

Partnering to Reduce Risks and Improve Cardiovascular Outcomes

American Heart Association Initiatives in Action for Consumers and Patients

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The mission of the American Heart Association (AHA) is summarized by the statement, "Building healthier lives free of cardiovascular disease and stroke." Reaching this goal will take significant advances in both science and clinical care but also will require a new level of engagement and action on the part of the public and patients in their health and health care. Recently, the AHA published "Translating Research Into Practice for Healthcare Providers: The American Heart Association's Strategy for Building Healthier Lives Free of Cardiovascular Disease and Stroke,"¹ which summarizes the AHA's efforts to actively foster cardiovascular research and evidence-based clinical care among healthcare providers. Although assisting the work of scientists and clinicians is critical to achieving the AHA's mission, it remains only part of the equation. Consumers and patients must be educated and engaged both to prevent cardiovascular events and to improve their outcomes after events occur. Recognizing this, the AHA has embarked on a robust set of initiatives designed to help individuals understand and modify their cardiovascular risk factors, to seek care when appropriate, to partner with their physicians and healthcare professionals to better treat their disease, and to help make changes in industry and workplaces. This report, the second of a 2-part series, summarizes the AHA's consumer- and patient-related activities to motivate healthy behaviors, improve risk factor control, and manage cardiovascular disease (CVD) and stroke.

It is clear that achieving lasting risk factor modification is a challenging endeavor. From a behavioral perspective, the substantive change occurs only after individuals move through several states: from a precontemplative to a contemplative state, from a preparatory to an action state, and finally to a maintenance state. Thus, the AHA has designed a series of initiatives and programs to address each of these states (Figure 1). The public must be made aware of the scope and impact of CVD and stroke, which remain the No. 1 killer and No. 3 killer of both women and men of all race and ethnicities in the United States. Individuals must understand both the general risks of CVD and stroke and their individual risk (and modifiable risk factors) so they can be motivated to take action. Once motivated and ready for change, individuals must be given the tools to take action for themselves or effectively engage in an active partnership with their physicians to promote health maintenance and disease management. At a societal level, regulatory or legislative changes may be needed to support healthy lifestyles and consumer or patient engagement.

One can also visualize the AHA's initiatives as affecting successive strata of a pyramid (Figure 2). At the base are the AHA's cause initiatives. These are directed at various segments of the general public and are designed to raise health awareness regarding CVD and stroke. Consumers and patients also need to be provided with tools to help identify and reduce risks and educational materials to promote healthy

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Transtheoretical Phases	Pre-contemplative State	Contemplative State	Preparative to Action	Health Maintenance
Organization Strategy	Awareness campaigns	Risk Assessment / Education	Health/Disease Management	Policy Advocacy
Example of AHA Initiative	Go Red For Women Campaign	Patient Profilers	AHA Heart360	Coverage, Payment Reform

Figure 1. AHA programmatic approach to addressing stages in consumer and patient behavior in accepting and becoming engaged in personal health management. Organizational strategy follows stages in consumer and patient acceptance from precontemplative to maintenance.

habits. The AHA’s newest efforts go beyond these general tools to assist individuals, one at a time, to design and carry out a personalized program for modifying risk factors and disease management. Across this entire spectrum, the AHA has sought to use emerging technologies such as the Internet, social media, and personal health records (PHRs) to make information and learning tools more available, portable, and engaging and to facilitate continuous updating. The ultimate goal of these programs is to place the consumer and patients at the center of the AHA’s healthcare efforts. By giving individuals a newfound ability to understand their risk factors, view and control their health records, and better monitor, manage, and take personal steps to improve their health, the AHA is positioned at the forefront of a new revolution in healthcare.²

AHA Cause-Initiative Programs

The AHA has developed and implemented a series of cause initiatives to extend the brands of the AHA and the American Stroke Association. Organizational entry points have been created to match the faces of the constituents they represent. Women can see themselves as part of the AHA through its Go Red for Women program; blacks have a critical health network via the Power to End Stroke Campaign; children and parents have resources created just for them in the Alliance for a Healthier Generation; and adults can become more physically active by engaging in individualized programs and through the support of their employers in programs such as Start! (Table 1). All of these initiatives are intended to raise public awareness of CVD, stroke, and associated risk factors, to empower individuals with the information and support that they may need to change their health.³ Additionally, each initiative provides a channel for consumers and patients to unite under a common issue, which in turn creates additional momentum for the group toward heart health.

