Published in final edited form as:

J Subst Abuse Treat. 2016 January ; 60: 1–5. doi:10.1016/j.jsat.2015.10.001.

Introduction to the special issue on the studies on the implementation of integrated models of alcohol, tobacco, and/or drug use interventions and medical care

Sarah B. Hunter, Ph.D.¹, Robert P. Schwartz, M.D.², and Peter D. Friedmann, M.D., M.P.H., FASAM, FACP³

¹RAND Health, Santa Monica, CA

²Friends Research Institute, Baltimore, MD

³Division of Academic Affairs, Baystate Health, Springfield, MA

Abstract

National efforts are underway to integrate medical care and behavioral health treatment. This special issue of the *Journal of Substance Abuse Treatment* presents 13 papers that examine the integration of substance use interventions and medical care. In this introduction, the guest editors first describe the need to examine the integration of substance use treatment into medical care settings. Next, an overview of the emerging field of implementation science and its applicability to substance use intervention integration is presented. Preview summaries of each of the articles included in this special issue are given. Articles include empirical studies of various integration models, study protocol papers that describe currently funded implementation research, and one review/commentary piece that discusses federal research priorities, integration support activities and remaining research gaps. These articles provide important information about how to guide future health system integration efforts to treat the millions of medical patients with substance use problems.

Keywords

implementation; integration; medical care; substance abuse treatment

1. Introduction

The integration of substance (i.e., alcohol, tobacco and/or drug) use interventions into medical care settings has been supported by recent legislation that advocates for parity to treat substance use disorders similar to other medical conditions (e.g., the Mental Health Parity and Addiction Equity Act of 2008) and increased federal funding to provide benefits to those in need of such care (i.e., Affordable Care Act, 2010). More specifically, these policy innovations promise to accelerate the integration of substance abuse and mental health services into medical settings (Buck, 2011).

Medical settings are ideal environments to identify and manage individuals with substance use disorders (Friedmann, Saitz & Samet, 1998). Primary care is often the first contact individuals have with the health care system, and most people visit primary care at least once a year (Blackwell et al., 2012). Additionally, patients who visit primary care typically have higher rates of substance abuse than the general population (O'Connor et al., 1998; Humphreys & McLellan, 2010; Samet et al., 2001). For example, research has suggested that approximately 22% of general health care patients report a comorbid substance use condition (SAMHSA 2005; Treatment Research Institute 2010) suggesting that the primary care setting may be an appropriate venue to identify and potentially address substance use problems.

How best to implement substance use interventions in medical care settings is not well known. Addiction treatment has traditionally been provided in a separate specialty services sector from general health care. Publicly funded substance use treatment settings contrast from general medical care settings in several ways. For example, few substance use treatment facilities report having integrated clinical information systems that allow ready access to electronic health records (McLellan, 2004; Andrews et al., 2015). Next, having a physician on staff or on contract, which will be necessary under new Medicaid regulations, is not common among many publicly funded substance use treatment programs. Finally, the use of evidence based practices, such as pharmacotherapy for alcohol or opioid use disorders, is not well integrated into much of the publicly-funded substance abuse specialty sector. In sum, the resources typically found in substance use treatment settings varies from traditional medical care settings, suggesting that increased attention will be needed on how to best to transfer substance use treatment practices from typical delivery settings to general health care settings.

This service provision conundrum is a prime candidate for implementation science. Implementation science is the scientific study of methods to promote the systematic uptake of clinical research findings and other evidence-based practices into routine practice, and hence to improve the quality (i.e., effectiveness, reliability, safety, appropriateness, equity, and efficiency) of health care (Eccles et al., 2009). The relatively new field of implementation science addresses the slow and unpredictable process through which findings from clinical and health services research become standard health care practices. Increasingly more research has been examining this research-to-practice gap, that is, how best to translate methods and practices deemed efficacious in research settings for use in real world health care settings.

Implementation science incorporates the study of the behavior of healthcare professionals and related staff, healthcare organizations, healthcare consumers, and policymakers as key factors in the adoption, implementation and sustainment of evidence-based interventions and guidelines (e.g., see the National Institutes of Health Program Announcement for the Dissemination and Implementation Research in Health at <http://grants.nih.gov/grants/guide/pa-files/PAR-13-055.html>). The added complexity of transitioning effective substance use care to medical settings requires attention to the context both within and external to the service setting, such as how federal, state and local policies encourage or challenge primary care providers to practice substance use care and how characteristics of the organization,

such as culture, climate, staff training and support impact the delivery of substance use treatment.

