www.pacescenter.org

PACES
Patient-centered Episode System

info@pacescenter.org

January 27, 2020

Seema Verma, MPH
Administrator
Centers for Medicare & Medicaid Services
Department of Health and Human Services
Attention: CMS-9915-P
P.O. Box 8010
Baltimore, MD 21244-8010

Submitted via www.regulations.gov

RE: Transparency in Coverage (CMS-9915-P)

Dear Administrator Verma:

The PACES Center for Value in Healthcare (PACES Center) is pleased to take this opportunity to respond to the proposed rule titled, "Transparency In Coverage," by the Centers for Medicare & Medicaid Services (CMS) and the Department of Health and Human Services (HHS), which was issued in conjunction with the final rule directed at hospital transparency requirements.

Our comments support the proposed rule and include thoughts about how CMS might lead the industry with respect to coherent and effective rules that promote price transparency. We at the PACES Center agree with CMS that the healthcare system does not adequately inform or activate consumers as key decision-makers.

We formed the non-profit PACES Center in 2019 in order to educate and support stakeholders in how to assess and improve patient care. We offer in the public domain a framework and set of clinically meaningful definitions of the reasons for healthcare, i.e., episodes of care for medical conditions and significant procedures. Our technical contributions are based on the Patient-Centered Episode System (PACES), which reflects work completed over several years that was funded by the Center for Medicare and Medicaid Innovation (CMMI).

The PACES Center envisions transparency as a driver of healthcare value and sees the episode definitions and clinical content we provide and curate as a means to standardizing comparisons that enable true transparency. Today, healthcare is delivered as a series of grouped services in distinct, sometimes overlapping episodes of care. Most patients wish to be more involved in and informed about deciding what constitutes the best value care for them, yet doing so today almost requires one to be both a health policy expert and an economist.

Patients simply want to know if the care they are considering is of high quality, is safe, and is at the best price. The information in this comment letter is intended to present a step-by-step guide for how to implement meaningful price transparency for patients in a way that enables informed decision making about where to receive their care. This involves standardizing and defining the unit of analysis, considering care from the patient's perspective, and presenting information to patients (along with their physicians) in a way that is comprehensible. While this proposed rule and our comments are focused on price transparency, it is important to remember that both quality and price are required to define value, and therefore quality measurement as well as price information are necessary for patients to make the best decisions.

Consumer as Activated Change-Agent

Consumers often bear a significant portion of the cost of their healthcare services given their exposure to high deductibles, co-payments, and balanced billing under prevalent insurance products. In many cases, patients avoid or defer services out of concern about the cost. In addition, many patients learn only after-the-fact about the full set of services associated with their care and their related costs that turn up in bills. This unfamiliarity with what to expect from one's prognosis along with unanticipated extra costs for out-of-network providers form the bulk of "surprise" bills.

Better information might make consumers more confident about their choices, and guide them toward opportunities to support greater value in healthcare. Particularly, price information can help to:

- Signal out-of-pocket costs. Consumers have finite resources and need to judge when and how much to pay for healthcare versus all other possible ways to use their money. High prices can even lead some patients to avoid or delay services they might otherwise seek.

- Signal efficiency. If all else is equal, relatively low prices can lead patients to seek care from certain providers and thereby reward their relative efficiency, contributing with other approaches to overall system improvement. **The potential impact here would be to leverage "shopping" opportunities to choose more efficient overall total cost of care.**[1]

- Signal trade-offs in seeking optimal value. Proper decision-making requires knowledge about the pros and cons of each choice. Consumers would be much better off if there was information about the cost and quality outcomes for patients similar to themselves, given their options among potential treatments and providers. **Ideally, this would include price and quality information about the identical package of services, i.e., the episode of interest to that patient at that time.**[2]

[1] National Quality Forum (NQF). Measurement Framework: Evaluating Efficiency Across Patient-Focused Episodes of Care. Washington, DC: NQF; 2009.
[2] Ryan, A and Tompkins, C, "Efficiency and Value in Healthcare: Linking Cost and Quality Measures,"

Bad information can mislead or misguide consumers. For example:

- Sticker shock. Retail prices, maximum amounts, and even pricing information without serious consideration of the clinical value and consequences at stake could frighten consumers into marketplace paralysis or other bad choices.

- Loss leaders. Price structure is often intended to maximize revenues. This can include paradoxical pricing of some products or services at relatively low amounts in order to induce consumers into additional or related products and services. Providing pricing for a single service without considering the entire likely episode of care allows for this, while episode pricing could help protect patients.

- Too good to be true. Lower prices could relate to services that are inferior, which in healthcare often can mean outdated technology or failure to follow-up, coordinate care, or make appropriate referrals.

Consumer as Complementary Change-Agent

The search for meaningful, effective, and safe methods for activating consumers has been ongoing for decades. The potential role of the consumer is important and is best crafted as an integral component of a coherent set of policies to address excessive and avoidable cost.