Go Red for Women

Approximately 460 000 women die of CVD each year, which is more than the next 4 causes of death combined.⁴ Despite this, many Americans are still unaware that heart disease and stroke are major health issues for American women. To address this gap, the association launched the Go Red for Women (GRFW) program in 2004 (www.GoRedforWomen.org). GRFW is designed to raise heart disease awareness in women and to provide women with knowledge and tools to take positive action to reduce their risks of heart disease and stroke.⁵ GRFW encourages women to address their cardiac

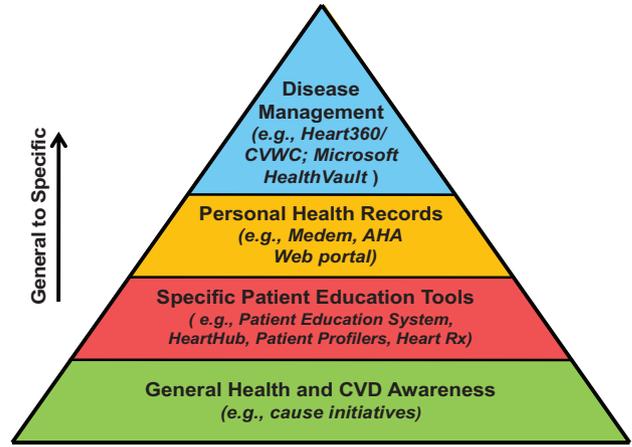


Figure 2. AHA strategies to further awareness and education from general health awareness to specific patient education tools, personal health records, and disease management tools. CVWC indicates Cardiovascular Wellness Center.

risks factors by getting them to “know their numbers” and to relate their blood pressure, cholesterol, and triglyceride levels to the guideline-recommended values.⁵

More than 1.3 million women have taken the GRFW heart checkup (an online heart risk assessment), and of those joining GRFW, 93% have visited their healthcare provider, 90% had their blood pressure checked, and 75% had their cholesterol levels checked (Fall 2007 GRFW database survey). Of those women who have joined GRFW in the past 12 months, 96% have taken some action, 54% reporting that they have begun exercising more frequently, 53% that they have had their cholesterol checked, and 65% that they eat more healthy foods. Choose to Move, a component of GRFW, is a 12-week online physical activity program. The 2007 Choose to Move Exercise Survey found that exercise goals are a high priority for women but that most do not commit time or use the best tools to succeed. Those who succeeded used tools that were easily accessible and free. The survey also found that women who work on their goal for more than 6 months have a better record of achievement, whereas about half of those who fail have stopped trying in the first 2 months. The 12-week, free online format of Choose to Move was designed to combat these barriers. By assisting women to exercise more, Choose to Move has helped more than 100 000 women tackle a critical CVD risk factor. Thus, GRFW has elevated women’s knowledge levels about their cardiovascular risks and has motivated them to take action to address these risks.

Alliance for a Healthier Generation

Approximately 1 in 3 children and teens (ages 2 to 19 years), in the United States are obese or overweight.⁶ When children are overweight, they have a markedly increased risk of developing hypertension, hypercholesterolemia, or type 2 diabetes mellitus and increased odds of becoming overweight adults with an increased risk of CVD.⁷ The AHA has a long history of providing evidence-based nutritional, physical activity, and obesity prevention and treatment information to professionals and to the public.^{8,9} As an extension of this effort, in 2005, the AHA joined with the William J. Clinton Foundation to form the

Table 1. Cause Campaigns

Campaign Name	Initiative Goal	Significant Accomplishment	URL
Go Red For Women	A movement intended to encourage women to become heart healthy and to “know their numbers” and take action to reduce their risk for CVD	<ul style="list-style-type: none"> • Over 1.3 million women have taken the GRFW heart checkup • Approximately 70% of women who have joined the “Go Red” movement had important health screening 	http://www.GoRedforWomen.org
Alliance for a Healthier Generation	A joint initiative between the AHA, the William J. Clinton Foundation, and Governor Arnold Schwarzenegger; the goal of the Alliance is to stop the increasing prevalence of childhood obesity by 2010 and reduce childhood obesity by 2015	<ul style="list-style-type: none"> • Brokered an agreement with beverage and snack food industries to improve school food and beverage options • Created with Nickelodeon the “<i>Let’s Just Play Go Healthy Challenge</i>”; Approximately 900 000 people have joined the “<i>Go Healthy Challenge</i>” • Implemented a Healthy Schools program • Is developing a program to reimburse individuals for obesity counseling and management 	http://www.healthiergeneration.org
Start!	A movement for both men and women to reverse the trend of adult physical inactivity in the United States by creating a culture that supports physical activity. The initiative provides valuable tools and resources for work sites/employers and individuals. START! recognizes companies for developing programs that prioritize the health and well-being of their employees	<ul style="list-style-type: none"> • During its first year, >520 fit-friendly companies participated in the initiative • More than 90 000 consumers registered on the MyStart! Online Web site 	http://www.americanheart.org/start
Power to End Stroke	A campaign to increase awareness of stroke and its major modifiable risk factors (high blood pressure and diabetes) among blacks. The campaign hopes to motivate both individual and community actions via Power Ambassadors	<ul style="list-style-type: none"> • 148 173 Individuals enrolled in movement • 4679 National, local Power Ambassadors 	http://www.strokeassociation.org

Alliance for a Healthier Generation (the Alliance) with a mission to eliminate childhood obesity and inspire all young people in the United States to develop lifelong, healthy habits (see www.HealthierGeneration.org). In May 2007, Governor Arnold Schwarzenegger of California joined former President Clinton and the AHA as co-lead of the Alliance.¹⁰ The goal of the Alliance is to stop the increasing prevalence of childhood obesity by 2010 and reduce its prevalence by 2015. Because there is no single identifiable cause for this epidemic, the Alliance has developed a multifaceted approach to address childhood obesity by targeting the places that can make a difference to a child’s health (homes, schools, doctors’ offices, and communities) and by targeting the children and adolescents themselves. This strategy includes fostering healthier environments and empowering children and adolescents with the information and tools they need to develop healthy habits.

