

**Assignment: Future changes in utilization of care: Extent of spillover effects between Medicare Advantage (MA) and Traditional FFS Medicare (TM); have spillover effects been realized or is there room for increased effects? AUSTIN/GREGER**

- a. Define the issue or assumption being discussed

For purpose of this paper, we will coin new words, basic spillover and claims spillover.

A “basic” spillover is when patterns of care or operation—provider behavior, internal expenses (inputs), or patient utilization—for MA patients are adopted for TM patients. Several studies document basic spillovers from increased managed care market penetration.

A “claims” spillover is a basic spillover that also impacts claim payments by CMS. Of note is that provider behavior and expenses and patterns of utilization could change (a basic spillover) without a change to claims payments. It will be convenient to further decompose a claims spillover into short-term and long-term. In some instances, a claims spillover could occur in the short term (e.g., if MA causes lower hospital admissions). In other instances, a claims spillover could occur in the long run only (e.g., if MA incentivize reductions in input prices which then get incorporated, with a lag, into the market basket update).

Likely, any spillover effect depends on reaching critical mass. For a provider to be sufficiently influenced by MA to change, it must experience a large enough MA volume. For example, one hospital may be sufficiently active in MA business to experience a spillover effect. But, this spillover might not impact any other hospital or other parts of the system.

In many ways, the difference between basic and claims spillover effect goes to the essential discussions about how to improve the historic FFS payment systems. A claims spillover reduces hospital revenue, yet may represent more efficient care. How can CMS remove barriers to useful productivity efforts that are blocked when the unneeded service or pattern of care delivery provides TM revenue and marginal income to the providers?

In what follows, for simplicity, we largely think of spillovers between MA and TM for inpatient or physician services. However, there are many more types of services and even sub-types of inpatient and physician services that may be affected by spillovers in heterogeneous ways and at different time scales due to the nature of payment rate updates. Untangling all that is beyond the scope of this paper, but we return to it as a research topic at the end.

Research documenting spillovers from managed care to TM extend back to at least the 1990s, with studies that examined HMO growth. More recently, five studies have explicitly examined spillovers from MA market penetration. These use publicly available data. All of these indicate measurable changes in behavior and spending at the provider level (basic spillovers). Some indicate an impact on CMS payments (claims spillovers,

either short- or long-run). A summary from Austin highlights essential information from these studies is as Appendix A to this document.

In addition to the scholarly work in Appendix A, business and operational sources indicate spillovers. Some early hospital adopters of Medicare Advantage state that they decided to join MA programs deliberately. One of many major reasons was that traditional FFS payment system blocked many actions to improve performance, reduce internal wasted spending, obtain smarter spending and/or increase productivity. The implications have become widely discussed among hospital executives. As an oversimplified summary, the hospital business model under FFS means that certain services create more revenue and more marginal income. Productivity to reduce waste may lose income. Using a colloquial language, some hospitals discuss enormous challenges of having “one foot in each canoe” (FFS and alternative payment).

The degree to which MA affects TM is very likely dependent on the nature of risk sharing and transfer from insurance carriers to providers. Provider entities bearing risk (e.g., under ACO or capitated models) likely experience a larger degree of spillover than those that do not. Likewise, provider market structure (the degree of horizontal or vertical integration) may mediate spillovers.

Multiple questions arise from this:

- (i) What is the magnitude of the “basic” and “claims” spillover from MA to TM? What spills over from MA to TM? What doesn’t?
  - (ii) To what extent are claims spillovers from projected changes in growth in MA market penetration already incorporated into projections?
  - (iii) To what extent should the projection methodology be changed to enhance accounting of claims spillovers?
- b. Why is it potentially relevant and material to the Medicare Trustees Report?

What’s written in part (a), above, makes this relatively clear. If greater MA market penetration causes lower TM claim spending growth, that’s clearly relevant. The magnitude of the “claim” spillover is not clear yet, in large part because a great deal of it would materialize in the long-term, due to ways in which DRG and other provider payments are updated. The end-to-end mechanism has not been fully documented or studied.

- c. How is it currently reflected in the Medicare Trustees Report? To your knowledge, has this issue been considered by prior Medicare Technical Panels?

MA to TM claims spillovers are reflected in the Trustees Report to the extent they have manifested in the past. However, there is no explicit adjustment in the projections to account for future changes in the growth of MA market penetration. Consequently, if MA growth deviates from the projection model, projections could implicitly under- or over-estimate spillovers.

Prior panels have considered this issue. At the time of the last panel, there were far fewer markets where Medicare Advantage programs had a high market share. So, any potential spillover effect did not have a practical implication on the long term forecast. However, given the growing enrollment in MA programs in more locations, the spillover effect has become more important.

Various sources believe that given existing, substantial inefficiencies in the health system, there is still room for additional basic and claims spillovers in both individual markets and the system as a whole. (In particular, Austin heard this from Mike Chernew and Kate Baicker.)

- d. What are the potential alternatives to be considered and potential advantages and disadvantages of each?

