

## Forum

# Medicare's Decision to Withhold Payment for Hospital Errors: The Devil Is in the Details

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A variety of strategies have been implemented to try to promote patient safety in American hospitals and clinics. These have included analyses of the extent of the problem<sup>1,2</sup>; media engagement<sup>3</sup>; development of measures for patient safety<sup>4,5</sup>; pressure from regulators, accreditors, and other safety-related organizations to adopt safety practices<sup>6-8</sup>; and public reporting of errors.<sup>9,10</sup> Although there is debate on how effective these strategies have been, it is clear that they have not eradicated medical mistakes.

Why not? Part of the problem, of course, is that improving safety is really challenging. But many believe that progress would be faster if there were a stronger business case for safety—more “skin in the game”—for providers and health care organizations. Assuming that this is true (and there is not universal agreement on this; some argue that creating financial incentives without an equal focus on building organizational skills and improving culture will yield few benefits), there are three basic ways to create such a case: payers could pay more for safer care, promote competition on safety (for example, improved safety leads to more patients or a better payer mix), or pay less for unsafe care and errors.

There is substantial experimentation around the first strategy in the form of “pay for performance” (P4P) initiatives. However, most of this activity surrounds quality rather than safety measures, partly because quality is so much easier to measure<sup>4</sup> and because there is far less experience in developing, testing, and collecting safety data.

## Article-at-a-Glance

**Background:** Medicare recently announced its intention to withhold additional payments for “serious preventable events.”

**The Intervention:** Beginning in 2009, Medicare will withhold its usual additional payments associated with hospitalizations that included one of several potentially preventable adverse events, such as certain hospital-acquired infections, pressure ulcers, and retained surgical objects. Several more events are being considered for the future. A new coding category, “present on admission” (POA), has been added to identify patients whose adverse events occurred before the index hospitalization.

**Issues and Challenges:** A “not paying for errors” policy seems reasonable if evidence demonstrates that most of the adverse events can be prevented by widespread adoption of achievable practices, the events can be measured accurately, the events resulted in clinically significant patient harm, and POA determination is feasible. Many of these criteria are met for the events in Medicare’s starter set; but there are concerns about each event.

**Conclusions:** Although the new Medicare policy will undoubtedly lead to instances of unfairness, gaming, and unforeseen consequences, it may be effective. This initial implementation should be considered a bold experiment, whose consequences are carefully monitored. Additional research will be needed to help identify preventable adverse events and evidence-based strategies to prevent them.

**Table 1. Sample of Diagnoses by Diagnosis-Related Groups (DRGs), with Typical Medicare Payments Based on Whether There Was or Was Not a Complicating Condition (or Major Complication)\***

| DRG     | Description                                                | Uncomplicated Case Payment | With Complications | With Major Complications |
|---------|------------------------------------------------------------|----------------------------|--------------------|--------------------------|
| 100–101 | Seizures                                                   | \$4,099                    |                    | \$6,205                  |
| 231–232 | Coronary artery bypass with percutaneous angioplasty       | \$30,748                   |                    | 36,231                   |
| 233–234 | Coronary artery bypass with cardiac catheterization        | \$24,429                   |                    | \$32,013                 |
| 235–236 | Coronary artery bypass without catheterization             | \$18,517                   |                    | \$25,503                 |
| 329–331 | Major small and large bowel procedures                     | \$9,141                    | \$14,362           | \$22,366                 |
| 444–446 | Disorders of the biliary tract                             | \$4,229                    | \$5,475            | \$6,822                  |
| 469–470 | Major joint replacement or reattachment of lower extremity | \$9,863                    |                    | \$13,235                 |
| 582–583 | Mastectomy for malignancy                                  | \$3,734                    | \$4,682            | \$4,682                  |
| 811–812 | Red blood cell disorders                                   | \$3,862                    |                    | \$4,967                  |

\* Payments are based on the new MS DRG system, and the weights and the standardized amounts are those that appeared in the August 2007 *Federal Register*. Of note, these figures represent the generic payment amounts for a nonteaching, nondisproportionate-share hospital in an area in which the average wage index is 1.00, and they contain only the labor and nonlabor portions of the rate.

