



The Community Guide

www.thecommunityguide.org

WHAT WORKS

Health Communication and Health Information Technology

Evidence-Based Interventions for Your Community




Health communication is the study and use of communication strategies to inform and influence choices people make about their health. Health information technology includes digital tools and services used to enhance patients' self-care, assist in patient-provider communication, inform health behaviors and decisions, prevent health complications, and promote health equity. Messages are shared through channels such as mass media, print materials, social media, mobile phone applications (apps), e-mail, text messaging, telehealth services, and face-to-face conversations. Health communication and health information technology enables health professionals and the public to search for, understand, and use health information to significantly impact their health decisions and actions.¹

This fact sheet provides proven intervention strategies—including programs and services—to develop successful health communication and health information technology interventions. It can help decision makers in both public and private sectors make choices about what intervention strategies are best for their communities. This fact sheet summarizes information in The Community Guide, an essential evidence-based resource of what works in public health.

Use the information in this fact sheet to help select intervention strategies you can use in your community

- Combine health communication strategies with other interventions to increase awareness and encourage appropriate health behaviors, such as getting cancer screening, receiving recommended vaccinations, and reducing tobacco use.
- Develop interactive digital interventions to improve blood pressure control using digital devices that provide personalized, automated guidance on blood pressure self-management.
- Combine activity monitors with interventions that include behavioral instruction through group-based or web-based education to increase physical activity.
- Implement text messaging interventions to increase medication adherence among patients with chronic medical conditions.
- Develop telehealth interventions that use electronic or digital media to improve care among adults who have diet-affected chronic diseases.
- Implement diabetes self-management mobile phone apps within healthcare systems to improve blood glucose.

 Community
Preventive Services
Task Force

The Community Guide provides evidence-based findings and recommendations from the Community Preventive Services Task Force (CPSTF) about preventive services and programs to improve health. The CPSTF—an independent, nonfederal panel of public health and prevention experts—bases its findings on systematic reviews of the scientific literature. Learn more about The Community Guide and what works in health communication and health information technology by visiting www.thecommunityguide.org/topic/health-communication-and-health-information-technology.

The Centers for Disease Control and Prevention provides administrative, scientific, and technical support for the Community Preventive Services Task Force.

THE PUBLIC HEALTH CHALLENGE

New communication channels for health information focus on digital and mobile technologies

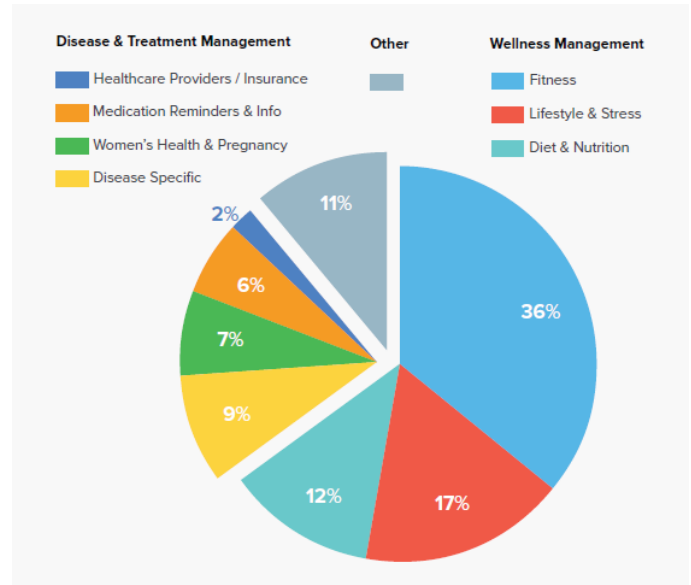


Mobile phone (cell phone and smartphone) ownership in the United States reached **95%** in 2016. Along with mobile phones, **half** of adults own **tablet computers**.²



In 2015, approximately **62%** of **smartphone owners** in the United States used their smartphones to find information about a **health condition**.³

Mobile Health (mHealth) apps by Category 2015



Source: Mevvy, June 2015; [IMS Health, AppScript, June 2015](#); IMS Institute for Healthcare Informatics, August 2015



