

Healthy Lifestyle Interventions to Combat Noncommunicable Disease—A Novel Nonhierarchical Connectivity Model for Key Stakeholders: A Policy Statement From the American Heart Association, European Society of Cardiology, European Association for Cardiovascular Prevention and Rehabilitation, and American College of Preventive Medicine

Ross Arena, PhD, PT (Chair, AHA Writing Group);
Marco Guazzi, MD, PhD (Co-Chair, ESC/EACPR Writing Group);
Liana Lianov, MD, MPH (Co-Chair, ACPM Writing Group); Laurie Whitsel, PhD;
Kathy Berra, MSN, RN; Carl J. Lavie, MD; Leonard Kaminsky, PhD; Mark Williams, PhD;
Marie-France Hivert, MD, MMSc; Nina Cherie Franklin, PhD, MS, LMT;
Jonathan Myers, PhD; Donald Dengel, PhD; Donald M. Lloyd-Jones, MD;
Fausto J. Pinto, MD, PhD; Francesco Cosentino, MD, PhD; Martin Halle, MD;
Stephan Gielen, MD; Paul Dendale, MD, PhD; Josef Niebauer, MD, PhD, MBA;
Antonio Pelliccia, MD; Pantaleo Giannuzzi, MD; Ugo Corra, MD;
Massimo F. Piepoli, MD, PhD; George Guthrie, MD, MPH; and Dexter Shurney, MD

Abstract

Noncommunicable diseases (NCDs) have become the primary health concern for most countries around the world. Currently, more than 36 million people worldwide die from NCDs each year, accounting for 63% of annual global deaths; most are preventable. The global financial burden of NCDs is staggering, with an estimated 2010 global cost of \$6.3 trillion (US dollars) that is projected to increase to \$13 trillion by 2030. A number of NCDs share one or more common predisposing risk factors, all related to lifestyle to some degree: (1) cigarette smoking, (2) hypertension, (3) hyperglycemia, (4) dyslipidemia, (5) obesity, (6) physical inactivity, and (7) poor nutrition. In large part, prevention, control, or even reversal of the aforementioned *modifiable* risk factors are realized through leading a healthy lifestyle (HL). The challenge is how to initiate the global change, not toward increasing documentation of the scope of the problem but toward true action—creating, implementing, and sustaining HL initiatives that will result in positive, measurable changes in the previously defined poor health metrics. To achieve this task, a paradigm shift in how we approach NCD prevention and treatment is required. The goal of this American Heart Association/European Society of Cardiology/European Association for Cardiovascular Prevention and Rehabilitation/American College of Preventive Medicine policy statement is to define key stakeholders and highlight their connectivity with respect to HL initiatives. This policy encourages integrated action by all stakeholders to create the needed paradigm shift and achieve broad adoption of HL behaviors on a global scale.

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Author Affiliations: A complete list of the authors' affiliations appears at the end of this article.

Noncommunicable diseases (NCDs) are a global health concern, with cardiovascular disease (CVD) at the forefront in virtually all developed countries.¹⁻³ Currently, more than 36 million people worldwide die from NCDs each year, accounting for 63% of annual global deaths; most are preventable.⁴ The estimated 2010 global cost of NCDs was \$6.3 trillion (US dollars), which is projected to increase to \$13 trillion by 2030.⁵ Countries around the world recognize that something must urgently be done to alter the current state and future outlook of NCDs.⁶

Noncommunicable diseases share predisposing risk factors related to an unhealthy lifestyle: (1) cigarette smoking, (2) hypertension, (3) hyperglycemia, (4) dyslipidemia, (5) obesity, (6) physical inactivity, and (7) poor nutrition. These combined lifestyle and biomarker risk factors do not exist in isolation but rather complexly interact to exponentially increase NCD risk.^{2,7} In 2010, overweight and obesity were estimated to cause 3.4 million deaths worldwide⁸; the global economic impact of obesity is now approximately \$2 trillion.⁹ Physical inactivity caused more than 5.3 of the 56 million global deaths in 2008¹⁰ and is currently the fourth leading cause of death worldwide.¹¹ Current projections indicate time spent being physically inactive will continue to increase substantially.¹² Diet quality and dietary patterns (eg, excess calories) are poor across much of the world and contribute substantially to the NCD burden.^{4,13} Smoking also remains as a notable contributor to NCD risk.^{4,7}