When markets have a critical mass of Medicare Advantage enrollment, research shows a lower growth in internal expenses for both MA and TM members. The short term forecast assumes growth in MA already, so there seems likely to be additional spillover in the near future as market penetration grows. To the extent future MA growth deviates from the past, changes to this spillover may not be recognized in the Trustees projection. So, OACT might consider a change in short term forecasts to explicitly include an MA-TM relationship. Perhaps this would affect the long term forecast by changing its starting point.

Though we need to be sensitive to double counting (i.e., some spillover effect is already reflected in prior trends, and that should not be counted and applied twice in projections), we cannot think of a disadvantage to an explicit incorporation of spillovers. The advantage is a projection that is more sensitive to spillovers, thus better able to reflect implication for TM of changes in MA market penetration.

A few other considerations for research:

- Some external studies found an overall claims spillover effect. OACT might consider a deeper internal analysis of what services experience such spillovers. Questions could include: What utilization changes (e.g., inpatient vs outpatient; intensive or extensive margin)? What illnesses are impacted (such as which DRGs)? Are the patterns similar within MA and within TM? Such analysis would require MA claims, which are not available nationally? However, data on hospital utilization is available in some states, so state specific studies might be done. Analysis of TM data alone is still useful, however. (See, e.g., the work of Callison on AMI in Appendix A.)
- CMS is committed to “smarter spending”(SS). The basic and claims spillover effect shows these opportunities are available. However, actions to create SS are spreading across the country far more slowly than actions to get better care. There are many causes for this but one cause is the limited public literature on smarter spending. If one searches for health improvement or “better care” for a particular major illness, there is deep literature, training resources, metrics and other support is often available. There is rarely comparable material on SS for a major illness. A study of

spillover actions and effects would begin to bridge this information gap and deepen the discussion on “smart spending”.

- Some actions directly create spillover. Others do not. A deeper study of various spillover effects could clarify which actions taken by MA (or other entities in the system) do and do not lead to spillovers. For example, an individual physician often treat all patients in the same manner in the office (a necessary condition for spillover). But, certain follow-up services may only be available in MA (no opportunity for spillover). A simple example is support for a patient uncontrolled diabetes. The physician may have the same discussion, but supported by other staff that offer practical advice can improve care and spending. But, this staff may only work on MA patients. Investigations could include discussions with experts, financial questions in alternative payment bids, and illness-specific analysis. It also would be useful to understand the hospital decision process: what do they do differently under MA programs (what specific actions are blocked by FFS payment).
  - Delineating all the pathways by which MA activities might lead to TM payment changes for the different services TM covers would help illuminate exactly how spillovers can occur in theory (even if they aren’t all realized in practice). As a simple example, changes in hospital admission rate has a direct impact on TM spending because fewer hospitalizations occur and are reimbursed. However, changes to the intensity of care within a hospital stay (with no change in DRG) cannot have an immediate spending impact. But it may have a delayed one through long-term payment updates. Different considerations may be at play for other services, but this document cannot address all of those.
- e. What studies or research exists that could be used to support one or more of these alternatives (cite, link or attach source)?
- See Appendix A for published research. There are five scholarly articles and one business summary from an early-adopter hospital. In addition, see “Second curve” by Ian Morrison
- f. Are there speakers we should entertain to inform our consideration of this issue/assumption?

Michael Chernew, Kate Baicker, Ian Morrison

There are other experts on working in this area, including physicians groups working on MA, hospitals working on MA programs, experts in hospital expense management, as well as financial experts who work in states with multiple delivery systems.

## Appendix A: Literature Review of MA to TM Spillovers

1. [“Managed care and medical expenditures of Medicare beneficiaries,”](#) by Michael Chernew, Philip DeCicca, and Robert Town (Journal of Health Economics, 2008)

The authors use an instrumental variables (IV) approach and 1994–2001 Medicare Current Beneficiary Survey data to estimate that each percentage point increase in Medicare HMO market penetration leads to a one percent decrease in annual, per capita TM spending. The spending reduction is for both inpatient and outpatient care and is concentrated among TM beneficiaries with at least one chronic condition.

Their instrument for Medicare HMO market penetration is the county-level government payment rate to plans. Higher payment rates attract plans into markets and permit more generous benefits, which increases market penetration. During the study period, those county-level plan payments were divorced from TM spending (the outcome variable), making them valid (exogenous) instruments for the analysis.

2. [“The spillover effects of Medicare managed care: Medicare Advantage and hospital utilization,”](#) by Katherine Baicker, Michael Chernew, and Jacob Robbins (Journal of Health Economics, 2013).

Using a similar IV approach as Chernew, DeCicca, and Town, the authors examined the relationship between greater MA enrollment and hospital utilization in the following year. Their analysis focused on five states represented in 1999-2009 Healthcare Cost and Utilization (HCUP) State Inpatient Databases (SID) — Florida, New York, California, Arizona, and Massachusetts — which account for almost half of all MA enrollees.