About **72%** of **internet users** have looked online for **health information** within the past year. This includes searches related to serious conditions, general health information, and minor health problems.⁴



About **1 in 5** smartphone owners has **at least one health app** on their phone to track or manage health. Among health app users, **38% track exercise**, **31% monitor diet**, and **12% manage weight**.⁵



In 2015, the use of certified **electronic health record (EHR)** technology reached approximately **78%** of **physician offices** and **96%** of **hospitals**.^{6,7}

Health information technology supports communication among providers and patients but accessibility and usability challenges exist



Approximately **80%** of adults living with **two or more chronic conditions** are more likely than other adults to track weight, diet, exercise, or other health indicators, like blood pressure and blood sugar. Among adults living with chronic conditions and seeking online health information, **30%** have been asked to **pay for access** to some information online; only **2% paid the fee**.⁸



About **90%** of physicians access **drug information** through a **mobile app** and **40%** use a mobile app **one to two times a day**. The increasing number of new apps makes it difficult for physicians to identify those that are relevant.¹⁰



Older Americans with **low health literacy** have difficulty accessing health information online. Only **9.7%** of **adults age 65 and older** with low health literacy used the **internet** to obtain **health information**, compared with **31.9%** of those with average health literacy.⁹



In 2014, **over 400** medication adherence apps were available with a wide variety of functionality. Most adherence apps were capable of handling basic medication instructions, but **fewer than half** were capable of adequately handling complex medication treatments, where reminders may be needed the most. Only **two apps** could **identify a possible food and drug interaction**.¹¹



Internet connectivity plays a major role in healthcare by providing access to health information technologies, such as EHRs, patient portals, telehealth services, and electronic communication with health care providers. Patients in rural areas are less likely to benefit from the recent advances in health information technology with only **63% of rural households** having home **internet access**, compared to **73% of urban** and **76% of suburban** households.¹²

SUMMARIZING THE CPSTF FINDINGS

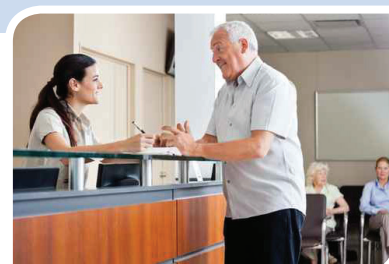
All findings for health communication and health information technology are available online at www.thecommunityguide.org/topic/health-communication-and-health-information-technology. Some of these are described below.

- **Health communication campaigns** combine multiple channels to influence health behaviors, using mass media as the central channel, and other strategies, such as distribution of free or reduced-price health products. These campaigns can increase the use of products—such as pedometers, nicotine replacement therapy, or bike helmets—that encourage healthy behaviors, help stop harmful behaviors, or protect from disease or injury. For example, a campaign to increase physical activity may combine newspaper and billboard advertisements about the benefits of walking with free pedometers and brochures on how to use them.
- **Comprehensive community-wide approaches** use multiple health communication, social marketing, and other strategies to improve a variety of behaviors, including increasing folic acid supplement use in women of childbearing age, and increasing vaccinations in targeted populations. These types of interventions are broad-based coordinated efforts targeted to the entire community.
- **Telehealth interventions** enable distance-based electronic or digital communication between healthcare providers and patients with diet-affected chronic diseases, such as cardiovascular disease and diabetes. Healthcare providers and patients can communicate by phones, videos, mobile apps, web-based programs, or email. These interventions help chronic disease patients improve dietary outcomes, such as sodium, fat, and fruit and vegetable intake. Most interactions between providers and patients are distance-based but they may be combined with in-person interactions.
- **Mobile phone applications** (apps) for diabetes self-management allow patients with type 2 diabetes to enter data or use medical equipment that transmits data directly. These apps provide patients with automated feedback or messages from healthcare providers and help improve blood glucose outcomes. Interventions can use these mobile phone apps within healthcare systems to help facilitate coordinated diabetes care between patients and healthcare providers.
- **Text messaging interventions** for medication adherence send messages to remind or encourage patients who have at least one chronic medical condition, to take their medication as prescribed. Messages must be accessible through the patient's mobile phone and must be sent regularly, although frequency may vary from medication dose times to weekly adherence reminders. These interventions may involve two-way communication with a healthcare provider.
- **Interactive digital interventions** for blood pressure control use digital devices to provide self-management information and support for patients with high blood pressure. The digital component must be interactive to allow patients to enter data and make choices. Information must be accessible through a computer, smartphone, telephone, or other hand-held device. Patients must receive personally relevant, tailored information and feedback that can be provided without direct input from a health professional. These interventions may include additional activities, such as self-measured blood pressure monitoring, counseling, or follow-up from a health professional.