In large part, prevention, management, or reversal of the aforementioned *modifiable* risk factors can be achieved through leading a healthier lifestyle.¹⁴⁻¹⁶ The importance of a healthy lifestyle (HL) to NCD prevention (primordial and primary) and management (secondary prevention) is already well established. In fact, a growing number of health care professionals refer to NCDs as lifestyle-related diseases (LRDs). However, much work is needed to actually change behaviors on a global level. A recent study assessed health policies in low- to middle-income World Health Organization (WHO) member countries and found that only 47% had documented strategies to combat NCDs. Clearly, HL initiatives, including health-conscious food availability/

choices and physical activity (PA), should be at the forefront of any strategy to combat NCDs.¹⁷ To achieve global change, a new approach to NCD prevention and treatment is needed. The importance of promoting and leading an HL must take a substantially more prominent role from the individual/family level to the global population level, capitalizing on all forms of prevention strategies (ie, primordial, primary, secondary). We must also look beyond the traditional health care model (ie, hospital and clinical settings) to implement HL initiatives. Effective communication and meaningful partnerships among stakeholders is essential.

Simply but importantly stated, an “all hands on deck” model is needed in the global HL campaign we must now embark upon—identifying all stakeholders, their roles (Table 1), connectivity to one another, and who they impact. The goal of this American Heart Association (AHA)/European Society of Cardiology (ESC)/European Association for Cardiovascular Prevention and Rehabilitation (EACPR)/American College of Preventive Medicine (ACPM) policy statement is to define key HL stakeholders and propose a novel nonhierarchical connectivity model that will facilitate creative and productive collaborations for the future. A forward-looking action plan is also included in this policy statement. Given the current global concern and impact of CVD and its associated risk factors, the current policy statement will primarily focus on this particular NCD.

DEFINING STAKEHOLDERS AND INDIVIDUAL ROLES

Professional Organizations

Numerous professional organizations are heavily committed to all facets of HL promotion, education, scientific discovery, policy, practical initiatives, and advocacy. The AHA,¹⁸ EACPR,¹⁹ ESC,^{17,20} ACPM,²¹ American College of Sports Medicine (ACSM),²² Preventive Cardiovascular Nurses Association,²³ and WHO⁴ are prime examples of organizations that have published documents and implemented initiatives that stress the importance of HLs in combating NCDs. Examples of messaging campaigns and initiatives include (1) the European Code Against Cancer, a WHO initiative

TABLE 1. Key Healthy Lifestyle Stakeholders and Their Overarching Roles

Stakeholder	Overarching roles
Professional organizations	Advocacy, championing healthy lifestyle thought leaders, dissemination of scientific knowledge and practice guidelines, professional meetings
Educational systems	Providing an appropriate healthy lifestyle curriculum at all levels of education, creating a healthy lifestyle environment within the educational setting
Government	Creating, supporting, and implementing legislation and programs that support healthy lifestyle initiatives on a population level
Health care organizations	Integrating healthy lifestyle interventions into the medical model as a standard of care
Insurance industry	Providing mechanisms for coverage of healthy lifestyle initiatives
Nonprofit and community organizations	Advocacy; creating, supporting, and implementing healthy lifestyle initiatives
Media outlets	Disseminating credible healthy lifestyle information to the lay public
Mobile health and technology companies	Bringing technological inventions/advances that support healthy lifestyle initiatives to market
Employers	Creating a healthy lifestyle environment within the workplace, offering healthy lifestyle programming to employees
Food industry	Making healthy food choices available, providing health-conscious nutrition labeling
Health and fitness industry	Providing an infrastructure and professionals capable of offering healthy lifestyle programming to the public
Individuals and families	Consumers of healthy lifestyle initiatives

