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# The remote brief intervention and referral to treatment model: Development, functionality, acceptability, and feasibility

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ABSTRACT

*Background:* Screening, brief intervention, and referral to treatment (SBIRT) is effective for reducing risky alcohol use across a variety of medical settings. However, most programs have been unsustainable because of cost and time demands. Telehealth may alleviate on-site clinician burden. This exploratory study examines the feasibility of a new Remote Brief Intervention and Referral to Treatment (R-BIRT) model.

*Methods:* Eligible emergency department (ED) patients were enrolled into one of five models. (1) Warm Handoff: clinician-facilitated phone call during ED visit. (2) Patient Direct: patient-initiated call during visit. (3) Electronic Referral: patient contacted by R-BIRT personnel post visit. (4) Patient Choice: choice of models 1–3. (5) Modified Patient Choice: choice of models 1–2, Electronic Referral offered if 1–2 were declined. Once connected, a health coach offered assessment, counseling, and referral to treatment. Follow up assessments were conducted at 1 and 3 months. Primary outcomes measured were acceptance, satisfaction, and completion rates.

*Results:* Of 125 eligible patients, 50 were enrolled, for an acceptance rate of 40%. Feedback and satisfaction ratings were generally positive. Completion rates were 58% overall, with patients enrolled into a model wherein the consultation occurred *during* the ED visit, as opposed to *after* the visit, much more likely to complete a consultation, 90% vs. 10%, $\chi^2$ (4, $N$ = 50) = 34.8, $p$ < 0.001.

*Conclusions:* The R-BIRT offers a feasible alternative to in-person alcohol SBIRT and should be studied further. The public health impact of having accessible, sustainable, evidence-based SBIRT for substance use across a range of medical settings could be considerable.



## 1. Introduction

Screening for risky alcohol use in medical settings, providing brief interventions for those who drink above low risk drinking limits, and referring those at risk for an alcohol use disorder to specialized treatment (SBIRT) has proven effective for reducing risky alcohol use and alcohol-related consequences (Babor et al., 2007; Bernstein et al., 1997; Kaner et al., 2009; Vasilaki et al., 2006). As a result, the United States Preventive Services Task Force (2012), Substance Abuse and Mental Health Services Administration (SAMHSA, 2006), Centers for Disease Control (CDC; Hungerford and Pollock, 2002, 2003), American College of Surgeons (2007), American College of Emergency Physicians (2005), Emergency Nurses Association (2009), National Institute on Alcohol Abuse and Alcoholism (NIAAA, 2007), and Joint Commission (2014) have strongly recommended alcohol SBIRT in primary care, emergency departments (EDs), trauma centers, and inpatient units. Despite decades of research and advocacy, most SBIRT programs are supported by external grants and are discontinued after funding ends. Most medical settings still do not routinely provide alcohol SBIRT (Babor et al., 2007; Cunningham et al., 2010), and most clinicians do not perform evidence-based SBIRT because of numerous barriers (Bernstein et al., 2005; Modesto-Lowe and Boornazian, 2000). A team oriented model that uses an on-site, dedicated interventionist addresses many of these barriers but is complex and costly to maintain (Babor et al., 2007; Bernstein et al., 2005, 2007; Boudreaux, 2010; Cunningham et al., 2010).

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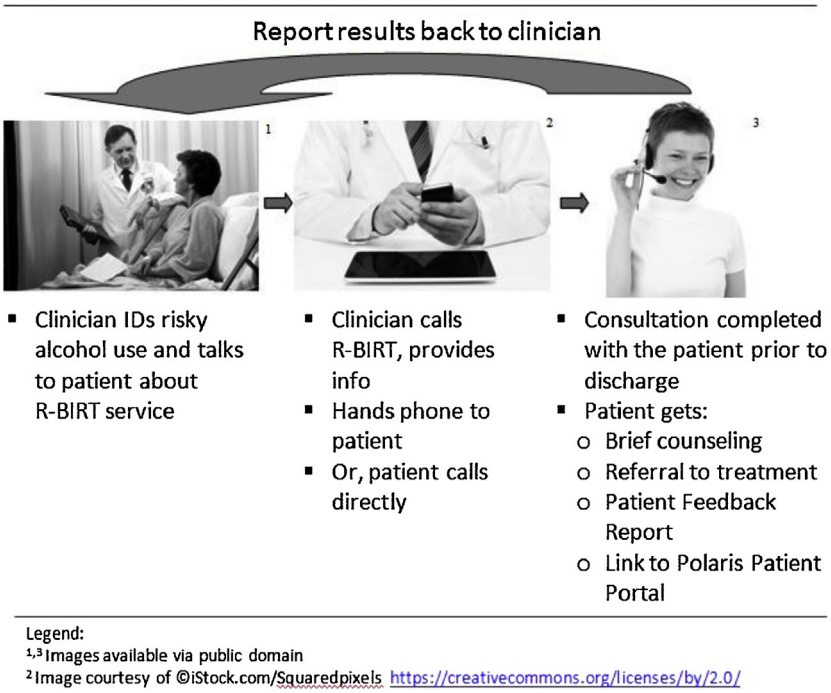


