as commonly applied, Markov models are used to determine if the new intervention is cost-effective if used instead an old one at one point in the patient’s lifetime. These models do not attempt to determine the lifetime optimal treatment pathway for treating the disease. We show how Markov decision models can be used to develop an optimal treatment pathway, by assigning a treatment option to each health state so as to maximize overall net benefit. We will demonstrate how to derive the optimal treatment pathway using dynamic programming. We will present an illustrative example of the use Markov decision model for a chronic disease such as HIV. We will discuss some potential ethical issues that could be raised by the optimal policies derived from Markov decision models. We will conclude the workshop with an interactive discussion of the benefits and drawbacks of Markov decision models.

**USE OF MEDICATION COMPLIANCE DATA IN OUTCOME ANALYSES**

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**OBJECTIVES:** Participants will learn how to collect, analyze, and use compliance data to perform per protocol analyses that can demonstrate effectiveness and shape models based on treatment persistence. Examples will include effectiveness for alcoholism, AIDS, cardiovascular and mental illnesses.

**PARTICIPANTS WHO WOULD BENEFIT:** Researchers who evaluate treatment outcomes, pharmacoeconomic specialists who evaluate treatment costs, and other health outcomes professionals.

Many people are negligent “partial compliers” who miss doses regularly or intermittently despite the best intentions and an understanding of the importance of taking medication. In addition, long-term persistence with chronic treatments is poor. These two manifestations of poor compliance, confound assessment of drug effects, result in poor quality medical care, and affect the overall cost of care. Poorly compliant patients, because of their non-response to drug treatment, advance to the uppermost steps of stepped-care schemes, incurring needless diagnostic costs and treatment costs. The clinical and economic consequences of poor compliance can range from trivial to catastrophic, depending upon drug, disease and its severity, and co-morbidities. Actual dose-taking and dose-timing data collected from individuals can be linked to efficacy parameters to stratify treatment effectiveness based on compliance. The importance of using real-time compliance data in outcomes analyses will be described with examples from electronic compliance techniques. Examples will include use of compliance data to demonstrate value to patients and providers, as well as the pharmaceutical industry.

**CHALLENGES IN Performing META ANALYSIS IN HEART FAILURE OUTCOMES RESEARCH**

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**OBJECTIVES:** Incorporating additional information from the outcomes research literature (i.e. pharmacoeconomics, pharmacoepidemiology, and quality of life) into drug information resources used by clinical practitioners presents a unique challenge. The objective of this workshop is to describe the complex issues involved when providing outcomes research information to clinicians who are involved in drug therapy selection. Based on the experiences of the presenters, cautionary statements about meta analysis in outcomes research, with application to heart failure, will be provided.

**PARTICIPANTS WHO WOULD BENEFIT:** Researchers interested in the epidemiologic, economic, and quality of life aspects of heart failure, as well as those interested in meta analysis and comparability of studies for clinical practice and decision-making.

The practical applicability of outcomes research for clinicians represents a significant challenge. Drug information sources could assist in making outcomes research findings both succinct and “user friendly” if there were sufficient literature and a means for compiling the salient findings. The medical and pharmacy literature has an abundant amount of information on heart failure and related treatments. Thus, it would appear that outcomes research in heart failure could serve as a test case for producing practical guidance for clinicians; however, a number of general issues need to be addressed. How should one objectively determine inclusion/exclusion criteria for research studies? When should meta analysis be performed and on what outcomes? When should findings be reported for drug classes rather than individual agents? There are also a number of questions that are specific to heart failure. How and to what extent should the severity of patients be used to group or stratify findings? How should data on comorbidities be incorporated? These questions will be explored in general and as part of a heart failure case study.

**MAKING MODELS BETTER**

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**OBJECTIVES:** Providing practical guidance for clinicians; however, a number of general issues need to be addressed. How should one objectively determine inclusion/exclusion criteria for research studies? When should meta analysis be performed and on what outcomes? When should findings be reported for drug classes rather than individual agents? There are also a number of questions that are specific to heart failure. How and to what extent should the severity of patients be used to group or stratify findings? How should data on comorbidities be incorporated? These questions will be explored in general and as part of a heart failure case study.