Screening, Brief Intervention and Referral to Treatment (SBIRT): Implementation in the Adolescent Inpatient Psychiatric Setting

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Abstract

BACKGROUND: The cost of substance use (SU) in the United States (U.S.) is estimated at $1.25 trillion annually. SU is a worldwide health concern, impacting physical and psychological health of those who use substances, their friends, family members, communities and nations. Screening, Brief Intervention (BI) and Referral to Treatment (SBIRT) provides an evidence-based (EB) framework to detect and treat SU. Evidence shows that mental health (MH) providers are not providing EB SU management. Federally grant-funded SBIRT demonstrated evidence of decreased SU and prevention of full disorders. Implementation outcomes in smaller-scale projects have included increased clinician knowledge, documentation and interdisciplinary teamwork.

OBJECTIVE: To improve quality of care (QOC) for adolescents who use substances in the inpatient psychiatric setting by implementing EB SBIRT practices.

METHODS: Research questions focused on whether the number of SBIRT notes documented (*N*=170 charts) increased and whether training of the interdisciplinary team (*N*=26 clinicians) increased SBIRT knowledge. Individualized interventions used existing processes, training and a new SBIRT Note template. An SBIRT knowledge survey was adapted from a similar study. A pre- and post-chart audit was conducted to show increase in SBIRT documentation. The rationale for the latter was not only for compliance, but also so that all team members can know the status of SBIRT services. Thus, increased interdisciplinary teamwork was an intentional, though indirect, outcome.

RESULTS: A paired-samples t-test indicated clinician SBIRT knowledge significantly increased, with a large effect size. The results suggest that a short, 45-60-minute tailored education module can significantly increase clinician SBIRT knowledge.

Auditing screening & BI notes both before and after the study period yielded important patient SU information and which types of SBIRT documentation increased post-implementation. The CRAFFT scores of the patients were quite high from a SU perspective, averaging over 3/6 both pre- and post-implementation, revealing over an 80% chance that the adolescent patient had a SU

disorder. Most patients were positive for at least one substance (pre- = 47.1%; post- = 65.2%), with cannabis and alcohol being the most commonly used substances. Completed CRAFFT screenings increased from 62.5% to 72.7% of audited patients.

Post-implementation, there were two types of BI notes: the preexisting Progress Note BI (PN BI) and the new Auto-Text BI (AT BI), part of the new SBIRT Note template introduced during implementation. The PN BIs not completed despite a positive screen increased from 79.6% to 83.7%. PN BIs increased 1%. The option for AT BI notes ameliorated this effect. Total BI notes completed for a patient positive for a substance increased from 20.4% to 32.6%, with 67.4% not receiving a documented BI. Total BIs completed for all patients was 21.2% post-implementation. **CONCLUSION**: This project is scalable throughout the U.S. in MH settings and will provide crucial knowledge about positive and negative drivers in small-scale SBIRT implementations. The role of registered nurses (RNs), social workers and psychiatrists in providing SBIRT services as an interdisciplinary team will be enhanced. Likely conclusions are that short trainings can significantly increase clinician knowledge about SBIRT and compliance with standards. Consistent with prior evidence, significant management involvement, SBIRT champions, thought leaders and other consistent emphasis is necessary to continue improving SBIRT practice in the target setting.

Keywords: adolescents, teenagers, youth, alcohol, behavioral health, cannabis, crisis, documentation, drug use, epidemic, high-risk use, illicit drugs, implementation, mental health, opiates, opioid, pilot study, psychiatric inpatient hospital, quality improvement, SBIRT, Screening, Brief Intervention and Referral to Treatment, substance use, unhealthy alcohol use, use disorders

Screening, Brief Intervention and Referral to Treatment (SBIRT): Implementation in the Adolescent Inpatient Psychiatric Setting

Of 19.7 million people who have a substance use[1] disorder in the U.S., 92.3% are not receiving any treatment (McCance-Katz & Satterfield, 2012). In addition to those who have a substance use disorder, 25% of the population are using substances at an unhealthy or *at-risk* level (Indiana SBIRT, 2019). Substance use, a preventable and treatable condition, profoundly contributes to morbidity and mortality worldwide (CDC, 2018a; Mertens et al., 2015). SBIRT is the primary public health initiative that has sought to identify and treat unhealthy substance use (IOM, 1990; SAMHSA, 2017). Despite increased efforts, the quantity and severity of substance use continues to rise. SBIRT has demonstrated significant reductions in substance use and associated harms (Babor, Del Boca, & Bray, 2017; SAMHSA, 2013).

Problem Statement

Effects of Substance Use

SU is estimated to cost $1.25 trillion per year (CDC, 2018; Cidambi, 2017). Thirty percent of hospitalized patients drink hazardous amounts of alcohol. This level of use contributes to admissions, complicates treatment and increases readmissions (Broyles, Rosenberger, Hanusa, Kraemer, & Gordon, 2012). Figure A1 shows alcohol shortens the lives of those who die from it by an average of 30 years and kills about 88,000 people a year (CDC, 2018a) (Appendix A). Alcohol causes increases in seven types of cancer, alcohol poisoning, car crashes, alcohol-related drowning, encephalopathy, violence, liver and heart disease, fetal alcohol syndrome, self-harm and more (WHO, 2014, p. 12; Welch, 2018).

There is no safe level of drinking alcohol (Raphelson, 2018; Welch, 2018). Alcohol is responsible for approximately 5% of global disease and injury and is the leading risk factor for

[1] *Substance use* throughout this work includes alcohol and all psychoactive drugs, legal, illegal, prescription or other.

disease in the U.S. and worldwide, accounting for 6% of all deaths and 10% of deaths among those ages 15 to 49 (Griswold et al., 2018; Mertens et al., 2015; WHO, 2014, pp. xiii-xiv). Relative to other age groups, young adults in the U.S. aged 25-34 are now experiencing the largest increase in mortality due to alcoholic cirrhosis (Tapper & Parikh, 2018). A lifetime of treating young people with alcohol-related morbidities will take a monumental human and financial toll.

Forty-eight million persons 12 and older have used an illicit drug or misused a prescription drug in the past year (CDC, 2017). Opiate overdoses have tripled since the 1990s and will continue to rise due to increasing use of fentanyl, carfentanyl and other deadly drugs, termed the *Third Wave* of the opioid epidemic (Bebinger, 2019; Ritchie & Roser, 2018). The opioid epidemic is creating catastrophic public health consequences (Hargraves et al., 2017). Figure A3 depicts the number of Americans that die from drug overdoses: more than 702,000 from 1999 to 2017 – about 10%, or 70,000, in 2017 (NIDA, 2019) (Appendix A). SU is associated with higher rates of cancer, cardiovascular disease, gastrointestinal disorders, infectious diseases and hepatic disorders (SAMHSA, 2013). One of four deaths in the U.S. are caused by SU (SBIRT Colorado, n.d.).

Substance Use is not Universally Screened and Treated

Alcohol Screening and BI effectiveness has been known for over 30 years (IOM, 1990; WHO, 1980). Early intervention with those who use substances at unhealthy levels can prevent disorders. Nine of ten who drink alcohol excessively are not dependent (Figure A2, Appendix A). Only one in six adults in the U.S. report discussing alcohol use with a provider, despite universal screening having been recommended in general medical settings since 2004 (Bacidore, Letizia, & Mitchel, 2017; Mertens et al., 2015). Alcohol screening with BI ranks among the highest-performing preventive services based on cost effectiveness and health impact, yet remains one of the least implemented (Muench et al., 2015).

Background and Significance

History of and Components of SBIRT

A gap in knowledge existed prior to the 1980s about screening and treatment of unhealthy SU. Alcoholism was known as a condition, however, the rest of high-risk or unhealthy behaviors were largely uncharted (Babor et al., 2017). WHO and the IOM provided the impetus for a standardized intervention to fill the gap between prevention in primary care and more intensive treatment for those diagnosed with SU. In 1980, WHO signaled that methods were urgently required to identify people with harmful or hazardous alcohol consumption before health and social consequences became pronounced (Bray, Del Boca, McRee, Hayashi & Babor, 2017; WHO, 1980). Ten years later, IOM published *Broadening the Base of Treatment for Alcohol Problems* (1990). Advancement in addiction science had, by that time, modified the breadth and definition of problematic alcohol use to encompass physical, psychological and behavioral aspects (Babor et al., 2017; IOM, 1990, pp. 25-32).

IOM advanced its view of alcohol consumption being directly related to outcomes. Additionally, IOM stated that alcohol problems are understood best on a continuum as a heterogenous disease process, requiring individualized assessment and treatment (IOM, 1990, pp. 25-32). Subsequently, a "tipping point" occurred, spurring a movement toward a flexible, universal schema for identification and treatment of unhealthy or high-risk alcohol use (Babor et al., 2017). In response to the need for a coordinated effort to promote the widespread adoption of SBIRT in the U.S., SAMHSA initiated the SBIRT program in 2003. (SAMHSA, 2017). SBIRT has expanded greatly since its inception in the 1990s (Madras et al., 2009). Thus, SBIRT was originated and sustained based on public health and health promotion and prevention theories (Babor et al., 2017).

SBIRT is one of the most successful addiction science translational disseminations ever accomplished (Babor et al., 2017). SBIRT is flexible, adaptable and yet standardized, explaining a great deal of its broad appeal and success (Agerwala & McCance-Katz, 2012). SBIRT consists of

three phases: Screening, BI, or brief treatment (BT) for those at higher risk, and Referral to Treatment (RT). BI is used for any person who scores high enough on a screening tool to indicate problematic use. Moderately at-risk persons should receive BT, with more serious cases being referred to specialty addiction care. Addiction treatment may consist of detoxification units, inpatient psychiatric hospitals, residential programs, intensive outpatient programs or partial hospitalization plans.

Not only can SBIRT be applied using various tools and with several implementation models, most healthcare workers can be trained to use it (Babor et al., 2017). Nurses, social workers, psychologists and medical assistants have been trained to perform SBIRT services (Bacidore et al., 2017; Mertens et al., 2015). SBIRT has been validated in most settings (SAMHSA, 2011). Remaining SBIRT questions and challenges are concentrated on implementation through clinician education and training, program evaluation and model adaptation (Babor et al., 2017). Once federally-funded SBIRT waned, medical sites and other settings (schools, jails) were compelled to innovate and provide resources to implement SBIRT programs.

Screenings consist of simple validated tools that yield a level of use corresponding to categories that advise recommended next steps (Appendix B). A BI is usually 5-10 minutes long; a BT 20-30 minutes. There is a choice of EB tools that include motivational interviewing (Bray et al., 2017). BI or BT begins with psychoeducation providing the patient with information about the amount of healthy v. unhealthy use. Next, negative consequences that can follow from SU are discussed. Insight and awareness are the goals (SAMHSA, n.d.b).

Efficacy of SBIRT

SBIRT has been shown to significantly reduce SU and associated harms (Babor et al., 2017; IRETA, n.d.; SAMHSA, 2013). Early intervention with those who have unhealthy levels of SU can prevent disorders, sequelae and death. SBIRT has been shown to have positive patient outcomes including numbers screened and treated, reduction in alcohol and illicit drug use, reported

abstinence and improvement in quality of life. Healthcare costs are also reduced (Babor et al., 2017). Cost savings are $5 for each $1 spent on SBIRT (Cowell, 2017; SAMHSA, n.d.b).

Analysis of data of one million people screened in 10 years of federally-supported SBIRT provide support for SBIRT's effectiveness in reducing SU. Pre – post differences were clinically and statistically significant for almost every measure of SU: heavy drinking declined by 72%, illicit drug use by 80%. A key rationale for SBIRT with all SU is that greater intervention intensity was associated with larger decreases in SU, including illicit drug use (Babor et al., 2017). Thus, although SBIRT does not have as strong a body of evidence with respect to illicit drug use as it does with alcohol use, SBIRT's advantages of flexibility, adaptability and standardization as well as a lack of competing large-scale frameworks, makes it likely to continue to be used and evaluated (Glass, 2015; SAMHSA, 2011). Since more intensive interventions result in better outcomes, BT and RT are indicated by the evidence, (Babor et al., 2017).

Maricopa County's Regional Behavioral Health Authority (MMIC) lists decreasing the incidence, prevalence and severity of SU as a high priority. More specifically, MMIC's current most urgent goals are 1) reducing underage drinking and 2) reducing the use of illicit opiates and prescription opiate misuse (MMIC, 2015). Numerous federal agencies and national organizations have advocated for universal screening, increased treatment and use of SBIRT in all medical settings, including the U.S. Preventative Services Task Force and the Office of Disease Prevention and Health Promotion ([ODPHP], 2018) with its *Healthy People 2020* initiative (APNA, 2012; Mertens et al., 2015). *Healthy People 2020* lists several objectives related to increased screening and treatment of people who use substances, including increasing SBIRT services and numbers treated (ODPHP, 2018). WHO supports SU screening and treatment worldwide (WHO, 2018).

SBIRT Implementation

Increasing pervasiveness and effectiveness of SBIRT is the current aim of research. The largest gap in knowledge is how to implement SBIRT in new settings and sustain implementation in

existing settings (Mertens et al., 2015; Vendetti et al., 2017). Current SBIRT research focuses on how to extend SBIRT into settings where small-scale programs are unfunded or underfunded, due to lack of federal funding and states' rejection of Medicaid program modifications to pay for SBIRT services. Barriers and facilitators have been studied and reported, so that remaining healthcare settings can replicate SBIRT implementations, increasing patient QOC (Vendetti et al., 2017).

SBIRT implementations require individualized design, diffusion of innovation, practice change and intensive education of service providers. Enhanced individual and organization readiness to change are factors. Evidence of positive outcomes and evaluation sustain and replicate programs throughout organizations. Diffusion of innovation is a process – new SBIRT programs take about 12 months to achieve optimal results (Mertens et al., 2015).

SBIRT implementation themes focus on barriers and facilitators. Little is known about methods for increasing implementation in real world settings. Different staffing models are one area of research. Most programs initially featured physician-provided BIs. BIs can also be provided by licensed and educated nurses, school psychologists, social workers and SU counselors (Bacidore et al., 2017; Mertens et al., 2015). Ongoing training and evaluation linked to performance have been required for successful SBIRT implementations (Bacidore et al., 2017; Mitchell et al., 2017).

Primary care, trauma centers, emergency departments and hospitals have implemented SBIRT to some degree. The American Academy of Pediatrics recommends SBIRT for adolescents (Levy & Williams, 2016). Evidence shows that MH settings are not providing EB SU management (SBIRT). Tradition plays a large role in how psychiatric care is delivered. MH settings are one of the last to implement an EB approach to SU SBIRT (IRETA, 2013; UCLA, 2015). JC and CMS HBIPS core measures now require SU screening upon admission to a psychiatric hospital; BIs are required for patients with positive alcohol screens (JC, 2013). There is no published SBIRT implementation evidence in psychiatric inpatient settings; only one in a community MH setting that reinforces the need for this project (Stanhope, Manuel, Jessell, & Halliday, 2018). Thus, MH

settings face the challenge of standardizing SU screening and treatment consistent with EB practice and national standards.

Quality of Care Would be Improved with Evidence-Based SBIRT

Administration at the project facility was concerned about the quality of SBIRT services provided. The screenings are not being universally performed. The BI documentation is completed by simply checking a few boxes on a psychiatric progress note EHR template. The clinicians, members of three different disciplines, social work, nursing and medicine, have not received training about the SBIRT services they are providing. The disciplines are working more in "silos" when it comes to SBIRT than as a preferred complex adaptive system. For example, nurses complete the screenings, but most do not know how the case managers (CMs) or psychiatrists use that information. In addition, most of the CMs and psychiatrists did not know where to find the completed screenings. SBIRT services are not routinely discussed for each patient, nor can all BI notes be found by the clinicians. However, CMs especially, but also psychiatrists and RNs, are having discussions with patients about SU that are not EB or documented, but could be, if they knew how to use EB tools and quickly record these conversations.

This SBIRT practice environment is contrary to the evidence for SBIRT implementations. A collaborative interprofessional approach to provision of SBIRT services is highly recommended (Bacidore et al., 2017; Del Boca, McRee, Vendetti, & Damon, 2017; Meunch, 2015). EB SBIRT in small-scale settings is dependent on interdisciplinary teamwork, since there is not just one specialist or clinical group providing all SBIRT services. These factors indicate that increased education and coordination would increase QOC on the units. Clinician knowledge about the HBIPs measures and the rationale for performing them would increase the quality of SBIRT services provided.

Purpose Statement and Rationale

The aim of public health initiatives related to SBIRT is to screen everyone for high-risk behaviors related to SU. Through early intervention, many healthcare problems caused by

hazardous use can be diminished or avoided (JC, 2013; IOM, 1990). Thus, the purpose of this quality improvement project is to improve the QOC for adolescents who use substances in the inpatient psychiatric setting by implementing EB SBIRT practices.

Reaching all persons who may be at risk or have unhealthy use is SBIRT's public health mandate. One of the few remaining populations that require application of SBIRT are those patients in the psychiatric inpatient setting. This project will endeavor to apply the most useful combination of education and implementation in that setting to improve QOC.

Objectives

The project developed and implemented an SBIRT program for two units in the adolescent inpatient psychiatric setting. Program objectives included finding significant patient and clinician demographics, enhancing the standardized documentation of SBIRT services, developing and executing an educational module for clinicians and increasing discussion by the MH team about the care being provided to adolescent patient and their families pertaining to SU. Goals to reach the program objectives were to increase: (a) clinician knowledge, (b) SBIRT services provided, (c) documentation of SBIRT services provided, and (d) interdisciplinary teamwork.

PICO Question

The clinically relevant question resulting from this inquiry is: "In adolescents who use substances and are admitted to an inpatient psychiatric unit, how can an EB SBIRT implementation improve the quality of care provided?"

Evaluation Questions

Evaluation inquiries were:

- Does education of the interdisciplinary team increase knowledge about SU and SBIRT services over the pre-intervention state, measured by a pre- and post-survey adapted from evidence?
- What are the significant clinician demographics and experience obtained by relevant questions in the pre-survey?

- Using a chart audit, what are the significant patient demographics on the pilot unit during four weeks prior to and four weeks after project implementation?
- What information can be gleaned about the quantity and type of SU by patients via chart audit during four weeks prior to and four weeks after project implementation? and
- By chart audit, what is the quantity and type of SBIRT documentation notes in the EHR during four weeks prior to and four weeks after project implementation?

Search Strategy

A search was conducted March 20, 2018 through March 23, 2018 and April 4, 2018 to April 5, 2018 to locate research about the PICO question. A search of the databases PubMed, PsycInfo, CINAHL, the Virginia Henderson Global Nursing e-Repository, Open Grey and CORE was conducted. The search of the six selected databases resulted in the retrievals listed in Table 1 (Appendix C). The primary findings came from PubMed with initial retrieval of 83 studies; 17 were retained for further analysis (Figure D1, Appendix D). The *cited by* feature of PubMed was used to increase the likelihood of identifying all relevant studies (Figures D3, D4).

When the CORE database was searched, initial retrievals were excessive compared to other retrievals (Figures E1, E2, Appendix E). Considering that CORE contains mostly unpublished materials, the CORE search was further refined by searching the title and abstract only, resulting in more relevant results (Figures E3, E4).

The search was not limited according to date of publication since the development of SBIRT is a recent phenomenon (2003) and SBIRT in MH settings is sparse. When material was duplicative, preference was given to articles published between 2013-2018.

Inclusion criteria for this review were: (a) original research studies that reported information about SBIRT implementation as a concept or a practice or (b) papers reporting information about the setting or QOC using SBIRT for patients with SU.

Papers were excluded if (a) they were focused on SBIRT for those using nicotine (clinically different from other substances), (b) SBIRT by medical residents (since SBIRT providers were primarily from one discipline in those studies) (c) SBIRT for other conditions not related to SU or (d) those that were written in a language other than English. Published opinions or works primarily regarding policy or commentary were also excluded.

The following two search strings were used to search the databases with the article title, abstracts and body all searched:

• *SBIRT* and *IMPLEMENTATION* (Figures 1 of Appendixes D-H)

• *SBIRT* and *IMPLEMENTING* (Figures 2 of Appendixes D-H)

The search terms were tested to check that they effectively located the types of articles that were consistent with the inclusion criteria prior to conducting the search in all engines. Other search strings were tested that yielded no additional results. For example, both *SBIRT and PROVIDER TRAINING* and *SBIRT and QUALITY IMPROVEMENT* searches were performed. Using searches that included the concepts of SBIRT spelled out were also previewed – the results were overly voluminous. A nursing librarian was consulted during this testing period to ensure whether any other search terms provided additional or better results. A guide was also consulted to find the optimal databases to search for unpublished literature (ASU Library, 2018).

The search was conducted sequentially using the search engines and search terms. Each of the articles retrieved was assessed for relevance by reading the title and/or the abstract using the inclusion and exclusion criteria. Articles that met the inclusion criteria and appeared to be most relevant to the setting were selected and saved to one specific folder on the researcher's computer, using a standardized method for the document names to avoid duplication in search results. After the initial search, all articles identified in subsequent searches were checked against the articles in the folder and duplicates excluded. The folder was addended throughout the searching process and each article that met the inclusion criteria was included in the folder, resulting in 20 reports.

Subsequently, during the quality appraisal process, articles were excluded based on the inclusion and exclusion criteria, date of publication, limited or dissimilar setting or overall relevance to the PICO question, detailed in Table 1 (Appendix C).

Literature in the folder was assessed using rapid critical analysis. The number of papers selected relevant to this research question following quality appraisal was 11. The number of articles included in the Evaluation Tables I1 and I2, was further narrowed to 10, also detailed in Table 1, by choosing the studies most relevant to the intervention of SBIRT implementation and to the setting of inpatient facilities (Appendixes C, I). Preference was also given to articles that analyzed the full SBIRT framework.

On May 1, 2019, a search for evidence published between March 1, 2018 and May 1, 2019 was conducted using the same search terms (please see Figures D5-D7) and methods as above, including viewing the title and/or abstract to decide which articles would be further critically assessed, also detailed in Table 1 (Appendixes C, D). The first search yielded 17 articles. Five of those were saved to the folder and four used in the evidence synthesis herein. One was eliminated due to a dissimilar setting. The second search yielded seven articles, with none saved to the folder.

Evidence Synthesis

There is a large body of evidence on SBIRT implementations in settings other than MH, including emergency departments, trauma centers and primary care. Each site has its own barriers, facilitators and readiness to change. Successful SBIRT implementation has been shown to be an endeavor requiring individualized programming and planning.

The body of evidence repeatedly supports the need for uniform, required documentation of all SBIRT services in a way that supports patient QOC and interdisciplinary team collaboration. Two recent studies collaborate the urgency of clinicians working together in SBIRT programs. Zimmerman et al. (2018, p. 196) concluded, “An inclusive multidisciplinary approach to the implementation of an SBIRT program achieves a high level of compliance.” Wamsley et al. (2018)

laments that true interprofessional training and implementation of collaborative, team-based SBIRT care is necessary, but largely unrealized.

Recording data in an EHR promotes health information exchange and quality improvement and is also necessary to demonstrate compliance with standards set forth by third parties, such as JC and CMS. Further, standard practices and procedures increase adherence to EB practice.

As to the nature of the services provided, using a short prescreening tool (consisting of one to four questions) increases sustainability and efficiency, allowing large numbers of patients to be screened. Positive prescreens should then be immediately followed by further screening and services, performed by the most cost-effective but appropriately-skilled clinicians, building on existing skills and processes. Steps should be taken to ensure success of referrals, such as providing transportation directly to the site, considering access to care and patient preferences.

