cell pain continue to be shaped by these social considerations.

By the 1980s, it was widely known that people with sickle cell disease seeking pain relief (particularly those seeking care in urban emergency departments) were stigmatized as drug seekers. For patients and their advocates, the reality of therapy was that, as one author commented in *Discover* in 1993, "before you can get past the agony, you have to get a doctor to believe it's real."[5] Even more challenging to physicians and nurses is that patients with sickle cell disease often know better than their caregivers what cocktail of agents (meperidine [Demerol], codeine, and other opioids) best relieves their pain during acute episodes. So it was particularly cheering in the 1990s that the drug hydroxyurea sidestepped some of these battles by significantly reducing the annual number of crises.

An audio interview with Dr. Wailoo is available at NEJM.org

Recent findings on the benefits of crizanlizumab and gene therapy (of the type reported by Ribeil et al. in this issue, pages 848–855) are new chapters in this history of therapeutic progress and peril. Patients with sickle cell disease have come a long way from their clinical obscurity 100 years ago. The search for a magic bullet continues, though most clinicians acknowledge that therapies won't cure the disease but merely enhance long-term management. Even the best therapy is a double-edged sword, presenting new conundrums. While bone marrow transplantation offers a possible cure, it brings the risk of graft-versus-host disease; the peril of gene therapy includes, for example, insertional oncogenesis — curing one disease but producing another. Meanwhile, a primary challenge for many patients with sickle cell disease remains a social one: being seen and treated as individuals who deserve relief, and being supported rather than stigmatized in a highly charged atmosphere.

Disclosure forms provided by the author are available at NEJM.org.

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Focusing on High-Cost Patients — The Key to Addressing High Costs?

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Given the rampant waste in the U.S. health care system,[1] evidence that a large proportion of health care spending is concentrated among a small proportion of patients has galvanized a focus on high-cost patients. On the surface, this response may seem sensible: in terms of clinical outcomes, the system fails the highest-need patients the most, and insofar as its failures can be addressed through better care coordination and management, devoting resources to high-risk patients could enhance these efforts' cost-effectiveness.

If the objective is to reduce wasteful spending, however, that logic may not hold. For providers participating in payment models rewarding 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 cost problem through a patient-centered lens may not offer clear resolution, for three related reasons. Targeting patients with high spending may not effectively target the spending that should be reduced. Longitudinal patient-specific investments that are important for coordinating care and improving quality may be less important for curbing wasteful spending. And potentially more effective system changes that reduce wasteful care for all patients have different cost structures that may not require patient targeting to maximize savings.

Thus, a focus on high-cost patients may not only fail to contain health care spending, it may help to entrench the status quo, since targeting specific patients suits existing provider structures developed under fee-for-service incentives.

Setting aside prices, lowering health care spending requires re-

ducing service volume. Efforts to reduce utilization ideally should focus on services that are of low value — minimally beneficial if not wasteful or harmful. Low-value services could include unnecessary procedures, tests, hospitalizations, and referrals, and care that could be provided in lower-cost settings without worsening quality.

In considering ways to reduce wasteful utilization, it's instructive to contrast patient-focused strategies targeting high-cost patients with systems-focused strategies intended to reduce low-value services for everyone. Whereas coordinated care may require patient-focused efforts, waste reduction might be achieved through systemic changes that don't require targeting and following specific patients. These might include development of preferred networks of efficient specialists and facilities, e-consult systems to reduce unnecessary referrals, decision-support systems to limit the use of low-value imaging or antibiotics, reduction in the capacity for overused procedures, triage systems to redirect patients from emergency departments to outpatient clinics, systems to monitor and appropriately shorten length of post-acute care stays, physician-retraining programs, changes in physician compensation, and physician profiling or other nonfinancial nudges to curb wasteful practices.

