

VALUE

Moving from Volume to Value: Part 2

Are you prepared for the changing healthcare environment?

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Every physician and hospital talks about the quality of the care that they provide to their patients. Most patients are satisfied with the care that they receive. Unfortunately, quality is rarely objectively measured. Also, medical professionals may claim to be “cost effective” when they have never determined the cost of providing care.

Achieving value for patients must become the priority for physicians and hospitals and everyone involved in patient care. Value is what matters for patients and unites the interests of all involved in providing services

for our patients. If value improves, patients, payers, providers, and suppliers can all benefit, while the economic sustainability of the healthcare system increases.

Value—neither an abstract ideal nor a code word for cost reduction—

sal shift in payments from volume to value. Most agree that the bloated U.S. healthcare system, which now is more than \$3 trillion per year and accounts for 17% of the GDP, is unsustainable. Drug manufacturers are defending escalating drug costs on the

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should define the framework for performance improvement in healthcare. Rigorous, disciplined measurement and improvement of value is the best way to drive system progress. Yet, value in healthcare remains largely unmeasured and misunderstood.¹

Futurists are forecasting a colos-

basis of their value, defined as their efficacy and effectiveness in treating a condition. Insurers are pushing the shift of financial risk to providers to accelerate the volume-to-value transition, and Medicare is promoting value-based purchasing in its alter-

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native payments program. The acronym MIPS, for Merit-based Incentive Payment System, has become part of the healthcare vocabulary; CMS clearly states that the “payment arrangement must provide for payment for covered professional services based on quality measures comparable to those in the quality performance category.”²

Charges Are Not a Surrogate for Costs.

Many physicians have structured their fees based on the way they are reimbursed. Unfortunately, that approach was doomed from the start, because it was based on the flawed assumption that every billable event has the same profit margin.

Yes, doctors and hospitals can easily calculate direct costs, which include drugs, disposables, staffing,

TABLE I: Cost of Supplies Need for Insertion of Testosterone Pellets	
0.3 x \$45 Administrator =	\$13.50
0.4 x \$30 Medical Assistant =	\$12.00
0.15 x \$400 Dr. Baum =	\$60.00
Cost \$50/pellet or \$450.00/patient	
Supplies =	\$35.00
Total Cost:	\$570.50

length of hospital stay, re-admission rates, and complications. It is ironic, then, that a standard definition of cost remains elusive when there is so much pressure from payers, the government, and now from patients with higher premiums and higher deductibles to rein in the cost of care.

Physicians currently are reimbursed on average estimates of relative demands (relative value units, or RVUs) on physician labor, practice expenses, and malpractice expenses in performing billable activities, which often are overestimated regarding their complexity.

We need to abandon the idea that charges billed or reimbursements paid in any way reflect costs. In reality,

the cost of using a resource—a physician, nurse, case manager, piece of equipment, or square meter of space—is the same whether the doctor is performing a poorly or a highly reimbursed service. Cost depends on how much of a resource’s available capacity (time)

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is used in the care for a particular patient, not on the charge or reimbursement for the service, or whether it is reimbursed at all.

Seven Steps for Determining Cost of Delivering Healthcare Services

Time-driven activity-based costing (TDABC) is a way of determining the cost of caring for patients. The following sections describe the seven steps used in TDABC.

Step 1. Select the Medical Condition.

Begin by specifying the medical condition (or patient population) that you are evaluating to determine the cost of caring for the patient. For each condition, it is necessary to define the beginning and end of the patient care cycle. For a condition that has a short duration, you only need to consider the initial evaluation, the procedure, and the follow-up visits. For chronic conditions such as diabetes, hypertension, or cancer, you might choose a care cycle for a period of time, such as a year.

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Step 2. Define the Care Delivery Value Chain.

Next, specify the care delivery value chain (CDVC), which charts the principal activities or interactions of the patient with all the members of the practice for a medical condition. The CDVC focuses providers on the full care cycle rather than on individual processes. This overall view of the patient care cycle helps to identify the interactions of the patient with the multiple caregivers providing care over the full cycle of care.

Step 3. Develop Process Maps of Each Activity in Patient Care Delivery.

Prepare detailed process maps for each activity in the care delivery value chain. Process maps encompass the paths patients follow as

TABLE 2: Cost Incurred in Seeing a New Patient

0.3 x \$45 Receptionist Allen = \$13.50

0.4 x \$65 Nurse White = \$26.00

0.15 x \$300 Dr. Baum = \$45.00

Total Cost of Visit: \$84.50

Reimbursement <\$84.50 is going to be a loss;
reimbursement >\$84.50 will be a profit.

they move through their care cycle. This includes all the personnel, facilities, and equipment involved at each step along the path. In addition to identifying the capacity-supplying

resources used in each process, identify the supplies, such as medications, syringes, and bandages, used directly in the process (Table 1). (As a DPM, you can easily substitute a podiatric procedure for the urological example used here.)

Step 4. Obtain Time Estimates for Each Process.

