Emerging Issues in Health-Care Reimbursement

Changes to Medicare reimbursement rules in recent years, along with expansion of insurance coverage by the emerging implementation of the Patient Protection and Affordable Care Act\(^1\) and Health Care and Education Reconciliation Act of 2010\(^2\) (collectively, “Health Care Reform Laws”) indicate potential uncertainties about how health-care expenditures will be reimbursed. The regulatory changes suggest that the universe of “allowed” procedures is expanding, and risk pools are expected to change with the introduction of previously uninsured patients into the managed care system. Companies and other organizations need to understand how changes prompted by the Health Care Reform Laws will impact business practices and performance.

In addition, formal oversight hearings in 2009 and reports sponsored by Senator Rockefeller\(^3\) and the New York Attorney General\(^4\) investigating payment practices for reimbursement of “out-of-network” health insurance benefits highlighted long-standing tensions between managed-care companies and medical providers. These investigations and related litigation have underscored the complexity of reimbursement issues. There are substantial disagreements over the reliability of data to understand health-care charges and the appropriateness of the rules used by insurance carriers for reimbursement. Whether the situation is improved or exacerbated by the Health Care Reform Laws and greater consumer involvement in health-care decision making is an open question.

In this rapidly changing environment, organizations will need to address the implications of reimbursement rules for their investments and operational planning as the debate about the cost of new benefits and their payment unfolds. In this newsletter, we summarize some of the major scientific and technical issues raised by the reimbursement discussions.

**Insurance Products and Markets**

Insurance mandates, the creation of health benefit exchanges, the inclusion or exclusion of certain services, market rules, and reporting requirements are expected to affect insurance product offerings and their pricing. The reforms likely will change the composition of member populations, risk pools, and insurance products. In addition, the Health Care Reform Laws include a
provision to award grants to States establishing centers at academic or other nonprofit institutions that collect and analyze medical reimbursement information from health insurance issuers and make the information available to the public via the Internet. Economic and statistical issues relating to pricing and benchmarking will be fundamental to developing new insurance products and reimbursement data centers in this environment.

While analyzing physician charges for thousands of different health-care services, Exponent noted three substantial scientific and technical challenges: data reliability, product market definition, and geographic market definition. The reliability of information used as a “bright line” for benchmarking typical charges and variation in pricing is an important issue for service providers and managed-care companies because it affects current reimbursements and, potentially, the cost and availability of future insurance products. Hundreds of millions of health-care procedures are delivered annually in the U.S., and managing the vast amount of data to create distributions of billed charges is a demanding task. The complexity of managing the data is compounded by practical decisions regarding how medical procedures are grouped together (i.e., the definition of similar products in the same market), as well as the definition of relevant geographic market areas for delivery of the service. Moreover, in the health-care marketplace, consumers may not have the necessary information (or the capacity) to comparison shop among providers, as they would for most other consumer products. This market failure contributes to a marketplace in which some providers’ charges might vary substantially from a competitively determined rate for the service. In light of these marketplace challenges, as well as an environment in which consumers will likely become more empowered to be proactive in their decision making about health-care service providers and insurance coverage, the sources of information available to consumers, providers, and managed-care companies are likely to increase in importance.

**Epidemiologic Assessment of the Uninsured**

The Health Care Reform Laws are anticipated to provide coverage for millions of people who do not now have health insurance. Costs have been a major concern, although another concern is how the health-care system will be able to serve an expanding need for services, if the number of critical resources such as primary care physicians is limited. Uninsured people, however, have been using the health-care system all along, although it is likely—and perhaps even desirable—that the newly insured will use it differently from the past. The shift that is often assumed to follow the reform is an increased use of services for routine therapies for chronic disease (e.g., diabetes, hypertension, and coronary artery disease) offset by decreased use of emergency room crisis care and costly prolonged hospital stays.

As a scientific matter, epidemiologists and health economists have used several large-scale national databases to assess quantitative differences in the use of health services and in health status between the uninsured and insured. To date, the research tends to support the expected shift toward routine treatments and a reduction in adverse outcomes that would require costly hospitalizations. For example, uninsured adults with chronic disease are less likely to see a physician and more likely to use emergency care than those with insurance.5 Previously uninsured adults acquiring Medicare coverage have fewer adverse cardiovascular outcomes over time than expected.6 Moreover, after years of Medicare coverage, the difference in outcomes between insured and previously uninsured adults levels off. Another example comes from a study of children...
receiving health services between 1995 and 2003. This study found that those with private insurance had less severe disease, significantly lower use of the emergency room, and lower hospitalization costs compared to those with public or no health insurance. These examples support the position that insurance comparable to private insurance could save billions of dollars annually in the United States. Consequently, natural experiments that compare insured and uninsured samples are important to understand cost impacts for specific geographic areas or health-care systems. Related research to further understand the impact of the Health Care Reform Laws will require rigorous analysis of such issues as the prevalence and incidence of disease, the factors influencing patterns of care, and descriptive epidemiologic characterization of patient populations.

