
	Cohort 2	PPS	20,874,965.00	21,232,744.00	21,349,929.00	23,300,519.00	23,581,964.00	23,164,232.00	-	-	Medicare Cost Reports
Average Salary: Net Patient Revenue Ratio	Eligible Non-Participant	CAH	0.4	0.39	0.39	0.37	0.37	0.36	-	-	Medicare Cost Reports
	Cohort 1	CAH	0.46	0.48	0.46	0.45	0.47	0.46	-	-	Medicare Cost Reports
	Cohort 2	CAH	0.46	0.47	0.43	0.45	0.48	0.51	-	-	Medicare Cost Reports
	Eligible Non-Participant	PPS	0.4	0.38	0.38	0.38	0.37	0.36	-	-	Medicare Cost Reports
	Cohort 1	PPS	0.48	0.47	0.48	0.68	0.75	0.76	-	-	Medicare Cost Reports
	Cohort 2	PPS	0.47	0.45	0.46	0.48	0.5	0.49	-	-	Medicare Cost Reports
Average Days Cash on Hand (Days)	Eligible Non-Participant	CAH	139.07	130.93	125.33	127.31	143.15	134.75	-	-	Medicare Cost Reports
	Cohort 1	CAH	11.51	11.8	12.05	12.72	6.53	22.83	-	-	Medicare Cost Reports
	Cohort 2	CAH	95.64	71.57	67.63	73.6	71.47	59.85	-	-	Medicare Cost Reports
	Eligible Non-Participant	PPS	132.64	127.32	123.28	113.03	126.97	128.12	-	-	Medicare Cost Reports
	Cohort 1	PPS	248.7	259.65	247.29	224.95	319.92	240.55	-	-	Medicare Cost Reports
	Cohort 2	PPS	108.57	108.33	101.67	103.94	94.46	89.2	-	-	Medicare Cost Reports

Measure	Cohort	Hospital Type	2013	2014	2015	2016	2017	2018	2019	2020	Data Source
Average Long-Term Debt to Capitalization Ratio	Eligible Non-Participant	CAH	0.44	0.45	0.48	0.5	0.42	0.33	-	-	Medicare Cost Reports
	Cohort 1	CAH	0.75	0.8	0.87	0.89	0.95	1.18	-	-	Medicare Cost Reports
	Cohort 2	CAH	0.39	0.45	0.58	0.58	0.59	0.64	-	-	Medicare Cost Reports
	Eligible Non-Participant	PPS	0.44	0.38	0.49	0.42	0.44	0.37	-	-	Medicare Cost Reports
	Cohort 1	PPS	0.19	0.16	0.17	0.14	0.23	0.22	-	-	Medicare Cost Reports
	Cohort 2	PPS	0.39	0.53	0.28	0.29	0.28	0.29	-	-	Medicare Cost Reports
Total Interim Medicare FFS Reimbursement – Facility-Based Services ($)	Eligible Non-Participant	CAH	-	27,965,760.42	39,555,398.06	43,515,925.12	46,147,624.20	46,825,515.48	43,595,970.95	37,935,968.95	Medicare FFS Claims
	Cohort 1	CAH	-	14,545,844.69	14,239,351.48	13,377,388.87	12,241,518.33	11,537,407.53	11,764,035.49*	12,394,630.68*	Medicare FFS Claims
	Cohort 2	CAH	-	10,984,164.47	12,366,970.88	11,957,981.04	10,925,132.88	9,700,118.96	9,148,803.85	7,490,871.89*	Medicare FFS Claims
	Eligible Non-Participant	PPS	-	1,164,405,508.33	1,191,311,000.57	1,218,401,146.92	1,229,071,254.61	1,252,912,547.15	1,290,936,341.81	1,175,266,727.59	Medicare FFS Claims
	Cohort 1	PPS	-	27,142,543.27	27,402,565.85	27,191,038.46	27,864,084.49	28,728,533.18	27,666,512.41*	24,752,086.33*	Medicare FFS Claims
	Cohort 2	PPS	-	75,908,475.51	74,292,032.29	74,690,596.36	75,219,943.15	73,082,718.54	68,135,419.70	61,905,547.21*	Medicare FFS Claims
Total Interim Medicare FFS - Professional Services ($)	Eligible Non-Participant	CAH	-	5,750,374.91	5,880,440.88	5,698,646.37	5,482,628.54	5,749,880.63	-	-	Medicare FFS Claims
	Cohort 1	CAH	-	1,801,226.64	1,885,204.06	1,844,369.41	1,763,130.11	1,693,691.74	-	-	Medicare FFS Claims
	Cohort 2	CAH	-	1,484,619.11	1,636,303.31	1,669,659.70	1,614,991.64	1,514,493.20	-	-	Medicare FFS Claims
	Eligible Non-Participant	PPS	-	236,693,212.47	239,484,225.96	241,506,103.27	240,732,944.07	236,097,987.51	-	-	Medicare FFS Claims
	Cohort 1	PPS	-	5,289,055.97	5,364,222.84	5,054,549.80	4,915,623.50	5,001,245.82	-	-	Medicare FFS Claims
	Cohort 2	PPS	-	15,939,137.58	16,390,536.01	16,029,864.70	14,449,224.53	14,520,652.21	-	-	Medicare FFS Claims