The most effective and efficient SBIRT providers are trained in SU, behavioral health or addiction counseling. Interprofessional teams are the most successful when specialists cannot be hired. Professions other than physicians, such as nursing or social work, are more efficient at providing services. For physicians, the amount of time spent in support activities compared to actual time of services was large, about 3:1. A recent study of the barriers physicians face implementing adolescent SBIRT supports maximizing each profession's abilities. A perceived lack of effectiveness of BI services and lack of training providing BIs were barriers to physicians providing SBIRT (Palmer, Karakus, & Mark, 2019). Clearly defined team-based responsibilities linked to performance works well. High compatibility with existing roles when introducing new EB interventions increases success; using existing staff contributes to feasibility.

The need for committed leadership from management is consistently reinforced. Implementation teams should include management and IT support. Strongly supporting SBIRT programs is the most crucial function physicians can perform as leaders of the interdisciplinary

treatment team. Physician support entails allowing team members time for completion of services, voicing their support and reinforcing compliance with program goals.[2]

Ongoing training, evaluation and modification should be included in planning activities from the beginning. An SBIRT champion is necessary and can provide ongoing education. In summary, the eight best practices for SBIRT are to:

- have a practice champion,
- utilize an interprofessional team,
- define and communicate the details of each SBIRT step,
- develop relationships with referral partners,
- institute ongoing SBIRT training,
- align SBIRT with the office flow,
- consider using a pre-screening instrument, and
- integrate SBIRT into the EHR (Hargraves et al., 2017).

Theories and Models

Public policy was the impetus and driving force for SBIRT. Later, SBIRT implementation was shaped by implementation, innovation and dissemination science, culminating in *The SBIRT Matrix*, a specific implementation framework for SBIRT (Del Boca et al., 2017). Innovation science as explored in Proctor, Powell, & McMillen (2013) drove the expansion of knowledge into what worked, and what did not work, when implementing SBIRT. These strategies are necessary, constituting the "how to" of changing healthcare practice. Implementation strategies are recognized as necessary for realizing the public health benefits of EB care by comprising the specific means or methods for adopting and sustaining interventions.

The SBIRT Matrix details factors to consider when implementing a program under five domains: (a) SBIRT services, (b) performance sites, (c) provider attributes, (d) patient populations, and (e) management activities. For this project, *The SBIRT Matrix* was used to both classify the evidence about what has worked in the past and to ascertain the aspects of this gold standard that could be applied to the current project, including project interventions. After these primary project

[2] "Many implementation challenges can be addressed by an adequate start-up phase focused on comprehensive education and training, and on the development of intra- and inter-organizational communication and collaboration; opinion leader support; and practitioner and host site buy-in" (Vendetti et al., 2017).

attributes were determined, two of most relevant studies with similar settings, Bacidore et al. (2017) and Muench et al. (2015), guided methodological elements. The Synthesis Table links *The SBIRT Matrix* domains to the evidence and the project (Appendix J) (Del Boca et al., 2017).

The SBIRT Matrix incorporated two relevant supporting theories: *Rogers' Diffusion of Innovation Theory*, including the *Concept of Adopters*, and the *Consolidated Theory for Implementing Research* (Boston University School of Public Health, 2016; Damschroder et al., 2009). The relationships of the theories are illustrated in Appendix K. The *Concept of Adopters* explains that certain groups will learn and adopt new innovations at various rates. *Innovators* are people who want to be the first to try; these people are very willing to take risks and are often the first to develop new ideas. *Early Adopters* are opinion leaders – they enjoy leadership roles and embrace change. *Early Majority* group members will adopt new ideas before the average person; however, they need to see evidence that the innovation works prior to adoption. Some believe there is a saturation point – after the *Early Majority* adopts an innovation, a critical mass is reached. The *Late Majority* and *Laggards* then follow (Kaminski, 2011; LaMorte, 2018).

TAP 33 is a step-by-step manual detailing how to complete an SBIRT implementation, integrating the components of *The SBIRT Matrix*. It also describes SBIRT implementation processes and covers challenges, barriers, cost and sustainability (SAMHSA, 2013).

Methods

Design

This endeavor was initiated with the belief that EB SBIRT improves QOC. This unfunded project targeted two adolescent units in a freestanding behavioral health hospital with eight total units (six are adult). The remainder of the hospital and sister hospitals with psychiatric units are probable sites for further quality improvement.

This was a quality improvement project that measured the effects of an SBIRT educational module and a new EHR SBIRT Note template on clinician knowledge and practice. A single-

sample, nonrandomized cohort was used. Individualized project interventions utilized existing processes, clinician education & a new auto-text note (SBIRT Note template) for additional documentation of SBIRT services.

Primary research questions focused on a) whether training of the interdisciplinary team increased knowledge about SBIRT & b) whether the number of SBIRT notes documented increased.

Ethics. This project was a joint effort between an Arizona State University (ASU) DNP student and faculty and a freestanding psychiatric hospital in an urban area of the Southwest U.S. ASU's Institutional Review Board (under preexisting joint agreement with the facility organization) approved the project with exempt, or expedited, status in September 2018. All patient and clinician project data were collected and stored anonymously thus, privacy and confidentiality were protected. A code of the clinician's choosing and known only to the clinician was used to pair each clinician's pretest to their posttest. The risk to patients participating in this project was no different from the risks of patients receiving usual SBIRT care. All electronic files containing identifiable information were kept on a secure server onsite.

Setting. The setting was two adolescent units in an inpatient psychiatric hospital consisting of an interdisciplinary team that provides care to acute mentally ill patients. The licensed team members included nurses, care managers and psychiatrists. The population was acutely mentally ill adolescents and their families or guardians. The patients had a range of MH disorders and often had "dual diagnoses," a MH and a SU disorder.

Sample. The targeted sample consisted of 36 full-time clinicians on two adolescent psychiatric inpatient units. Recruitment was accomplished via a poster, e-mails, staff meetings and conversations on the units between the researcher, clinicians and management.

Twenty-six clinicians (N=26) were educated in SBIRT best practices and completed the post-survey. The clinicians who completed the education consisted of five CMs, three psychiatrists

and eighteen RNs. One psychiatrist who was trained left the facility before taking the post-survey and nine RNs did not take part in the training.

Instruments/Outcome Measurement. Outcomes were measured by a pre- and post-survey and a chart audit. The outcome related to SBIRT knowledge is: clinicians on target units will increase knowledge of SBIRT services, why they are the standard of care, and how to perform and document them. The outcome related to SBIRT documentation is: clinicians will increase documentation of SBIRT services and able to find SBIRT documentation in patients' charts. This may lead to increased team discussion about patient's SBIRT status and services.

Chart Audit. A pre-and post-chart audit was conducted to show increase in SBIRT documentation. Chart audits have often been used retrospectively to assess the outcomes of SU screening (Bright, Walsh, & Williams, 2010; Griffiths, Stone, Tran, Fernandez, & Ford, 2007). A chart audit effectively revealed patient demographics and SU and the quantity and type of SBIRT notes documented in the patients' charts over the study period.[3]

Rationales for auditing documentation were a) to track & evaluate the number of SBIRT services performed & whether they were performed correctly & completely, b) to obtain compliance information and c) so all team members can know the status of SBIRT services for each patient. Thus, increased interdisciplinary teamwork was planned.

Pre- and Post-Survey. The pre- and post-survey utilized a modified instrument from a comparable SBIRT implementation (Bacidore et al., 2017). The measure, an *Emergency Department Alcohol SBIRT Knowledge: Pretest/Posttest*, was originated to assess knowledge of SBIRT within a multidisciplinary team of RNs and social workers. An interdisciplinary expert panel of five established survey content validity with an I-CVI and an S-CVI/Ave of 1.00 (excellent*)* for

[3] The sample size in a nursing screening study (*n*=79) was comparable to the original sample size for the current project (*n*=36) (Griffiths et al., 2007).

each question (Jingcheng, Xiankun, & Zhenqiu, 2012; Polit & Beck, 2006). Internal consistency was established via Cronbach's $\alpha = 0.95$ (Bacidore et al., 2017, pp. 207, 210).

With permission, the survey was modified for the setting and to include relevant clinician demographics (Del Boca et al., 2017) (Appendix L, M). The original 10 multiple-choice questions on the topic of SBIRT knowledge and practice were slightly modified by removing the words "emergency department." The tenth question was specific to the setting and was removed.

Clinician SBIRT Training Module. The education module was designed and compiled by the researcher, who had personal experience working on the target units, into a presentation tailored to the setting. The learning module included a) knowledge about the origins, evidence base & steps of SBIRT, b) the services each type of clinician was charged with performing, c) where to find documentation of SBIRT services in the EHR, d) how to perform the services & documentation correctly, e) how their interventions affected other clinicians' knowledge & interventions regarding patients' SBIRT status, and f) the nature & importance of interdisciplinary care related to SBIRT.

Process

SBIRT Knowledge Interventions

The researcher provided education, administered the surveys and collected data, the latter with assistance from Nursing Informatics. The pre- and post- chart audit and training period was from September 2018 to February 2019. Figure 3 details the site timeline (Appendix N).

The modified survey, including nine modified multiple-choice questions testing SBIRT knowledge, was completed by clinicians (RNs, social workers and psychiatrists) on the target units before & after education (Figure 2, Appendix M). The education module, when completing it with the researcher and including loading the SBIRT Note template into the clinician's EHR profile, took about 45-60 minutes per person to complete. Clinician demographics were also gathered.

SBIRT Documentation Interventions

A chart audit was completed of all discharged patients on the two units four weeks prior to (*n*=104) & four weeks after (*n*=66) the program interventions, which included the clinician training and the new SBIRT Note template implementation. The number and type of SBIRT services documented before and after implementation was compared and patient demographics and SU information was gathered.

The researcher implemented and audited a) an SBIRT Note template, initiated primarily for CMs but available to others, to document SBIRT services provided, and b) examined completion of preexisting chart elements for screening and BIs, before and after clinician training. The screening data included frequency data of three preexisting screenings: CRAFFT screenings, a SU table and a Caregivers' SU table. BI data included frequency of two notes: an existing section of the provider progress notes and the new SBIRT Note template.

Data Analysis

Data were managed, stored and analyzed using SPSS® version 24 (IBM, 2016). Data were entered into SPSS from the survey questionnaire and the chart audit. The survey data was analyzed using nonparametric tests due to inability to assume normal distribution of ordinal data with a small sample size (*N*=26). Two-tailed tests were performed; the critical value was set at $p < 0.05$. The survey data was analyzed using paired t tests. Measures of central tendency and frequency data were collected for survey and chart audit data to describe the sample and outcome variables.

Results

Survey Results

SBIRT Knowledge. Does education of the interdisciplinary team increase knowledge about SU and SBIRT services over the pre-intervention state?

A sample of 26 clinicians, five CMs, three psychiatrists and eighteen RNs, were educated in SBIRT best practices and completed the post-survey. A paired-samples t-test indicated scores on the

posttest were significantly higher than scores on the pretest. A significant difference with a large effect size was found in the correct number of answers between the pretest (*M*=6.23/9, *SD*=1.56) & the posttest (*M*=7.88/9, *SD*=1.11), $t(25) = -4.219$, $p < 0.001$, $d = 0.827$ (Tables O3, O4, Appendix O). These results suggest that education significantly increased clinician SBIRT knowledge. Another way of stating the increase in scores between the surveys is the mean score, as a percentage, increased from 69.22% pretest to 87.56% posttest. A clinically significant result was that the percentage of clinicians who scored 100% increased from 7.7% pretest to 42.3% posttest.

Clinician Demographics. What are the relevant clinician demographics and experience?

Based on the survey demographic results, clinicians with a greater *Highest Level of Education* tended to perform moderately higher on the post-survey, $r_s = .408$, $p = 0.039$ (Table O1). No other demographics were significantly correlated with survey performance (Table O1, O2).

Chart Audit Results

Each category of documentation, such as CRAFFT Screenings & BI notes, were tabulated & compared pre- & post-intervention. Through Screening analysis, information about the SU of adolescent patients was also gathered.

Patient Demographics. What are the significant patient demographics on the pilot unit during four weeks prior to and four weeks after project implementation? The patient demographics were: two-thirds female, averaging 15 years of age and mostly Caucasian (Table Q1, Appendix Q).

Patient Substance Use. What information can be gleaned about the quantity and type of SU by patients during four weeks prior to and four weeks after project implementation?

The CRAFFT scores of the patients were quite high from a SU perspective. The average CRAFFT score revealed over an 80% chance that the patient had a SU disorder, both pre- ($M = 3.33$, $SD = 3.20$) and post- ($M = 3.23$, $SD = 2.97$) (Table Q3). A score of "3" on the CRAFFT correlates with a 79% chance of having a DSM-V SU disorder (Center for Adolescent Substance Use Research, 2017, Figure 4, Appendix P).

A large portion of the sample were positive for at least one substance (pre- = 47.1%; post- = 65.2%) (Table Q4). The screenings did increase (see below) so the change from pre- to post- is likely due to increased screening. Regarding the type of substances, the number of patients who used cannabis was the highest, post = 50.8%, with those who used alcohol the second-largest group, post = 37.9%. Opiates were the third highest at 15.2% post (Table Q4).

Documentation Results. What is the quantity and type of SBIRT documentation notes in the EHR during four weeks prior to and four weeks after project implementation?

Screening Documentation Results. CRAFFT screening notes fully completed increased from 62.5% to 72.7% of patients (Table Q2). In order to get a score from the EHR element, the CRAFFT form must be fully completed. CRAFFT screening notes partially & fully completed increased from 78.8% of the sample pre- to 87.9% of the sample post-implementation. Thus, partial and full CRAFFT screenings increased 9.1%. Post-implementation patients who did not receive a CRAFFT screening at all was reduced to 12.1%. (Table Q2).

Another existing screening tool was the *SU Table.* It contains a list of 13 substances. Patients are asked, for each substance, if they have used the substance before, the quantity of the substance used, the number of times they used it and the last use. This data provided information about the number of patients who use any substances. Those that were positive for at least one substance increased from 47.1% to 65.2% of the sample between pre- and post-implementation. Those who were negative for all substances decreased from 44.2% to 27.3% (Table Q3). Thus, it appears that the quality of the screenings using the *SU Table* increased substantially. Although *SU Tables* were not completed at a higher rate per patient, it appears that the number of substances documented for each patient increased. The importance of fully completing the *SU Table* in depth with the patient was one of the practices targeted in the education module.

Another existing screening tool was the *Caregiver SU Concerns Table*. This short five-question table was completed 87.5% of the time pre-implementation and did not increase (Table Q2). All three screening tools were completed during the admission by the admitting RN.

Brief Intervention Documentation Results. Post-implementation, there were two types of BI notes: the preexisting Progress Note BI (PN BI) and the new Auto-Text BI (AT BI). The AT BI was part of the new SBIRT Note template that was introduced during implementation. The PN BIs increased 1% from pre- to post- for all patients (from 9.6% to 10.6%) (Table Q5).

However, the PN BIs not completed despite a positive screen increased 4.1% (from 79.6% to 83.7%) (Table Q7). This was likely due to screenings increasing significantly, while PN BIs did not. The addition of the option for AT BI notes ameliorated this effect, and thus the total BI notes completed for a patient positive for a substance increased from 20.4% to 32.6% and total BIs completed for all patients was 21.2% post-implementation, an increase of 11.6% of patients (Table Q6, Q7). Ultimately, 67.4% of patients who were positive for a substance did not receive a documented BI.

Impact

The project showed that short trainings (45 - 60 minutes) can significantly increase clinician knowledge about SBIRT and encourage increased SBIRT service performance and documentation. An interdisciplinary team of RNs, CMs and psychiatrists learned where to find existing screening and BI notes in the EHR. The team also learned how their work impacted other disciplines and how to provide SBIRT services to patients throughout the framework. Their work around SBIRT became less like a system of silos and more dynamic in nature.

The results indicate that screenings can be significantly increased by educating RNs on existing tools and how they are used by the rest of the interdisciplinary team. BIs can be increased by the addition of a simple note & education of CMs on the importance of completing BIs.

This project is scalable throughout the U.S. in MH settings. Knowledge regarding the positive and negative drivers in small-scale SBIRT implementations was gleaned. The role of RNs, social workers & psychiatrists as a team providing SBIRT services will be enhanced.

The findings support initiatives to teach SBIRT practice in multidisciplinary curricula: residencies, masters' social work, doctoral psychology & APRN. The urgency of implementing SBIRT in the adolescent population was reinforced.

Discussion

The primary limitation of the project was that 1/3 (9/27 of the RNs on target units, mostly night shift scheduled RNs) did not complete the SBIRT training. This occurred despite offered evening sessions, self-completion modules loaded on workstations, and urging by the unit manager. All CMs and psychiatrists completed the training. The frequency of patients who receive a CRAFFT screening, and who are positive for at least one substance, would likely further increase if all RNs complete the training.

The mean CRAFFT scores were over 3/6 both pre- and post-implementation, indicating an over 80% chance of having a SU disorder. The primary goal of SBIRT as prevention is to intervene much earlier with patients – with those that are using at an unhealthy or high-risk level. Thus, the patient population was acute from a SU perspective, indicating that it is crucial to provide further BI and referral services for all adolescents that screen positive for a substance. Similarly, a recent outpatient MH SBIRT program found nearly half of the sample screened positive for problematic SU, reinforcing the unmet need among adolescents (Stanhope et al., 2018).

The BI data indicated that 67% of patients who are positive for a substance are not receiving BIs. If it weren't for the AT BIs, BIs would have only been completed 16.3% (7/43) of the time with patients positive for a substance, a decrease of 4.1% (20.4% - 16.3%) from pre- to post-implementation instead of the increase of 12.2% that occurred with the AT BI available. This is

important knowledge that makes it clear how crucial these projects are and the degree that SBIRT implementations are needed to provide EB care.

Emphasis should be made upon the fact that this knowledge does not constitute a conclusion that the providers are doing less well than their peers – this only justifies the purpose and rationale of the project – that MH settings need formal SBIRT programs. These findings are consistent with evidence that SBIRT knowledge training is necessary and highlights the necessity of training all capable clinicians in the provision and documentation of SBIRT services.

Evidence shows that a full SBIRT implementation takes about 12 months. To complete project objectives, the program must continue training and other management interventions, reaching diffusion of innovation saturation. The short time of six weeks with a trainer onsite was only enough time to reach *Innovators* and *Early Adopters*.

Consistent with prior evidence, significant management involvement, SBIRT champions, thought leaders & other consistent emphasis is necessary to continue to make improvements in SBIRT practice in the target setting or other new SBIRT program settings.

Recommendations

- *BI Training*: Continue training the CMs and psychiatrists how to quickly document a BI; step through process with them individually; continue group training.
- *Incentives and Disincentives:* Use both to encourage provision and documentation of SBIRT services. Evidence has shown that a negative effect on evaluations for non-performers may be necessary to elicit participation. Use incentives to encourage SBIRT service completion and to encourage an SBIRT champion to volunteer from each discipline.
- *RN Training*: Ensure remaining and new hire RNs are trained.
- *SBIRT at Team Meetings*: Encourage quick discussion of SBIRT status (screenings) and who will perform BIs during initial discussion of new patients at the interdisciplinary team meeting.

- *Management as Role Models*: High-level management role modeling (for each discipline) and observations of team meetings could enable the above step.
- *Culture of Care*: Continue concurrent implementations on the other units in the hospital, and at sister hospitals, so SBIRT practice becomes part of the culture of care.

By continuing to invest in EB SBIRT implementation in the above manner, the facility practice standards of care will be elevated to national standards and best practices. Patients will be thoroughly screened, and if positive for high-risk use, will receive an appropriate intervention, increasing the QOC provided by the specialty hospital. Patients and families could be spared the dire consequences that often occur as a result of adolescent SU. Interdisciplinary teamwork will be enhanced, moving from "silos to synergy" with SBIRT practice (Newhouse & Spring, 2010). Clinician teams will be more effective with patients, as individuals and teams, more knowledgeable and enabled to provide effective EB care.

Conclusion

The current project sought enhanced outcomes for patients, clinician practice, the hospital and the organization by providing standardization and increased QOC of patients via an EB SBIRT implementation. The project design was individualized, guided by *The SBIRT Matrix*, and EB. Positive results were yielded considering the short timeframe. Crucial information about the SU status of adolescent patients was learned. Screenings and BIs increased. A newly implemented SBIRT Note template is in place for further adoption of SBIRT practice and documentation. A training program resulted in a large effect size increase in SBIRT knowledge by an interdisciplinary team of RNs, CMs and psychiatrists. Continued training and interventions will yield a fully-implemented SBIRT program that can be replicated, increasing QOC further in the facility and beyond. An EB SBIRT program serves patients, families and communities and is one step closer to fulfilling the public health mandate to screen and treat all those with unhealthy SU when they have contact with the healthcare system.

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Zimmermann, E., Sample, J. M., Zimmermann, M. E., Sullivan, F., Stankiewicz, S., & Saldinger, P. (2018). Successful implementation of an alcohol screening, brief intervention, and referral to treatment program. *Journal of Trauma Nursing, 25*(3):196-200. doi:10.1097/JTN.0000000000000368

Appendix A: Alcohol and Substance Use Figures

Figure A1. Alcohol use and your health (CDC, 2018a).

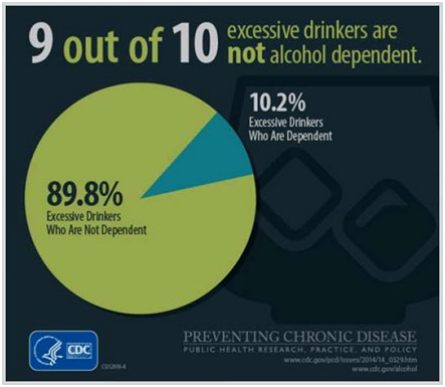


Figure A2. 9/10 Excessive Drinkers are not Alcohol Dependent (CDC, 2014).

