Can New Payment Models Stop the "Insidious Creep?" The Case of Colonoscopies

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Table of Contents

Research Insights From the Industry 2
Truven Health Analysis 3
Impact of New Payment Models 7
Best-Case Scenario: Bundled Payment Within an ACO 7
References 8

Executive Summary

When considered together, two articles in *The New York Times* — published a year apart — provide a very clear picture of how the current fee-for-service (FFS) payment system provides an incentive for and enables an "insidious creep" in public expectations for "appropriate" medical care, driven by physician practices.

An article in the May 28, 2012 edition of *The New York Times* entitled "Waking Up to Major Colonoscopy Bills"[1] revealed the trend in the participation of anesthesiologists in simple colonoscopy procedures, and its impact on patient out-of-pocket costs. An article in the June 1, 2013 edition entitled "The $2.7 Trillion Medical Bill: Colonoscopies Explain Why U.S. Leads the World in Health Expenditures"[2] described the significant variation in the price of these and other medical, surgical, and imaging procedures — even within a single city or metropolitan area.

In this second article, the author states that, "....the amount paid by a patient and the patient's insurance plan for a routine colonoscopy can be as high as $8,500 in the New York area, compared with a high of $1,900 in Baltimore. The low price in New York was $740, less than a tenth of the highest price." She stresses that variations like these are not limited to colonoscopies, but can be observed for many common and expensive procedures and services, including hospital stays, magnetic-resonance imaging (MRI) scans, and artificial hips among others. She emphasizes the impact the lack of price transparency has on the insufficient market forces that would normally reduce this variation in price. Even a physician is not aware of the actual amount that the patient or insurer will pay for a procedure performed outside of his or her own office. She also describes the increase in price resulting from the decision to perform the simple procedure with the participation of an anesthesiologist performing deep, rather than conscious, sedation.

In the title and opening statement of this paper, I used the term "insidious." This is not a word that I use in everyday conversation. It is, however, the word that immediately came to mind as I read these articles. The articles reveal the unexplainable trend in the use of "deep sedation" for simple colonoscopy procedures and its impact on patient out-of-pocket costs. The author doesn't refer to the trend as unexplainable, actually avoiding any serious discussion of the reason that this is happening. She does acknowledge that, "… there is no clear scientific evidence to support this, and critics say that an extra pair of hands in the room simply allows the doctor to perform more procedures." Her recommendation is to, "… find a gastroenterologist who administers sedation on his own, or make sure that the anesthesiologist is covered by your plan."

Insidious:
Operating or proceeding in an inconspicuous or seemingly harmless way, but actually with grave effect: an insidious disease. I recently read it described as "creeping in at the edges."

Research Insights From the Industry

An article published in *Gastrointestinal Endoscopy*, the journal of the American Society for Gastrointestinal Endoscopy, reported that for colonoscopy and endoscopy procedures, the percentage with a participating anesthesiologist is, "projected to grow from 23.9 percent and 24.4 percent in 2007 to 53.4 percent and 52.9 percent by 2015, respectively."[3] The authors also report that the rate of anesthesiologist participation is higher in areas with higher per capita income, lower unemployment rates, and higher per capita inpatient admissions.

A study published in the March 2013 issue of the *Journal of the American Medical Association*: Internal Medicine evaluated the impact of deep sedation on colonoscopy complication rates. The authors hypothesized that, "because of impairment in patient response, this technique also has the potential for a greater likelihood of adverse events."[4] Their findings stated, "Although the absolute risk of complications is low, the use of anesthesia services for colonoscopy is associated with a somewhat higher frequency of complications, specifically, aspiration pneumonia." This finding suggests that this trend not only results in a significant increase in costs with no real benefit to the patient, but a possible increase in the risk of a complication.

The article describes a patient for whom the anesthesiologist billed $1,600 for the procedure. The health plan paid only $588. After failing to collect the remainder from the patient, the anesthesiologist sent the balance to a bill collector.

A Few Statistics and Examples From the May 2012 Article In *The New York Times*, "Waking Up to Major Colonoscopy Bills"

- More than 20 million outpatient endoscopy procedures are performed in the United States each year, and the number is growing.
- Three gastroenterology societies recommend conscious sedation as adequate in cases where there are no complications.
- As much as $1.1 billion spent on anesthesia for gastrointestinal procedures each year may not be medically necessary.