PUTTING THE CPSTF FINDINGS TO WORK

As a public health decision maker, practitioner, community leader, or person who can influence the health of your community, you can use The Community Guide to create a blueprint for success.

- ✓ Identify your community's needs. Review the intervention strategies recommended by the CPSTF and determine which ones best match your needs. Adopt, adapt, or develop evidence-based health communication campaigns and health information technology to support your programs, services, and policies.
- ✓ See how other communities have applied the CPSTF recommendations for health communication at www.thecommunityguide.org/content/the-community-guide-in-action. Get ideas from their Community Guide in Action stories.
- ✓ Explore best practices of health information technology from the **Agency for Healthcare Research and Quality (AHRQ)** at <https://healthit.ahrq.gov>. Review guides and tools to learn how to improve quality and usability of health information, and find programs that might be adaptable to your needs.
- ✓ Consult **CDC's Gateway to Health Communication and Social Marketing Practice** at www.cdc.gov/healthcommunication to learn about tools that can help develop messages and materials for your health communication campaigns.
- ✓ Use **CDCynergy "Lite"** at www.cdc.gov/healthcommunication/CDCynergyLite to plan, manage, and evaluate public health communication programs.
- ✓ Craft effective messages and develop social media strategies and evaluation plans using **CDC's HealthCommWorks** suite of tools at <https://cdc.orau.gov/healthcommworks>.
- ✓ Use **NCI's Making Health Communications Programs Work** (also known as the Pink Book) at www.cancer.gov/publications/health-communication/pink-book.pdf to guide your communication program planning.



THE COMMUNITY GUIDE IN ACTION

Communities Use Media to Bolster Prevention Efforts



For many public health topics covered in The Community Guide, the CPSTF recommends supplementing interventions with health communication activities. Stories in *The Community Guide in Action* series show what some of these health communication efforts look like.

- In rural **South Carolina**, for instance, a combination of a small media campaign and one-on-one health education sessions created buzz about the local health clinic’s free cancer screening program. Combined with client- and provider-oriented interventions, these efforts helped increase cervical and breast cancer screening rates.
- In **Nebraska**, local health experts used a variety of interventions to pass a statewide smoking ban. The effort started in part with outreach to local news editors combined with local education efforts including mass media. It resulted in statewide changes to reduce tobacco use.
- In **New York**, two media campaigns were used to increase cancer screening in communities with high cancer rates. The Don’t Wonder – Know! campaign combined mass media and small media using three public service announcements through television, radio, social media, and print channels, such as newspapers, bus shelters, subways, and store fronts. As a result, screening rates increased during the pilot study of the program.

Read more at www.thecommunityguide.org/content/the-community-guide-in-action.

FOR MORE INFORMATION

The Community Guide: Health Communication and Health Information Technology
www.thecommunityguide.org/topic/health-communication-and-health-information-technology

Gateway to Health Communication and Social Marketing Practice, CDC
www.cdc.gov/healthcommunication

Health Literacy: Accurate, Accessible, and Actionable Health Information for All, CDC
www.cdc.gov/healthliteracy

Healthy People 2020 Interventions and Resources on Health Communication and Health Information Technology
www.healthypeople.gov/2020/topics-objectives/topic/health-communication-and-health-information-technology

CDC Mobile Activities
www.cdc.gov/mobile/mobileapp



REFERENCES

¹Office of Disease Prevention and Health Promotion. Healthy People. Health Communication and Health Information Technology. 2017. Available from URL: <https://www.healthypeople.gov/2020/topics-objectives/topic/health-communication-and-health-information-technology>.