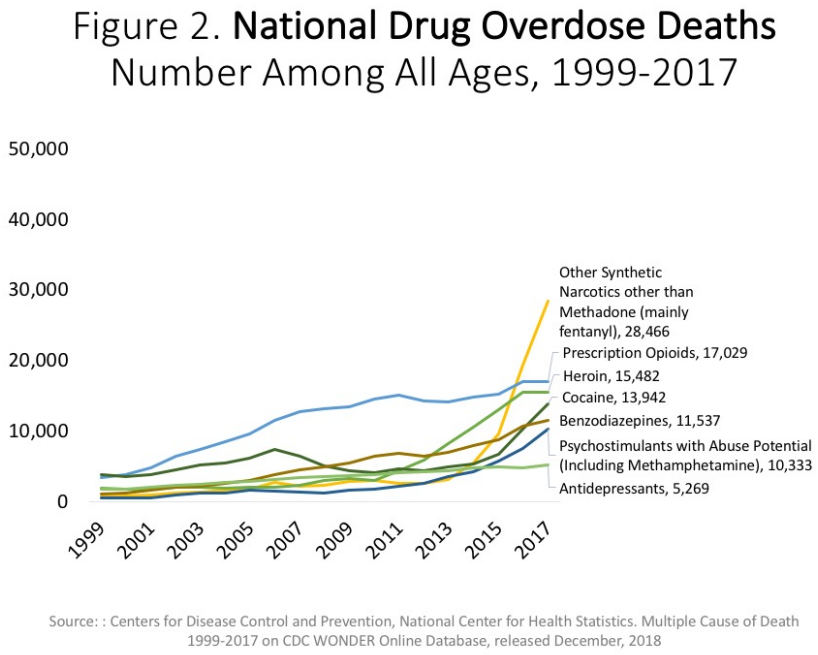
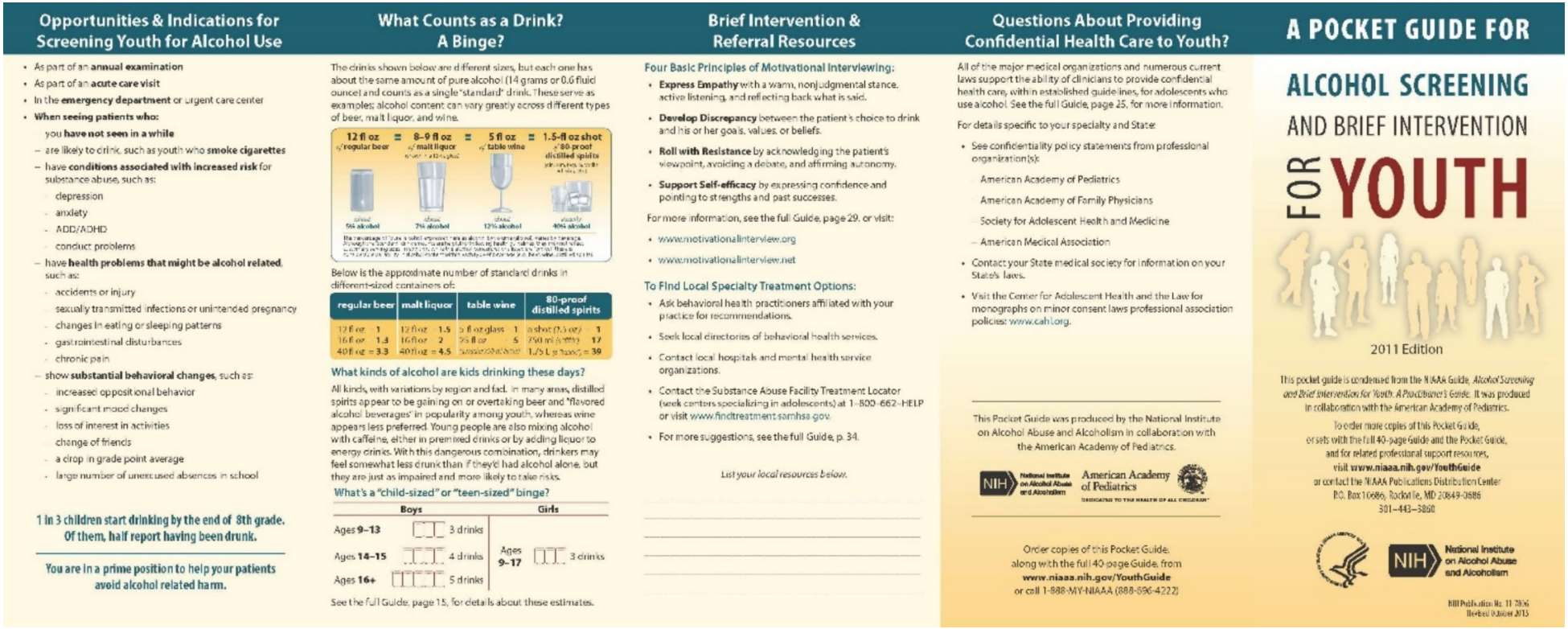


Figure A3. Overdose death rates (NIDA, 2019).

Appendix B: A Pocket Guide for Alcohol Screening and Brief Intervention for Youth



Opportunities & Indications for Screening Youth for Alcohol Use

- As part of an **annual examination**
- As part of an **acute care visit**
- In the **emergency department** or urgent care center
- **When seeing patients who:**
  - you **have not seen in a while**
  - are likely to drink, such as youth who **smoke cigarettes**
  - have **conditions associated with increased risk** for substance abuse, such as:
    - depression
    - anxiety
    - ADD/ADHD
    - conduct problems
  - have **health problems that might be alcohol related**, such as:
    - accidents or injury
    - sexually transmitted infections or unintended pregnancy
    - changes in eating or sleeping patterns
    - gastrointestinal disturbances
    - chronic pain
  - show **substantial behavioral changes**, such as:
    - increased oppositional behavior
    - significant mood changes
    - loss of interest in activities
    - change of friends
    - a drop in grade point average
    - large number of unexcused absences in school

1 in 3 children start drinking by the end of 8th grade. Of them, half report having been drunk.

You are in a prime position to help your patients avoid alcohol related harm.

What Counts as a Drink? A Binge?

The drinks shown below are different sizes, but each one has about the same amount of pure alcohol (14 grams or 0.6 fluid ounce) and counts as a single "standard" drink. These serve as examples; alcohol content can vary greatly across different types of beer, malt liquor, and wine.

Below is the approximate number of standard drinks in different-sized containers of:

regular beer	malt liquor	table wine	80-proof distilled spirits
12 fl oz = 1	12 fl oz = 1.5	5 fl oz glass = 1	1 shot (1.5 oz) = 1
16 fl oz = 1.3	16 fl oz = 2	25 fl oz = 5	750 ml bottle = 17
40 fl oz = 3.3	40 fl oz = 4.5	[illegible]	1.75 L bottle = 39

What kinds of alcohol are kids drinking these days?

All kinds, with variations by region and fad. In many areas, distilled spirits appear to be gaining on or overtaking beer and "flavored alcohol beverages" in popularity among youth, whereas wine appears less preferred. Young people are also mixing alcohol with caffeine, either in premixed drinks or by adding liquor to energy drinks. With this dangerous combination, drinkers may feel somewhat less drunk than if they'd had alcohol alone, but they are just as impaired and more likely to take risks.

What's a "child-sized" or "teen-sized" binge?

Boys		Girls	
Ages **9–13**	3 drinks	Ages **9–17**	3 drinks
Ages **14–15**	4 drinks		
Ages **16+**	5 drinks		

See the full Guide, page 15, for details about these estimates.

Brief Intervention & Referral Resources

Four Basic Principles of Motivational Interviewing:

- **Express Empathy** with a warm, nonjudgmental stance, active listening, and reflecting back what is said.
- **Develop Discrepancy** between the patient's choice to drink and his or her goals, values, or beliefs.
- **Roll with Resistance** by acknowledging the patient's viewpoint, avoiding a debate, and affirming autonomy.
- **Support Self-efficacy** by expressing confidence and pointing to strengths and past successes.

For more information, see the full Guide, page 29, or visit:

- www.motivationalinterview.org
- www.motivationalinterview.net

To Find Local Specialty Treatment Options:

- Ask behavioral health practitioners affiliated with your practice for recommendations.
- Seek local directories of behavioral health services.
- Contact local hospitals and mental health service organizations.
- Contact the Substance Abuse Facility Treatment Locator (seek centers specializing in adolescents) at 1-800-662-HELP or visit www.findtreatment.samhsa.gov.
- For more suggestions, see the full Guide, p. 34.

List your local resources below.

Questions About Providing Confidential Health Care to Youth?

All of the major medical organizations and numerous current laws support the ability of clinicians to provide confidential health care, within established guidelines, for adolescents who use alcohol. See the full Guide, page 25, for more information.

For details specific to your specialty and State:

- See confidentiality policy statements from professional organization(s):
  - American Academy of Pediatrics
  - American Academy of Family Physicians
  - Society for Adolescent Health and Medicine
  - American Medical Association
- Contact your State medical society for information on your State's laws.
- Visit the Center for Adolescent Health and the Law for monographs on minor consent laws professional association policies: www.cahl.org.

This Pocket Guide was produced by the National Institute on Alcohol Abuse and Alcoholism in collaboration with the American Academy of Pediatrics.

NIH National Institute on Alcohol Abuse and Alcoholism
American Academy of Pediatrics
DEDICATED TO THE HEALTH OF ALL CHILDREN™

Order copies of this Pocket Guide, along with the full 40-page Guide, from **www.niaaa.nih.gov/YouthGuide** or call 1-888-MY-NIAAA (888-696-4222)

A POCKET GUIDE FOR

ALCOHOL SCREENING AND BRIEF INTERVENTION FOR YOUTH

2011 Edition

This pocket guide is condensed from the NIAAA Guide, *Alcohol Screening and Brief Intervention for Youth: A Practitioner's Guide*. It was produced in collaboration with the American Academy of Pediatrics.

To order more copies of this Pocket Guide, or sets with the full 40-page Guide and the Pocket Guide, and for related professional support resources, visit **www.niaaa.nih.gov/YouthGuide** or contact the NIAAA Publications Distribution Center P.O. Box 10686, Rockville, MD 20849-0686 301–443–3860

NIH National Institute on Alcohol Abuse and Alcoholism

NIH Publication No. 11-7806
Revised October 2015

Figure 1. A Pocket Guide for Alcohol Screening and Brief Intervention for Youth (NIAAA, 2011, p.1).

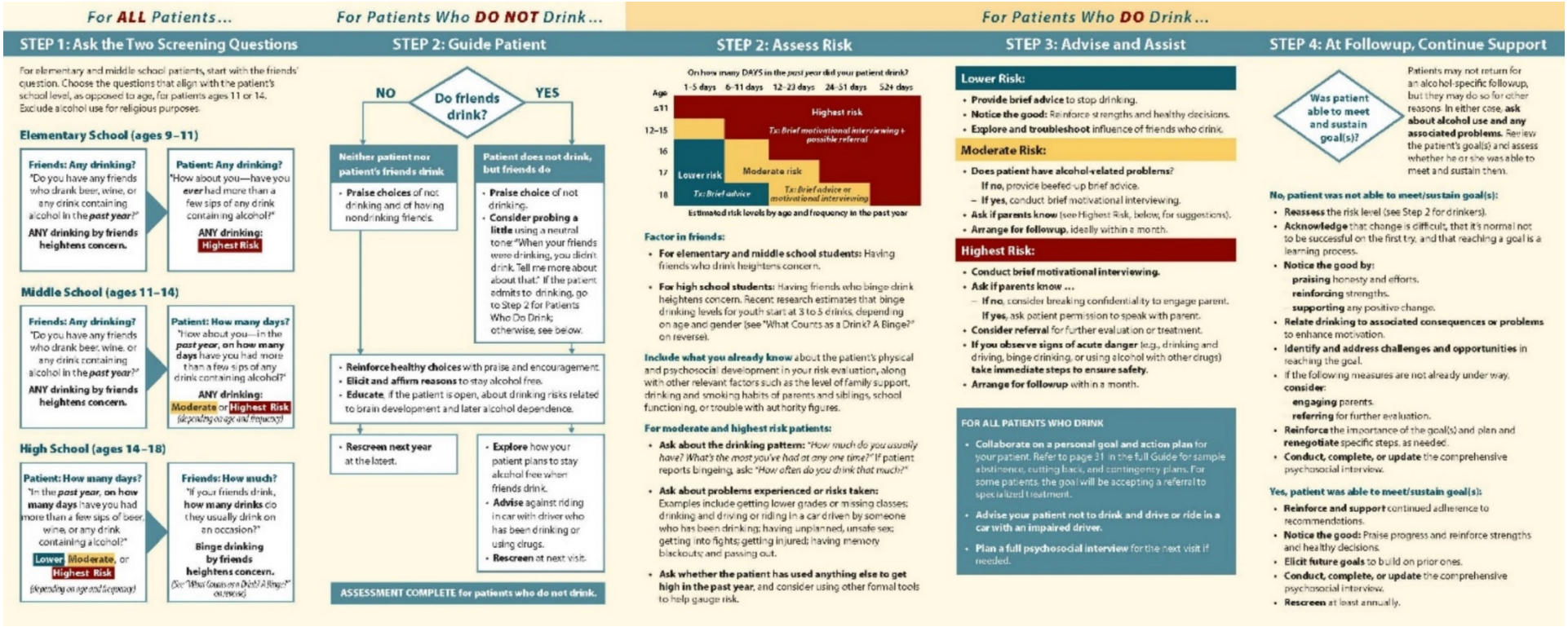


Figure 1. A Pocket Guide for Alcohol Screening and Brief Intervention for Youth (NIAAA, 2011, p. 2).

Appendix C: Search Strategy – Search Terms

Table 1
Search Strategy – Search Terms

	Database Searched	Retrieved	Saved to Folder	Included in Evaluation Table
SBIRT and *IMPLEMENTATION (IMPL)*	PubMed	83	17: 2 – *Eliminated Due To (EDT):* commentary only 1 – EDT: study protocol only 4 – EDT: better suited to plan of action 2 – EDT: not a similar setting/only one type of pt 1 – EDT: pilot study; will be followed by more robust study later 1 – found in reference list of Babor (2017)	2017 Del Boca SBIRT Matrix 2017 Vendetti SBIRT Barriers, Facilitators & Model Migration 2017 Babor Implications of SBIRT, in reference list found: 2017 Singh (Sustaining SBIRT in Healthcare Settings) 2017 Cowell Time and Motion Study 2015 Mertens (Physician v. non-Physician Delivery of SBIRT) 2018 O'Sullivan (A Sequential IMPL Model for Workforce Dev) -2016 Mitchell (SBIRT *IMPL* for Adolescents in Urban FQHCs) (eliminated from final choices due to trial not complete).
	PsycInfo	75	1	2015 Muench (Perceptions of Clinical Team Members toward *IMPL* of SBIRT Processes)
	CINAHL	68	0	
	The V. Henderson Global Nursing e-Repository (VHGNR)	26	0	
	Open Grey	0	-	
	CORE	6	0	
SBIRT and *IMPLEMENTING (IMPG)*	PubMed	39	2	2017 Bacidore (*IMPG* Interprof. ETOH SBIRT in ED) 2017 Hargraves (*IMPG* SBIRT in PC Lessons Learned)
	PsycInfo	20	0	
	CINAHL	26	0	
	VHGNR	20	0	
	Open Grey	0	-	
	CORE	1	0	
Updated Search: conducted May 1, 2019 for published evidence between March 1, 2018 to May 1, 2019:				
				Included in Final Manuscript Draft Evidence Synthesis:
SBIRT and IMPL	PubMed	17	5	4
	One eliminated – not a similar setting.			Palmer, A., Karakus, M., & Mark, T. (2019). Barriers faced by physicians in screening for substance use disorders among adolescents. *Psychiatric Services, 70*(5):409-412.
				Stanhope, V., Manuel, J. I., Jessell, L., & Halliday, T. M. (2018). Implementing SBIRT for adolescents within community mental health organizations: A mixed methods study. *Journal of Substance Abuse Treatment, 90*, 38-46.
				Wamsley, M., M., Satterfield, D., J., Curtis, D., A., Lundgren, D., L., & Satre, D., D. (2018). Alcohol and drug screening, brief intervention, and referral to treatment (SBIRT) training and implementation: Perspectives from 4 health professions. *Journal of Addiction Medicine, 12*(4), 262-272.
				Zimmermann, E., Sample, J. M., Zimmermann, M. E., Sullivan, F., Stankiewicz, S., & Saldinger, P. (2018). Successful implementation of an alcohol screening, brief intervention, and referral to treatment program. *Journal of Trauma Nursing, 25*(3):196-200.
SBIRT and *IMPG*	PubMed	7	0	0

Appendix D: PubMed Searches

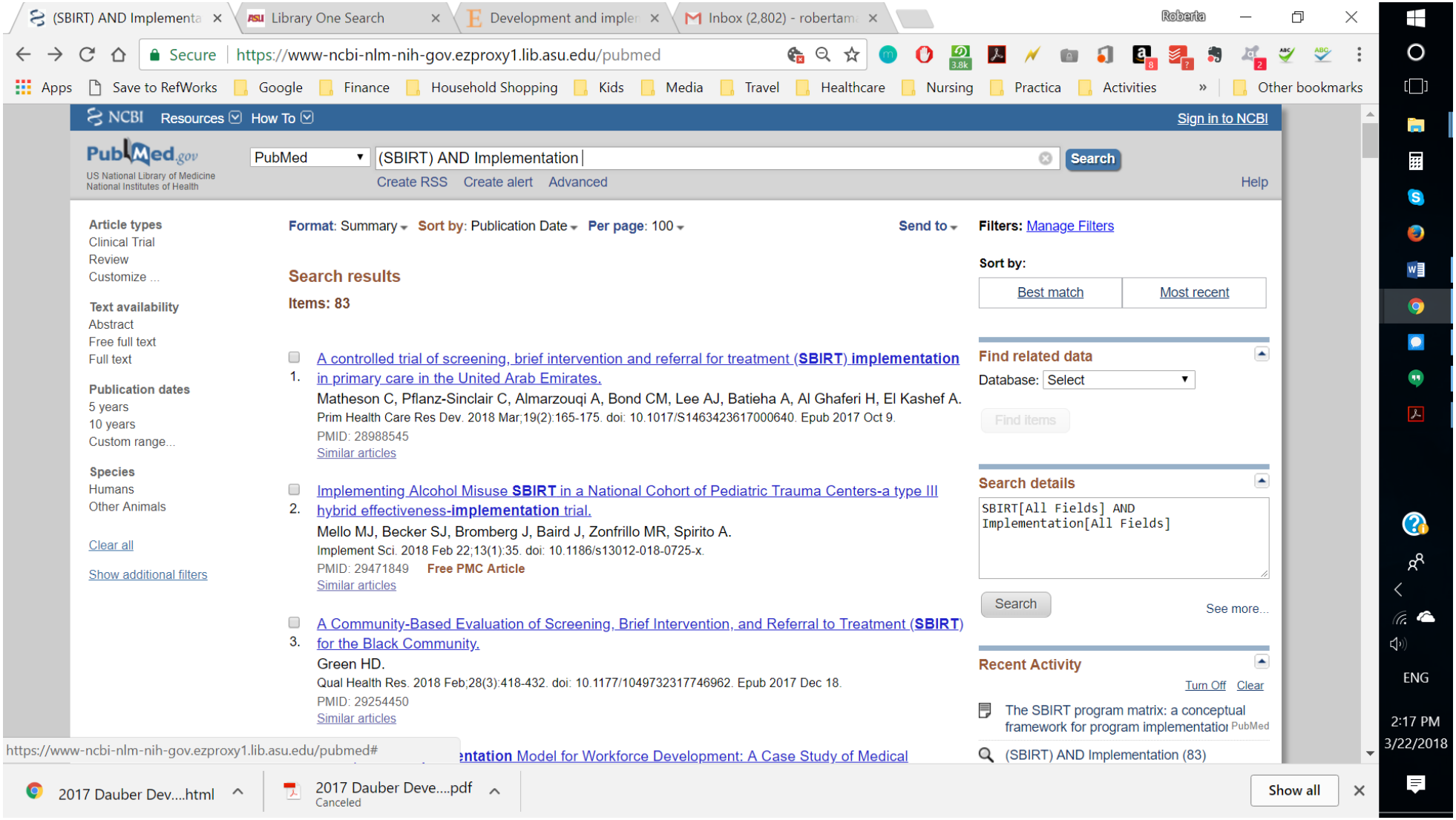


Figure D1. Initial PubMed Search One.

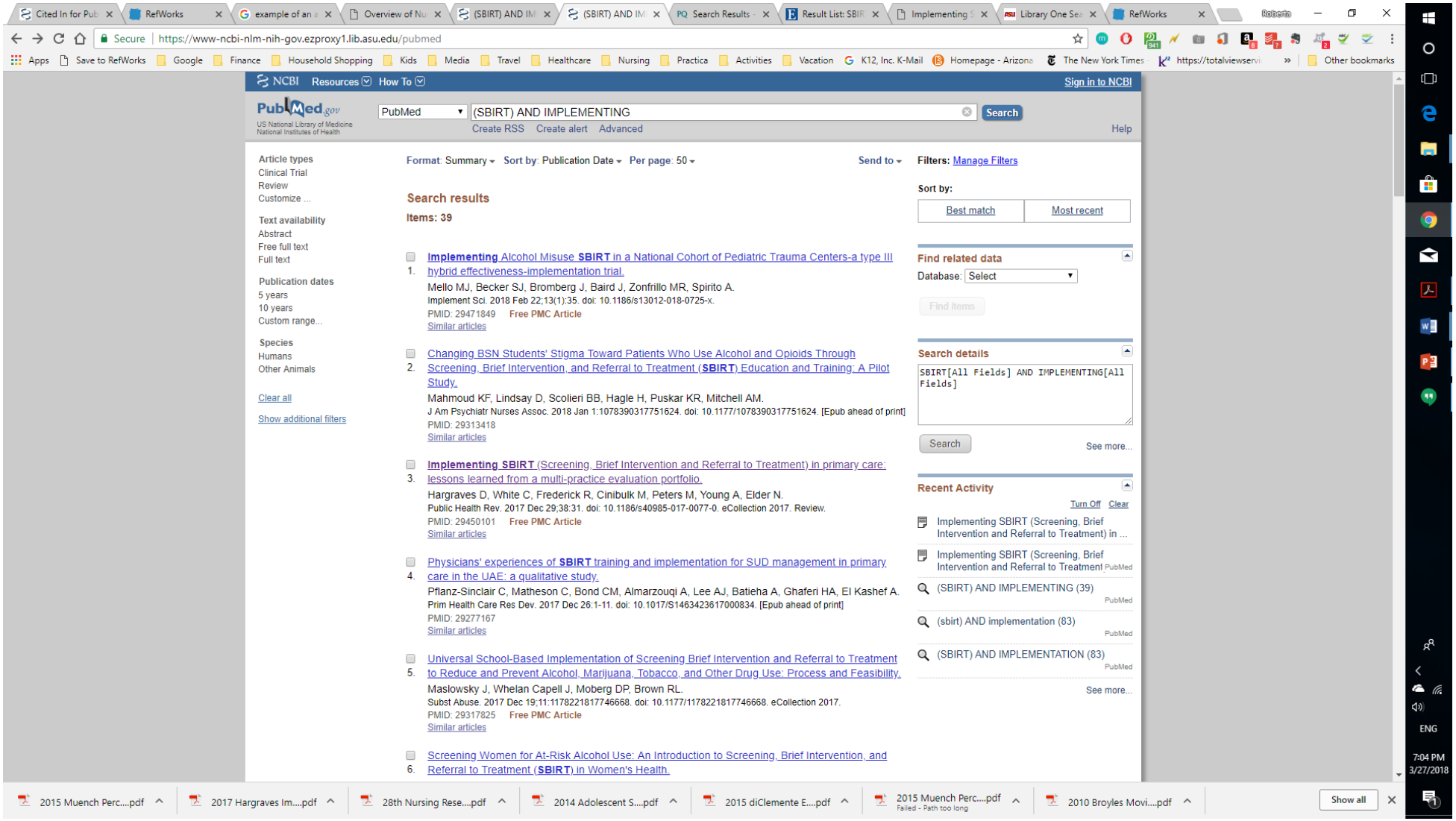


Figure D2. PubMed Search Two.