**Fig. 1.** R-BIRT overview.

This failure in sustainability of alcohol SBIRT has occurred despite data suggesting it results in net healthcare cost savings (Estee et al., 2010; Fleming et al., 2002; Gentilello et al., 2005; Zarkin et al., 2003). For example, one study has shown that for every dollar invested in SBIRT, $4.30 in medical costs were saved (Fleming et al., 2002). Unfortunately, the savings accrue to insurance companies, not to the organizations that bear the cost of providing SBIRT. Fortunately, because healthcare financing reform as a result of the Affordable Care Act now offers incentives for quality, healthcare organizations will directly reap the benefits of averted costs (SAMHSA/HRSA, 2012).

The telehealth model has potential to be more cost effective than the on-site interventionist. Telehealth is defined as "the use of electronic information and telecommunications technologies to support long-distance clinical health care, patient and professional health-related education, public health and health administration" (Health Resources and Services Administration Rural Health, n.d.). Telehealth has revolutionized how, when, and where healthcare is provided. It has been applied to a range of clinical issues, from real time neurological and psychiatric evaluations performed via video conferencing in EDs (Boyle et al., 2009) to national tobacco Quitlines (Bonniot and Schroeder, 2010). Telehealth has several advantages, including (1) provision of specialty care to populations with limited access; (2) improved care efficiency and cost-effectiveness; and (3) enhanced quality control through uniform training, competency standards, and quality assurance protocols.

Although commercial telehealth delivered alcohol SBIRT services do not currently exist, one study of brief telephone counseling provided after an ED visit has been published (Mello et al., 2008). The intervention did not decrease alcohol consumption but significantly decreased impaired driving in the six months after the ED visit when compared to usual care. This study supported the feasibility of telehealth for alcohol SBIRT delivered after the ED visit and encouraged development of improved models. This paper describes initial development, functionality, acceptability, and, overall feasibility of a new telehealth SBIRT delivery model that was field-tested by a small sample of ED patients.

## 2. Materials and methods

### 2.1. Overview

The University of Massachusetts Medical School (UMass) and Polaris Health Directions partnered to design and evaluate the Remote Brief Intervention and Referral to Treatment (R-BIRT) consultation service. It incorporates practices promoted by SAMHSA's National Registry for Evidence-based Programs and Practice (SAMHSA, n.d.a); however, rather than using on-site interventionists it uses remote interventionists (see Fig. 1). First, patients are identified by treating clinicians as drinking above low risk drinking limits (NIAAA, n.d.) or as exhibiting clinical symptoms suggestive of an Alcohol Use Disorder (American Psychiatric Association, 2013). Second, the clinician describes the R-BIRT consultation to the patient and connects willing patients to an R-BIRT interventionist, called a health coach to reduce stigma, by telephone or two-way video during the healthcare visit. If the clinician is too busy to provide a "warm handoff," the patient can make the call during the visit using a toll-free number. Third, the R-BIRT health coach performs an assessment, brief motivational counseling, and, if needed, referral to specialized treatment. Specially designed software enables a semi-structured computer assisted interview. In addition to standardized screeners, the software provides an interactive motivational toolkit and a referral generator that helps identify a best treatment provider based on patient characteristics, like ZIP code, insurance, and alcohol abuse severity (Boudreaux et al., 2009). Fourth, once the consultation is complete, the software generates summary reports, one for the referring clinician (Healthcare Provider Report) and one for the patient (Patient Feedback Report). The reports are transmitted by fax or secure email to the clinician and can be accessed by the patient through a secure web-portal hosted by Polaris. The R-BIRT improves upon the post-visit telehealth model (Mello et al., 2008) by: (1) targeting all patients with risky drinking or symptoms of an Alcohol Use Disorder rather than focusing only on those presenting with injury; (2) applying the intervention *during* the visit when motivation and opportunity are greatest; and (3) using a computer assisted interview to promote fidelity. While the R-BIRT is designed to accommodate any medical setting, there is a strong evidence base for alcohol SBIRT in the ED (Academic ED SBIRT Research Collaborative, 2007a,b; D'Onofrio et al., 2012; Woolard et al., 2013) so it was tested in an ED where risky alcohol use is common.

R-BIRT development and feasibility testing occurred in two phases: (1) drafting an intervention protocol and training materials, and creating the enabling software; and (2) usability testing and refinement through an open field test of ED patients. Each phase is described below.

### 2.2. Phase 1: R-BIRT design and creation

The team guiding the R-BIRT design has considerable experience with traditional (Academic ED SBIRT Research Collaborative, 2007a,b; Bernstein et al., 2009) and computerized SBIRT models (Boudreaux et al., 2009, 2011, 2012). The team