IMPLEMENTING THE DAST-10 SCREENING TOOL IN A PRIMARY CARE PRACTICE

by

David Johnsrud

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As members of the DNP Project Committee, we certify that we have read the DNP project prepared by David Johnsrud, titled Implementing the DAST-10 Screening Tool in a Primary Care Practice and recommend that it be accepted as fulfilling the DNP project requirement for the Degree of Doctor of Nursing Practice.

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Final approval and acceptance of this DNP project is contingent upon the candidate's submission of the final copies of the DNP project to the Graduate College.

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DEDICATION
Darlene Olsen Johnsrude, RN, BA, MC, LPC
1931-2020

∞

This doctoral project is dedicated to my mother, who knew long before me that I would become a nurse. She left her childhood home in rural Saskatchewan, Canada, to begin her career in psychiatric nursing and nurse leadership at the age of 16, while I entered nursing as a second career in middle age. She would have leapt at the opportunity to be a Psychiatric/Mental Health Nurse Practitioner were it available to her. She had a brilliant and complex mind and was fiercely proud to be part of the noble profession of nursing, for which she held an almost-religious reverence. She had great compassion for her patients, holding them in high regard and striving always to protect and preserve their dignity and autonomy. I hope to meet my future roles with comparable degrees of competence, compassion, intuition, and lifelong learning.

∞

“When my father died, it was like a whole library burned down.”

-- Laurie Anderson
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ABSTRACT

**Purpose:** This quality improvement initiative aimed to engender use of the Drug Abuse Screening Test 10 (DAST-10) in a single practice within a Federally Qualified Health Center (FQHC) in preparation for the instrument to be incorporated into all its primary care practices.

**Background:** Illicit drug use and/or illicit use of prescription drugs is endemic in the United States (US). In Pima County, deaths from overdoses reached the highest level in 2019, with 32.3 deaths per 100,000, a 17.8% increase over the previous year and higher than the national total of 21.6 per 100,000. Accidental death by overdose accounted for 91% of cases in 2019 in Pima County. Regular screening for substance abuse at the primary care level is supported in the literature and recommended by the United States Preventive Services Task Force (USPSTF). The DAST-10 is an easily administered brief screening for drug use that can be implemented in primary care practice to identify patients at risk of developing substance use disorder (SUD) or who currently have SUD (Patnode et al., 2020).

**Methods:** Participants were convenience sample of two physicians, four family nurse practitioners, and five medical assistants at a community health center primary care clinic. A pretest/posttest design gauged change in support for the DAST-10. An education session was conducted at an in-person meeting, followed by email delivery of the pretest questionnaire. Two Plan-Do-Study-Act (PDSA) cycles of two weeks each were conducted, during which total number of screenings and scores were made available to the participants. The end of the intervention was an identical posttest questionnaire.

**Results:** Pretest and posttest questionnaires did not show significant improvement in participants’ opinions and attitudes regarding the DAST-10. On a Likert scale of 1-5, ordered
from left to right, aggregated results showed a mean score of 4.29 pre-intervention and 4.11 post-intervention. The reception was generally positive toward the screen from pre- to post-intervention.

**Conclusions:** The DAST-10 is now used at the clinic site. Patients scoring 3-10 are met by the Behavioral Health Consultant (BHC) after PCP appointments for further discussion and/or referral to treatment. Removal of barriers to use warrants further study.
INTRODUCTION

Substance abuse in the United States (US) is widespread. An estimated 57.2 million US residents aged 12 or above reported illicit drug use some time during the preceding year on the 2019 National Survey on Drug Use and Health (Substance Abuse and Mental Health Services Administration [SAMHSA], 2020). Deaths from drug overdose nationwide in 2019 alone exceeded 70,000 (Mattson et al., 2021). Total costs to the US economy in all areas impacted by substance abuse, including tobacco and alcohol, are estimated to be over $740 billion annually (National Institute on Drug Abuse [NIDA], n.d.). The US Preventive Services Task Force (USPSTF) recommends screening of all adults aged 18 and over for unhealthy drug use in primary care (Krist et al., 2020) (Appendix J). The National Institute on Drug Abuse (NIDA) endorses the DAST-10 as an evidence-based validated screening instrument, which can be administered in the primary care setting (NIDA, 2021) (Appendix I).

Background Knowledge and Significance

There were 70,630 deaths from drug overdoses in the US in 2019 (21.6 per 100,000), a 56.3% increase from 2013 (13.8 per 100,000) (Mattson et al., 2021). Deaths from synthetic opioids other than methadone (e.g., fentanyl) increased 1040% from 2013-2019, or from 1 to 11.4 per 100,000 (Mattson et al., 2021). During the same period, deaths from overdose related to psychostimulant drugs (e.g., methamphetamine), increased 317% from 1.2 to 5.0 per 100,000 (Mattson et al., 2021). Deaths from opioids accounted for most of the overdose deaths in 2019 nationwide, at 70.6% (Mattson et al., 2021).

The literature reveals agreement among stakeholders in healthcare delivery, including patients, that regular screening for substance use (SU) is essential and necessary at the primary
care level (Jones et al., 2018; McNeely et al., 2018; Saunders et al., 2019). Unfortunately, it also demonstrates that screening is often not conducted regularly, if at all, or done without the benefit of a validated screening tool. This increases the likelihood that patients with risky use of substances leading to a substance use disorder (SUD) are not regularly and systematically identified in primary care practice (Harris & Yu, 2016; Jones et al., 2018; McNeely et al., 2018; Saunders et al., 2019; Wu et al., 2017; Wu et al., 2019).

The USPSTF recommends screening all adults aged 18 years or older for unhealthy drug use in the primary care setting when appropriate services for follow-up and treatment are available (Krist et al., 2020). The recommendation does not pertain to patients with a current known SUD and/or who are currently undergoing substance use (SU) treatment, nor is it recommended for use in settings where the potential consequences to the patient are punitive (Krist et al., 2020). A positive screen for unhealthy drug use does not in itself indicate an SUD diagnosis (Krist et al., 2020) (Appendix D). The USPSTF does not specify a validated screening instrument for unhealthy drug use, though it references several in its 2020 recommendation statement. The agency also does not specify the time interval for screening (Krist et al., 2020). The Department of Veterans Affairs (VA) and federal programs recommend screening for both alcohol and unhealthy drug use annually (Saitz, 2020).

Screening, Brief Intervention, and Referral to Treatment (SBIRT) is a practice protocol to identify SUDs and provide early intervention or refer to comprehensive treatment. It includes screening and early intervention for both alcohol and other substance use (Centers for Medicare and Medicaid Services [CMS], 2020). SBIRT originated within the World Health Organization (WHO), beginning in the early 1980s when the WHO sought to address the problem of
alcoholism based on the disease model (Babor et al., 2017). In 1982, the WHO developed an instrument for routine alcohol use disorder screening in primary care settings and for brief intervention to be initiated within primary care practices (Babor et al., 2017). That instrument is the Alcohol Use Disorders Identification Test (AUDIT), which was used initially within the context of the WHO protocol Screening and Brief Intervention (SBI) (Babor et al., 2017). When SAMHSA chose SBI as the basis of its comprehensive and far-reaching grant program in 2003, RT (Referral to Treatment) was added to the acronym to emphasize a critical element in SU care, that of referring to appropriate treatment resources (Babor et al., 2017; Bray et al., 2017).

SBIRT services are reimbursable by the Centers for Medicare and Medicaid Services (CMS) and commercial service providers (CMS, 2020). The USPSTF recommends screening for unhealthy drug use of all patients aged 18 and older as a ‘Grade B’ recommendation. However, it does not indicate a specific instrument preferred for such screening (US Preventative Services Task Force [USPSTF], 2020). A systematic review conducted for the USPSTF included 28 studies that evaluated 30 screening instruments, including the DAST-10 (Patnode et al., 2020). Among all unhealthy drug use instruments evaluated for adults aged 18 years and older, sensitivity ranged from 0.71 to 0.94 (95% CI 0.62-0.97) and specificity from 0.87 to 0.97 (95% CI 0.83 to 0.98) (Patnode et al., 2020). The DAST-10 is given as one option for organizations to adopt in their SBIRT protocols (CMS, 2020). An SBIRT toolkit document for providers in Massachusetts includes the DAST-10 as the screening instrument for SU (Massachusetts Bureau of Substance Abuse Services, 2012).

SAMHSA initiated a grant program in 2003 to launch and fund SBIRT implementation and continuation across the US and within diverse care environments, such as community health
clinics, school health clinics, hospitals, and universities (Bray et al., 2017). The latest SBIRT grants funded by SAMHSA were announced in 2018, providing up to $995,000 annually for up to five years for up to eight sites (SAMHSA, 2020).

Historically, the DAST was developed and initially validated by Dr. Harvey Skinner in 1982 (Skinner, 1982). Dr. Skinner based the DAST on the 1971 Michigan Alcoholism Screening Test (MAST) and designed the DAST to closely resemble the MAST, modified for drug use (Skinner, 1982). The first version of the DAST consists of 28 questions. It yields a quantitative index of problems associated with the respondent’s drug use, like the DAST-10 and other DAST versions (Skinner, 1982). At the time of its development and original study, the DAST had a Cronbach’s alpha of 0.92 in its total sample and 0.86 in the subsample (Skinner, 1982). The 10 questions in the DAST-10 take approximately five minutes to administer or for a patient to complete on their own (National Institute on Drug Abuse Clinical Trials Network, n.d.). The copyright for the instrument is held by The Centre for Addiction and Mental Health (CAMH) (The Centre for Addiction and Mental Health, 2021). The Chief of Clinical Behavioral Health (CCBH) at the FQHC project site has negotiated a rate with the copyright holder for the use of the DAST-10 over five years and has spoken with Dr. Skinner about the use of the instrument at the FQHC (Jon Reardon, personal communication, May 13, 2021).

The intervention site for this quality improvement (QI) project is an FQHC primary care practice that currently utilizes an SBIRT protocol and screens for alcohol, tobacco, and marijuana use (Appendix A). It does not have a specific instrument in place to assess the use of illicit drugs or illicit use of prescription drugs, relying instead on a generic question of whether the patient uses “any other drugs.” Responses to this question are entered into an unstructured
data field in the EMR. The FQHC has selected the DAST-10 as the validated instrument to screen patients for this type of substance use.

In 2020, the CCBH asked a previous doctoral nursing student to identify an appropriate screening instrument for unhealthy drug use for the organization (Tanis, 2020). The principal director (PD) of that project, “DAST-10 Education with the Intent to Adopt in an Integrated Health Clinic,” conducted an educational session for stakeholders via a PowerPoint presentation (Tanis, 2020). As the organization wishes to move forward with incorporating the DAST-10 into its SBIRT protocol, the CCBH requested that this PD undertake a trial of the screening instrument in one of its 13 primary care practices, with the hope and expectation that doing so will generate internal champions in preparation for the entire organization to utilize the DAST-10 regularly.

Advanced practice registered nurses (APRNs), specifically nurse practitioners (NPs), assess and diagnose patients within their respective specialties (American Association of Nurse Practitioners [AANP], n.d.). Family NPs and Psychiatric Mental Health NPs (PMHNPs) are well-positioned within their roles to effectively employ screening instruments such as the DAST-10 to inform their practices and help direct patient care within their respective fields (AANP, n.d.). Assessment of this kind aligns with the profession’s values of health promotion, disease prevention, and health education and counseling (AANP, n.d.).

**Local Problem**

Pima County had a population of 1,044,675 in 2019 and sustained the highest recorded human loss from drug overdose deaths that year (Pima County Health Department [PCHD], n.d.). A total of 337 persons, or 32.3 per 100,000, died from an overdose, a 17.8% increase over
the 286 deaths from overdose reported in 2018 (PCHD, n.d.). Accidental death by overdose accounted for 91% of drug fatalities in 2019, while 8% were attributed to suicides (PCHD, n.d.). The most prevalent drug involved in overdose deaths in Pima County in 2019 was methamphetamine (37.7%), then fentanyl (26.4%), heroin (21.4%), cocaine (15.4%), and alcohol (13.4%) (PCHD, n.d.). In many cases, more than one drug of abuse was present and contributed to death (PCHD, n.d.). Deaths from heroin overdose are likely underrepresented by final toxicology reports due to the rapid metabolization of heroin to morphine (PCHD, n.d.).

The selected FQHC based in southeastern Arizona currently utilizes a SBIRT protocol in 13 primary care practices, though the current form does not include a screening tool specific for substance use other than for alcohol and tobacco. This FQHC uses an unstructured field within its EMR (electronic medical record) to record patient answers to the question, labeled “other drugs,” into which medical assistants (MA) record the patient’s response. The use of unstructured fields within an EMR makes data capture and aggregation especially difficult to collect and interpret (Wu et al., 2019). Further, staff has reported discomfort with broaching the topic of substance use with patients without specific guidance or standardization, with the resulting question as to whether patients are being adequately assessed for substance use. This suggests the potential missed opportunity to intervene early to prevent SUDs and, ultimately, deaths from complications of SUDs, such as accidental or intentional overdose.

**Intended Improvement**

The FQHC has identified the DAST-10 as its preferred screening tool to pilot at one primary health center clinic and intends to proliferate it to all 13 of its primary care practices. Stakeholders in this endeavor are the participants who directly interface with the patients and the
screening instrument, namely MAs and primary care providers (PCPs), adult patients over the age of 18 in the primary care practice, and the FQHC leadership. The DAST-10 is accessible in the EMR for MAs to administer to patients during pre-appointment procedures. Per request of the organization’s Behavioral Health Consultant (BHC), MAs were given the option to hand the patient a paper document to complete, with the intention that the MA would enter the data into the EMR before the provider visit.

**Project Purpose**

This project director aimed to generate among clinical stakeholders receptivity to using the DAST-10 with eligible patients. As the health center leaders were planning to implement the DAST-10 screening instrument into all its primary care practices, generating internal champions assists in securing buy-in from stakeholders across the FQHC. Identifying and referring to treatment those patients with risky drug use allows providers to deliver more effective and holistic care. Results of screening on a scored basis can also help inform initial care by behavioral health (BH) providers once identified patients are referred.

**Project Question**

After an educational session and four-week trial of incorporating the DAST-10 into the FQHC’s SBIRT protocol as a primary practice intervention, will acceptance of the DAST-10 reported by providers and MAs increase as revealed by changes to scores in a pre- and post-intervention questionnaire?
Project Objectives

The project purpose was to test the feasibility of incorporating the DAST-10 screening instrument into the SBIRT procedures for unhealthy substance use in adult patients presenting to the FQHC for primary care. Objectives are listed below.

1. Generate data using the DAST-10, delineated below in the “Methods” section.
2. Present data to stakeholders during the analysis (second) week of the first Plan-Do-Study-Act (PDSA) cycle, along with an optional brief survey to generate feedback.
3. Identify opportunities for improvement by using pretest and posttest questionnaires for clinical stakeholders to gauge changes in knowledge, readiness to use, comfort level, and confidence in the instrument after the four-week trial period of three PDSA cycles.

Theoretical Framework

The framework for this quality improvement (QI) project was Lewin’s Theory of Planned Change, also known as Lewin’s Change Model (Hussain et al., 2018). The model is best suited to stable environments, such as established institutions, for implementing changes on a smaller scale (Shirey, 2013) and is accepted in psychology as a theoretical framework for instituting change (Hussain et al., 2018). In 1947, Kurt Lewin described three stages inherent in any organizational change: unfreezing, changing, and refreezing (Hussain et al., 2018; Shirey, 2013). Underlying these elements is Lewin’s force field analysis (FFA) framework, which identifies forces in the organization before implementing a change to address an organizational problem (Shirey, 2013). Driving forces are those issues that push the organization toward motivation to implement a change to achieve the new, more desirable future state (Shirey, 2013). Restraining
forces tend toward maintaining the status quo or the organizational resistance to the change (Shirey, 2013).

In this project, the desired future state was for patients to be screened annually for risky substance use using a validated screening instrument specific to illicit drug use and/or illicit use of prescription drugs. Scores were to be entered into an EMR, generating specific data for current and future analysis and tracking SBIRT performance over time. The intent behind using the DAST-10 was to ensure regular, systematic, accurate, and nonpartial screening for risky illicit drug use in patients and to refer patients with moderate to high risk to behavioral health services.

The driving forces toward implementing the change included discomfort among MAs using the current method of asking the open-ended question “Any other drug use?” of patients and capturing this data in unstructured fields within the EMR. Unstructured fields do not lead to easy data extraction, so tracking the effectiveness of the FQHC’s SBIRT program was not facilitated in this manner. Additionally, there was the genuine concern that patients with risky illicit drug use were not being identified and therefore may not be connected with readily available intervention options.

