



SOCIETY OF ACTUARIES

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Using the Internet as a Pricing Tool

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Not too long ago, pricing a new product or benefit often meant spending long hours in a library or making phone calls to providers and associations in hopes of finding enough clinical information and general population data to make a reasonable cost estimate. Today, using the Internet can greatly reduce the time and energy needed to collect this type of information. The Internet also provides a means to keep up to date on current events and to discuss pricing issues with other actuaries.

Clinical Background Information

A basic understanding of what happens in real-life clinical situations is necessary to price a new benefit or product or to determine the impact of new technology on trend. For example, to price an acupuncture benefit, one has to understand:

- What kinds of conditions are treated with acupuncture?
- Is there any consensus of opinion in the medical community regarding the effectiveness of acupuncture?
- What mix of services are performed in conjunction with the acupuncture?
- How long is a typical course of treatment?
- What are the licensing requirements for providers?
- Will the new covered service replace existing covered services, or will it be in addition to existing services?

- Are there new diagnostic or therapeutic techniques in the offing that will increase or decrease the utilization and cost per procedure?

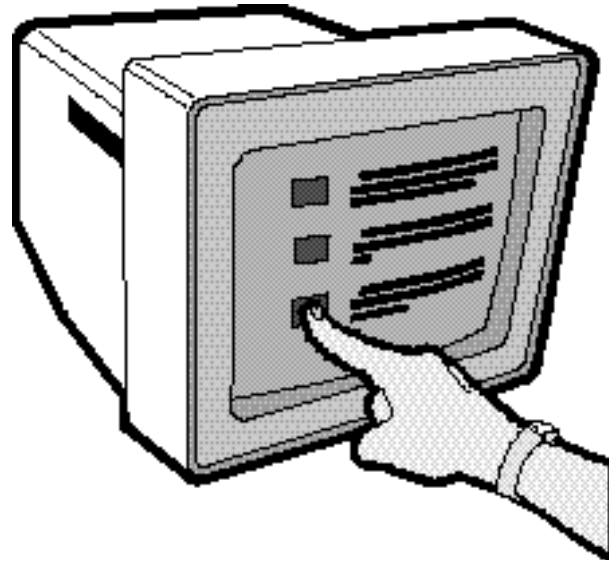
High level answers to these types of questions can be found on consumer-oriented health sites, such as <http://www.intelihealth.com>, <http://www.webmd.com>, or <http://www.mayohealth.org>.

Other sources of information are non-profit disease-advocacy organizations such as the American Cancer Society (<http://www.cancer.org>) and professional associations such as the American Academy of Ophthalmology (<http://www.eyenet.org>). The Medline Plus site (<http://www.nlm.nih.gov/medlineplus>) provides a table of links to many such organizations.

If you need more formal or detailed information, then you may find what you need in a federally-sponsored treatment guideline or consensus statement.

Guidelines and consensus statements are prepared by a panel of professionals practicing in the field. They normally include a review of the applicable research, prevalence data and evidence-based treatment recommendations. The National Guideline Clearinghouse site (<http://www.guideline.gov>) provides a list of guidelines. Other sources of federally-sponsored clinical information include the National Institutes of Health (<http://www.nih.gov>) and the Food and Drug Administration (<http://www.fda.gov>).

Finally, if you need to look at papers published in professional journals, you



can use Medline (<http://www.ncbi.nlm.nih.gov/pubmed>) to find a list of articles that have been written on the subject.

Medline search results usually return only a site for ordering a reprint of the article. Occasionally, the article is online, however.

Defining the Change in Coverage

Two of the key questions asked during the pricing process are “Who is paying what now?” and “Who will be paying what after the change goes into effect?”

If there is only one primary payor, then the answer lies in the applicable contractual language and claims-paying practices. This information is proprietary, so it won't be found on the Internet. Non-profit disease-advocacy organizations, however, often contain information on current industry practices and how a patient can maximize his or her benefits. This information may be helpful in framing the thought process. Also, your company Intranet may contain the specific information you need.

If the change in plan is in response to a legislative mandate, then you probably want a copy of the bill and related

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committee and research reports. For federal legislation, this information may be obtained through <http://thomas.loc.gov> or the Congressional Budget Office site (<http://www.cbo.gov>).

Information for state legislation can generally be accessed through the state Web page. State Web sites use the URL format <http://www.state.ss.us> where "ss" is the 2-digit state abbreviation. For example, the address for Connecticut state site is <http://www.state.ct.us>.

You can often find a more focused discussion of a bill on the American Academy of Actuaries site (<http://www.actuary.org>) or on an industry trade association site, such as the American Association of Health Plans (<http://www.aahp.org>).

If the plan you are pricing is not the only payor, then you also need to consider changes in the payments by the other payor. For Medicare, this information can usually be obtained through the Medicare site (<http://www.medicare.gov>). For Social Security, the site is <http://www.ssa.gov>.