> "Patients need to understand and take into account the cost implications of the care they request. The burden of selecting the most appropriate care plan in terms of costs and benefits should not be left totally to health professionals… Current developments suggest that consumers will be asked next to hold down health care spending. Consumers alone, we believe, cannot appreciably slow the growth in health spending. Rather, consumers, employers, insurers, providers, and government must undertake complementary actions to restrain costs and thereby guide the rate of increase in spending."[3]

Accordingly, effective policies should provide requisite information and help to deliver the information in a manner that is complete and consistent with choosing high-value healthcare. This could reinforce other types of reforms such as providers' value-based care models, and payers' structures of accountability and risk.

Patients believe that they will be shopping for a single service such as a surgery, but in most circumstances the reality is much more complex. Instead, the decision to undergo a procedure leads to a complex series of services delivered as a care program or model spanning a timeframe from before, and during the procedure to recovery after its completion. Individual service items are not selected *à la carte*, as standalone purchases without regard to the whole service package

---

Commissioned by the National Quality Forum, November 14, 2014.

[3] Altman, S., C. Tompkins, et al. "Escalating Spending for Health Care: Is it Desirable or Inevitable?" Health Affairs, 8 January 2003, W3-1 – W3- 14. Available from: http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=14527231.

or episode of interest, but are frequently billed separately as though they had been decided upon individually. Half of all expenditures are incurred by only five percent of all patients; and two-thirds of expenditures are for 10 percent of all patients. These proportions hold for publicly and privately insured populations. **The bulk of healthcare expenditures occur on behalf of patients with serious needs who participate in one or more substantial episodes of care during a year.**

There are many efforts afoot to educate, motivate, and reward providers for coordinating services into meaningful and efficient episodes of care. ACOs, bundled payments, capitation, medical homes, and centers of excellence are all intended to manage the appropriateness and cost-effectiveness of patient care. Price transparency should be a complementary motivator for patients to seek care from efficient providers and delivery systems, i.e., those that will coordinate and manage the individual service items in light of the clinical goals related to the patient's care plan and its entire service package.

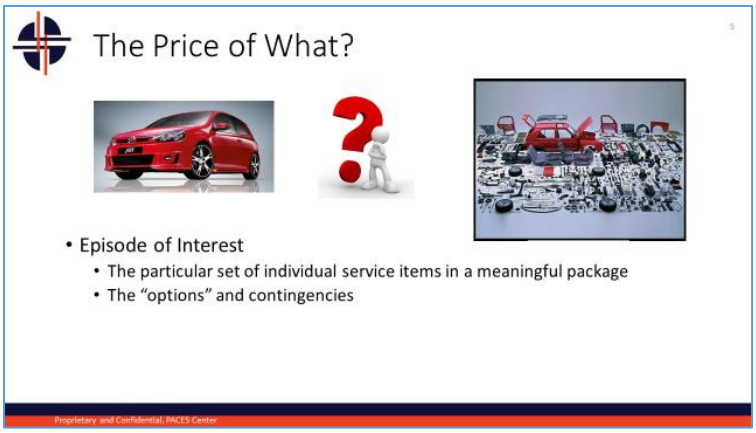
Separate from this Transparency In Coverage proposed rule, HHS has proposed regulations that might be considered complementary and reinforcing. Specifically, it intends "to allow issuers that empower and incentivize consumers through the introduction of new or different plans that include provisions encouraging consumers to shop for services from lower-cost, higher-value providers. The context calls for sharing the resulting savings with consumers, and to take credit for such "shared savings" payments in their Medical Loss Ratio (MLR) calculations (***p. 97*)**.

In the current context, the HHS proposed regulations would bolster the concept of helping consumers to engage with high-value providers, who are typically identified by episode analytics, and thereby secure the best price and overall value for the service packages (i.e., episodes of care) relevant to their needs.

Units of Analysis, Inference, and Purchase

We are all experienced consumers dealing with a variety of products and services. Facing a significant or major purchase, many perceptive consumers will "do research" and consider the most appropriate product or service. When more than one supplier is a candidate, research can extend to which outlet or producer offers the best value. To be helpful, the prices offered for transparency should be linked to service units with informative labels and descriptions; and in turn, prices shown to the consumers should be for identical or equivalent units of service in order to facilitate comparisons and reasonable choices.

The figure below illustrates the point with pictures of a car, a meaningful whole concept of interest to a consumer shopping in the market, alongside the individual parts of the car. When shopping for a car, consumers always shop for the whole car, which includes key options or contingencies, but never for every (or any) part of the car individually (*à la carte*).



Shopping from a manufacturer's unabridged parts catalog would likely be confusing and unnecessarily complicated. A car manufacturer knows which parts are designed and intended to assemble the final product. Competitive pricing pressure is applied at the appropriate level for consumers to analyze the options, make inferences about best value, and finally make decisions about what to buy and from whom.

An aspect of accountability in this era of patient-centered care is the patient's experience. This can emphasize communication, education, seamless care, continuity of care, and overall coordinated experience. Often high-value care has a strong component of patient education with respect to the clinical issues, the therapeutic options, and the services to expect. Adding price information would further inform patients regarding those options and contingencies.

