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## Session 58TS

### Credibility and Health Insurance

**Track:** Education and Research

**Instructor:** THOMAS N. HERZOG

*Summary: The instructor presents a tutorial on the application of credibility theory to health insurance. The concept of full credibility and the necessary conditions for experience data to be fully credible are covered.*

**Mr. Thomas N. Herzog:** This talk is a condensed version of an SOA seminar Prof. James Robinson of the University of Wisconsin and I gave in November 1998.

The theoretical part of the talk entailed describing three approaches to credibility: the limited fluctuation approach, Buhlmann's approach, and the Bayesian approach. The applications considered included an analysis of loss ratios of health insurance claims, a study of disability income claim termination rates, and an examination of alternative loss reserving methods in a health insurance context. All of this material is discussed in depth in the third edition of my text: *Introduction to Credibility Theory* published by ACTEX Publications. In the interest of saving space, I will not repeat this material here but ask the interested reader to peruse my text. The theoretical portion of my presentation is found primarily in chapters 4, 5, 6, and 8 of my text. The loss ratio example appears in Section 11.5 as an alternative application of the methodology developed earlier in Chapter 11. The remaining two examples are discussed in Sections A.1 and A.2 of the Appendix.

#### Further Reading

A recommendation for a more advanced treatment of Bayesian statistics is the text *Bayesian Data Analysis* written by Gelman, Carlin, Stern, and Rubin, and published by Chapman and Hall.

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