Technology Based Interventions and SBIRT

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Purpose of the ATTCs (SAMHSA FUNDED)

devlop and strengthen the workforce that provides addictions treatment and recovery support services to those in need.
2012 – 2017
ATTC Network
Coordinating Office

10 Regional Centers
4 ATTC National Focus Centers

- National American Indian & Alaska Native ATTC
- National SBIRT ATTC
- National Frontier & Rural ATTC
- National Hispanic & Latino ATTC
SERVE as the national subject expert and key resource to PROMOTE the awareness and implementation of telehealth technologies
GOAL: to expose practitioners to technology-based interventions related to screening, brief intervention, and referral to treatment.
Outline

• Prevalence of Use of Technology in Behavioral Health by Clients and Practitioners
• Definition of Technology-Based Interventions
• Workforce/Organizations, and Patients’ and Use of Technologies
• Research-Based Technologies for SBIRT
• Summary
• Resources
“The successful practitioner of the next century will need to master technologies in order to effectively manage the care of their patients. As the microscope allowed practitioners in an earlier era to see the microbial agents of infection... the computer will also change the patient. As patients arrive with better and more information, health care professionals may find themselves increasingly in the role of counselor and consultant”

People are using technology
Use of online and mobile technologies is increasingly ubiquitous across age, race/ethnicity, and geography.

Increasingly, consumers rely on Internet- and smartphone-based tools for health information and tracking.
In 2013, **1.91 trillion** text messages were sent in the United States... and more than **8 trillion** text messages were sent worldwide.

Research studies exist that support the efficacy of texting with other chronic conditions- obesity, diabetes, asthma, tobacco dependence, and sexual health.

DEFINITION

... use of technology devices to deliver some aspects of assessment, intervention, treatment, or recovery services directly to patients via interaction with a web-based program and/or mobile device

(Carroll & Rounsaville, 2010)
Technology-based interventions have the ability to:

• lower consumer threshold for initiation of treatment
• refer at-risk individuals to in-person treatment

(Clarke & Yarborough, 2013)
Technology-Assisted Care Interventions

- Serve as adjuncts to standard treatment
- Save clinician time
- Extend clinician expertise
- Integrate other EBPs to provide additional services to clients with co-morbid conditions
- Provide access to web-based smoking cessations programs or other health-related conditions

(Carroll & Rounsaville, 2010)
Encouraging evidence suggests positive treatment outcomes

(Bickel et al., 2008; Carroll & Rounsaville, 2010)
Technology has the potential to narrow the “access gap” to behavioral health interventions and reduce health disparities in disadvantaged and hard-to-reach populations (Gibbons et al., 2011)
Workforce & Technology Issues
Use of technology by clinicians

- is increasing
- presents unique clinical/business dilemmas

(NBCC Policy, 2013)
DIGITAL DIVIDE
Younger clinicians and those with smartphones found the app more usable than older clinicians and those without smartphones.

These variables predicted clinicians’ intentions to use the PTSD app in treatment with Vets.

(Kuhn et al., 2014)
"In every office there's always someone who didn't get the message."
RESEARCH
ORGANIZATIONS
Agencies with annual operating budgets of greater than $10 million reported significantly fewer barriers than those with budgets of $10 million or less

(Ramsey et al., 2016)
Agencies serving more than 3,000 clients per year reported significantly fewer implementation barriers than those serving less clients annually.

(Ramsey et al., 2016)
Provider resistance and lack of openness to use technology-based care approaches may be multifaceted...

- limited awareness of established benefits
- an organizational climate characterized by skepticism or unwillingness to try new approaches
- a demand for more research on the effectiveness and safety of these tools

(Ramsey et al., 2016)
a substantial portion of providers reported a lack of basic knowledge about how technologies can be used for behavioral health care

(Ramsey et al., 2016)
How will technologies change how the provider does business?

“I suppose I’ll be the one to mention the elephant in the room.”

(Muench, 2015)
Findings and Recommendations

STAFF
The fit of any innovation with the attitudes and values of the agency and providers adopting it is critical to the acceptability, efficiency, and effectiveness of the implementation process.