Wellness & Nutrition Programs

The newly enacted reforms place a heavy emphasis on activities to improve health proactively, including wellness and nutrition programs. Emphasis on evidence-based and community-based prevention suggests the need for methods to test and prove the effectiveness of such wellness programs in terms of cost, quality of life, and productivity. Employers need to consider how to structure these programs, estimate both start-up and long-term costs, and create incentives for employees. Organizations will want to investigate the adequacy of their existing resources and benchmark their current and planned program design and performance against best practices. Understanding how employees’ participation in wellness programs will be reimbursed and how programs may be financed will affect program planning and the framework for promoting a healthier workplace environment.

For example, a pharmaceutical company that offers a smoking cessation product might be interested in identifying the potential cost savings to an employer from offering this product, along with counseling and support, to employees. This type of problem was addressed by Exponent with an interactive model that estimated the cost to employers associated with offering the product and compared it to the benefits—specifically, lower health-care costs and increased productivity due to fewer smoking-related illnesses. The model allows the user to select from variables such as the region of the country, the type of industry, and details of the cessation program, to estimate employer costs. This type of model can help estimate the return on investment that employers need to know to select among alternative benefit offerings.

Impact of Device-Related Infections on Reimbursement

The application of implantable devices in medicine has increased dramatically over the past 30 years. Despite these tremendous advances in melding the engineering and medical sciences, device-related bacterial infections are the single greatest challenge to the widespread application of many medical implants. Urinary catheters account for the greatest number of device-related infections, although bloodstream infections arguably have a greater impact on patient morbidity and mortality. These devices also are responsible for a significant fraction of hospital-acquired (nosocomial) infections. The cost of these nosocomial infections has a significant impact on the cost of health-care delivery; for example, management of a bloodstream infection can exceed $50,000 per patient.

In recognition of the role that some medical devices (catheters, in particular) can play in the etiology of nosocomial infections, changes are being implemented
to hospital and clinic Medicare reimbursement schedules. Payments to hospitals and clinics for eight secondary conditions that are considered to be preventable complications of medical care are being reduced or eliminated. These conditions include catheter-related (and other) infections that were not present at the time of admission. While device handling and implantation protocols are certainly important factors in determining patient outcome, device-related infections can still occur under the most stringent of patient-care protocols.

Advances in materials engineering and surgical techniques—coupled with the demographics of an aging population—have led to significant increases in device implantations. Exponent has extensive experience with the design and development of medical devices, including antimicrobial coatings and coating systems designed to reduce the incidence of device-related infections. With the changes in Medicare reimbursement policies, the science of infection prevention and product performance are likely to drive research and innovation in the engineering of medical devices.

More In-Depth Analysis

To assist our clients in understanding various issues in the area of health-care reimbursement, Exponent is developing Internet seminars (“webinars”) on specific topics that are of interest to the health, regulatory, and legal communities. Each webinar in this series on health-care reimbursement will consist of a focused presentation of 20–25 minutes, followed by 15–20 minutes of questions and discussion. Some of the presentations under development are listed below:

Pricing & Benchmarking Health-Care Services
Robin Cantor, Ph.D.
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Epidemiologic Assessment of the Uninsured
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Wellness & Preventive Care
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Impact of Device-Related Infections on Reimbursement
Marc Mittelman, Ph.D., M.S.
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A schedule of topics, times, and dates will be finalized and sent out under separate cover.

1 Patient Protection and Affordable Care Act, Public Law No: 111–148.
3 U.S. Senate Committee on Commerce, Science, and Transportation, “Underpayment to Consumers by the Health Insurance Industry,” Staff Report for Chairman Rockefeller (June 24, 2009).
6 McWilliams JM, Meara E, Zaslavsky AM, Aygian JZ. Health of previously uninsured adults after acquiring Medicare coverage. JAMA; 2007 298(24):2886–2894.
About Exponent Health Sciences

Exponent Health Sciences and Economics

Exponent is a leading engineering and scientific consulting firm dedicated to providing solutions to complex problems. Exponent has one of the foremost health sciences consulting practices in the United States. We have expanded our practice to include economics at the interface of science and technology. Our scientists, economists, physicians, and regulatory specialists evaluate a full range of environmental and public health issues, including public health and economic effects; potential health effects associated with environmental agents, chemicals, and consumer products; food safety and nutrition; and pharmaceutical products. Our clients rely on us for incisive and objective assessments that address physical, chemical, biological, and economic phenomena, to arrive at solutions that can be relied upon to make important decisions. In addition, Exponent performs research and analysis in more than 90 science- and engineering-related technical disciplines.

More information about our Health Sciences practice, as well as our other capabilities, can be found at www.exponent.com.

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