Potential restraining forces in place included a natural resistance to change among at least some members of any organizational structure. Likely forces also included concerns about more time being needed with patients to discuss screening and next steps (should patients accept the offer of treatment where indicated), uncertainty about engaging in these conversations and anxiety about patient reactions to this type of discussion.
The three phases inherent in Lewin’s Theory of Planned Change are unfreezing, changing, and refreezing (Hussain et al., 2018; Shirey, 2013). In this project, the unfreezing stage consisted of mobilizing stakeholders at the implementation level, i.e., the clinical staff and providers, to undertake the steps to change. This included an education presentation entitled “DAST-10 Education with the Intent to Adopt in an Integrated Health Clinic.” This presentation was prepared by a previous DNP student and given in Fall 2020 at the FQHC’s main campus about the DAST-10 and the reasons that it is of benefit to the stakeholders to adopt into practice (Tanis, 2020). Additionally, a brief PowerPoint presentation was added to describe the current project. There was also open discussion to gather stakeholders’ thoughts and opinions on entering the changing stage. At this time, MAs attending the meeting identified the following issues:

1. The DAST-10 is currently available in the Athena EMR primary care clinic note environment as a “Favorite” that can be added in a few steps by EMR users. Because the form is not currently included in the pre-appointment procedures section of the EMR, there is no efficient way to review whether the patient was screened within the last year, a named exclusion criterion for screening (Meeting participant, personal communication, October 14, 2021). However, there is currently one provider for whom this was a significant potential complication, as there was a high probability that they would see the same patients more than once during the four-week intervention period. Additionally, there is no method to identify patients from other agencies or practices who may have been screened within the past 12 months before being seen at this FQHC.
2. The DAST-10 is not currently in the EMR in Spanish, nor did the PI supply a paper form in Spanish. The CCBH allowed the site to use a Spanish version of the paper form (Appendix I) for Spanish-speaking patients, which was located by the BHC and approved by the Clinical Director of Behavioral Health (J. Reardon, personal communication, October 20, 2021).

3. There is not currently a method of noting that a patient was offered screening with the DAST-10 and refused.

The changing stage was the implementation of the DAST-10 into the EMR and administered to patients by MAs as part of pre-appointment procedures, such as collecting vital signs and administering other screening instruments. This stage consisted of two PDSA cycles over four weeks. Screening with the DAST-10 was requested of participants and strongly encouraged during the entirety of the four-week intervention. The four weeks were divided into two PDSA cycles of two weeks each. The data generated as a result of DAST-10 screening during the first weeks of each two-week cycle was collected and analyzed. The second week of each two-week PDSA cycle were used to disseminate these data to participants and for participants to offer anonymous feedback about their experiences with DAST-10 screening to the PI. This was accomplished by making available a brief survey to participants. This survey was offered as a means to communicate to the PI and to identify problems encountered that the PI and/or FQHC may be able to remedy during the course of the intervention, where possible. No data was collected from this survey; its intended use was as an anonymous communication tool.

Since the FQHC’s goal is to implement the DAST-10 into its existing SBIRT protocol, the refreezing stage in this project entailed the continued use of the DAST-10 and adoption in all
its primary care practices after piloting the instrument in one location. One goal at this stage was to engender positive opinions on the DAST-10 in the expectation that it will be a standard component of patient care across the organization. If the PDSA cycles showed improvement in identifying patients with risky substance use, and if stakeholders became more comfortable and facile with engaging the DAST-10 in their respective roles, the new state will be reinforced. This process represents the refreezing phase of Lewin’s Theory of Planned Change (Figure 1).

**Figure 1**

*Lewin’s Change Management Model*

![Lewin's Change Management Model](image)

Literature Synthesis

Evidence Search

Journal databases searched included PubMed, Embase, PsycINFO, and Google Scholar. Search terms included “DAST10,” “DAST 10,” “DAST-10,” “primary care,” “screening,” “drug screening,” “SBIRT,” and “self-report” in different combinations. All three search terms for DAST-10 were joined with the “OR” Boolean operator to ensure locating articles with variations in this term. Search strategy focused on locating articles specific to primary care, the DAST-10 screening instrument, any illicit drug use screening instrument, and the need for drug screening in primary care. Multiple searches with varying combinations of search terms through each journal database were conducted until repetitious results emerged. A total of 63 articles were retrieved: PubMed (50 articles), Embase (6 articles), and PsycINFO (7 articles). Articles found in Google Scholar were paywalled, but these very few articles were located in the Arizona Health Sciences Library (AHSL) journal databases. The PD omitted 46 articles from the literature synthesis for featuring pediatric study subjects, pertinence to other aspects of drug use and primary care, languages other than English, and for being older than five years, except for the original study on the Drug Abuse Screening Test (DAST) by Dr. Harvey Skinner in 1982. The final number of articles included for review was 17 (Appendix H).

Concepts and Definitions

The focus of this project was specifically to implement the DAST-10 to assess for risky use and/or abuse of illicit drugs, such as cocaine, methamphetamine, and heroin, as well as illicit use and/or misuse of prescription drugs, such as opioid analgesics and benzodiazepines. The terms “unhealthy drug use,” “substance use,” and “illicit drug use” used throughout this paper
refer to the above definition. An “eligible patient” for screening with the DAST-10 was an adult aged 18 or over, who did not have a current diagnosis of active SUD, was not undergoing current treatment for SUD, and had not been screened in the past year (Patnode et al., 2020).

**Comprehensive Appraisal of Evidence**

There is a dearth of research limited to the screening component only in SBIRT in primary care practice, and even fewer feature the DAST-10 as that component. As such, studies were included for review that utilized other validated drug use screening instruments in primary care as part of an SBIRT protocol, such as the Two-Item Conjoint Screen (TICS) for alcohol and other drug abuse (Jones et al., 2018), the Alcohol, Smoking, and Substance Involvement Screening Test (ASSIST) (Bone et al., 2016; Matheson et al., 2018), and the Tobacco, Alcohol, Prescription medication and other Substance use tool (TAPS) (Wu et al., 2017). Of note, TAPS consists of a screening instrument and brief intervention together (National Institute on Drug Abuse [NIDA], n.d.). Other articles deemed pertinent discussed the SBIRT protocol *in toto* within primary care (Babor et al., 2017; Bray et al., 2017; Harris & Yu, 2016; Moser et al., 2020; Wu et al., 2019).

Several themes were identified from the literature, including: 1) SBIRT as an effective clinical screening and intervention protocol; 2) the importance of retrievability of data (i.e., not entered into unstructured EMR fields such as clinic notes); 3) factors related to SU under-detection; 4) staff and provider opinions on screening and confidence/competencies; 5) cross-cultural application of screens; 6) the clinical practice value of identifying SU; and 7) using PDSA cycles to improve workflow.
**SBIRT Effects on Substance Use and Services**

Three recent studies from the SBIRT grant program funded by SAMHSA nationwide from 2003–2014 had substantial sample sizes for data analysis (Aldridge et al., 2017; Babor et al., 2017; Bray et al., 2017). Babor et al. (2017) conducted a cross-site evaluation of the SAMHSA grant data. The study found that results were dose-dependent, in that more intensity of intervention resulted in a concomitant decrease in all substance use. Program champions, sufficient funding, change across systems, and addressing provider challenges were all directly associated with SBIRT program sustainability (Babor et al., 2017). Bray et al. (2017) conducted a narrative review of the research pertaining to the SAMHSA study grant data, finding that SBIRT is an effective means to extend SU treatment services to patients in primary care across the spectrum of use, from risky use to abuse patterns. The study identified the SAMHSA SBIRT grant program as the largest demonstration program to date (Bray et al., 2017). Both the Babor (2017) and Bray (2017) studies utilized SAMHSA data taken from Cohort 1 (funded from 2003–2008; n= 528,036) and Cohort 3 (funded from 2008–2013; n = 489,396), while Aldridge et al. (2017) extracted a sample group of 17,575 from Cohort 1 projects funded from January 2004 to March 2010 (n = 754,525).

Aldridge et al. (2017) conducted a pretest/posttest design examining the lasting effects of SBIRT, and found that alcohol use, heavy alcohol use, and illicit drug use declined by 35.6%, 43.4%, and 75.8%, respectively, six months following SBIRT application. The authors posited that confounders likely inflated these results, most notably known factors in SU, such as naturally waxing and waning use patterns (Aldridge et al., 2017). Therefore, it cannot be inferred that positive results are due entirely to SBIRT alone (Aldridge et al., 2017). Although Aldridge et
al. (2017) estimated lower rates of decreased SU than either Bray et al. (2017) or Babor et al. (2017), all three studies found that SAMHSA’s pre- and post-intervention data demonstrate clinically significant decreases in substance use. Despite the large sample sizes and diversity of locales, the lack of control groups in the SAMHSA grant studies weakens the generalizability of the findings (Aldridge et al., 2017; Babor et al., 2017; Bray et al., 2017).

**Importance of Data Retrievability**

The robust data collection from SAMHSA’s grant program points to the importance of SBIRT information captured in a retrievable form on the EMR (Aldridge et al., 2017; Bone et al., 2016; Bray et al., 2017). Wu et al. (2019) forwarded an argument for capturing SBIRT data points within the EMR, citing the practicality of routinely collecting data in structured fields within EMRs to generate data sources for pragmatic research. Frequently, SBIRT data collection in EMRs reveals inconsistent data gathering in such unstructured EMR fields as clinic notes, making data extraction and interpretation much more difficult (Wu et al., 2019). Wu et al. (2019) noted the need to formulate strategies to capture relevant SBIRT data in structured fields commonly recorded in clinic notes. Failure to utilize a validated screening instrument is another factor in data retrievability, as data pertaining to SU will inevitably not be contained within designated collection utilities in the EMR (Harris & Yu, 2016).

**Factors Related to Under-Detection of SU**

Many authors noted that SBIRT with or without the use of a standardized screening tool was not used, infrequently used, or applied inconsistently in many primary care practices, even in those that utilized an SBIRT protocol (Harris & Yu, 2016; Harris et al., 2018; Jones et al., 2018; McNeely et al., 2018; Saunders et al., 2019; Wu et al., 2019). Saunders et al. (2019)
identified significant barriers to screening by primary care providers (PCPs) in rural practices, namely discomfort of staff asking patients about substance use and provider concerns of not being professionally prepared to address the topic of SU with patients, both of which are directly related to under-screening and therefore under-detection SU in patients. A New York State study assessing provider attitudes and perceptions of screening found that 57% of participants screened their patients for drug use. Also, NPs and PAs were less comfortable with screening, had more negative attitudes towards screening, and felt less responsible for screening for SU than their physician counterparts (Harris & Yu, 2016).

Factors at the patient level impacting accurate reporting of SU included fear of repercussions from disclosing SU, fear of breach of confidentiality, and patient’s failure to recognize abuse patterns in their SU (Bone et al., 2016; McNeely et al., 2018). Under-detection of active substance use in primary care practice patients must therefore be considered a real possibility and a serious concern (Bone et al., 2016; McNeely et al., 2018).

**Provider and Clinic Staff Opinions and Confidence**

Notably, there was some agreement among providers and staff that routine screening for drug use is important and should be undertaken at the primary care level (Jones et al., 2018; Saunders et al., 2019). There was less enthusiasm for engaging patients in these discussions, even with a validated screening tool (Harris & Yu, 2016; Saunders et al., 2019). Moreover, many providers and staff expressed reluctance to use a standardized tool to assess for drug use or simply did not use one at all (Harris & Yu, 2016; Saunders et al., 2019). This is worth noting well, as one of the reasons the project site organization is seeking to install and utilize a validated
screening tool for drug use was to address discomfort among staff about asking patients about drug use with the aid of pre-determined questions.

Other issues related to likely under-screening and under-detection emerged in the literature, such as uncertainty expressed by staff as to whether the tool should be completed by the patient, such as on a tablet in the waiting room, administered by support staff such as MAs or RNs, or administered by providers (Saunders et al., 2019). Harris and Yu (2016) found that half of all respondents to their survey felt unprepared or undertrained to screen and/or address substance use with their patients, even with the aid of a validated screening tool. A sobering finding was that only 27.7% of PCPs in a cross-sectional study were familiar with SBIRT at all (Harris & Yu, 2016). Saunders et al. (2019) noted that patients in a focus group expressed concerns about disclosing substance use and potential negative or punitive consequences.

**Cross-Cultural Applications**

Of relevance to FHQC s in general is applicability of the DAST-10 across cultures to address the diverse patient populations they serve. The literature search revealed two studies of the DAST-10 within cultural, race, and gender contexts.

A study examining the psychometric properties of the DAST-10 in the Persian language with excellent internal consistency reliability, as evidenced by Cronbach’s alpha 0.93, and tested for use with Iranian patients was included (Shirinbayan et al., 2020). Translating the tool accurately and with rigorous statistical integrity for other cultures and languages continues to be undertaken (Shirinbayan et al., 2020). In a controlled study in Abu Dhabi in the United Arab Emirates, only 21 experimental group participants (n = 906) screened positive for unhealthy drug and/or alcohol use in an SBIRT clinical trial (Matheson et al., 2018). None of these participants
attended a follow-up appointment, which may point to different cultural mores and greater severity of legal consequences for illicit drug use in the Middle East (Matheson et al., 2018).

Additionally, a study whose aim was to identify within-group differences in sex and race with SBIRT interventions was included. No clinically meaningful differences could be noted in drug use accounting for sex and race differences, though the study authors conceded that with a low positivity rate for the drug use screen (4.70%, n = 1368), this arm of the study may have been underpowered (Sahker et al., 2019). The study did not demonstrate that SBIRT was effective for drug use, though it did find that SBIRT was statistically meaningful for positive change in alcohol use.

**Clinical Practice Value of Identifying Substance Use**

Adding to the importance of identifying patients at risk for a SUD is a study from Washington State with a large sample size (n = 45,647) that showed greater use of acute care services, such as emergency departments, among those patients who screen positive for SU, including cannabis. The generalizability of this study is uncertain, as the sample was predominantly White (80.9%) (Matson et al., 2020). Another study examining the effects of SBIRT in New York City’s eight city-funded sexual health clinics found that patients receiving SBIRT services for positive drug and alcohol use screens reported less sexual activity, improved mental health, and better physical health at 6-month follow-up (Harris et al., 2018). New York has retained SBIRT services in its sexual health clinics due to the implication that HIV/AIDS transmission rates may decrease as a result (Harris et al., 2018).
**Using PDSA Cycles to Improve Workflow**

A study was included that bore the most similarity to this project for using PDSA cycles to assist a project director to identify and resolve barriers to illicit drug screening use in an FQHC primary practice (Moser et al., 2020). In 2020, Moser et al. conducted a quality improvement initiative to identify and resolve barriers to SBIRT utilization at an Oklahoma FQHC through four PDSA cycles (Moser et al., 2020). The study authors achieved workflow improvements, except for a single bottleneck problem that could not be resolved due to disagreement at the leadership level regarding the shifting of screening procedure responsibility from clinical staff to front desk staff (Moser et al., 2020).

**Strengths of Evidence**

Studies using data from SAMHSA’s SBIRT grant program had the benefit of substantial sample sizes, diverse regionality, and diverse populations, although the samples were not representative of all populations served by SAMHSA, which negatively impacts generalizability (Aldridge et al., 2017; Babor et al., 2017; Bray et al., 2017). McNeely et al. (2018) also collected data from two very different regions in the US: the Pacific Northwest and the Maritime Northeast. This study also included participants from a wide array of roles in healthcare, including patients. Finally, Wu et al. (2019) collected data from 26 health systems across the US, ensuring a degree of regional diversity, yet not generalizability. There remains a lack of studies on SBIRT data captured in EMRs.

The studies on the data generated by the SAMHSA SBIRT grant program had substantial sample sizes, analyzing two groups of approximately 500,000 participants each, although Aldridge et al. (2017) studied a smaller subgroup (n = 17,575) of these participants in a pre-
post-study of drug and alcohol use six months after SBIRT. SAMHSA developed a data collection tool, the SBIRT Checklist for Observation in Real-time (SCORe), for assessing correct administration of SBIRT protocols, involving real-time observation of providers (Babor et al., 2017).

Matheson et al. (2017), studying the effectiveness of SBIRT in Abu Dhabi, was the only investigator that utilized control groups. Validation studies of the DAST-10 used rigorous statistical methods that indicated excellent internal consistency reliability (Shirinbayan et al., 2020; Skinner, 1982). Shirinbayan et al. (2020) tested the psychometric properties of the Persian language version of the DAST-10 with a resulting Cronbach’s alpha of 0.93 (Shirinbayan et al., 2020). Skinner’s (1982) landmark study on the original 28-item DAST yielded Cronbach’s alphas of 0.92 in the total sample and 0.86 in the subsample (Skinner, 1982).

Weaknesses, Gaps, and Limitations of Evidence

Only one study using a control group was found and was included for context (Shirinbayan et al., 2020). Most evidence from studies included in this paper is not from randomized controlled trials or is specific to certain clinics or certain geographic regions. Therefore, the generalizability of many studies cannot be inferred. Changes to reported SU after SBIRT adoption as an intervention may be due to confounding factors, such as known natural patterns of waxing/waning drug use, and not due to SBIRT intervention (Aldridge et al., 2017).

Substance use (SU) screening in primary care practice is little studied, which may be due to such screening not being commonly practiced. More study is indicated to bolster and solidify current recommendations (Patnode et al., 2020). A gap in the literature is that an optimal
screening interval, such as annually, has not been established through evidence-based study (Patnode et al., 2020).

Of those primary care practices that report using SBIRT protocols, data tend to be entered into unstructured fields, such as clinic notes, making data extraction and interpretation very difficult and not standardized (Wu et al., 2019). Other barriers to consistent SBIRT and screening tool use indicate a need for more quality improvement initiatives to identify, address, and overcome them (Patnode et al., 2020).

Mentioned in nearly every study is the serious limitation of the DAST-10 and other instruments like it being a self-report screening tool, which may lead to under-reporting. A study conducted at four FQHCs compared urine samples given by patients after completing a self-report instrument of SU. There was considerable discrepancy between self-report and urine drug screen (UDS) results, with 22% (n = 30) showing positive UDS for some substances that patients denied using on self-report. Still, the investigators acknowledged that UDS could yield false positives from other drugs, such as cold remedies and antibiotics, and false negatives from infrequent use or length of time between episodic use periods (Bone et al., 2016). Data thus generated from self-report screens have the potential to be inaccurate.