They found higher MA penetration associated with reduced TM and commercial market hospital costs and utilization. A 10 percentage point increase in MA penetration is associated with a about a 4.5% decrease in overall and TM-specific hospital costs and a commensurate shortening of length of stay. In addition, preventable hospitalization rates are lower when MA market penetration grows. Their (non-IV) OLS specification is conservative, obtaining a smaller spillover.

The size of the estimated spillover to TM would offset more than 10% of increased payments to Medicare Advantage plans. But, the manner in which Medicare pays for hospital care (prospectively based on diagnosis related groups (DRGs)) means that it could only recoup spillover savings for services bundled into DRG payments over time, as payment rates are adjusted.

3. [“Medicare Payments and System-Level Health-Care Use: The Spillover Effects of Medicare Managed Care,”](#) by Katherine Baicker and Jacob Robbins (American Journal of Health Economics, 2015).

The authors extended prior work, focusing on 1999-2011. Their models include one year lags of MA market penetration and, as in earlier work, market penetration is instrumented with MA payment rates.

They found that a 10 percentage point increase in MA market penetration associated with decreases of 7.3% in hospital days and 9.1% in nonsurgical hospital days and increases of 5.5% in outpatient visits and 8.9% in outpatient surgical visits. For beneficiaries with chronic conditions the results are a bit larger. And, with a model that includes MA market penetration squared, they estimated that the spillover to hospital days is maximized when penetration is at 18%. OLS results are conservative, showing a smaller spillover effect.

In total, the authors calculate a \$252 per TM beneficiary per year in spillover savings for every 10 percentage points in higher MA market penetration, though as noted above, the savings would have to be recouped in DRG payment updates over time.

4. [“Medicare Managed Care Spillovers and Treatment Intensity,”](#) by Kevin Callison (Health Economics, 2016).

Like prior studies, Callison uses 2003-2009 SID data and MA payment rates as an instrument for market penetration to examine the relationship between MA market penetration and TM-financed treatment intensity for patients hospitalized with AMI. He finds that a 1 percentage point increase in MA market penetration is associated with a 0.94% reduction in TM hospital costs for AMI patients, a 2.2% reduction in the number of inpatient procedures, a 2.4% reduction in the probability of receiving an angioplasty, a 2.4% reduction in the probability of ventilator utilization, and a 1.8% increase in the probability of mortality. (This mortality finding is at odds with prior work relating MA penetration to mortality and hospitalization by [Afendulis, Chernew, and Kessler.](#)) As in prior studies, OLS (non-IV) estimates are conservative in their estimation of a spillover effect.

5. [“Recent Growth In Medicare Advantage Enrollment Associated With Decreased Fee-For-Service Spending In Certain Counties,”](#) by Garret Johnson, Jose Figueroa, and Ashish Jha (Health Affairs, 2016)

The authors bring the spillover literature up to date with an analysis of the association of changes in county-level MA market penetration with changes in county-level TM spending between 2007 and 2014. Changes are measured over two year periods and MA market penetration is lagged by a full period (i.e., 2007-2009 MA penetration change predicts 2009-2011 TM spending change, etc.). Unfortunately (for analytic purposes), the ACA tied MA payments directly to TM spending, so the authors could not use the IV approach exploited in prior studies. However, an OLS approach, which the authors used, has underestimated the spillover in prior work, as discussed above.

A spillover was observed only for counties in the highest quartile of baseline MA market penetration (>17.2). In those counties, a 10% increase in penetration was associated with a \$154 annual decrease in TM spending per beneficiary. The results suggest a threshold effect, by which spillovers only occur (or are detectable with OLS methods) when MA market penetration is sufficiently large. The estimated spillover accounts for 11% of the recent slowdown in TM spending and more than offset the payment to MA plans above TM costs.

All these findings are consistent with a larger, older literature that documents a spillover between commercial market (not MA) managed care and TM spending. Here's a summary of a small subset of that literature from [Baicker, Chernew, and Robbins](#) (this is a direct quote from that paper):

[[Robinson \(1996\)](#)] finds that hospital expenditures grew 44% less rapidly in markets with high HMO penetration (15.2%) compared with low penetration (0.6%) [...]. [Gaskin and Hadley](#) [...] find hospitals in areas with high HMO penetration (40% of the population enrolled in HMOs) had a 25% slower growth rate in costs than hospitals in low penetration areas (5% of the population enrolled in HMOs). [...]

[Baker](#) finds a concave relationship between managed care penetration [...] and both Traditional Medicare Part A and Part B FFS spending. Part A and Part B expenditures are increasing in HMO penetration until a maximum is reached at 16% and 18% penetration, respectively, after which they are decreasing in penetration.

6. [“Turning Value-Based Health Care into a Real Business Model,”](#) by Laura S. Kaiser and Thomas H. Lee, MD

This article from Intermountain Healthcare summarizes the business perspective on value-based care. It outlines why some of the early-adopter hospitals have moved in this direction. It references the “all-in” approach that creates spillover within the hospital setting (although the word spillover is not used). The article offers four examples of actions move toward better care and affordability (their term for smarter spending).

As part of the “all-in” approach, Intermountain runs an MA program, but the MA program is not explicitly mentioned in the article.