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Evaluating Approaches for Adoption of Medical Technologies

A Recently Released SOA Research Report

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A new expensive prescription drug comes on the market. A new expensive radiology procedure is heavily advertised. As an actuary for a health insurance company, how should you evaluate these new technologies?

Robert Lieberthal, Tony Amos and Jessica Lopatto from the Jefferson School of Public Health provide a framework for how actuaries can tackle valuing such new technologies in their recently completed research sponsored by the Society of Actuaries' (SOA's) Health Section. While this sort of evaluation may seem very actuarial in nature (classic cost benefit analysis), actuaries historically have done such analysis based largely on quantitative costs and benefits ($$). The move within managed care to reimbursement based on value brings an enormous base of evidence actuaries historically haven't dealt with—the clinical kind.

Evaluating benefits and costs using clinical evidence is the sweet spot of Health Economics and Outcomes Research (HEOR). The report defines HEOR as the discipline "concerned with determining the value of medical technologies. The methods, findings, and literature of this field allow for the determination of the value of a medical technology." The authors define medical technology in an inclusive way, covering drugs, devices, tests, protocols or procedures. Therefore, as actuaries are increasingly asked to incorporate value into pricing and other core areas, it is advantageous to piggyback off of the substantial body of evidence that HEOR presents.

In addition to the background and overview material on the field of HEOR, a key output from this research is a structured assessment tool that actuaries can use in evaluating new technologies. The four sections of this assessment tool are as follows:

- Classifying the technology—What is the purpose of this new technology? What are the restrictions involved?
- Evidence base—What evidence do we have on the effectiveness of the new technology?
- Applying the evidence—What is the effect on stakeholders? Insurers might be primarily interested in cost while government might be interested in a healthier population.
- Feedback loop—What is the consensus among stakeholders within the company?

Without this framework, knowing how to evaluate a new technology can be a very daunting task. Once you see it, the process to assess value becomes simple and very straightforward. The framework allows an actuary to bring together all of the evidence for a new technology, clinical or otherwise, to more objectively assess value. One noteworthy aspect of the evidence base evaluation is that in gathering the data, the tool prompts one to assess the source, validity and possible bias of the data presented—a very actuarial perspective on data analysis.

This easy-to-read research report gives actuaries an introduction to HEOR and a state-of-the-art evaluation tool, allowing us to adapt HEOR's key measuring systems as we move forward with value-based actuarial work.

The report can be found online at *www.soa.org/research.*