In the current FFS market, this creeping patient expectation for deep sedation cannot be stopped. The patient readily defers to the physician's insistence that the deep sedation is necessary, since it is covered by insurance and, "I deserve the best care available." This patient tells all of his friends that the experience was not nearly as bad as he feared and that it was certainly due to the effects of the anesthesia. Word spreads and patients insist that their physician follow this "best practice." Now envision this same pattern occurring over and over with many and various types of relatively low-cost medical procedures and services. This isn't the conspicuous trend that we have seen in the use of new technologies that might actually provide marginal value to improving health outcomes. This trend of anesthesia for colonoscopy is more difficult to detect and even more difficult to prevent, since criteria for appropriateness are difficult to assess and encourage.

Truven Health Analysis

When our team of data scientists at Truven Health Analytics™ first began working on the methodology for estimating procedure prices for the Truven Health Treatment Cost Calculator, we developed a method to "bundle" together all of the services related to a procedure so that we could then add these to calculate the typical total cost. For some common outpatient surgical procedures, it was clearly appropriate to add in an anesthesiologist claim. But for many medical procedures, our expectation was that an anesthesiologist was not usually necessary. The empirical evidence, however, convinced us that we must acknowledge a significant and rapid trend, and we must provide a price estimate that includes the anesthesiologist fee.

An analysis of the Truven Health MarketScan® Commercial Claims Database revealed significant geographic variability in the rate of anesthesiology claims for simple screening colonoscopy. For example, some states including Alabama, Arizona, North Carolina, Ohio, Massachusetts, and Wisconsin experience relatively low rates — between 20 percent and 38 percent. This contrasts with other states with much higher rates, including Connecticut, Florida, and Georgia — between 60 percent and 75 percent. The data also suggests variability within state, often between major urban areas and the rest of the state. For example, Detroit is at 60 percent, while the rest of Michigan is at only 18 percent; Northern New Jersey is at 62 percent, while the rest of the state is at 39 percent; and New York City is at 82 percent, while the rest of the state is at 31 percent. A clear exception to this pattern is in California where major urban areas and the rest of the state are consistently between 30 percent and 35 percent.

I speak from personal experience when I say that a screening colonoscopy is not a pleasant experience. But it's really not that bad. Its "bark is worse than its bite." The preparation is actually much more unpleasant and the insertion of the IV is more painful than the procedure under conscious sedation. It seems more useful to look for factors that enable or even encourage this insidious trend than to search for a single cause. The objective is not to blame someone, but to understand and consider the possible impact of alternative payment models. What are these factors?

- It is possible that the service, in this case general anesthesia, has sufficient value for a small subset of patients. It may be difficult to identify these patients prior to the service, and, therefore, easier to simply offer it to all patients. This is certainly true in the case where there is little risk to the procedure. However, there is some risk with all procedures and certainly with deep sedation.
- In some cases, the service enables the physician to complete more procedures per day. Transferring responsibility for patient comfort to the anesthesiologist might allow the proceduralist to move to the next patient that has already been anesthetized. This increases the physician's productivity and FFS revenues.
- In a competitive market, promoting the availability of a service that might reduce discomfort or simply add convenience will attract additional patients and the resulting increase in FFS revenue. Most decisions to purchase a new piece of equipment that is intended to increase patient comfort are justified by an assumed increase in volume and the associated revenue. These services soon become expected by the market as standard practice to which the patient is entitled.
- Finally, it is difficult to ignore the advantages offered to the practice of increased revenues that result from providing services that can be justified as providing some, though limited, value to some patients. The response to this incentive can be justified by, "Everybody else is doing it and if I don't offer it to the patient, he will just go to somebody else who will." There is no reason to feel guilty and certainly no public shame associated with these practices since they are actually appreciated by patients.

The New York Times articles point out that comparing prices for simple procedures like colonoscopies or observing trends in these prices is extremely difficult because separate payments are made to each of the providers involved in the procedure. These payments are made at different times and are based on different payment structures and rules. For example, an upper endoscopy can be performed during the same session as the colonoscopy, with the patient under either conscious sedation or deep sedation. In this situation, both the physician performing the procedures and the facility are usually paid at rates less than the total paid for the two procedures performed during separate sessions. These rate calculations are often specific to each facility or physician, making comparison very difficult.

Truven Health applies an Outpatient Event Grouper (OPEG) in its analyses of procedure prices and utilization rates. This methodology aggregates all payments related to each "event," resulting in a total price for the procedure, regardless of the site of service or the variation in payment rules. Statistical models have been applied to identify the associations between the specific services related to each procedure. The objective is to enable analysis of variation in payment and utilization (e.g., across sites of service, providers, geographic location) for outpatient surgical, medical diagnostic, and radiology procedures.

Analyses applied to colonoscopy events within the MarketScan commercial data clearly demonstrate the patterns and trends that are described in the two *Times* articles.