During its 3-year history, the Alliance has experienced much success in its efforts. The Alliance’s Healthy Schools

Program is providing schools with comprehensive tools and solutions to help schools improve in the areas of nutrition, physical activity, and staff wellness. The program, which began in 2006 with generous support from the Robert Wood Johnson Foundation, provides on-site support to ≈2000 schools in 34 states during the 2008 to 2009 school year with a goal to support more than 8000 schools by 2010. Additionally, the Healthy Schools Program is reaching countless additional schools via its online program, with schools registered for the online program in all 50 states.

Most notably, the Alliance was able to broker a landmark agreement with the beverage and snack food industries to offer healthier food and drink options in schools. During the first 2 years of implementation, the Alliance for a Healthier Generation School Beverage Guidelines resulted in a 65% decrease in full-calorie carbonated soft drink sales, and nearly 79% of school beverage contracts are in compliance with the Alliance Guidelines; these changes resulted in 58% fewer beverage calories being shipped to schools in the 2007 to 2008 school year than in 2004. These first-ever voluntary

guidelines for snacks and beverages sold in schools are providing healthier food choices for nearly 35 million American students.

The Alliance has also developed the Go Healthy Challenge, which is motivating and empowering children to take charge of their health and lead their own movement to make their schools, families, and communities healthier. As part of the Go Healthy Challenge, in 2006, the Alliance and Nickelodeon created 2 seasons of the Let's Just Play Go Healthy Challenge, an integrated TV, online, and grassroots program that empowers children to take charge of their own health. To date, the Go Healthy Challenge has engaged nearly 1 million children who pledged to go healthy, and the Alliance continues to engage kids through grassroots and online initiatives. Lastly, the Alliance is working with the healthcare industry to improve the diagnosis, prevention, and treatment of childhood obesity through collaborations with providers, industry, and other stakeholder groups.

Start!

With the increasing levels of physical inactivity and sedentary behavior and the alarming rate of adult obesity, in 2007, the AHA decided to launch its newest cause, Start! (www.americanheart.org/start), which encourages Americans and their employers to create a culture of physical activity and health.¹¹ The overall goal of Start! is to reverse the trend of adult physical inactivity in the United States by encouraging Americans to make positive lifestyle changes. With the majority of time spent in the workplace, encouraging companies to develop programs that facilitate heart-healthy behaviors makes perfect sense. Programs include company walking programs, Start! online tools and resources, AHA's Start! Heart Walk, and the Start! Fit Friendly Recognition Program, a program that is intended to recognize employers who develop successful programs.¹² Each of these programs provides a company with tools to keep their employees active all year. Heart360, as described below, is an important tool that will be offered to companies to assist with disease management. Outside of the workplace, individuals can track their daily physical activity and caloric intake through the MyStart! online tracking tool, which also provides additional resources such as nutritional information.¹³ In the first year of Start!, more than 520 fit-friendly companies participated in the campaign, and >90 000 individuals registered on the MyStart! Online World Wide Web site.¹⁴

Power to End Stroke

Stroke remains the nation's No. 3 killer and a leading cause of long-term disability in the United States. Blacks have a higher prevalence of hypertension and other stroke risk factors and as a result have twice the risk and mortality of stroke as whites. Given these alarming statistics, the American Stroke Association developed the Power to End Stroke campaign, intended to heighten awareness among blacks of the serious impact stroke has in their community and to focus attention on the beneficial effects of control of high blood pressure and diabetes (see www.strokeassociation.org). The

Power to End Stroke campaign is designed to engage blacks by encouraging them to make a personal commitment to join the movement. More than 300 000 individuals have joined Power to End Stroke by taking the stroke pledge. More than 4600 Power Ambassadors, individuals with influence, have made a commitment to understand stroke risk factors and to share this knowledge with others in the community. This campaign will empower individuals to take action by doing 1 or more of the following: (1) talk to a doctor, (2) exercise/walk, (3) undergo a stroke risk-assessment test, and (4) participate in a health screening. By 2011, the campaign hopes to mobilize 500 000 blacks to understand their risks for stroke and to take meaningful steps to reduce this risk. The Power to End Stroke campaign has particular significance to improving national health rankings, because all the actionable determinants of health (personal behavior, social factors, healthcare, and the environment) disproportionately affect underserved populations and people with lower socioeconomic status.¹⁵

AHA's Primary and Secondary Patient Education, Risk Assessment, and Disease Management Programs

Disseminating healthcare and disease management information in a user-friendly, easily understood format is a challenging but necessary step to empower patients, caregivers, and families, both once risk has developed but an acute event has not occurred and, from a secondary prevention perspective, to attempt to negate additional and perhaps fatal events. In addition to providing public health information designed to prevent CVD and stroke, the AHA has a long history of developing high-quality educational materials for patients with established CVD or stroke. The AHA recently recognized the need to develop expertise in patient health literacy and cultural competency and to create new distribution channels for its educational products. To have the greatest impact, the AHA's health messages should be coupled with an assessment of individual patient health and risk factors. Thus, the AHA has developed innovative tools for personalized cardiovascular risk assessment and the ability to monitor and adjust modifiable risk. These have been developed in close collaboration with healthcare professionals, because they have a fundamental interest in educating their patients and can serve as a key distributor of this information.