NOTES: * These hypothetical interim reimbursement amounts reflect the total payments the hospital participants would have received in CY2019 under traditional Medicare FFS reimbursement. & The global budget payments do not cover swing bed services provided by PPS hospital participants. CAH = Critical access hospital; PPS = Prospective payment system.

Appendix Exhibit D.2. Reconciliation of PY1 (2019) Interim Global Budget Payments with Medicare Cost Reports for Cohort 1

Measure	2014	2015	2016	2017	2018	2019 (PY1)	2020 (PY2)
Total Settlement	$276,712	$159,324	$180,199	$447,736	-$107,261	-$761,095	-$456,610
Total Interim Reimbursement	$14,545,845	$14,239,351	$13,377,389	$12,241,518	$11,537,408	$13,924,462	$13,062,920
Settlement as a Percent of Interim Reimbursement	1.9%	1.1%	1.3%	3.7%	-0.9%	-5.5%	-3.5%

Appendix Exhibit D.3. Interim Global Budget Payments

Measure	Cohort	2014	2015	2016	2017	2018	2019 (PY1)	2020 (PY2)
Interim Medicare FFS Payments During the Baseline Period for Global Budget-Covered Services	Cohort 1	$41,688,388	$41,641,917	$40,568,427	$40,105,603	$40,265,941		
	Cohort 2	$86,892,640	$86,659,003	$86,648,577	$86,145,076	$82,782,838		
Interim Global Budget Payment	Cohort 1						$41,878,202	$41,541,776
	Cohort 2							$93,024,464