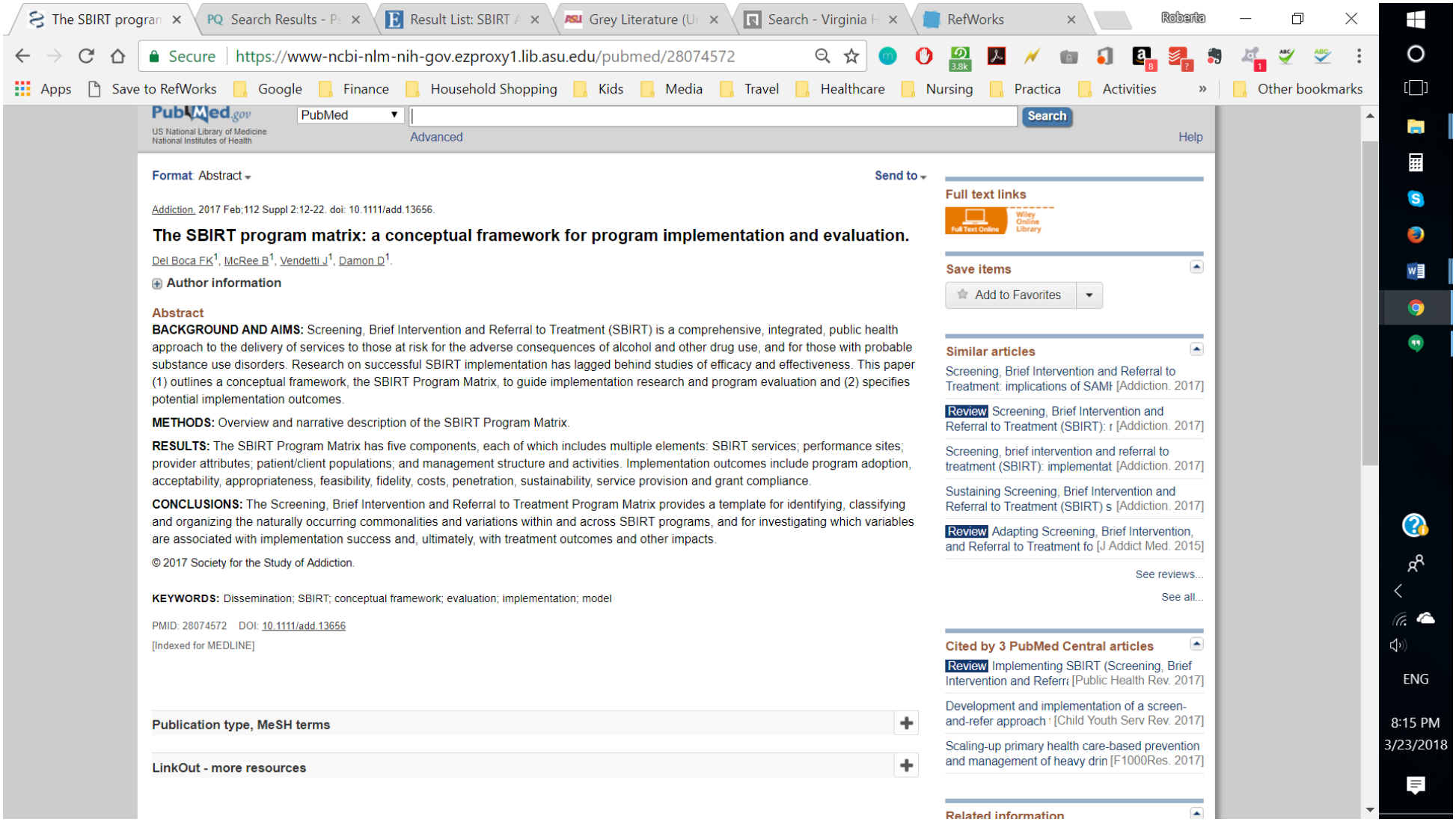


Figure D3. First PubMed *Cited By* Feature Used.

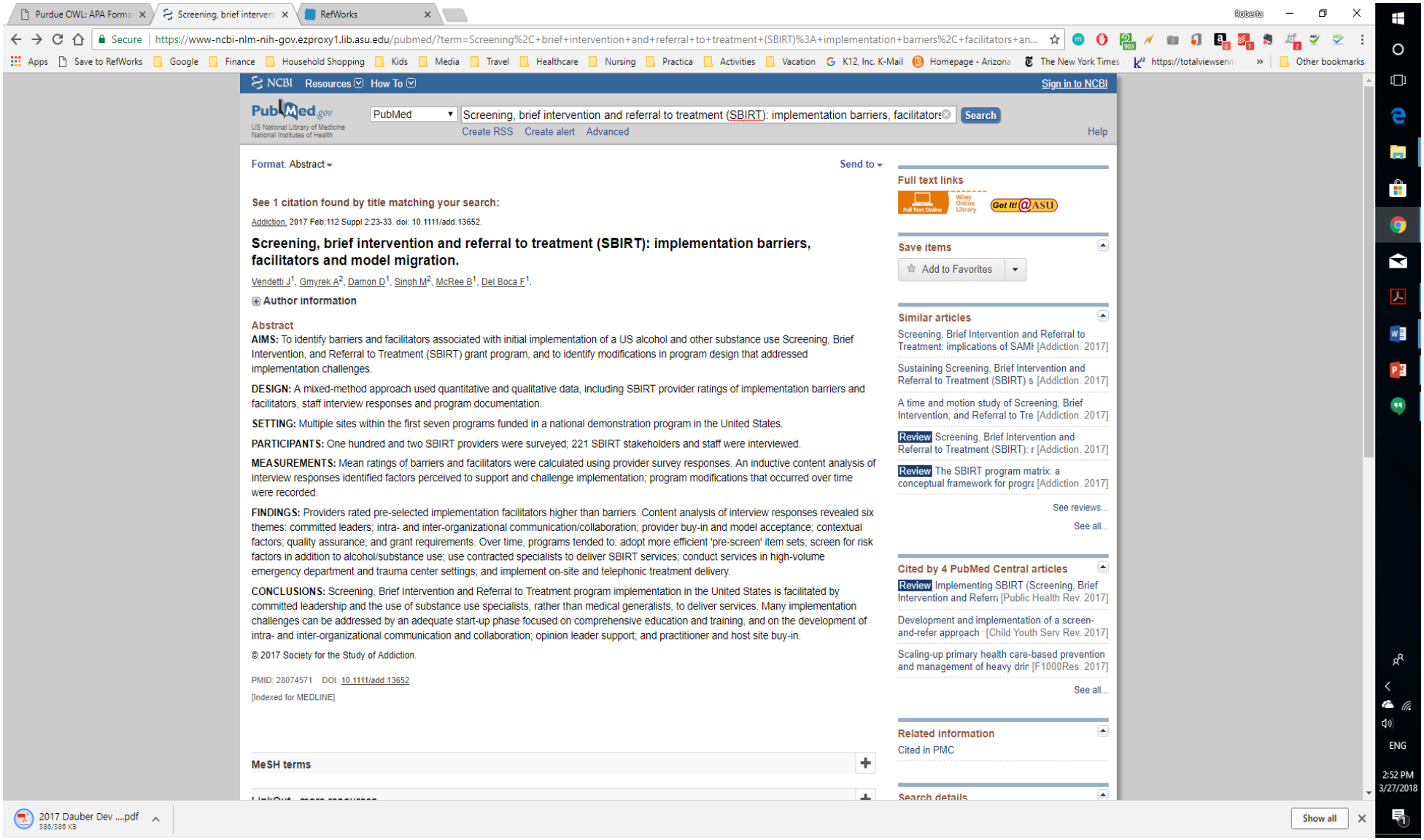


Figure D4. Second PubMed *Cited By* Feature Used.

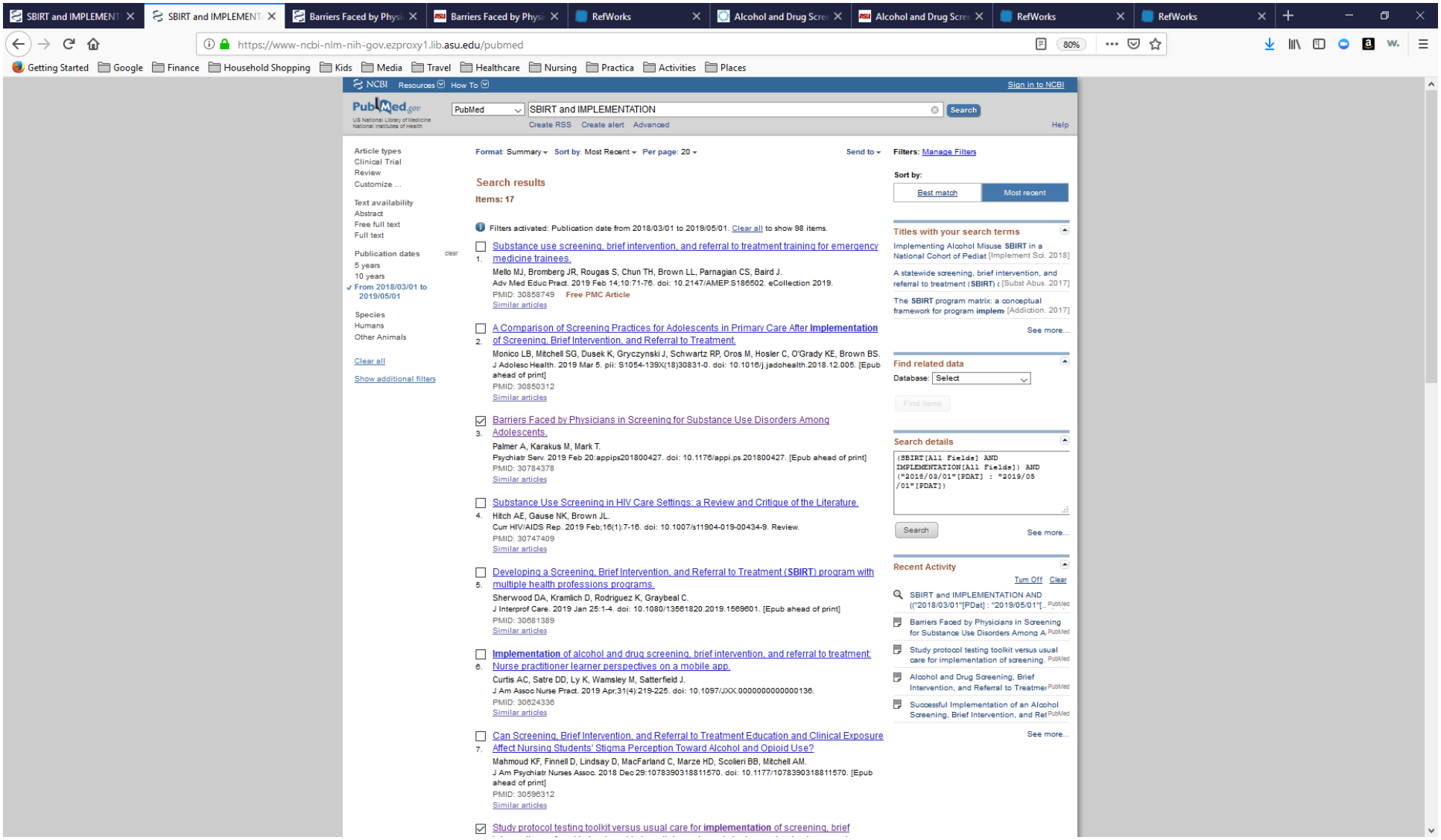


Figure D5. PubMed Updated Search One, p. 1.

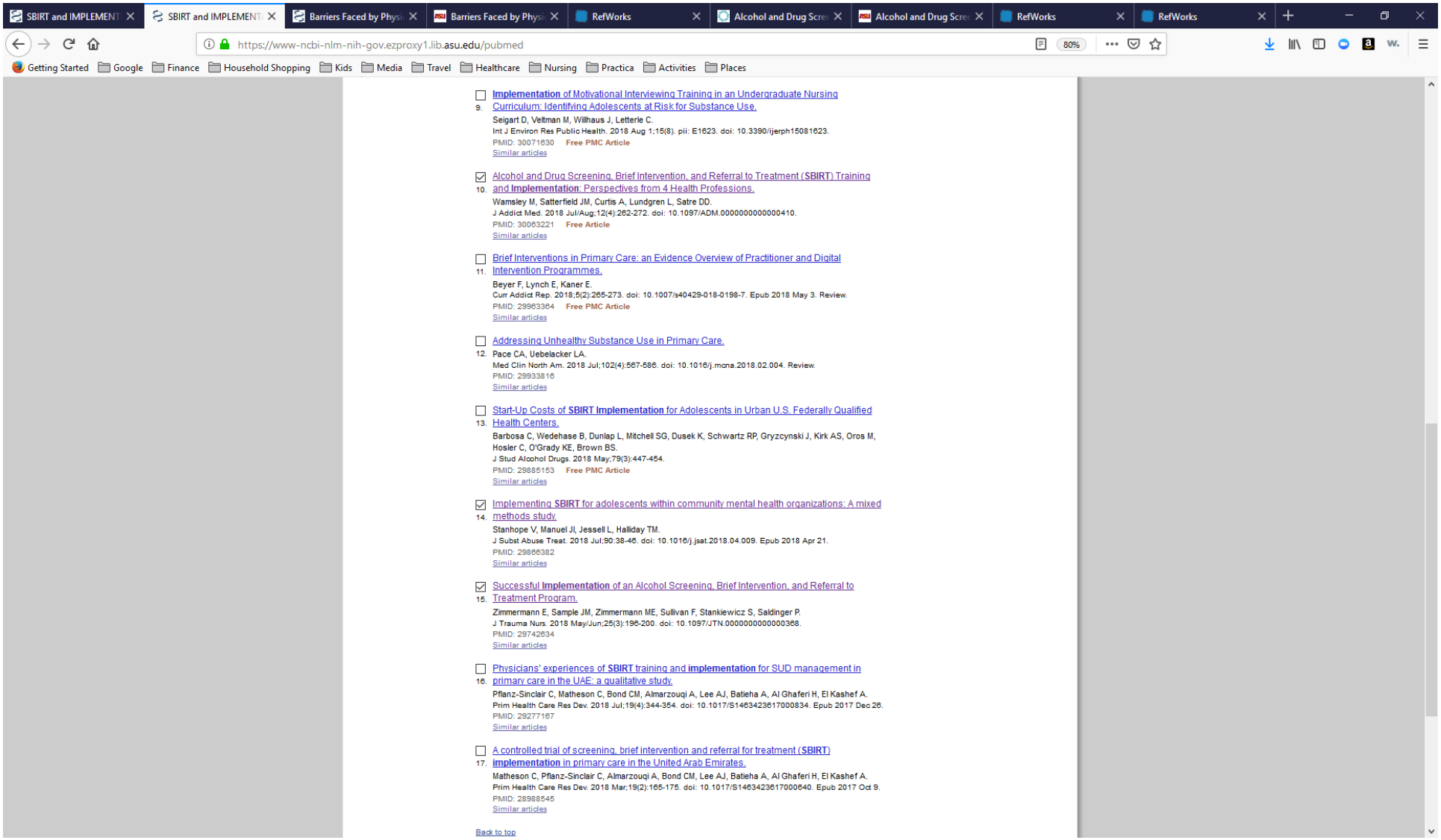


Figure D6. PubMed Updated Search One, p. 2

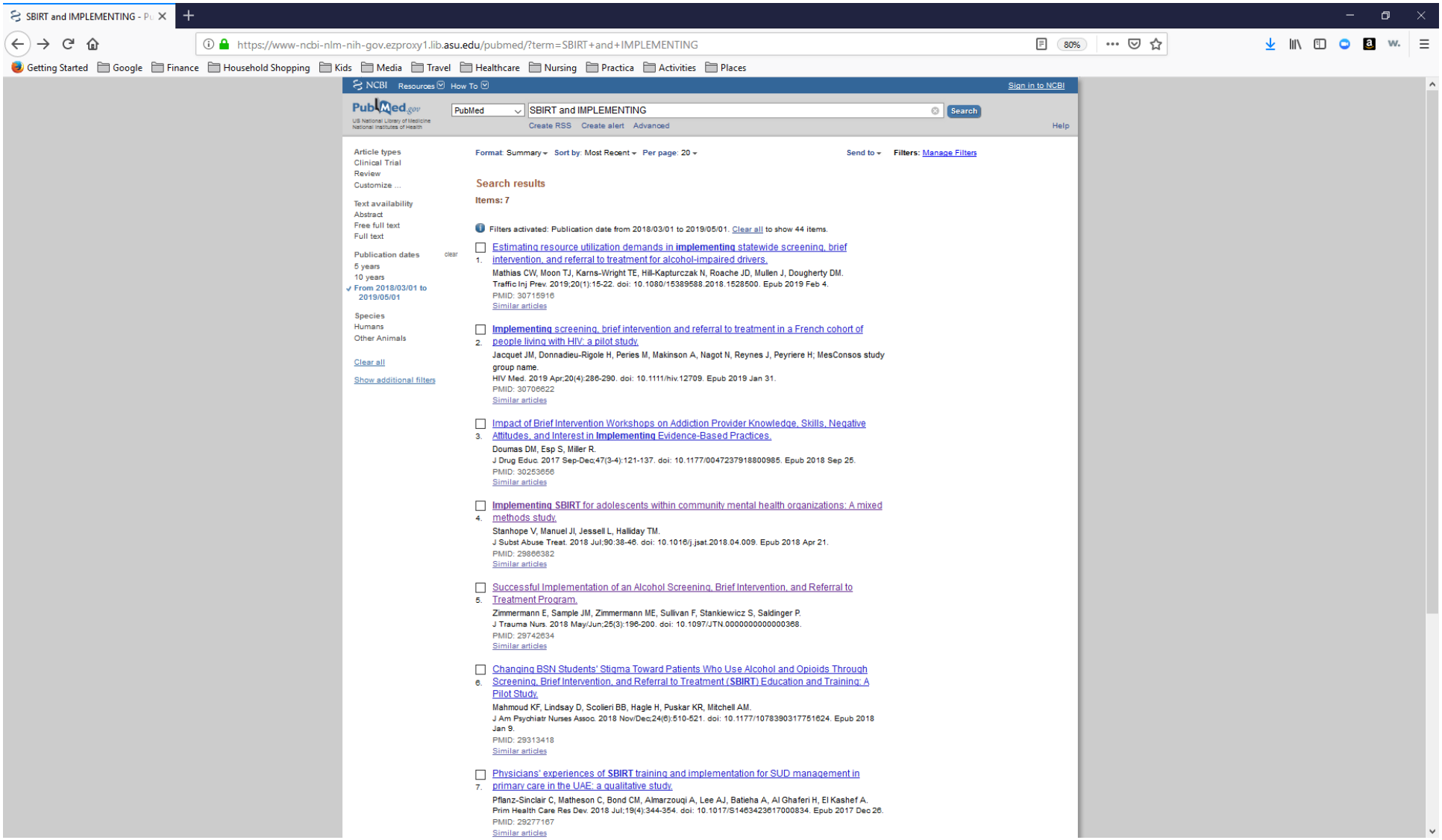


Figure D7. PubMed Updated Search Two.

Appendix E: CORE Searches

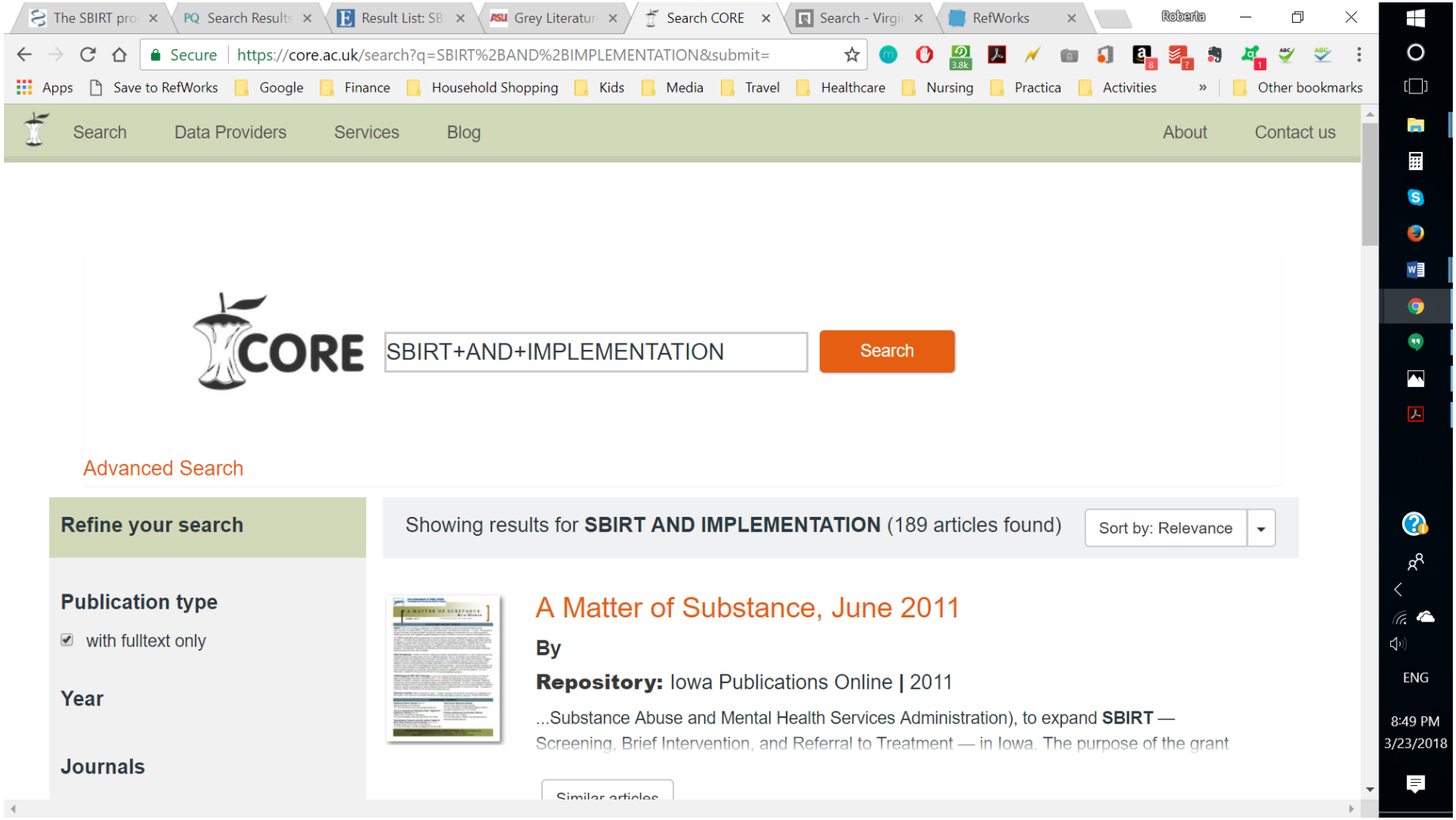


Figure E1. Initial CORE Search One.

