

# Mobile Health-Based Approaches for Smoking Cessation Resources

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Smoking accounts for about one in five deaths in the United States, and the economic cost of smoking was estimated at \$193 billion in 2004 (American Lung Association, 2011). Although the prevalence of American adult smokers has decreased by 1.6% from 2005–2011, the proportion of daily smokers smoking from one to nine cigarettes per day increased from 16% to 22% (Centers for Disease Control and Prevention [CDC], 2011). Tobacco use contributes to multiple health issues such as heart disease and cancers and is the single largest preventable cause of death and disease in the United States (CDC, 2011).

Guidelines recommend that every patient who smokes should be counseled by a healthcare provider to quit smoking (Fiore et al., 2008). The Joint Commission (2010) requires healthcare organizations to implement a smoke-free environment. Encouraging smokers to quit is one of the most effective interventions known to reduce smoking-related morbidity and mortality and to improve patients' health. Providing advice on smoking cessation to smokers by healthcare providers improves cessation rates (Doolan & Froelicher, 2006; Lancaster & Stead, 2005; Mahon, 2005; Sarna et al., 2000). For instance, in cases in which a nurse offered smoking cessation advice, the likelihood of quitting increased by about 50% compared to smokers without nursing interventions (Doolan & Froelicher, 2006). Despite the effectiveness, the interventions are still widely underused (Cokkinides, Ward, Jemal, & Thun, 2005). Annually, about 80% of smokers are seen in primary care settings (Doolan & Froelicher, 2006); however, a low number of patients reported that they received advice on smoking cessation from healthcare providers (Lancaster & Stead, 2005).

Nursing interventions have been more focused on assessment than smoking cessation interventions (Sarna et al., 2009). In a national survey on nurses' delivery of tobacco cessation interventions, 73% of

**Purpose/Objectives:** To describe how the National Cancer Institute's Cancer Information Service (CIS) smoking-related resources on a mobile health (mHealth) platform were integrated into the workflow of RNs in advanced practice nurse (APN) training and to examine awareness and use of CIS resources and nurses' perceptions of the usefulness of those CIS resources.

**Design:** Descriptive analyses.

**Setting:** Acute and primary care sites affiliated with the School of Nursing at Columbia University.

**Sample:** 156 RNs enrolled in APN training.

**Methods:** The integration was comprised of (a) inclusion of CIS information into mHealth decision support system (DSS) plan of care, (b) addition of info button in the mHealth DSS, (c) Web-based information portal for smoking cessation accessible via desktop and the mHealth DSS, and (d) information prescriptions for patient referral.

**Main Research Variables:** Use and perceived usefulness of the CIS resources.

**Findings:** 86% of nurses used the mHealth DSS with integrated CIS resources. Of the 145 care plan items chosen, 122 were referrals to CIS resources; info button was used 1,571 times. Use of CIS resources by smokers and healthcare providers in the metropolitan area of New York City increased during the study period compared to the prestudy period. More than 60% of nurses perceived CIS resources as useful or somewhat useful.

**Conclusions:** Integration of CIS resources into an mHealth DSS was seen as useful by most participants.

**Implications for Nursing:** Implementation of evidence into workflow using an mHealth DSS can assist nurses in managing smoking cessation in patients and may expand their roles in referring smokers to reliable sources of information.

**Knowledge Translation:** mHealth DSS and information prescriptions may support smoking cessation interventions in primary care settings. Smoking cessation interventions can be facilitated through informatics methods and mHealth platforms. Nurses' referrals of patients to smoking-related CIS resources may result in patients' use of the resources and subsequent smoking cessation.