Now estimate how much time each provider, nurse, receptionist, technician, or other resource spends with a patient at each step in the process. For short-duration, inexpensive processes that have little variation, consider using standard times for your calculations. Actual duration should be calculated for time-consuming, less predictable processes, especially those that involve multiple physicians and nurses performing complex care activities

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such as major surgery or examination of patients with complicated medical problems.

TDABC also is well suited to capture the effect of process variation on cost. The time estimate and associated incremental resources required can easily be added to the overall time equation for that patient.

Step 5. Estimate the Cost of Supplying Patient Care Resources.

In this step, estimate the direct costs of each resource involved in caring for patients. The direct costs include compensation for employees, depreciation or leasing of

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equipment, supplies, and any other operating expenses. These data become the numerator for calculating each resource's capacity cost rate.

Next, identify the support resources necessary to supply the primary resources providing patient care. These include supervising employees, space and furnishings (office and patient treatment areas), and corporate functions that support patient-facing employees. When calculating the cost of supplies, include the cost of the resources used to acquire them and make them available for patient use during the treatment process (for instance, purchasing, receiving, storage, sterilization, and delivery).

Finally, we need to allocate the costs that support the patient-facing work. Map those processes as we did in step 3 and then calculate and assign costs to patient-facing resources on the basis of their demands for the services, using the process that will be described in step 6.

This approach to allocating support costs represents a major shift from current practice. To illustrate, let's compare the allocation of the resources required in a centralized department to sterilize two kinds of surgical tool kits, those used for total knee replacement and those used for cardiac bypass. Existing cost systems tend to allocate higher sterilization costs to cardiac bypass cases than to knee replacement cases because the charges (or direct costs) are higher for a cardiac bypass than for a knee replacement. Under TDABC, however, we have learned that more time and expense are required to sterilize the typically more complex knee surgery tools, so relatively higher sterilization costs should be assigned to knee replacements.

When costing support departments, a good guideline is the "rule of 1." Support functions that have only one employee can be treated as a fixed cost; they can be either not allocated at all or allocated using a simplistic method, as is currently done. But depart-

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ments that have more than one person or more than one unit of any resource represent variable costs. The workload of these departments has expanded because of increased demand for the services and outputs they

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provide. Their costs should and can be assigned on the basis of the patient processes that create demand for their services.

Project teams tasked with estimating the cost to supply resources—the numerator of the capacity cost rate—should have expertise in finance, human resources, and information systems. They can do this work in parallel with the process mapping and time estimation (steps 3 and 4) performed by clinicians and team members with expertise in quality management and process improvement.



Step 6. Estimate the Capacity of Each Resource, and Calculate the Capacity Cost Rate.

Determining the practical capacity for employees—the denominator in the capacity cost rate equation—requires three time estimates, which are gathered from Human Resource records and other sources:

- The total number of days that each employee actually works each year;
- The total number of hours per day that the employee is available for work; and
- The average number of hours per workday used for non-patient-related work, such as breaks, training, education, and administrative meetings.

To calculate the resource capacity cost rate, we simply divide the resource’s total cost (step 5) by its practical capacity (step 6) to obtain a rate, measured in dollars per unit of time, typically an hour or a minute:

$$\text{Monthly Practical Capacity of Resource} = \frac{\alpha}{12} \times (b-c)$$

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TABLE 3:
Practice’s Cost of Performing a Vasectomy

0.3 x \$35 Administrator = \$10.50

Medical assistant to set up instruments = \$12.00

0.5 x \$300 Dr. Baum (includes semen analysis x 2) = \$150.00

Supplies = \$30.00

- Clips
- Suture (3-0 plain)
- Ophthalmic cautery
- Ice pack
- Sterile gloves
- Sterile drapes
- “Brass bell” for patient to ring for his significant other!

Time-driven activity-based costing = \$202.50

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Step 7. Calculate the Total Cost of Patient Care.

In the final step, the total cost of treating a patient is determined by simply multiplying the capacity cost rates (including associated support costs) for each resource used in each patient process by the amounts of time the patient spent with the resource (step 4). Sum up all the costs across all the processes used during the patient's complete cycle of care to produce the total cost of care for the patient.

We have provided two examples from Dr Baum's urology practice. Table 2 presents the cost for an office visit for a new patient with urinary symptoms. Table 3 shows the cost of performing a vasectomy in the office setting. (Again, as a DPM you'll use the same type of calculations but with a podiatric example.)

Other Uses of TDABC

TDABC predicts the volume and types of patients expected. If the practice participates in a capitated model, then it becomes imperative to know the costs of care and the various morbidity patterns of various population segments. This information may be difficult to obtain, but it begins with costing each aspect of care over an entire patient cycle. Now you can negotiate from a position of strength and better predict the profitability of participating in a capitated contract.

You can use TDABC to predict the quantity of resources required in hours to provide care for patients. This costing method also estimates the quantity of each resource needed to meet demand. The process can provide an estimate of monthly budgets simply by multiplying the quantity of each resource category required (e.g., nurses, medical assistants, physician assistants) by the monthly cost of each resource.

Bottom Line: TDABC provides one of the metrics that is necessary to determine the value of healthcare. **PM**

References

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