Most cost analyses prepared by outside organizations are based on the most common industry practices. If your company practices vary from the norm, then obviously you should reflect that in your final pricing estimates.

Collecting Data

Credible data based on the experience of the pricing population is always the source of choice for utilization and cost data. This data is also proprietary, so it will not be found on the Internet.

If that data is not available, then experience of a similar population is usually the second choice. Information on both Medicare and Medicaid populations can be found on the Health Care Financing

Administration site. (<http://www.hcfa.gov>).

For other populations covered under a medical plan, one alternative is to purchase an intercompany study sponsored by the Society of Actuaries or by a consulting firm. The Internet can be used for researching availability and contacting the sponsoring organization.

"If data from a similar population can be found or it is impractical to purchase the data, then you may find general population that meets your needs. The federal government provides quite a bit of both high-level and detailed general population data online at no charge."

If data from a similar population can be found or if it is impractical to purchase the data, then you may find general population that meets your needs. The federal government provides quite a bit of both high-level and detailed general population data online at no charge. In addition to the clinical sources mentioned above, the Center for Disease Control (<http://www.cdc.gov>), which includes the National Center for Health Statistics, provides several data sets, including:

- Incidence and prevalence rates for several diseases, including Lyme disease, cancer, and AIDS.
- Surveys such as the *Longitudinal Study of Aging* and the *National Survey of Ambulatory Surgery*
- Downloadable chart books for easy reference including *Health, United States, 2000* and the *International Health Data Reference Guide, 1999*

Both prevalence and cost data may be found on consumer, individual provider, provider organizations and disease advocacy organizations, and occasionally, on consulting firm sites.

Regardless of the source of the data, it must be adjusted for trend, age-sex distributions, benefit richness, geographic, etc. In addition, if the data is not based on the

pricing population, then it must be adjusted for expected differences in utilization between the two populations.

Pricing Methodology

Since the focus of this article is on using the Internet, many important aspects of the pricing process have not been discussed. Both the Society of Actuaries and American Academy of Actuaries have many methodology aids available online including professional specialty guides, and Transaction articles. Also, some consulting firms have case studies online for review.

Data Quality

Data quality is always a key concern to actuaries regardless of the type of data or the source of the data. Some of the key questions used to determine data quality include:

- How objective is the author and/or sponsoring organization?

- How recent is the data?
- Are the underlying methods and assumptions sound?
- Is there sufficient documentation to verify the author's conclusions?
- Does the data reflect the circumstances and population for which it will be used?
- Is there enough detail available to make any necessary adjustments?

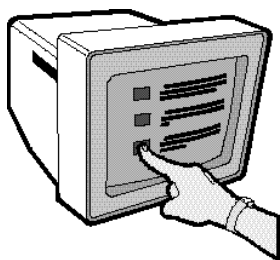
The Internet poses some additional problems, however, because of its dynamic, consumer-oriented nature.

First, if you cite a traditional print source in your documentation, then anyone who wants to, can go to that source for more information. With the Internet, your source may be deleted or changed after your work is complete. As a work-around, it is a good idea to print out or download any information you use in your work, especially work requiring an actuarial statement of opinion.

Second, the quality of information in general and medical information in particular varies considerably on the Internet. So how do you determine the quality of the medical information?

The Healthfinder site (<http://www.healthfinder.gov>) has a white paper on medical information quality that may help you gauge the quality of the information you are using. Also, some sites display an HONcode icon indicating that they adhere to the principles of the Health on the Net Foundation (<http://www.hon.ch>), a Swiss non-profit organization.

Although organizations participating in the HONcode program are



self-regulated, there is a complaint and review process in place. Some of the principles stated by both Healthfinder and HONcode include:

- Does the site clearly separate advertising and sales from health information?
- Clearly state its purpose and sponsors?
- Tell you how it gets its information?

Using the Internet Effectively

At times, the seemingly infinite amount of information can be daunting, especially if you have to find an answer in a short time period. Most people use a search engine to find data, but even with very specific search strings, they almost always return literally thousands of results. One work-around for this is to use a more focused approach to the search using such sites as:

- The Society of Actuaries (<http://www.soa.org>) table of links for sites of interest to actuaries
- The National Association of Health Data Organizations (<http://www.nahdo.org>) for health data
- The Society of Actuaries Ambassador Program for international data
- Fedgate for a complete list of federal government sites (<http://fedgate.org>. Note: the www reference is not needed in this address).

Although the amount of information on the Internet may seem infinite, in reality it is not. If you have questions about a specific site, then you can use the e-mail link to contact the sponsoring organization. If you have a more general question, you can throw it out to the actuarial community using the Society of Actuaries list-serves or discussion forums.

Finally, the Internet does not always provide instant, free access to information. Many sites require you to sign up for an ID before you can access all the data available on the site. Sometimes, you can immediately use the data after you fill out the on-line form. In other cases, the ID requires a subscription fee or proof that your employer is a participating member in the sponsoring organization.

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