Appendix Exhibit D.4. Reimbursement by Major Diagnostic Code

Total Reimbursement

Cohort	MDC	2014	2015	2016
Cohort 1	1	842,207.58	924,985.21	841,329.87
Cohort 1	2	6,162.45	9,596.20	3,524.08
Cohort 1	3	63,645.64	63,195.34	59,097.01
Cohort 1	4	3,058,957.45	3,494,839.30	4,346,856.57
Cohort 1	5	3,693,016.71	3,350,937.79	3,090,023.81
Cohort 1	6	1,952,577.59	1,704,827.76	1,616,909.72
Cohort 1	7	435,132.97	506,742.27	319,797.01
Cohort 1	8	2,501,488.70	2,515,921.10	2,032,916.92
Cohort 1	9	507,210.80	366,376.05	555,890.25
Cohort 1	10	635,213.52	434,875.08	466,050.02
Cohort 1	11	1,331,906.50	1,213,989.97	1,361,109.84
Cohort 1	12	13,618.48	5,622.35	23,462.89
Cohort 1	13	30,039.81	34,242.58	16,321.65
Cohort 1	16	-	33,711.71	4,154.24
Cohort 1	17	-	-	-
Cohort 1	18	273,761.21	222,777.77	192,216.69
Cohort 1	19	27,197.79	12,239.26	32,683.91
Cohort 1	20	1,696,601.96	1,345,068.19	979,212.56
Cohort 1	21	18,688.60	18,375.00	29,582.30
Cohort 1	22	16,982.39	24,991.26	45,247.92
Cohort 1	23	193,311.37	195,626.83	150,996.49
Cohort 1	24	177,542.22	202,065.53	196,107.37
Cohort 1	25	10,657.32	65,428.18	86,884.51
Cohort 2	1	3,098.76	30,340.45	-
Cohort 2	2	2,081,430.08	1,745,360.43	1,504,309.25
Cohort 2	3	22,877.81	18,314.82	18,903.70
Cohort 2	4	171,536.60	182,198.80	89,254.37
Cohort 2	5	7,067,932.98	6,490,765.52	7,350,838.72
Cohort 2	6	11,493,497.52	10,063,292.80	8,961,086.89
Cohort 2	7	4,628,344.75	4,536,397.58	3,629,048.78
Cohort 2	8	1,245,364.87	1,068,313.97	741,999.86
Cohort 2	9	7,110,577.49	6,533,466.93	5,559,718.41
Cohort 2	10	1,041,050.97	1,013,558.16	723,994.23
Cohort 2	11	1,656,554.59	1,460,559.49	1,249,275.43
Cohort 2	12	3,079,954.34	2,427,554.95	2,064,369.60
Cohort 2	13	161,774.89	63,822.30	40,019.40
Cohort 2	14	62,550.02	107,095.70	86,054.97
Cohort 2	15	3,051.51	32,615.44	31,614.83
Cohort 2	16	-	-	-

Cohort	MDC	2014	2015	2016
Cohort 2	17	721,455.41	602,766.22	439,817.41
Cohort 2	18	181,976.81	290,906.95	169,888.52
Cohort 2	19	4,895,844.44	4,307,555.73	4,001,488.18
Cohort 2	20	423,909.33	580,016.80	347,736.85
Cohort 2	21	109,926.22	150,085.31	145,830.81
Cohort 2	22	383,831.33	281,966.34	223,842.66
Cohort 2	23	-	10,544.68	-
Cohort 2	24	162,832.82	214,279.02	133,689.03
Cohort 2	25	-	-	-

SOURCE: Medicare FFS Claims (CY2018-CY2020)
NOTE: Only Major Diagnostic Categories (MDCs) accounting for at least 5% of total inpatient reimbursement are included.