The AHA uses a variety of different mediums to move its information and educational messages across the continuum of care, from primary prevention to acute treatment interventions to long-term care. The AHA has committed significant resources to the development of patient education materials (in the form of comprehensive print brochures/materials). Overall, the AHA distributes more than 7.3 million printed education materials to patients and caregivers annually, with a specific emphasis on serving special needs populations. The current print product line includes 14 Spanish brochures and 2 targeted to the black community (in addition to those already developed specifically for Power to End Stroke), with a distribution to >312 000 patients in fiscal year 2007 to

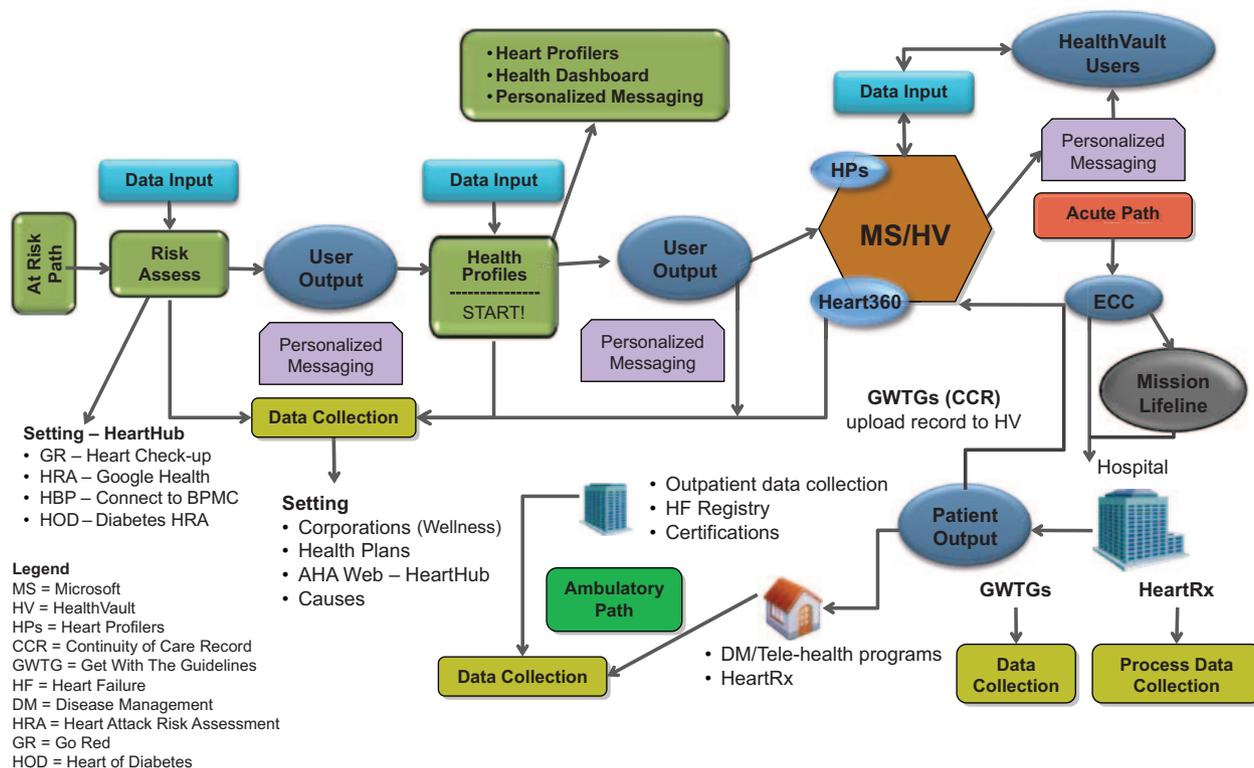


Figure 3. The Get With the Guidelines (GWTG) Continuity of Care Record (CCR) is a flexible document that contains core health information for both patient and physician. The HeartRx patient education system, formerly the Patient Education System (PES), is a hospital discharge and compliance program. HeartHub is a patient portal that allows individuals to access prevention and disease management information. The Heart360 Cardiovascular Wellness Center is a premier portal intended to facilitate management of hypertension, diabetes, cholesterol, physical activity, and nutrition; it will also serve to improve medication compliance and home monitoring. Heart Profilers is an interactive tool designed to help patients with CVD understand treatment options and outcomes. ECC indicates emergency cardiovascular care; BPMC, blood pressure management center.

2008. The AHA evaluates the materials to better meet patient needs on an ongoing basis and also conducts routine audits to identify content gaps based on market need. The products are analyzed according to 4 key factors: health literacy, physical characteristics, attention to special needs populations, and ease of topics. Most recently, the AHA has begun a complete redesign of the print product line to better address health literacy needs. Additionally, the AHA has created a series of World Wide Web-based products that are intended to address the diverse needs of its audiences, some of which are described in more detail in the sections below. In June 2008, approximately 205 pages of content were launched in Spanish, Vietnamese, and Chinese on the AHA's cholesterol, high blood pressure, heart attack, and caregiver Web content areas, and further translation is in process.

