Forecasting the Future of Health Care: Challenges & Opportunities

Jeff Bauer, Ph.D.

Copyright 2011, Jeffrey C. Bauer
Disclaimers

• My comments do not necessarily represent positions of exl pharma or any other clients.

• My criticism of one faction’s positions on health reform does not imply support for any other faction’s positions.

• After 40+ years in health care, I believe American enterprise can create the world’s best health system.
• Honoré Daumier, 1858
The Take-Homes in Tweets: Environmental Assessment

Predictions about health care’s futures are impossible because unprecedented forces will create a new realm of possibilities.

• American health care will become remarkably diverse.

• Health care will change more in this decade than it did in the past 50 years.

• Problems and solutions must be defined in the context of new resources and opportunities, not history and tradition.

• Business partners can collaborate to optimize health care delivery through strategic responses to anticipated changes.

• Forecasting will replace predicting as the appropriate tool for looking at the future.
PREDICTING
Making a statement of what will happen, when

- Assumes continuation of historic relationships (no change in climate)
- Projects a single outcome at specified level of confidence
- Focuses responsive action on the predicted outcome
- Generates a one-size-fits-all solution (e.g., practice standards)

National health spending is projected to continue to increase as a share of GDP over the next decade.

FORECASTING
Estimating the probabilities of possibilities

- Incorporates changes in causal relationships (new climate)

- Projects multiple outcomes (less/same/more, worse/no change/better)

- Empowers strategy to influence different outcomes...simultaneously.

- Enables custom solutions for different problems (e.g., standard practices)
I don’t think of myself predicting things. I’m expressing possibilities. Things that could happen. To a large extent it’s a question of how badly people want them to. The purpose of thinking about the future is not to predict it but to raise people’s hopes.

-- Freeman Dyson
The Take-Homes in Tweets: Environmental Assessment

The clinical paradigm is shifting from one-size-fits-all to personalized-predictive medicine.

- Many diseases with a single appearance are now recognized as different conditions with a range of biological instructions.

- Therapies increasingly will be matched to each patient’s specific disease characteristics (pharmacogenomics).

- Management of chronic illness will become more cost-effective than treatment of acute conditions.

- Molecular medicine will increase the relative importance of pharmaceutical therapy.

- Team-based care will become the most effective approach to health (patient-centered medical homes).
All-American gene. This “visual genotype” for the breast cancer gene *BRCAT* shows common variations in 90 people representing the U.S. population.

Source: Science, April 25, 2003
RESULTS
At 6 months, overall survival was 84% (95% confidence interval [CI], 78 to 89) in the vemurafenib group and 64% (95% CI, 56 to 73) in the dacarbazine group. In the interim analysis for overall survival and final analysis for progression-free survival, vemurafenib was associated with a relative reduction of 63% in the risk of death and of 74% in the risk of either death or disease progression, as compared with dacarbazine (P<0.001 for both comparisons). After review of the interim analysis by an independent data and safety monitoring board, crossover from dacarbazine to vemurafenib was recommended. Response rates were 48% for vemurafenib and 5% for dacarbazine. Common adverse events associated with vemurafenib were arthralgia, rash, fatigue, alopecia, keratoacanthoma or squamous-cell carcinoma, photosensitivity, nausea, and diarrhea; 38% of patients required dose modification because of toxic effects.

CONCLUSIONS
Vemurafenib produced improved rates of overall and progression-free survival in patients with previously untreated melanoma with the BRAF V600E mutation. (Funded by Hoffmann–La Roche; BRIM-3 ClinicalTrials.gov number, NCT01006980.)
The Take-Homes in Tweets: Environmental Assessment

The data base for effective health care will shift from paper records to integrated, multi-platform networks of digital data.

- Communications and information technologies will be the necessary foundation of good medical practice.
- Telemedicine (virtual visits) will replace a substantial portion of hands-on care.
- Digital information systems will enable real-time comparative-effectiveness research (CER).
- e-health and social media tools will enhance patient-provider interactions and improve patient behavior.
The Doctor Will See You Now. Please Log On.

By MILT FREUDENHEIM
Published: May 28, 2010

Dr. Jerry Jones uses two-way video at his home in Houston to consult with a patient across town. Dr. Jones is under contract to NuPhysicia, one of the new telemedicine companies.
More Doctors Are Prescribing Medicines Online

By TIMOTHY W. MARTIN

Doctors are increasingly prescribing medications electronically, abandoning the traditional paper scripts that can result in drug errors due to hard-to-read writing or coverage denials by a patient's insurer.

