Impacts of Hospital Global Budgets on Utilization of Care:
Evidence from Maryland

June 7, 2018
National ACO, Bundled Payment, and MACRA Summit
Washington, DC

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Note

- This presentation summarizes the results of two studies:
  - "Changes in health care use associated with the introduction of hospital global budgets in Maryland," published by *JAMA Internal Medicine* January 16, 2018
  - "Changes In Hospital Utilization Three Years Into Maryland's Global Budget Program For Rural Hospitals," published by *Health Affairs* in April 2018

- Acknowledgements:
  - *Co-authors:* Ateev Mehrotra, Michael McWilliams, Laura Hatfield, Sule Gerovich, Mike Chernew, and Lauren Gilstrap
  - *Funding:* Commonwealth Fund and the National Institute on Aging of the National Institutes for Health (P01 AG032952)

Maryland’s Program Similar to other APMs

- Maryland’s hospital global budget program is one of several Alternative Payment Models (APMs) being tested in the U.S.
- APMs generally combine spending targets (“budgets”) with financial incentives linked to quality metrics (“P4P” incentives)
- Under Maryland’s hospital global budget model:
  - Hospitals receive an annual all-payer budget covering all hospital-based care, and hospitals bear risk for spending that is over/under budget
  - Budgets are adjusted to reflect the performance of hospitals on quality measures, including readmissions, hospital-acquired conditions, and process of care measures

Unique Aspects of Maryland's Program

- **Encompasses all payers –** Medicare, Medicaid, and commercial payers
- **Limited to services provided in the hospital –** includes only inpatient, ED, and on-campus outpatient department services
- **Does not affect payments to physicians,** including physicians practicing in the hospital

Policy Objectives

- Maryland's program was established to meet several policy objectives:

1. **Limiting the rate of hospital spending growth**
   - Hold hospital spending growth below the national trend for Medicare
2. **Improve the quality of care**
   - Incentives to reduce readmissions and meet other performance benchmarks
3. **Improve population health**
   - When paid a fixed annual budget, hospitals have incentives to reduce high-cost, potentially avoidable utilization by strengthening outpatient services, including primary care