Figure 3 illustrates the AHA's vision for creating a seamless strategy for patient risk assessment, health education, and disease management programs available in multiple settings, including home, office, and hospital. In essence, this Figure serves to delineate the AHA's multichannel approach to patient risk assessment and education. This encompasses the spectrum of CVD awareness from risk assessment as (shown on the left side of the Figure) to acute care treatment and to secondary prevention and treatment after hospital discharge (shown on the right). The AHA's current comprehensive approach to risk assessment and education, while having a foundation in more traditional print and World Wide

Web-based patient content development and distribution, will increasingly rely on the use of newer forms of information technology and Web-based tools. Between 40% and 80% of Americans look for health information on the Internet.^{16,17} This means that approximately 113 000 000 adults access the Internet for healthcare-related information. It is further estimated, according to 1 survey, that approximately 8 million American adults searched for information on at least 1 health topic on a typical day in August 2006.¹⁸ The AHA, therefore, has recently committed significant resources to develop internal information technology competencies and has partnered with multiple leaders in information technology and communications to both develop and distribute evidence-based cardiovascular information. Finally, once educational offerings have been developed, the AHA is fully committed to rigorously evaluating their impact on patient understanding of disease and patient health outcomes, thus fulfilling the organization's motto, "To Learn and Live."

Risk Assessment Tools

The AHA has created tools that help individuals better understand their CVD risk and what steps they can take to reduce this risk. Moreover, strong recommendations are made to healthcare providers to encourage each patient to have an assessment of at least some of his or her risks.¹⁹ The AHA's

heart attack assessment and high blood pressure tools deliver personalized health risk assessments (see www.americanheart.org/riskassessment and www.americanheart.org/hbprisk). These tools also provide practical recommendations to help patients reduce their cardiovascular risk in partnership with their physicians and demonstrate how risk factor modification impacts their risk. The AHA risk assessment tools are based on well-recognized standards, including the Framingham Heart Study,²⁰ the Third Report of the Expert Panel on Detection, Evaluation, and Treatment of High Blood Cholesterol in Adults (Adult Treatment Panel III),²¹ and the Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure (JNC 7).²²

The Heart Attack Risk Assessment identifies the risk of having a heart attack or dying of coronary heart disease in 10 years based on a patient's current risk factors. Interactive programs allow users to modify their risk factors to see how addressing these risk factors would reduce their 10-year risk. Side-by-side information displays before and after projected results when 1 or more of the risk factors are modified (reducing systolic blood pressure, stopping smoking, reducing total cholesterol, and increasing high-density lipoprotein cholesterol). This tool also provides for users to register so that they can return and complete additional assessments over time and track their progress, storing up to 8 assessment results. In May 2008, the Heart Attack Risk Assessment was made compatible with the recently launched Google Health (www.google.com/health). As a result, patients can now store key health data points in a Google Health Account and then share their information with their healthcare professionals and others as they see fit.

The High Blood Pressure Risk Calculator provides a rating scale that is based on current blood pressure and compares a user's risk of (1) dying of heart attack within 10 years, (2) dying of a stroke within 10 years, (3) developing heart failure during their lifetime, and (4) developing serious kidney disease within 16 years to that of someone of the same age and gender with a normal blood pressure. Similar to the other assessment, it also allows the user to input lifestyle changes to see how implementing these changes (losing weight, increasing physical activity, and following the AHA's guideline recommendations for eating a healthy diet and limiting salt and alcohol intake) can reduce these risks. The goal of the comparative analyses in both tools is to empower patients to understand how making positive lifestyle changes, even incrementally, can benefit them and reduce their risk. The AHA is currently developing a diabetes risk tool and dashboard, which is scheduled to launch in November 2008, and is evaluating other risk tools, including one for overall global cardiovascular risk assessment.

These online and interactive tools complement traditional print patient education materials to offer consumers and patients current and credible cardiovascular information. To further address the diversity of audiences that could benefit from these risk assessment tools, in 2007, the AHA launched the High Blood Pressure Risk Calculator in Spanish. In January 2008, the AHA Heart Attack Risk Assessment Tool was relaunched with new versions in

both English and Spanish. Both tools have been designed with sophisticated data dashboards that collect user data and demographics in an aggregate and HIPAA (Health Insurance Portability and Accountability Act of 1996)-compliant format. This unique, visually appealing tool allows the AHA to more easily analyze the data touch points, by gender and age, of each risk assessment and quickly determine the number of users and their risk levels. It allows the organization to evaluate the effectiveness of the tool and understand patients' likelihood of changing their behavior to reduce their risk.