For example, routinely available data can be used to determine whether appropriate patients with myocardial infarction received beta-blockers and aspirin, whereas sophisticated chart review, and sometimes even direct observation, is required to detect medication errors or wrong-site surgery. Creating a consumer-driven market for safety is stymied by the same problem: How can the public identify a safe versus unsafe hospital, particularly when most errors can only be identified through voluntary reporting? This dependence on provider self-reports makes it impossible to know whether a large number of error reports is a sign of safety (a “reporting culture”) or of high risk. Moreover, there is little evidence that patients are presently looking at quality or safety data and choosing providers on the basis of the data.<sup>11</sup> At this point, therefore, a hospital investing substantially in buttressing its safety practices and systems is unlikely to recoup this investment in either P4P payments or in more or better-paying patients.

A third way to create a business case for safety might be to pay less for errors, in essence increasing the cost to the organization of allowing unsafe conditions. Medicare recently announced its intention to do just this beginning in fiscal year 2009—not paying hospitals the additional costs of treating certain “conditions that could reasonably have been prevented” and “serious preventable events,” an announcement that generated considerable fanfare.<sup>12,13</sup> In this article, we review some of the issues and challenges

surrounding Medicare’s strategy of “not paying for errors” and its policy implications. We conclude that the policy may well have a beneficial effect on patient safety but that it may generate a number of unintended consequences that will have to be carefully monitored and, if possible, mitigated.

### The Impact of Today’s Payment System on the Business Case for Safety

Medicare reimburses hospitals on the basis of diagnosis-related groups (DRGs), a bundled payment for a given diagnosis. In theory, this payment system should incentivize a hospital to try to prevent errors (let’s say, mistakenly giving a patient with renal insufficiency a nephrotoxic agent, which prolongs the hospitalization) that might lead to costlier care and longer hospitalizations in the setting of a fixed reimbursement. Of course, this dynamic is different if Medicare is not the dominant payer; some other payers cover per-diem charges, which substantially changes the incentives.

However, even under Medicare’s DRG system, the reimbursement is not, in fact, fixed. When the patient develops renal failure, the hospital codes a “modifier”, originally intended to recognize the costs of caring for more severe cases, which increases the payment considerably. Table 1 (above) shows typical payments for common diseases with and without these modifiers. Until now,

Medicare was agnostic about whether the “complication or co-morbidity” (CC) was a manifestation of the illness or an error—it simply wrote a bigger check to account for the higher costs of caring for the CC.

Studies on the cost of medical errors reveal that the existing hospital payment system already provides an incentive for prevention because the average increase in payment is often small (ranging from \$700 per case for pressure ulcers to \$9,000 per case for postoperative sepsis) and the costs to hospitals of treating the complications are, on average, three times higher than that.<sup>14</sup> Moreover, hospitals, particularly those that tend to run full, generally pay close attention to their lengths of stay because shorter hospitalizations open up beds for more admissions. Nevertheless, few hospitals do this accounting as it pertains to the impact of preventable complications. In most cases, the fact that complications are often invisible to senior leaders, are associated with higher reimbursements, and have been generally felt to be unpreventable creates no significant business case to focus resources and attention on preventing errors.

### The Practical Aspects of “Not Paying for Hospital Errors”

The dynamic as just described caused policymakers and payers to consider the notion of withholding payments for preventable adverse events in hospital care. However, which errors should not be paid for? And how could they be identified (remember, most errors come to light through provider self-reports, something that the health care system would like to encourage). And what exactly would “not paying” mean—after all, it would be unfair and even draconian to deny *all* reimbursement for a long and expensive hospitalization in which virtually everything went well but for one relatively mild preventable adverse event.

The first issue was to find a set of conditions that were easily identifiable and represented potentially preventable adverse outcomes. In 2001, the National Quality Forum (NQF), a public-private partnership charged with promoting and certifying evidence-based quality and safety metrics, began focusing on creating a list of “never events”—events so egregious that they “just should not happen in health care today,” in the words at the time of NQF founding president Ken Kizer.<sup>15</sup> Interestingly, one of

the authors [N.F.], who served on the original NQF committee, recalls that the original purpose of the list was to help states and others who wanted to investigate serious, preventable events. However, it was not long before some began to wonder about whether “never events” could be used for payment purposes rather than to facilitate public oversight. Accompanying this change in purpose came an expansion in the types of included events, as the list grew from its initial focus on “how-could-this-happen” types of complications (for example, wrong-site surgery) to a broader, somewhat less sensational list of 28 complications of care judged by NQF to be unambiguously measurable and potentially preventable (Table 2, page 119).