Implementation

- Maryland's program was implemented in two phases

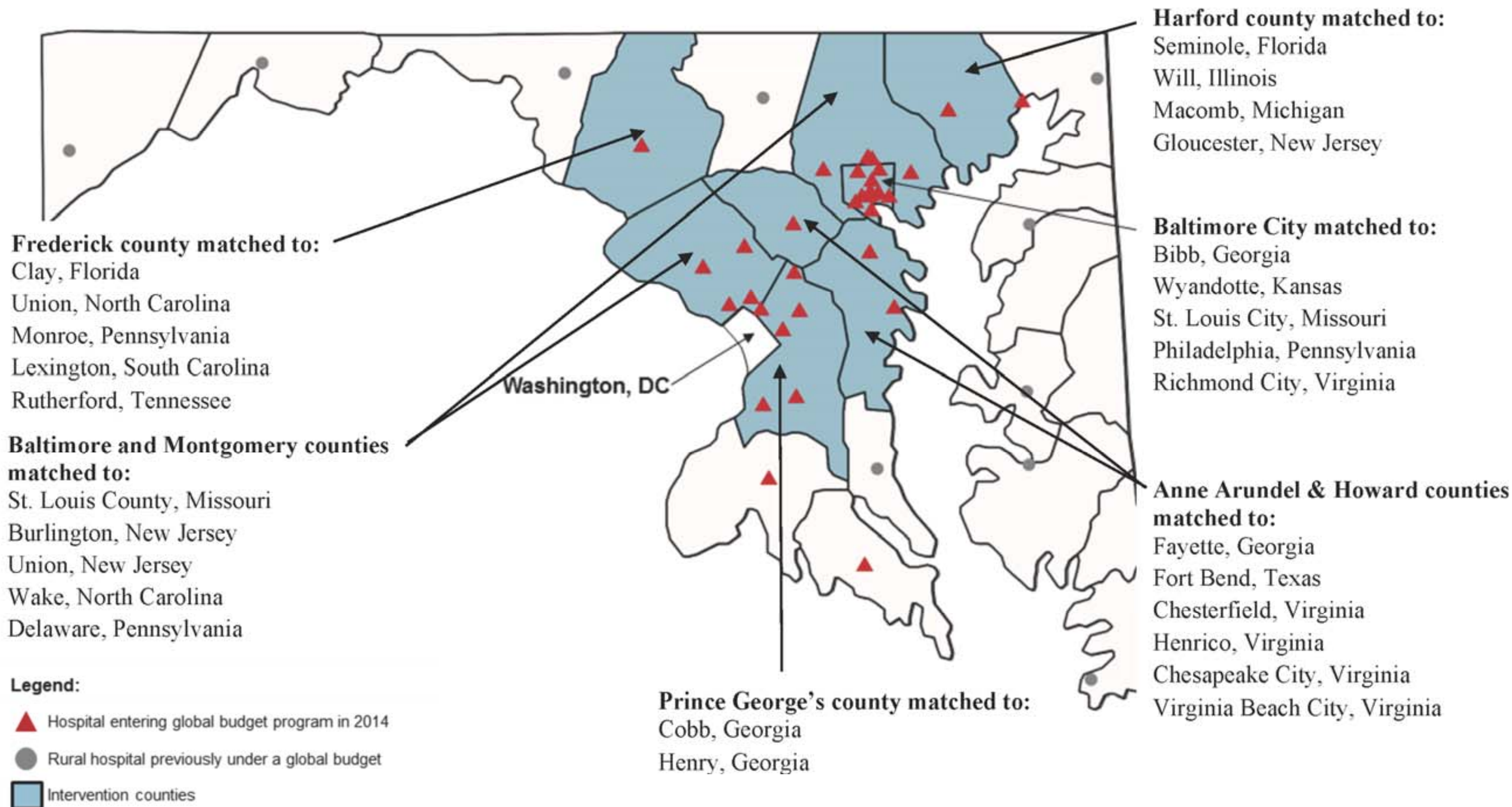
1. **Rural hospital "pilot"**
   - Eight rural hospitals received global budgets beginning in July 2010
2. **Statewide expansion**
   - 36 hospitals joined in early 2014
   - Expansion occurred under a waiver with CMS, which exempts Maryland hospitals from the Medicare Prospective Payment System

Evaluation

- We evaluated the impact of Maryland's global budget program on utilization of care using a difference-in-differences analysis with a control population
    - ***Statewide evaluation (JAMA IM):*** Compared Maryland to a matched out-of-state control population
    - ***Rural evaluation (Health Affairs):*** Compared populations served by rural hospitals in a pilot global budget program to in-state populations whose hospitals subsequently received global budgets
    - Study population consisted of fee-for-service Medicare beneficiaries
    - We did not assess spending, as this is controlled via hospitals' budgets

Statewide Evaluation

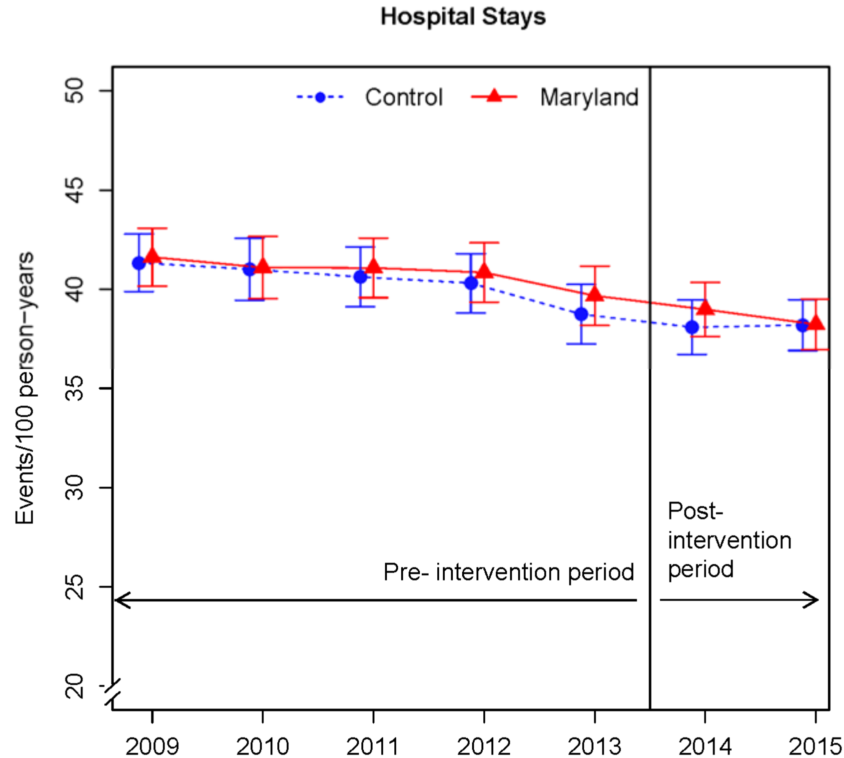
Intervention and Matched Control Counties