The potential for social acceptability bias was noted by some authors, in that patients may be dissuaded from answering questions truthfully due to concern of being seen in a negative light by those administering the screens (Aldridge et al., 2017; McNeely et al., 2018; Saunders et al., 2019). Further, the fear of negative consequences of disclosing substance use may deter patients from answering truthfully (Matheson et al., 2018; Saunders et al., 2019; Skinner, 1982).
Many states have legalized the use of cannabis. As such, its inclusion on a list of items of illicit drug use may be confusing to some respondents, who may not recognize whether their legal use of cannabis is unhealthy use (Matson et al., 2020). This has the potential to confound the results of a self-report instrument (Matson et al., 2020).

**METHODS**

**Project Design**

A single-group pretest/posttest design was used for this project. The FQHC leaders selected and announced the initial in-person project education session date and time for the PCPs and MAs. Participants were asked to complete the pre-intervention survey via SurveyMonkey following the education session (Appendix D). At the conclusion of the four-week DAST-10 trial period, clinic stakeholders were asked via email to complete an identical post-intervention survey.

**Model for Implementation**

The Model for Improvement (MFI) is a two-part model consisting of a short series of questions and a model for action (Institute for Healthcare Improvement [IHI], 2021) (Figure 2). The three questions are:

1. *What are we trying to accomplish?* This question is answered by referencing a time frame, a specific and measurable objective, and the population involved (IHI, 2021). In this project, the PD assessed staff knowledge, readiness to use, comfort level, and confidence on using the DAST-10 in practice after a trial period of four weeks. The population was the MAs and PCPs at a specific primary care practice in an FQHC.
2. *How will we know that a change is an improvement?* A quantitative measurement was used to determine whether a change resulted in improvement in comfort level and confidence. A pretest/posttest in the form of the same questionnaire before and after the trial period yielded quantitative values as to whether the change resulted in improvement.

3. *What change can we make that will result in an improvement?* The desired change may be identified by a person or persons within the system who know the problem well (Babor et al., 2017). The CCBH at the project site specified the reported discomfort of staff asking patients about unhealthy drug use and the question as to whether patients are being adequately screened and risky use detected as the problem(s). The suggested change was to introduce a standard validated screening tool to aid assessment.

**Figure 2**

*Model for Improvement*

![Model for Improvement](image)

The second part of the model consists of one or more PDSA cycles. PDSA is an action-oriented approach to making changes via the scientific method (IHI, 2021). The intervention consisted of two PDSA cycles of two weeks each. The Planning stage included discussing strategy with leadership at the implementation site and formulating the plan for the intervention and measurement of PCP/MA change in receptivity. The Doing stage consisted of incorporating the DAST-10 screening tool into the EMR and setting a beginning date for staff and providers to begin using it to screen patients. The second week of each PDSA cycle was devoted to disseminating data for clinic stakeholders to review, as described in the “Theoretical Framework” section above. After participants reviewed these data, a brief survey requested feedback to identify any trouble spots. These actions represent the Study stage. Identified opportunities for improvement were to have been addressed as possible before entering the first week of the subsequent cycle; this represents the Act stage of the PDSA cycle.

**Setting and Stakeholders**

The setting was a single primary care practice within an FQHC in Pima County, Arizona, which has a total of 13 primary care practices and 23 locations. The stakeholders were the MAs, PCPs, patients eligible for screening, and the leadership of the FQHC itself. Approval was given to the PD to conduct the project at this site (Appendix A).

The organization was founded in 1957 as a single clinic to provide medical care to migrant farm workers in a rural community (MHC Healthcare [MHCH], n.d.). Other services include internal medicine, women’s health, OB/GYN, pharmacy services, counseling and wellness services, dental care, psychiatric medicine, pediatric medicine, and urgent care (MHCH, n.d.). Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) is
available for eligible patients at four locations. Outreach services assist patients in accessing healthcare by navigating insurance, Medicare, and the Arizona Health Care Cost Care Containment System (AHCCCS), among others (MHCH, n.d.). A sliding scale payment arrangement is available in certain economic circumstances (MHCH, n.d.). Transportation to and from appointments is available to some patients (MHCH, n.d.). No patients are turned away for inability to pay for services (MHCH, n.d.).

Per Health Resources and Services Administration (HRSA) requirements, the organization is headed by a governing board (Health Resources and Services Administration [HRSA], 2018). The leadership team consists of a Chief Executive Officer (CEO), presiding over the Chief Operating Officer (COO), Chief Financial Officer (CFO), Chief Medical Officer (CMO), Chief Information Officer (CIO), Chief of Clinical Behavioral Health (CCBH), and the Chief Human Resources Officer (CHRO). The implementation site providers and staff who directly implemented the DAST-10 in their daily practice consisted of five MA’s and six providers, those being four APRNs and two MDs. The BHC provided direct project support on site.

The clinic for implementing the intervention was selected by the CCBH; this project was suggested by him and intended to dovetail with a previous student’s project. At the organization’s request, Dr. David Tanis had suggested the DAST-10 as the validated screening instrument for use in the SBIRT protocol currently in place in the primary care clinics (Tanis, 2020). Further, he designed and implemented training on the instrument and presented this to staff and providers over the WebEx communication platform in Summer 2020. The next step in implementing the DAST-10 in the FQHC was to pilot it in a single practice to generate internal
champions to facilitate the adoption of the instrument system-wide. This DNP project endeavored to achieve this aim.

**Planning the Intervention**

Prior to beginning screening patients with the DAST-10, the site clinic primary care providers and their MAs were given an education session to introduce the DAST-10 and explain its purpose, at the request of the BHC (Appendix E). The interim clinic director determined an appropriate time and date for the session. There were a combined 10 providers and MAs, as well as some clinic support staff present. One provider was unable to attend. The education session was held at an in-person staff meeting at the site.

A recruitment email was sent to these participants announcing the project: a four-week (initially intended to be six weeks) trial of the DAST-10 screening tool as an active component of the clinic’s SBIRT protocol in preparation to proliferate the DAST-10 at all 13 of the FQHC’s primary care practices (Appendix C).

Dr. David Tanis granted the PD permission to utilize his PowerPoint presentation entitled “DAST-10 Education for the Intent to Adopt at an Integrated Health Clinic” that he designed and presented in Summer 2020 as his doctoral project (Appendix E) (Tanis, 2020). This was to reintroduce the topic and educate other stakeholder staff and providers who may not have had the benefit of this short lecture presentation. This was followed by a brief PowerPoint presentation prepared by the PD that described the current project (Appendix E).

Initially, the intervention phase of the quality improvement initiative was planned to occur over six weeks. It was to consist of three PDSA cycles of two weeks each, during which clinic stakeholders were to screen patients for illicit drug use with the DAST-10 via the EMR as
part of pre-appointment procedures. The second week of each two-week PDSA cycle were to be devoted to analyzing data produced by screening patients the week prior. Therefore, week 1 was for data collection and week 2 was for analyzing it.

Following the education session, an anonymous pre-test questionnaire was disseminated via a link-embedded email through SurveyMonkey to all PCPs and MAs, not just those who attended the education session (Appendix D). That email included an attachment containing the PowerPoint presentations created by Dr. Tanis (2020) and the PD for review and for those who were unable to attend the education session (Appendix E). The questionnaire solicited stakeholder opinion as to receptivity to using the DAST-10, that is, comfort level using the instrument, understanding of the instrument itself, and perceived value in its use.

The trial launch occurred the following Monday, October 18, 2021. This period was divided into two PDSA cycles of two weeks each, with continuous screening for all four weeks. Screening data generated during the first week of each two-week PDSA cycle was disseminated to participants during the second week of each cycle. Raw numbers without personal health information (PHI) included were to be collated into one or more reports generated from the EMR with the assistance of the organization’s information technology (IT) department. The original five intended data points were:

1. Total number of screening-eligible patients seen in the practice.
2. Total number of eligible patients screened with DAST-10.
3. Total numbers of patients scoring no risk (0) to low risk (1-2).
4. Total number of patients scoring moderate-to-high risk (3-10).
5. Total number of patients scoring moderate-to-high risk (3-10) referred to any kind of behavioral health treatment.

During the second week of each PDSA cycle, a brief PDSA Cycle Optional Feedback Survey (SurveyMonkey) was sent to participants, which was identical for the second weeks of each PDSA cycle (Appendix D). The purpose was to collect anonymous feedback on the instrument and identify any problems with its use by PCPs or MAs. The SurveyMonkey link to the PDSA Cycle Optional Feedback Survey was embedded in an email that included a bar graph illustrating the data points (Appendix F). In the second PDSA cycle, the bar graph from the previous cycle was included with the bar graph from the current cycle for side-by-side comparison by stakeholders (Appendix F). This side-by-side comparison was intended to give stakeholders context for answering the survey, which solicited stakeholder opinions on the value of the DAST-10 and provided feedback as to difficulties or problems noted with incorporating the instrument in the clinic workflow. Had there been a third PDSA cycle, a side-by-side comparison of the three data collection weeks was to be provided in an email containing a link to the PDSA Cycle Optional Feedback Survey (see “Course of Intervention”).

Participants and Recruitment

The participants were MAs and PCPs in a single primary care practice in an FQHC. Recruitment was through intra-organization communication and an email explaining the project (Appendix C).

Consent and Ethical Considerations

An attachment to the recruitment email consisted of a Disclosure and Voluntary Consent document (Appendix B), which did not require a signature. Participation in any aspect of the
project was considered consent, which was stated clearly in the document (Appendix B). As the intervention itself is well-established to be appropriate and recommended (Patnode et al., 2020), ethical considerations pertaining to patients being screened with the DAST-10 are such that the benefits were deemed to outweigh risks.

**Data Collection**

Data were collected and compiled with the online survey engine SurveyMonkey. Links to the pre- and post-questionnaire surveys and one optional feedback survey (Appendix D) were provided in email communications to MAs and PCPs of the practice (Appendix C). The PD accessed the data in the SurveyMonkey survey engine and presented it to participants in bar graph form in email (Appendix F). Per the SurveyMonkey website, its data is kept secure in multiple ways, such as encryption, physical isolation within cages of server hardware, multi-factor authentication for employees, and a vulnerability management program inclusive of penetration testing, among other measures (SurveyMonkey, 2021). The survey engine offers the option of anonymizing responses, even to the survey originator, and this feature was utilized (SurveyMonkey, 2021).

**Data Analysis Overview**

As the FQHC’s primary objective is to generate internal champions to move the instrument across the entirety of FQHC’s primary care practices, the main data analysis was the results of the pre-intervention questionnaire compared with the post-intervention questionnaire. The identical pre- and post-intervention questionnaires consisted of seven questions each. The five-point Likert scale questions were ordered 1-5 from left to right. Answer choices for each question were “Strongly Disagree” (1), “Disagree” (2), “Neither Agree nor Disagree” (3),
“Agree” (4), and “Strongly Agree” (5), so that higher point values were associated with more positive responses (Appendix D). An improvement in overall scores regarding PCP and MA knowledge, readiness to use, comfort level, and confidence in the instrument would be interpreted as a successful intervention. Answers to each question were compiled and compared. Average and median values of each individual question were compared in the pre- and post-intervention surveys as well as overall pre- and post-intervention questionnaire average and median values.

RESULTS

Outcomes

The main outcome measure was the change in respondent scores regarding using the DAST-10 in positive or negative directions after the four-week implementation period. Four pre-intervention questionnaires and four post-intervention questionnaires were returned. As there were six providers and five MAs were involved in the project, the response rate was 36.4% for both questionnaires.

Receptivity to using the DAST-10 in practice was high prior to beginning of intervention with the pre-intervention questionnaire, as evidenced by agreement with confidence in applying the screen, readiness to use, comfort with using, opinion of effectiveness, support for using, suitability, and logic for use. The post-intervention questionnaire scores did not demonstrate diminishment or improvement in the questionnaire concepts, with the exception of Q4 and Q5, discussed below.

All questions in both questionnaires were answered by four anonymous respondents who completed them, out of 11 possible. It is unknown how many, if any, of the respondents were the
same for both the pre- and post-intervention questionnaires, as paired t-tests were not applied.

The variance between the median and average (mean) for each question ranged between 0.00 and 0.25, indicating a lack of outlier opinions. None of the questions was answered “Strongly Disagree” (1) or “Disagree” (2). For each of questions 1-3, responses on pre-intervention questionnaires did not change from those on post-intervention questionnaires (Tables 1, 2, & 3).

Table 1

Pre- and Post-Intervention Questionnaire Results: Question 1

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<thead>
<tr>
<th></th>
<th>1= Strongly Disagree</th>
<th>2= Disagree</th>
<th>3= Neither</th>
<th>4= Agree</th>
<th>5= Strongly Agree</th>
<th>Group Total Score/N</th>
<th>Group Mean Score</th>
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<td>0(0%)</td>
<td>0(0%)</td>
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<td>Post</td>
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<td>0(0%)</td>
<td>0(0%)</td>
<td>3(75%)</td>
<td>1(25%)</td>
<td>17/4</td>
<td>4.25</td>
<td>4</td>
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Table 2

Pre- and Post-Intervention Questionnaire Results: Question 2

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<th>1= Strongly Disagree</th>
<th>2= Disagree</th>
<th>3= Neither Agree nor Disagree</th>
<th>4= Agree</th>
<th>5= Strongly Agree</th>
<th>Group Total Score/N</th>
<th>Group Mean Score</th>
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<td>Pre</td>
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<tr>
<td>Post</td>
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Table 3

Pre- and Post-Intervention Questionnaire Results: Question 3

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<th>3=</th>
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<th>Group Total Score/N</th>
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Q4 and Q5 assessed for opinion of effectiveness and support for using the screen in practice, respectively, and were the only questions that were not answered the same way pre- and post-intervention. In Q4, answers shifted from two respondents selecting “Agree” and two respondents selecting “Disagree” to one respondent for each answer. Two respondents chose “Neither” in the post-intervention questionnaire. In Q5, two respondents answered, “Strongly Agree” and another two answered “Agree” in the pre-intervention questionnaire. In the post-intervention questionnaire, the “Agree” answer remained unchanged, with two respondents. The “Strongly Agree” answer diminished to one respondent, and the “Neither” question went from zero respondents to one (Tables 4 & 5).
Table 4

_Pre-and Post-Intervention Questionnaire Results: Question 4_

| Question 4 – The DAST-10 is more effective than our current method. | 1= Strongly Disagree | 2= Disagree | 3= Neither Agree nor Disagree | 4= Agree | 5= Strongly Agree | Group Total Score/N | Group Mean Score | Group Median Score |
| | N(%) | N(%) | N(%) | N(%) | N(%) | |
|---|---|---|---|---|---|---|---|---|
| Pre | 0(0%) | 0(0%) | 0(0%) | 2(50%) | 2(50%) | 18/4 | 4.50 | 4.50 |
| Post | 0(0%) | 0(0%) | 2(50%) | 1(25%) | 1(25%) | 15/4 | 3.75 | 3.50 |
| Difference | - | - | - | - | - | - | -0.75 | -1.0 |

Table 5

_Pre-and Post-Intervention Questionnaire Results: Question 5_

| Question 5 – I support using the DAST-10 in our SBIRT protocol. | 1= Strongly Disagree | 2= Disagree | 3= Neither Agree nor Disagree | 4= Agree | 5= Strongly Agree | Group Total Score/N | Group Mean Score | Group Median Score |
| | N(%) | N(%) | N(%) | N(%) | N(%) | |
|---|---|---|---|---|---|---|---|---|
| Pre | 0(0%) | 0(0%) | 0(0%) | 2(50%) | 2(50%) | 18/4 | 4.50 | 4.50 |
| Post | 0(0%) | 0(0%) | 1(25%) | 2(50%) | 1(25%) | 16/4 | 4.00 | 4.00 |
| Difference | - | - | - | - | - | - | -.50 | -.50 |

Finally, responses to Q6 and Q7 were answered in exactly the same pattern relative to each other, and responses to each question did not change from pre-intervention to post-intervention (Tables 6 & 7).
Table 6

Pre- and Post-Intervention Questionnaire Results: Question 6

Question 6 – The DAST-10 is a suitable instrument for assessing patients for unhealthy drug use.

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<thead>
<tr>
<th></th>
<th>1= Strongly Disagree</th>
<th>2= Disagree</th>
<th>3= Neither Agree nor Disagree</th>
<th>4= Agree</th>
<th>5= Strongly Agree</th>
<th>Group Total Score/N</th>
<th>Group Mean Score</th>
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<td>Post</td>
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Table 7

Pre- and Post-Intervention Questionnaire Results: Question 7

Question 7 – It is logical to screen patients annually with the DAST-10.

<table>
<thead>
<tr>
<th></th>
<th>1= Strongly Disagree</th>
<th>2= Disagree</th>
<th>3= Neither Agree nor Disagree</th>
<th>4= Agree</th>
<th>5= Strongly Agree</th>
<th>Group Total Score/N</th>
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Slightly lower group mean scores were observed in the post-intervention questionnaire compared to the pre-intervention questionnaire. There was little variation in the responses within the group in each of the pre-intervention and post-intervention questionnaires.