Determination of how well a particular approach to integrate substance use interventions into primary care works from an implementation science perspective, may require consideration of such factors as provider and patient acceptability of the intervention and the intervention's feasibility, uptake, fidelity, penetration, sustainability, and costs in the proposed setting (Proctor et al., 2009). Other important outcomes for consideration in implementation research studies include those from a service system perspective, that is effectiveness, efficiency, timeliness, equity and patient-centeredness (i.e., the IOM standards) and from a clinical perspective (e.g., symptomology, functioning, and satisfaction).

It is not well known what level of integration works best or how best to disseminate, encourage adoption and widespread use of substance use treatment practices in primary care. It may depend on the context of the care environment (e.g., outpatient, inpatient) and the populations served (e.g., private payer, Medicaid/Medicare populations, veteran, racial/ethnicity minority). More than one model may be appropriate and effective and the changing landscapes of health care provision and payment models make this an especially vexing problem for research as particular integration models may be only feasible for practice under particular provision and payment models.

Addressing this integration issue requires robust studies of implementation strategies to improve the delivery of substance use treatment in primary care, including the identification of facilitators of and barriers to service delivery, along with the development and testing of strategies for the scale up, spread, and sustainment of such treatments. For example, studies are needed that yield information about how to prepare the medical service context for successful implementation, how to promote quality implementation and sustainment in these settings, and how to de-implement interventions, practices or policies that run counter to the goal of providing substance use care within these settings. Moreover, it is also important to consider that interventions that have been found effective in substance use treatment settings may need to be re-designed to be effective in primary care given the variations across these service sectors on many factors related to implementation.

Because implementation science research often addresses both effectiveness and the “how” and “why” for such findings, mixed method approaches that utilize both quantitative and qualitative data are often utilized (Palinkas et al., 2011). For example, variations in penetration rates across sites (i.e., a quantitative measure) may be explained by information from in-depth interviews with providers that denote the facilitators and barriers to integrating care into their setting (i.e., qualitative data). In this issue, a number of articles utilized mixed methods (e.g., Brooks et al. (2016), Guerrero et al. (2016), Kaiser & Karantzou, (2016)) or rely on qualitative approaches to help explain previously noted quantitative findings (e.g., Williams et al., (2016)).

This special issue highlights recent advances in the field on integrating substance use treatment into real-world medical care. Consistent with previous literature (Collins et al.,

2010; Heath et al., 2013), the articles presented in this issue describe models of health care integration that represent a broad array of different levels of service integration. For example, a high level of integration may be exhibited by having primary care physicians deliver substance use treatment. A medium level of integration may be demonstrated by employing a behavioral health specialist in primary care to address substance use whereas an example of low level of integration would be to screen for a substance use problem in primary care but to refer patient to another setting to receive substance use treatment. A number of different approaches have been developed and examined to integrate substance use care within primary care, many of which are reported here. We start this issue with a presentation of studies that examined models that suggest higher levels of integration in that they employ physician-involvement in the treatment. In most cases, integration models also employ other health professionals, such as nurses, social workers, and/or health educators to assist in the delivery of care and many of these approaches are also presented.

2. Research of high level integration approaches

Pharmacotherapy for alcohol and opioid use disorders has been shown to be effective when delivered in primary care settings (e.g., Fiellin et al., 2014; Kranzler & Van Kirk, 2001), making it a natural choice for a study of implementation in real world practice settings. For example in this issue, LaBelle and colleagues report the results from a statewide dissemination initiative to increase opioid agonist therapy with buprenorphine in community health centers (CHCs) in Massachusetts. The state supported the use of the Collaborative Care Model for Office-Based Opioid Treatment (Alford et al., 2007; 2011) that included training and support to physicians to become eligible to prescribe treatment (i.e., “waivered” status) and the utilization of nurse care managers to conduct screening, medication induction, and ongoing assessment and treatment sessions. This paper describes implementation of the state initiative across a three year period, including adoption rates across CHCs, the number of trained physicians, and the number of patients receiving treatment. The authors consider program costs and sustainability in the discussion section. This work serves as a model by which other entities may assess scale-up of buprenorphine treatment within primary care settings.