Because many of these conditions would allow for a “complicating condition” DRG code, they provided a scaffolding for a Centers for Medicare & Medicaid Services (CMS) plan to not pay for complications. Recognizing the challenge of measuring these complications and of making the transition to this new model, CMS chose to begin with a starter set of eight conditions (Table 3, page 120), with consideration of adding an additional five (Table 4, page 120) a year later. Although the media framed this initiative as “not paying for errors,” the reality was that when a discharge diagnosis was coded as having one of these complications and there was no evidence that the complication was present at the time of admission, the higher payment normally associated with the complicating condition would not be made.

### Challenges in Implementing the Policy

In our judgment, a policy of withholding payment for adverse events is reasonable when the following criteria are satisfied for each of the events:

- Evidence demonstrates that the bulk of the adverse events in question can be prevented by widespread adoption of achievable practices.
- The events can be measured accurately, in a way that is auditable.
- The events resulted in clinically significant patient harm.
- It is possible, through chart review, to differentiate the adverse events that began in the hospital from those that were “present on admission” (POA).

Let’s examine the initial list of “no-pay diagnoses”

Table 2. The National Quality Forum's List of 28 "Never Events"\*

**Surgical Events**

1. Surgery performed on the wrong body part
2. Surgery performed on the wrong patient
3. Wrong surgical procedure performed on a patient
4. Unintended retention of a foreign object in a patient after surgery or other procedure
5. Intraoperative or immediately postoperative death in an ASA Class I patient

**Care Management Events**

6. Patient death or serious disability associated with a medication error (e.g., errors involving the wrong drug, wrong dose, wrong patient, wrong time, wrong rate, wrong preparation, or wrong route of administration)
7. Patient death or serious disability associated with a hemolytic reaction due to the administration of ABO/HLA-incompatible blood or blood products
8. Maternal death or serious disability associated with labor or delivery in a low-risk pregnancy while being cared for in a healthcare facility
9. Patient death or serious disability associated with hypoglycemia, the onset of which occurs while the patient is being cared for in a healthcare facility
10. Death or serious disability (kernicterus) associated with failure to identify and treat hyperbilirubinemia in neonates
11. Stage 3 or 4 pressure ulcers acquired after admission to a healthcare facility
12. Patient death or serious disability due to spinal manipulative therapy
13. Artificial insemination with the wrong donor sperm or donor egg

**Product or Device Events**

14. Patient death or serious disability associated with the use of contaminated drugs, devices, or biologics provided by the healthcare facility
15. Patient death or serious disability associated with the use or function of a device in patient care, in which the device is used or functions other than as intended
16. Patient death or serious disability associated with intravascular air embolism that occurs while being cared for in a healthcare facility

**Environmental Events**

17. Patient death or serious disability associated with an electric shock or elective cardioversion while being cared for in a healthcare facility
18. Any incident in which a line designated for oxygen or other gas to be delivered to a patient contains the wrong gas or is contaminated by toxic substances
19. Patient death or serious disability associated with a burn incurred from any source while being cared for in a healthcare facility
20. Patient death or serious disability associated with the use of restraints or bedrails while being cared for in a healthcare facility
21. Patient death or serious disability associated with a fall while being cared for in a healthcare facility

**Patient Protection Events**

22. Infant discharged to the wrong person
23. Patient death or serious disability associated with patient elopement (disappearance)
24. Patient suicide, or attempted suicide resulting in serious disability, while being cared for in a healthcare facility

**Criminal Events**

25. Any instance of care ordered by or provided by someone impersonating a physician, nurse, pharmacist, or other licensed health care provider
26. Abduction of a patient of any age
27. Sexual assault on a patient within or on the grounds of the health care facility
28. Death or significant injury of a patient or staff member resulting from a physical assault (i.e., battery) that occurs within or on the grounds of the healthcare facility

\* ASA, American Society of Anesthesiologists; ABO, the ABO Blood Classification System; HLA, human leukocyte antigen. Source: The National Quality Forum: Press Release: *National Quality Forum Updates Endorsement of Serious Reportable Events in Healthcare*. Oct. 16, 2006. <http://www.qualityforum.org/pdf/news/prSeriousReportableEvents10-15-06.pdf> (last accessed Dec. 4, 2007).

against these four criteria:

