Published in final edited form as:

J Subst Abuse Treat. 2005 October ; 29(3): 167–172. doi:10.1016/j.jsat.2005.05.008.

Charting a course for health services research at the National Institute on Drug Abuse

Wilson M. Compton, M.D., M.P.E., Jack B. Stein, Ph.D.^{*}, Elizabeth B. Robertson, Ph.D., Denise Pintello, Ph.D., Beverly Pringle, Ph.D., and Nora D. Volkow, M.D.

National Institute on Drug Abuse, Bethesda, MD, USA

Abstract

Through research, we continue to develop and refine an array of safe and efficacious interventions to prevent and treat drug abuse; however, these interventions have not led to widespread improvements in prevention and treatment services in nonresearch settings. In addition, investigator-initiated research rarely examine or refine interventions that practitioners have found relevant and that are widely practiced. To address these problems, the National Institute on Drug Abuse convened a blue ribbon task force to examine its health services research program. The report served as a catalyst for the institute to promote a vigorous program of research that seeks to examine prevention and treatment intervention delivery systems and policies that facilitate provision of effective care in a range of real world settings. Findings from this research should help address the translational bottleneck of bringing evidence-based interventions into the community.

Keywords

Drug abuse; Health services; Quality; Financing; Organization

1. Introduction

In June 2003, the National Institute on Drug Abuse (NIDA) constituted a blue ribbon task force to examine the health services program at the institute and to make recommendations for the future development of this program. The task force issued its final report in February 2004 (NIDA, 2004), and since that time the institute has had a chance to analyze and begin implementing its recommendations. What follows is based in large part on the report but includes additional material based on the initial responses of the institute. The purpose of this article is to provide a brief outline for future development of prevention and treatment services research in the drug abuse field that will be led and managed by the NIDA.

2. Background

Despite major strides in drug abuse prevention and treatment research, limited improvements have occurred in prevention and treatment services in nonresearch settings (Glasgow, Lichtenstein, & Marcus, 2003). Moreover, many interventions in widespread and common practice have not been examined or refined through research protocols. Recent attention to this gap between research and practice has led to the recognition of the need for

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^{*}Corresponding author. Division of Epidemiology, Services and Prevention Research National Institute on Drug Abuse 6001 Executive Boulevard, NSC 9589 Bethesda, Maryland 20892-9589 USA. Tel.: +1 301 443 6504; fax: +1 301 443 2636., jstein1@nida.nih.gov (J.B. Stein).

research to examine delivery of prevention and treatment services in a range of real world settings (Lamb, Greenlick, & McCarty, 1998). Findings from research of this type will have practical implications for provision of care to individuals and groups affected by or at risk for drug abuse and addiction.

2.1. The challenges of implementing evidence-based practices

Payers, policymakers, and the public at large are demanding evidence-based practices, practical and cost-effective interventions, therapies, and medications that will reduce risks for initiation of drug use, prevent escalation among those who have experimented with drugs, reduce substance abuse and its negative consequences among those diagnosed with drug use disorders, diminish the spread and consequences of HIV among drug abusers, and reduce relapse among drug abusers in recovery. The problems of transferring efficacious and effective interventions are serious and pervasive throughout the public health system (L'Enfant, 2003). However, prevention and treatment of drug abuse have several levels of complexity that are not found with other diseases and disorders. As listed in Table 1, key aspects of drug abuse services include unique service delivery settings, nonmedical personnel and practices, high levels of external pressure to seek treatment, and reliance on public sources of program funding. These unique aspects of drug abuse health services practices coupled with special drug abuse policy, organization, financing, and regulations pose challenges for drug abuse health services researchers.

2.2. Defining health services research

One of the first goals for drug abuse health services research is to agree on a common definition of the field. At times, services research has been oversimplified as “effectiveness research in real world settings,” “research on technology transfer,” and research on “dissemination of scientific findings.” These labels must be replaced with a clear appreciation for the scope and sophistication of research involved in the accessibility, quality, and cost of drug abuse services. Thus, an important step in defining the types of research questions that need to be addressed in drug abuse services research is developing a clear definition for the field. The NIDA endorses the definition provided in the Blue Ribbon Task Force report.

Health services research is research conducted to identify the most effective ways to organize, manage, finance and deliver high quality care at a reasonable cost for all who need it.

As indicated by this definition, health services research examines key factors (e.g., individual need and health care structure) and their effects on the access, quality, and cost of care (Fig. 1).