(Ramsey et al., 2016)
The most pressing staff concerns... Is this better and easier than what I am currently using/doing?

(Muench, 2015)
Integration requires an understanding of staff members’ degree of comfort with technology.

(Muench, 2015)
... and the time burden

(Campbell et al., 2012)
... and selection of appropriate training to increase staff confidence in navigating potentially foreign technologies
It’s imperative that professionals understand...

- the ability of technology to reach enormous numbers of people (it is undeniable)
- the use of technology for treatment and recovery support offers the possibility of better care, reduced stigma, and broader reach
Patients’ Acceptability of Technologies
People with common health care concerns find each other by website and blog search engines, and through mobile apps and Twitter tags

(Marri et al., 2014)
What do we know about SUD patients?
Survey of 8 urban drug treatment clinics in Baltimore (266 patients)

Clients’ had access to:
• Mobile Phone: 91%
• Text Messaging: 79%
• Internet/Email/Computer: 39-45%

(McClure, Acquanta, Harding, & Stitzer, 2012)
• 61.3% patients reported utilizing mobile applications
  (Dahne & Lejuez, 2015)

• Younger patients are more likely to utilize technology including smartphones and mobile apps
  (McClure et al., 2013)

• Younger age is a risk factor for substance use treatment dropout so mobile apps may be well suited for addressing treatment needs
  (Brorson et al., 2013)
Current evidence demonstrates that clients use and are interested in using technologies as part of their treatment or continuing support.

(Moore et al., 2011; Muench et al., 2013; Muench, 2015)
Customer Demand
Given the promise of these computerized interventions, we feel encouraged that technology has become mature enough to capture at least some aspect of psychotherapy.
Technology-based SBIs could help increase the frequency and quality of SBI use in medical settings by enhancing efficiency and standardizing implementation.

(Harris & Knight, 2015)
In terms of screening, touchscreen devices or stand alone computers with Internet connections can allow patients to enter information while waiting to be seen.

Computer-facilitated brief intervention delivery has the potential advantages of greater standardization, lower cost, and greater ease of implementation compared with face-to-face delivery.

(Harris & Knight, 2015)
Technology-based SBI solutions may help address the problem that only 15.7% of the general population are asked about their alcohol usage by health care professionals, but evidence for their effectiveness is less clear. 

(Harris & Knight, 2015)
Using a computer to collect stigmatizing information has the potential to improve data quality by minimizing subjective bias.

(Kim et al., 2008; Metzger et al., 2000; Tourangeau & Smith, 1996)
Substance use itself was not a barrier to completing online health related surveys through an ePHR in an urban HIV clinic sample

(Hilton et al., 2012)
The review by Harris & Knight ‘found a burgeoning, but still small, research field with only 23 published papers, representing 18 different trials evaluating the use of technology-based alcohol SBI among adults, pregnant women, and adolescents in medical settings.

Studies all found that technology-based alcohol SBIs are feasible in medical settings and acceptable among patients, but most had methodological limitations’.  

(Harris & Knight, 2015)
Technology-Based SBIRT

- eSBI online screeners
- Tablet-Based Screening
  - CASI
    - Spanish Version
    - Incarcerated Males
- Interactive Voice Response
- Web-Based SBIRT
  - Individuals with DUIs
  - Adolescents
- Text-Based SBIRT
- New Studies
Studies of eSBIs (online screeners) find a small but significant effect size for eSBIs and conclude that some users can benefit from these computer-based interventions, particularly people unlikely to seek out more traditional services.

(Bewick et al., 2008; Donoghue et al., 2014; Rooke et al., 2010; White et al., 2010)
the strongest evidence supporting their efficacy based on randomized controlled trials are

• The Drinker’s Checkup (www.drinkerscheckup.com) (Hester et al., 2005)

• Check Your Drinking (www.checkyourdrinking.net) (Cunningham et al., 2009)

(Carroll, 2015)
CASI

• a touch-screen tablet computer that delivers the Alcohol Use Disorder Identification Test (AUDIT)

• is an interactive questionnaire, operating with large icons and headphones

• in both English and Spanish

(Ewing et al., 2012)
Results showed that...