**ARE THE PREVENTION PRACTICES EVIDENCE-BASED?**

For many of the complications on the upcoming (Table 3) or potential (Table 4) list, particularly those in the area of infection control, there is some evidence of preventability. For example, high rates of adherence to a series of practices (hand hygiene, maximal barrier precautions,

chlorhexidine skin antiseptics, optimal catheter site selection, daily assessment of line necessity [with removal of unnecessary lines], and avoidance of the femoral site) led to a remarkable 66% reduction in the rate of catheter-related bloodstream infections in approximately 100 Michigan intensive care units.<sup>16</sup> The evidence for preventing urinary tract infections (UTIs) is less compelling—here, the key intervention appears to be early removal of indwelling catheters, facilitated by automatic stop orders

**Table 3. Eight Conditions for Which CMS Plans to Withhold Reimbursement\***

**Hospital-acquired infections**

1. Catheter-associated urinary tract infections
2. *Staphylococcus aureus* bloodstream infections
3. Surgical site infections

**Other complications of care**

4. Pressure ulcers
5. Objects left in during surgery
6. Air embolism
7. Blood-type incompatibility
8. Hospital injuries (including burns and falls)

\* CMS, Centers for Medicare & Medicaid Services.

**Table 4. Five Conditions for Which CMS Is Seeking More Comment Before Adding Them to the Nonreimbursable List\***

**Hospital-acquired infections**

1. Ventilator-associated pneumonia
2. Vascular catheter-associated infections
3. *Clostridium difficile*-associated disease
4. Methicillin-resistant *staphylococcus aureus* infections

**Other complications of care**

5. Wrong-site surgery

\* CMS, Centers for Medicare & Medicaid Services.

or computerized reminders.<sup>17,18</sup> Surgical site infections (note that the only surgical infection on the proposed list is mediastinitis following coronary bypass grafting; the others were felt to not be clearly identifiable and attributable to suboptimal care through chart review) can be partly prevented through appropriate use of prophylactic antibiotics, use of clippers rather than razors for hair removal, tight postoperative glucose control, and maintenance of postoperative normothermia.<sup>19,20</sup> Other studies have shown that several practices, particularly elevation of the head of the bed and daily interruption of sedation, can decrease the frequency of ventilator-associated pneumonia.<sup>21,22</sup>

Once we leave infection control, the evidence base becomes more tenuous. A number of suggested activities have been promoted for preventing pressure ulcers. For example, in its Prevent Pressure Ulcers intervention, the Institute for Healthcare Improvement's 5 Million Lives Campaign recommends six essential elements of care—daily skin inspections, keeping the patient dry, treating overly dry areas with moisturizers, optimizing nutrition and hydration, and minimizing skin pressure,<sup>23</sup> and there are some anecdotal reports of success.<sup>24,25</sup> Yet there is little robust, validated evidence of preventability. Similarly, the efficacy of a number of commonsensical fall-prevention strategies (bed alarms, specially padded floors, lowering the mattress) has not been convincingly demonstrated,<sup>26</sup> and studies of the effectiveness of hip protectors have yielded mixed results.<sup>27,28</sup> The same is true for the prevention of air embolism, blood-type mismatches, and retained

objects in surgery—they are all terrible adverse events that seem likely to be preventable, but none have prevention strategies that have been validated in high-quality, rigorous studies.

**CAN THE EVENTS BE MEASURED ACCURATELY?**

Validated, standardized definitions are critical to the implementation of Medicare's strategy. If the definitions are vague, there will be significant opportunity for "gaming" or biased ascertainment of complications. In this regard, the decades-long efforts by the infection control community and the Centers for Disease Control and Prevention to create standard definitions for hospital-acquired infections was an important antecedent to the present effort.<sup>29</sup> The definitions for hospital-acquired urinary and catheter-associated infections are reasonably standard, and most hospitals have infection control officers who monitor these areas. Ventilator-associated pneumonia, though, is notoriously difficult to diagnose.<sup>30</sup> The diagnosis of pressure ulcers can be subjective (unless they are very severe); this subjectivity will undoubtedly influence both the hospital diagnosis and the POA determinations. There is no ambiguity about the presence of retained surgical instruments when they are found, but they can be present for months or years before being detected.<sup>31</sup>

**DO THE EVENTS LEAD TO CLINICALLY SIGNIFICANT HARM?**

At present, the policy makes no distinction between

trivial and significant harm. Consider the issue of falls: Will hospital payment be reduced when a patient slips and sustains a cut that can be treated with a band aid? Practically, this will not be a major issue with the introductory list because most of the events are generally associated with significant harm. Moreover, one can argue that an event with trivial consequences should never have led to higher payments in the first place. However, we worry that this distinction may become important with the addition of items over time (particularly when these events are also reported publicly), and therefore it is crucial to establish the principle that significant harm is required to withhold payment.