The NIDA definition of health services research is consonant with previously published definitions of health services research (AcademyHealth, 2003; Aday & Andersen, 1974; Agency for Healthcare Research and Quality, 2002; Andersen, 1995). At the same time, the NIDA definition points out policy, financing, and service delivery issues unique to drug abuse. This is extremely important because of the critical need to improve existing drug abuse prevention and treatment practices. Thus, future research must focus on the special organizational, workforce, financing, and policy factors that are the major forces controlling addiction prevention and treatment services. Of course, the ultimate goal of these research efforts would be to bring more effective services to the public.

3. The state of drug abuse services research at the NIDA

The NIDA's health services research focuses both on prevention and treatment. Historically, health services research at the NIDA extends back to the 1980s when several demonstration projects emphasized research in real world settings as a way to enhance and expand services for persons at risk for HIV and in need of drug treatment (Inciardi, Fletcher, & Tims, 1993). With the incorporation of the NIDA into the National Institutes of Health in 1992, health services research was singled out for attention in the congressional authorizing language, requiring the NIDA to allocate at least 15% of its budget to the key issues of services research: access, effectiveness, organization and management, economics (cost, financing, benefit cost, cost effectiveness, etc.), and quality of care.

To this end, the NIDA has supported research in all these general domains but also has awarded grants for the development of innovative research methods including new instrumentation, data collection tools, and analytic procedures. However, because many science-based interventions have not been integrated into everyday practice, an increasingly important part of the NIDA's health services research program has been to identify those research-and community-derived practices that are practical, cost-effective, and self-sustaining.

3.1. The state of drug abuse services research: Prevention services research

For the past 5 years, substance abuse prevention research (including HIV prevention research) has evolved into efficacy, effectiveness, and multisite intervention studies, as described in the NIDA (2003) publication entitled *Preventing Drug Use Among Children and Adolescents: A Research-Based Guide for Parents, Educators, and Community Leaders*. At the core of this research has been the goal of sustaining proven prevention practices. However, the lack of prevention-specific infrastructures and training and credentialing for prevention practitioners has hampered the achievement of this goal. Recently, existing (e.g., Cooperative Extension Service, Safe and Drug-Free Schools, WIC [Women, Infants, and Children]) and newly created (e.g., Communities that Care) service systems have become major venues for complex, multidimensional prevention services research (Arthur, Hawkins, Pollard, Catalano, & Baglioni, 2002; Spoth, Greenberg, Bierman, & Redmond, 2004), but smaller efficacy and effectiveness studies continue to address important services research questions, as well as methodological studies to examine how prevention services should be implemented.

3.2. The state of drug abuse services research: Treatment services research

During the early and mid-1990s, the major focus of the treatment services program of the NIDA addressed issues of treatment effectiveness. One of the best known NIDA (1999) publications, *Principles of Drug Addiction Treatment: A Research-Based Guide*, summarizes much of this work. But this topic was not the only one addressed in health services research at the NIDA during the past decade. Substantial research effort has been devoted to understanding the real world context in which drug abuse treatment occurs, and a key area of research has been studies on how and why new, empirically derived treatments become adopted, organized, and managed. Studies suggest that transferring research to practice is associated with organizational factors such as leadership attitudes, staff turnover, organizational stress, regulatory and financial pressures, management style, and tolerance for change. These findings are leading to the development of an integrated framework of organizational change that can enhance the systematic study of research application.

4. Future directions

Given the background of health services research at the NIDA summarized earlier (and in more detail in the Blue Ribbon Task Force report itself), the NIDA has identified key gaps that need to be addressed as suggested within the Blue Ribbon Task Force. The key themes recognized by the NIDA for immediate attention include the following: research studies to help understand common practices currently in widespread use that have not yet been extensively examined, working with other federal agencies to agree on standards for classification of practices as evidence based, developing collaborative research processes to study major service delivery systems, and promoting studies with designs that provide evidence of causal and mechanistic associations of interventions with outcomes.

4.1. Understanding common practices

An increasingly important health services research issue is the identification of those research- and community-derived practices that are practical and cost-effective. Despite research advances in drug abuse service delivery, many science-based interventions have not been integrated into everyday practice. Included in this endeavor is the need to gain scientifically credible understanding of how service systems and setting characteristics influence prevention and treatment program implementation and, in turn, program effects (Rogers, 1995). Methodologies for conducting research on existing drug abuse prevention and treatment services need to include descriptive studies. Moreover, descriptive methodologies can also be useful in developing a better understanding of the influence of prevention and treatment system characteristics on evidence-based prevention and treatment practices and outcomes. For example:

- What prevention and treatment interventions are widely practiced?
- How do changes in environmental contexts and systems over time influence effectiveness?
- How do provider-level adaptations to evidence-based prevention and treatment practices influence effectiveness?
- What is the relationship between system characteristics and the choice of practices, the method/setting of delivery of those practices, and the quality of delivery of practices?
- How do methods of financing drug abuse prevention and treatment services influence service delivery?
- How do current and evolving federal, state, and local policies affect the provision and quality of prevention and treatment services?