Evaluation Methods

- Small differences in the intervention and control groups' pre-reform trends could lead to biased estimates
- We fit models with and without adjustment for differential pre-intervention trends:
  - ***Without adjustment for pre-intervention trend differences:*** Assumes differences between Maryland and the control group would have remained constant without Maryland's payment change
  - ***With adjustment for differential pre-intervention trends:*** Assumes outcomes in Maryland and the control group would have continued to change based on the groups' pre-intervention trends
- Examined whether results differed under the two assumptions
- Report estimates of differential changes from baseline period to 2015

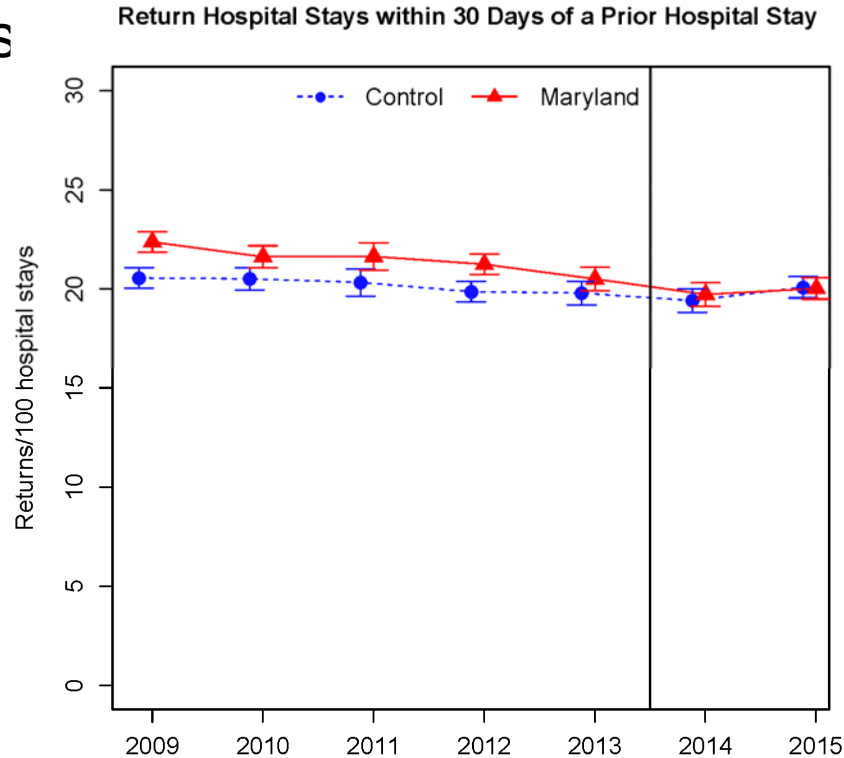
Results:
Hospital Stays



- ***Pre-intervention period:*** Slower rate of decline in MD of 0.2 hospital stays/100 beneficiary-years
- ***Estimates assuming parallel trends:*** Greater decline in MD of 0.47 hospital stays/100-beneficiary years
- ***Estimates assuming differential trends:*** Greater decline in MD of 1.24 hospital stays/100 beneficiary-years *

* Statistically significant at P<0.05.