2.45% patients reported at-risk drinking to in-person screening

11.5% patients reported at-risk alcohol consumption to the computer (CASI)

(Loftipour et al., 2013)
CASl had a more than eight-fold higher probability in screening for at-risk alcohol use over in-person screening (Loftipour et al., 2013)
Emergency department patients followed up at 1 and 6 months after CASI administration reported substantially lower alcohol consumption (i.e., alcohol use problems of lower severity) (Vacca et al., 2011)
Spanish CASI

- A higher percentage of Spanish-speaking males than females were at-risk drinkers or likely dependent
- 15% of Spanish-speaking patients were at-risk drinkers, and 5% had an AUDIT score consistent with alcohol dependency
- Spanish-speaking males exhibited higher frequency of drinking days per week and higher number of drinks per day compared with females
- This study indicated that CASI was an effective tool for detecting at-risk and likely dependent drinking behavior in Spanish-speaking ED patients.

(Loftipour et al., 2013)
CASI with Incarcerated Males

- Substance use disorders are overrepresented in incarcerated male populations
- Cost-effective screening for alcohol and substance use problems among incarcerated populations is a necessary first step forward intervention
- Developing cost-effective screening strategies is essential for population-wide diffusion in correctional settings
- Screening must impose minimal fiscal and staff burden to be adopted by departments of corrections that are facing pressures to lower costs

(Wolff & Shi, 2015)
Study indicated that computer-administered ASSIST screening was feasible among incarcerated men, even those who had very limited prior exposure to computers, and is as reliable as ASSIST interviewer administered screening.

(Wolff & Shi, 2015)
Computer-administered screening minimizes staff time and administration cost, but these savings are meaningful only if clinical effectiveness is demonstrated.

Cost-effective screening seeks to efficiently screen for a treatable condition while maximizing the number of people accurately identified as needing treatment for a particular condition, such as substance abuse problems.

(McNeely et al., 2014; Wolford et al., 2008; Wolff et al., 2015)
Interactive voice response (IVR)

- a telephone-based technology
- uses touch-tone phones to enable a caller to interact with a computer using the telephone keypad as the interface

(Rose et al., 2009)
IVR

- IVR is an auditory interactive process that is not hampered by low literacy.
- Privacy and anonymity are greater with an IVR than on a computer screen or written questionnaire because others cannot see or hear the questions or responses, even if others are present at the time of the call.
- Touch tone phones are familiar, easy to use, and more widely available than computers.
- Hardware and software of a centrally-housed IVR system can support multiple clinic sites and thus there are no on-site installation costs beyond telephone access.
IVR Use in Primary Care

(Rose et al., 2009)
1/3 of the calls to IVR-BI were made outside of clinic hours

IVR-BI produced greater exposure to needed advice and information
TRAC: Texting to Reduce Alcohol Consumption

Why Text Messaging

- Competing priorities of practitioners
- Competing priorities of patients
- Behavioral support outside the healthcare environment
- Scalable
- Ubiquitous
- Low burden
- Conversational

(Suffoletto et al., 2015)
The I of SBIRT

An Interactive Text Message Intervention to Reduce Binge Drinking in Young Adults

- November 1, 2012 to November 5, 2013
- 4 EDs in Pittsburgh
- 765 participants 18-25 years
- AUDIT-C score >3 for women or >4 for men
- Excluded
  - Past Rx for drugs or alcohol
  - Current Rx for psychiatric disorder
- 12-week interactive text message intervention
Pre-weekend (Thursday) Dialogue Design

Drinking Plan Query

Plan to drink

Binge Plan Query

No plan to drink

Abstinence Support

Plan to binge

Goal Setting Query

No plan to binge

No Plan to Binge Support

Will set goal

Goal Support

Will not set goal

Resistance Support
Post-weekend (Sunday) Dialogue Design

Drinking Recall Query

- Drinking with binge: High Risk Feedback
- Drinking without binge: Low Risk Feedback
- No drinking reported: Abstinence Feedback
Commercialization

CaringTXT™

Donald P. Taylor, PhD, MBA – Chief Executive Officer
Web-Based Screening - DWI

• For most DWI offenders, screening is not initiated until after adjudication, which can take months or even years, thereby delaying the identification of those in need of treatment.