Next, Barnes et al. (2016) examined the effectiveness of a multicomponent intervention targeting risky alcohol use among older adults. The intervention consisted of provision of information to both patients and providers about an individual's risk. Providers were asked to discuss risk factors with their patients. Health educators were also employed to contact intervention patients at regular intervals to discuss the patient risk report. The results showed a modest intervention effect on functioning and health-related quality of life. Further exploration of the data suggested that the provider intervention may have been more effective than the health educator intervention, indicating more work may be needed in finding the most feasible and effective approach to delivering interventions for risky use in these settings.

3. Screening and Brief Intervention Studies

Screening, brief intervention and referral to treatment (SBIRT) interventions typically employ a range of health care professionals in its delivery, including medical assistants who may be primarily responsible for screening, and physicians, nurses or other health care providers (including behavioral health counselors) who are primarily responsible for providing brief intervention and referrals to treatment. Brief intervention (BI) for unhealthy alcohol use is recommended by the US Preventive Services Task Force (USPSTF, 2015) however, the Task Force reports there is inadequate evidence for the screening for drug misuse in primary care (USPSTF, 2015) and the efficacy of BI for drug misuse from two recent, large, well conducted randomized trials found lack of effectiveness for this approach (Roy-Byrne et al., 2014; Saitz et al., 2014). Nevertheless, the use of SBIRT is expanding rapidly with federal support, and therefore, in addition to more research on the effectiveness of screening and brief intervention for drug misuse, a better understanding of the workflow processes associated with this intervention in medical care settings is needed. Kaiser and Karuntzos' paper documents the workflow process at emergency room and outpatient (ambulatory) care settings among four grantees (3 U.S. states and 1 tribal entity) funded by the Substance Abuse and Mental Health Services Administration (SAMHSA). This SBIRT approach included as a first step, pre-screening using a short substance use screener, as part of an intake assessment. This step was followed by a full screening by a health educator if warranted by an individual's responses to the pre-screener. If a patient screened positive for risky use, a brief intervention was then delivered, typically by the health educator. Variations in delivery were found between emergency room and ambulatory clinics. Also, brief intervention delivery varied especially in rural areas. The authors note the need to better understand the workflow process between SBIRT and non-SBIRT practitioners in these settings and explore the impact of health information systems on the adoption and efficiency of SBIRT delivery.

Williams et al. (2016) describe alcohol screening and brief intervention (SBI) within the Veterans Administration (VA). The authors note that while the VA has been perceived as national leader in implementing alcohol SBIs, closer examination suggests that the quality in which the SBIs have been conducted has been low. In order to better understand the challenges associated with alcohol SBI implementation, the researchers asked key informants (i.e., administrative staff and staff primarily responsible for screening or brief interventions) to identify factors that influenced implementation in the VA using questions that were informed by Greenhalgh et al.'s (2004) and Michie et al.'s (2005) implementation frameworks. Both of these frameworks identify multiple determinants to successful implementation, some of which Williams and colleagues hypothesized had not been adequately addressed in the alcohol SBI roll-out in the VA. Despite the consensus of staff in these settings regarding the importance of addressing unhealthy alcohol use, more attention to staff training, academic detailing and related resources is needed to improve the quality in which alcohol SBI is delivered. Without adequate training or support, clinical reminders might, for example, encourage a culture of "box-checking".

Darnell and colleagues studied implementation of motivational interviewing (MI) among trauma center staff mandated to implement alcohol SBIs. Nurses and social workers at 20

hospital sites located across the country were randomly assigned to receive a one day workshop in MI for alcohol SBI or not. MI fidelity was monitored over a 27-month period in both the training and control conditions. The study demonstrated that the one day training significantly improved global MI fidelity ratings that were sustained over the 27-month study. However, the training did not produce a level of fidelity that met pre-established proficiency standards. These findings are consistent with other studies that suggest MI can be taught to non-mental health professionals, but expert proficiency requires ongoing training, supervision and feedback (Miller et al., 2009; Hall et al., 2015).

4. Studies of contextual and organizational factors

“Context matters” in implementation and one must consider the multiple levels in which a practice operates, including societal, policy, payer, organizational, provider, patient and caregiver perspectives. The Consolidated Framework of Implementation Research (CFIR) developed by Damschroder and colleagues (2009) is a comprehensive typology that outlines five evidence-based elements that may influence implementation: 1) the “outer setting” refers to aspects external to an organization or practice, such as funding sources, political climate, patient need; 2) the “inner setting” refers to aspects within an organization, such as leadership support and organizational culture; 3) intervention characteristics are aspects of the intervention itself, such as cost, evidence, and adaptability; 4) characteristics of the individuals involved, including knowledge, self-efficacy and perceptions about the intervention; and 5) the implementation process, meaning aspects of how the intervention is implemented such planning activities, the engagement of stakeholders, and ongoing monitoring. Damschroder and Hagedorn (2011) argue cogently for the use of implementation theory to guide implementation efforts in substance abuse treatment as well as for reporting results and helping to refine existing theory.

