

# Study Snapshot:

## The Role of Population Health in Geographic Variation in Medicare Costs

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### key findings

- Determining the source and extent of geographic variation in Medicare costs requires proper accounting for population health differences.
- Of two primary case-mix adjustment approaches used in geographic variation studies, 1) the age-sex-race-adjusted end-of-life expenditure approach is not sufficient, and 2) bias in the diagnosis-based condition case-mix adjustment is likely to be small.
- Although physician practice patterns do affect Medicare geographic cost variations, population health explains at least 75 to 85 percent of the area variations.

### The Question:

#### Why Case-mix Adjustment Matters

While large geographic variation in Medicare costs is widely recognized, the size and source of the variation has been subject to debate. Several factors influence spending per Medicare beneficiary, including, perhaps most importantly, a patient's health status. Consequently, case-mix adjustment, or controlling for area population health, is critical to developing estimates of Medicare geographic cost variation. In an HCFO-funded study,<sup>1</sup> James Reschovsky, Ph.D., Center for Studying Health System Change, and colleagues examined and compared alternative approaches to case-mix adjustment to inform geographic variation estimates and draw policy inferences. The full results of their study are available in *Medical Care Research and Review*. An overview and summary of the key findings are available in the related *HCFO Findings Brief*.

### The Implications:

Beneficiary health status explains most of the geographic variation in Medicare costs. Thus, geographic variations research must appropriately control for population health in order to inform policy.

Earlier geographic variations studies that applied minimal or moderate controls for population health determined that variation in Medicare spending resulted from local physician practice patterns and extensive geography-based inefficiency in the U.S. health care system. Reschovsky and colleagues agree that inefficiency exists within our health care system, but their findings suggest that this inefficiency is not as strongly associated with geography as others have suggested. In their study, the researchers found that case-mix, or population health, explains at least 75 to 85 percent of geographic variation in Medicare costs. Even though other factors, including local physician practice patterns, may also influence geographic variations, an examination of the potential role of these other factors requires the use of appropriate case-mix control. The current study highlights limitations of the age-sex-race-adjusted end-of-life expenditure approach and determines that bias in diagnosis-based case-mix adjustment is not substantial. While the perfect case-mix control methodology may be elusive, this analysis demonstrates that proper accounting for population health differences is essential if geographic variations research is to be used to inform policy.

### Contact Us

For more information on the results from this grant, please contact the principal investigator James Reschovsky, Ph.D., at [jreschovsky@hschange.org](mailto:jreschovsky@hschange.org).

<sup>1</sup> The Robert Wood Johnson Foundation Changes in Health Care Financing and Organization (HCFO) Initiative supports timely and policy relevant health services research on health care policy, financing, and organizational issues.

**If you would like to learn more about other HCFO-funded work, please contact: Bonnie J. Austin, HCFO Deputy Director | [bonnie.austin@academyhealth.org](mailto:bonnie.austin@academyhealth.org)**



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