There were four respondents and seven questions, each with answer selections rated from 1 to 5 possible points. As all four respondents answered all questions, the possible total points for each questionnaire for the entire group ranged from 28 to 140. Also, possible Mean Total Scores
ranged from 7 to 35, and possible Mean Question Scores from 1 to 5. Lower numbers are associated with more negative responses and higher numbers to more positive responses:

\[ 4 \times 7 \times 1 \text{ (SD) } = 28 \text{ total pts/4 R = 7/7 = 1} \]

\[ 4 \times 7 \times 5 \text{ (SA) } = 140 \text{ total pts/4 R= 35/7 = 5} \]

The actual Mean Total Scores and Mean Question Scores pre- and post-intervention were calculated thus:

Pre-Intervention Questionnaire:

\[ (3 \times 1) + (4 \times 18) + (5 \times 9) = 120 \text{ total across all respondents/4 = 30 Mean Total Score} \]

\[ 30 \text{ MTS/7 questions } = 4.29 \text{ Mean Question Score.} \]

Post-Intervention Questionnaire:

\[ (3 \times 4) + (4 \times 17) + (5 \times 7) = 115 \text{ total across all respondents/4 = 28.8 Mean Total Score} \]

\[ 28.8 \text{ Mean Total Score/7 questions } = 4.11 \text{ Mean Question Score} \]

Neither the answers “Strongly Disagree” nor “Disagree” were selected in any question, either before or after the intervention. The most changed answer was “Neither Agree nor Disagree,” selected once pre-intervention and four times post-intervention. Next, the answer “Strongly Agree” was selected nine times pre-intervention and seven times post-intervention. The least changed answer selection was “Agree,” from 18 times to 17 times (Table 8).
Course of Intervention

The project implementation phase was beset with significant challenges, and changes to the initially proposed project had to be made before and during implementation. The project committee chair was kept abreast of these challenges and the changes they necessitated in the interim between the proposal defense and the project implementation. The latter was delayed by some months as the project site was upgrading the EMR, which presented significant and ongoing challenges to the organization. As this project is designed to work within the EMR, with reports generated by the Reports Specialist within the organization’s IT department, priority naturally was allocated by the agency to troubleshooting the immediate and urgent issues the EMR upgrade presented to the FQHC (Figure 3).

Due to time constraints, the project chair suggested decreasing the number of two-week PDSA cycles from three to two (Dr. Lindsay Bouchard, personal communication, September 1, 2021). The five data points for the PDSA cycle bar charts were initially deemed to be readily accessible in the form of reports generated from the EMR, however, the CCBH learned after the proposal was defended that the fifth data point (number of patients scoring 3-10 who were...
referred to behavioral health services of any kind) could not be readily obtained by EMR report (J. Reardon, personal communication, August 4, 2021). Though there may have been a possible workaround with additional software coding, the organization was unable to devote staff time to this problem (J. Reardon, personal communication, August 4, 2021).

Figure 3

Flowchart of Actual Process Steps and Events

The intervention began with the educational session at an in-person meeting attended by MAs, PCPs, the interim clinic director, and the BHC. The PD delivered Dr. Tanis’ PowerPoint
presentation explaining the DAST-10, followed by a brief PowerPoint explaining the intervention (Appendix E).

Following the presentation, an email was sent to all primary care providers and associated MAs at the project site with a link attached to the pre-intervention questionnaire (Appendix D), requesting completion of the questionnaire. Reminder emails were sent, and the questionnaire was closed at the end of the day on the first day of PDSA Cycle 1, when the DAST-10 was first implemented into patient pre-appointment procedures.

On the third day of PDSA Cycle 1, the BHC advised the PI and the CCBH that the first seven questions of the DAST-10 were incorrectly populating into patient charts as the WAST-SF (Figure 5). After completing the screen and clicking “SCORE,” the first seven DAST-10 questions with patient answers were converted from the DAST-10 to the Women Abuse Screening Test-Short Form (WAST-SF), which had been entered into patients’ records after clicking the “SCORE” button in the data collection screen (Figure 4 & 5). This unfortunate and unforeseen complication necessitated the rest of the intervention completed by patients on paper copies of the DAST-10 provided to them at the project site prior to their clinic appointments. No data was available to be collected from the EMR at any time during the intervention period. Removing the EMR from the project also resulted in the loss of data generated from the first data point, that being total number of eligible patients seen. The first and fifth data points (total number of eligible patients seen and total number of patients referred to behavioral health services, respectively) were abandoned to minimize the project’s draw on the organization’s resources. Until a remedy could be arranged, the CCBH directed that the DAST-10 continue to be administered on paper forms in either English or Spanish with retention for later scanning into
patient charts, if feasible. The EMR-based DAST-10 was not to be used until the problem was resolved (personal communication, L. Stanley & J. Reardon, October 20, 2021). This issue has since been resolved with an update by the EMR software developer in January 2022 (L. Stanley, personal communication, February 9, 2022).

**Figure 4**

*View of DAST-10 Response Screen in EMR*

Note: EMR athenaPractice v20 (www.athenahealth.com)
Figure 5

View of Appearance of DAST-10 in Patient Chart

| DAST-10 Form | 1) In general, how would you describe your relationship?  Yes  
2) Do you and your partner work out arguments with?  Yes  
3) Do arguments ever result in you feeling down or bad about yourself?  Yes  
4) Do arguments ever result in hitting, kicking or pushing?  Yes  
5) Do you ever feel frightened by what your partner says or does?  Yes  
6) Has your partner ever abused you physically?  No  
7) Has your partner ever abused you emotionally?  Yes  
8) Have you engaged in illegal activities in order to obtain drugs?  No  
9) Have you ever experienced withdrawal symptoms (felt sick) when you stopped taking drugs?  No  
10) Have you had medical problems as a result of your drug use (e.g., memory loss, hepatitis, convulsions, bleeding, cirrhosis, etc.)?  Yes  

DAST Score: 6, Degree of Problems Related to Drug Abuse: Substantial level. Suggested Action: Intensive assessment

Note: (L. Stanley, personal communication, October 20, 2021)

The BHC collected the paper copies of the DAST-10 from the providers and made photocopies thereof with PHI redacted for the PD to tally manually. The BHC provided these to the PD at the beginning of the following week, corresponding to week 2 of PDSA Cycle 1. During this week, an email was sent to all affected parties with a bar chart showing numbers of patients screened and their resulting scores (Appendix F) and a link to a brief four-question survey designed for participants to give anonymous feedback (Appendix D). Three of these surveys were returned. All had answered all four Likert scale questions therein. None had provided any written responses in the free text field provided.

The third week of the four-week intervention corresponded to week 1 of PDSA Cycle 2. The EMR was not yet adapted to remedy the problem identified in PDSA Cycle 1, so paper copies of the DAST-10 continued to be used to screen patients. This method rendered the DAST-10 a patient self-administered screen, which is permissible and does not jeopardize its integrity.
(Skinner, 1982). Many more forms were returned during PDSA Cycle 2, again with PHI redacted. Originally, the intention for week 2 of PDSA Cycle 2 was to produce a bar chart with side-by-side comparisons of PDSA Cycle 1 and PDSA Cycle 2, along with a link embedded in the same email for the second feedback survey on the process (Appendices C & F). As there was low engagement on PDSA Cycle 1 survey, the project chair permitted the PD to omit the PDSA Cycle 2 survey. Therefore, the email with the combined-cycle bar chart contained a link to the post-intervention questionnaire instead, which would otherwise have been presented the week following the completion of the DAST-10 four-week trial.

The bar chart for the PDSA Cycles contained data points for total number of patients screened, score 0-2, and score 3-10 (Appendix F). A fourth data point was added to include paper forms returned incomplete. This was unexpected and presents additional questions regarding the DAST-10 as a self-administered instrument.

When the project went to implementation, beginning with the education session on October 14, 2021, its parameters had changed from three PDSA cycles to two and from five data points to be collected to four. Additionally, due to relatively low engagement on the PDSA Cycle 1 survey (27%), the PDSA Cycle 2 survey was abandoned, which was slated to run during the fourth week of the intervention. If the original proposed timeline was followed, the post-intervention questionnaire would have been presented two weeks following the end of the active intervention, that being week 1 of PDSA Cycle 2 (Appendix G). The PD was concerned that engagement could fall further during this interval, resulting in fewer post-intervention questionnaires returned than pre-intervention questionnaires. This interval was therefore shortened, and the PDSA Cycle 2 survey was dropped in the interest of collecting as many of the
more consequential post-intervention questionnaires as possible to inform the project outcome measures.

**Challenges to the Use of the DAST-10**

Over four weeks, a total of 76 paper DAST-10 forms were returned, including five (6%) completed on the Spanish language version. Although this project was not designed to measure patient reactions to unhealthy drug use screening, it is worth noting that nine (11%) DAST-10 screening forms were returned incomplete, which was not anticipated. Six of these forms had a “0” entered on the total score line without marking any answers on the form. There is no provision for scoring or interpreting incomplete screens (Skinner, 1982), which leaves a significant potential gap in care delivery and may necessitate a practice protocol to address these cases. Further, four patients wrote comments directly on the paper forms. One patient wrote, “Don’t do any drugs since the 1970s,” and another wrote two comments on the form: “None” and “Never do drugs.” A third patient circled the appropriate answers per directions for the first two questions, then wrote “No” next to the following eight questions. Still, another patient who had entered “0” on the form wrote the word “NO” next to it. The BHC reported that they had received feedback from some MAs that several patients refused the screening altogether (L. Stanley, personal communication, November 8, 2021).

A patient who did not complete the Spanish language form left a question mark next to the unanswered question 5: “¿Alguna vez se siente mal o culpable debido a su uso de drogas?” (“Do you ever feel bad or guilty about your drug use?”). The English language form includes the direction “If never use drugs, choose ‘no.’” The Spanish language form does not have this direction, raising the question as to whether the patient did not understand a question that may
have been clarified with the additional verbiage or if the patient was undecided if their drug use caused them guilt (Appendix I).

PDSA Cycle 1 yielded 12 forms collected by the BHC, while PDSA Cycle 2 yielded 64 forms (Appendix F). The clinic’s procedure for this pilot of the DAST-10 in clinic was for patients scoring 3-10 (indicating moderate to high risk) to meet with the BHC immediately following their PCP appointment, where feasible. Where this was not possible, the BHC followed up by phone. The clinic intends to retain screening with the DAST-10, and the entire organization will be adopting the screen in all its primary care practices. At the time of this writing, screening with the DAST-10 continues in the project site clinic on paper forms, though with less consistency than during the intervention period (L. Stanley, personal communication, December 1, 2021).

**DISCUSSION**

**Summary**

The most important success is the participants’ generally positive attitude toward using the DAST-10 in practice, in spite of the challenges that arose during the implementation. Opinions and attitudes toward the DAST-10 were generally positive at the beginning of the intervention and remained positive at the end. There was a slight decrease in overall mean of scores post-intervention. Further, screening continues after the intervention has completed, which may further normalize the use of the DAST-10 at this clinic site and, more importantly, identify patients with risky use of substances. The potential to prevent and/or successfully treat SUD in these patients cannot be overlooked, as well as the potential to prevent overdose deaths.
The EMR error in transposing the completed DAST-10 as the WAST-SF presented additional EMR challenges to the agency and incorrectly populated patient charts for two days. However, this serious flaw in the EMR was detected relatively quickly and at one primary care practice only, instead of all 13 of the agency’s primary practices. Piloting the DAST-10 at one clinic only may have prevented this problem on a much larger scale. In this way, this discovery at this juncture represents a success.

The project did not demonstrate an overall improvement in participants’ opinions and attitudes about screening patients with the DAST-10, although opinions were quite positive at the outset of the project. The overall analysis indicated a slightly decreased mean score, from 4.29 pre-intervention to 4.11 post-intervention. Possible item ratings ranged from 1 to 5, corresponding with more negative opinions at lower values and more positive opinions at higher values. As such, the final answer to the project question, whether there was evidence to support a change in opinions and perspectives of the participants following implementation of the DAST-10 in clinic practice in a more positive direction, is ‘no.’

The failure to capture data in the EMR was unfortunate, as the PD intended to generate data to further the next logical step in the DAST-10 implementation evaluation, that being examining the relationship between number of referrals made to BH and number of patients who followed through by attending appointments. A future project for another doctoral student could have been to analyze these data and provide insight as to the effectiveness or lack thereof of such referrals. It is unknown how many eligible patients were seen, and how many of this number were screened. There is currently no standardized way to enter the data collected on the paper copy DAST-10 into patient charts, nor any practical way to retrieve it for later analysis.
Interpretation

Reception of providers and MAs to using the DAST-10 was generally good, which may bode well for the organization to implement the screen agency-wide. One of the agency’s goals was to increase illicit drug use screening by removing a significant barrier to screening, that of the discomfort of the MAs in asking these rather personal questions of patients. It is not clear that the DAST-10 screen eliminated that barrier entirely, at least not via the method it was delivered during the intervention, on paper forms.

Implications

In general, the value of screening at the primary care level for illicit drug use and quantifying the risk level where it exists is not in dispute among these providers and MAs. Removal of barriers to facilitate screening remains a significant issue and may well form the basis for a future doctoral project(s) to install the DAST-10 into the SBIRT protocol at this FQHC.

Limitations

There were 11 participants total; four returned the pre-intervention and post-intervention questionnaires, yielding a small sample size. As the data were obtained from the returned questionnaires, the results of a sample size of four cannot be assumed to scale to all of the project site’s PCPs and MAs, let alone those in the entirety of the organization.

The project was designed to be executed within the EMR, which was discovered to not function as expected for this purpose soon after the intervention was underway. Firm data on the originally planned data points were therefore not available and cannot be used for future projects
to interpret and track outcomes of those patients scoring at moderate to high risk and referred to behavioral health services.

Five (6%) of the paper screening forms were returned on the Spanish language version of the DAST-10 form. There is currently no method within the EMR to include forms in Spanish or other non-English languages. As the clinic serves many patients who do not speak or read English fluently, this may represent a care disparity, as administering these screens may be omitted due to appointment time constraints. Sight-impaired patients and literacy-challenged patients may have difficulty completing a self-administered form. These persons may need the MA or provider to administer the screen by reading the questions for the patient to answer, which presents additional issues related to time constraints and possibly discomfort on the part of the patient and the MA or provider administering the screen.

The most important benefit is the identification of patients who may have or are at risk of developing an SUD. Of the 76 paper forms completed during the intervention, five (6%) scored three or above, the threshold for referring to behavioral health services. The BHC was alerted to these patients and followed them clinically after they were identified.

It is unknown whether any real harm came to any patient or participant during the intervention; the PI was not advised of any. There is a possibility that some patients were put off or offended by being screened for illicit drug use. Indications of such feelings included written comments some patients included on the paper forms, some refusing to be screened, or returning forms incomplete.

During PDSA Cycle 1, one provider who could not attend the education session misunderstood the procedure for using the DAST-10; when their MA provided them with the
paper form before entering the data into the EMR, the provider reviewed the form and then shredded it. No data was entered into the patient chart, nor was the form retained to scan into it (L. Stanley, personal communication, October 26, 2021). Although the PowerPoint slides detailing the project were provided in an email to all participants whether or not they were able to attend the education session, it is not entirely surprising that busy providers would overlook an email such as this. The provider was instructed in the intended procedure by the BHC for PDSA Cycle 2.

Also, during PDSA Cycle 1, an MA was found to have not administered the instrument at all and further conducted pre-appointment procedures without ever addressing illicit drug use, though they did continue to screen for alcohol and tobacco use, as has been the clinic’s practice (L. Stanley, personal communication, October 26, 2021). This may represent avoidant behavior by clinic personnel and is a recognized issue by the FQHC, also emerging in the literature search and synthesis portion of the project proposal (Harris & Yu, 2016; Saunders et al., 2019).

The project was designed to screen patients using the EMR, and all data for the project to be supplied from EMR reports by date. The role of paper forms in the intervention was intended to ease restraints on MAs by mitigating discomfort and/or decreasing demands on their limited time to prepare patients to be seen by providers. The paper forms were supplied as an option for MAs at their discretion, per the request of the BHC. The data on these forms were expected to be entered into the EMR after completion.

That the EMR populated the DAST-10 into patient charts as most of the WAST-SF, rendering the EMR entirely unusable for the project, was wholly unexpected. The CCBH ordered that screening continue on paper forms for the duration of the intervention. As this problem was
not discovered until the third day of PDSA Cycle 1, an unknown number of screens were completed and entered into patient charts. This data was not captured nor included for dissemination to participants in bar chart form during week 2 of PDSA Cycle 1. Using paper forms entirely was not anticipated, so measures to track these were not in place, such as dates when the screens were completed. The BHC personally collected the paper forms from provider offices and supplied these to the PI on the third day of PDSA Cycle 1/week 2, when screening was intended to continue for the sake of continuity but not accounted for in bar charts for dissemination to participants. It is not known how many of the forms provided to the PI also included the first two days of PDSA Cycle 1/week 2, the intended analysis week.

Many more forms were returned to the PD during PDSA Cycle 2. Due to a lack of control measures to track paper forms, those returned included some completed during PDSA Cycle 1, in addition to weeks 1 and 2 of PDSA Cycle 2. It was not possible to determine when these forms were completed so as to divide them accurately between PSDA Cycles 1 and 2. The project design was to examine the results of week 1 of both PDSA Cycles only.

The PD did not expect that some forms would be returned partially complete, and there was no provision to address this. A column was added to the PDSA Cycle Bar Chart to include this information to participants when requesting their feedback mid-intervention (Appendix F.)