For example, this table demonstrates the significant variability in the price paid for each of the separately billed services. Note that each of these services is usually billed by different providers on separate bills.

Table 1: Range In Prices for Usual Services In an Outpatient-Hospital-Based Colonoscopy Event With Anesthesia

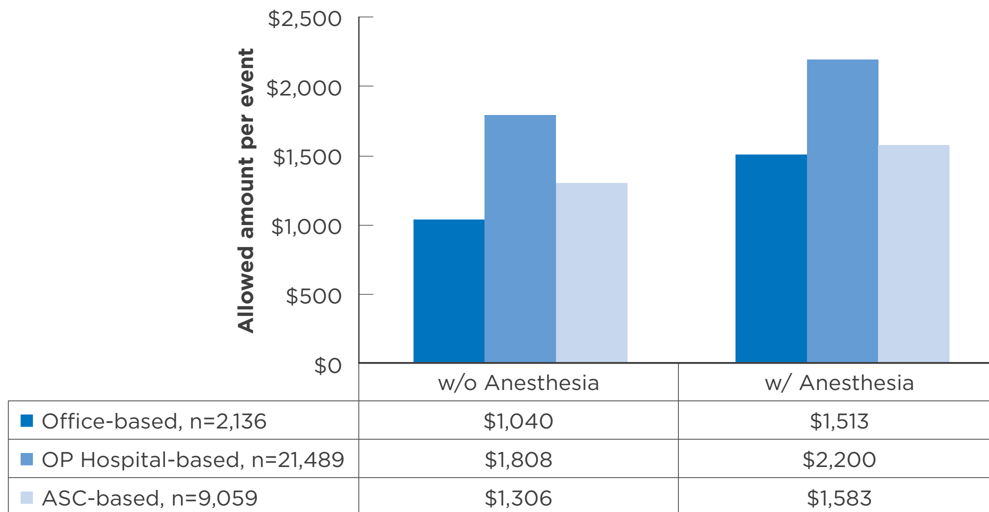
(Single Census Division)

	Low Price (5th Percentile)	High Price (95th Percentile)
Physician	$183	$701
Facility	$531	$3,962
Anesthesiologist	$183	$684
Total	$1,123	$4,879

It's important to understand that many different combinations of these individual prices can result in wide variations in total price. For example, a low price for the physician service could be combined with a low price for the facility service for some events, while a high price for the physician service could be combined with a high price for the facility service for other events. For a consumer to compare the total price among alternative providers, she would need to identify all realistic combinations and ask each individual provider for the relevant price for the specific health plan (since price varies by health plan as well).

The chart below shows the difference in average price between sites of service (office, hospital, or ambulatory surgical center), and the impact on price of the participation of an anesthesiologist.