In seeking answers to these important questions, the NIDA has begun to actively encourage research on prevention and treatment programs supported by the Substance Abuse and Mental Health Services Administration (SAMHSA). For example, research on the SAMHSA's Drug-Free Communities program is encouraged, as is research on other major SAMHSA efforts. In general, the SAMHSA provides the majority of support for the nation's publicly funded drug abuse service delivery system. Thus, SAMHSA-supported programs provide unique and large-scale targets for research to help enhance our understanding of the current delivery system.

4.2. Developing standards for evidence-based practice

The phrase *evidence-based practice* is commonly used; however, there are no generally accepted standards for this designation. For example, many interventions labeled as evidence based have not been tested within community settings and with the broad spectrum

of clients found in real world settings. Within the provider community, there is often a sense that newly validated evidence-based interventions may not fit existing practices, may not be feasible, or are no better than what are currently available. Similarly, within the payer community, there is a sense that science has failed to examine issues such as financing (both public and private payers), organized care settings, regulatory environments, training and workforce issues, sustainability, and even patient acceptance in the development of evidence-based interventions. Thus, there is a need for standards for evidence-based practice that include an approach to rating the scientific strength of available evidence (Cochrane Collaboration, 2004; Eccles, Grimshaw, Campbell, & Ramsay, 2003; White, Suchowierska, & Campbell, 2004). Over the past year, the NIDA has been an active participant in several federal initiatives designed to define standards for evidence-based practice and to determine a process for these standards to be fairly and reasonably applied to the testing and refinement of both new and existing interventions (e.g., the SAMHSA's National Registry of Effective Programs and Practices).

Without broad acceptance across the scientific, provider, policymaker, and payer communities, these terms will lose meaning and the public will lose hope of better services through scientific examination. However, developing standards for evidence-based practices can be problematic in the face of nonstandard implementation. That is, what is the impact of efforts to tailor evidence-based practices to better fit community norms and funding? A key research question is to determine the degree to which adaptations impact effectiveness of particular evidence-based practices. Elements to be considered in this research are the "minimal requirements" with regard to organizational, personnel, training and technical assistance, and funding to retain features critical to the effective delivery and sustainability of evidence-based practices. Key research questions should consider the critical factors associated with the effective dissemination and sustainability of evidence-based practices when replicated in real world conditions.

4.3. Developing a collaborative research process

Underlying the discussions of understanding common practice and developing standards for evidence-based practices is the need for a collaborative research process among a variety of partners. For example, a better understanding of the critically important research questions can come from the collaboration of researchers and practitioners in designing and refining research projects. Practitioners are generally acutely aware of the nuances of service systems that can promote success or ensure failure of an intervention. Thus, their involvement in the services research enterprise is essential from the outset to ensure that research is relevant, feasible, and acceptable. In an effort to further define the role of providers in research and the nature of such research, the NIDA sponsored a forum in May 2005, "Enhancing Community Partnerships in Research: An Agenda-Setting Meeting."

A second collaboration critical to the success of drug abuse health services research is between the research and services-funding agencies. The majority (62%) of all spending for substance abuse prevention and treatment services in the United States comes from government sources (Cartwright & Solano, 2003). Thus, the government supports the majority of both research on drug abuse services and the services themselves. The irony is that most services provided have not been subjected to rigorous scientific scrutiny despite the fact that service providers hold a wealth of knowledge on the organizational, financing, policy, regulation, and reimbursement issues that affect contemporary prevention and treatment of drug abuse. Given this situation, collaboration between the research and practice arms of government will strengthen the types of research questions asked as well as the types of prevention and treatment services offered. Recent efforts to "braid" funding streams have resulted in NIDA-SAMHSA collaborations designed to streamline research and service efforts. For example, the NIDA provides ongoing support to fund research

within the SAMHSA's evaluation of the Strategic Prevention Framework State Incentive Grant program whereas the SAMHSA funds services delivery within the NIDA's primary care research initiative.

A final area for collaboration is with researchers studying service systems and delivery in other areas of behavioral health. Although diseases and disorders differ in the types of prevention and treatment interventions appropriate to them, there are commonalities in the service delivery systems. Thus, answers to health services research questions in one area may inform other areas. In response, NIDA health services staff members have taken a leadership role in developing a National Institutes of Health-wide health services research workgroup to examine these common issues. Furthermore, drug abuse health services research overlaps with other types of drug abuse research, specifically basic, epidemiology, and intervention research. These overlaps create additional opportunities for multi-disciplinary collaboration.