**Steps to Improve Future Performance**

1. Correction of the error in the EMR that results in the first seven questions of the DAST-10 being replaced with questions from the WAST-SF when the screen populates to the patient chart note after the screen is answered in a different window.
2. Using the DAST-10 in the EMR so that reports can be quickly generated and analyzed as to total numbers of patients screened, scores, and dispositions (i.e., referral to behavioral health services) for patients with screening scores indicating moderate to high risk of SUD. This last measure is crucial to assess if patients’ needs are being adequately addressed after risk for SUD is identified.

3. Relocation of the DAST-10 into the grouped SBIRT forms in the EMR for consistency and to enable flagging of charts for patients who have not been screened in the last year or ever before.

4. Eliminating the paper form of the DAST-10 and administering this screen and all other pre-appointment screens via patient entry of answers into a tablet as much as possible. Some MA or provider administration of screens may still be necessary, such as for visually impaired or developmentally disabled patients and those with literacy challenges.

5. Another potential benefit of patients self-administering the screen on a tablet may be eliminating or significantly reducing MA and/or provider discomfort elicited by direct interaction with patients for illicit drug use screening.

**DNP Essentials Addressed**

The following DNP Essentials developed by the AACN were addressed in the execution of this DNP project (American Association of Colleges of Nursing [AACN], 2006).

**DNP Essential II: Organizational and Systems Leadership For Quality Improvement and Systems Thinking**

The FQHC intends to adopt the use of the DAST-10 screening instrument systemwide to all 13 of its primary care practices. By gauging participants’ thoughts and opinions before and
after the initial implementation that is the project, the PI sought to assess how this intervention impacted the providers and MAs at the project site. Additionally, a goal of the FQHC is to improve SBIRT administration to its patients. In this instance, that improvement is adopting a standardized screening instrument to replace a free-form text response.

**DNP Essential III: Clinical Scholarship and Analytical Methods for Evidence-Based Practice**

A primary desired outcome of the FQHC in adopting the DAST-10 is to improve the reliability of information collected at the practice level regarding their patients having a current SUD or risk for acquiring same. The DAST-10 translates patients’ answers into quantifiable data and is supported in the literature as a validated evidence-based intervention. Therefore, this project demonstrates applying knowledge to address problems in practice, thereby improving health outcomes (AACN, 2006).

**DNP Essential IV: Information Systems/Technology and Patient Care Technology for the Improvement and Transformation of Health Care**

Although the project did not ultimately include the FQHC’s EMR, it was designed around EMR functionality and power to collect and track data to facilitate appropriate patient care measures, such as referral to treatment. The aim was to shift the capture of patients’ responses to questions about their drug use or lack of same from a free-form text box to quantifiable and recoverable data.
DNP Essential V: Health Care Policy for Advocacy in Health Care

The project is the initiation of a policy change within the FHQC. Introducing the DAST-10 to a pilot site within the organization demonstrates engagement in forming new policy and implementing it within an organization.

DNP Essential VI: Interprofessional Collaboration for Improving Patient and Population Health Outcomes

Collaboration with other professionals at the organization was necessary to plan and execute the project. Involved parties included the CCBH, the BHC, the clinic’s Interim Director, the CMO, the Reports Specialist, and all medical assistants and primary care providers at the project site. Ongoing communication with these parties by the PI and/or between individuals in these roles for many months was essential to planning and executing the project.

DNP Essential VII: Clinical Prevention and Population Health for Improving the Nation’s Health

The DAST-10 screening instrument is a prevention intervention. The elements of clinical prevention and population health are addressed in this project by reducing the incidence of adverse or tragic outcomes of SU by identifying patients at risk. Similarly, identifying and offering treatment to patients assessed to be at moderate to high risk is health promotion. At the community level, population health is addressed by seeking to reduce the incidence of SUD, overdose, and overdose deaths. The population in this example are the patients of an FQHC, which is comprised largely of rural and medically underserved communities.
Plan for Sustainability

The organization plans to implement the DAST-10 systemwide; this was established before the project was designed.

Plan for Dissemination

There is a project currently underway by a different student from another university to incorporate all the FQHC’s SBIRT pre-appointment forms, inclusive of the DAST-10, into an application designed to be installed on tablet computers and provided to patients to complete independently before their appointments (J. Reardon & N. Haas, personal communication, April 14, 2021). The DAST-10 is planned to be a permanent feature of the FQHC’s SBIRT protocol within its primary care practices and currently continues at the project site.

Funding

The CCBH has negotiated a multi-year contact with the DAST-10 copyright holder for the use of the screen within the agency. Specific details therein are confidential. There may also be a financial cost to the agency in additional labor costs to staff to administer the screen prior to appointments and the possibility of appointments taking longer to complete to allow for discussion of screen results with patients. The agency incurred labor costs unknown and unavailable to the PD for the pre-intervention educational meeting held at the beginning of the project implementation, which was attended by most of the participants.

Conclusions

Participants consisting of primary care providers and MAs at a single primary care clinic within an FQHC demonstrated generally positive opinions regarding screening patients for illicit drug use and risk for SUD in primary care, both before and after a four-week trial of the DAST-
10 at this clinic site. There was no improvement in opinions as assessed on a post-intervention questionnaire on a Likert scale (values 1-5) when compared to a pre-intervention questionnaire, and only a very slight reduction in the overall mean score (4.29 to 4.11). The median score remained the same at 4.00.

Further study is needed to assess barriers to screening patients and quality improvement initiatives to mitigate identified barriers. There is some indication that patients may also be reluctant to be screened in this way, as evidenced by comments written on some forms, incomplete forms returned to the MAs, and some patients refusing to be screened for illicit drug use altogether.

The DAST-10 is currently in use at the clinic site, though still on paper forms. Patients scoring 3-10 are still met by the BHC after PCP appointments for further discussion and/or referral to treatment. That it is currently being used is the project’s best success and was the overall goal of the agency from the outset.
APPENDIX A:

SITE APPROVAL/AUTHORIZATION LETTER
April 5, 2021

University of Arizona Institutional Review Board
c/o Office of Human Subjects
1618 E Helen St
Tucson, AZ 85721

Please note that Mr. David Johnsrud, UA Doctor of Nursing Practice student, has permission of MHC Healthcare to conduct a quality improvement project at our MHC Healthcare Primary Care Health Center at 2355 N Wyatt Dr, Suite 101, Tucson AZ 85712 for his project, “Incorporating the DAST-10 Screening Tool into SBIRT in a Primary Care Practice”.

The primary care clinic currently utilizes a Screening, Brief Intervention, and Referral to Treatment (SBIRT) protocol to identify patients using alcohol, marijuana, and tobacco products. It does not currently utilize a validated instrument to identify patients using other substances, such as illicit stimulant, ililicic opioids, or prescription opioids obtained illicitly. Mr. Johnsrud will incorporate the ten-question Drug Abuse Screening Test (DAST-10) screening tool into the existing Screening, Brief Intervention and Referral to Treatment (SBIRT) screening tools at this facility, after conducting an educational session for staff stakeholders on the purpose and use of the instrument. Then, with the assistance of our IT department, he will incorporate it into the SBIRT protocol in a short series of brief Plan-Do-Study-Act cycles at the primary care clinic. Those patients scoring 3-10, indicating a moderate-to-severe risk of developing a substance use disorder, will be referred to the Behavioral Health (BH) arm of MHC Healthcare by their providers or other licensed clinical staff. Mr. Johnsrud will compare the number of referrals made to BH to the same time period(s) one year prior, in order to determine if there is a relative change in referrals to BH after DAST-10 implementation. He will be assisted by Laura Stanley, LCSW/Behavioral Health Consultant and our IT department to incorporate the DAST-10 tool into our SBIRT in our Centricity electronic medical record (EMR).

Mr. Johnsrud has agreed to provide to my office a copy of the University of Arizona Determination before he begins the project. He will also present aggregate results to myself and other interested parties at MHC Healthcare.

If there are any questions, please contact my office.

Signed, [Signature]

Jon Reardon, MBA, MSW, LCSW
Chief of Clinical Behavioral Health
APPENDIX B:

DISCLOSURE AND VOLUNTARY CONSENT DOCUMENT
Disclosure & Voluntary Consent Statement

Dear MHC Healthcare Staff and Providers:

This document is to inform you of a Doctor of Nursing Practice project to be conducted at MHC Healthcare Primary Care Health Center on N. Wyatt Drive in Tucson, Arizona.

The purpose of the project is to pilot the Drug Abuse Screening Test (DAST-10) into the current SBIRT protocol at this location. The PI will be assessing the staff’s and providers’ reception, comfort level, and opinions regarding the use of the DAST-10 to screen all eligible patients over the age of 18 for unhealthy drug use, exclusive of tobacco and alcohol.

There will be an education session at a time to be determined via the WebEx platform. Immediately following the session, a survey will be emailed to stakeholders.

There will be three Plan-Do-Study-Act (PDSA) cycles, each two weeks in duration. The DAST-10 will be installed into the Athena EMR patient clinic encounter. The instrument can be administered verbally by medical assistants to patients during the pre-appointment procedures and responses entered into the clinical record. Alternatively, MAs may provide the patient with a paper version to fill out independently with the results entered into the EMR by the MA. The resulting score will then be available in the EMR to aid providers in dispositioning their patients.

A survey will be sent to all stakeholders during the second week of each PDSA cycle requesting feedback on the DAST-10 implementation. If identified, needed changes will be implemented before the next PDSA cycle. Aggregated data absent of protected healthcare information (PHI) will be shared with stakeholders at each PDSA cycle. The total time interval for all three PDSA cycles is expected to be six weeks. During analysis weeks, participants are encouraged to continue using the DAST-10 for the potential benefit of MHC Healthcare’s patients.

In the final PDSA cycle, aggregated data devoid of PHI from all three cycles will be disclosed, and a link to a final post-survey will be included. There are no foreseeable benefits to participants by participating in the education session, the subsequent DAST-10 trial, or any of the five surveys.

The potential for discomfort may arise in the adoption of a new screening procedure for support staff by verbally posing the questions therein to patients. Further, providers may experience some discomfort discussing the results with patients and recommended next steps.

Survey participation will be anonymous. Responses will not be associated with any identification of the respondents, including to the PI.

Participation in any or all aspects of this doctoral project is voluntary. There will be no penalty or repercussion for choosing to not participate or for partial participation. Staff and/or providers may discontinue their participation at any time without penalty or repercussion.
By participating in any aspect of this project, you are giving your consent to do so.

For any questions, concerns, or comments, please contact the PI, whose contact information appears below.

David Johnsrud
PMHNP student
University of Arizona
(520) [REDACTED]
[REDACTED]@email.arizona.edu
APPENDIX C:

RECRUITMENT MATERIAL (RECRUITMENT EMAIL AND RELATED COMMUNICATIONS)
October 14, 2021

Dear MHC Healthcare Staff and Providers,

Thank you so much for meeting with me today to discuss my doctoral project, which will consist of a trial of the Drug Abuse Screening Test (DAST-10) at the Wyatt St Primary Care Health Center during Fall 2021.

Attached please find a disclosure statement that details the intervention and the procedures, which I encourage you to read in its entirety. I would be honored and grateful if you could assist me with your participation, which is entirely voluntary.

The DAST-10 is a validated screening instrument consisting of 10 questions designed by Dr. Harvey Skinner. It is an adaptation of his original 28-item instrument, which he developed in 1982. The aim of the project is to pilot the DAST-10 into the SBIRT protocol in your location.

My colleague, Dr. David Tanis, conducted an education session at MHC Healthcare in the summer of 2020 about the DAST-10 and its application. Thank you for joining me today for a review of Dr. Tanis’ session, as well as the brief overview of the project. Dr. Tanis’ PowerPoint slides and slides pertaining to the project will be sent to all clinic stakeholders in a separate email for your review and for those unable to attend the education session.

Please note that the DAST-10 does not screen for alcohol or tobacco use, so please continue to use those screens in your daily workflow.

The project implementation will last four weeks, during which your voluntary participation in short surveys is requested to identify problems and to solicit your feedback. A pre-intervention questionnaire will be emailed to you today and two short identical surveys will be emailed to you over the course of the project. Following the completion of the 4-week intervention, an identical post-intervention survey will be sent to you.

Thank you all so much for your assistance with my project. I hope you will find it of value in caring for your patients.

Please do not hesitate to contact me with any questions or concerns.

David Johnsrud, RN
PMHNP Student
University of Arizona
(520) [REDACTED]
[REDACTED]@email.arizona.edu

Attachment: disclosure statement
October 14, 2021

Dear MHC Healthcare Staff and Providers,

If you were able to attend today’s WebEx education session on the DAST-10 screening instrument, thank you and I hope you found it helpful.

If you were not able to attend, please see the PowerPoint slides attached below that were presented. The DAST-10 screening instrument is also attached for your reference.

Please consider completing this brief questionnaire, whether or not you were able to attend the WebEx meeting. This will be one of the measures of the project objectives and outcomes. The survey will be available until Monday, October 18, 2021.

https://www.surveymonkey.com

The project implementation will commence on October 18. Please start to incorporate the DAST-10 into the pre-appointment procedures and appointments on that day and continue doing so for every eligible patient (over 18, not currently undergoing SUD treatment) for the entire four weeks.

Thank you again for your time and for your assistance with this project. I am also available by phone or email if there are any questions or concerns. Please consider me at your disposal for anything that comes up during the 4-week trial period.

David Johnsrud, RN
PMHNP-DNP student
University of Arizona
(520) [REDACTED]
[REDACTED]@email.arizona.edu

attachment [PPT Slides]
attachment [DAST-10]
October 14, 2021

Mostly informational for those who could not attend today’s session.

Today's education session on the DAST-10 was conducted in person at the Integrated Health Care Center, not on WebEx.

David Johnsrud, RN, EAMP
Student ID: [REDACTED]
[REDACTED]@email.arizona.edu
Admit Year: 2015 (deferred until 2016)
PMHNP Specialty
520-[REDACTED]
October 15, 2021

Hello, everyone!

Hope your Friday is going well and that the weekend will be restful for you all. Thank you to those of you who have completed the brief questionnaire prior to the launch of using the DAST-10 screen in your workflows and practices on Monday.

If you haven't had a chance to respond yet, please take a minute to click on the link below. The amount of time it should take to complete the questionnaire is approximately 60 seconds or less. There are 7 radio-button questions on a Likert scale.

7-Item DAST-10 Questionnaire Link

Have a great weekend, everyone, and thank you all!

--

David Johnsrud  
PMHNP student  
University of Arizona  
(520) [REDACTED]  
[REDACTED]@email.arizona.edu
October 15, 2021

Hello, everyone.

Thank you to those who completed the questionnaire. It is very brief; only 7 quick questions. No free text. Please take just a minute to click on the link below.

DAST-10 Questionnaire

Thank you all and have a great weekend!

David Johnsrud, RN, EAMP
Student ID: [REDACTED]
[REDACTED]@email.arizona.edu
Admit Year: 2015 (deferred until 2016)
PMHNP Specialty
520-[REDACTED]
October 17, 2021

Dear MHC Healthcare Staff and Providers:

Happy Monday!

Firstly, if you have not had a chance to complete the 7-item questionnaire following the meeting last week, please do take a minute to click on the link below to knock it out. It will take no more than 60 seconds. This is a very important piece of the data I am collecting and your input is invaluable. I am hoping for 8-9 more surveys from providers and MAs today.

https://www.surveymonkey.com/r/95NXXYD

Today is the first day of the four-week trial of the DAST-10 screening instrument in your clinic. Please start to use the instrument with all patients over age 18 who are not currently diagnosed with or receiving treatment for a substance use disorder. Continue to use your usual alcohol and tobacco screens.

I hope this trial goes smoothly for you all. I am available to discuss any problems or concerns via phone or email. Alternatively, you may give me your feedback in the brief survey that will be delivered for all three PDSA cycles.

MAs, I have attached the DAST-10 to this email so that you may print it and hand it to your patients to complete independently, if you prefer. Ideally, the data will be entered into the patient record prior to the appointment so that the provider can access it.

Also, the PPT slides showing the location of the DAST-10 are attached for your review. Once you add it to Favorites, it will be easy to access in Athena.

I am very honored and grateful to be able to do this project with you. Thank you so much for your participation.

Sincerely,

David Johnsrud, RN

[Attachment: DAST-10 paper form (English)]
[Attachment: PPT instructions]
October 26, 2021

Dear MHC Healthcare Staff and Providers:

Thank you for your efforts during the first week of using the DAST-10 in your practice and/or workflow! As promised, I present to you in chart form (attached) the results of your efforts. As we progress through the next cycle, I will add that data to the chart for comparison.

A major hitch was discovered on Wednesday last week; in the EMR, when the DAST-10 is completed and populates to the clinic note, the first seven questions are replaced with questions from the WAST-SF intimate partner violence screen. I understand that you were all instructed to stop using the DAST-10 screening function in Athena and rely solely on the paper forms for now until a remedy is implemented.

The bar chart above reflects results tabulated manually from the paper forms your patients completed. Because data reporting from the EMR was not available, there is no data for the “Pts Seen” and “Screened” columns. A total of 12 forms were collected; 9 scored 0-2, 1 scored 3-10, and 2 forms were incomplete.