The clinical education of patients can be refined or supplemented by clarifying the *operational definition* of the relevant clinical concepts. Much of the variability and confusion could be reduced if the definitions and labels were clearly and consistently applied, including what is meant by a label such as Colon Cancer, Heart Failure, Colectomy, or CABG. Patients with a particular condition, or who are contemplating a particular procedure to treat the condition, should understand the whole unit of interest, i.e., the *items and services* that are routine, likely, or contingent.

The context and interrelationships can be crucial. For example, a patient might shop for an imaging study, including at locations affiliated with the ordering clinician, and other competing or freelance suppliers. However, that patient already has contact with a component of a delivery system (i.e., the ordering physician, other clinician, or facility), and in many cases will need to continue involvement contingent on the results of the imaging study and the next chapter of the larger episode of concern.

As such, "shopping" for that item might be part of shopping for the larger service package, or at least what follows the instance of the particular shoppable service item. If the individual item or service is received chronologically before other pieces of the larger package, then selection of a

provider for that individually shoppable service might cause redirection and become entrée into components of a delivery system that would be poised to deliver many other items in that package, in some cases even the bulk or entirety of the patient's care.

By shopping at various junctures, the patient might find more efficient providers or delivery systems, or might interrupt important continuity of care. Thus, having appropriate price signals available at early junctures in a care journey could help to steer patients toward a reliably efficient total cost of care for the episode of interest.

This important concept arises in the Proposed Rule with regard to bundled payment and its constituent items and price (p. 36). We understand CMS' definition of bundled payment; the extent to which a "single payment" (and therefore an aggregate price) is operational is important to acknowledge in price transparency. However,

- Bundled payment models, even those developed by CMS, often involve billing for individual items and services under the auspices of risk arrangements that include comparisons of actual to expected costs, and reconciliation of savings and losses according to predetermined rules. Thus, the concept of bundled payment ought to, and typically does, apply to specific episode definitions with linked accountability metrics and financial reconciliation. We believe CMS should reinforce an episode framework along with standard definitions and requirements for related items and services to be assembled together in pricing disclosures.

Even absent a formal bundled payment, the underlying point remains: the list of items is a delineation of a whole construct, i.e., the episode of interest in its entirety. Knowing what is in such a list, knowing whether it differs across providers, and even better, knowing that it should not differ across providers, are important to understanding the whole unit of service and its announced price ***(p. 39)***.

In this vein, we agree with CMS in its articulation of items and services (p. 31) as well as its intention for this to capture either discrete items or services or bundled payments for a set of items and services (***p. 32*)**. A key aspect of this, and one for which CMS has requested input, relates to linking or packaging items and services when they are typically provided together or as a package. Accordingly:

- **We support a policy that would require plans and issuers to provide cost-sharing information for items and services typically provided with another service when a request is received just for that discrete service (and the plan or issuer does not have a bundled payment for that service)** (p. 50).

Price disclosure can inform and empower consumers whether they shop for items and services individually with their respective prices, or as part of service packages (i.e., individual shoppable services, explicit or implicit items within bundles or episodes). We believe the overall effectiveness of price transparency and the activated consumer would be enhanced if the price of individual items and services (e.g., imaging studies) are consistently subject to pricing pressure.

From the individual consumer to the system as a whole, the power of information can be amplified to the extent that all instances of a service item are subject to the discipline of informed choices. This includes instances of the service that might stand alone, and instances in which the service is manifestly part of a known episode of care. In the latter case, the individual service is one of many "line items" or pieces, which sum *en bloc* to the relevant price and choice facing the consumer.

Accordingly, we agree with CMS, which stated in the context of hospital price transparency that it would be "exceptionally valuable to give consumers a more complete picture of the total amount they will be charged in connection with an inpatient admission or an outpatient department visit." Moreover, we see an inpatient stay, or an outpatient visit to be integral to episodes of care that involve continuity of care prior to and following those utilization events.

There could be unintended consequences to well-intended policies. Given that the frequent or typical context in which an individual type of service is "priced" or purchased involves other services related or embedded within a larger package, it would be prudent to discourage competition based on individual items and services as "loss leaders" for delivery systems. For example, if the prices of imaging studies become the signal or "hook" for patients to choose a provider for a larger purpose, then providers might want to show a relatively low price for those gateway services in order to drive patient and service volumes for the larger, contingent packages.