Results:
Return Hospital Stays



- ***Pre-intervention period:*** Faster rate of decline in MD of 0.1 return stays/100 index hospital stays
- ***Estimates assuming parallel trends:*** Greater decline in MD of 1.0 return hospital stays/100 hospitalizations
- ***Estimates assuming differential trends:*** Greater decline in MD of 0.6 return hospital stays/100 hospitalizations

Results:
Additional Outcomes

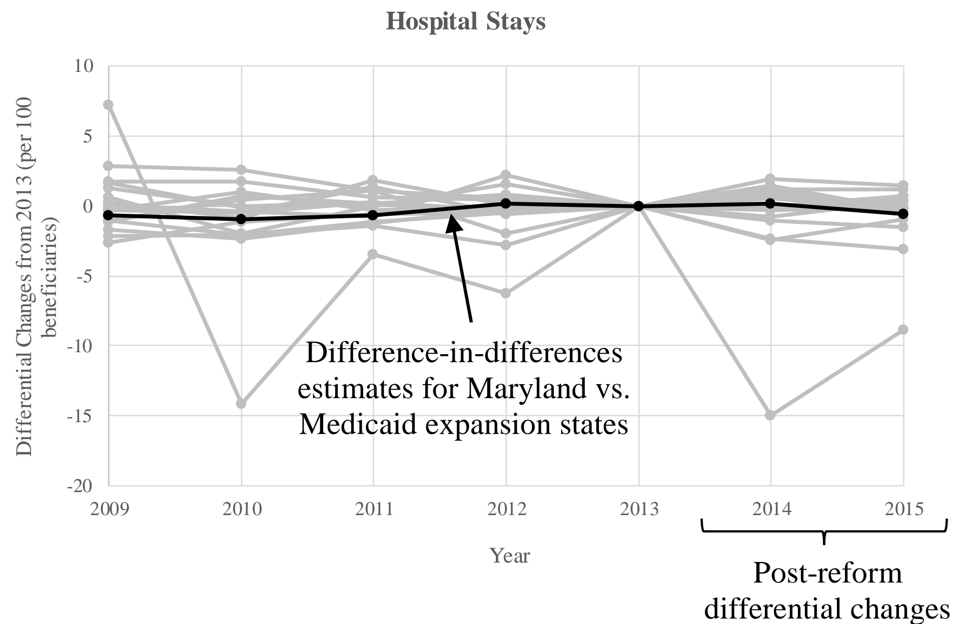
Outcome	Pre-intervention difference in trends	Differential change from preintervention Period to 2015, Maryland compared to control group (95% CI)	
		Assuming Parallel Trends	Assuming Differential Trends
Non-admitted ED visits, per 100 person-years	Faster rate of increase in Maryland	Faster rate of increase in Maryland	Faster rate of decrease in Maryland
Price-standardized HOPD utilization, $ per person	Slower rate of increase in Maryland	Slower rate of increase in Maryland	Faster rate of increase in Maryland
Primary care visits, per 100 person-years	Slower rate of decrease in Maryland	Slower rate of decrease in Maryland **	No change
Primary care visit within 7 days of hospitalization, per 100 hospital stays	No discernable trend difference	No change	No change

