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Focusing on High-cost Patients: the Key to Addressing High Costs?

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In the context of rampant waste in the US healthcare system,¹ evidence that a large proportion of healthcare spending is concentrated among a small proportion of patients has galvanized the attention of payers, providers, and funders on high-cost patients. On the surface, this focus may seem a sensible response, or even an important paradigm shift as many tout it to be. In terms of clinical outcomes, the healthcare system fails patients with the greatest needs the most. To the extent longitudinal patient engagement is needed to address these failures through better care coordination and management, devoting resources to high-risk patients who would benefit most could enhance the cost-effectiveness of these efforts.

If the objective is to reduce wasteful healthcare spending, however, does the same logic hold? For providers participating in payment models that reward lower spending, such as accountable care organizations (ACOs), interventions focused on specific patients might facilitate spending reductions for patients covered by the models without eroding fee-for-service revenue for other patients. Beyond this appeal, however, viewing the problem of high costs through a patient-centered lens may not offer clearer resolution for three related reasons. First, targeting patients with high spending may not effectively target the spending that should be reduced. Second, longitudinal patient-specific investments that are important for coordinating care and improving quality may be less important for curbing wasteful spending. Third, potentially more effective system changes that reduce wasteful care for all patients have different cost structures that may not require patient targeting to maximize dollars saved per dollar spent.

When squared with these considerations—each explored below—the trumpeted focus on high-cost patients may be more of a slogan than true strategy in the quest to contain healthcare spending. It may even serve to entrench the status quo, since targeting high-cost patients suits existing provider structures developed under fee-for-service incentives.

Setting aside prices (which are important but merit separate examination), lowering healthcare spending requires a reduction in service volume. Efforts to reduce utilization ideally should focus on services that are low-value, meaning minimally beneficial if not wasteful or harmful. Low-value services might include unnecessary procedures, tests,

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hospitalizations, and referrals, as well as care that could be provided in lower-cost settings without worsening quality.

In considering ways to reduce wasteful utilization, it is instructive to contrast patient-focused strategies that target high-cost patients with systems-focused strategies intended to reduce low-value services for all patients. Whereas high-quality coordinated care may require patient-focused efforts, waste reduction might be achieved through a variety of systemic changes that do not require prospectively targeting and managing specific patients. These might include, for example, the development of preferred networks of efficient specialists and facilities, e-consult systems to reduce unnecessary referrals, decision support systems to limit low-value imaging or antibiotics, reductions in capacity for overused procedures, triage systems to redirect patients from emergency rooms to outpatient clinics, systems to monitor and appropriately shorten length of post-acute stays, physician retraining programs, changes in physician compensation, and physician profiling or other non-financial nudges to curb wasteful practices.

Unlike systemic efforts to reduce service use for any patient, intensive case management of high-cost patients requires predicting which patients will be high-cost. Such predictions are fraught with error because healthcare needs fluctuate randomly. For example, 75% of Medicare spending was concentrated among 17% of beneficiaries in 2013, based on our analysis of claims. If predictive information is used to identify patients at risk for high spending, however, the high-risk patients account for a smaller proportion of spending. The 17% of Medicare beneficiaries with the highest Hierarchical Condition Category (HCC) risk scores and most chronic conditions in 2013, for example, cost nearly four times more per person than other beneficiaries but accounted for only 42% of all Medicare spending (Table).

Targeting patients with high predicted spending may miss even more opportunities for waste reduction if spending is not proportionately more wasteful when it is higher. Moreover, even without targeting specific patients, systemic efforts to minimize low-value service provision should nevertheless affect high-cost patients disproportionately because they receive more services. For these reasons, targeting patients at risk of excessive spending may not yield presumed advantages in addressing the excess.

