

Concept Paper

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Concept Paper

Maryland’s All-Payer Model and Hospital Financial Stability: A Comparative Study with Massachusetts, 2004–2024

Short Title: Maryland All-Payer Model: Financial Stability & Patient Cost Impact

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Abstract

Maryland’s all-payer hospital model is a unique statewide experiment in regulated payment reform aimed at controlling costs and stabilizing finances. This concept paper proposes a comparative study to analyze the impact of Maryland’s All-Payer Model (APM), launched in 2014, on hospital financial health and patient cost burdens, using Massachusetts as a policy benchmark. The study will leverage longitudinal panel data from the RAND Hospital Cost Report Information System (HCRIS) covering 2004 to 2024. A difference-in-differences (DiD) approach will compare trends in operating margins, revenue volatility, and hospital cost growth before and after implementation between the two states. The goal is to determine whether Maryland’s global budget strategy achieved its policy goals without harming patients. The findings might influence broader U.S. policy discussions on payment reform and rate regulation.

Keywords: hospital financial stability; all-payer model; rate-setting; cost containment; payment reform; Maryland; Massachusetts

1. Introduction

Hospital financial performance is a key indicator of the sustainability of health systems. In the United States, traditional fee-for-service payment models have been associated with rising costs, financial instability, and misaligned incentives. In response, some states have explored alternative payment strategies. Maryland’s All-Payer Model (APM), introduced under a CMS waiver in 2014, is among the most ambitious, shifting all acute-care hospitals to global budgets that cap annual revenues across all payers.

This reform contrasts with Massachusetts’s approach, which regulates costs through benchmarks and transparency mechanisms but retains fee-for-service hospital payments. Both states share similar socioeconomic profiles, high insurance coverage rates, and strong hospital infrastructure, making them suitable comparators. This paper proposes a longitudinal comparative analysis to assess whether Maryland’s APM improved hospital financial stability and contained patient costs relative to Massachusetts over the period 2004–2024.

2. Research Questions and Hypotheses

Research Question 1: Did Maryland’s All-Payer Model improve hospital financial stability (e.g., margins, revenue volatility) compared to Massachusetts?

Research Question 2: Did the APM reduce the growth of patient hospital cost burden (e.g., charges per admission, out-of-pocket costs)?

Hypothesis: Hospitals operating under Maryland's global budget framework will demonstrate greater financial stability, reflected in higher or more consistent margins, and experience slower growth in patient cost burdens compared to hospitals in Massachusetts over the 2014–2024 period.

3. Background and State Selection Rationale

Hospitals are vital to the U.S. healthcare system, yet many face ongoing financial challenges due to payment models that favor service volume over value. Maryland provides a unique policy alternative through its All-Payer Model (APM), launched in 2014, which established global budgets for all acute-care hospitals and limited annual revenue growth across all payers [1–3]. Under the oversight of the Health Services Cost Review Commission (HSCRC), Maryland hospitals operate with fixed annual budgets for inpatient and outpatient services, aimed at encouraging cost efficiency and predictable financial planning [4–6].

Initial findings suggest that the APM reduced hospital expenditures in Medicare while maintaining hospital revenues, although its overall financial impact on other payers remains uncertain [7]. The study proposes comparing Massachusetts as a counterfactual, since it depends heavily on traditional fee-for-service payment systems [8].

Maryland and Massachusetts offer an interesting comparison for several reasons: they are both high-income states (per capita incomes in 2024: \$93,927 for MA; \$78,538 for MD) [9], they have nearly universal insurance coverage, and they implement excellent health policies in each state [10]. Because they share many sociological similarities, external influences are less significant, but there is a notable difference in payment policies.

This enables a valid difference-in-differences test by comparing the financial performance in these two states using Maryland's APMS before and after its implementation.

4. Literature Review

Empirical research underlines the significance of payment structure in influencing hospital performance. Song et al. [11] found that global payment models reduce cost growth and increase predictability. Shahian et al. [12] identified a link between academic productivity and financial stability in hospitals, while Lirk et al. [13] created a resilience index that includes cost-report and structural features.

COVID-era research highlighted the vulnerability of hospital revenue that relies on volume. Orlando and Field [14] pointed out that many safety-net hospitals faced significant financial losses during pandemic-related volume drops. Neupane et al. [15] demonstrated that hospital type and payer mix were linked to financial resilience.

These findings reinforce the need to evaluate hospital performance under payment models that decouple volume from revenue — as Maryland's APM aims to do.

5. Methods and Data

5.1. Data Source

The main dataset will be the **RAND Hospital Cost Report Information System (HCRIS)** — a cleaned and standardized set of CMS cost reports that contains annual financial data for all Medicare-certified hospitals from 1996 to 2024 [6].

5.2. Study Design

The study will use a **difference-in-differences** design comparing hospitals in Maryland (treatment group) to those in Massachusetts (control group), before and after APM implementation in 2014.

5.3. Model Specification

$$Y_{ht} = \beta_0 + \beta_1(MD_h \times Post_t) + \phi_h + \delta_t + \gamma X_{ht} + \epsilon_{ht}$$

- Y_{ht} : Outcome variable (e.g., operating margin) for hospital h in year t
- MD_h : Indicator for Maryland hospital
- $Post_t$: Indicator for years ≥ 2014
- ϕ_h : Hospital fixed effects
- δ_t : Year fixed effects
- X_{ht} : Time-varying hospital characteristics (e.g., bed size, ownership, teaching status, payer mix)
- Standard errors will be clustered by hospital or state.

5.4. Outcomes

Financial Stability:

- Operating and total margins
- Revenue volatility (e.g., standard deviation of margins over time)
- Debt-to-asset ratios

Cost Burden:

- Charges per admission
- Net patient revenue per discharge
- Cost-to-charge ratios

Robustness Checks:

- Placebo year (e.g., 2012)
- Event-study plots for pre-trends
- Hospital-specific trends
- Short-window analyses (e.g., 2012–2018)

6. Expected Outcomes and Policy Implications

We anticipate that the APM will be related to:

- **Higher or more stable margins** and reduced financial volatility in Maryland hospitals after 2014.
- **Slower increase** in patient hospital charges and expenditures compared to Massachusetts.

If confirmed, these findings would support using global budgets as a national payment model to enhance hospital financial resilience without adding to patient burden. The results could also guide states as they consider CMS’s upcoming AHEAD Model or related reforms.

7. Limitations

- **The parallel trends** assumption could be undermined if unobserved differences existed between MD and MA hospitals before 2014. This will be examined through event studies and placebo checks.
- **Data quality:** Although HCRIS is audited, it is based on hospital-reported data; some elements (e.g., cost-to-charge ratios) may differ depending on accounting practices.
- **Policy spillover:** Post-2019 reforms, such as Maryland’s Total Cost of Care model, might complicate results, but this will be addressed through sensitivity analyses.
- **External validity:** Results from MD and MA might not apply to other states.

Funding: This work received no external funding.

Data Availability: Public datasets used in this study are available from: RAND HCRIS: <https://www.rand.org/pubs/tools/TL303.html> HCUP: <https://www.ahrq.gov/data/hcup/index.html> AHA: <https://www.aha.org/data-insights>.

Conflict of Interest: None declared.

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