Appendix Exhibit D.5. Biweekly Reimbursement – All Participants

Biweek Number	2014	2015	2016	2017	2018	2019	2020
0	$ 5,470,647.47	$ 5,505,712.26	$ 4,636,236.96	$ 5,135,053.38	$ 5,166,502.49	$ 4,419,585.01	$ 4,386,298.97
1	$ 4,717,812.50	$ 5,138,892.39	$ 4,554,958.10	$ 5,036,418.70	$ 4,928,787.39	$ 4,455,759.96	$ 4,340,157.63
2	$ 4,808,505.68	$ 5,064,096.84	$ 4,562,031.30	$ 5,005,737.13	$ 4,690,949.94	$ 4,541,265.03	$ 4,436,193.35
3	$ 4,805,158.59	$ 4,921,539.64	$ 4,996,261.87	$ 4,815,899.77	$ 5,208,874.65	$ 4,324,991.43	$ 4,431,668.24
4	$ 5,106,663.83	$ 5,454,355.83	$ 5,248,002.60	$ 4,935,324.45	$ 4,903,436.03	$ 4,822,412.57	$ 4,344,499.94
5	$ 5,192,583.70	$ 5,326,914.21	$ 5,341,736.17	$ 5,128,290.69	$ 4,471,317.99	$ 4,617,963.59	$ 3,687,493.15
6	$ 5,450,769.37	$ 5,064,268.85	$ 5,176,400.04	$ 4,944,424.39	$ 4,928,344.71	$ 4,530,117.31	$ 2,924,113.95
7	$ 4,991,239.91	$ 5,101,065.45	$ 5,190,547.88	$ 5,510,150.35	$ 5,096,356.99	$ 4,196,415.47	$ 2,801,199.51
8	$ 5,262,587.02	$ 4,960,173.98	$ 4,648,393.45	$ 5,058,204.14	$ 5,004,627.33	$ 4,790,518.14	$ 3,223,850.61
9	$ 5,067,856.72	$ 4,871,173.02	$ 5,062,158.62	$ 5,035,724.80	$ 4,297,253.41	$ 4,488,413.47	$ 3,312,227.69
10	$ 4,875,808.36	$ 5,096,320.79	$ 4,879,986.49	$ 5,243,892.09	$ 4,274,873.07	$ 4,418,932.90	$ 3,476,486.03
11	$ 4,815,856.24	$ 5,108,625.81	$ 5,243,358.90	$ 5,016,029.43	$ 4,382,830.10	$ 4,795,319.47	$ 4,134,262.43
12	$ 4,819,331.18	$ 5,059,718.17	$ 4,875,126.09	$ 4,703,362.92	$ 4,353,595.33	$ 4,870,671.31	$ 4,123,973.16
13	$ 4,911,843.06	$ 4,424,705.58	$ 5,204,833.20	$ 4,481,170.88	$ 4,926,380.43	$ 4,088,535.84	$ 4,157,967.92
14	$ 5,003,432.62	$ 4,880,869.35	$ 4,991,580.05	$ 4,736,586.01	$ 4,296,982.70	$ 4,525,950.21	$ 4,319,570.71
15	$ 4,756,389.48	$ 4,846,212.22	$ 5,127,973.80	$ 5,096,046.91	$ 4,811,804.58	$ 4,286,998.57	$ 4,121,989.09
16	$ 5,010,228.70	$ 4,764,743.39	$ 4,668,145.73	$ 4,822,513.62	$ 4,698,640.52	$ 4,465,079.10	$ 4,042,214.97
17	$ 5,044,668.57	$ 4,624,080.81	$ 4,458,922.62	$ 4,546,743.70	$ 4,721,575.68	$ 4,206,872.71	$ 4,037,929.34
18	$ 5,128,987.19	$ 5,048,538.85	$ 4,748,702.45	$ 4,825,789.71	$ 5,132,729.74	$ 4,618,494.20	$ 4,236,607.90
19	$ 4,972,704.99	$ 5,269,377.81	$ 5,096,236.84	$ 4,822,311.27	$ 5,323,146.69	$ 4,957,032.00	$ 4,497,272.97
20	$ 5,038,107.02	$ 5,235,093.81	$ 5,137,536.15	$ 5,227,229.22	$ 4,701,921.20	$ 4,806,433.83	$ 4,165,905.23
21	$ 4,967,075.59	$ 5,107,669.60	$ 5,055,240.69	$ 4,915,457.63	$ 4,799,064.21	$ 4,315,846.10	$ 4,739,890.75
22	$ 5,043,820.37	$ 4,787,756.43	$ 4,917,219.87	$ 4,799,264.01	$ 4,879,776.45	$ 4,981,309.75	$ 4,725,038.12
23	$ 4,542,489.89	$ 4,430,634.68	$ 4,682,687.14	$ 4,418,366.04	$ 4,659,706.55	$ 4,008,244.75	$ 4,540,053.95
24	$ 5,103,429.73	$ 4,614,217.36	$ 4,758,681.90	$ 4,637,568.60	$ 4,728,050.98	$ 4,792,023.29	$ 5,647,764.08
25	$ 3,673,030.16	$ 3,594,163.37	$ 3,954,045.82	$ 3,353,119.01	$ 3,661,249.05	$ 3,389,585.44	$ 3,688,506.42

References

1. Commonwealth of Pennsylvania, Centers for Medicare and Medicaid Services. First Amended and Restated Pennsylvania Rural Health Model State Agreement. 2018.
2. The Lewin Group. Memorandum "Pennsylvania Rural Health Model Service Area Methodology. February 2019.