In response to such a call, Guerrero and colleagues explored the environmental (i.e., outer setting) and organizational (i.e., inner setting) factors related to outpatient addiction treatment programs coordination with mental and public health services. The study was conducted specifically with programs serving racial and ethnic minority populations in an urban setting. The researchers found an association between both external factors (funding) and internal factors (leadership and cultural competence) and health service coordination suggesting the importance of both environmental and institutional factors to successful health care integration.

Costs are an important component to implementation studies. Intervention costs are considered a key implementation outcome in Proctor et al. (2009)'s implementation research conceptual framework. Although there has been a range of literature on the effectiveness and implementation of SBIRT and increasing efforts to integrate it into primary care, little is known about the costs of SBIRT provision. Barbosa and colleagues analyzed the costs of providing SBIRT in three U.S. states and one tribal organization as part of one of the largest SBIRT dissemination efforts to date. The authors discuss the major cost drivers (e.g., labor and support activities) along with the comparability and utility of the results for future SBIRT program planning.

5. Technical Assistance Studies

A support system that assists in building the capacity of organizations to enhance the infrastructure, skills and motivation to adopt new practices is a key driver of successful transfer of evidence-based treatment to usual care settings (Wandersman et al., 2008; Flaspohler et al., 2012). This support may take the form of training, technical assistance and/or coaching.

Chaple et al. (2016) describe a pilot study that examined technical assistance provision to improve the integration of behavioral health (i.e., both mental health and substance use) care into Federally Qualified Health Centers (FQHCs). The researchers utilized the Behavioral Health Integration in Medical Care (BHIMC) index to assess four FQHCs capacity to deliver behavioral health services prior to and after receiving technical assistance as well as to help inform the technical assistance provision. The technical assistance included multiple elements including leadership support, staff input and training, the promotion of peer-to-peer learning, the identification of change agents to guide implementation, and the use of measurement and feedback for implementation monitoring purposes over a 6-9 month period. The study showed that the sites made improvements in their BHIMC scores over time, especially in relation to infrastructure-related elements (e.g., staff and training) as compared to more clinical services-related elements (e.g., screening and treatment) which the investigators speculate may be related to the timing and intensity of the TA provision. The study provides evidence of the utility of both technical assistance provision to build primary care capacity and the BHIMC index to systematically assess changes in behavioral care integration in these settings.

Brooks and colleagues describe provider and patient engagement and feedback from a hybrid effectiveness trial that provided a brief intervention toolkit to behavioral health counselors in three FQHCs in the Philadelphia area. Previous studies of the toolkit in substance abuse treatment have shown that it leads to an enduring impact on counselor behavior. This paper describes the adaptation of the toolkit for use in primary care, and the results from the first 12 months of implementation. The toolkit led to improvements in staff capacity to deliver brief interventions in primary care by providing some structure and resources to address patient need. Feedback from patients was also generally positive, emphasizing the finding that addressing substance use in primary care was an acceptable and feasible approach.

6. Study Protocols

Given the relative infancy of implementation science, this issue also includes study protocol papers that describe the purpose and methods of currently funded studies that have not yet yielded results. The study protocol papers give readers a glimpse of current research efforts underway. For example, Gwin Mitchell et al. (2016) describe a multi-site cluster randomized trial exploring the effectiveness of SBIRT delivery for adolescents using either a generalist (i.e., primary care provider) or specialist (i.e., behavioral health counselor) approach. The researchers plan to assess several implementation outcomes, including provider level measures of acceptability, appropriateness, adoption, feasibility, fidelity, along with service

system outcomes, including costs/cost effectiveness, penetration and sustainability. These findings will improve understanding about how an SBIRT intervention that targets adolescent risk behaviors is perceived and utilized during the trial and what the costs would be to sustain it. The results of this study will be important given the increased emphasis on incorporating the SBIRT approach into primary care settings and the diversity of findings regarding implementation and costs.