Intensive case management for high-cost patients, by contrast, requires predicting which patients will generate high spending. Such predictions are fraught with error because health care needs fluctuate randomly. For example, we found that 75% of Medicare spending was concentrated among 17% of beneficiaries in 2013, but high-risk patients identified by means of predictive information accounted for a smaller proportion of spending. For example, care for the 17% of Medicare beneficiaries with the highest Hierarchical Condition Category risk scores and most chronic conditions in 2013 cost nearly four times as much per person as care for other beneficiaries but accounted for only 42% of Medicare spending (see table).

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

Consider the provision of 31 low-value services to Medicare patients, as detected in claims (see table).[1,2] In 2013, 17% of the highest-risk patients received nearly twice as many low-value services per person as lower-risk patients but accounted for only 27% of the 11 million low-value services provided to Medicare patients and 31% of spending on these services. On the basis of these figures, if a provider organization could reduce low-value–service use by 20% through system changes affecting all its patients, it would have to achieve a 74% (20% divided by 0.27) reduction in the high-risk group to achieve an equal reduction in the total number provided. Targeting a smaller higher-risk group would necessitate an even greater reduction.

Although better predictive modeling might improve targeting, this analysis reveals that patient-focused strategies applied to high-risk patients must be substantially more effective or less costly than broader strategies to justify their prominence in cost-containment efforts. Those possibilities seem unlikely. Though care coordination programs may have substantial and valuable clinical benefits, especially for high-risk patients, they haven't been convincingly shown to lower spending, let alone by amounts exceeding program costs.[3]

As for costs, organizational strategies for reducing overuse through system changes generally involve more fixed costs, whereas patient-focused interventions such as intensive case management involve more variable costs (which increase with the number of patients affected). The average cost per dollar saved might therefore decrease as patient-focused strategies target increasingly high-cost patients, but it would tend to decrease 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.

In keeping 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 (as would be expected from a focus on high-cost patients). For example, despite a substantial $1,427-per-patient difference in Medicare spending between the most and least efficient quartile of organizations before they became ACOs

Medicare Spending and Low-Value Service Use in 2013, According to Patient Risk for High Spending.*

Group	Group Size		Medicare Spending			Low-Value–Service Use		
	No. of Patients	% of Total	Spending per Patient ($)	Total Spending ($ billion)	% of Total	Services per Patient	Total No. of Services	% 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 six categories: cancer screening, diagnostic and preventive testing, preoperative testing before low- or intermediate-risk surgical procedures, imaging, cardiovascular testing and procedures, and other invasive procedures.[1,2]

† 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.

(adjusted for geography and patient characteristics),[4] spending was equally concentrated among high-cost patients in each of these two quartiles, with 19% of patients accounting for 75% of spending in both.

So why has the cost problem been reframed as one of high-cost patients rather than low-value decisions? If new payment models reward providers for reducing wasteful spending through any means, why has managing high-risk patients' care so dominated responses to these incentives? Clinicians are drawn to patient-focused solutions because they routinely manage patient care, not the systems shaping clinical decisions. But high-risk care management is also appealing because reducing wasteful care for all patients can cause substantial fee-for-service losses. Even if all providers enter risk-sharing contracts with all payers for 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 three basic approaches to aligning provider incentives with systems-focused strategies to limit wasteful care. One is moving away from ACO-like global budgets toward more piecemeal models such as bundled payments that place episodes of care under budgets. Though that could strengthen a health system's incentives to reduce spending for all patients by placing more of its revenue under budgets, it would weaken incentives to eliminate wasteful episodes of care or wasteful services outside of bundles. The second is allowing provider consolidation to the point that a single organization provides the bulk of care in each market, 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 their revenue when established with all payers.[5] This approach holds promise, since physician groups have demonstrated aptitude as ACOs in reducing spending in several categories,[4] but it could be quashed in its infancy by advancement of the first two.

The notion that focusing on high-cost patients is the key to reining in runaway spending encourages acceptance of expansive organizational structures that halt providers who are hesitant, with one foot dipped in payment reform and the other planted on the fee-for-service dock. Perhaps smaller provider groups with stronger incentives to eliminate waste could emerge as a competitive force under new payment models. Until somebody jumps into the water, high-cost patients may continue to be high-cost.

Disclosure forms provided by the authors are available at NEJM.org.

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