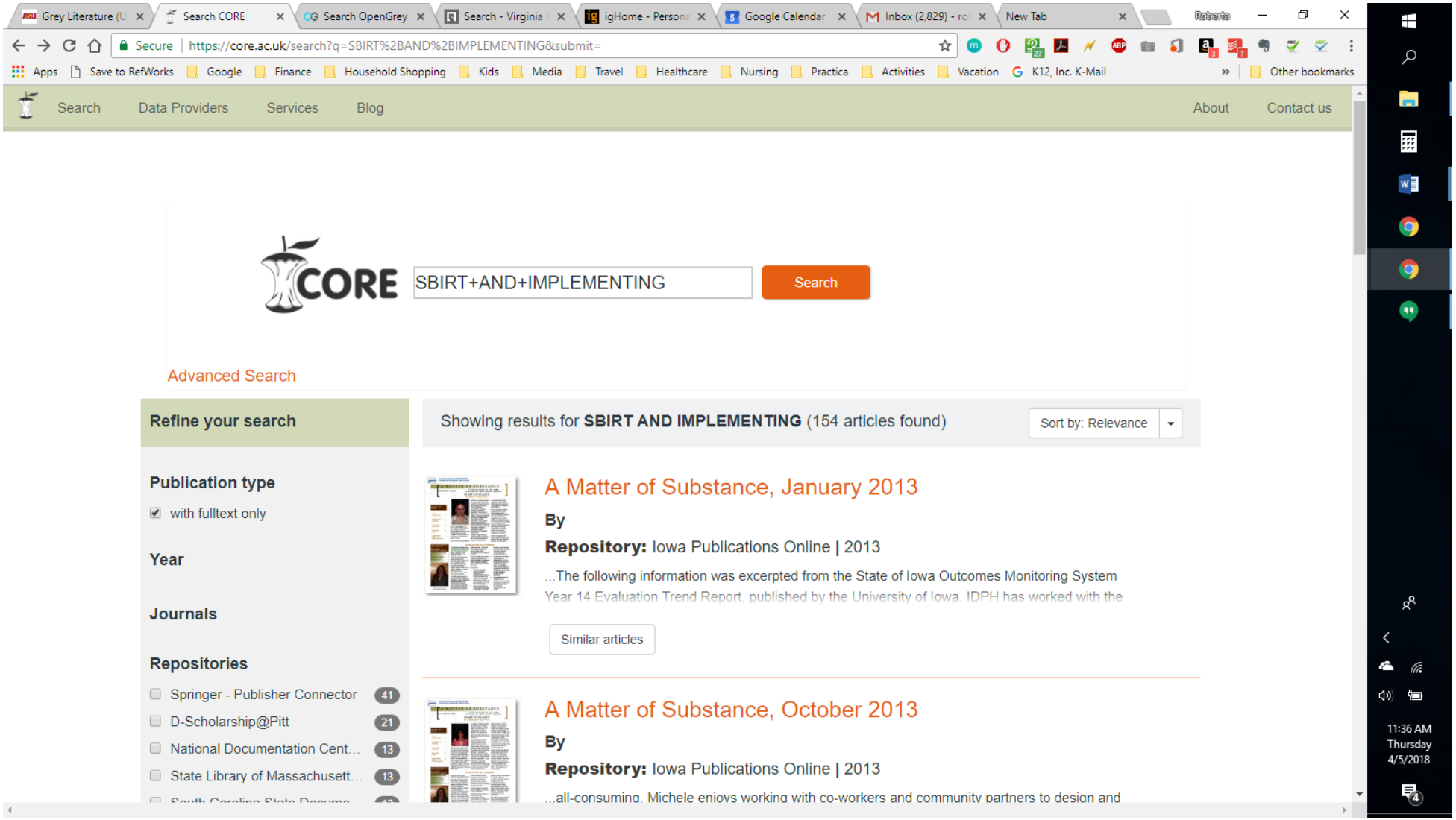


Figure E2. Initial CORE Search Two.

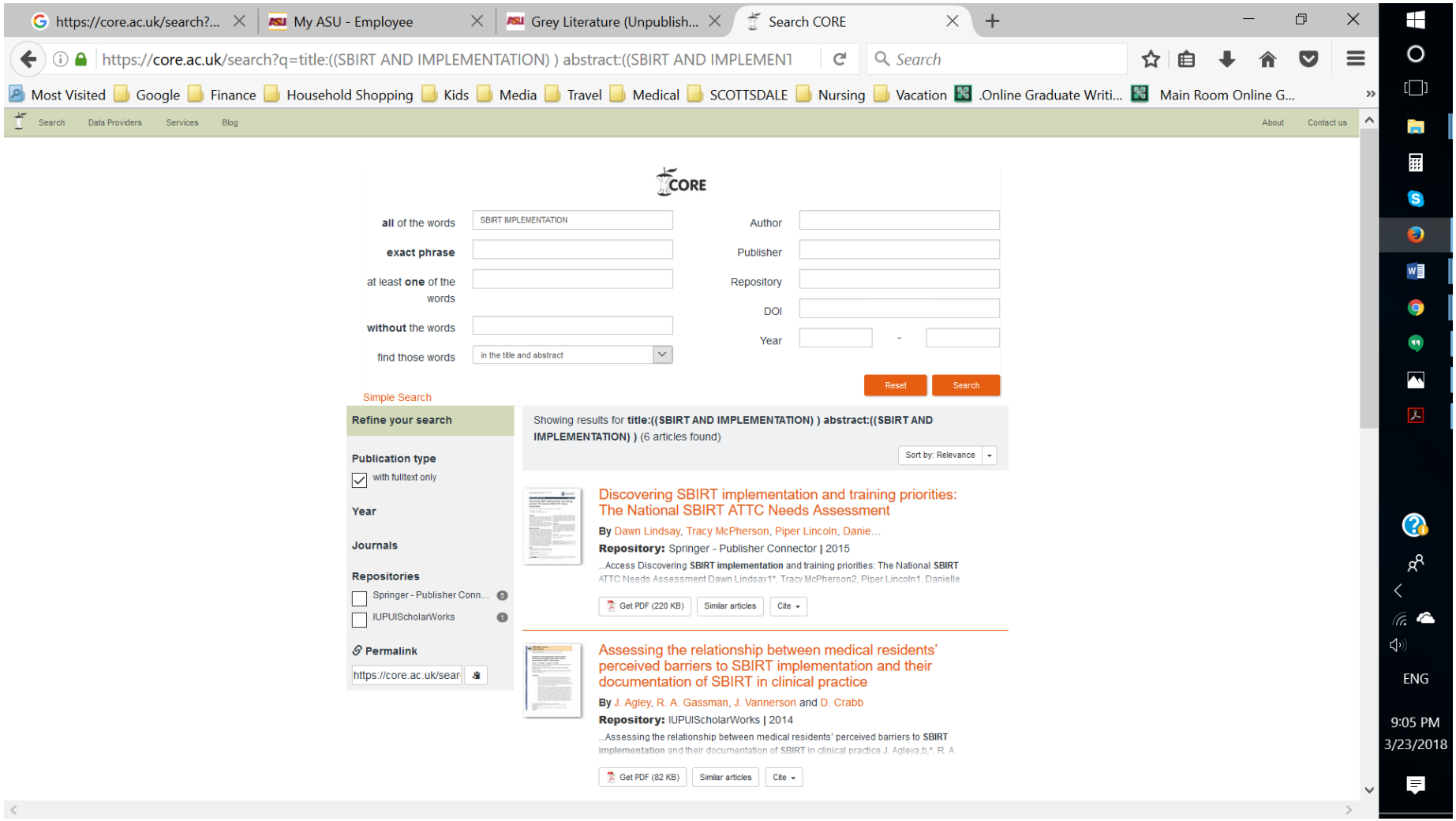


Figure E3. Refined CORE Search One.

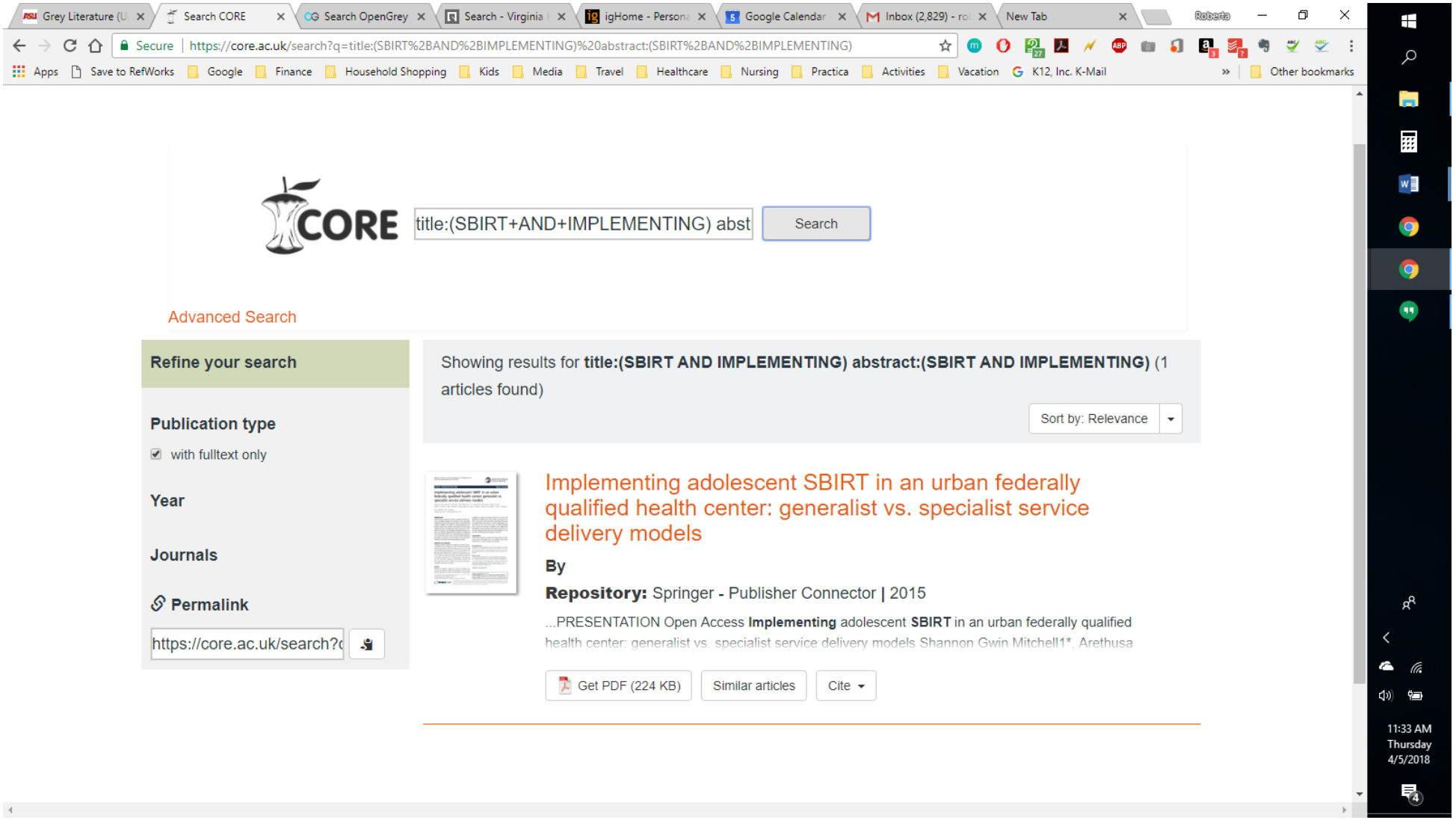


Figure E4. Refined CORE Search Two.

Appendix F: ProQuest Searches

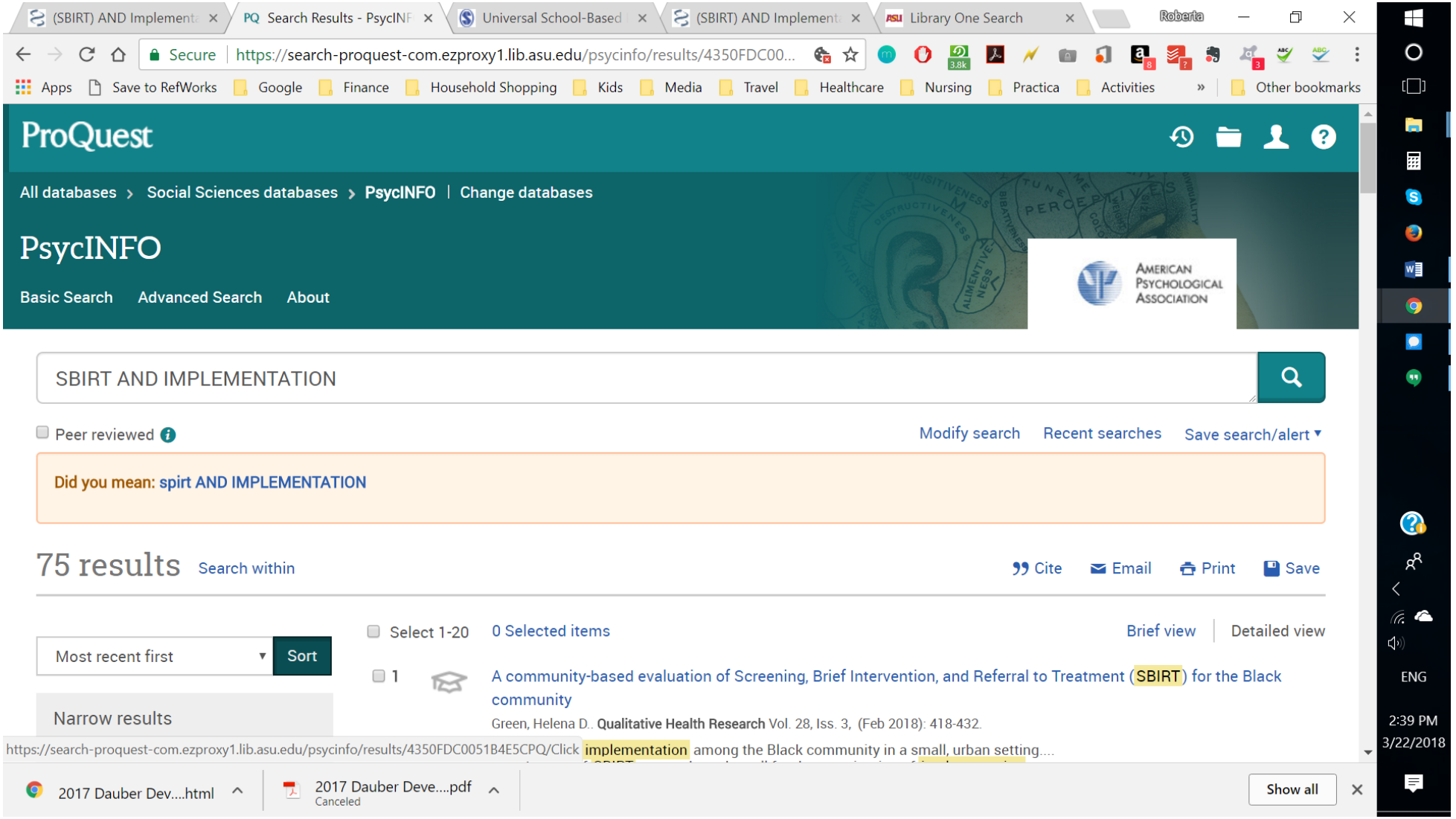


Figure F1. ProQuest Search One.

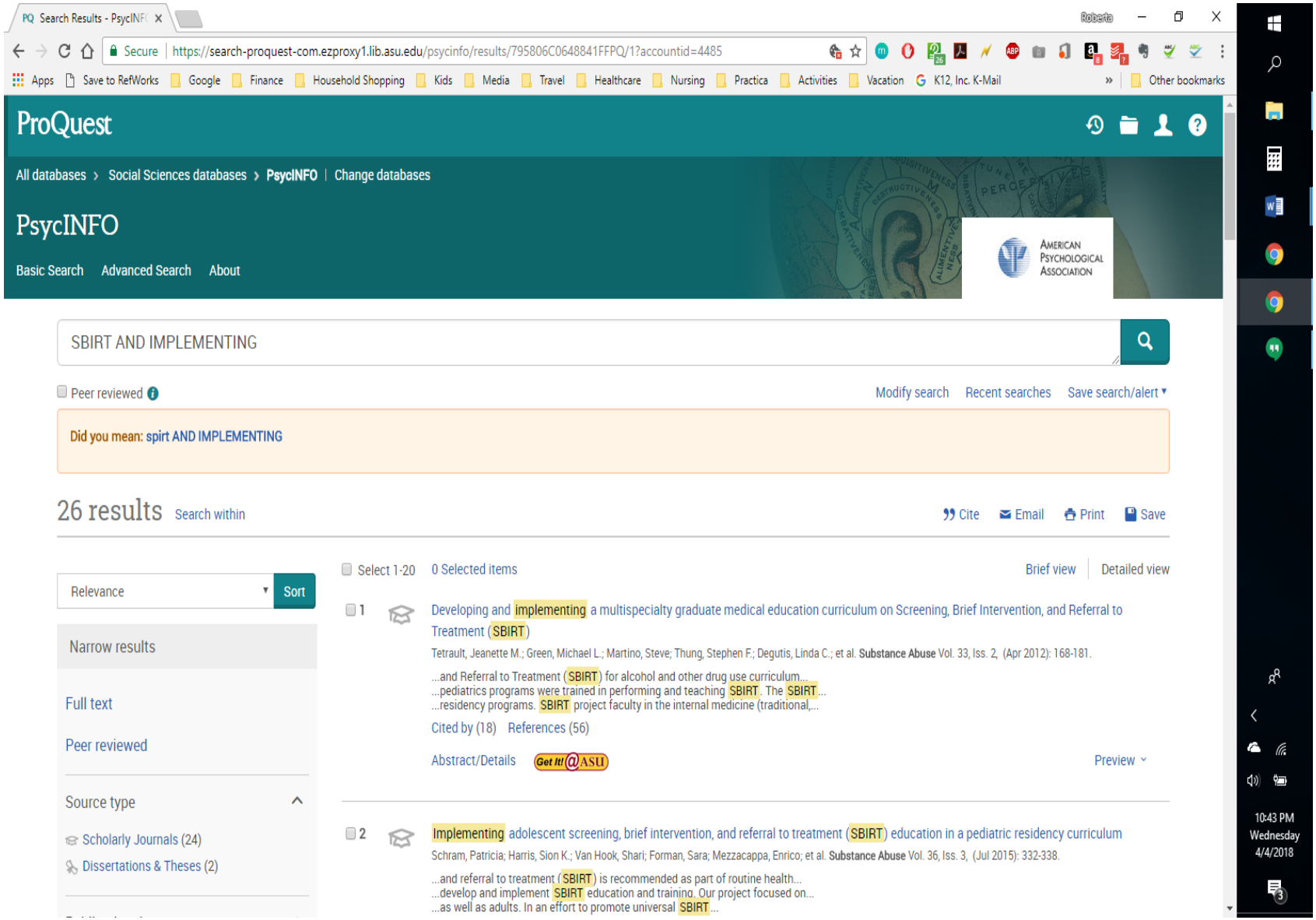


Figure F2. ProQuest Search Two.

Appendix G: CINAHL Searches

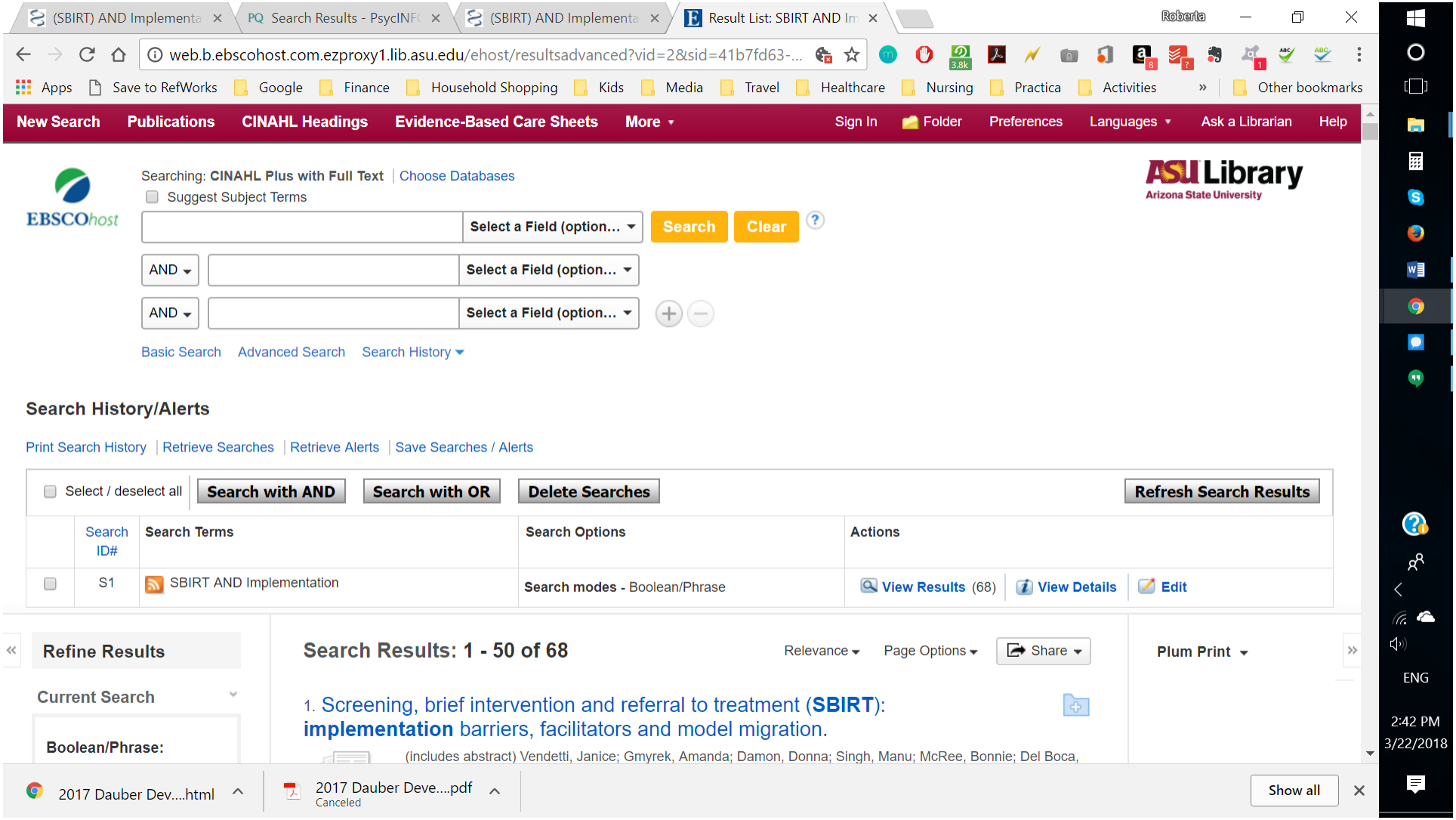


Figure G1. CINAHL Search One.