Next, Kalkhoran et al. (2016) describe a study to develop and test a computer-facilitated intervention designed to improve provider adherence to the evidence-based 5As (i.e., ask, advise, assess, assist and arrange) for smoking cessation. Their project will consist of the development of a tailored resource guide for patients and a clinical summary report with decision support tools for clinicians to use in primary care settings. More specifically, previous implementation studies have found that less clinical attention is paid to the “assist” and “arrange” steps in the 5A model and so increased emphasis on the provision of tools to guide providers on how to adequately cover these steps will be developed. The evaluation of the intervention will be guided by the RE-AIM framework (Glasgow, Vogt, & Boles, 1999), a common approach utilized in the implementation science field that considers reach (i.e., the percentage of population eligible for intervention that receives it), efficacy (i.e., the effect of the intervention), adoption (i.e., the proportion of settings willing to adopt the intervention), implementation (i.e., the extent to which the intervention is implemented as intended), and maintenance (i.e., the routinization or sustainment of the intervention over time).

Lasser and colleagues describe a multicomponent intervention designed to improve adherence to chronic opioid treatment guidelines. The intervention is based on a chronic care model (Bodenheimer, Wagner, & Grumbach, 2002) that incorporates nurse care management, a patient registry, academic detailing support, and electronic monitoring tools to prevent opioid misuse among chronic pain patients. Chronic opioid treatment guidelines include strategies such as controlled substance agreements, urine drug testing, frequent PCP visits, pill counts, and the use of state prescription monitoring programs. The goal of this study is to develop an intervention to improve uptake of these treatment guidelines by primary care providers. The article reports the cluster randomized study design and intervention description, and early implementation progress, in the form of the number of primary care providers enrolled to date (i.e., evidence of adoption) and number of patients being monitored with the recommended strategies.

Lasser et al. (2016) article sheds light on common challenges in implementation research. First, patient outcomes, such as reduced mortality rates, are often difficult to power for in a study of this magnitude. Many times implementation studies emphasize the examination of more proximal outcomes, such as treatment quality, treatment utilization and provider and patient acceptance, as previous studies have already demonstrated the effectiveness of the treatment. Moreover, implementation research studies tend to incorporate the study of system and organizational aspects and often require data acquisition at multiple levels (i.e., system, organization, provider and patient) across multiple entities (e.g., states, regions, and/or practices/organizations). Significant challenges exist to the collecting, aggregating

and analyzing of this complex data and it requires more sophisticated approaches than typically used in a single site randomized controlled trial.

7. Review and Commentary

Finally, Ducharme and colleagues provide an overview of the priorities in implementation research on integrated care at four federal research entities (i.e., the National Cancer Institute, National Institute on Alcohol Abuse and Alcoholism, the National Institute on Drug Abuse and the Veterans Health Administration) and summarize some recent federally funded studies. Based on a review of NIH and VHA-funded extramural grants from 2008-2014, Ducharme et al. (2016) classified recent integrated care implementation research into five priority domains: 1) Screening and brief intervention for risky alcohol use; 2) Screening, brief intervention, and treatment for tobacco use; 3) FDA-approved pharmacotherapy uptake; 4) Safe opioid prescribing; and 5) Disease management. Ducharme et al. (2016) also cite other governmental efforts underway to support behavioral health care integration, such as research and synthesis funded by the Agency for Healthcare Research and Quality, demonstration projects initiated by the Centers of Medicaid and Medicare Services (CMS), demonstration initiatives along with technical assistance efforts jointly supported by the Substance Abuse and Mental Health Services Administration (SAMHSA) and the Health Resources and Services Administration (HRSA). A discussion of evidence-based practices, service delivery models and implementation strategies being tested and remaining research gaps are discussed.

8. Summary and Conclusions

The selection of articles in this special issue is designed to provide the *JSAT* audience with the latest findings on the use of implementation science to address the integration of substance use interventions into medical care settings. Because of implementation science's rather recent beginnings as a formalized field of research, more work is needed to clarify methodologies and test the various theories and implementation strategies that have been posed (Lewis et al., 2015; Powell et al., 2015). As seen in these articles, investigators have used heterogeneous methodology to assess the implementation and outcomes of substance use integration. Such a diversity of methods will pave the way for improved understanding of what approaches most effectively integrate substance use treatment into medical care settings. We hope this work will propel the field forward and lead to improved access and quality of substance use care for those medical patients who also suffer from unhealthy substance use.

