

**SPR 13TH ANNUAL MEETING
PRECONFERENCE WORKSHOP #3
MAY 24, 2005
8:30 AM – 5:00 PM**

Title

Using Real Time Data Capture in Prevention Science

Presenters

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Chair

Kathy Etz, Ph.D.
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Description

The use of data collection techniques that collect information on momentary experiences over time in a diversity of contexts has given rise to new research approaches of great relevance to prevention research. For example, this methodology, referred to as real time data capture (RTDC), allows for collection of data about experiences and events as they occur in participants' natural environments, including less accessible contexts (friend's houses, outdoor venues, etc.). By circumventing problems with recall data and ensuring ecological validity, these methods may provide a more accurate picture of behavior and experience over time, and of the influence of setting factors. In addition to collecting data on targeted behaviors, this methodology has promise for intervention delivery, in real time, in response to participants' reports of current circumstances. We discuss these in the context of prevention science.

This workshop will review the state of the practice in design, implementation, analysis, and related issues for methods used to capture data in real time (referred to as EMA, ESM, RTDC, etc.). It will include discussion of technology and practical implementation issues as well as theoretical and methodological ones, and will use case study examples to facilitate "hands-on" knowledge.

Objectives

The objective of the day will be to prepare researchers with little or no exposure to this domain of research to design and implement real-time data capture studies. At the end of the workshop, participants will understand 1) how real time data capture could assist in addressing research questions of interest, 2) design issues that must be considered when using this methodology, 3) the challenges inherent in this method and strategies for addressing these challenges, 4) various statistical approaches for analysis of these data. Specifically, participants will consider when real time data capture is most suitable (what constructs, etc.), what sampling design is best suited for their study, how to design instruments for RTDC, technological challenges, implementation issues (how to train staff and participants, etc.), data analysis methods, and IRB issues.

Outcomes

Participants will be better informed about the state of the practice and the state of the science in terms of the design and implementation of studies using real time data capture. They will be prepared to begin designing a study using real time data capture or learn more about ways to handle the challenges that emerge if they are currently involved in a study using RTDC.

Career Level and Prerequisites

This workshop will be accessible to investigators with and without experience with real time data capture.

Methods

Materials will be presented using a case study. The workshop will be interactive, and there will be opportunity for participants to ask questions about anticipated applications to their own areas of interest. Persons planning to attend are encouraged to submit questions or issues by March 21, 2005 to Dr. Kathy Etz at ketz@nih.gov. Part of the workshop will be reserved for a discussion of those questions and issues.

Materials

Participants will receive a complete set of slides, along with several recent publications.

Presenters

Dr. Saul Shiffman, Ph.D. is Research Professor of Psychology (Clinical and Health Psychology), Psychiatry, and Pharmaceutical Sciences at the University of Pittsburgh. Dr. Shiffman has been a pioneer in applying methods of real-time data capture to behavioral research, developing the methodological framework of Ecological Momentary Assessment (EMA) and the use of palm-top computers for real-world, real-time data collection. He was co-chair (with Arthur Stone) of an National Cancer Institute-sponsored conference on *The Science of Real-Time Data Capture*, and is co-editor of a forthcoming Oxford University Press book by the same title. Dr. Shiffman helped found invivodata, inc., which provides electronic diary services for clinical trials, and where he is Chief Science Officer.

Dr. Shiffman has published over 200 scientific papers, including methodological and substantive studies using EMA methods. He has collaborated and written on the design, conduct, and analysis of EMA trials. His empirical work has applied EMA methods to studies of diverse areas, including cigarette smoking, alcohol use, stress, obesity, pain, coping, and cardiovascular risk.

Dr. Shiffman has been designated a Fellow of the American Psychological Association (divisions of Health Psychology, Psychopharmacology, and Addictions), the American Psychological Society, and the Society for Behavioral Medicine, and accepted as a member of the Academy of Behavioral Medicine Research. He has served on advisory panels to the National Institute on Drug Abuse, the National Cancer Institute, the American Cancer Society, and the Center for the Advancement of Health, among others. Dr. Shiffman is a core member of the Tobacco Etiology Research Network.