The Patient Journey

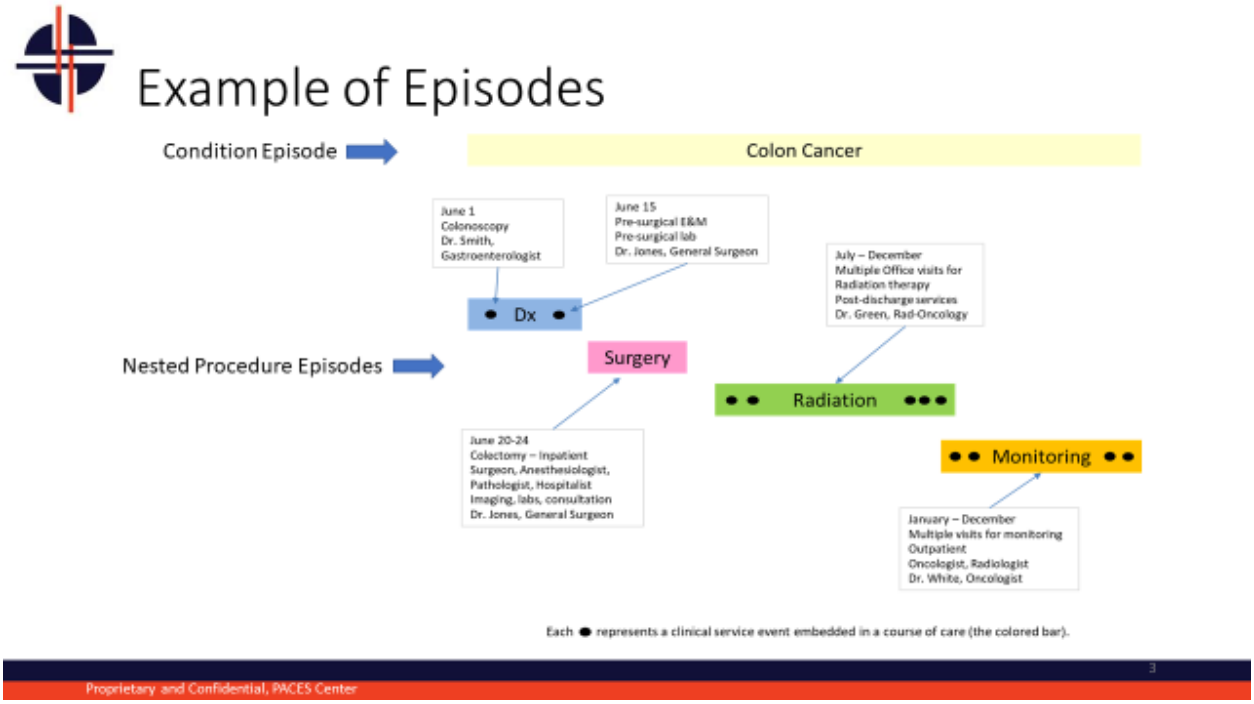
This section grounds the policies involving price transparency within the patient's experience. The success of eventual policies is likely to emanate from their ability to anticipate patients' moments of decision, and to empower consumers with information that optimizes decisions and deficiencies related to the total cost of care for their respective episodes of interest.

The figure below illustrates the journey of a patient with Colon Cancer. The condition is first diagnosed and the episode for cancer begins early in June when the patient sees Dr. Smith, a Gastroenterologist, for a Colonoscopy and diagnostic work-up. Even at the apparent outset of an episode of Colon Cancer, the relevance of price transparency has begun:

- Was the patient referred directly to Dr. Smith and the Colonoscopy without having or consulting differential price information?
- How might differential pricing, and possibly a relatively "low price" for Dr. Smith and the diagnostic procedure affect what happens afterwards?
- Did seeing Dr. Smith put the patient into a group that includes surgeons and radiation oncologists from whom it would be convenient to receive such treatments, if needed?
- How much will pricing information about shoppable services affect whether the patient remains within that group, or seeks care from other sources?

If the patient might need surgery (i.e., a Colectomy), this is a major decision and possible "shopping" opportunity. Such a choice should consider the implications of differential access

(e.g., convenience) and quality (e.g., outcomes), as well as differential pricing according to the choice of the surgeon and surgical team, along with the type of setting and specific facility. We will illustrate some of these concepts in more detail later in this letter.



In the example, the patient's cancer episode continued on June 15, with a pre-surgical E&M visit with Dr. Jones, a General Surgeon, along with ancillary services. Within a few days, the patient was hospitalized for a Colectomy, which is both a discrete episode in its own right, as well as being a procedure episode nested within the underlying condition episode for Colon Cancer.

The procedure episode for Colectomy involved several days in an inpatient setting. The surgical episode involved services from several specialists and included many types of supporting and ancillary services. The aftermath of surgery, of course, can include for some patients routine aftercare services as well as unexpected or untoward events such as slow recovery, sequelae, or complications.

In the course of treating the Colon Cancer, the patient can elect whether or not to have the operation, or where and from whom to have it, based on various criteria. There is continuity (or should be) through these phases of care. There is clinical relevance and interrelationships among all of the items and services within the context of a unified and optimal care plan tailored to meet the specific needs of the patient.

For this patient, a new phase of treatment commenced in July and continued through the end of the year involving radiation therapy under the supervision of Dr. Green, a Radiation Oncologist. Management of the patient continues through the next year, involving multiple visits and

imaging studies. The patient's journey involved contact with Dr. White, an Oncologist, radiologists, and hopefully appropriate contact with primary care providers.