The number of e-prescriptions nearly tripled last year to 191 million from the previous year's 68 million, representing about 12% of the 1.63 billion original prescriptions, excluding refills, according to Surescripts LLC, whose online network handles the bulk of the electronic communications. The growth has accelerated. For the first three months of this year, nearly one in five prescriptions was filed electronically, Surescripts says. About 25% of all office-based doctors currently have the technology to e-prescribe, more than twice as many as at the end of 2008, Surescripts says.
Earlier this year, Mike Dionne signed up for Polka, a smart-phone application that lets him use his iPhone to keep tabs on the health of his elderly father, who lives 80 miles away. It tracks his dad's numerous doctors' appointments, his insulin and medication schedule and other health information.

Then in August, a new doctor examining Mr. Dionne's father detected an aneurysm, something the son was able to confirm from afar. Over the phone, Mr. Dionne consulted Polka, the application he and his siblings maintain on behalf of their father, and was able to tell the doctor when the aneurysm was first diagnosed, by which doctor and the last recorded size.
The Do-It-Yourself House Call

Insurer-Endorsed Remote-Monitoring Technology Leads Heart Patients to Take Their Readings at Home

By AVERY JOHNSON

Technology that aims to keep congestive heart failure patients out of the hospital is gaining traction.

The idea is for heart patients to take readings like their weight, blood pressure and other key metrics using wireless and other technologies; the data are then transmitted to a case manager or medical care giver. That way health care givers can catch, and address, warning signs before the patient lands in the ER with shortness of breath or a heart attack. In the past, patients have found such technology difficult to use. But a number of managed-care companies are experimenting with electronic devices meant to make the process easier.

A big benefit is that it allows patients to stay in their homes, but the systems can't catch everything, and patients shouldn't be lulled into a false sense of security by the technology.

WellPoint Inc.'s Anthem unit in California is piloting a wireless scale and blood-pressure cuff that communicates in real time with nurses on alert for fluctuations that can signal heart failure, or when the heart can no longer pump enough blood to the body's organs. Humana Inc. in January will launch a program to track heart patients' vital signs wirelessly and link them up via video to chat with nurses if appropriate.
The Take-Homes in Tweets: Environmental Assessment

Ongoing changes in the American population will shift demands on health care delivery systems.

- Cultural, racial, and ethnic diversification are changing the health problems that providers will be expected to treat.

- Infectious, behavioral, and environmental diseases will become more prevalent as the population changes.

- New disease patterns will increase the relative importance of pharmaceutical therapy.
POPULATION GROWTH
Projected U.S. population growth if immigration and fertility do not change:
Total population in millions

Source: US Bureau of the Census
Cancer Rates Among Asian Americans

Patterns of cancer incidence among the five largest Asian-American groups in California.

Liver cancer

<table>
<thead>
<tr>
<th></th>
<th>MEN</th>
<th>WOMEN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chinese</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Filipino</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Japanese</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Korean</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vietnamese</td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(non-Hispanic)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Incidence rate per 100,000

Stomach cancer

Colon cancer

Lung cancer

Breast cancer

<p>| |</p>
<table>
<thead>
<tr>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Chinese</td>
</tr>
<tr>
<td>Filipino</td>
</tr>
<tr>
<td>Japanese</td>
</tr>
<tr>
<td>Korean</td>
</tr>
<tr>
<td>Vietnamese</td>
</tr>
<tr>
<td>White</td>
</tr>
<tr>
<td>(non-Hispanic)</td>
</tr>
</tbody>
</table>

Incidence rate per 100,000

Prostate cancer

Source: CA, a Cancer Journal for Clinicians

The New York Times
The Take-Homes in Tweets: Environmental Assessment
New approaches to payment will create major changes in the supply and demand for care.

- Government-directed health reform will continue to be a contentious, unresolved issue for the foreseeable future.

- People with health insurance will be expected to pay an increasing share of the bills for their care.

- The complexity of market dynamics and consumer demand will increase.

- Creative partnerships of providers, payers, purchasers, and vendors will build successful new business models.

- No single stakeholder can solve its problems by itself.
Remember the First Law of Parasitism!

Don’t kill the host that feeds you.

No element of society can survive at the expense of other elements.