To illustrate these points, consider the provision of 31 low-value services to Medicare patients, as detected in claims using previously described methods (Table).^{1,2} In 2013, the same 17% of patients with the highest risk received nearly twice as many low-value services per person than lower-risk patients but accounted for only 27% of the 11 million low-value services provided to all Medicare patients—or 31% of spending on these services (Table). Based on this example from Medicare, if a provider organization could reduce low-value service use by 20% through system changes that affect all of its patients, it would have to achieve a 74% ($20\%/0.27$) reduction among the high-risk group to achieve an equal reduction in the total number provided. If a smaller higher-risk group were targeted, the reduction would have to be even greater.

Although more sophisticated predictive modeling might improve targeting somewhat, this analysis reveals that patient-focused strategies applied to high-risk patients must be substantially more effective or substantially less costly than broader strategies to justify their prominence in cost-containment efforts. There are good reasons to doubt these scenarios. While the clinical benefits of care coordination programs may be significant, greater for high-risk patients, and well worth the costs, such programs have not been shown to lower spending convincingly, let alone to an extent exceeding program costs.³

As for costs, organizational strategies to reduce overuse through system changes generally involve more fixed (particularly upfront) costs, whereas patient-focused interventions such as intensive case management involve more variable costs (i.e., costs that increase with the number of patients affected). As a result, the average cost per dollar saved might fall as patient-focused strategies target increasingly high-cost patients, but it would tend to fall conversely as systems-focused strategies affect *more* patients. Thus, potentially more effective systemic approaches to reducing wasteful spending would not derive the cost advantages from patient targeting that certain quality-improvement initiatives might.

Consistent with these arguments, spending differences among ACOs suggest that historically more efficient organizations have achieved lower spending by influencing the entire distribution of spending rather than just shortening its tail. For example, despite a substantial \$1427/patient difference in Medicare spending between the most and least efficient quartile of organizations before they became ACOs⁴ (adjusted for geography and case mix), spending was equally concentrated among high-cost patients in each quartile, with 19% of patients accounting for 75% of spending in both groups of organizations.

One is therefore left to wonder why the problem of high costs has been reframed as one of high-cost patients rather than low-value decisions. If new payment models reward providers for reducing spending, particularly wasteful spending, why has management of high-risk patients so dominated provider responses to these incentives? Clinicians are naturally drawn to patient-focused solutions because they routinely manage patients, not the systems that shape clinical decisions. But the appeal of high-risk care management also stems from the reality for many providers that reducing wasteful care for all patients causes substantial fee-for-service losses. Even if all providers risk contract with all payers for all of their primary care patients, large multispecialty organizations—particularly those with hospitals—would continue to serve many patients covered by the contracts of competitors who provide the patients' primary care.⁵

There are generally three approaches to align provider incentives with the adoption of systems-focused strategies to limit wasteful care. One is moving away from ACO-like global budget models toward more piecemeal models such as bundled payments that place episodes of specialty or inpatient care under budgets. While placing more of large health systems' revenue under budgets and thereby strengthening their incentives to reduce spending for all patients, this would weaken incentives to eliminate wasteful episodes or wasteful services outside of bundles. The second is allowing provider consolidation to the point that single organizations provide the bulk of care in markets, but at the expense of weaker competition and higher prices. The third is ensuring that smaller provider groups get a fair shot.

Incentives to implement systemic strategies are particularly strong for primary care groups in ACO-like contracts because such contracts cover nearly all of their revenue when established with all payers.⁵ This last approach holds promise, as physician groups have demonstrated early aptitude as ACOs in reducing spending in several major categories,⁴ but could be quashed in its infancy by advancement of the first two.

Thus, the popular notion that focusing on high-cost patients is the key to reining in runaway spending—however misconceived—encourages acceptance of expansive organizational structures that halt providers in hesitant positions, with one foot dipped in payment reform and the other firmly planted on the fee-for-service dock. Whether smaller provider groups with stronger incentives to systematically eliminate waste can emerge as a competitive force under new payment models remains to be seen. Until somebody jumps into the water, high-cost patients may continue to be high-cost.