### IS IT POSSIBLE TO DETERMINE WHETHER THE COMPLICATIONS WERE PRESENT ON ADMISSION?

Presently, there is no mechanism by which CMS can determine, through analysis of its administrative data, whether any of the CCs were present on admission. Consequently, CMS has developed codes to document POA; the software that can capture these codes became ready on January 1, 2008. The feasibility and validity of these codes have been tested in only a limited way.<sup>32</sup> California and New York have allowed POA coding for several years, but because POA designation had few consequences, the accuracy of these designations has not been carefully evaluated. Moreover, they are likely to be the source of many unintended consequences, perhaps even clinically inappropriate care.

For example, hospitals will now be under tremendous pressure to document evidence of UTIs and pressure ulcers at the time of admission. One can expect that virtually all Medicare patients—and ultimately, probably all adults, as other insurers follow Medicare's lead—will have urinalyses and head-to-toe skin exams on admission. One might argue that such examinations represent high-quality care (in the case of the skin exam) or that the cost and risks of the test are low (in the case of the urinalysis). However, what will the criteria for an “early decubitus ulcer” be? Is there any doubt that this diagnosis will become America's next epidemic, as hospitals defend themselves against the possibility of having their compensation cut for the later emergence of pressure ulcers in their elderly, bed-bound patients? And how many “UTIs” will be found on admission, leading to clinically inappro-

priate antibiotics in elderly patients whose urinary tracts have chronic, low-level bacterial colonization?<sup>33</sup> Moreover, some authorities are now recommending that all hospitalized patients be screened for methicillin-resistant *Staphylococcus aureus* infection (and treated and isolated if infection is found), but this strategy is highly controversial in the infection control community and has only mixed supportive evidence.<sup>34</sup>

### Unexpected and Potentially Negative Consequences of the New Policy

The response of health care organizations to new regulations and payment reforms is relatively predictable. The organizations (hospitals in this case) can be expected to adapt in ways that maximize compliance and minimize risk (for example, of loss of revenue, accreditation failure) while doing what they can to preserve their usual functions and culture. In the case of the new Medicare policy, these responses are likely to lead to many consequences, some unintended. One predictable consequence is that the included complications will receive extra attention, perhaps at the cost of other equally important areas not covered by the policy, such as medication, transitional, or diagnostic errors. For some of the complications on the list, substantial energy and resources will be expended on myriad prevention efforts, despite the absence of evidence-based best practices. In other areas, the new policy may lead to “gaming”—efforts to change documentation to minimize the negative impact of the policy on the bottom line without any true improvement in clinical quality.<sup>35</sup> In still other areas, the POA determinations will be complex, expensive, and clinically inappropriate. Not only might this be this damaging in its own right, it poses the risk that clinicians and administrators will come to see the entire policy as a bureaucratic obstacle course to be gamed wherever possible, rather than a serious effort to prevent harm.

### Is “Not Paying for Errors” a Good Idea?

The last decade has shown that creating a business case for safety and quality is an important part of an overall strategy to promote adoption of evidence-based improvement strategies. Moreover, even when today's evidence base is lacking, it might be that the new set of incentives generated by the Medicare policy will spur hospitals, funders, and

researchers to new heights of innovation, thereby improving the evidence base surrounding prevention over time. Because of this, we believe that the new policy might well have a net positive effect on patient safety, notwithstanding all the challenges that we have enumerated.

That said, there will undoubtedly be unfairness (some of the “errors” on the Medicare list are not fully preventable, even with pristine care), accompanied by some gaming and other wasteful activities (particularly around POA determinations). For most hospitals, the dollars at risk will be fairly small, both because most of the adverse events on the list are unusual and because patients with any complicating conditions often have more than one (in which case hospitals will still receive their extra payments, even if one of the conditions was on the “no pay” list). For these reasons, although we are likely to hear anecdotes about CMS’s new strategy leading providers to eschew Medicare patients or causing safety net providers to go out of business, these seem like unlikely outcomes. In fact, one of the policy’s virtues is that, because the notion of not paying for errors makes a great soundbite (one example: articles about the policy were the most popular safety articles on the Agency for Healthcare Research and Quality (AHRQ) Patient Safety Network [<http://psnet.ahrq.gov>] for several weeks), its impact is likely to be larger than one would predict from the actual monetary shifts. For this reason, we believe that this strategy is likely to engender more change than an alternative strategy of paying more for fewer adverse events, although it would be reasonable to test these two alternatives for both intended and unintended consequences.