- What did the patient shop for originally?
- Which services through these phases of care can or should be priced and purchased *à la carte*?
- Which services constitute the beginning of a new phase, or a nested episode in its own right and which form an integral service package, in the patient's journey with Colon Cancer?

Chronologically, the journey depicted here may have begun with primary care and referral to Dr. Smith. The prior contact or relationship with the PCP may or may not have included a consideration of differential prices, but in either case, it can become the starting point or the initiation of one or more linked episodes of care.

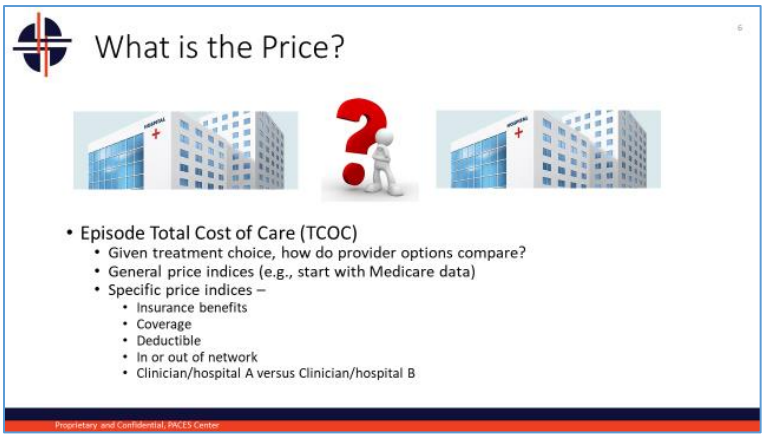
Quite possibly, the Colonoscopy event could be subject to comparative pricing, although the implicit cost or price of the Colonoscopy might include its linkage to the next juncture, i.e., the pre-surgical evaluation and related choice of Dr. Jones as surgeon. Similarly, the choice of Dr. Jones and the choice of inpatient provider will be linked closely.

There is the concrete matter of which hospitals does Dr. Jones have privileges to operate in. To choose Dr. Jones is to choose a hospital where he can operate. Alternatively, to choose a hospital implies choosing a surgeon from among those eligible to operate in that facility. In all likelihood, the choice of surgeon and the choice of facility are made jointly, pointing to the utility of information available to sort options for the surgical episode in its entirety, and not isolated or even potentially misleading prices attached to individual items or components of the whole. For example, the most affordable surgeon (designated by NPI) might operate at the most expensive facility. Alternatively, the most affordable facility (as measured by room and board) might have the most complicated, prolonged and expensive aftercare.

An Educated Consumer Makes the Best Customer

The whole formative and healthy process on behalf of individual patients, and reforming systems for better performance, can begin with solid education. The patient depicted above with Colon Cancer began the clinical episode in consultation with a provider who recommended or referred the patient to Dr. Smith or to a Colonoscopy.

An episode of care typically has an overall purpose and integrated care plan. Providers can treat an injury or disease, in many cases with alternative courses of treatment, each with its own "service package" and accompanying risks, benefits, and cost. This speaks to the need for educating patients about the clinical situation, as well as possible trajectories. This includes the "process" of developing a care plan, including clinical junctures and their respective decisions and explicit trade-offs, opportunities for hand-offs between providers, and how price and quality might help inform those decisions.