The types of research questions expected to emanate from these collaborations include the following:

- What impacts do changes in service systems, such as the institution of managed care practices, novel financing approaches to accessing drug and HIV prevention and treatment, and drug courts have on the provision of effective interventions?
- Can services research issues such as cost, financing, portability, and training burden be integrated into the early development and testing of medications, therapies, and interventions?
- Can services research issues such as organizational function, reimbursement, regulatory and policy constraints, and diffusion of innovation be integrated into the later stages of medication, therapy, and intervention testing?
- How can organizational factors, financing, policy, and other traditional services research considerations be integrated into prevention or treatment outcomes studies?

4.4. Causal study designs

Where possible, policy and practice are best served by research, which provides the most definitive answers. This means that given a choice between nonexperimental and experimental designs of equal power and cost, experimental designs are favored. Such a perspective has far-reaching implications for all three of the other initial recommendations in this report. For all three areas, an emphasis on experimental designs (or their equivalent when randomization is not possible) is a key component. First, rigorous study of commonly used practices can best be achieved with randomized clinical trials (or some variant). Standards of effectiveness that will be used to classify evidence-based practices are certain to include reference to the scientific standards of randomized clinical trials. Finally, research collaborations with services-funding organizations may be particularly productive if they include the opportunity to randomize the funding of services at the state, community, or program level. Such place-based randomization has a strong history in the social services field and will allow a melding of service delivery and science (Petrosino, Boruch, Rounding, McDonald, & Chalmers, 2000). The key is to structure implementation of innovations in ways that permit rigorous examination (Society for Prevention Research, 2004). This recommendation is perhaps the most radical and will require a restructuring of the ways that the field considers implementation of programs. But the benefits are clear: answers as to whether programs are worth supporting.

A corollary of the encouragement of study designs that allow causal inference is the development of better methods for clinical research studies that approximate randomized designs and may have practical advantages where randomization is impractical. Thus, another area for support is in the development of statistical methods and designs. For instance, certain time series designs are a reasonable alternative when randomization is not possible (Borckardt & Nash, 2002; Hartmann et al., 1980; Trochim, 1984). Propensity scoring seems to improve the inferential strengths of nonrandomized designs (Rosenbaum & Rubin, 1983, 1985). Furthermore, even within the arena of randomized studies, statistical advances have provided new insights into existing data and need to be encouraged (Ahn, Jung, & Kang, 2004). The NIDA sponsored a half-day workshop for researchers in June 2004 on these new analytic tools for making causal inferences from observational data.

5. Conclusions

Advances in drug addiction research have revolutionized our understanding of drug abuse prevention and treatment. Future health services research promises to enhance the delivery, quality, and cost of providing these services within a competitive health care environment. The report of the Blue Ribbon Task Force on Health Services Research of the NIDA draws attention to the strengths of the existing programs and identifies challenges and opportunities for the field. Building on this report, the NIDA is committed to promoting innovative and rigorous studies that will help us understand services issues so that our research work can have the maximum impact on health policies and practices.

Acknowledgments

This article is based to a large degree on the report of the Blue Ribbon Task Force on Health Services Research of the NIDA. Members of the task force who contributed to the report were Andrea G. Barthwell, Caryn Blitz, Richard Catalano, Mady Chalk, Linda Chinnia, Wilson M. Compton, Michael L. Dennis, Richard Frank, Warren Hewitt, James A. Inciardi, Marguerita Lightfoot, A. Thomas McLellan (Co-Chair), Isaac Montoya, Claire E. Sterk, Constance M. Weisner (Co-Chair), and Janet Wood.

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A multidisciplinary field that examines how:

Ultimately, the goals of health services research are to identify the most effective ways to organize, manage, finance, and deliver high quality care.

Fig. 1.
Defining health services research.

Table 1

Key aspects of drug abuse services

Characteristic	Description
Service settings	Drug abuse services are mainly delivered outside mainstream health care settings Prevention settings: street outreach, schools, community-based organizations and coalitions, police departments Treatment settings: nonmedical freestanding addiction programs, criminal justice institutions, and human service agencies
Entry to care	Large proportion of patients are pressured into treatment and do not seek treatment voluntarily
Interventions	Many interventions are delivered as part of full-scale programs versus stand-alone approaches Drug treatment typically includes a combination of behavioral therapies and educational/social services Treatment rarely includes medications
Financing	Government payments (in particular, federal block grants) account for a majority of spending for substance abuse services