Dr. Hufford is Vice President of Scientific Affairs at invivodata, inc., which provides electronic diary services for clinical trials. He previously was on the faculty of Department of Psychology (Clinical Psychology) the University of Montana. In addition to his own research on methods and applications of ecological momentary assessment (EMA), Dr. Hufford has consulted or collaborated on the design of over 100 studies using EMA methods, and is an expert on design and implementation of electronic diary research methods. Dr. Hufford has published more than 40 papers, including studies on measure validation, ecological momentary assessment, as well as applications of nonlinear dynamic systems theory to the prediction of treatment outcomes.

Applied Behavioral Medicine Research Institute at the State University of New York at Stony Brook. His work focuses on fine-grained understanding of the interplay between environmental influences and physiological processes, especially the hypothalamic-pituitary-adrenal axis. He was involved with the development of Ecological Momentary Assessment, a technique for intensively monitoring individuals in their natural environments. Dr. Stone chaired a National Institutes of Health Conference called the "Science of Self-report," and co-chaired a National Cancer Institute conference on "The Science of Real-Time Data Capture," and senior editor on books by the same titles. Dr. Stone was editor of *Health Psychology* until 2005, and previously edited *Annals of Behavioral Medicine*. Dr. Stone is a fellow of the American Psychological Association, the Society of Behavioral Medicine, and the American Psychosomatic Society, and a member of the Academy of Behavioral Medicine Research.

Dr. Arthur Stone is Professor and Vice-Chair of the Psychiatry Department and Director of the Applied Behavioral Medicine Research Institute at the State University of New York at Stony

Brook. His work focuses on fine-grained understanding of the interplay between environmental influences and physiological processes, especially the hypothalamic-pituitary-adrenal axis. He was involved with the development of Ecological Momentary Assessment, a technique for intensively monitoring individuals in their natural environments. Dr. Stone chaired a National Institutes of Health Conference called the "Science of Self-report," and co-chaired a National Cancer Institute conference on "The Science of Real-Time Data Capture," and senior editor on books by the same titles. Dr. Stone was editor of *Health Psychology* until 2005, and previously edited *Annals of Behavioral Medicine*. Dr. Stone is a fellow of the American Psychological Association, the Society of Behavioral Medicine, and the American Psychosomatic Society, and a member of the Academy of Behavioral Medicine Research.

Dr. Theodore (Ted) Walls is an assistant professor of psychology at the University of Rhode Island. He is a cognitive developmental psychologist with substantive interests in goal setting, agency and performance and quantitative interests in longitudinal modeling. He is engaged in the development and application of advanced statistical techniques specifically for the study of developmental psychological data, e.g. time series, multilevel modeling, structural equation modeling and various techniques for modeling recurrent events. His recent work involves development of techniques for the analysis of intensive longitudinal data, as produced from diary-based and technology enabled studies. These studies are of great interest to students and researchers because they account for both maturational and detailed causal mechanisms.

Dr. Brian R. Flay is Distinguished Professor of Community Health Sciences (Public Health) and Psychology at the University of Illinois at Chicago (UIC), where he founded the Health Research and Policy Centers (HRPCs), a cluster of university-wide centers focusing on health behavior, health promotion and disease prevention, health in the elderly, health services and health policy. Dr. Flay has conducted a series of experimental studies of programs for the prevention of cigarette smoking, substance use, AIDS and violence in Canada, California and Chicago. He is currently conducting 4 school-based randomized trials of the Positive Action program, a K-12 character education program that appears to change school climates, improve class management skills and time on task by teachers, and increase learning and improve behavior of students. Dr. Flay is a Fellow of the Society for Behavioral Medicine, the Society for Community Research and Action, and the American Academy of Health Behavior. He received recognition for outstanding research from the Research Council of the American School Health Association (1993), the American Academy of Health Behavior (Research Laureate Award, 2001), and Current Contents ISI (recognized as a Highly Cited Researcher – in the top 1/2% - 2003).

Dr. Etz is the Director of the Program on Human Development in Adolescence and Early Adulthood in the Epidemiology Research Branch, Division of Epidemiology, Services, and Prevention Research at the National Institute on Drug Abuse. Dr. Etz received her Ph.D. in Human Development from the University of North Carolina, Greensboro in 1997. Dr. Etz's program area at NIDA covers developmental research that explores: 1) the impact of biopsychosocial processes on drug abuse during multiple life transitions, 2) how new roles and behaviors adopted in emerging developmental stages influence patterns of drug abuse, and 3) the role of different systems and factors (e.g. family, peers, pubertal transitions) in drug abuse patterns and transitions.