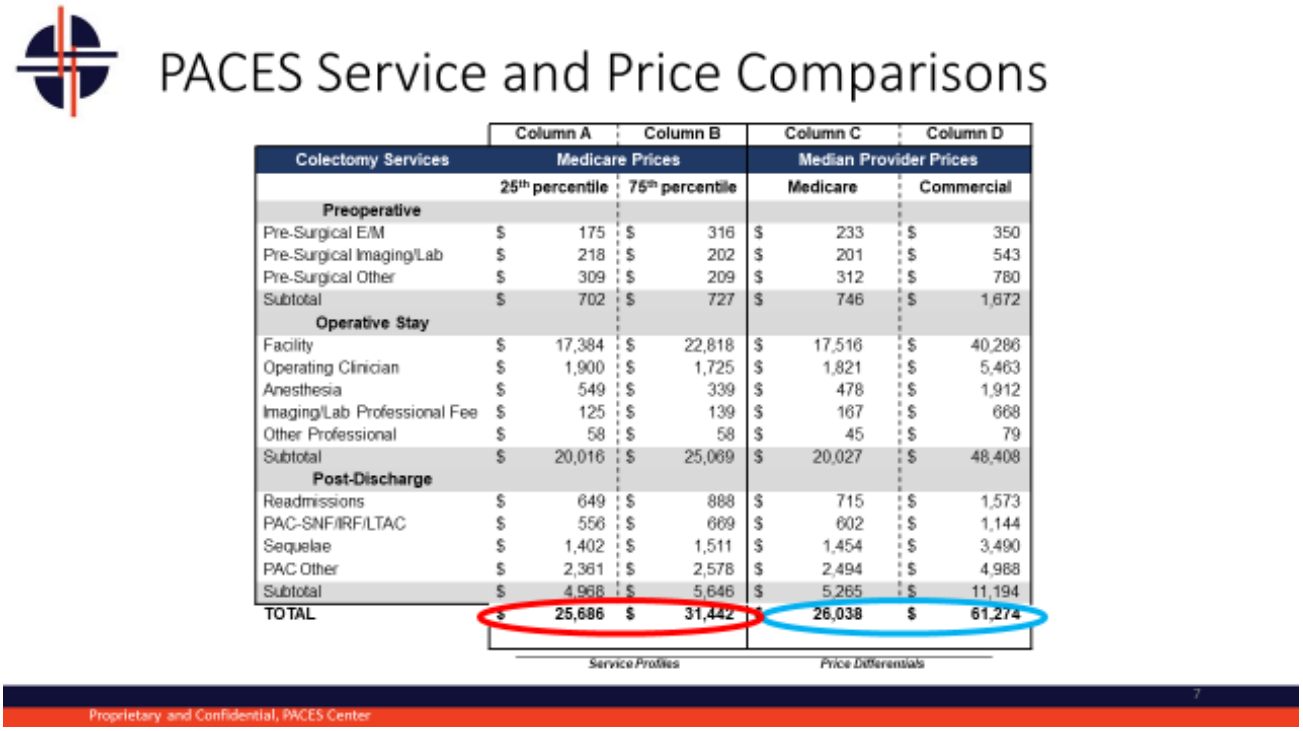


The purchase of an episode of care involves several dimensions or criteria. Some of those criteria involve prices, and include the total cost of care, the reasons and amounts that the total cost can vary across providers, and the "bottom line" out-of-pocket cost to the consumer.

The figure below highlights an example of a serious and important type of episode, namely Colectomy. As shown previously, the choice or occurrence of Colectomy was likely preceded by phases involving diagnosis, consideration of treatment options including candidacy for Colectomy, and information about the operation itself and related services. The rows comprising the figure below show various categories of services that are relevant to Colectomy. The gray-highlighted rows introduce logical phases of care: Pre-operative; Operative Stay; and Post-Discharge. Within each of those phases are specific relevant services that are necessary, plausible, or frequently provided for patients undergoing Colectomy.

Columns A and B in the figure illustrate the Colectomy experience at two different facilities. Column A has a cost profile based on Medicare spending that is relatively low, i.e., at the 25th percentile, which means one fourth of all hospitals are less costly on average while three-fourths of all hospitals are most costly. Column B provides a contrasting, relatively more costly hospital for Colectomy, at the 75th percentile, meaning that three fourths of all hospitals have lower average cost profiles. (See the red oval around the respective total spending amounts.)

The differences between the hospitals shown in Columns A and B can stem from many sources, but importantly here, not from arbitrary differences in the label Colectomy or what services are considered relevant or plausible for inclusion under that label. The definitions and the logic for supplying or assigning the contents of the Colectomy profiles emanate from a common source.



The resulting differences can reflect distinct and non-overlapping clinicians and other staff who participate in care associated with Colectomy, higher or lower than average complication rates, transition to post-acute care, and other differences.

For example, Column B shows higher average cost profiles in all of the Post-Acute categories, including readmissions, post-acute facilities, and treatment of sequelae or complications. This could be important information to empower consumers with regard to a choice among competing providers for the same service, i.e., consistently labeled and operationally defined. For example, the information would become muddled and potentially misleading if some hospitals included, while others omitted, whole categories (e.g., post-acute, or treatment of sequelae). Similarly, consumers might be led to make different decisions if all of the evidence and pricing information was focused on a single service, such as the Colonoscopy or pre-surgical evaluation fee, as if these were reliable indicators of the relative prices to be expected across the entirety of the episode.

Columns C and D in the figure show a different part of the story. They both focus on the same hospital or delivery system, in this case the median (50th percentile) with regard to Medicare spending, meaning that half of all hospitals have lower cost profiles and half have higher cost profiles. Column C shows Medicare spending amounts for the services and categories described previously. Column D illustrates the point that a patient covered by a commercial third-party insurance plan would face one total price for a Colectomy, as well as prices for its constituent parts, that will differ from Medicare, and from other commercial plans.

Thus, comparisons as between Columns A and B illustrate the different underlying cost and utilization profiles associated with different hospitals (options for the consumer). Meanwhile, each patient would view such options and comparisons through the lens of his or her insurance plan, as illustrated in Columns C and D.

Why Standard Episode Definitions?

The figure below shows an example of information available now to consumers regarding comparative price information for an episode of Routine Vaginal Delivery. The Notes in the third column indicate that the operational definition (i.e., what is included in the concept) differs from one report to the next. For example, Fair Health's reported $8,711 "in-network price for all services related to the episode of care" is lower than CIVHC's reported $11,160 "facility prices for routine vaginal delivery."