The degree to which the policy adheres to the four principles we outlined above will markedly influence the chances that its positive aspects will outweigh the negative ones. However, the experience of the young patient safety movement is that even commonsensical practices and policy initiatives can cause harm that must be anticipated, measured, and mitigated. For example, computerization creates new classes of mistakes,<sup>35</sup> and reductions in house-staff duty hours can lead to handoff errors.<sup>36</sup> Some performance measures will prove to be flawed.

In light of all of this uncertainty and risk, “not paying for errors” should be viewed as a bold experiment and its initial implementation a pilot study, whose consequences should be carefully monitored. In particular, the experi-

ence of hospitals with POA designation should be carefully assessed to determine its accuracy, the resources it takes to code it, and whether it is serving its intended purpose. Medicare and other payers will need to fund research that helps identify (in a way that minimizes measurement burden, bias, and potential for gaming) preventable adverse events, as well as evidence-based strategies to prevent them.

Finally, it will be important for Medicare—and other payers embracing this strategy—to be clear about the rationale behind the policy to gain and hold provider and hospital administrator acceptance. The strategy’s justification is not that Medicare believes that most doctors or hospitals don’t care about errors (or even worse, that they are trying to harm patients because of the economic incentives). Rather, the policy flows from our new understanding that most errors represent system problems and that fixing such systems takes substantial institutional and personal focus, time, and resources. With this paradigm in mind, careful implementation of this policy may generate new levels of system change and fewer preventable deaths. **J**

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### References

1. Institute of Medicine: *To Err is Human: Building a Safer Health System*. Washington DC: National Academy Press, 2000.
2. Wachter R.M., Shojania K.G.: *Internal Bleeding: The Truth Behind America’s Terrifying Epidemic of Medical Mistakes*. New York: Rugged Land, 2004.
3. Millenson M.L.: Pushing the profession: How the news media turned patient safety into a priority. *Qual Saf Health Care* 11:57–63, Mar. 2002.
4. Pronovost P.J., Miller M., Wachter R.M.: Tracking progress in patient safety: An elusive target. *JAMA* 296:696–699, Aug. 9, 2006.
5. National Quality Forum (NQF): *Serious Reportable Events in Healthcare 2006 Update: A Consensus Report*. Washington DC: NQF, 2007.
6. Devers K.J., Pham H.H., Liu G.: What is driving hospitals’ patient-safety efforts? *Health Aff (Millwood)* 23:103–115, Mar.–Apr. 2004.
7. Wachter R.M.: The end of the beginning: Patient safety five years after “To Err is Human.” *Health Aff (Millwood)*, Nov. 30, 2004.