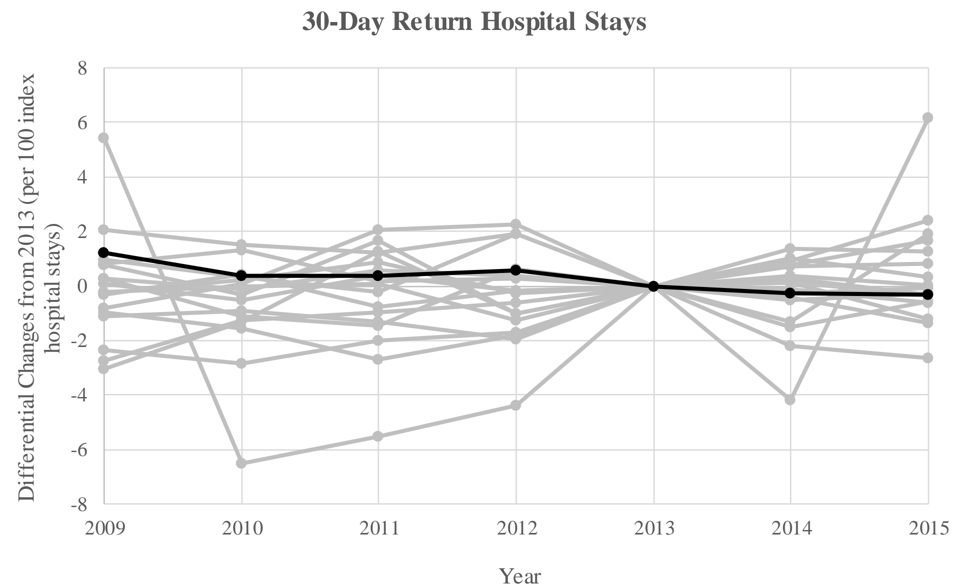
** Statistically significant at P<0.01

Placebo Analyses

- To examine whether differential changes in Maryland were greater than would have occurred without global budgets, we performed a placebo analysis that compared:
    1. Differential changes among all Medicaid expansion states other than Maryland
    2. Differential changes between Maryland and all other Medicaid expansion states
- Results on next slide…