Please note the link in this email to a brief anonymous survey; it will be the same for the next cycle, beginning this coming Monday, November 1. It is an opportunity for you to give feedback if you wish. There is also a free-form text box for you to give any other feedback you would like to convey. Candor is encouraged. Feedback will help identify any additional trouble spots, such as bottlenecks, in your workflow with the instrument. The survey will remain open this week and close at midnight on Friday. Survey responses will be checked daily so if there are any problems, they can be addressed as quickly as possible.

https://www.surveymonkey.com/r/T9TDYDN

Please continue to screen your patients (adults aged 18 and over who are not currently being treated for SUD) using the paper forms and retain them for tabulation and patient records. I request that you add the date to the paper forms.

Thank you again for your help and your feedback. It is very much appreciated.

Sincerely,

David Johnsrud

[Attachment: PDSA Cycle 1 Bar Chart]
October 29, 2021

Good morning!

I hope your week is going well and that you are continuing to screen your patients aged 18 and up with the DAST-10, even though it currently cannot be used within the EMR. Please continue to use the paper forms and do retain them so that they may be scanned into patient charts and referred to in the future.

If you haven't been able to, please take just a minute (that's all!) to answer just 4 questions in the survey link posted below.

https://www.surveymonkey.com/r/T9TDYDN

The free-text field is for your candid review. Please tell me what isn't working for you; that is almost more important to know at this stage than what IS working, but I'd like to know both, if you have time.

The survey is 100% anonymous.

Thank you.
November 1, 2021

Dear MHC Healthcare Staff and Providers:

Thank you so much for your feedback on the survey last week. No specific comments were made about trouble spots or issues, though I am aware that the DAST-10 was not populating into the clinic note correctly.

I have not heard if this issue has been resolved yet. Either way, please continue to screen patients with the DAST-10, either retaining the form to scan into patients' charts, or directly into Athena, if it has been fixed.

As we enter the second cycle of the project, please contact me for any issues you encounter, or include in the next survey.

Thank you again for all you do.

Sincerely,

David Johnsrud
PMHNP student
University of Arizona
(520) [REDACTED]
[REDACTED]@email.arizona.edu
November 10, 2021

Dear MHC Healthcare Staff and Providers:

Thank you all so much for your participation with rolling out the DAST-10 screening instrument at your clinic. This was an invaluable experience for me and I am indebted to you all for your work, your feedback, and your honesty.

As there was a significant challenge presented in the rollout of the DAST-10 in your clinic, that being the incorrect population of the instrument into the clinic note in Athena, the available data to compile is less than planned. Thank you all for powering through that and any other challenges you encountered during this pilot. The bar chart comparing both cycles is attached to this email. As you can see, significantly more screens were completed during the second of the two PDSA cycles. The data being compared is the first week to the third week of the pilot, and that is what is represented on the bar chart comparing both cycles.

There is one last questionnaire link. This one is identical to the first one at the beginning of the project, just after our meeting. It is only seven questions. This last item is my outcome measures for the project; how you experienced the DAST-10 and how you feel about it going forward. It is a radio-button-type questionnaire; therefore, no free text is required. I very much want to know how this went for you, both positives and negatives.

The questionnaire should take no more than two minutes maximum, and is linked below:

https://www.surveymonkey.com

Once again, thank you all very much for all you did to help me finish my degree and to pilot a valuable tool in your organization for assessing and helping your patients. You are a great team!

Sincerely,

David Johnsrud
PMHNP student
University of Arizona
(520) [REDACTED]
[REDACTED]@email.arizona.edu

Attachment: bar graphs
November 10, 2021

Dear PCHC Providers and MAs,

Thank you for answering the brief questionnaire on the DAST-10 pilot in your clinic. I have received two responses thus far. The questionnaire will provide data for my outcome measure, which is your opinion on the DAST-10.

I would like to have a handful of questionnaires to compile and present to my project committee for defense. If you have 1-2 minutes, please click on the link below to access the questionnaire.

Thank you all!

https://www.surveymonkey.com

David Johnsrud, RN

[REDACTED]@email.arizona.edu
PMHNP Specialty
University of Arizona College of Nursing
520-[REDACTED]
Dear PCHC clinic MAs and providers:

Thank you all again for your assistance in launching my project at the PCHC clinic at MHCH. I am hopeful that you are finding the DAST-10 a valuable tool to help your patients and perhaps even save lives. I am honored that I was able to be a small part in getting this underway at MHCH. I will be wrapping up my data collection and beginning the final edits on my paper to defend soon in the future.

Two of you have completed the last brief questionnaire--thank you! The results of the questionnaire are my outcome measure and are crucial to completing the project paper. I promise I will not ask again after this email. If you could take just a minute to click the link below to SurveyMonkey to answer 7 quick questions (button selection of answers), I would be very grateful and will have some good data to work with and help propel the use of the DAST-10 forward in your organization.

https://www.surveymonkey.com

Thank you all again and hope your holidays are joyful.

David Johnsrud, RN, EAMP
Student ID: [REDACTED]
[REDACTED]@email.arizona.edu
Admit Year: 2015 (deferred until 2016)
PMHNPSpecialty
520-[REDACTED]
APPENDIX D:

EVALUATION INSTRUMENTS (PRE- AND POST-INTERVENTION QUESTIONNAIRES; PDSA CYCLE OPTIONAL FEEDBACK SURVEY)
# PRE-INTERVENTION QUESTIONNAIRE

**Pre-Intervention**

Please rate your agreement with the following seven (7) statements regarding adding the DAST-10 instrument to your clinic’s existing SBIRT protocol to assess patients for risk of unhealthy drug use.

1. I feel confident in my knowledge of DAST-10 use.

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<tr>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neither Agree nor Disagree</th>
<th>Agree</th>
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2. I feel ready to use the DAST-10 effectively.

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<th>Strongly Disagree</th>
<th>Disagree</th>
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3. I am comfortable using the DAST-10 to screen patients for unhealthy drug use.

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<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neither Agree nor Disagree</th>
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4. The DAST-10 is more effective than our current method.

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<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neither Agree nor Disagree</th>
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5. I support using the DAST-10 in our SBIRT protocol.

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<th>Strongly Disagree</th>
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6. The DAST-10 is a suitable instrument for assessing patients for unhealthy drug use.

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7. It is logical to screen patients annually with the DAST-10.

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<th>Strongly Disagree</th>
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# POST-INTERVENTION QUESTIONNAIRE

Using the DAST-10 in Clinic Questionnaire (Post-Intervention Survey)
Please rate your agreement with the following seven (7) statements regarding adding the DAST-10 instrument to your clinic’s existing SBIRT protocol to assess patients for risk of unhealthy drug use.

1. I feel confident in my knowledge of DAST-10 use.

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2. I feel ready to use the DAST-10 effectively.

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**PDSA CYCLE OPTIONAL FEEDBACK SURVEY**

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<th>1. How easy was it to use or interpret the DAST-10 in your workflow?</th>
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<th>2. How comfortable were you with engaging patients using the DAST-10?</th>
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<td>Very Uncomfortable</td>
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<th>3. Do you think the DAST-10 should be retained as a part of your practice or workflow?</th>
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<th>4. Did you encounter any problems or difficulties using the DAST-10 in your role?</th>
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If "Yes", please provide details below.

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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>5. Please give any other feedback you would like to share on the previous week using the DAST-10. (Responses are anonymous).</th>
</tr>
</thead>
<tbody>
<tr>
<td>[ ]</td>
</tr>
</tbody>
</table>
APPENDIX E:

PARTICIPANT MATERIALS (POWERPOINT EDUCATION SESSION SLIDES AND SCRIPT BY D. TANIS; POWERPOINT EDUCATION SESSION SLIDES FOR INTERVENTION; REVISED POWERPOINT SLIDES FOR INTERVENTION)
DAST-10 Education for the Intent to Adopt at an Integrated Health Clinic

David Tanis, DNP-PMHNP Student

Local Problem

• Currently we do not have a standardized protocol/screening tool
• Current Process:
  • Not quantitative
  • Not trackable
  • No consequences
  • No intervention
  • Marijuana
Barriers to Substance Use Screening

• Education:
  • Knowledge about a good screening tool
  • Training on substance use screening tools

• Time:
  • Time constraints
  • Resources

Drug Abuse Screening Test (DAST-10)

<table>
<thead>
<tr>
<th>In the past 12 months...</th>
<th>Circle</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Have you used drugs other than those required for medical reasons?</td>
<td>Yes No</td>
</tr>
<tr>
<td>2. Do you abuse more than one drug at a time?</td>
<td>Yes No</td>
</tr>
<tr>
<td>3. Are you unable to stop abusing drugs when you want to?</td>
<td>Yes No</td>
</tr>
<tr>
<td>4. Have you ever had blackouts or flashbacks as a result of drug use?</td>
<td>Yes No</td>
</tr>
<tr>
<td>5. Do you ever feel bad or guilty about your drug use?</td>
<td>Yes No</td>
</tr>
<tr>
<td>6. Does your spouse (or parents) ever complain about your involvement with drugs?</td>
<td>Yes No</td>
</tr>
<tr>
<td>7. Have you neglected your family because of your use of drugs?</td>
<td>Yes No</td>
</tr>
<tr>
<td>8. Have you engaged in illegal activities in order to obtain drugs?</td>
<td>Yes No</td>
</tr>
<tr>
<td>9. Have you ever experienced withdrawal symptoms (felt sick) when you stopped taking drugs?</td>
<td>Yes No</td>
</tr>
<tr>
<td>10. Have you had medical problems as a result of your drug use (e.g. memory loss, hepatitis, convulsions, bleeding)?</td>
<td>Yes No</td>
</tr>
</tbody>
</table>

Scoring: Score 1 point for each question answered “Yes,” except for question 3 for which a “No” receives 1 point. Score:
Drug Abuse Screening Test (DAST-10)

<table>
<thead>
<tr>
<th>Interpretation of Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Score</td>
</tr>
<tr>
<td>0</td>
</tr>
<tr>
<td>1-2</td>
</tr>
<tr>
<td>3-5</td>
</tr>
<tr>
<td>6-8</td>
</tr>
<tr>
<td>9-10</td>
</tr>
</tbody>
</table>

Benefits of DAST-10

- Fast administration
- Inexpensive
- High internal consistency (i.e. stable, accurate)
- Trackable
- Estimates severity
Using the DAST-10

<table>
<thead>
<tr>
<th>None</th>
<th>DAST-10</th>
<th>DAST-20</th>
<th>Action</th>
<th>ASAM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>0</td>
<td>0</td>
<td>Monitor</td>
<td>Level I</td>
</tr>
<tr>
<td>Low</td>
<td>1-2</td>
<td>1-5</td>
<td>Brief Counseling</td>
<td>Level I</td>
</tr>
<tr>
<td>Intermediate (likely meets DSM criteria)</td>
<td>3-5</td>
<td>6-10</td>
<td>Outpatient (intensive)</td>
<td>Level I or II</td>
</tr>
<tr>
<td>Severe</td>
<td>6-8</td>
<td>11-15</td>
<td>Intensive</td>
<td>Level II or III</td>
</tr>
<tr>
<td>Severe</td>
<td>9-10</td>
<td>16-20</td>
<td>Intensive</td>
<td>Level III or IV</td>
</tr>
</tbody>
</table>

ASAM: American Society of Addiction Medicine Placement Criteria

- Easily scored (0-10)
- Suggested Interventions

Benefits to MHC Practice

- Increased SUD identification
- Improved patient outcomes
- MAT program growth
- Increased profitability
[Slide 1] DAST-10 Education for the Intent to Adopt at an Integrated Health Clinic
  • David Tanis, DNP-PMHNP Student

[Slide 2] Local Problem
  • Pima County is worse than state average for top 20 causes of death in:
    • Drug-induced deaths
    • Opiates/Opioids
    • Pharmaceutical Opioids
    • Heroin
  “I’m sure we are all aware of the current opioid epidemic and other substance abuse problems occurring in the United States. Pima County, home to Marana Healthcare, has their own set of substance use issues. In their 2015 Community Health Needs Assessment, Pima County performed worse than Arizona state averages in only four of the top 20 causes of death. These four areas that Pima County performed worse in are drug-induced deaths, opiate and opioid related deaths, pharmaceutical opioid deaths, and heroin-related deaths”
  • Current Process:
    • Not quantitative
    • Not trackable
    • No consequences
    • No intervention
  “Currently at MHC, all AHCCCS patients receive initial and annual behavioral health assessments. In an attempt to identify drug use, patients are asked four questions. They are asked if they have a history of substance use, what their use over the previous 12 months is, if they have had any periods of sobriety, and if they have ever received substance use treatment. Unfortunately, there are disadvantages to the current process. These questions do not quantify their substance use problems, a patient’s progress cannot be tracked, drug-related consequences are not identified, and standardized interventions are not suggested”:

[Slide 3] Barriers to Substance Use Screening
  • Education:
    • Clinical knowledge
    • Training
  • Time:
    • Time constraints
    • Resources
  “A search of the literature identifies education and time as barriers to the implementation of a proper substance abuse screening tool. Healthcare workers lack proper training and clinical knowledge on the screening tools. Office visits are typically brief, and resources are scarce, so there is often insufficient time to administer the screening tool”

[Slide 4] Drug Abuse Screening Test (DAST-10)
  “Enter the Drug Abuse Screening Test, or DAST-10. This is a ten-item tool that can either be self-administered by the patient or administered as an interview by the healthcare worker. It has a high internal consistency with a Cronbach’s alpha ranging from .86 to .95, meaning that
it is stable and accurate. It also has high correlation to its 28-question counterpart, the DAST-28, meaning you can get just as accurate of a result in less time”

[Slide 5] Benefits of DAST-10
• Fast administration
• Inexpensive
• High internal consistency
• Trackable
• Estimates severity
“There are many benefits to the DAST-10. It can be administered quickly, typically between one to five minutes. This means we can accurately and rapidly identify substance abuse problems. It is designed with time solutions in mind. It is available to use at no cost and estimates the severity of a patient’s drug-related problems numerically. It has a high internal consistency between psychiatric disorders and can identify problems related to all drugs of abuse. Also, by quantifying drug related consequences, a patient’s progress in treatment can be tracked”

[Slide 6] Using the DAST-10
“Using the DAST-10 is simple. The questionnaire includes instructions for the patient should you choose to have the patient self-administer the screening. If you choose to administer it yourself through an interview, simply ask the patient the ten questions and have them answer with a “yes” or “no” response. Questions number 3 is keyed 1 point for a response of “no”. All other questions are keyed one point for a response of “yes.” After you have asked all the questions, simply add up the score. There is an interpretive guide listed on the bottom of the DAST-10 that correlates a severity to the total score. Appropriate actions, along with the suggested ASAM level of care, are listed in the interpretive guide}. Suggested actions include monitoring, brief counseling, intensive outpatient, and inpatient treatment”

[Slide 7] Implications for MHC
• Increased SUD identification
• Improved patient outcomes
• MAT program growth
• Increased profitability
‘There are multiple implications for the use of the DAST-10 at MHC. The identification of problematic substance use can increase, resulting in improved patient outcomes. The identification of substance use disorder can promote growth of MHC’s developing MAT program, and can increase profitability with counseling services, psychiatric and medical services, and MAT. Also, the identification of problematic substance use from Marana’s medical patients can trigger referrals to behavioral health services, further increasing profits and improving patient outcomes”
DAST-10 6-week Trial

David Johnsrud
DNP-PMHNP Student

THE UNIVERSITY OF ARIZONA
College of Nursing

INTERVENTION

• 6-week trial period
• Three 2-week PDSA cycles.
• Weeks 1, 3, 5: Data collection
• Weeks 2, 4, 6: Data analysis and staff feedback
ELIGIBLE PATIENTS

• Age 18 and above
• Not currently undergoing treatment for SUD
• Not currently referred to treatment for SUD

(Patnode, 2020)

DATA POINTS

• Total number of adult patients seen
• Number of patients screened
• Number of patients with scores 0-2
• Number of patients with scores 3-10
• Number of patients referred to BH.
CYCLE 1 DATA

One week

CYCLE 2 DATA ADDED

Two weeks
CYCLE 3 DATA ADDED

PDSA Cycles 1, 2, and 3

REFERENCE

DAST-10 4-week Trial

David Johnsrud
DNP-PMHNP Student

THE UNIVERSITY OF ARIZONA
College of Nursing

INTERVENTION

• 4-week trial period
• Two 2-week PDSA cycles.
• Weeks 1 & 3: Data collection focus
• Weeks 2 & 4: Data analysis and staff feedback
• Please continue to screen through all four weeks.
ELIGIBLE PATIENTS

- Age 18 and above
- Not currently undergoing/referred to treatment for SUD

(Patnode, 2020)

DATA POINTS

- Total number of adult patients seen
- Number of patients screened
- Number of patients with scores 0-2
- Number of patients with scores 3-10
CYCLE 1 DATA

PDSA Cycle 1

Pts Seen | Screened | Score 0-2 | Score 3-10
---|---|---|---
70 | 50 | 40 | 30

One week

CYCLE 2 DATA ADDED

PDSA Cycles 1 & 2

Pts Seen | Screened | Score 0-2 | Score 3-10
---|---|---|---
80 | 70 | 60 | 50

Two weeks
LOCATING DAST-10 IN ATHENAPRACTICE v20
LOCATING DAST-10 IN ATHENAPRACTICE v20
LOCATING DAST-10 IN ATHENAPRACTICE v20
REFERENCE

APPENDIX F:

PDSA CYCLE BAR CHARTS AND SURVEY RESULTS
**PDSA Cycle 1**

- **PTS SEEN**: 0
- **PTS SCREENED**: 12
- **SCORE 0-2**: 9
- **SCORE 3-10**: 1
- **INCOMPLETE**: 2

**PDSA Cycles 1 & 2**

- **PTS SEEN**: 12
- **PTS SCREENED**: 64
- **SCORE 0-2**: 51
- **SCORE 3-10**: 5
- **INCOMPLETE**: 2

Legend:
- PDSA Cycle 1
- PDSA Cycle 2
Q1 How easy was it to use or interpret the DAST-10 in your workflow?