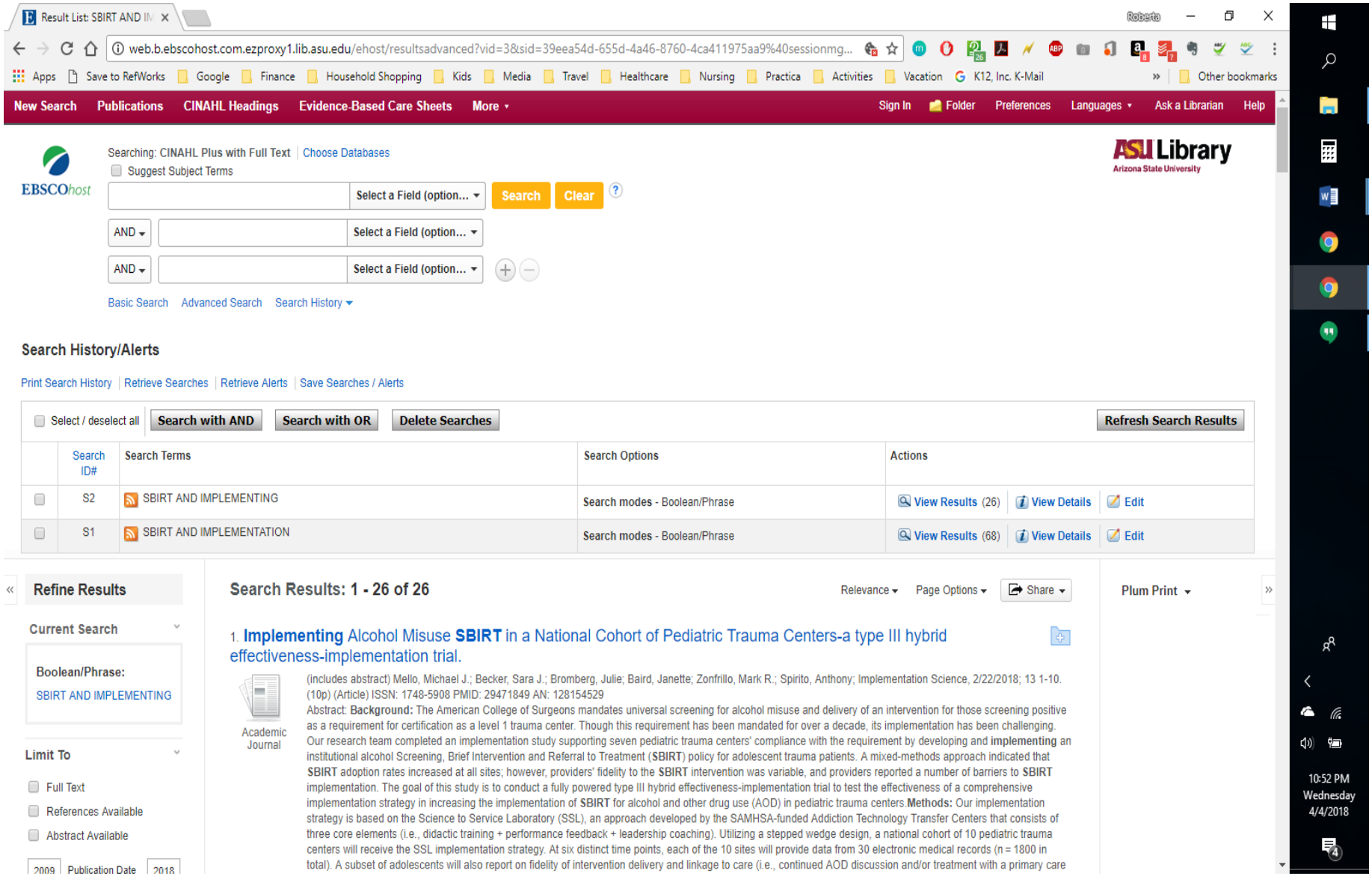


Figure G2. CINAHL Search Two.

Appendix H: Virginia Henderson Global Nursing e-Repository Searches

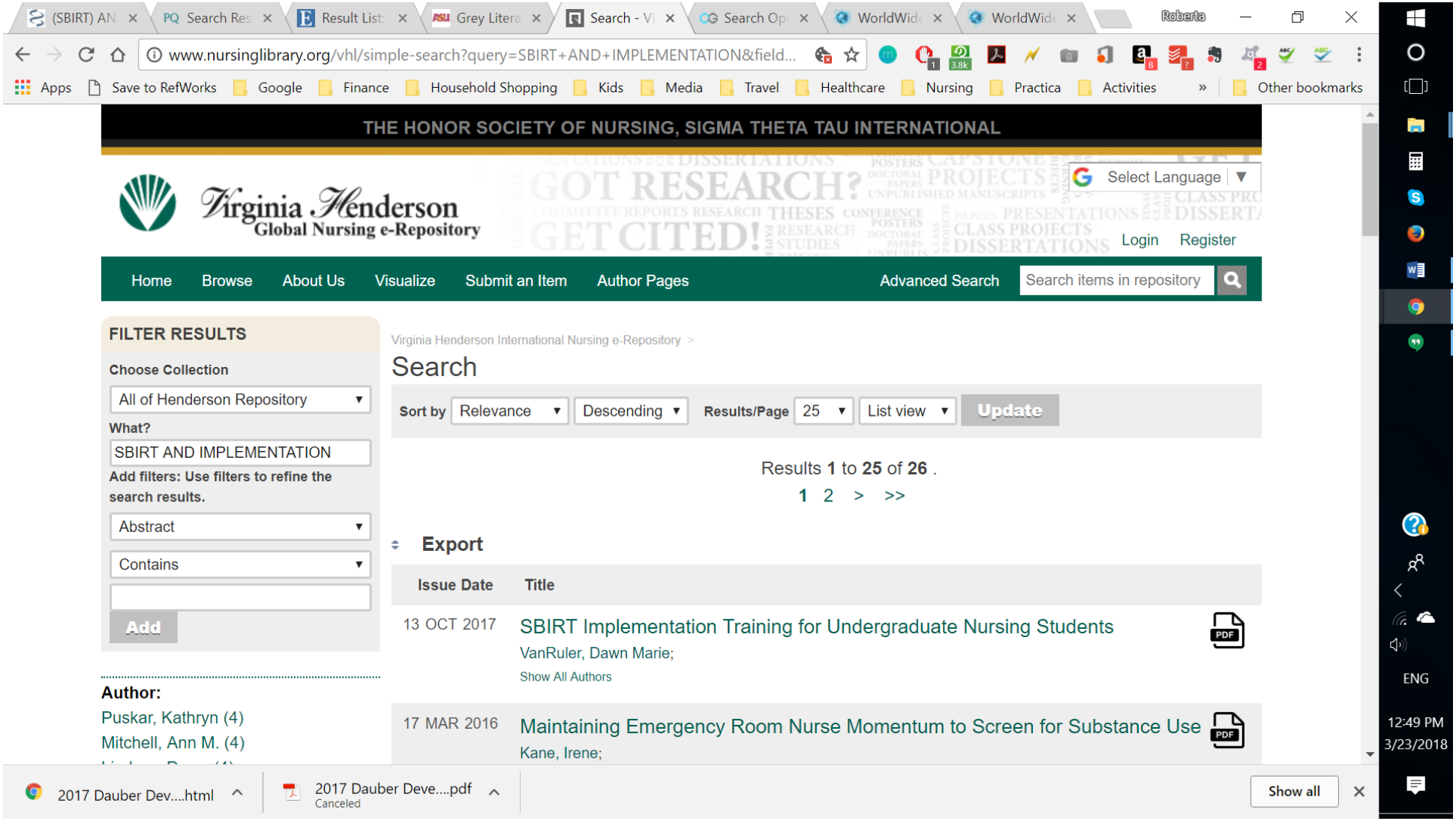


Figure H1. Virginia Henderson Global Nursing e-Repository Search One.

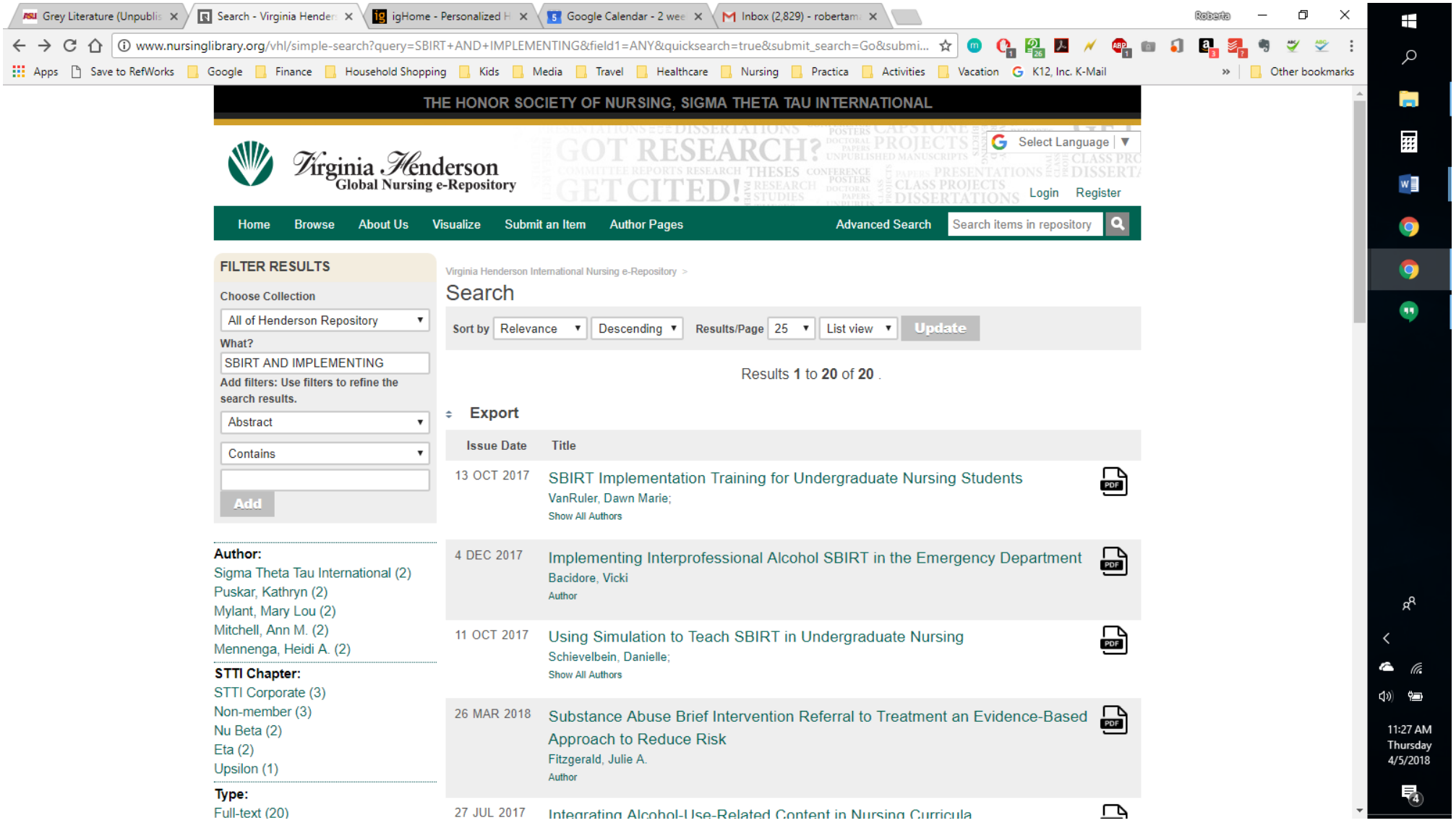


Figure H2. Virginia Henderson Global Nursing e-Repository Search Two.

Appendix I: Evaluation Tables

Table I1

Evaluation Table – Quantitative Studies

Citation *(Rev. chron: year, then alpha.)*	Theory/ Conceptual Framework	Design/ Method	Sample/ Setting	Major Variables & Definitions	Measurement/ Instruments	Data ANLS	Findings/ Results	Level/Quality/Decision/Application/Generalizability/Risk of harm if IMPL[4]/Feasibility
O'Sullivan (2018) Country: US Funding: unstated, but affiliated with UCSF Bias: unstated	IMPL SCI/ Community Development MDL CFIR (EBP)	ANLS Report/ Case Study approach	Multiple site (five) residency PGs in different specialty settings.	EVAL of parts of sequential MDL: executive team, PG champion.	Quantitative tabulation of products & resident perceptions.	90 curricular projects & 57 presentations developed. [insert more here later]	Step 1: Strong MGMT team to support SBIRT champions was essential. Step 2: Champions needed financial support to have necessary time to IMPL TRN. Step 3: Building a peer network across PGs was critical Add'l: Collecting & sharing resources aided champions.	III/Good quality: provides info. what worked sequential IMPL at specialty settings. Noted that champions developed TRN & required a large amount of time (may not be feasible).
Cowell (2017) Country: US Funding: unstated Bias: unknown	Cost/benefit ANLS/Measurement of resource utilizations with accuracy.	Time & motion study—direct observation.	501 PRV-PT interactions, 63 SBIRT PRVs 26 US sites within 4 grantees.	COMP of SBIRT	Determined 8 activities r/t SBIRT & timed them. Use data as needed for cost data.	SBIRT PRVs only spent 13% of their time delivering services. In literature: 15% for PHYS, 34% for RNs, 21% for internists & 34% for surgeons.	Support activities require more time than actual delivery of services – PRVs spent 42% of time supporting services. RES should address how support time can be reduced to sustain SBIRT financially. Time for screens & BI in trauma setting is higher than in out-PT setting.	II/Good quality: provides information about quantifying services *& support*. Yes – use it.
Vendetti (2017). Country: US Funding: SAMHSA Bias: None	-PH -INNOV SCI	Mixed Methods PRVs survey responses on a 5-point Likert scale) 139 semi-structured interviews with 221 staff	7 grant PGs 102 PRVs surveyed for quantitative methods n=221 stakeholders & staff were interviewed for qualitative methods.	COMPs of 1st cohort. IMPL both BAR & FACs. Also, changes to framework noted & named, "MDL migration."	Mean ratings of BAR & FAC from PRV survey. Inductive ANLS of interviews identified FAC & BAR; PG changes recorded. Clustering of identified themes was accomplished, assisted by ATLAS.	102 SBIRT PRVs rated each FACT. Means (&*std*(*X*) were calculated & BAR & FAC were ranked. -Narrative notes were reviewed & coded, thematic categorization followed by id of salient themes -Reported reasons for changes were ANLS.	FAC had > scores than BAR Many BAR with time & turnover. FAC were specialty SBIRT leaders & buy-in (by mgmt. & PRVs). 6 broad themes: committed leaders, intra- & inter-ORG communication/ collaboration, PRV buy-in & MDL acceptance, contextual FACT, QI & grant requirements. MDL migration: 4 PG elements changed: using pre-screen instead of full screen, in-house generalists changed to specialists, low vol. ambulatory settings changed to high-vol. ED, trauma & inPT & referring PTs out changed to co-occurring or telephonic services.	II/Good quality: experienced SBIRT RES conducted study; methods are appropriate to type of data & findings/ Yes – use it/ **Bottom line** is that FAC can overcome BAR. MDL migrations show way to avoid problems in IMPL: what will work & what will not work/ Generalizable Feasible – may choose aspects most important to site.

[4] Most agree little harm in IMPL of SBIRT except risk of breaking confidentiality, but which must be adhered to by law – the greatest risk comes with no EB SBIRT IMPL.

Key: **ANLS** – analysis; **BAR** – barriers; **CHAR** – characteristics; **CMPT** – computer(ized); **CM** – case management; **COMP** – component(s); **DOC** – documentation; **EB** – evidence-based; **EDU** – education(al); **EVAL** – evaluation; **FAC** – facilitators; **FACT** – factors; **IMPL** – implementation; **INC** – increase**; IND** – individual; **INNOV** – innovation; **INT** – intervention; **MA** – medical assistants; **MDL** – model; **MED** – medical; **MGMT** – management; **OUTC** – outcomes; **ORG** – organization; **PC** – primary care; **PG** – program(s); **PHYS** – physician(s); **PRAC** – practices; **PROC** – process/procedure; **PROT** – protocol; **PRV** – provider(s); **PH** – public health; **PT** – patient; **RES** – research(ers); **SAMHSA** – US Substance Abuse and Mental Health Services Administration; **SBIRT** – Screening, Brief Intervention and Referral to Treatment; **SCI** – Science; **SU** – Substance Use; **SW** – social worker(s); **TRN** – training; **TX** – treatment or therapy; **US** – United States

Table I1

Evaluation Table – Quantitative Studies

Citation *(Rev. chron: year, then alpha.)*	Theory/ Conceptual Framework	Design/ Method	Sample/ Setting	Major Variables & Definitions	Measurement/ Instruments	Data ANLS	Findings/ Results	Level/Quality/Decision/Application/Generalizability/Risk of harm if IMPL[4]/Feasibility
Mertens (2015). Country: US Funding: Kaiser Permanente Bias: none known	IMPL SCI CFIR	Cluster randomized IMPL trial using Naturalistic Private, integrated health care system 54 adult PC clinics randomly assigned in blocked groups of 3	SBIRT by PHYS v. non- PHYS PRVs & MAs v. usual care	NIH-recommended screening questions were added to EHR facilitating SBIRT; also TRN. Screening & brief INT & referral rates by arm. Also examined PT-, PHYS-, & system-level FACT affecting screening rates &, among those who screened positive, rates of BI & RT.	PC leader survey (n=45) EHR & administrative databases	Survey – descriptive - avg. mo. & annual screening rates for each MED ctr. by arm - highest screening - rates of BI/RT for each MED center & overall by study arm - assoc.bt PT PHYS & system FACT & OUTC.	-Prior to TRN, 88 % of PC leaders reported no policies/requirements to ask PTs about alcohol. Those with policies indicated no consistent EB screening methods. - For average percent screened, NPP & MA arm (50.9 %) was higher than both PCP arm (9.2 %) & Control arm (3.5 %) Rates over year INCd with TRN. - PCP arm had higher BI/RT rates (44.4 %) than either NPP & MA arm (3.4 %) or Control arm (2.7 %)	II/Good quality/ Yes – use it/ Discussed in depth type of PRV issues, common theme, & having similarities with project site. Feasible – practical.
Hargraves (2017). Country: US Funding: University of Cincinnati's Department of Family & Community Medicine & Interact for Health Bias: None	Pragmatic Best PRACs approach	Mixed: EVAL team communicated with sites data re: FAC & BAR. Editing method for qualitative data; Key strategies for success detailed for IMPL SBIRT	Ten PC PRACs Each PRAC chose conditions for screen, screening tools & how provide BI & RT.	SBIRT PRAC descriptions PG EVAL, including:-(1) no. of PTs to be screened, (2) no. screened, (3) no. scoring positive, (4) no. BI, (5) No. RT & (6) no. confirmed receiving TX at referral. -what worked well, what needed improvement, & what had changed.	Data were collated & summarized. Open-ended question responses, PRAC visit notes, & interviews, were collated & coded using editing method.	Sorted interview data into coding categories, checking against other categories & original data, searched for patterns & themes, returned to existing lit. & framed findings as pragmatic best PRACs.	8 best PRACs for PC SBIRT **without funding**: Have PRAC champion; Utilize an interprofessional team; Define & communicate details of each SBIRT step; Develop relationships with referral partners; Institute ongoing SBIRT TRN; Align SBIRT with PC office flow; Consider using pre-screening instrument, & Integrate SBIRT into EHR	III/Good quality. Yes, use it. Great information for team-based SBIRT with little or no funding. Consistent with & reinforces prior RES. Includes good description of SBIRT. Feasible.

Key: **ANLS** – analysis; **BAR** – barriers; **CHAR** – characteristics; **CMPT** – computer(ized); **CM** – case management; **COMP** – component(s); **DOC** – documentation; **EB** – evidence-based; **EDU** – education(al); **EVAL** – evaluation; **FAC** – facilitators; **FACT** – factors; **IMPL** – implementation; **INC** – increase**; IND** – individual; **INNOV** – innovation; **INT** – intervention; **MA** – medical assistants; **MDL** – model; **MED** – medical; **MGMT** – management; **OUTC** – outcomes; **ORG** – organization; **PC** – primary care; **PG** – program(s); **PHYS** – physician(s); **PRAC** – practices; **PROC** – process/procedure; **PROT** – protocol; **PRV** – provider(s); **PH** – public health; **PT** – patient; **RES** – research(ers); **SAMHSA** – US Substance Abuse and Mental Health Services Administration; **SBIRT** – Screening, Brief Intervention and Referral to Treatment; **SCI** – Science; **SU** – Substance Use; **SW** – social worker(s); **TRN** – training; **TX** – treatment or therapy; **US** – United States

Table I2

Evaluation Table – Qualitative Studies

Citation *(Rev. chron: year, then alpha.)*	Conceptual Framework	Design/ Method/ Sampling	Sample/Setting	Major Variables & Definitions	Measurement/ Instruments	Data ANLS	Findings/ Themes	Level/Quality/Decision/Application/Generalizability/Risk of harm if IMPL[3]/Feasibility
Bacidore (2017) Country: US Funding: Loyola University Bias: None	Rogers' Diffusion of INNOVs: considers INNOV, communication channels, social system & time, with purpose to capitalize on exposure & influence of an INNOV.	Quality improvement project/ A single-sample, nonrandomized cohort was used;	80 ED RNs & 4 SW All ED RNs & SW for EDU COMP of project, & all ED PTs meeting criteria for SBIRT PROT COMP of project/ large Univ. MED center ED with no prior alcohol screening in place.	Effects of an SBIRT EDU module & EHR DOC PROT regarding ED RNs' & SW' knowledge of SBIRT & Adherence to SBIRT EHR DOC PROT.	From EHR, pre- & post-test of TRN, EVAL of TRN, & EVAL of PG.	PTs ranged in age from 18 to 64 years, with mean age of 43 years. Thirty-two PTs (80%) were male.	RNs lower-than-expected perceived relevance of EDU PG & expected impact on PRAC. Possible reasons for these findings include *competing priorities*, *conflicting demands*, & *high workload* responsibilities. Expected, adherence to EHR DOC PROT was demonstrated. "We screen everyone" approach. Next steps: self-administered AUDIT that might eliminate possible bias. Also, if time needed by RNs for this task was factor, shorter AUDIT-C.	III/Good quality Yes – use it. Team-based (interprofessional) ***First*** step of project IMPL included IT specialist. Adherence linked to performance EVALs. This was in another. Can be adapted to other dept.'s, & other facilities in larger health care system. Some parts feasible – discussed further in implications section.
Babor (2017). Country: US Funding: SAMHSA Bias: None	Addiction SCI/PH policy/translational RES	Cross-site EVAL (was part of block funding PG)	SBIRT PG 11 multi-state PG 2 cohorts	PG IMPL Methodological INNOVs PT OUTC Economic Issues Sustainability System-wide Effects	Cross-site EVAL forms which were length & required as part of grant, so done at all sites.	Described all EVAL data in categories with conclusions & policy implications.	-1 million screened. -IMPL facilitated by committed leadership & use of SU specialists instead of generalists. -Pre-post differences clinically meaningful & statistically significant for almost every measure of SU. -Greater INT intensity = >decreases in SU. -BT costly than BI -Four FACT influenced sustainability: presence of PG champions, availability of funding, systemic change & effective MGMT of SBIRT PRV challenges.	III/ High quality: Large sample size ANLS data from large block grants for SBIRT as part of required EVAL. Some parts feasible – discussed further in implications section.
Del Boca (2017). Country: US Funding: SAMHSA Bias: None	PH/ SBIRT PG Matrix, informed by dissemination, INNOV & IMPL SCI, including CFIR	*New* Framework / Narrative description/ No *sampling*, however, all possible SBIRT PG were included.	SBIRT PG	Matrix COMPs: -SBIRT services -Performance sites -PRV attributes -PT/client populations -Mgmt. structure & activities	RES ANLS core COMPs of SBIRT IMPL from existing literature & from original ANLS of SBIRT PGs.	RES elicited elements of each COMP. The matrix is used in Table 4 (Appendix S).	RES additionally applied IMPL SCI to contrast concepts of PT OUTC with IMPL OUTC; specifying latter for EVAL purposes of SBIRT PGs.	III/ High quality: RES experienced in SBIRT all possible PGs to construct matrix/Yes – use it/ **Only existing framework** for translational SBIRT IMPL & EVAL/ Generalizable Feasible.