Acknowledgments

Preparation of this manuscript was supported in part by the National Institute on Alcohol Abuse and Alcoholism (R01AA021217, PI: Hunter) and the National Institute on Drug Abuse (R34DA032041, PI: Hunter). Dr. Hunter serves as core faculty for the Implementation Research Institute at the George Warren Brown School of Social Work at Washington University through a grant by the National Institute on Mental Health (R25MH080916, PI: Enola Proctor) and the Department of Veterans Affairs, Health Services Research & Development Service, Quality Enhancement Research Initiative (QUERI). Dr. Schwartz was supported through the National Institute on Drug Abuse grants 5U10DA013034 (PIs Stitzer and Schwartz) and 1 R01 DA026003 (PI Schwartz). The contents of the published material are solely the responsibility of the authors and do not reflect the views of the National Institutes of Health or Department of Veterans Affairs.

References

- Alford DP, LaBelle CT, Kretsch N, Bergeron A, Winter M, Botticelli M, Samet JH. Collaborative care of opioid-addicted patients in primary care using buprenorphine: Five-year experience. *Archives of Internal Medicine*. 2011; 171(5):425–431. [PubMed: 21403039]
- Alford DP, LaBelle CT, Richardson JM, O'Connell JJ, Hohl CA, Cheng DM, Samet JH. Treating homeless opioid dependent patients with buprenorphine in an office-based setting. *Journal of General Internal Medicine*. 2007; 22(2):171–176. [PubMed: 17356982]
- Andrews C, Abraham A, Grogan CM, Pollack HA, Bersamira C, Humphreys K, Friedmann P. Despite resources from the ACA, most States do little to help addiction treatment programs implement health care reform. *Health Affairs*. 2015; 34(5):828–35. [PubMed: 25941285]
- Barbosa C, Cowell A, Landwehr J, Dowd W, Bray J. Cost of screening, brief intervention, and referral to treatment in health care settings. *Journal of Substance Abuse Treatment*. 2016
- Barnes AJ, Xu H, Tseng CH, Ang A, Tallen L, Moore AM, Marshall DC, Mirkin M, Ransohoff K, Duru OK, Ettner SL. The effect of a patient-provider educational intervention to reduce at-risk drinking on changes in health and health-related quality of life among older adults: The project SHARE study. *Journal of Substance Abuse Treatment*. 2016
- Blackwell D, Lucas J, Clarke T. Summary health statistics for U.S adults: National health interview survey, 2012. *Vital Health Stat National Center for Health Statistics*, editor. 2012
- Bodenheimer T, Wagner EH, Grumbach K. Improving primary care for patients with chronic illness. *Journal of the American Medical Association*. 2002; 288(14):1775–9. [PubMed: 12365965]
- Brooks AC, Chambers J, Lauby J, Byrne E, Carpenedo CM, Benishek LA, Medvin R, Metzger DS, Kirby KC. Implementation of a brief treatment counseling toolkit in federally qualified healthcare centers: Patient and clinician utilization and satisfaction. *Journal of Substance Abuse Treatment*. 2016
- Buck JA. The looming expansion and transformation of public substance abuse treatment under the Affordable Care Act. *Health Affairs*. 2011; 30(8):1402–1410. [PubMed: 21821557]
- Chaple MJ, Sacks S, Randell J, Kang B. A technical assistance framework to facilitate the delivery of integrated behavioral health services in federally qualified health centers (FQHCs). *Journal of Substance Abuse Treatment*. 2016
- Collins, C.; Hewson, DL.; Munger, R.; Wade, T. *Evolving Models of Behavioral Health Integration in Primary Care*. New York: Milbank Memorial Fund; 2010.
- Damschroder LJ, Aron DC, Keith RE, Kirsh SR, Alexander JA, Lowery JC. Fostering implementation of health services research findings into practice: A consolidated framework for advancing implementation research. *Implementation Science*. 2009; 4:50. [PubMed: 19664226]
- Damschroder LJ, Hagedorn HJ. A guiding framework and approach for implementation research in substance use disorders treatment. *Psychology of Addictive Behaviors*. 2011; 25(2):194–205. [PubMed: 21443291]
- Darnell D, Dunn C, Atkins D, Ingraham L, Zatzick D. A randomized evaluation of Motivational Interviewing training for mandated implementation of alcohol screening and brief intervention in trauma centers. *Journal of Substance Abuse Treatment*. 2016
- Ducharme L, Chandler RK, Harris AH. Implementing effective substance abuse treatments in general medical settings: Mapping the research terrain. *Journal of Substance Abuse Treatment*. 2016
- Eccles MP, Armstrong D, Baker R, Cleary K, Davies H, Davies S, Glasziou P, Ilot tI, Kinmonth AL, Leng G, Logan S, Marteau T, Michie S, Rogers H, Rycroft-Malone J, Sibbald B. An implementation research agenda. *Implementation Science*. 2009 Apr 7.4:18. [PubMed: 19351400]
- Fiellin DA, Schottenfeld RS, Cutter CJ, Moore BA, Barry DT, O'Connor PG. Primary care-based buprenorphine taper vs maintenance therapy for prescription opioid dependence: a randomized clinical trial. *Journal of the American Medical Association Intern Med*. 2014; 174(12):1947–54.10.1001/jamainternmed.2014.5302.
- Flaspohler P, Lesesne CA, Puddy RW, Smith E, Wandersman A. Advances in bridging research and practice: introduction to the second special issue on the interactive system framework for dissemination and implementation. *American Journal of Community Psychology*. 2012; 50(3-4): 271–81. [PubMed: 22875685]