Protect what you prey upon.
The Take-Homes in Tweets: Environmental Assessment

The delivery system will change significantly due to economic forces to limit expenditures on health care.

• Health care marketplaces will be local and national.

• Successful providers will be accountable for value and price (Value-Based Purchasing).

• More providers and practitioners will align their financial interests to succeed in highly competitive marketplaces.

• Health care and the economy will have a “train wreck” if serious systemic problems are not solved soon.

National health spending is projected to continue to increase as a share of GDP over the next decade.

Positive Actions: Supply Side

All medical enterprises must adopt better ways of doing business by replacing traditional operations with efficient and effective production processes.

- Efficiency is maximizing output for a fixed budget or minimizing costs for a fixed output (i.e., no economic waste).
Waste in medical services is currently estimated at 20% to 35% of total health care spending.

- Additional services necessitated by incorrect and/or unsafe practices
- Widespread use of unproductive or counterproductive clinical interventions
- Approaches to care inconsistent with current evidence
- Failure to use least-expensive resources to achieve desired outputs
- Poor utilization of personnel and facilities (not being “green”)
- Redundant reimbursement procedures with perverse incentives
- Inappropriate balance between acute care, disease management, and prevention
Positive Actions

All medical enterprises must adopt better ways of doing business by replacing traditional operations with efficient and effective production processes.

- Effectiveness is a measure of relative compliance with objective specifications of expected performance (i.e., no unexplained variation).

- Only one variable can be optimized in a system with limited resources, so leaders must decide whether efficiency or effectiveness is priority #1.
“To save money, would you be willing to get your health care from a provider that publicly admits its care is not always as good as it could be? Most people wouldn’t be any more willing to patronize this hospital or medical group than they would be to fly on an airline that admits it gets you (not just their luggage) to their destination most of the time. Hence, providers that accept the imperatives of efficiency and effectiveness must adopt the following goal for their mission statements: Doing it right all the time, as inexpensively as possible! This statement should be in every strategic plan.”

Bauer, Jeffrey C. and Mark Hagland Paradox and Imperatives in Health Care: How Efficiency, Effectiveness, and E-Transformation Can Conquer Waste and Optimize Quality (Productivity Press, 2008)
“Marketing is not only much broader than selling, it is not a specialized activity at all. It encompasses the entire business. It is the whole business seen from the point of view of the final result, that is, from the customer's point of view. Concern and responsibility for marketing must therefore permeate all areas of the enterprise.”

Peter Drucker
Positive Actions: Pharmaceutical Marketing Professionals

Use the digital tools of pharmacy marketing to promote efficiency and effectiveness of health care.

• Actively pursue appropriate integration of marketing and clinical information exchanges.

• Promote marketing’s potential contributions to clinical practice improvement efforts (Phase IV completion, compliance, appropriate use)

• Demand excellence in methodology and data (validity, reliability) and research.

• Envision yourselves as market leaders to create positive change...
“Today, the primacy of biomedical research and technology development is being challenged. Patients, physicians, insurers, and policymakers are all questioning the slow pace of advance, escalating cost, dubious clinical value, inappropriate commercial exploitation, and lure of false hope for patients with serious diseases. The backdrop is growing skepticism of the value of science as a solution to global problems.

Moreover, the mutual trust among patients, clinicians, and researchers, which was so apparent after the 1950s, is in danger of forfeiture. This is due to suspicion that economic self-interest is disrupting medicine’s compact with patients, as exemplified by a number of high-profile ethical lapses in the protection of human research subjects and the involvement of physicians in the marketing activities of companies.”
“It is time for medicine to reinvent itself—for researchers and clinicians to form a strategic partnership and to embrace the goal of exponentially increasing medicine’s value. Physicians need to become part of the solution in the US health care system. The system’s problems should not be addressed by politicians, who are virtually powerless to effect meaningful change in health care until physicians fix the way care is delivered.”
Positive Actions: Pharmaceutical Marketing Professionals

Imagine a great health system -- and get involved in multi-stakeholder partnerships to build it.

• Move aggressively in desired directions, not limited by health reform’s laws and regulations.

• Be accountable for improving the medical marketplace within the new economic reality of fixed resources.

• Collaborate to ensure that health care is provided correctly all the time, as inexpensively as possible...doing more with less.

• Create a success story for a future Digital Pharma Conference!
RENEE MAGRITTE - “LA PRÉVOYANCE”