FROM THE EDITOR-IN-CHIEF

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The Promise Of Biomedical Innovation

BY ALAN R. WEIL

Biomedical innovation represents the best and enables the worst of our health care system. We have conquered diseases, eased suffering, and accelerated recovery from illness and injury through application of human ingenuity. Lives are longer, richer, and fuller because we have dedicated ourselves to the continuous quest for better care. The simplest interaction with the health care system engenders awe at the arsenal we have amassed in the name of improving the lives of patients.

Yet our shift to high-tech care means that many people die in the hospital despite their stated preference to spend their final days more peacefully at home. The adoption of new technologies has been the primary source of health care cost growth over the past few decades, placing the very fruits of our labor increasingly out of reach. Investments in innovation occur where financial returns are greatest or political forces are strongest, which may not align with the most pressing health care needs.

THE VALUE OF INNOVATION

James Robinson, who, along with Dana Goldman, served as one of the advisors for this special Health Affairs issue on biomedical innovation, kicks off the discussion by describing the shift in this innovation that must occur as health care faces new constraints. While the immediate implication may be fewer resources available for innovation, he concludes that this shift “has the potential to increase the social value of innovation by focusing industry on design, pricing, and distribution principles that are more closely aligned with the preferences—and pocketbooks—of its customers.”

Examining a very specific innovation—robot-assisted surgery for kidney cancer—Amitabh Chandra and colleagues trace a path to better care. They find that growing access to robotic surgery coincided with growing use of partial nephrectomy, which offers better survival rates. They calculate a five-to-one benefit-to-cost ratio associated with adoption of robot-assisted surgery.

Peter Ubel and David Asch remind us that we can make room for innovation only if we are willing to let go of our old habits. Noting that “de-innovation is not the mirror image of innovation,” they explore the barriers to shedding outmoded practices and consider ways to overcome those barriers.

THE ECONOMICS OF INNOVATION

The resources available for innovation depend heavily upon the expected financial returns to those investments. Ernst Berndt and colleagues describe a sharp decline in returns on investments in drug development from the 1990s to the late 2000s. James Chambers and colleagues find that Medicare is less willing to cover new medical interventions than it was in the past, holding constant the level of evidence to support the intervention. Jonathan Fleming finds that venture capital investments in life sciences have shifted to later in the development of innovations, suggesting a perception, if not a reality, that the path to economic success has become less certain.

Public policy has a tremendous effect on the economics of innovation. Policy can directly support innovation through payment, as John Hernandez and colleagues discuss. They note that Medicare’s program that adds on payments for innovation is much narrower than similar programs in Germany, France, and Japan.

INTELLECTUAL PROPERTY AND INNOVATION

Just last month a Food and Drug Administration (FDA) panel recommended the approval of the first biosimilar drug: a version of the cancer drug Neupogen. Henry Grabowski and colleagues review the current framework for patents and intellectual property for drugs and biologics, weighing the objectives of encouraging innovation and competition and considering alternatives to the current system. Benjamin Falit and colleagues contrast the challenging pathway for biosimilars with the more hospitable environment for approval of generic drugs. We will watch the emerging biosimilar market with great interest.

DATAWATCH

After a five-year hiatus, DataWatch has returned in this issue with a fascinating look by Patricia Neuman and colleagues at the distribution of Medicare spending by enrollee age and service category. As in the past, DataWatch will highlight quantitative findings from a broad range of data sources with an emphasis on graphics. We are grateful to the Physicians Foundation for providing us with the support to include DataWatch in this and future issues.

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