

iMPACT3: Online Tools for Development of Web Sites for the Study of Patients' Preferences and Utilities

**Leslie A Lenert, MD, MS. Veterans Administration San Diego Healthcare System
and the University of California - San Diego, San Diego, CA**

Preferences for health outcomes, often called utilities, are numeric measurements of the patients' opinions about overall quality of life with a disease or a health condition. These measurements are used in economic studies (cost effectiveness analysis) as weights for life years (so called Quality adjusted life years or QALYs), in development of guidelines for clinical care (again as quality weights for life years), and to help identify the best treatment alternative for individual patients through application of decision analysis. iMPACT3 (Internet Multimedia Preference Assessor Construction Tool) is a free publicly accessible web site that helps researchers design experimental protocols for measurement of utilities. When the researcher is finished with his or her design, iMPACT3 generates a set of HTML files that use Javascript to implement the protocol. iMPACT3 then downloads those to the researcher's computer, where they can be used in a stand alone fashion to collect data from patients in a clinic or published on the web.

Researchers employ a broad range of methods in studies of preferences and utilities. Some approaches measure quality of life in terms of patients' willingness to accept risk not to live with the health condition (the standard gamble). Others measure it in terms of their willingness to

trade-off length of life in order to live free of the burdens of disease (the time trade-off). Still others measure patients' willingness to forgo income (willingness to pay) to be cured. Measurements performed with these more complex methods are typically combined with measurements performed using simpler methods such as analog scales. Computer implementations of these approaches use animated graphics to assist patients with performance of these rating tasks. Measurements are performed in the context of descriptions of typical effects of diseases on quality of life, sometimes using multimedia methods. Researchers also measure the health status and level of disease activity in preference studies to aid with the interpretation of measurements. iMPACT3 supports automatic creation of web sites employing all of these measures.

In this demonstration, we will describe and discuss computer approaches for measurement of utilities and their applications in healthcare. We will then discuss the design of iMPACT3 and approaches for automatic generation of web sites for data collection in clinical studies.