²Pew Research Center [Internet]. Mobile Fact Sheet. 2017 [cited 8-7-17]. Available from URL: <http://www.pewinternet.org/fact-sheet/mobile>.

³Smith A. Pew Research Center. 2016. [2017-04-10]. US Smartphone Use in 2015. Available at www.pewinternet.org/files/2015/03/PI_Smartphones_0401151.pdf.

⁴Fox S, Duggan M. Health Online 2013. Pew Research Center; 2013. Available at www.pewinternet.org/Reports/2013/Health-online.aspx.

⁵Fox S, Duggan M. Mobile Health 2012. Pew Research Center; 2012. Available at www.pewinternet.org/2012/11/08/mobile-health-2012.

⁶Yang N, Hing E. Table of Electronic Health Record Adoption and Use among Office-based Physicians in the U.S., by State: 2015 National Electronic Health Records Survey. 2016. Source: Centers for Disease Control and Prevention. National Center for Health Statistics. https://www.cdc.gov/nchs/data/ahcd/nehrs/2015_nehrs_ehr_by_specialty.pdf.

⁷Henry, J., Pylpuchuk, Y., Searcy, T. & Patel, V. (May 2016). Adoption of Electronic Health Record Systems among U.S. Non-Federal Acute Care Hospitals: 2008-2015. ONC Data Brief 35. Office of the National Coordinator for Health Information Technology: Washington DC. Accessed August 2016: <https://dashboard.healthit.gov/evaluations/data-briefs/non-federal-acute-care-hospital-ehr-adoption-2008-2015.php>.

⁸Fox S, Duggan M. The Diagnosis Difference. Pew Research Center; 2013. Available at www.pewinternet.org/2013/11/26/the-diagnosis-difference.

⁹H. Levy, A. Janke, K. Langa. Health literacy and the digital divide among older Americans. J Gen Intern Med (2015) 30: 284-289. <https://doi.org/10.1007/s11606-014-3069-5>.

¹⁰Amaran Moodley, Julie E. Mangino, Debra A. Goff; Review of Infectious Diseases Applications for iPhone/iPad and Android: From Pocket to Patient, Clinical Infectious Diseases, Volume 57, Issue 8, 15 October 2013, Pages 1145–1154. <https://academic.oup.com/cid/article/57/8/1145/528783>.

¹¹Heldenbrand S, Martin BC, Gubbins PO, Hadden, K, et al. Assessment of medication adherence app features, functionality, and health literacy level and the creation of a searchable Web-based adherence app resource for health care professionals and patients. Volume 56, Issue 3 (2016)293-302 <https://doi.org/10.1016/j.japh.2015.12.014> <https://mhealth.jmir.org/2017/4/e45/>.

¹²Greenberg, A. J., Haney, D., Blake, K. D., Moser, R. P. and Hesse, B. W. (2016). Differences in Access to and Use of Electronic Personal Health Information Between Rural and Urban Residents in the United States. The Journal of Rural Health. doi:10.1111/jrh.12228. <https://www.ncbi.nlm.nih.gov/pubmed/28075508>.



CPSTF FINDINGS ON HEALTH COMMUNICATION AND HEALTH INFORMATION TECHNOLOGY INTERVENTIONS

The Community Preventive Services Task Force (CPSTF) has released the following findings on what works in public health to promote healthy behaviors through health communication and health information technology-based interventions. All findings are compiled in The Community Guide and some are listed in the table below. Use the findings to identify strategies and interventions you could use for your community.

Legend for CPSTF Findings: Recommended Insufficient Evidence Recommended Against (See reverse for detailed descriptions.)