References

1. Schwartz AL, Landon BE, Elshaug AG, Chernew ME, McWilliams JM. Measuring low-value care in Medicare. *JAMA Intern Med.* 2014; 174:1067–76. [PubMed: 24819824]
2. Schwartz AL, Chernew ME, Landon BE, McWilliams JM. Changes in low-value services in year 1 of the Medicare Pioneer Accountable Care Organization program. *JAMA Intern Med.* 2015; 175:1815–25. [PubMed: 26390323]
3. Peikes D, Chen A, Schore J, Brown R. Effects of care coordination on hospitalization, quality of care, and health care expenditures among Medicare beneficiaries: 15 randomized trials. *JAMA.* 2009; 301:603–18. [PubMed: 19211468]
4. McWilliams JM. Changes in Medicare Shared Savings Program Savings from 2013 to 2014. *JAMA.* 2016 (published online: 10.1001/jama.2016.12049).
5. McWilliams JM, Chernew ME, Dalton JB, Landon BE. Outpatient care patterns and organizational accountability in Medicare. *JAMA Intern Med.* 2014; 174:938–45. [PubMed: 24756690]

Medicare spending and low-value service use in 2013 by patient risk for high spending*

Table

	Group size		Medicare spending			Low-value service use		
	N	Proportion of total	Spending per patient	Total spending (billions)	Proportion of total	Services per patient	Total number services	Proportion of total
All Medicare beneficiaries	29,524,850	100%	\$9,356	\$276.2	100%	0.37	10,924,790	100%
High-risk beneficiaries [†]	5,014,295	17%	\$23,076	\$115.7	42%	0.59	2,941,475	27%
Other beneficiaries	24,510,555	83%	\$6,549	\$160.5	58%	0.33	7,983,315	73%

* Analyses were conducted using Part A and B Medicare claims and a random 20% sample of beneficiaries. Totals were multiplied by a factor of 5 to approximate totals for the entire Medicare population. Low-value service use was assessed using 31 measures in 6 categories: 1) cancer screening (breast, cervical, colorectal, or prostate cancer screening for patients over age 75 receiving dialysis services, cervical cancer screening for women age 65 or older, colorectal cancer screening for adults over age 85, and prostate specific antigen testing for men age 75 or older); 2) diagnostic and preventive testing (bone mineral density testing at overly frequent intervals, homocysteine testing for cardiovascular risk stratification, hypercoagulability testing for patients with deep venous thrombosis, parathyroid hormone testing for patients with stage 1–3 chronic kidney disease, total or free triiodothyronine [T3] testing, and 1,25-dihydroxyvitamin D testing in the absence of hypercalcemia or decreased kidney function); 3) preoperative testing (chest radiography, echocardiography, pulmonary function testing, and cardiac stress tests) before low- or intermediate-risk surgical procedures; 4) imaging (computed tomography for uncomplicated acute rhinosinusitis, advanced imaging of the head in the evaluation of syncope, advanced imaging of the head for uncomplicated headache, electroencephalogram for headaches, back imaging for patients with nonspecific low back pain, screening for carotid artery disease in asymptomatic adults, screening for carotid artery disease for syncope, imaging for diagnosis of plantar fasciitis); 5) cardiovascular testing and procedures (stress testing for stable coronary disease, percutaneous coronary intervention with revascularization for stable coronary artery disease, renal artery angioplasty or stenting, carotid endarterectomy for asymptomatic patients, inferior vena cava filters for the prevention of pulmonary embolism, and pulmonary artery catheterization in the intensive care unit); and 6) other invasive procedures (vertebroplasty or kyphoplasty for osteoporotic vertebral fractures, arthroscopic surgery for osteoarthritis of the knee, and spinal injections for low back pain).

[†] High-risk beneficiaries were defined as having both a Hierarchical Condition Category score and a count of conditions in the Chronic Condition Data Warehouse in the top quartile of the distributions of these characteristics.