Implementation Research: The Black Box of Program Implementation

Katherine Woolsey, BA & Kathleen Biebel, PhD

When an airplane takes off, a Flight Data Recorder captures information of time, altitude, airspeed, vertical acceleration, heading, and radio transmissions.[1] In the event of a crash, black box data help aviation scientists understand what happened and, perhaps more importantly, inform strategies to promote airline safety.

Implementation research can be thought of as a black box, providing information about the journey from research theory to actual practice. Implementation is defined as, "a specific set of activities designed to put into practice an activity or program of known dimensions" (p.5).[2] Implementation studies examine issues of design, administration, and operation by tracking day-to-day, "real world" events such as staffing, training, or funding. [2, 3, 4]

Implementation research identifies and describes what happens as a program evolves; it attempts to explain why things happen the way they do.[2] This information is often used to support evaluations of social programs but is not designed to provide rigorous evaluation or to determine cause and effect.[2,3]

Implementation Study Methods: Opening the Black Box

Implementation research may study the entire implementation of an activity or program or target one or two discrete components.[3] Implementation study research questions fall into three main categories (p.1): [6]

- ▶ What is happening?
- ▶ Is it what is expected or desired?
- ▶ Why is it happening as it is?

Within these categories, research questions may be more specific, and focus on key areas of implementation. Sample research questions include the following: [5]

- ▶ What are the program's key components?
- ▶ What does staff do?
- ▶ To what extent is the program amenable to implementation elsewhere?

Implementation studies use a variety of data and mixed methods to answer the wide range of questions posed by implementation researchers. In general, data collected in implementation studies fit into five distinct categories:[3]

Printed Materials
Existing documents and records; includes meeting minutes, budgets, and background statistical data

Administrative Data
Data collected as part of program operations; includes client characteristics, service use and outcomes

Individual & Group Oral Accounts
First hand accounts of program implementation; includes individual interviews and focus groups

Observations

Program processes witnessed firsthand; includes participant and program observation

Surveys & Questionnaires

Standardized data collection among multiple informants; includes satisfaction surveys

On-going data analysis informs research methods and future data collection. As things evolve and change over the course of implementation activities, the research responds by making appropriate modifications. For example, as themes emerge during qualitative data analysis, researchers may modify interview questions to clarify information gathered about a particular topic.[3]

Implementation Studies at CMHSR: Using the Black Box

CMHSR is actively engaged in implementation research. Two examples include investigating a developing programs and systems change in the mental health and child welfare worlds.[6]

The Family Options Study is exploring the development and implementation of a new family-centered, strengths-based program (Family Options) for families living with parental mental illness. Family Options was developed in a community-based, psycho-social rehabilitation agency in Central Massachusetts. One focus of the implementation study explores conditions necessary to shift the organization's paradigm of working with adults to working with families. The ongoing study has collected data for 20 months, conducting over 100 individual interviews with 19 different informants, and six nine focus groups involving three distinct stakeholder groups. CMHSR investigators are analyzing study data to understand the feasibility of the Family Options intervention and offer guidance for innovation and replication.

The Family Networks Study is a partnership with the Massachusetts Department of Social Services (MA/DSS) to conduct a two-year study of the process of implementing systems level change (i.e. Family Networks) within a state agency. Through Family Networks, MA/DSS has redesigned and integrated traditional categorical services across the state into local systems of care for children, youth and families served by the child welfare system. A primary goal of the study is to understand what structures, processes and conditions influence the implementation of Family Networks. Data collection began in June 2007 and will continue through December 2008. The study will use a variety of research methods, including focus groups, in-depth interviews and case studies. CMHSR investigators will analyze data to provide on-going feedback and final products including (a) an agenda for training and consultation; (b) recommendations for policy, procedural, and practice refinements; and (c) Continuous Quality Improvement strategies and protocols for continued monitoring of progress after the study is completed.

Conclusion

An organization has plenty of work to do before a new program is up and running. Implementation research provides strategies and techniques to inform the real world challenges organizations struggle with as they strive to develop and sustain programs for the populations they serve. By incorporating implementation research into human services, organizations can use the black box to better understand these processes and optimize their implementation strategies.

References

1. Grossi, D.R. (2006). Aviation recorder overview [Electronic Version]. National Transportation Safety Board [NTSB] *Journal of Accident Investigation, 2* (1), 31-42.
2. Fixsen, D. L., S. F. Naoom, et al. (2005). Implementation research: A synthesis of the literature Tampa FL University of South Florida, Louis de la Parte Florida Mental Health Institute, *The National Implementation Research Network (FMHI Publication #231).*
3. Werner, A. (2004). Introduction to Implementation Research. In A Guide to Implementation Research (chap. 1). Retrieved April 6, 2007 from http://www.urban.org/pubs/implementation-research/chapter1.html.
4. Grol, R., & Jones, R. (2000). Twenty years of implementation research. *Family Practice, 17* (1), S32-S35.
5. Implementation Study Methodology Report. (2001). Retrieved September 10, 2007 from http://www.healthychild.ucla.edu/ICECS/resource/materials/outcomes/implementation-MethodReport.pdf
6. Nicholson, J., Biebel, K., Williams, V.F., & Katz-Leavy, J. (2004) Prevalence of Parenthood in Adults with Mental Illness: Implications for State and Federal Policy, Programs, and Providers. In Center for Mental Health Services. Mental Health, United States, 2002. Manderscheid, R.W., & Henderson, M.J. (eds.) DHHS Pub No. (SMA) 3938. Rockville, Maryland: Substance Abuse and Mental Health Services Administration, pp. 120-137.

Visit us on-line at www.umassmed.edu/cmhsr