• Alcohol use screening could be provided pre-trial services.
  • Pre-trial services orientation sessions may provide an opportune moment to engage offenders in their own treatment and recovery process.
  • Pre-trial services provide supervision of offenders prior to adjudication, and this supervision process starts soon after release from custody for the offense.

(Mullen et al., 2015)
SBIRT program for DWI Offenders consists of:

- a self-guided, web-based, screening tool named Motivational Alcohol Treatments to Enhance Roadway Safety (MATTERS)
- assesses alcohol use characteristics and generates a personalized feedback report
- Feedback report can then be used by staff to deliver a manualized brief motivational intervention and provide a referral to treatment

(Ryan, et al, 2014)
Two Studies for Adolescents - BI

- Brief intervention for adolescents
- Reported drinking in the past 12 months (Cunningham et al. 2012)
- or that screened positive for risky drinking on the AUDIT-C (Walton et al. 2014)
- The latter two trials additionally compared a single-session, computer-delivered brief intervention with a therapist-delivered version that was similar in content
Brief Intervention
(Cunningham et al., 2009; 2012)

• Found that their computerized and therapist-delivered brief interventions, which addressed peer violence and alcohol use were associated with greater reductions in alcohol-related consequences, such as missing school because of alcohol use, compared with patients receiving the standard-care control.

• By the 12-month follow-up, patients receiving the therapist-delivered brief intervention maintained reductions in peer violence, but neither intervention continued to influence alcohol-related outcomes.
Among **836 urban adolescent ED patients** with risky drinking

- those receiving either brief intervention significantly increased their perception that it was important to stop drinking, compared with adolescents receiving standard care

- those receiving the therapist-delivered intervention increased their readiness to stop drinking.

- within the computer-delivered brief intervention, the components that most influenced outcomes were those that helped patients identify more benefits of behavior change, imagine sports activities that could be alternatives to alcohol use, and choose a goal to reduce or stop drinking
New Studies on Technology-Based SBIRT

• Computer self-administered screening for substance use in a university health center-feasibility pilot (McNeely et al., 2015)

• How digital interventions on screening and BI might be applied to psychiatric ED settings (Blow & Lawton-Barry, 2015)

• Interactive, empathic, video-enhanced, and computer-delivered SBI (e-SBI) plus 3 tailored mailings, and estimated intervention effects for pregnant women (Ondersma et al., 2015)
Technology-Based Interventions for SBIRT are

1. feasible
2. patients are interested in using them
3. initial studies are demonstrating positive outcomes
Technology-Based Interventions for SBIRT can:

1. help health care and other settings with implementation
2. encourage patients’ disclosure of alcohol/drug usage
3. in some cases provide more extensive brief intervention services
time for new technology
Clients and consumers are already embracing technology and creating a patient-centered health movement...
However, technology-based interventions are most effective when combined with human support, reinforcing how providers will remain the foundation of care for those seeking help.

(Muench, 2015)
THANK YOU
New Ethical Dilemmas in the Digital Age
Technology-Based Supervision: Extending the Reach of Clinical Supervisors
New Curriculum

Implementing Technology Assisted Care into Behavioral Health Settings: A framework for Change

National Frontier & Rural ATTC

www.nfarattc.org | nfar@attcnetwork.org
Telehealth Capacity Assessment Tool

Is your Agency ready for Telehealth?
Save the Date

Mind the Gap: Using Technology to Connect People to Care

NFAR’S 4th Annual Technology Summit

National Frontier & Rural ATTC

Philadelphia, PA | August 3-5, 2016