Answered: 3  Skipped: 0

<table>
<thead>
<tr>
<th></th>
<th>DIFFICULT</th>
<th>SOMETHAT DIFFICULT</th>
<th>NEITHER DIFFICULT NOR EASY</th>
<th>SOMETHAT EASY</th>
<th>EASY</th>
<th>TOTAL</th>
<th>WEIGHTED AVERAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>(no label)</td>
<td>0.00%</td>
<td>0.00%</td>
<td>33.33%</td>
<td>0.00%</td>
<td>66.67%</td>
<td>2</td>
<td>3 4.33</td>
</tr>
</tbody>
</table>

DAST-10 PDSA Cycle 1 Survey
Q2 How comfortable were you with engaging patients using the DAST-10?

Answered: 3  Skipped: 0

<table>
<thead>
<tr>
<th></th>
<th>UNCOMFORTABLE</th>
<th>SOMEWHAT UNCOMFORTABLE</th>
<th>NEITHER COMFORTABLE NOR UNCOMFORTABLE</th>
<th>SOMEWHAT COMFORTABLE</th>
<th>COMFORTABLE</th>
<th>TOTAL</th>
<th>WEIGHTED AVERAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>(no label)</td>
<td>0.00%</td>
<td>0.00%</td>
<td>0.00%</td>
<td>33.33%</td>
<td>66.67%</td>
<td>3</td>
<td>4.1</td>
</tr>
</tbody>
</table>
Q3 Do you think the DAST-10 should be retained as a part of your practice or workflow?

Answered: 3  Skipped: 0

<table>
<thead>
<tr>
<th>ANSWER CHOICES</th>
<th>RESPONSES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>66.67%</td>
</tr>
<tr>
<td>No</td>
<td>0.00%</td>
</tr>
<tr>
<td>No opinion</td>
<td>33.33%</td>
</tr>
</tbody>
</table>

TOTAL 3
Q4 Did you encounter any problems or difficulties using the DAST-10 in your role?

Answered: 3  Skipped: 0

<table>
<thead>
<tr>
<th>ANSWER CHOICES</th>
<th>RESPONSES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>0.00%</td>
</tr>
<tr>
<td>No</td>
<td>100.00%</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX G:

PROJECT TIMELINE
<table>
<thead>
<tr>
<th>Week</th>
<th>Education</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Recruitment email with Voluntary Disclosure Form</td>
</tr>
<tr>
<td></td>
<td>Pre-Questionnaire emailed with PowerPoint slides and DAST-10 form attached.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Week</th>
<th>PDSA Cycle 1: Intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Week</th>
<th>PDSA Cycle 1: Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Bar Chart 1 provided</td>
</tr>
<tr>
<td></td>
<td>Optional feedback survey</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Week</th>
<th>PDSA Cycle 2: Intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Week</th>
<th>PDSA Cycle 2: Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>Bar Charts 1 and 2 provided</td>
</tr>
<tr>
<td></td>
<td>Post-Intervention Survey</td>
</tr>
</tbody>
</table>

| TBD  | Executive Summary of Findings provided to FQHC |
APPENDIX H:

LITERATURE REVIEW GRID
Project Question: *Will the opinions and perspectives of the medical assistants and providers in a primary care practice regarding screening patients for illicit drug use and nonmedical use of controlled prescription drugs change during and/or after a four-week trial period of incorporating the DAST-10 screening instrument into its SBIRT protocol?*

<table>
<thead>
<tr>
<th>Pub. Year; Author’s Last Name</th>
<th>Title of Publication</th>
<th>Type of Study</th>
<th>Main Outcomes of Findings</th>
<th>Strengths &amp; Weaknesses</th>
<th>Support for and or Link to Project</th>
</tr>
</thead>
</table>
| Aldridge, Linford, Bray. (2017). | Substance use outcomes of patients served by a large US implementation of screening, brief intervention, and referral to treatment (SBIRT). | Pre/Post-study design of data collected by SAMHSA SBIRT grant program. | n = 17,575  
Comparison of substance use (SU) before SBIRT to SU six months after SBIRT services.  
Prevalence of use fell across all categories:  
Alcohol use: 35.6%  
Heavy drinking: 43.4%  
Illicit drug use: 75.8%. | Strengths: evidence supporting SAMHSA’s SBIRT data via rigorous statistical means.  
Screening instruments used have strong psychometric properties.  
Weaknesses: delivery of SBIRT services not observed.  
No control group.  
Self-report of SU can’t be verified.  
Social acceptability bias, differential recall bias, lack of rapport with interviewer may suppress report of SU.  
Samples not completely representative of all of SAMHSA participants | Supports the use of screening specific to illicit drug use within SBIRT. |
<table>
<thead>
<tr>
<th>Pub. Year; Author’s Last Name</th>
<th>Title of Publication</th>
<th>Type of Study</th>
<th>Main Outcomes of Findings</th>
<th>Strengths &amp; Weaknesses</th>
<th>Support for and or Link to Project</th>
</tr>
</thead>
<tbody>
<tr>
<td>Babor, Del Boca, &amp; Bray. (2017).</td>
<td>Screening, brief intervention and referral to treatment: implications of SAMHSA’s SBIRT initiative for substance abuse policy and practice.</td>
<td>Cross-site evaluation, quasi-experimental study of data collected by SAMHSA SBIRT grant program. Focus on effectiveness of BI and BT.</td>
<td>Two SAMHSA cohorts screened&lt;br&gt;n = 528,036 and n = 489,396&lt;br&gt;Positive screening by type: ETOH: 74.4%; 80.0%&lt;br&gt;Illicit drugs: 41.8%; 45.8%&lt;br&gt;Dual use: 30.0%; 32.1%&lt;br&gt;Post-SBIRT, heavy drinking declined by 72% and illicit drug use declined by 80%.</td>
<td>Strengths: Methodological methods (2) were innovated by SAMHSA to enhance rigor of data collection.&lt;br&gt;Large sample size (n = &gt; 1M)&lt;br&gt;Weaknesses: Screening instruments rely on self-report.&lt;br&gt;No control group.</td>
<td>Participants who engage in follow up may be characteristically different than those who don’t. Those who do not may have had poor response to interventions. Supports use of specific instrument within SBIRT to identify illicit drugs/illicit use.</td>
</tr>
<tr>
<td>Bone, Gelberg, Vahidi, Leake, Yacenda-Murphy, &amp; Anderson. (2016).</td>
<td>Under-reporting of risky drug use among primary care patients in federally qualified health centers.</td>
<td>Quantitative study/within-subjects design.</td>
<td>n= 189&lt;br&gt;Patient in waiting rooms in 4 FQHCs asked to report drug use on a screening instrument and then underwent urine drug assay testing.&lt;br&gt;78% of patients (n = 105) reported drug use accurately. 22% (n = =30) underreported drug use. Underreporting by drug type was highest with</td>
<td>Strengths: Rigorous statistical methods.&lt;br&gt;Sample drawn from FQHCs, which have not been studied RE: underreport of drug use.&lt;br&gt;High-risk population.</td>
<td>Weaknesses: UDS used to verify accuracy of self-report. UDS can deliver false-</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Patients using self-report instruments may not answer items truthfully. Points to a significant weakness in self-report instruments.</td>
</tr>
<tr>
<td>Pub. Year; Author’s Last Name</td>
<td>Title of Publication</td>
<td>Type of Study</td>
<td>Main Outcomes of Findings</td>
<td>Strengths &amp; Weaknesses</td>
<td>Support for and or Link to Project</td>
</tr>
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<td>--------------------------</td>
<td>-----------------------</td>
<td>----------------------------------</td>
</tr>
<tr>
<td>Bray, Del Boca, McRee, Hayashi, &amp; Babor. (2017).</td>
<td>Screening, brief intervention and referral to treatment (SBIRT): rationale, Cross-site evaluation, quasi-experimental study of data collected</td>
<td>Two large cohorts, totaling &gt; 1M subjects.</td>
<td>amphetamines (66%), followed by opiates (45%), cocaine (14%), and marijuana (7%). Under-reporting associated with incarceration hx and older age.</td>
<td>positive and false-negative results. Screening instrument relies on self-report. Period relevant to accurate UDS results differ by substance and differences in patients’ metabolisms. Drug use reporting period on survey is arbitrary. Relied on anonymous self-report, which may be more accurate than administered instrument results. Rate of under-reporting would likely be lower if included all persons in waiting room. n = 135. Limited sample size. Majority of participants low-income. Results may differ across socioeconomic strata.</td>
<td>Strengths: Rigorous statistical methods. Very large sample size (n = &gt; 1 M). Supports screening with a validated instrument as part of SBIRT in the primary</td>
</tr>
<tr>
<td>Pub. Year; Author’s Last Name</td>
<td>Title of Publication</td>
<td>Type of Study</td>
<td>Main Outcomes of Findings</td>
<td>Strengths &amp; Weaknesses</td>
<td>Support for and or Link to Project</td>
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</tr>
<tr>
<td>program overview and cross-site evaluation.</td>
<td>by SAMHSA SBIRT grant program.</td>
<td>Cohort 1 (n= 528,036) overall positive screen 22.4% Illegal drug use 41.8% Cohort 2 (n=489,396) overall positive screen 11.1% Illegal drug use 45.8%</td>
<td>Weaknesses: Funded by SAMHSA No control group.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Harris, Yu. (2016).</td>
<td>Attitudes, perceptions and practice of alcohol and drug screening, brief intervention and referral to treatment: a case study of New York State primary care physicians and non-physician providers.</td>
<td>Cross-sectional study.</td>
<td>Assessment of differences and similarities between physician and non-physician providers attitudes on SBIRT. Only 27.7% familiar with SBIRT. 57% screened their pts for SU. 46% provided BI 47% referred to treatment. Few used a standardized tool to screen for SU. 213 PCPs (112 physicians, 54 non-physician providers, 47 did not answer RE: role) Physicians had more positive attitudes regarding SBIRT than non-physician providers (NPs and PAs) Issues reported: not feeling knowledgeable enough to</td>
<td>Strengths: Peer-reviewed. Identified important differences between physician and non-physician providers on attitudes and perceptions of SBIRT. Weaknesses: Convenience sample; may be influenced by selection bias. Generalizability of results questionable. Cross-sectional nature of study limits ability to calculate for causal links. More research needed.</td>
<td>Provides insight on possible barriers to provider engagement and willingness to use instrument or SBIRT in general.</td>
</tr>
<tr>
<td>Pub. Year; Author’s Last Name</td>
<td>Title of Publication</td>
<td>Type of Study</td>
<td>Main Outcomes of Findings</td>
<td>Strengths &amp; Weaknesses</td>
<td>Support for and or Link to Project</td>
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<td>--------------------------------</td>
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<td>--------------</td>
<td>---------------------------</td>
<td>------------------------</td>
<td>----------------------------------</td>
</tr>
<tr>
<td>Harris, Yu, Wolff, Rogers, &amp; Blank. (2017).</td>
<td>Optimizing the impact of alcohol and drug screening and early intervention in a high-risk population receiving services in eight New York City sexual health clinics: a process and outcome evaluation of Project Renew.</td>
<td>Quality improvement initiative</td>
<td>Eight NYC sexual health clinics adopted SBIRT model to reduce risky substance use, which is linked to risky sexual activity, which in turn, is linked to HIV/STD transmission. 130,597 screenings conducted across all nine clinics over a three-year period. 51% positive (n=66,989) 17,474 brief interventions and 1238 referrals (not unique to ind pts). 10% sample of positive patients screened at 6-month f/u. Patients reported reduced SU, reduced sexual activity, fewer depression days and anxiety days than baseline. (p &lt; 0.05).</td>
<td>Strengths: Rigorous statistical methods. High f/u rate: 85.3% Weaknesses: No control group. Causal link cannot be demonstrated. Study is specific to patients of a sexual health clinic; may not be representative of general population. Reasons for positive response to SBIRT may be related to motivation specifically to avoid HIV/AIDS. Patients who followed up may have had better result than those who did not.</td>
<td>Supports use of screening in clinics to identify risky SU.</td>
</tr>
<tr>
<td>Pub. Year; Author’s Last Name</td>
<td>Title of Publication</td>
<td>Type of Study</td>
<td>Main Outcomes of Findings</td>
<td>Strengths &amp; Weaknesses</td>
<td>Support for and or Link to Project</td>
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<tr>
<td>-------------------------------</td>
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<td>-----------------------</td>
<td>-----------------------------------</td>
</tr>
<tr>
<td>Jones, Johnston, Biola, Gomez, &amp; Crowder. (2017).</td>
<td>Implementing standardized substance use disorder screening in primary care.</td>
<td>Quality improvement initiative</td>
<td>Two Item Conjoint Screen (TICS) used as screening instrument. Two-question screening tool that assesses for both alcohol and drug use. Trialed at an FQHC with nine satellite clinics that did not previously consistently screen for these conditions. All PCPs began using the screening after pilot completed in Nov 2015. 3,891 screenings completed in 2015. 30,611 screenings completed in 2016. 17 PCPs (68%) responded to survey. 100% believed screening helped to identify potential SUDs.</td>
<td>Strengths: Screening tool (TICS) has high specificity (78%) and sensitivity (78%) Data collection over a two-year period. Weaknesses: Single community health center. Results may not be generalizable. PCPs have access to BH staff on site. May not be representative of providers’ engagement with screening in all practices. Limited number of respondents. (n = 17) Screening tool (TICS) relies on patients’ self-report and self-perception of use.</td>
<td>Supports use of consistent screening at the primary care level to identify patients with disordered use of alcohol and other drugs.</td>
</tr>
<tr>
<td>Matheson, Pflanz-Sinclair, Almarzouqi, Bond, Lee, Batieha,</td>
<td>A controlled trial of screening, brief intervention and referral for treatment</td>
<td>Non-randomized controlled trial: two clinics using SBIRT intervention and two</td>
<td>n= 906 patients screened. Control group n= 900. Positive = 24. Brief intervention given to 21.</td>
<td>Strengths: Rigorous statistical methods.</td>
<td>Study took place in Middle East, which has very different laws (severe</td>
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<tr>
<td>Pub. Year; Author’s Last Name</td>
<td>Title of Publication</td>
<td>Type of Study</td>
<td>Main Outcomes of Findings</td>
<td>Strengths &amp; Weaknesses</td>
<td>Support for and or Link to Project</td>
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<td>Ghaferi, &amp; El Kashef. (2017).</td>
<td>(SBIRT) implementation in primary care in the United Arab Emirates.</td>
<td>matched control clinics.</td>
<td>Referral given to 3. None of 21 BI patients returned for f/u. Prevalence of SU increased in 906-member cohort to 0.028% (95% CI 0.15400.264), which was higher than in control group (p&lt;0.001)</td>
<td>Use of control groups. Two study arms, each with one study clinic and one control clinic. Experimental groups: (n = 906) together. Weaknesses: Study conducted in a country with different cultural mores and legal consequences for SU. Not a randomized controlled study. Low number of positive screens (n = 21) Unclear if reflects low SU or participants not answering screening questions truthfully. F/u rate: 0%.</td>
<td>consequences for drug abuse) and cultural mores towards SU. However, does point to a weakness in SBIRT delivered in primary care clinics in that patients may not attend follow up sessions for reasons including shame, stigma, and fear.</td>
</tr>
<tr>
<td>Matson, Lapham, Bobb, Johnson, Richards, Lee, Bradley, &amp; Glass. (2020).</td>
<td>Cannabis use, other drug use, and risk of subsequent acute care in primary care patients.</td>
<td>Retrospective cohort study</td>
<td>Patients in Washington State screened for cannabis use and other drug use (separate screens) to determine if there is a relationship between substance use and future acute care utilization. Study found that substance use screens in</td>
<td>Strengths: Large sample size (n = 47,447) Rigorous statistical methods. Weaknesses:</td>
<td>Shows benefit of using validated screening instruments at primary care level. Identifying SU may decrease use of acute care services.</td>
</tr>
<tr>
<td>Pub. Year; Author’s Last Name</td>
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<tr>
<td>Moser, Edwards, Pryor, Manson, &amp; O’Hare. (2020).</td>
<td>Workflow improvement and the use of PDSA cycles: an exploration using</td>
<td>Quality improvement initiative</td>
<td>Nurses reported 23.82% decreased barriers to referrals and 21.12% increase in “helpfulness” of SBIRT.</td>
<td>Strengths:</td>
<td>This study aims to improve the entirety of SBIRT protocol in an FQHC, while this</td>
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<td>screening, brief intervention, and referral to treatment (SBIRT) integration.</td>
<td>4 PDSA cycles over 10 weeks to improve SBIRT in an FQHC.</td>
<td>Providers reported 7.6% decreased barriers to referrals and decreased “helpfulness” of SBIRT.</td>
<td>4 PDSA cycles with resulting data statistically analyzed. Weaknesses: No consistent time frame between PDSA cycles. Identification of several barriers and process problems recognized and addressed (with one exception, below) at each PDSA cycle. Data analysis not continuous. Unable to eliminate bottleneck in process by shifting SBIRT screening from medical staff to front desk staff; unable to assess if there would be an improvement in this area. Adapted RBQ results had low internal consistency. Paired sample t-test not used for these results.</td>
<td>project focuses on the screening and identification aspect only. It does give context to FQHC issues with SBIRT in general and the use of PDSA cycles to guide improvements in process in FQHC primary care.</td>
</tr>
<tr>
<td>McNeely, Kumar, Rieckman, Sedlander, Farkas,</td>
<td>Barriers and facilitators affecting the implementation of</td>
<td>Qualitative study by focus groups and individual interviews.</td>
<td>Two urban academic health systems.</td>
<td>Strengths: Two study sites from two very different US</td>
<td>Gives context to current project and factors to consider</td>
</tr>
<tr>
<td>Pub. Year; Author’s Last Name</td>
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<td>Among healthcare staff: Consistent agreement that knowledge of patient SU is important due to its impact on patient health and care. Agreement that SU not consistently adequately identified in medical settings. Agreement that universal screening is appropriate and necessary. Barriers: patients stated concerned with consequences of disclosing SU. Patients may not answer truthfully. Lack of staff training or time may hamper screening efforts. Overall, participants supportive of universal screening to identify SU, with the addition of appropriate follow up.</td>
<td>Weaknesses:</td>
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<td>Weaknesses: Study participants all from urban areas. May not generalize to rural populations. Younger participants difficult to recruit, so entire cohort not representative of age strata of general population, may have skewed data. Interviews in English only; excludes some participants. Social desirability bias possible.</td>
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<th>Support for and or Link to Project</th>
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<tr>
<td>Sahker, Jones, Lancianese, Pro, Arndt. (2019).</td>
<td>Racial/ethnic differences in alcohol and drug use outcomes following screening, brief intervention, and referral to treatment (SBIRT) in federally qualified health centers.</td>
<td>Quasi-experimental design</td>
<td>Quantifying differences within race/ethnicity and sex as regards alcohol and drug use after SBIRT. Used health data from four FQHCs from 2012-2016. (n = 29,121) Did show sex differences in outcome within race and ethnicity for alcohol use, but not for drug use, though far fewer patients screened positive for drugs than for alcohol, which may have underpowered this component of the study. (Time 1 prescreen: 4.70% (n=1368) vs. 14.25% (n=4149). DAST-10 used for drug screening.</td>
<td>Strengths: Rigorous statistical methodology. Large sample size (n = 29,121) and multiple tests allowed for alpha threshold to be reduced from p = 0.5 to p &lt; 0.001. Weaknesses: Study undertaken at an FQHC, which may yield a sample on lower economic strata. Generalizability therefore may be limited. Screening relies on self-report. Effect sizes in pts self-ID as white, Black, and Other were small. Not clinically significant.</td>
<td>DAST-10 is used as the SU screening instrument within this SBIRT protocol.</td>
</tr>
<tr>
<td>Saunders, Moore, Gardner, Farkas, Marsch, McLeman, Meier, Nesin, Rotrosen, Walsh, McNeely. (2019).</td>
<td>Screening for substance use in rural primary care: a qualitative study of providers and patients.</td>
<td>Multi-phase (qualitative) study</td>
<td>Three stakeholder groups at three rural FQHCs in Maine (PCPs, MAs, patients) PCPs (n=10) individual interviews. All groups (n=60) focus groups</td>
<td>Strengths: Barriers to screening as expressed by participants thoroughly uncovered and explored. Table 2 maps KTA framework to focus group quotes, each</td>
<td>MHC Healthcare has identified staff lack of comfort with discussing drug use in general with patients. Use of a screening tool in this study led to discomfort in</td>
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<tr>
<td>Pub. Year; Author’s Last Name</td>
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<td>Shirinbayan, Salavati, Soleimani, Saedi, Asghari-Jafarabadi, Hemmati-Garankani, Vameghi. (2019).</td>
<td>The psychometric properties of the drug abuse screening test.</td>
<td>Cross-sectional descriptive-analytical study</td>
<td>Psychometric study of validity of DAST-10 in Persian for Iranian and culturally similar Persian-speaking societies. 244 of 251 participants returned questionnaire. (97.2%) Cronbach’s alpha coefficient for Persian version = 0.93,</td>
<td>Strengths: Internal consistency reliability: Cronbach’s alpha (0.93). Confirmatory factor analysis and exploratory factor analysis evaluated the construct validity.</td>
<td>Shows cross-cultural validity and reliability of DAST-10 in Iranian patients after accurate translation to Persian, similar to other languages to which instrument has been adapted. Suggests possibility that other translations</td>
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<td>Representing major themes. Weaknesses: Small sample size (n = 65). All participants from Bangor ME area. May not be representative across all US regions. Social desirability bias may have influenced participants in focus groups, as well as shyness about speaking in groups. Recent legislation legalized cannabis, may confound results on screening instruments.</td>
<td>Providers when discussing results. Points to future potential barriers to consider.</td>
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</table>