Key: **ANLS** – analysis; **BAR** – barriers; **CHAR** – characteristics; **CMPT** – computer(ized); **CM** – case management; **COMP** – component(s); **DOC** – documentation; **EB** – evidence-based; **EDU** – education(al); **EVAL** – evaluation; **FAC** – facilitators; **FACT** – factors; **IMPL** – implementation; **INC** – increase**; IND** – individual; **INNOV** – innovation; **INT** – intervention; **MA** – medical assistants; **MDL** – model; **MED** – medical; **MGMT** – management; **OUTC** – outcomes; **ORG** – organization; **PC** – primary care; **PG** – program(s); **PHYS** – physician(s); **PRAC** – practices; **PROC** – process/procedure; **PROT** – protocol; **PRV** – provider(s); **PH** – public health; **PT** – patient; **RES** – research(ers); **SAMHSA** – US Substance Abuse and Mental Health Services Administration; **SBIRT** – Screening, Brief Intervention and Referral to Treatment; **SCI** – Science; **SU** – Substance Use; **SW** – social worker(s); **TRN** – training; **TX** – treatment or therapy; **US** – United States

Table I2

Evaluation Table – Qualitative Studies

Citation *(Rev. chron: year, then alpha.)*	Conceptual Framework	Design/ Method/ Sampling	Sample/Setting	Major Variables & Definitions	Measurement/ Instruments	Data ANLS	Findings/ Themes	Level/Quality/Decision/Application/Generalizability/Risk of harm if IMPL[3]/Feasibility
Singh (2017). Country: US Funding: SAMHSA Bias: None	INNOV SCI & ORG change/ Sustainability	Descriptive study/ Service delivery table Financing table & a Semi-structured telephone interview/ Convenienc e sampling	34 staff members/ 6 grantees/ PC outPT clinics & hospitals	SBIRT services provided after funding ceased. Estimate of funding for each SBIRT activity. FAC & BAR	Current screening, BI, BT & RT service delivery BAR & FAC to sustaining each of SBIRT service delivery COMP s; ORG structure & PT flow for delivering SBIRT services Financing	Interviews recorded, transcribed, cleaned; 21 descriptive codes based on Topics; 3 teams of 2 ANLS each, inductive (inferential/in terpretive) content ANLS of coded semi-structured interview data; identified themes; 2 coder-team came to consensus ATLAS used	Of 103 original sites, 6 SBIRT PG, 34 sites (33%) completely discont'd SBIRT & 69 sites (67%) cont'd SBIRT in some capacity. Funding of add'l monies. Staffing: SBIRT PRVs by facility, some Masters-EDU clinicians 2 HS or Bachelors BH counselors. Some hired MAs, LPNs, RNs & bachelor's then trained. All sites cont'd to screen, BI & RT. Only 5 sustained BT, & at only some sites. FAC: Champions are key, facilitated acceptance through pres. TRNs & EDU workshops & worked towards IMPL of HCPCS billing codes. Not having permanent champion BAR. Availability of SBIRT PRV, time constraints & having modifiable PG MDL & structure also significant.	III/Good quality/ Yes – use it. Consistent with other RES regarding flexibility of PG, cost FACT & specialist MDL being strong FAC, champions are necessary, & ongoing TRN. Some parts feasible – discussed further in implications section.
Muench (2015). Country: US Funding: SAMHSA Bias: None	PH/SBIRT IMPL IMPL of health care INNOV such as SBIRT is complex social PROC interconnected within context –	Focus groups/ MAs, resident PHYS, faculty PHYS, & SBIRT Champions participated on volunteer basis.	IMPL systematized, team-based (SBIRT) PROC in six PC clinics that included receptionists, MAs, & PHYS	-BAR & FAC -Participants role in SBIRT, their experiences, their thoughts about IMPL, general attitudes regarding SU screening. -FACT contributing to success (or lack thereof) of SBIRT IMPL & FACT that could INC performance rates.	Groups audio-recorded for later transcription. Transcripts were reviewed & collaborativel y coded for main emergent themes.	semi-structured; standardized questions were used to guide focus groups with PROTs & guides about	Buy-in from PHYS & clinic leadership & seamless integration of SBIRT into EHR were noted as strongest FAC. Time constraints & personal discomfort discussing SU were cited as major BAR. Other findings discussed in Appraisal & Synthesis	III/Good quality. Yes, use it. Much useful information on IMPL FAC & BAR, & CFIR MDL explained. Feasible.

Key: **ANLS** – analysis; **BAR** – barriers; **CHAR** – characteristics; **CMPT** – computer(ized); **CM** – case management; **COMP** – component(s); **DOC** – documentation; **EB** – evidence-based; **EDU** – education(al); **EVAL** – evaluation; **FAC** – facilitators; **FACT** – factors; **IMPL** – implementation; **INC** – increase**; IND** – individual; **INNOV** – innovation; **INT** – intervention; **MA** – medical assistants; **MDL** – model; **MED** – medical; **MGMT** – management; **OUTC** – outcomes; **ORG** – organization; **PC** – primary care; **PG** – program(s); **PHYS** – physician(s); **PRAC** – practices; **PROC** – process/procedure; **PROT** – protocol; **PRV** – provider(s); **PH** – public health; **PT** – patient; **RES** – research(ers); **SAMHSA** – US Substance Abuse and Mental Health Services Administration; **SBIRT** – Screening, Brief Intervention and Referral to Treatment; **SCI** – Science; **SU** – Substance Use; **SW** – social worker(s); **TRN** – training; **TX** – treatment or therapy; **US** – United States

Appendix J: Synthesis Table

Table 2
Synthesis Table

Same order as EVAL Tables (Appendices Q, R)	O'Sullivan	Cowell	Hargraves	Vendetti	Mertens	Bacidore	Babor	Del Boca	Singh	Muench
Year	2018	2017	2017	2017	2015	2017	2017	2017	2017	2015
Type	Quantitative	Quantitative	Mixed	Mixed	Quantitative	Qualitative	Qualitative	Qualitative/Landmark	Qualitative	Qualitative
Design	Case study	Time & Motion	Pragmatic Best PRAC	Scaled survey & interviews	IMPL RCT	QI/Single-sample, cohort	X-site EVAL	Narrative	Descriptive	Focus groups
Setting	Residency PGs @ teaching FAC	26 US sites in 4 grantees	10 PC PRACs	7 federal grant PGs	PC	80RN & 4SW IMPL in ED	11 PG 2 cohorts	SBIRT PGs	Federal grant settings	6 PC clinics
SBIRT Services/ *INT CHAR & PROC*								Continuum of care, efficiency, no. screened and treated		
Tools, approaches/ PROCs	Integrate with EHR ✓↑		Integrate with EHR ✓↑	Integration with HER was difficult when simultaneous with PG IMPL but eventually FAC ✓↑	Integrate with EHR ✓↑	RN-admin. ✓↓ Self-admin ✓↑ EHR ✓↑	PT OUTC for SU meaningful	Conditions, efficiency, EB adherence, self- or staff-administered, CMPT-assisted, paper-and-pencil, face- to-face, telephonic, anonymity, veracity, EHR, telephonic.	Easily modifiable MDL ✓↑	Integrate with EHR ✓↑
Pre-screening			✓↑	✓↑		✓↓		Consists of few questions, if + perform full screen, initial stage of the screening or embedded with intake, AUDIT-C, NIAAA, first few of ASSIST, CRAFFT for under 21, be aware of EB validity by person administrating.		
Screening		SBI > time in trauma than in out-PT ✓						AUDIT (contains BI materials), ASSIST (includes BI and is for drugs), interview, self-administered questionnaire, CMPT-assisted, veracity.		
Brief INT		SBI > time in trauma than in out-PT ✓					> cost effective than BT ✓	5–20 minutes, advice & info., may >1 session, in-person or via telephone, general MED personnel or dedicated SBIRT PRV, may be CMPT which INC service efficiency and reduces costs, as well as enhance EBP and access to care, usually involves MI. In + to above, FRAMES, NIAAA, USDA.		
Brief TX							More intensity = decreases in SU.	Required in federally funded PGs, for higher risk, is a form of RT, 2-12 sessions, IND, by a licensed behavioral or SU counselor, very often a dedicated SBIRT PRV onsite, INC level of care, produce significant behavior change, if licensed, reimbursable so sustainable, MET, CBT	Least efficient use of resources ✓↓	
Referral to tx and added services			Relationships with referral partners ✓↑	referring PTs out ✓↓co-occurring/ telephonic ✓↑				Probable SU DO, includes CM, EB RT includes warm hand-off, transportation, appt.'s, INC access to care, consider insurance, sliding scale. BI or MI with trained SU counselors (rather than referral staff) INC completion of TX. Networks, collaborative agreements & TX slots affect RT.		

Key: ✓ = present; ✓ = not present; ↑ = facilitator; ↓ = barrier; **ANLS** – analysis; **BAR** – barriers; **CHAR** – characteristics; **CM** – case management; **CMPT** – computer(ized); **COMP** – component(s); **DOC** – documentation; **EB** – evidence-based; **EDU** –education(al); **EVAL** – evaluation; **FAC** – facilitators; **FACT** – factors; **IMPL** – implementation; **INC** – increase; **IND** – individual; **INNOV** – innovation; **INT** – intervention; **MA** – medical assistants; **MDL** – model; **MED** – medical; **MGMT** – management; **OUTC** – outcomes; **ORG** – organization; **PC** – primary care **PG** – program(s); **PHYS** – physician(s); **PRAC** – practices; **PROC** – process/procedure; **PROT** – protocol; **PRV** – provider(s); **PH** – public health; **PT** – patient; **RES** – research(ers); **SAMHSA** – US Substance Abuse and Mental Health Services Administration; **SBIRT** – Screening, Brief Intervention and Referral to Treatment; **SCI** – Science; **SU** – Substance Use; **SW** – social worker(s); **TRN** – training; **TX** – treatment or therapy; **US** – United States

Table 2

Synthesis Table

Same order as EVAL Tables (Appendices Q, R)	O'Sullivan	Cowell	Hargraves	Vendetti	Mertens	Bacidore	Babor	Del Boca	Singh	Muench
Performance Sites/ *Outer Setting*								PT OUTC/no. screened/intensity of services		
Type of MED setting	Had enough time ✓↑ ✓↑	26 various sites ✓		Low volume ✓↓ High volume ✓↑ Time ✓↓		Time ✓↓		PC, EDs, high-volume settings yield INC no. of results, PTs in those settings show less reductions in ETOH use fidelity to EB may be the reason. High-volume personnel cited BAR: lack of time and need to attend to severe, life-threatening problems.	Time ✓↓	Time ✓↓
Urban v rural	Various specialties ✓↑							Rural can't justify FT SBIRT specialist & tend to screen their whole population quickly.		
ORG receptivity/ Inner Setting	Academic ✓↑		Define & communicate each step ✓↑		ORG & PRV readiness for change may INC over time ✓↑		Systemic change ✓↑	INNOV v. risk-adverse ORG culture; perceived or actual resources & other readiness FACT.		
PRV Attributes/ *CHARs of INDs*								General v. specialist, recruitment and TRN		
Personal CHARs					Assoc. with differences in communicati on styles ✓↑			Gender/race/ethnicity		Personal discomfort discussion SU ✓↓
Clinical TRN	MED ✓↑			Generalists ✓↓ Specialists ✓↑	MAs can screen with TRN ✓↑	Generalists ✓↑	Generalists ✓↓ Specialists ✓↑	MED/behavioral/SU/health educators		MAs can screen with TRN ✓↑
EDU attainment	Residents ✓↑		Interprofessional team-based ✓↑		Non-PHYS arm INC rates of screening ✓↑ PCP arm had INC BI/RT rates ✓↑	Interprofessional team-based ✓↑		MAs, RNs, Master's, doctoral (Ph.D.), PHYS	Masters or BH-trained at < EDUC are efficient use of skills ✓↑	Interprofessi onal team-based ✓↑
Counseling experience								No. of years		
Self-efficacy					Long time req. for PRV change ✓↓			Empathy, self-efficacy, ability to tolerate INC IMPL	Availability of SBIRT PRV ✓↑	
Tx philosophy								PH/12-step		
PT-client populations/ *Outer Setting*								Resource allocation and networks necessary		
Risk status						"we screen everyone" ✓↑		% PT who screen +, and who require BI, BT or RT, affecting resources		
Demographic CHARs								need for interpreters, indigence, Natives and veterans may have INC service eligibility, scheduling for those who work FT		

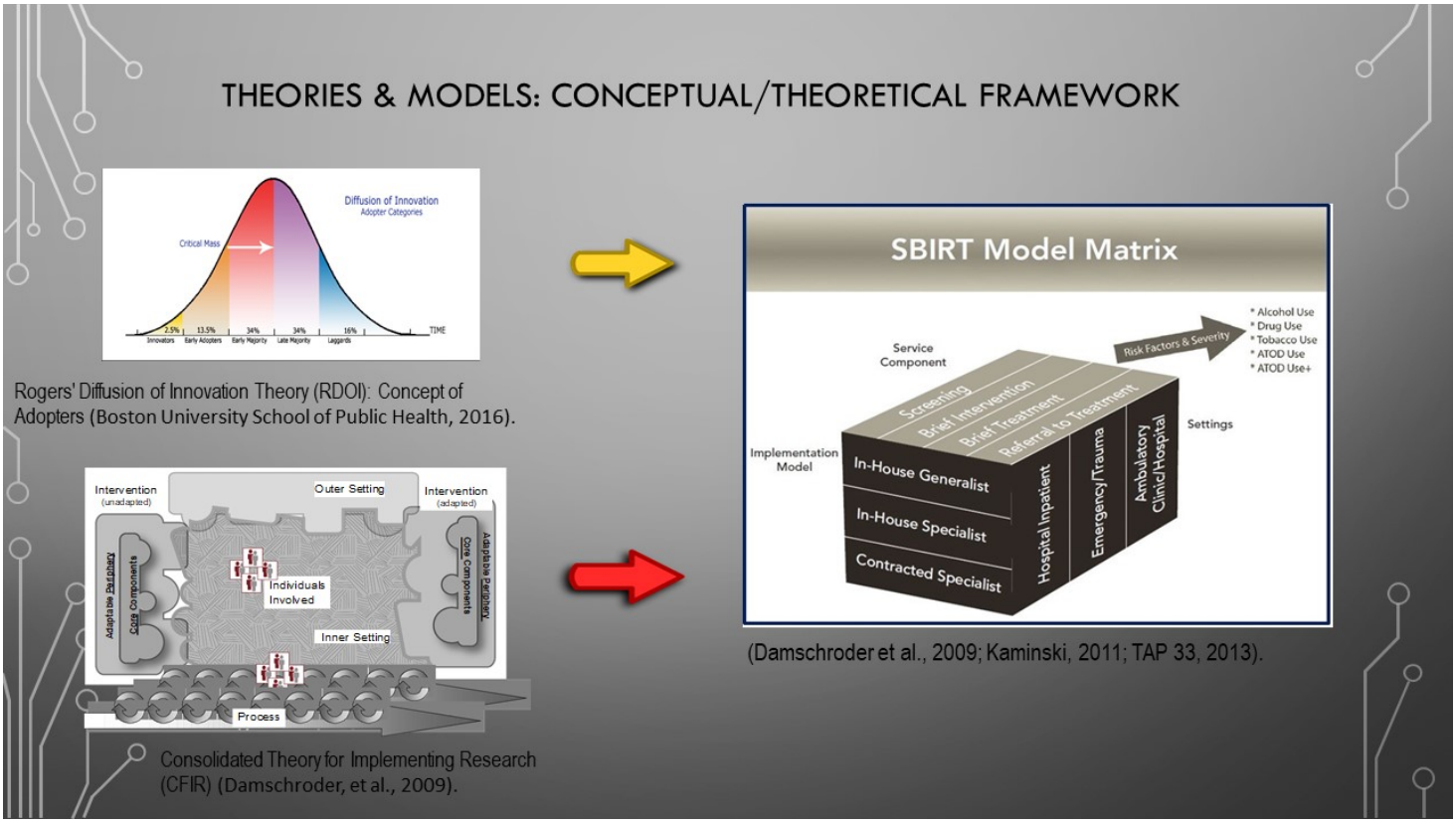
Key: ✓ = present; ✓ = not present; ↑ = facilitator; ↓ = barrier; **ANLS** – analysis; **BAR** – barriers; **CHAR** – characteristics; **CM** – case management; **CMPT** – computer(ized); **COMP** – component(s); **DOC** – documentation; **EB** – evidence-based; **EDU** –education(al); **EVAL** – evaluation; **FAC** – facilitators; **FACT** – factors; **IMPL** – implementation; **INC** – increase; **IND** – individual; **INNOV** – innovation; **INT** – intervention; **MA** – medical assistants; **MDL** – model; **MED** – medical; **MGMT** – management; **OUTC** – outcomes; **ORG** – organization; **PC** – primary care **PG** – program(s); **PHYS** – physician(s); **PRAC** – practices; **PROC** – process/procedure; **PROT** – protocol; **PRV** – provider(s); **PH** – public health; **PT** – patient; **RES** – research(ers); **SAMHSA** – US Substance Abuse and Mental Health Services Administration; **SBIRT** – Screening, Brief Intervention and Referral to Treatment; **SCI** – Science; **SU** – Substance Use; **SW** – social worker(s); **TRN** – training; **TX** – treatment or therapy; **US** – United States

Table 2
Synthesis Table

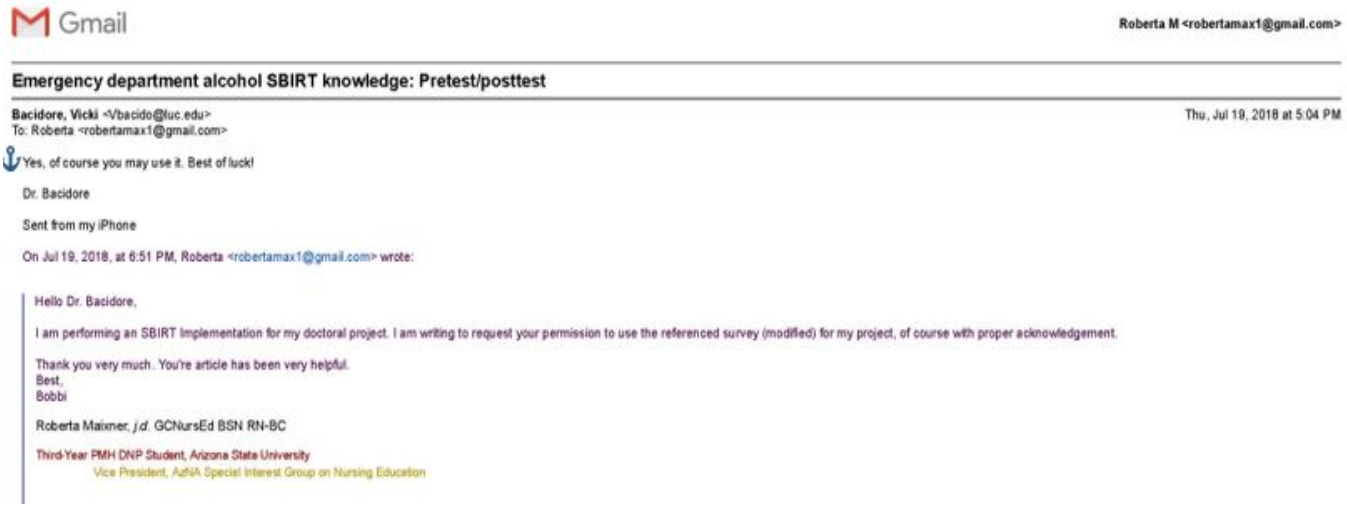
Same order as EVAL Tables (Appendices Q, R)	O'Sullivan	Cowell	Hargraves	Vendetti	Mertens	Bacidore	Babor	Del Boca	Singh	Muench
Patterns of A&SU						Allowed opt-out ✓↓		Patterns and multiple risks		
Legal status								If problematic may require INC coordination		
Physical and mental health								Chronic MED issues that affect TX PG availability		
Tx experiences								Prior experiences may color perceptions of alternatives	Concerned about stigma ✓↓	
MGMT structure & activities/ *Inner Setting & PROC*								Key IMPL FAC: multiple level change and MGMT		
EB PROTs			Details ✓↑		Quality critical with new IMPL ✓↑			Adoption is necessary starting point following PROCs in EB instruments, explicit SOPs.		
PRV selection/hiring				Turnover ✓↓	PRV CHAR were related to SBIRT services provided ✓↑↓			ORG, PG and PRAC levels – this and next two. Empathetic, culturally competent, who tolerate MED setting conditions		
Pre-service and in-service TRN	Sharing EDU materials ✓↑		Ongoing SBIRT TRN ✓↑		Rates INC w/ TRN > 1 yr ✓↑	eLearning TRN ✓↑		Should include all personnel at host setting, not just designated SBIRT PRV; for the latter include didactic and PRAC sessions		TRN helped overcome discomfort ✓↑
Coaching and staff EVALs				QA ✓↑	Feedback critical with new IMPL and need more of it ✓↑	Adherence = performance EVALs ✓↑	Effective MGMT of SBIRT PRV challenges ✓↑	Of SBIRT PRV, tied to performance and compensation, should include ongoing EVAL quality assurance (QA) that assess adherence to PROT: shadowing, taping sessions, recalibration exercises		
PG EVAL and dissemination	Champion ✓↑		Champion ✓↑	PRV & MGMT buy-in ✓↑		✓↑	Champion ✓↑	Formative and summative, tracking performance indicators and produce relevant data for all stakeholders; INC buy-in needs efforts of champions, experts & opinion leaders	Champions = critical ✓↑	PHYS as opinion leaders ✓↓ Buy-in from PHYS ✓↓
Facilitative administrative support systems	Peer network ✓↑ Strong supportive exec. team ✓↑		Integrate with existing PROC ✓↑	Committed leadership ✓↑		✓↑		Requires supportive leadership at all levels for success.		Buy-in from MGMT ✓↑
System INTs and sustainability planning	Funded champions✓↑	Support time (42%) > delivery time (13%) ✓		ORG comm.✓↑	IMPL may take a year ✓↓	***First*** step of IMPL incl. IT ✓↑	Funding ✓↑	Funding, hospitable environment for PG IMPL and operations	Funding listed) ✓↑✓↓	

Key: ✓ = present; ✓ = not present; ↑ = facilitator; ↓ = barrier; **ANLS** – analysis; **BAR** – barriers; **CHAR** – characteristics; **CM** – case management; **CMPT** – computer(ized); **COMP** – component(s); **DOC** – documentation; **EB** – evidence-based; **EDU** –education(al); **EVAL** – evaluation; **FAC** – facilitators; **FACT** – factors; **IMPL** – implementation; **INC** – increase; **IND** – individual; **INNOV** – innovation; **INT** – intervention; **MA** – medical assistants; **MDL** – model; **MED** – medical; **MGMT** – management; **OUTC** – outcomes; **ORG** – organization; **PC** – primary care **PG** – program(s); **PHYS** – physician(s); **PRAC** – practices; **PROC** – process/procedure; **PROT** – protocol; **PRV** – provider(s); **PH** – public health; **PT** – patient; **RES** – research(ers); **SAMHSA** – US Substance Abuse and Mental Health Services Administration; **SBIRT** – Screening, Brief Intervention and Referral to Treatment; **SCI** – Science; **SU** – Substance Use; **SW** – social worker(s); **TRN** – training; **TX** – treatment or therapy; **US** – United States

Appendix K: Theories Diagram



Appendix L: Permission to Use Survey[5]



Gmail

Roberta M <robertamax1@gmail.com>

Emergency department alcohol SBIRT knowledge: Pretest/posttest

Bacidore, Vicki <Vbacido@luc.edu>
To: Roberta <robertamax1@gmail.com>

Thu, Jul 19, 2018 at 5:04 PM

Yes, of course you may use it. Best of luck!