Heart Profilers

As noted above, better understanding of risk factors and risk status with online tools can empower individuals to manage their existing condition(s).^{23,24} Recognizing the potential benefits of online patient education, the AHA, in collaboration with NexCura (now part of Thomson Reuters), developed the Heart Profilers,²⁵ a suite of online interactive tools designed to help both patients and healthcare professionals understand treatment options and outcomes for specific CVD states (see www.americanheart.org/heartprofilers). Current modules include atrial fibrillation, cholesterol, coronary artery disease, heart failure, and high blood pressure, with plans to expand to additional topics in the near future. After patients register and complete a health questionnaire, Heart Profilers provides them with a personalized report detailing current treatment options, possible side effects and complications of treatments, and success rates. This tool also generates questions and potential treatment options for patients to discuss with their healthcare provider. There are more than 315 000 patients registered for Heart Profilers. Early patient survey results are promising: System users (n=1039) were 1.6 times more likely than a nonuser control group (n=1594) to be aware of treatment options for heart failure and atrial fibrillation and to ask their doctors about these options.²⁶

HeartHub

The AHA recently launched HeartHub,²⁷ which provides a patient portal that delivers a variety of CVD and stroke information to the public, from prevention to disease management (see www.hearthub.org). This portal is designed to be a 1-stop shop for those who reach the AHA via independent Web search, at the direction of their healthcare provider, or by referral from one of the AHA's many entry points. With HeartHub, healthcare professionals quickly and easily can direct patients to a credible, comprehensive source of heart and stroke information, with content in arrhythmias, cardiac rehabilitation, lipid management, diabetes mellitus, heart attack, heart failure, high blood pressure, peripheral artery disease, and stroke. There is also content for caregivers. Additionally, the site offers multiple language options (Spanish, Vietnamese, and simplified Chinese), and the content was developed to accommodate different reading levels and learn-

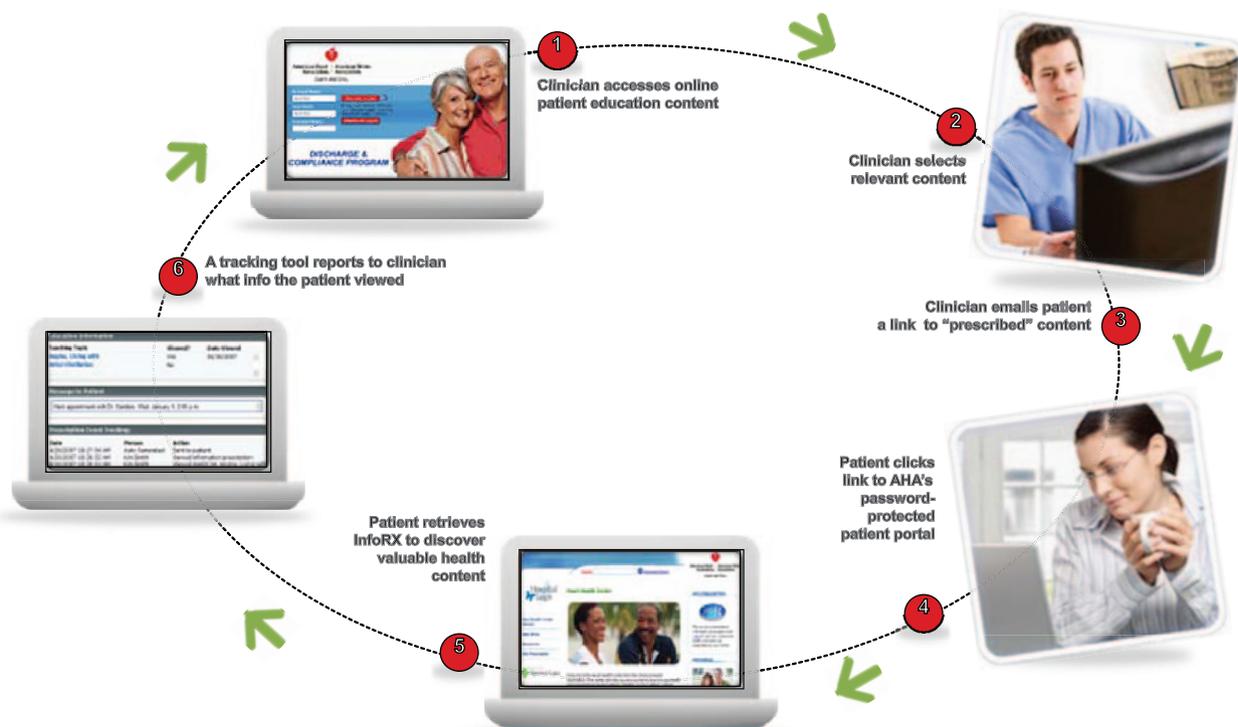


Figure 4. Schematic of the HeartRx program, a partnership between AHA and Krames. Clinicians can e-mail the patient a secure link to a password-protected site where they can pick up specific health education. When a patient accesses the site, a tracking tool captures that encounter and informs the clinician so that the patient’s access is documented, and follow-up contacts can be planned as needed. The content includes printable health information, streaming videos, and online animations pertaining to medical conditions and treatments, medication management, frequently asked questions about drugs, and nutrition.

ing styles. Through this portal, the public will have access to resources such as the following: a library of streaming video health clips that cover a wide range of topics; the latest heart and stroke articles from news media, AHA consumer/patient publications, and clinical research presentations; interactive health tools; and social networking functions with access to online discussion forums in which individuals with CVD or stroke may exchange information with others who have the same condition.