- Friedmann PD, Saitz R, Samet JH. Management of adults recovering from alcohol or other drug problems: relapse prevention in primary care. *Journal of the American Medical Association*. 1998; 279(15):1227–31. [PubMed: 9555766]
- Heath, B.; Wise Romero, P.; Reynolds, K. A Standard Framework for Levels of Integrated Healthcare. Washington, D.C.: SAMHSA-HRSA Center for Integrated Health Solutions; 2013 Mar. 2013
- Glasgow RE, Vogt TM, Boles SM. Evaluating the public health impact of health promotion interventions: the RE-AIM framework. *American Journal of Public Health*. 1999; 89(9):1322–1327. [PubMed: 10474547]
- Greenhalgh T, Robert G, Macfarlane F, Bate P, Kyriakidou O. Diffusion of innovations in service organizations: systematic review and recommendations. *Milbank Quarterly*. 2004; 82(4):581–629. [PubMed: 15595944]
- Guerrero EG, Andrews C, Harris LM, Padwa H, Kong Y, Fenwick K. Improving coordination of addiction health services organizations with mental health and public health services. *Journal of Substance Abuse Treatment*. 2016
- Gwin Mitchell S, Schwartz RP, Kirk AS, Dusek K, Oros M, Hosler C, Gryczynski C, Barbosa C, Dunlap L, Lounsbury D, O'Grady KE, Brown BS. SBIRT implementation for adolescents in urban federally qualified health centers. *Journal of Substance Abuse Treatment*. 2016
- Hall K, Staiger PK, Simpson A, Best D, Lubman DI. After 30 years of dissemination, have we achieved sustained practice change in motivational interviewing? *Addiction*. 2015 Jul.:28.
- Humphreys K, McLellan AT. Brief intervention, treatment, and recovery support services for americans who have substance use disorders. *Psychological Services*. 2010; 7(4):275–284.
- Kaiser D, Karuntzos G. An examination of the workflow processes of the screening, brief intervention, and referral to treatment (SBIRT) program in health care settings. *Journal of Substance Abuse Treatment*. 2016
- Kalkhoran S, Appelle NA, Napoles AN, Munoz RP, Lum PJ, Alvarado N, Gregorich SE, Satterfield JM. Beyond the ask and advise: Implementation of a computer tablet intervention to enhance provider adherence to the 5As for smoking cessation. *Journal of Substance Abuse Treatment*. 2016
- Kranzler HR, Van Kirk J. Efficacy of naltrexone and acamprosate for alcoholism treatment: A metaanalysis. *Alcoholism, Clinical and Experimental Research*. 2001; 25(9):1335–1341.
- LaBelle CT, Han SC, Bergeron A, Samet JH. Office-based opioid treatment - with buprenorphine (OBOT-B): Statewide implementation of the Massachusetts collaborative care model in community health centers. *Journal of Substance Abuse Treatment*. 2016
- Lasser K, Shanahan C, Parker V, Beers D, Xuan X, Heymann O, Lange A, Liebschutz J. A multicomponent intervention to improve primary care provider adherence to chronic opioid therapy guidelines and reduce opioid misuse: a cluster randomized controlled trial protocol. *Journal of Substance Abuse Treatment*. 2016
- Lewis CC, Weiner BJ, Stanick C, Fischer SM. Advancing implementation science through measure development and evaluation: a study protocol. *Implementation Science*. 2015 Jul 22.10(1):102. [PubMed: 26197880]
- McLellan AT, Meyers K. Contemporary addiction treatment: a review of systems problems for adults and adolescents. *Biological Psychiatry*. 2004; 56(10):764–70. [PubMed: 15556121]
- Michie S, Johnston M, Abraham C, Lawton R, Parker D, Walker A. Making psychological theory useful for implementing evidence based practice: a consensus approach. *Quality & Safety in Health Care*. 2005; 14(1):26–33. [PubMed: 15692000]
- Miller WR, Yahne CE, Moyers TB, Martinez J, Pirritano M. A randomized trial of methods to help clinicians learn motivational interviewing. *Journal of Consulting and Clinical Psychology*. 2004; 72:1050–62. [PubMed: 15612851]
- National Institutes of Health. Dissemination and Implementation Research in Health (R01). <http://grants.nih.gov/grants/guide/pa-files/PA-13-055.html>
- O'Connor PG, Schottenfeld RS. Patients with alcohol problems. *New England Journal of Medicine*. 1998; 338(9):592–602. [PubMed: 9475768]
- Palinkas LA, Aarons GA, Horwitz S, Chamberlain P, Hurlburt M, Landsverk J. Mixed method designs in implementation research. *Administration and Policy in Mental Health and Mental Health Services Research*. 2011; 38:44–53. [PubMed: 20967495]