Intervention	CPSTF Finding
Mass Media	
Health Communication Campaigns that Include Mass Media and Health-Related Product Distribution	
Motor Vehicle Injury - Alcohol-Impaired Driving: Publicized Sobriety Checkpoint Programs	
Tobacco Use and Secondhand Smoke Exposure: Mass-Reach Health Communication	
Skin Cancer: Mass Media	
Physical Activity: Stand Alone Mass Media Campaigns	
Small Media	
Cancer Screening: Small Media Targeting Clients Client-Oriented Screening Interventions	
Interpersonal Communication	
Cancer Screening - One-on-One Education for Clients	
Motor Vehicle Injury - Use of Child Safety Seats: Distribution and Education Programs	
Violence Prevention - School-Based Programs	
Physical Activity - Campaigns and Informational Approaches: Classroom-Based Health Education Focused on Providing Information	
Obesity - Multicomponent Provider Interventions	

Intervention	CPSTF Finding
Comprehensive, Community-Wide Approach	
Skin Cancer: Multicomponent Community-Wide Interventions	
Motor Vehicle Injury - Alcohol-Impaired Driving: Multicomponent Interventions with Community Mobilization	
Physical Activity - Community-Wide Campaigns	
Vaccination Programs: Community-Based Interventions Implemented in Combination	
Vaccination Programs: Community-Wide Education When Used Alone	
Health Information Technology	
Cardiovascular Disease: Interactive Digital Interventions for Blood Pressure Self-Management	
Diabetes Management: Mobile Phone Applications Used Within Healthcare Systems for Type 2 Diabetes Self-Management	
Comprehensive Telehealth Interventions to Improve Diet Among Patients with Chronic Diseases	
Text Messaging Interventions for Medication Adherence Among Patients with Chronic Diseases	
Physical Activity: Interventions Including Activity Monitors for Adults with Overweight or Obesity	
Diabetes Management: Mobile Phone Applications Used Within Healthcare Systems for Type 1 Diabetes Self-Management	

For more findings promoting health communication and health information technology, visit The Community Guide website at www.thecommunityguide.org/topic/health-communication-and-health-information-technology. Other related resources include one pagers and Community Guide in Action stories.

UNDERSTANDING THE FINDINGS

The CPSTF bases its findings and recommendations on systematic reviews of the scientific literature. With oversight from the CPSTF, scientists and subject matter experts from the Centers for Disease Control and Prevention conduct these reviews in collaboration with a wide range of government, academic, policy, and practice-based partners. Based on the strength of the evidence, the CPSTF assigns each intervention to one of the categories below.

Category	Description	Icon
Recommended	There is strong or sufficient evidence that the intervention strategy is effective . This finding is based on the number of studies, how well the studies were designed and carried out, and the consistency and strength of the results.	
Insufficient Evidence	There is not enough evidence to determine whether the intervention strategy is effective. This does not mean the intervention does not work. There is not enough research available or the results are too inconsistent to make a firm conclusion about the intervention strategy's effectiveness. The CPSTF encourages those who use interventions with insufficient evidence to evaluate their efforts.	
Recommended Against	There is strong or sufficient evidence that the intervention strategy is harmful or not effective .	

EVALUATING THE EVIDENCE

- CPSTF findings are based on systematic reviews of all relevant, high-quality evidence. Systematic reviews are conducted in accordance with the highest international standards, using a transparent and replicable methodology that accounts for the complexities of real-world public health interventions.
- Systematic review science teams, coordinated by CDC scientists, evaluate the strengths and limitations of all relevant high-quality evidence to assess whether programs, services, and other interventions are effective in improving health at the population level.
- Review teams determine whether findings are applicable to different U.S. population groups and settings; highlights possible harms, potential benefits, and implementation considerations; and identifies evidence gaps and areas for future research.
- A separate team of economists conducts systematic economic analyses for recommended intervention approaches. They look at cost, cost effectiveness, and cost-benefit analyses to provide public health professionals with information they need to make decisions and allocate funding.

Visit www.thecommunityguide.org/about/our-methodology for more information about the methods used to conduct the systematic reviews and the criteria the CPSTF uses to make findings and recommendations.