Results:
Placebo Analyses





Rural Evaluation

- We evaluated the impact of Maryland's global budget program on utilization of care using a difference-in-differences analysis with a control population
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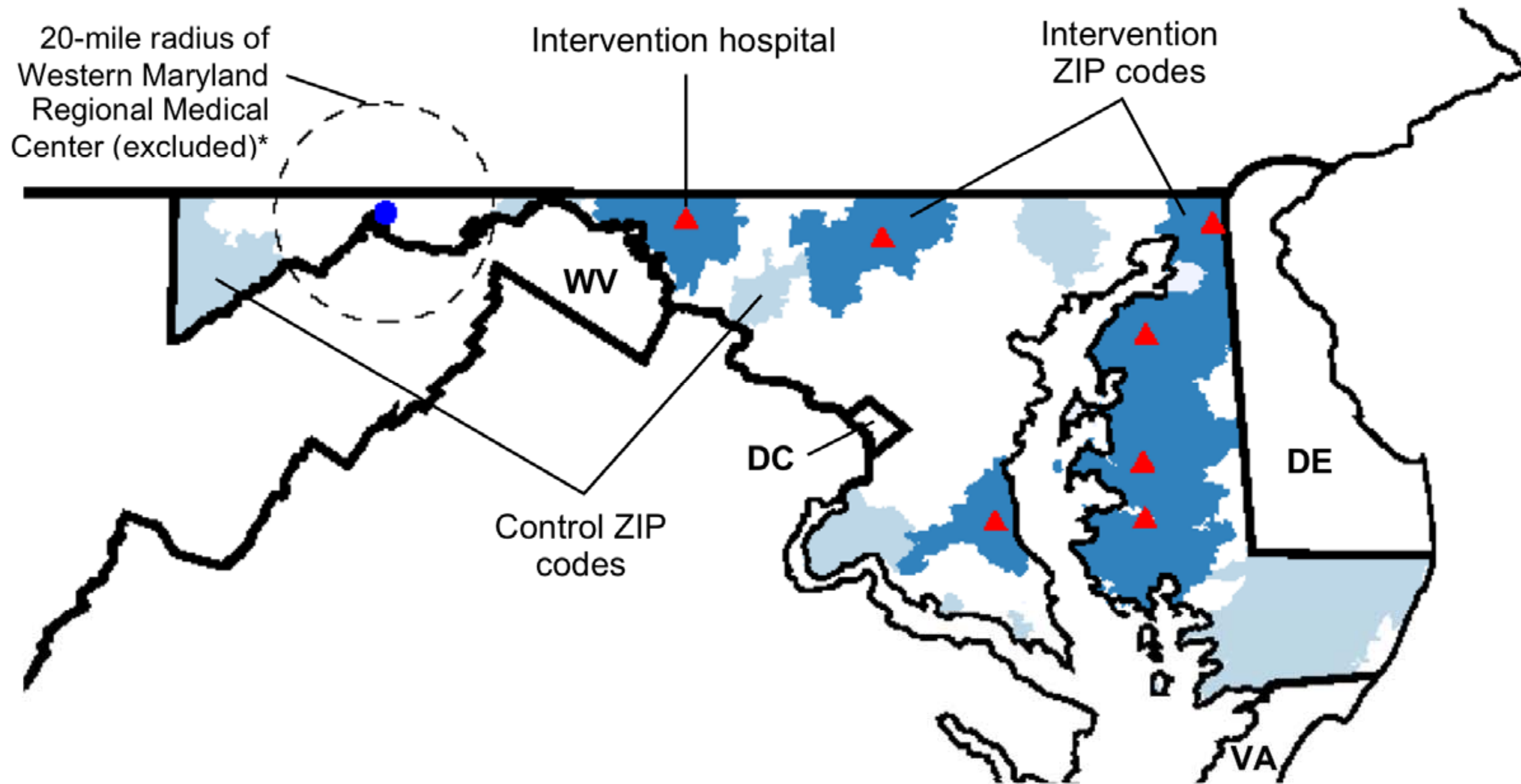
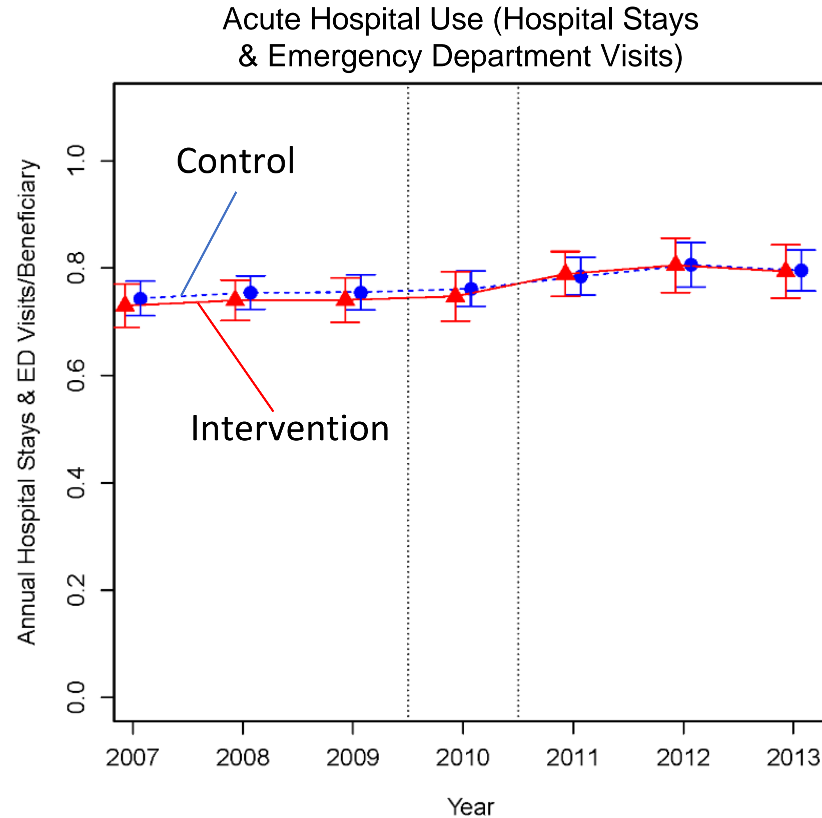
Intervention and Matched Control Counties