- Powell BJ, Waltz TJ, Chinman MJ, Damschroder LJ, Smith JL, Matthieu MM, Proctor EK, Kirchner JE. A refined compilation of implementation strategies: results from the Expert Recommendations for Implementing Change (ERIC) project. *Implementation Science*. 2015 Feb 12;10:21. [PubMed: 25889199]
- Proctor EK, Landsverk J, Aarons G, Chambers D, Glisson C, Mittman B. Implementation research in mental health services: An emerging science with conceptual, methodological, and training challenges. *Administration and Policy in Mental Health*. 2009; 36(1):24–34. [PubMed: 19104929]
- Roy-Byrne P, Bumgardner K, Krupski A, Dunn C, Ries R, Donovan D, et al. Brief intervention for problem drug use in safety-net primary care settings: A randomized clinical trial. *Journal of the American Medical Association*. 2014; 312(5):492–501. [PubMed: 25096689]
- Saitz R, Palfai TPA, Cheng DM, Alford DP, Bernstein JA, Lloyd-Travaglini CA, et al. Screening and brief intervention for drug use in primary care. The ASPIRE randomized clinical trial. *Journal of the American Medical Association*. 2014; 312(5):502–513. [PubMed: 25096690]
- Samet JH, Friedmann P, Saitz R. Benefits of linking primary medical care and substance abuse services: Patient, provider, and societal perspectives. *Archives of Internal Medicine*. 2001; 161(1): 85–91. [PubMed: 11146702]
- Substance Abuse and Mental Health Services Administration. National Survey on Drug Use and Health. Rockville, MD: Department of Health and Human Services; 2005. Author
- Treatment Research Institute, Inc.. Forum on Integration: A Collaborative for States. Philadelphia, PA: Treatment Research Institute, Inc; 2010. 2010
- U.S. Preventive Services Task Force. Final Update Summary: Alcohol Misuse: Screening and Behavioral Counseling Interventions in Primary Care. U S Preventive Services Task Force. 2015. July 2015 <http://www.uspreventiveservicestaskforce.org/Page/Document/UpdateSummaryFinal/alcohol-misuse-screening-and-behavioral-counseling-interventions-in-primary-care?ds=1&s=alcohol>
- U.S. Preventive Services Task Force. Final Update Summary: Drug Use, Illicit: Screening. U S Preventive Services Task Force. 2015. July 2015 <http://www.uspreventiveservicestaskforce.org/Page/Document/UpdateSummaryFinal/drug-use-illicit-screening>
- Wandersman A, Duffy J, Flaspohler P, Noonan R, Lubell K, Stillman L, Blachman M, Dunville R, Saul J. Bridging the gap between prevention research and practice: the interactive systems framework for dissemination and implementation. *American Journal of Community Psychology*. 2008; 41(3-4):171–81. [PubMed: 18302018]
- Williams E, Achtmeyer CE, Young JP, Rittmueller SE, Ludman EJ, Lapham GT, Lee AK, Chavez LJ, Berger D, Bradley KA. Local implementation of alcohol screening and brief intervention at five Veterans Health Administration primary care clinics: Perspectives of clinical and administrative staff. *Journal of Substance Abuse Treatment*. 2016