These are just averages for Denver. Even the average price for a type of episode (e.g., routine vaginal delivery) might be generally informative, but the figure illustrates that the definition of the episode itself can be quite variable. Understanding the reported price for any provider in Denver, or Colorado, or any other locale would have to begin with an examination of the definition used by a particular provider or information clearinghouse.

Conceivably, the rankings and price differences across providers might change according to the definition used for any particular report. Requiring all parties to participate in price transparency could cause cacophony and administrative nightmares. The types of differences seen in the definitions and the average prices could pervade and corrupt the general equivalence and value of the information.

10

March 2019 Estimates for the Average Cost Of Routine Vaginal Delivery, Denver Colorado

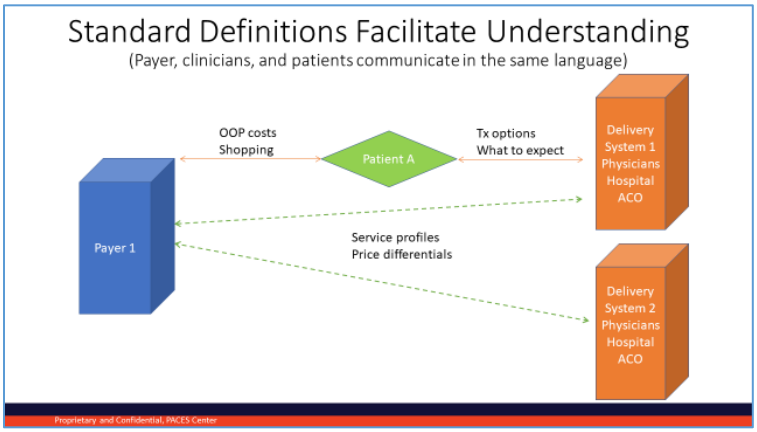
Source	Average Price	Notes
Center for Improving Value in Healthcare (CIVHC)	$11,160 (2017)	Facility prices for routine vaginal delivery
Colorado Division Of Insurance	$7,347 (2017)	Facility prices for routine vaginal delivery
Guroo	$13,599 (July 2018)	Includes routine prenatal care, labs, ultrasound, delivery of newborn, and routine postnatal care
Healthcare Bluebook	$9,625 (No data date)	Includes facility and professional services during the delivery
Fair Health	$8,711 (No data date)	In-network price for all services related to the episode of care

Embracing Standard Episode Definitions: An Industry Imperative, March 28, 2019, 10.1377/HBLOG20190326.202031 Exhibit 1

Proprietary and Confidential, PACES Center

Metrics and labels are most valuable when they refer to the same product, service, or service package, and not when applied loosely or in ways that mask important differences. For example, if one party provides information in general categories, while another uses precise sub-categories, it could be more difficult to make strict comparisons. Similarly, if different parties use different nomenclature, even if all use "plain English," it could be more difficult to be sure of exact comparisons.

The figure below depicts a world of digital data exchange in which the patient is served by provider price transparency and payer price transparency emanating from a common standard for the common good.



Patient A, shown in the green diamond, faces a particular clinical scenario, and depends on valid and reliable communication with and among stakeholders in order to make the right decisions, and thereby secondarily participates in the process of improving system performance. The figure shows Payer 1 as relevant to this particular consumer (i.e., the commercial insurance plan in which the patient is enrolled). For simplicity, the figure shows two providers, Delivery System 1 and Delivery System 2, which represent alternatives for providing the services of interest.

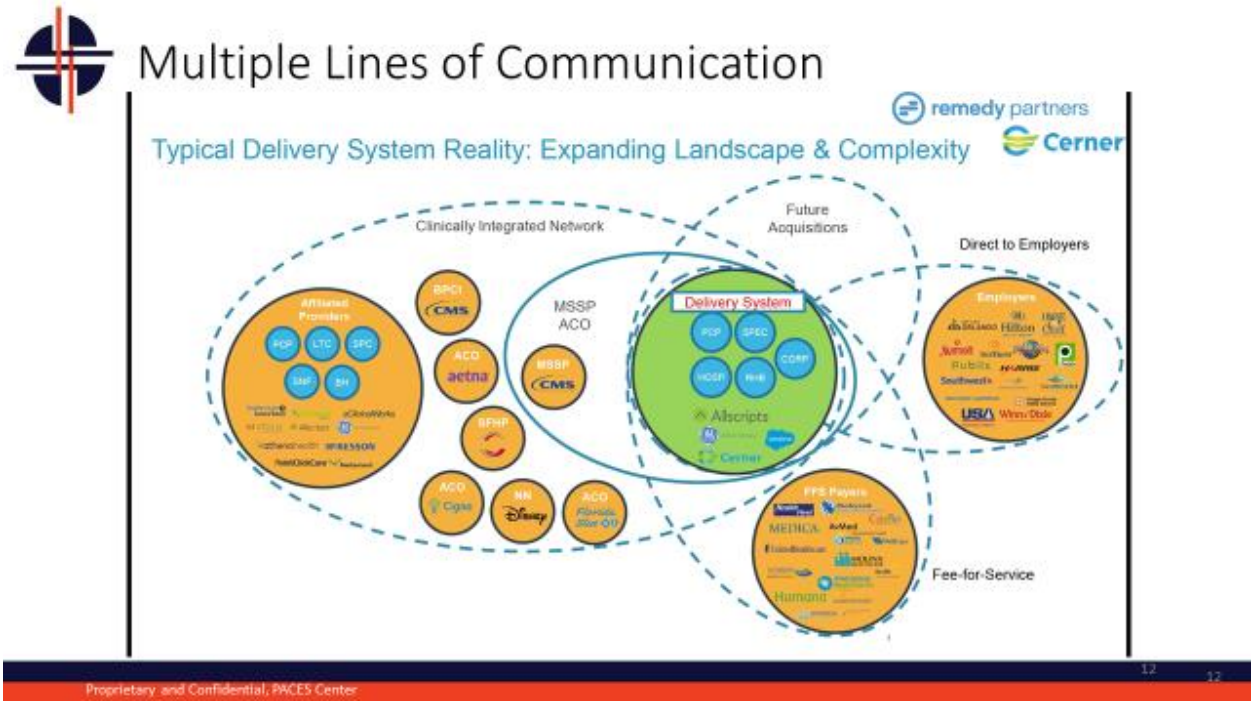
The figure points to having the major parties at work together toward the objective of providing consistent and useful information.