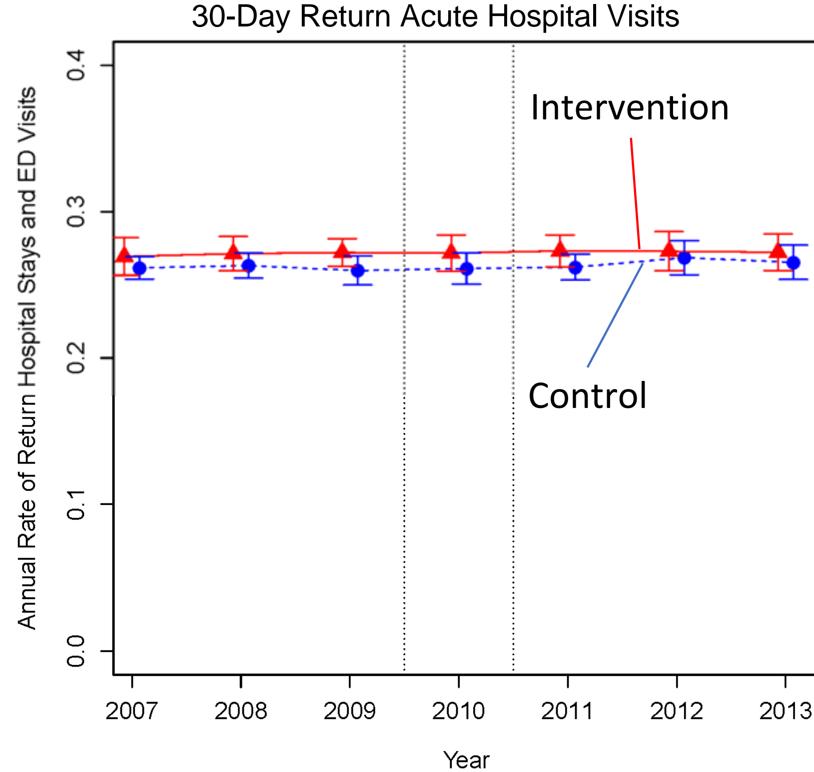
* Western Maryland Regional Medical Center opened in late 2009, replacing two hospitals in an expanded facility.

Results



- No discernable difference in pre-intervention trends
- ***Pre vs. post-reform differential change:*** Increase in intervention population of 1.4 acute hospital visits/100-beneficiary years

Results



- No discernable change from the pre-intervention to the post-intervention period in either group

Conclusions

- After two years of Maryland's statewide hospital global budget program, and after three years of the pilot program in rural hospitals, we found no changes in health care use that could be attributed to global budgets
- For some outcomes in our statewide evaluation, e.g. readmissions, we could not isolate differential declines in Maryland after 2014 from pre-2014 trends
- In the statewide evaluation, we saw no change on 'leading indicators' that might be indicative of early steps to improve care (e.g., post-discharge primary care visits)

Why?

1. **Lack of incentive alignment between physicians and hospitals**
2. **Avoiding hospitalizations only saves hospitals the marginal cost of care**
3. **Hospitals in Maryland remain dependent on admissions for revenue**
4. **Change in hospitals takes time** – hospitals are ocean liners, not speedboats
5. **Maryland's reforms didn't begin instantaneously in 2014**
6. **Our control population is an imperfect counterfactual for Maryland** – difficult to distinguish small policy impacts from secular trends
7. **Numerous changes are occurring in Maryland and in other states –** difficult to isolate the effect of one policy change in a dynamic environment