Chart 1: Mean Price per Colonscopy Event

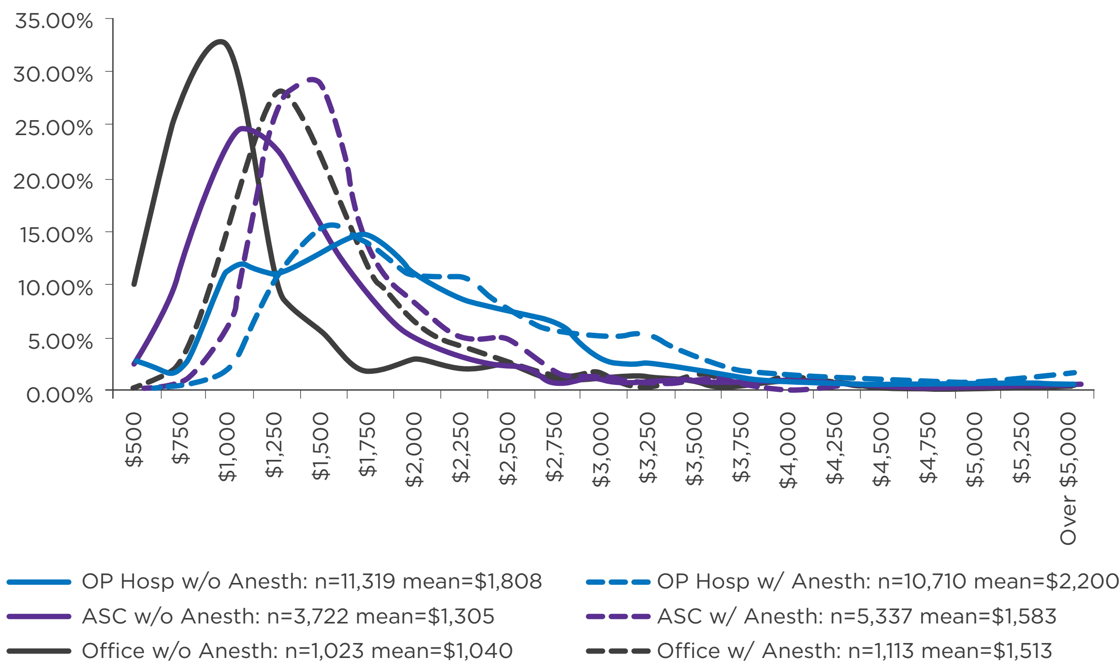


	w/o Anesthesia	w/ Anesthesia
Office-based, n=2,136	$1,040	$1,513
OP Hospital-based, n=21,489	$1,808	$2,200
ASC-based, n=9,059	$1,306	$1,583

2012 MarketScan® sample, commercially insured population
33K non-emergent screening colonoscopies without biopsy or removal of lesions/polyps

Chart 2 shows the extent of the variability of prices between different sites of care and types of anesthetic (the different colors) and even for a specific site and type of anesthesia (the distributions for a single color).

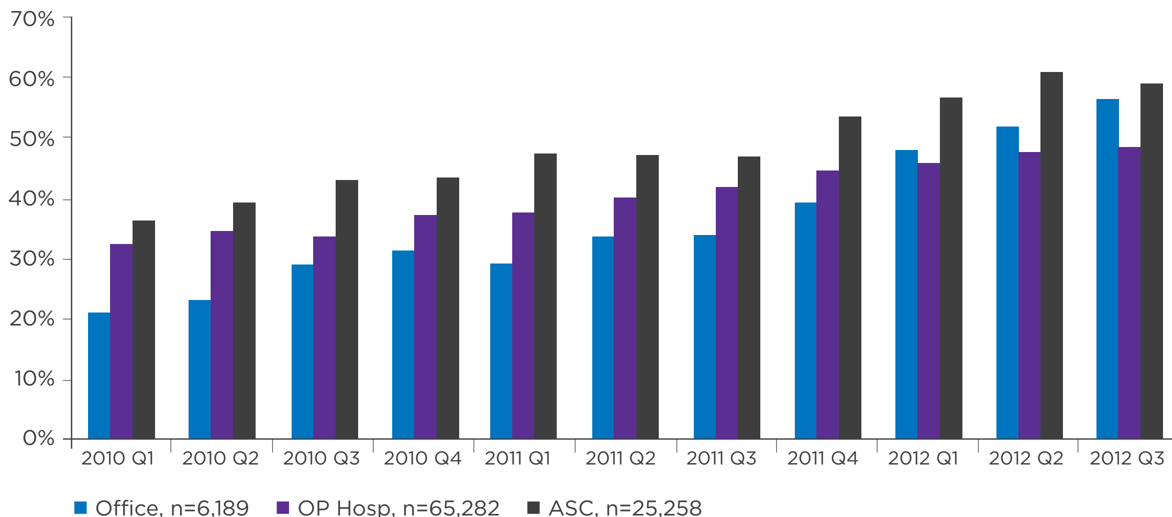
Chart 2: Distribution of Payments for Colonscopy Event



2012 MarketScan® sample, commercially insured population
33K non-emergent screening colonoscopies without biopsy or removal of lesions/polyps

The increasing trend in the participation of an anesthesiologist for screening colonoscopy (the insidious trend) can be observed in the chart below. Notice that this trend is greatest for the office-based procedure, which has been the lowest-priced site of care.