HeartRx Patient Education System

The AHA has also developed a suite of high-quality, evidence-based educational information that professionals can prescribe to their patients with cardiovascular conditions via the HeartRx program (Figure 4). The goal of HeartRx²⁸ is to deliver a rich library of comprehensive and interactive patient education information. HeartRx provides patients with a self-guided learning experience either before or after a doctor visit or other encounter with the healthcare

TRACK	TREAT	TRAIN
<p>Download HealthVault Connection Center</p> <p>Keeping track of your blood pressure, weight, and physical activity is easy. Record and review your progress as often as you wish.</p>	<p>Connect to my doctor now</p> <p>Help prevent or treat high blood pressure and cardiovascular disease by sharing your health information with your own doctor.</p>	<p>Sign up for a Virtual Coach</p> <p>Train yourself with the help of a fun Virtual Coach and your own health information to living a longer and healthier life.</p>

Figure 5. Heart360 is the next-generation cardiovascular wellness center (CVWC). AHA and Microsoft have collaborated to extend the vision and scope of the center into a comprehensive wellness-management tool. Consumers, patients, physicians, and other medical professionals and caregivers can use the tool to help track, treat, and train individual risk factors for CVD, including hypertension, diabetes, and cholesterol. It also allows providers to observe their patients’ progress, view personal trends, and watch for red flags. The goal is to establish the AHA CVWC as a hub for communication and data exchange between physicians and their patients, thereby facilitating the optimal management of hypertension and other associated conditions and improving medication compliance, home blood pressure monitoring, and outcomes.

Table 2. Summary of AHA Patient-Directed Initiatives and Programs

Name	Purpose of Initiative/Program	Significant Accomplishments	URL
Risk Assessments	The AHA's High Blood Pressure and Heart Attack Assessment tools deliver personalized health risk assessments and serve to complement traditional print education materials. These tools are intended to provide practical recommendations to help a patient reduce cardiovascular risk in partnership with the patient's physicians based on well-recognized standards	High Blood Pressure Assessment: <ul style="list-style-type: none"> ● Relaunched: February 2007 ● English users FY 2007–2008: 177 212 ● Spanish users FY 2007–2008: 5923 Heart Attack Risk Assessment: <ul style="list-style-type: none"> ● Relaunched with Google Health in May 2008 ● English users FY 2007–2008: 78 7111 ● Spanish users FY 2007–2008: 897 ● Registered users January 2008 through August 14, 2008: 13 477 	http://www.americanheart.org/hbprisk http://www.americanheart.org/riskassessment
Heart Profilers	An online interactive tool designed to help both patients and healthcare professionals understand treatment options and outcomes for CVD; provides patients with a personalized report detailing current treatment options, possible side effects, and success rates	Launched in 2002 <ul style="list-style-type: none"> ● Unique visitors, FY 2007–2008: 140 870 ● Registered users (patient and professional): 321 297, of whom 315 694 are patients 	http://www.americanheart.org/heartprofilers
HearHub	A patient portal that allows healthcare professionals to direct patients to a variety of CVD and stroke information for healthcare consumers and patients, from prevention to disease management. HearHub content includes information on arrhythmias, cardiac rehabilitation, lipid management, diabetes, heart attack, heart failure, high blood pressure, peripheral artery disease, and stroke in a variety of languages and is written for different reading levels	Launched April 25, 2008 <ul style="list-style-type: none"> ● Unique visitors to date for HearHub: 96 700 ● Total number of visitors to americanheart.org patient education pages: 6 289 287 	http://www.hearthub.org
HeartRx	A patient education system that can be used to prepare patients for hospital admissions or doctors visits, to follow up with information without scheduling another visit; and to reduce time spent by staff in educating patients in the inpatient or outpatient setting		
Heartsaver CPR, and Hands-Only CPR	A collection of learning products that are intended to increase CPR knowledge and awareness among laypersons. Heartsaver CPR is a course for schools, designed to teach lifesaving skills to middle- and high-school students. Hands-Only CPR simplifies training so that individuals are more likely to perform good chest compressions and improve cardiac arrest outcomes		http://www.americanheart.org/presenter.jhtml?identifier=3047680 and http://handsonlycpr.eisenberginc.com/
PHR Resource Center	A Web portal dedicated to empowering healthcare consumers and patients to develop PHRs and to help them get started in owning and maintaining a PHR for themselves and their family members		http://www.americanheart.org/PHR
Blood Pressure Management Center	A portal designed to help patients manage their high blood pressure while allowing them to track their weight, physical activity, and risk factors online. Patients can also print their personal reports for discussion with their physician, or they can log in and access the tool while they are at the physician's office	Launched October 2007 <ul style="list-style-type: none"> ● Unique visitors: 33 356 ● Registrations to date: 28 524 ● Users permitting data sharing: 4856 	http://www.bpmc.heart.org
Heart360	This tool, which expands on the existing Blood Pressure Management Center, allows for communication and data exchange between physicians and their patients. It also serves to facilitate home monitoring and the use of such tools for the optimal management of hypertension, diabetes, hyperlipidemia, physical activity, and nutrition	Launched October 2008	http://www.heart360.org