- In the upper right portion of the figure, the Patient learns about the medical condition, treatment options, and trade-offs from clinicians, who happen to be part of Delivery System 1. This process of learning and discovery can include questions about clinical trajectories and contingencies, and the associated cost implications. Delivery System 1 can provide some but not all of the needed pieces of information, especially if only the hospital (and not the affiliated professionals or sub-acute facilities) is participating in the price transparency.
- Moving leftward in the figure, the Patient queries Payer 1 about the differential price (and ideally, value) in comparing service options between Delivery Systems 1 and 2.
- Payer 1 is prepared to answer the Patient's queries because Payer 1 has done its homework. It has profiled Delivery Systems 1 and 2 with respect to the episode of interest to the Patient, and is able to provide differential pricing and expected out-of-pocket costs for the totality of the episode, as well as individual items and services that constitute the full episode.

- Because all of the stakeholders in the dynamic exchanges ideally have agreed to use standard definitions, the Patient is able to understand and receive consistent and helpful information. The Patient understands the total cost of care, the local treatment options, and the implications of choosing one delivery system, physician, or hospital, over the alternatives.

The figure below depicts the complexity of the regulatory and competitive environments from the perspective of a delivery system (pictured in the green circle). The system includes a hospital, primary care practices, medical homes, specialty practices, and various HIT vendors. The delivery system serves tens of thousands of patients, some of whom are employees under contracts direct to employers (right side of the figure), while others have public or commercial payers, which operate many different models of payment and accountability.

Price transparency can be one of many policies and opportunities to bring discipline to the enforcement of regulations, and by extension, to the workings of the marketplace. Standard units can beget standard metrics and consistent information in support of patient decisions, and aligned messages to improve value for items, services, and total episodes of care.



Supporting Patient Price Transparency

Right now, there is no market standard for episodes equivalent to those in other areas of healthcare such as CPTs or DRGs. However, the bedrock clinical concepts that motivate and explain modern healthcare consist of episodes, which follow patient journeys over time and across settings and providers in order to fulfill clinical aims and patient goals of care. The care

plans, the ability to understand gaps in care, comparisons of outcomes, and a platform for evaluating efficiency and value rest on episode concepts.

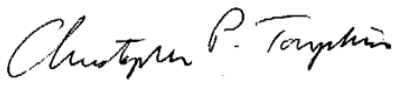
Operationally defining episodes consistently using coding systems in claims, EHRs, and potentially other data sources, will require a common set of definitions and logic for linking or assigning clinically relevant pieces of the whole. Hospitals might need some help joining the community of standard language for episodes of care and relevant lists of services. Many hospitals copy CPT, HCPCS, and/or other procedure descriptions directly, add their own internal numbers, and make a carefully guarded crosswalk between internal codes and standard/billable service codes. Additional use of Natural Language Processing (NLP) methods can help ensure a smooth and reliable crosswalk between internal systems, standard coding systems, and "plain English" reporting to consumers.

Adoption of common standards can promote transparency and multi-stakeholder buy-in, facilitate communication, enable comparisons, and support other use cases. This could facilitate integrated analytics and care-redesign across payers, supports multi-payer or all-payer models, and supports alignment of cost and quality to assess efficiency/value.

This can help build an infrastructure in which the patient can have a significant yet complementary role along with other methods to promote excellence and efficiency in patient care.

> *No single stakeholder should be asked to bear the burden of curbing excess health spending; anything less than a coordinated effort is doomed to failure*

Yours truly,



Christopher P. Tompkins, Ph.D.
Founder, CEO, and Vice Chairman
PACES Center