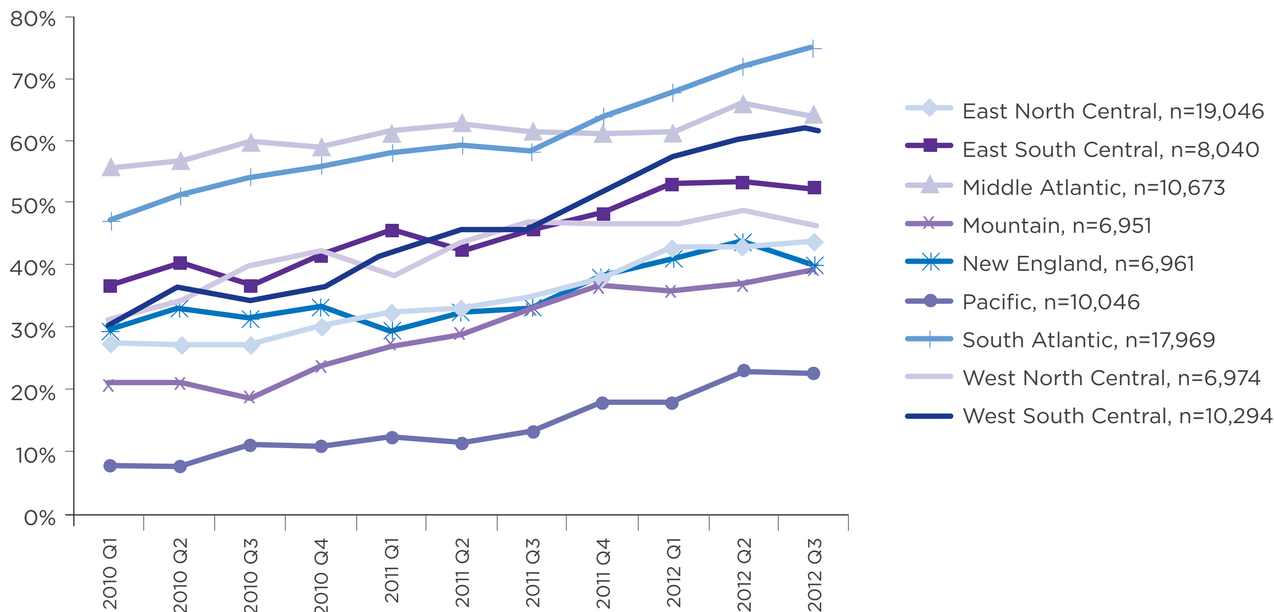
Chart 3: Rate of Anesthesia Used In Colonscopy



2010-2012 MarketScan® sample, commercially insured population
97K non-emergent screening colonoscopies without biopsy or removal of lesions/polyps

Finally, the last chart shows that the rate of anesthesiologist particpation differs by region, but that this increasing trend is common to all regions. For example, in only two years, the rate in the West South Central region increased from 35 percent to 65 percent, while in the Pacific region the initial low rate of 11 percent increased to 24 percent.

Chart 4: Trend In Use of Anesthesia In Colonscopy by Geographic Division



2010-2012 MarketScan® sample, commercially insured population
97K non-emergent screening colonoscopies without biopsy or removal of lesions/polyps

Impact of New Payment Models

Will either of the proposed new payment models, bundled payment or the accountable care organization (ACO), impact this insidious trend represented here as the rapid increase in anesthesiologist participation for simple colonoscopy procedures?

The Accountable Care Organization

The first step in addressing this type of service inflation is to actually recognize it. It seems unlikely that information systems implemented by most ACOs would have been sensitive enough to detect this trend early in its emergence. Once an ACO has identified the trend, it has only a limited set of tools to control it. Since it is likely that individual gastroenterologists and anesthesiologists will continue to be paid on a fee-for-service (FFS) basis, there will be no financial incentive to seriously consider the need for this practice. If these physicians participate in a "gain-sharing" arrangement, the incentive is so indirect and the probability of payment so remote that it is unlikely to impact behavior. If the physicians are employed, the ACO can create treatment standards and base a portion of compensation on compliance. In a market where compensation continues to be predominantly FFS, any change in treatment patterns is unlikely. It may be possible for the ACO to influence the site of care by limiting the availability of facility resources and providing financial incentives for office-based procedures.

Bundled Payment

There may be more hope that establishing a single payment rate for the entire service bundle will influence these treatment decisions. In this case, a price set at the average payment for a bundle of services, including the facility, proceduralist, and anesthesiologist, would create an incentive to evaluate treatment patterns and search for value in a lower-cost setting and level of sedation. In the case of a colonoscopy, the incentives might not only control the trend of increasing anesthesiologist charges, but also encourage the trend toward more office-based procedures. However, as has been pointed out during policy discussions on payment reform, the bundled payment — while providing an incentive to redesign the process of care — does nothing to reduce the existing incentives leading to increasing volume.

Best-Case Scenario: Bundled Payment Within an ACO

It seems possible to have the best of both worlds and maximize the impact of payment reform on the real value of treatment decisions. If we embed the bundled payment within an ACO, we can count on the incentives present in both models to complement each other and create a better solution. The bundled payment model provides the ACO with a means of controlling the total price and its variability, while setting up a mechanism to measure and monitor service utilization. The bundled payment provides an incentive at the physician-level to search for the most efficient and effective process of providing the service. The role of the ACO in assuring that utilization rates are appropriate and consistent with the population's need requires that the organization establish and manage compliance with evidence-based guidelines.

References

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4 G S Cooper, et al, "Complications Following Colonoscopy With Anesthesia Assistance: A Population-Based Analysis" , *JAMA Intern Med*. 2013;173(7)

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