Dr. Bacidore

Sent from my iPhone

On Jul 19, 2018, at 6:51 PM, Roberta <robertamax1@gmail.com> wrote:

> Hello Dr. Bacidore,
>
> I am performing an SBIRT implementation for my doctoral project. I am writing to request your permission to use the referenced survey (modified) for my project, of course with proper acknowledgement.
>
> Thank you very much. You're article has been very helpful.
> Best,
> Bobbi
>
> Roberta Maixner, *j.d.* GCNursEd BSN RN-BC
>
> Third-Year PMH DNP Student, Arizona State University
> Vice President, AdNA Special Interest Group on Nursing Education

[5] Permission was granted to modify and use the survey (V. Bacidore, personal communication, July 19, 2018).

Appendix M: Modified Pre-Survey

Appendix B

Behavioral Health Unit Alcohol SBIRT Knowledge: Pretest

Code: __ _____

Demographics:

Instructions: Please fill out the following questions with respect to ***yourself*** (Circle the best answer):

1. Gender:
   1-Female
   2-Male
   3-Transgender

2. Ethnicity:
   1-Caucasian
   2 Hispanic
   3 African/Black
   4 Asian
   5 Native American
   6 Other (Write-In) _____

3. Have you done specialty training in substance use counseling?
   0-No
   1-YES

4. Years of counseling experience? _____

5. Highest Level of Education:
   Associates
   BSN or other Bachelors degree
   Masters
   Doctoral (Ph.D)
   Medical doctor

6. Role:
   1-MD,
   2-NP,
   3-RN,
   4-SW (Social worker, case manager or therapist) or
   Other (Write-In) (i.e. LCSW, MFT or other specialty license or certificate)_____

Figure 2. Modified Pre-Survey, p. 1.

7. How long in the role (above) (years)? _____

8. How long have you been working at this facility (years)? _____

Alcohol SBIRT Knowledge:

Instructions: Please fill out the following questions regarding your *knowledge about SBIRT* (Circle the best answer):

9. Unhealthy alcohol use can contribute to:
   a. Liver damage
   b. Inflammation of the pancreas
   c. Vitamin deficiency
   d. All of the above

10. According to NIAAA guidelines, which of the following is considered low-risk drinking limits?
   a. For a man, no more than four drinks on any single day and no more than 14 drinks per week
   b. For a woman, no more than three drinks on any single day and no more than seven drinks per week
   c. For adults older than 65 years, no more than three drinks on any single day and no more than seven drinks per week
   d. All of the above

11. The percentage of patients who are considered "at risk" or "harmful" alcohol users is approximately:
   a. 10%
   b. 15%
   c. 25%
   d. 45%

12. Which of the following is true regarding alcohol SBIRT?
   a. SBIRT is primarily intended to identify patients with high-risk alcohol use
   b. SBIRT is primarily intended to identify patients with risky/harmful alcohol use
   c. SBIRT is primarily intended to identify patients with low-risk alcohol use
   d. SBIRT is primarily intended to identify patients who are addicted to alcohol

13. Research investigations have demonstrated a number of positive outcomes related to alcohol SBIRT. Which of the following is the most compelling reason to initiate alcohol SBIRT?
   a. Fewer traffic incidents
   b. Potential to increase adherence to alcohol treatment
   c. Reductions in alcohol consumption
   d. Fewer repeat injuries, emergency department visits, and repeat hospitalizations

14. Which of the following is true about the AUDIT?
   a. The AUDIT focuses on recent alcohol use
   b. The AUDIT assesses multiple categories of substances, including alcohol
   c. The AUDIT identifies only hazardous and harmful drinkers

Figure 2. Modified Pre-Survey, p. 2.

d. The AUDIT consists of 4 brief questions

15. What strategies can the health care provider suggest, should the patient indicate that he/she is not interested in changing his/her behavior related to alcohol use?
   a. Reduce the amount and/or frequency of alcohol use
   b. Avoid driving while intoxicated
   c. Stress being safe, even when intoxicated
   d. All of the above

16. An effective step that the health care provider can take upon closing the intervention is to:
   a. Encourage the patient to drive to the nearest referral center upon discharge
   b. Tell the patient to call the referral center at discharge
   c. Provide the patient written information outlining a number of referral resources at discharge
   d. Insist on a signed written agreement or contract

17. Which of the following patients require referral to treatment?
   a. Patients who have made the connection between drinking and problems
   b. Patients who have high indicators of abuse
   c. Patients who have stated perceived benefits of drinking
   d. Patients who refuse to take the AUDIT test

18. Alcohol SBIRT protocol includes all of the following patient inclusion criteria except:
   a. The patient is not impaired and has a GCS of 15
   b. The patient is >18 years ofage
   c. The patient is triaged at a 2, 3, 4, or 5 Emergency Severity Index level

Figure 2. Modified Pre-Survey, p. 3.

Appendix N: Project Implementation Timeline

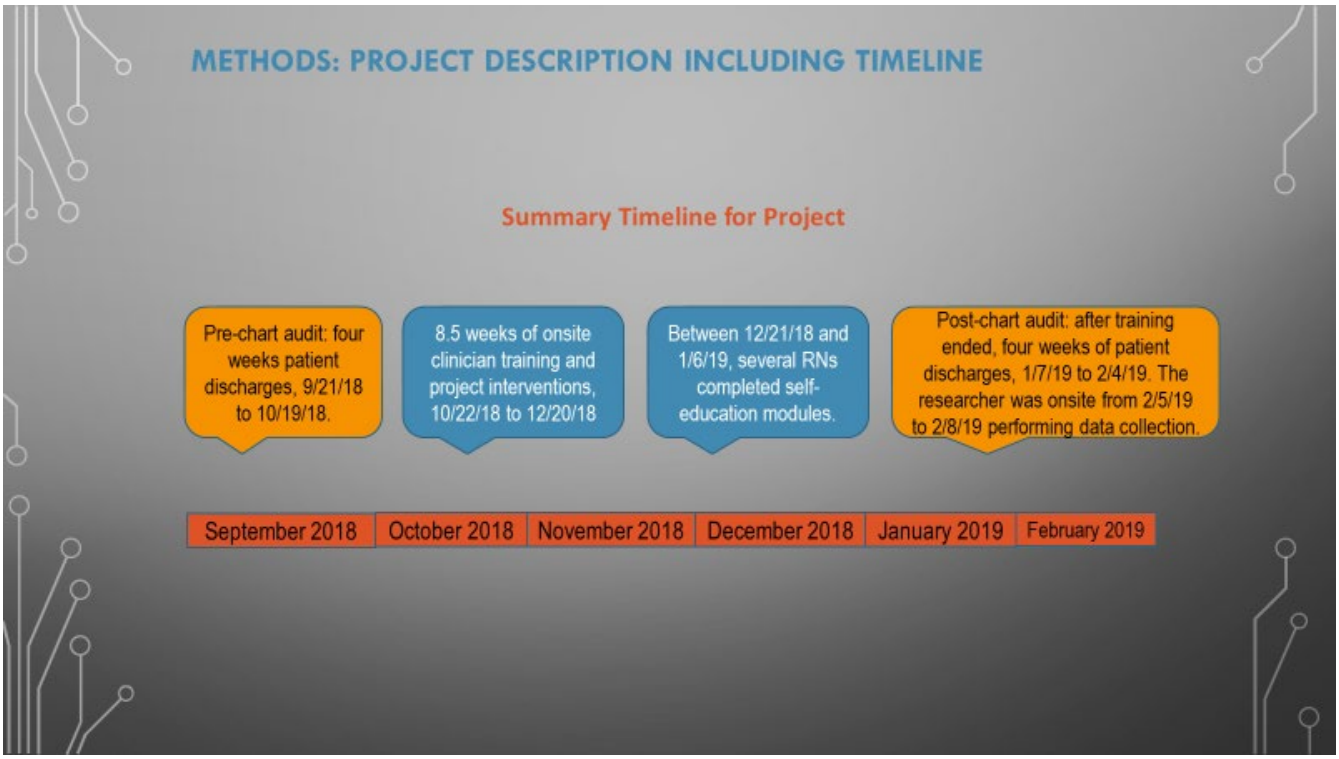


Figure 3: Project Implementation Timeline.

Appendix O: Pre- and Post-Survey Tables

Table O1

Survey: Clinician Demographics [a]

		No.	*(%)*
Gender	Female	19	73.1
	Male	7	26.9
Ethnicity	Caucasian	15	57.6
	Hispanic	4	15.4
	African/Black	1	3.8
	Asian	6	23.1
Highest Level of Education	Associates	4	15.4
	BSN/Bachelors	13	50.0
	Masters	6	23.1
	Medical Doctor	3	11.5
Professional Role on Unit	Medical Doctor	3	11.5
	Registered Nurse	18	69.2
	Social Worker/ Case Manager	5	19.2

Note: *Highest Level of Education* was significantly moderately correlated with *Number of Answers Correct* on post-survey, $r_s = .408$, $p = 0.039$. No other demographics/experience were significantly correlated with pretest or posttest performance.

[a] N=26

Table O2

Survey: Clinician Training and Experience [a]

	SU Specialty Training (Years)	Counseling Experience (Years)	How Long in Professional Role (Years)	How Long at Facility (Years)
M/SD	1.5/.37	3.5/8.85	10.85/9.28	4.19/7.20
Range	0-1	0-35	0-35	0-30

[a] N=26

Table O3

Survey: Pre- and Post- Survey Number of Correct Answers [a]

	Range	**Number/% that Achieved 100%**	***M***	***SD***
Pre- Survey No. of Correct Answers	4/9 – 9/9	2/7.7	6.23/9	1.56
Post- Survey No. of Correct Answers	6/9 – 9/9	11/42.3	7.88/9	1.11

Note: Clinicians who scored 100% increased from 7.7% to 42.3%.

[a] *N*=26 Adolescent psychiatric inpatient unit clinicians (5 CMs, 3 psychiatrists & 18 RNs) were educated in SBIRT best practices.

Table O4

Survey: Paired Samples T-Test [a]

			95% Confidence Interval of the Difference				
	M	**SD**	***Lower***	***Upper***	**t**	**df**	**Sig. (2-tailed)**
Pair: Pre- and Post- Total Correct Answers	-1.654	2.00	-2.461	-.846	-4.219	25	.000

Note: A significant difference with a large effect size was found in the correct number of answers between the pretest (*M*=6.23/9, *SD*=1.56) & the posttest (*M*=7.88/9, *SD*=1.11), $t(25) = -4.219$, $p < 0.001$, $d = 0.827$.

Note: These results suggest that education significantly increased clinician SBIRT knowledge.

[a] *N*=26 Adolescent psychiatric inpatient unit clinicians (5 CMs, 3 psychiatrists & 18 RNs) were educated in SBIRT best practices.

Appendix P: CRAFFT Manual Figure

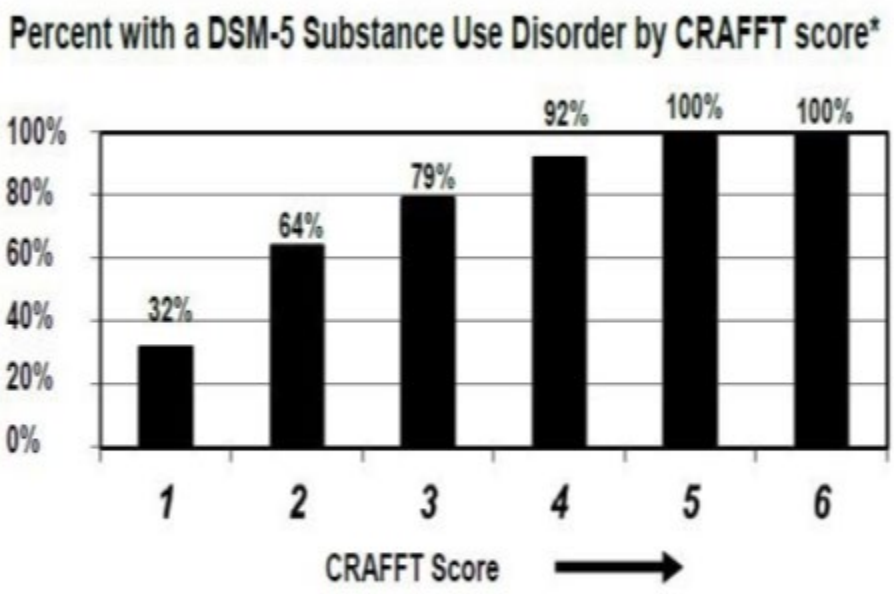


Figure 4. Percent with a DSM-5 Substance Use Disorder by CRAFFT score (Center for Adolescent Substance Use Research, 2017).

Appendix Q: Pre- and Post-Chart Audit Tables

Table Q1

Pre- and Post-Implementation Chart Audit: Patient Demographics

Pre- *n*=104; Post- *n*=66		**Pre- #(%)**	**Post- # (%)**
Gender	Female	69 (66.3)	42 (63.6)
	Male	35 (33.7)	24 (36.4)
Age	13	14 (13.5)	5 (7.6)
	14	17 (16.3)	11 (16.7)
	15	24 (23.1)	16 (24.2)
	16	28 (26.9)	21 (31.8)
	17	21 (20.2)	13 (19.7)
Age	*Average*	***M/SD***	***M/SD***
		15.24/1.32	15.39/1.20
Ethnicity/Race		**Pre- (%)**	**Post- (%)**
	Caucasian	64 (61.5)	41 (62.1)
	Black	12 (11.5)	10 (15.2)
	Native	3 (2.9)	2 (3.0)
	Hispanic	25 (24.0)	13 (19.7)

Table Q2

Pre- and Post-Implementation Chart Audit: Completed (Screening Step of SBIRT)

Pre- *n*=104; Post- *n*=66		**Pre- #(%)**	**Post- #(%)**
CRAFFT	Fully Completed	65 (62.5)	48 (72.7)
	Partially Completed	17 (16.3)	10 (15.2)
	Partially and Fully Completed	82 (78.8) [a]	58 (87.9) [b]
	Not Completed, All Ages	22 (21.2)	8 (12.1)
Substance Use Table	Fully Completed	70 (67.3)	36 (54.5)
	Partially Completed	25 (24.0)	25 (37.9)
	Fully and Partially Completed	95 (91.3) [c]	61 (92.4) [d]
	Not Completed	9 (8.7)	5 (7.6)
Caregiver Concerns Table	Completed	91 (87.5)	57 (86.4)
	Not Completed	13 (12.5)	9 (13.6)

Note. The *CRAFFT* is a separate form in the EHR that must be opened and completed by the admitting RN, whereas both the *Substance Use Table* and the *Caregiver Concerns Table* are contained within the Pediatric Admission Assessment.

[a] (65 + 17; 62.5% + 16.3%).

[b] (48 + 10; 72.7% + 15.2%).

[c] (70 + 25; 67.3% + 24.0%).

[d] (36 + 25; 54.5% + 37.9%).

Table Q3

Pre- and Post-Implementation Chart Audit: CRAFFT Scores (Screening Step of SBIRT)

Pre- *n*=104; Post- *n*=66		**Pre- #(%)**	**Post- #(%)**
CRAFFT Score	0	42 (40.4)	23 (34.8)
	1	4 (3.8)	2 (3.0)
	2	7 (6.7)	8 (12.1)
	3	2 (1.9)	5 (7.6)
	4	3 (2.9)	2 (3.0)
	5	5 (4.8)	2 (3.0)
	6	2 (1.9)	6 (9.1)
	Not Fully Completed [a]	39 (37.5)	18 (27.3)
	M/SD	3.33/3.20	3.23/2.97

Note. The average CRAFFT score, both pre- and post-implementation, revealed *over an 80% chance* that the patient had a SU disorder. The CRAFFT Manual reveals that a score of "3" on the CRAFFT is correlated with a 79% chance that the adolescent has a DSM-V Substance Use Disorder.

[a] The CRAFFT form must be fully completed to obtain a score.

Table Q4

Pre- and Post-Implementation Chart Audit: Substance Use (SU) Table Details (Screening Step of SBIRT)

Pre- *n*=104; Post- *n*=66		**Pre- #(%)**	**Post- (%)**
SU Table	Completed, Positive for at Least One Substance [a]	49 (47.1)	43 (65.2)
	Completed, Negative for All Substances	46 (44.2)	18 (27.3)
	Not Completed	9 (8.7)	5 (7.6)
Positive for Substance:	Alcohol	34 (32.7)	25 (37.9)
	Barbiturates	3 (2.9)	1 (1.5)
	Cannabis	42 (40.4)	33 (50.8)
	Cocaine	7 (6.7)	5 (7.6)
	Hallucinogens	4 (3.8)	7 (10.6)
	Hypnotics	2 (1.9)	1 (1.5)
	Inhalants	2 (1.9)	(0.0)
	Methamphetamines	2 (1.9)	2 (3.0)
	Opiates	10 (9.6)	10 (15.2)
	Sedatives	3 (2.9)	4 (6.1)
	Stimulants	1 (1.0)	0 (0.0)
	Tranquilizers	1 (1.0)	0 (0.0)
	Prescription Drugs	7 (6.7)	9 (13.6)

[a] The increase in patients that are positive for at least one substance is likely due to the increase in fully completing the *SU Table* due to RN education provided during implementation.

Table Q5

Progress Note Brief Interventions (BIs) Completed One Day After Admission (BI Step of SBIRT)

Pre- *n*=104; Post- *n*=66 (except where otherwise noted)	**Pre- #(%)**	**Post-# (%)**
Progress Note BI Completed [a]	10 (9.6) [b]	7 (10.6) [b]
Progress Note BI Completed for Alcohol [a]	10 (9.6) [b]	7 (10.6)[b]
Progress Note BI Not Completed Despite Positive Screen for Alcohol	24/34 (70.6) [c]	18/25 (72.0) [c]
Progress Note BI Not Completed Despite Positive Screen for a Substance	39/49 [d] (79.6) [c]	36/43 [d] (83.7) [c]
Progress Note BI Not Completed in the Case of Negative Screening	54 (51.9) [e]	24 (36.4) [e]

Note. The existing method (pre-intervention) for documenting BIs was for the provider to document a discussion about (primarily) alcohol use in the progress note, one day after admission (Progress Note BI). The focus on alcohol is related to CMS and TJC requiring BIs for alcohol only, and no other substances, in their HBIPs requirements.

A new auto-text note for SBIRT documentation of *Screenings, BIs or Referrals to Treatment* was implemented as an intervention that any clinician could complete to document same. It consists of only a few keystrokes to complete once loaded on the clinician's profile.

[a] all Progress Note BIs that were completed, both pre- and post-, were for the substance alcohol.

[b] Screenings increased (Tables 2 & 4 above), however Progress Note BI completion did not increase significantly *(+1.0%*). Thus, it appears that the educational intervention did not change practice regarding Progress Note BI completion.

[c] Progress Note BIs not completed, despite a positive screen for alcohol, increased (72.0% - 70.6% = 1.4%, as did Progress Note BIs not completed despite a positive screen for any substance *(83.7% - 79.6% = + 4.1%*). This data also supports the conclusion that although screenings increased, the educational intervention did not change practice regarding Progress Note BI completion.

[d] Patients Positive for a Substance, Table Q4: (pre- *n*=49; post- *n*=43).

[e] Though not required by CMS/TJC, evidence suggests that best practice is to complete a very short *Brief Advice* with adolescents, even when they are negative for SU, praising their healthy behavior, discussing their friends' SU choices and highlighting dangerous situations that are likely to occur (*i.e.*, whether to get in a car with a driver who has been using substances).

Table Q6

SBIRT Auto-text (AT) Notes Completed (Screening, BI, or Referral to Treatment Steps of SBIRT)

Pre- *n*=104; Post- *n*=66 (except where otherwise noted)	**Pre- (%)**	**Post- (%)**
AT Note Completed	*N/A*	8 (12.1)
AT Note Not Completed Despite Positive Screen for a Substance	*N/A*	35/43 (81.4) [a]
AT Note Not Completed in the Case of Negative Screening [a]	*N/A*	21 (31.8)[b]
AT Note Completed for Screening	*N/A*	8 (12.1)
AT Note Completed for BI	*N/A*	7 (10.6)[b]
AT Note Completed for Referral to Treatment	*N/A*	0 (0.0)
AT Note Completed by RN	*N/A*	0 0.0)
AT Note Completed by Case Manager	*N/A*	8 (12.1)
AT Note Completed by Psychiatrist	*N/A*	0 (0.0)

Note. A new *AT Note* for SBIRT documentation of *Screenings, BIs or Referrals to Treatment* was implemented, as an intervention that any clinician could complete, to document any SBIRT services.

It consisted of only a few keystrokes to create the note, once loaded on the clinician's EHR profile. Once the note was created, the clinician could choose to simply put in one or more "X's" on appropriate lines and save the note, or they could document more lengthy notes with text.

Since the AT Note was part of implementation, there was no pre-implementation data for AT Notes.

[a] (43 – 8 = 35. 35/43 = 81.4%).

[b] Though not required by CMS/TJC, evidence suggests that best practice is to complete a very short *Brief Advice* with adolescents, even when they are negative for SU, praising their healthy behavior, discussing their friends' SU choices and highlighting dangerous situations that are likely to occur (*i.e.*, whether to get in a car with a driver who has been using substances).

Table Q7

BIs Completed for Patients Positive for SU & Not Completed Despite Positive Screen (BI Step of SBIRT)

Pre- *n*=104; Post- *n*=66 (except where otherwise noted)	**Pre- (%)**	**Post- (%)**	**Difference (%)**
AT Note Completed for BI	*N/A*	6 (9.1)	*N/A*
AT Note Not Completed Despite Positive Screen for a Substance	*N/A*	42/49 (85.7)	*N/A*
Progress Note BI Completed	10 (9.6)	7 (10.6)	+1.0
Progress Note BI Not Completed Despite Positive Screen for a Substance	39/49 (79.6)	36/43 (83.7)	+4.1
Total Percentage of BIs (PN & AT) Completed [a]	10 (9.6)	14 (21.2)	+11.6
Total BIs Completed with Patients Positive for a Substance [b]	10/49 (20.4)[c]	14/43 (32.6)[d]	+12.2[e]

Note: If it weren't for the AT Note BIs post-implementation, BIs would have only been completed 7/43 = 16.3% of the time with patients positive for a substance, a decrease of 4.1% (20.4% - 16.3%) from pre- to post-implementation.

[a] The total amount of BIs accomplished with the addition of the AT Note is 12.2% higher among positively-screened patients than pre-implementation (with only the PN as an option for documenting BIs).

[b] Patients Positive for a Substance, Table Q4: (pre- *n*=49; post- *n*=43).

[c] *n*=49 patients were positive for at least one substance pre-implementation. 10 PNs were completed for a total of 10/49 = 20.41% of patients who were positive for a substance. Thus, a BI was completed 20.4% of the time with patients positive for a substance. Pre-implementation all the PN BIs were for alcohol so none were done for use of other substances.

[d] *n*=43 patients were positive for at least one substance post-implementation. 7 PN BIs and 7 AT Notes for BIs were completed, for a total of BIs completed 14/43 = 32.6% of the time with patients positive for a substance.

[e] This increase of 12.2% in the percentage of BIs completed for patients who were positive for a substance is even more impactful when considering that the amount of screenings significantly increased.