- <http://content.healthaffairs.org/cgi/content/abstract/hlthaff.w4.534> (last accessed Dec. 4, 2007).
8. Berwick D.M., et al.: The 100,000 Lives Campaign: Setting a goal and a deadline for improving health care quality. *JAMA* 295:324–327, Jan. 18, 2006.
  9. Rosenthal J., Booth M.: *Maximizing the Use of State Adverse Event Data to Improve Patient Safety*. Portland, ME: National Academy for State Health Policy, 2005.
  10. Barach P., Small S.D.: Reporting and preventing medical mishaps: Lessons from non-medical near miss reporting systems. *BMJ* 320:759–763, Mar. 18, 2000.
  11. Schneider E.C., Lieberman T.: Publicly disclosed information about the quality of health care: Response of the US public. *Quality in Health Care* 10:96–103, Jun. 2001.
  12. Pear R.: Medicare says it won't cover hospital errors. *The New York Times*, Aug. 19, 2007. [http://www.nytimes.com/2007/08/19/washington/19hospital.html?\\_r=1&oref=slogin](http://www.nytimes.com/2007/08/19/washington/19hospital.html?_r=1&oref=slogin) (last accessed Dec. 30, 2007).
  13. Rosenthal M.B.: Non-payment for performance? Medicare's new reimbursement rule. *N Engl J Med* 357:1573–1575, Oct. 18, 2007.
  14. Zhan C., et al.: Medicare payment for selected adverse events: Building the business case for investing in patient safety. *Health Aff (Millwood)* 25:1386–1393, Sep.–Oct. 2006.
  15. Vastag B., Kenneth W., Kizer K.: Health care quality evangelist. *JAMA* 285:869–871, Feb. 21, 2001.
  16. Pronovost P., et al.: An intervention to decrease catheter-related bloodstream infections in the ICU. *N Engl J Med* 355:2725–2732, Dec. 28, 2006.
  17. Saint S., et al.: Are physicians aware of which of their patients have indwelling urinary catheters? *Am J Med* 109:476–480, Oct. 15, 2000.
  18. Saint S., et al.: A reminder reduces urinary catheterization in hospitalized patients. *Jt Comm J Qual Patient Saf* 31:455–462, Aug. 2005.
  19. Van den Berghe G., et al.: Intensive insulin therapy in critically ill patients. *N Engl J Med* 345:1359–1367, Nov. 8, 2001.
  20. Melling A.C., et al.: Effects of preoperative warming on the incidence of wound infection after clean surgery: A randomised controlled trial. *Lancet* 358:876–880, Sep. 15, 2001.
  21. van Nieuwenhoven C.A., et al.: Feasibility and effects of the semirecumbent position to prevent ventilator-associated pneumonia: A randomized study. *Crit Care Med* 34:396–402, Feb. 2006.
  22. Kress J.P., et al.: Daily interruption of sedative infusions in critically ill patients undergoing mechanical ventilation. *N Engl J Med* 342:1471–1477, May 18, 2000.
  23. Institute for Healthcare Improvement: *Prevent Pressure Ulcers: How-To Guide*. <http://www.ihl.org/IHI/Programs/Campaign/PressureUlcers.htm> (last accessed Dec. 6, 2007).
  24. Courtney B.A., Ruppman J.B., Cooper H.M.: Save our skin: Initiative cuts pressure ulcer incidence in half. *Nurs Manage* 37:36,38,40 passim, Apr. 2006.
  25. Gibbons W., et al.: Eliminating facility-acquired pressure ulcers at Ascension Health. *Jt Comm J Qual Patient Saf* 32:488–496, Sep. 2006.
  26. Wachter R.M.: *Understanding Patient Safety*. New York: McGraw-Hill, 2008.
  27. Agostini J.V., Baker D.I., Bogardus S.T.: Prevention of falls in hospitalized and institutionalized older people. In Shojania K.G., et al. (eds.): *Making Health Care Safer: A Critical Analysis of Patient Safety Practices*. Evidence Report/Technology Assessment No. 43, AHRQ Publication No. 01-E058, 2001. <http://www.ahrq.gov/clinic/ptsafety/> (last accessed Dec. 4, 2007).
  28. Kiel D.P., et al.: Efficacy of a hip protector to prevent hip fracture in nursing home residents: The HIP PRO randomized controlled trial. *JAMA* 298:413–422, Jul. 25, 2007.
  29. Gerberding J.L.: Hospital-onset infections: A patient safety issue. *Ann Intern Med* 137:665–670, Oct. 2002.
  30. Klompas M., Platt R.: Ventilator-associated pneumonia: The wrong quality measure for benchmarking. *Ann Intern Med* 147:803–805, Dec. 2007.
  31. Gawande A.A., et al.: Risk factors for retained instruments and sponges after surgery. *N Engl J Med* 48:229–235, Jan. 16, 2003.
  32. Naessens J.M., et al.: Do complication screening programs detect complications present at admission? *Jt Comm J Qual Patient Saf* 30:133–142, Mar. 2004.
  33. Hecker M.T., et al.: Unnecessary use of antimicrobials in hospitalized patients: Current patterns of misuse with an emphasis on the antianaerobic spectrum of activity. *Arch Intern Med* 163:972–978, Apr. 28, 2003.
  34. Henderson D.K.: Managing methicillin-resistant staphylococci: A paradigm for preventing nosocomial transmission of resistant organisms. *Am J Infect Control* 4(5 suppl 1):S46–54, discussion S64–73, 2006.
  35. Wachter R.M.: Expected and unanticipated consequences of the quality and information technology revolutions. *JAMA* 295:2780–2783, Jun. 21, 2006.
  36. Okie S.: An elusive balance: Residents' work hours and the continuity of care. *N Engl J Med* 356:2665–2667, Jun. 28, 2007.