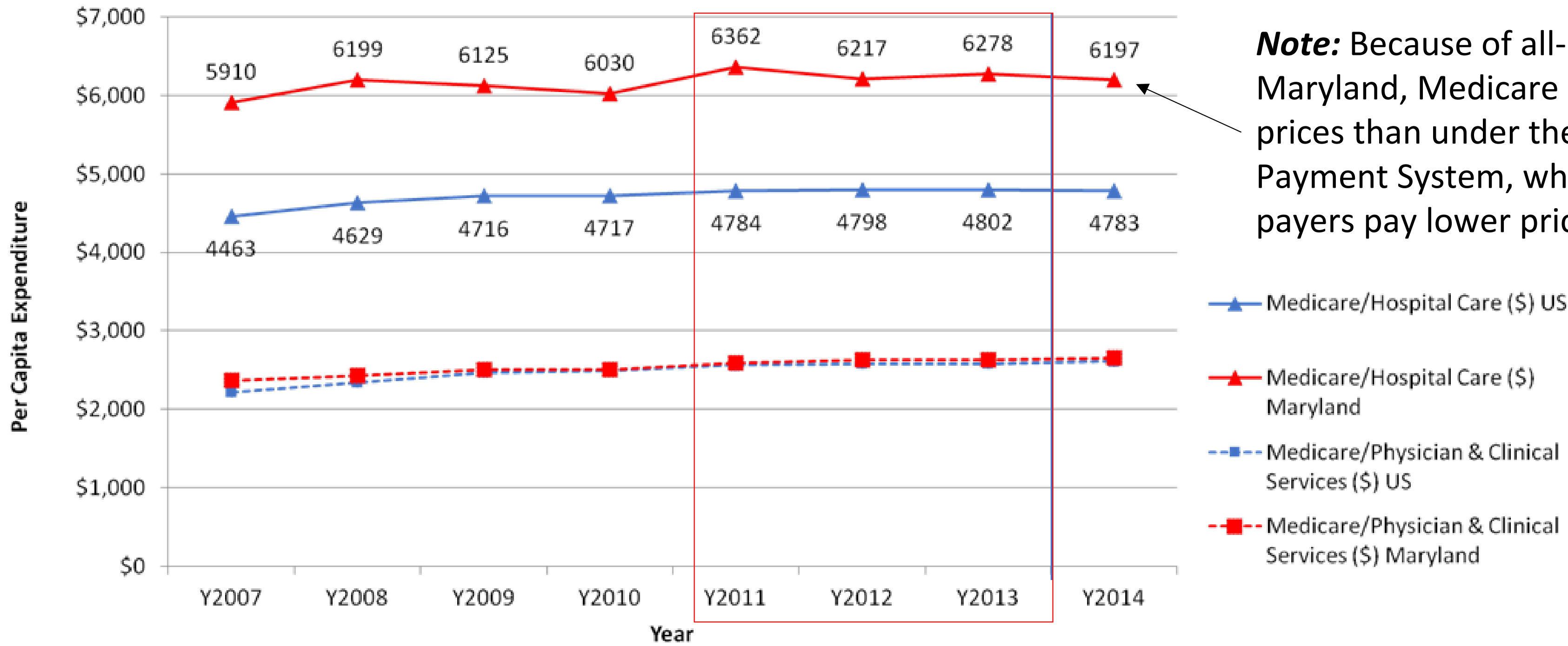
Policy Considerations

- Policy makers are considering hospital global budgets to address a number of policy objectives:
  1) Control health care spending growth
  2) Provide a predictable revenue stream to hospitals (key element of Pennsylvania's plan for global budgets in rural hospitals)
  3) Incentivize hospital investment in primary care and population health

Policy Considerations

1) Control health care spending growth

- Does putting hospitals on a budget help to contain costs for the entire system or shift costs elsewhere?
- How are budgets adjusted to reflect exogenous changes in the demand for care?
- What mechanisms are established to reallocate budgets among providers to account for shifts in care?
- How should hospital budgets be set to account for secular spending trends?



Note: Because of all-payer rate setting in Maryland, Medicare pays higher hospital prices than under the Prospective Payment System, while commercial payers pay lower prices

Per capita Medicare spending:		Average Annual Growth Rate		
		2007-2013	2009-13	2011-13
Hospital services	US	1.23%	0.45%	0.19%
	Maryland	1.01%	0.62%	**-0.66%**
Physician services	US	2.53%	1.13%	0.31%
	Maryland	1.74%	1.22%	0.63%

Policy Considerations

2) Provide a predictable revenue stream to hospitals

- Budgets can provide financial stability, particularly for small hospitals with unpredictable volume
- Challenging to meet the dual objectives of financial stability and cost containment if hospitals cannot adequately cover fixed costs with current revenue
    - Low-volume hospitals with high fixed costs may need to shed excess capacity for a global payment model to be sustainable in the long run
    - Without mechanisms to 'rebase' budgets as capacity is reconfigured, these programs could end up subsidizing underutilized capacity and will not contain costs

Policy Considerations

3) Improve population health

- The hope is that global budgets will catalyze improvements in services that reduce potentially avoidable, high-cost hospital use
- Yet in Maryland, hospitals have limited means of rewarding physicians for improving care outside the hospital
- How hospitals and physicians share risks and rewards in updates to Maryland's program will likely be critical to its future success

Questions

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