FY indicates fiscal year.

system. It can be used to prepare patients for hospital admissions or doctors' visits, to provide follow-up information without scheduling another visit, and to make educational time in the inpatient or outpatient setting more efficient. The nucleus of HeartRx is the patient Heart

Health Center Web site and the InfoRx online education prescribing functionality. With InfoRx, the healthcare professional can e-prescribe specific educational information for the patient, track when and what information was sent, and track when it was picked up by the patient. The

Heart Health Center Web site provides patients with additional tools and information for self-management of their conditions. HeartRx is a closed, password-protected system designed currently for hospital implementation, but application in the ambulatory care setting is under evaluation.

Emergency Cardiovascular Care Programs

The AHA has historically developed tools and programs to help save lives in emergency situations. These programs include basic training in cardiopulmonary resuscitation (CPR) and use of automated external defibrillators. In addition to AHA's traditional live training sessions in basic life support, the organization has developed CPR Anytime,²⁹ a collection of learning products that are intended to increase CPR knowledge skills and awareness. Studies have shown that for every CPR Anytime kit used for training, an average of 2.5 people learn how to perform CPR.²⁷ In addition, the AHA has developed the Heartsaver CPR course in schools, designed to teach lifesaving skills to middle and high school students. In April 2008, the AHA announced a new call to action: Hands-Only CPR³⁰ for adults experiencing a witnessed cardiac arrest. Hands-Only CPR simplifies training so that individuals are more likely to perform effective chest compressions and improve cardiac arrest outcomes.

Personal Health Technologies and Disease Management

The AHA is on the cutting edge of Web-based PHRs and other disease management tools to involve patients directly in their own wellness and healthcare. In June 2008, the AHA launched www.americanheart.org/PHR, a Web portal dedicated to empowering Americans in owning and maintaining a PHR for themselves and their family members. The AHA/American Stroke Association has also commissioned a study of PHRs that will serve to document the impact and value of interactive, Web-based personal health records for patients and healthcare providers, with a focus on CVD and heart health.

The unique aspect of the AHA's development of PHRs is that these programs do more than provide information; they are interactive and assist patients in risk factor management or disease management. The success of disease management programs is primarily dependent on individuals' willingness to become engaged in these programs. The AHA has begun to develop novel tools for disease and risk management to facilitate this engagement. The first effort by the AHA in this area is a Web-based tool known as the Blood Pressure Management Center, built by the AHA on Microsoft's new health platform, HealthVault (see www.bpmc.heart.org). The Blood Pressure Management Center will help facilitate management of high blood pressure by patients, while allowing them to track their weight, physical activity, and risk factors online. Patients can either print their personal reports for discussion with their physicians, or they can log in and access the tool while they are at the physician's office. Patients can also allow family members who are helping manage their

care to have access to their online records. The use of similar online tools has been demonstrated to be an effective means of improving blood pressure control, particularly when coupled with active monitoring and patient engagement by a pharmacist.³¹

The AHA has just completed the expansion of the existing Blood Pressure Management Center into a global Cardiovascular Wellness Center, known as Heart360 (Figure 5). AHA and Microsoft have collaborated to extend the vision and scope of the center into a comprehensive cardiovascular wellness management tool. Consumers, patients, physicians, other medical professionals, and caregivers can use the tool to help track, treat, and train individual risk factors for CVD, including hypertension, diabetes mellitus, and cholesterol. This program is intended to serve as a venue for communication and data exchange between physicians and their patients and to allow providers to observe their patients' progress, view personal trends, and watch for red flags. Ultimately, the Heart360 will be positioned as a premier portal for communication and data exchange between physicians and their patients, facilitating home monitoring, medication compliance, and the use of best-in-class tools for the optimal management of hypertension, diabetes, hyperlipidemia, physical activity, and nutrition.

Conclusions

The AHA has engaged in a number of activities intended to empower consumers and patients to take active roles in their own health from the perspective of both disease prevention and disease management. The AHA realized that to engage patients in their own health care, it must first make them aware of their disease risks, then provide tools that allow them to modify these risks, and finally, deliver the tools (PHR, home monitoring, behavioral skills, self-management) to make them active partners with their healthcare providers. Although the present report is not intended to be a complete inventory of the AHA's consumer- and patient-related efforts, it highlights some of its most noteworthy and novel initiatives (Table 2).

As an organization committed to "building healthier lives free of CVD and stroke," the AHA must continue to identify opportunities to further empower consumers and patients using the latest developments in evidence-based care, consumer research, and technologies, such as the PHR. It is also essential to assess these programs on a continuing basis to determine whether, in fact, these programs and technologies result in improved patient care and better outcomes. Therefore, although the AHA has made an impressive start, the organization realizes that ongoing efforts and partnerships will be needed to make individuals informed and active participants in their own health, leading them toward building healthier lives free of CVD and stroke.

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*Modest.

†Significant.

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Partnering to Reduce Risks and Improve Cardiovascular Outcomes: American Heart Association Initiatives in Action for Consumers and Patients

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