Identify problem: Unanimous agreement on importance of screening, universal preferred. Adapt to local context: PCPs and MAs in agreement on annual screening. Assess barriers: Patients concerned about trust in providers, perceived that rapport was lacking. PCPs and MAs lacked comfort and preparedness to discuss screen results and treatment.
<table>
<thead>
<tr>
<th>Pub. Year; Author’s Last Name</th>
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<th>Main Outcomes of Findings</th>
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<tr>
<td>Skinner. (1983.)</td>
<td>The drug abuse screening test.</td>
<td>Confirmatory factor analysis/empirical evaluation</td>
<td>n = 223 (72% male, 28% female). Mean age: 32.7 yrs. Self-identified as having SU problems; all had voluntarily requested help. DAST internal consistency reliability Cronbach’s alpha (0.92). Biases of denial and social desirability influenced results minimally. Results may not translate across all contexts; patients may be less inclined to answer truthfully if DAST applied in employment or LE situations.</td>
<td>Rigorous statistical methodology. Weaknesses: Test-retest reliability, concurrent validity not measured. Instrument is translated across very different languages, cultures, and geography. Reliability of translation dependent on human interpretation of language and cultural equivalents.</td>
<td>Early study on DAST, written by developer. Original instrument 28 questions. Provides historical context to project. Seminal work.</td>
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<tr>
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<tr>
<td>Wu, McNeely, Subramaniam, Brady, Sharma, VanVeldhuisen, Zhu, Schwartz. (2017).</td>
<td>DSM-5 substance use disorders among primary care patients: results from a multisite study.</td>
<td>Multi-site validation study/cross-sectional</td>
<td>TAPS tool study recruited participants for development of this new screening instrument (Tobacco, Alcohol, Prescription Medication, and Other Substance Use Tool) n=2057 recruited, n = 2000 completed study. Mean age 46.0 yrs. Women 56.2%, Men 43.7%. 12-month SUDs: 36%</td>
<td>Needed (at time of study) validation with urine testing and in populations that have not presented as having existing SUD. desirability bias or fear of consequences of disclosure. Both items above may impact generalizability. Strengths: Large sample size (n = 2000). Participants recruited from multiple sites, though limited to East Coast. Weaknesses: TAPS tool is a self-report instrument. Cross-sectional design. Cannot assess differences in sociodemographic strata related to specific SUDs. Study participants entirely located along Eastern Seaboard. Participants limited to English-speaking and ability to use a tablet computer.</td>
<td>Prevalence of patients with SUD is high in primary care practices in general, underscoring importance of screening and identifying same. Supports screening at primary care level.</td>
</tr>
<tr>
<td>Pub. Year; Author’s Last Name</td>
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<td>Type of Study</td>
<td>Main Outcomes of Findings</td>
<td>Strengths &amp; Weaknesses</td>
<td>Support for and or Link to Project</td>
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<tr>
<td>Wu, Payne, Roseman, Kingsbury, Case, Nelson, &amp; Lindblad. (2019).</td>
<td>Clinical workflow and substance use screening, brief intervention, and referral to treatment data in the electronic health records: a national drug abuse treatment clinical trials network study.</td>
<td>Nonexperimental descriptive study</td>
<td>Lack of SUD treatment data in EMRs. Collected data on use of EMRs to support and implement SBIRT protocols. 26 health systems (inclusive of primary care, ambulatory/specialty, mixed setting, hospital o/p, hospital i/p, ED). Validated screening instruments rarely used across these settings to assess for SUDs. SBIRT data collected in structured and unstructured EMR fields (i.e., progress notes). Documentation of SUD screenings often in unstructured fields. Low utilization of validated screening instruments to assess for SUDs.</td>
<td>Strengths: Participants recruited from across the USA from 26 settings across all major regions. Study is exploratory in order to facilitate hypothesis development for future, more rigorous studies. Weaknesses: Sample disproportionately from Southern US (46.2%). First study of its kind; unable to compare results with prior studies. Results are descriptive. Self-report may be influenced by reporting bias.</td>
<td>SBIRT data collected in EMR structured fields important to collect for quality performance measures. Supports use of validated screening tools to identify patients with SUDs and capturing this data in EMR.</td>
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<tr>
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|                               |                      |              |                           | Participants were representatives of their facilities but were not representative of all providers of their facilities.  
Convenience sample.            |                      |
APPENDIX I:
OTHER DOCUMENTS AS APPLICABLE TO THE PROJECT (DAST-10 FORMS IN ENGLISH AND SPANISH)
Drug Abuse Screening Test, DAST-10

The following questions concern information about your possible involvement with drugs not including alcoholic beverages during the past 12 months.

“Drug abuse” refers to (1) the use of prescribed or over-the-counter drugs in excess of the directions, and (2) any nonmedical use of drugs.

The various classes of drugs may include cannabis (marijuana, hashish), solvents (e.g., paint thinner), tranquilizers (e.g., Valium), barbiturates, cocaine, stimulants (e.g., speed), hallucinogens (e.g., LSD) or narcotics (e.g., heroin). Remember that the questions do not include alcoholic beverages.

Please answer every question. If you have difficulty with a statement, then choose the response that is mostly right.

<table>
<thead>
<tr>
<th>In the past 12 months...</th>
<th>Circle</th>
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<tbody>
<tr>
<td>1. Have you used drugs other than those required for medical reasons?</td>
<td>Yes</td>
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<tr>
<td>2. Do you abuse more than one drug at a time?</td>
<td>Yes</td>
</tr>
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<td>3. Are you unable to stop abusing drugs when you want to?</td>
<td>Yes</td>
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<td>4. Have you ever had blackouts or flashbacks as a result of drug use?</td>
<td>Yes</td>
</tr>
<tr>
<td>5. Do you ever feel bad or guilty about your drug use?</td>
<td>Yes</td>
</tr>
<tr>
<td>6. Does your spouse (or parents) ever complain about your involvement with drugs?</td>
<td>Yes</td>
</tr>
<tr>
<td>7. Have you neglected your family because of your use of drugs?</td>
<td>Yes</td>
</tr>
<tr>
<td>8. Have you engaged in illegal activities in order to obtain drugs?</td>
<td>Yes</td>
</tr>
<tr>
<td>9. Have you ever experienced withdrawal symptoms (felt sick) when you stopped taking drugs?</td>
<td>Yes</td>
</tr>
<tr>
<td>10. Have you had medical problems as a result of your drug use (e.g. memory loss, hepatitis, convulsions, bleeding)?</td>
<td>Yes</td>
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Scoring: Score 1 point for each question answered “Yes,” except for question 3 for which a “No” receives 1 point.

<table>
<thead>
<tr>
<th>Interpretation of Score</th>
<th>Score</th>
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<tr>
<td>Score</td>
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<tr>
<td>0</td>
<td>None problems reported</td>
</tr>
<tr>
<td>1-2</td>
<td>Low level</td>
</tr>
<tr>
<td>3-5</td>
<td>Moderate level</td>
</tr>
<tr>
<td>6-8</td>
<td>Substantial level</td>
</tr>
<tr>
<td>9-10</td>
<td>Severe level</td>
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Drug Abuse Screening Test (DAST-10). (Copyright 1982 by the Addiction Research Foundation.)
CUESTIONARIO DE USO DE DROGAS (DAST-10)

Las siguientes preguntas se refieren a información acerca de su potencial envolvimiento con drogas excluyendo alcohol y tabaco durante los últimos 12 meses. Lea con cuidado cada pregunta y decida si su respuesta es “No” o “Sí”. Después, marque el casillero apropiado junto a la pregunta.

Cuando la palabra “abuso de drogas” es usada, esta se refiere al uso de medicinas compradas con receta médica o sin ella y que son ingeridas en exceso de lo recomendado. Las varias clases de drogas pueden incluir: cannabis (marihuana, hashis), solventes, tranquilizantes (Valium), barbitúricos, cocaína, estimulantes (speed), alucinógenos (LSD) o narcóticos (heroina). Recuerde que las preguntas no incluyen alcohol o tabaco.

Por favor responda cada pregunta. Si tiene dificultades con alguna de las preguntas, escoja la que le parezca correcta.

<table>
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<tr>
<th>Estas Preguntas Están Referidas a los Últimos Doce Meses:</th>
<th>No</th>
<th>Sí</th>
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</thead>
<tbody>
<tr>
<td>1. ¿Ha usado drogas que no eran requeridas por razones médicas?</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>2. ¿Ud. abusa más de una droga a la vez?</td>
<td>□</td>
<td>□</td>
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<tr>
<td>3. ¿Es Ud. capaz de parar de usar drogas siempre cuando se lo propone?</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>4. ¿Ha tenido &quot;perdidas de conocimiento&quot; o una &quot;memoria repentina&quot; como resultado del uso de drogas?</td>
<td>□</td>
<td>□</td>
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<tr>
<td>5. ¿Alguna vez se siente mal o culpable debido a su uso de drogas?</td>
<td>□</td>
<td>□</td>
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<tr>
<td>6. ¿Alguna vez su pareja (o familiares) se han quejado de su uso de drogas?</td>
<td>□</td>
<td>□</td>
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<tr>
<td>7. ¿Ha desatendido a su familia debido a su uso de drogas?</td>
<td>□</td>
<td>□</td>
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<tr>
<td>8. ¿Se ha implicado en actividades ilegales con el fin de obtener drogas?</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>9. ¿Alguna vez ha experimentado síntomas de abstinencia (sentirse enfermo) cuando dejó de usar drogas?</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>10. ¿Ha tenido problemas médicos como resultado de su uso de drogas (perdida de la memoria, hepatitis, convulsiones, hemorragia, etc.)?</td>
<td>□</td>
<td>□</td>
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(Skinner, 1982)
APPENDIX J:

SUMMARY OF USPTFS SCREENING RECOMMENDATIONS
Clinician Summary of USPSTF Recommendation
Screening for Unhealthy Drug Use

June 2020

What does the USPSTF recommend?

For adults 18 years or older

Screen by asking questions about unhealthy drug use in adults 18 years or older.

Screen when services for accurate diagnosis, effective treatment, and appropriate care can be offered or referred. Screening refers to asking questions about unhealthy drug use, not testing biological specimens.

Unhealthy drug use includes using illegal drugs, such as heroin, or using a prescription drug in ways that are not recommended by a doctor, such as to “get high” or affect someone’s mood or way of thinking.

For adolescents

The evidence is insufficient to assess the balance of benefits and harms of screening for unhealthy drug use.

To whom does this recommendation apply?

- Adults 18 years or older and adolescents, including those who are pregnant and postpartum.
- Settings and people for which services for accurate diagnosis, effective treatment, and appropriate care can be offered or referred.
- Does not apply to:
  - Adolescents or adults who have a currently diagnosed drug use disorder or are currently undergoing or have been referred to drug use treatment.
  - Settings and people for which treatment cannot be provided or the result of screening is punitive.

What’s new?

- This recommendation to screen adults for unhealthy drug use is new and is based on new evidence. Previously in 2008, there was insufficient evidence to make a recommendation for adults.
- Evidence continues to be insufficient to assess the balance of benefits and harms of screening for drug use in adolescents.
How to implement this recommendation?

For adults: Ask adults about unhealthy drug use. Clinicians can ask the questions or ask their patient to share their answers on a form, computer, or tablet. There are a variety of screening tools available, such as:

- Brief tools (e.g., NIDA [National Institute on Drug Abuse] Quick Screen, which asks 4 questions about use of alcohol, tobacco, nonmedical use of prescription drugs, and illegal drugs in the past year), which may be more feasible in busy primary care settings.
- Longer tools (e.g., the 8-item ASSIST [Alcohol, Smoking and Substance Involvement Screening Test]) that assess risks associated with unhealthy drug use or comorbid conditions.
- The PRO (Prenatal Risk Overview) for pregnant people.

Providers should be aware of state requirements and best practices on informed consent for screening, documenting screening results in medical records, and confidentiality protections.

For adolescents: Evidence is insufficient, so clinicians should use their judgement about screening by asking questions about drug use.

What are other relevant USPSTF recommendations?

The USPSTF has also issued other related recommendations on interventions to prevent drug use in children, adolescents, and young adults; screening and behavioral counseling interventions for reducing unhealthy alcohol use in adolescents and adults; interventions for tobacco smoking cessation in adults, including pregnant people; and primary care interventions to prevent tobacco use in children and adolescents.

Where to read the full recommendation statement?

Visit the USPSTF website to read the full recommendation statement. This includes more details on the rationale of the recommendation, including benefits and harms; supporting evidence; and recommendations of others.
REFERENCES


MHC Healthcare. (MHCH). (n.d.). *mhchealthcare.org*


Tanis, D. (2020). *DAST-10 education for the intent to adopt in an integrated health clinic* University of Arizona, Tucson, USA.