that lists smoking cessation and a smoke-free environment, maintaining a healthy body weight, being physically active, and having a healthy diet as primary ways to reduce cancer risk,²⁴ (2) the WHO's voluntary global targets for the prevention and control of NCDs that highlight the importance of an HL²⁵ (Table 2) and (3) the AHA's 7 core health metrics, divided into 4 health behaviors (smoking, PA, diet pattern, and body mass) and 3 health factors (cholesterol, blood glucose, and blood pressure).²⁶ Documents published by other organizations, such as the European Heart Health Charter,^{17,19} recognize the central importance of these 7 health metrics to NCD prevention and treatment. Another example of professional organization engagement in this area, the EACPR initiative "Prevention in Your Country," brings together CVD prevention targets and methods as described by the national prevention coordinators of most European countries, resulting in a single accessible Web-based location for a comprehensive overview of best practices.²⁰ The AHA²⁷ and the ACSM²⁸ have Web-based HL platforms that are other excellent resources. Lastly, professional organizations commonly have major scientific meetings at which large groups can immerse themselves in cutting-edge science, clinical guidelines, policy, sharing of best practices, and other quality programming. A promising trend is the increasing attention these organizations are affording

primordial and primary prevention, recognizing that decreasing the risk of NCDs ever developing is ideal.

Educational Systems

Elementary and Secondary Health Education.

The elementary and secondary education system is a primary location for primordial NCD prevention. A substantial portion of a child's daily PA can and should be undertaken during school hours.^{29,30} Moreover, school-based educational programming creates an opportunity to introduce key components of an HL at a young and impressionable age (ie, primordial prevention). Comprehensive school-based PA programs should be implemented to provide numerous opportunities for PA, such as structured physical education classes, recess, PA breaks, and "walk/bicycle to school" initiatives.³¹ Support for this approach is reflected in both US and European policy statements.^{32,33}

As with PA, schools should offer healthy diet education and provide nutritious food choice options. Schools provide students with opportunities to consume an array of foods and beverages throughout the day and thus enable students to learn about and practice healthy eating behaviors. Initiatives such as the US Department of Agriculture's smart snack standards for schools should help to dramatically improve the nutritional environment in the elementary and secondary educational

TABLE 2. World Health Organization's Voluntary Global Targets for the Prevention and Control of Noncommunicable Diseases

Goal	Global target
Decrease risk of premature mortality from cardiovascular disease, cancer, diabetes, or chronic respiratory disease	25% Relative risk reduction
Decrease harmful alcohol use, as appropriate, with the national context	10% Relative risk reduction
Decrease prevalence of insufficient physical activity	10% Relative risk reduction
Decrease mean population intake of salt/sodium	30% Relative reduction
Decrease prevalence of current tobacco use in persons 15 y or older	30% Relative reduction
Decrease prevalence of high blood pressure or contain the prevalence of high blood pressure, according to national circumstances	25% Relative reduction
Halt the increase in diabetes and obesity	Not applicable
Increase the percentage of people who receive drug therapy and counseling (including glycemic control) to prevent heart attacks and strokes	At least 50% of eligible people
Availability of affordable basic technologies and essential medicines, including genetics, required to treat major noncommunicable diseases in both public and private facilities	80% Availability

From the World Health Organization.⁴

system.³⁴ A recent WHO survey found that several European countries (ie, Ireland, Malta, Norway, Portugal, Slovenia, and Sweden) have implemented policies supportive of a healthy nutritional environment in schools.³⁵

Postsecondary Health Education. Promoting PA and a healthy diet during college remains a priority. The early years of college are a decisive period when young adults make independent choices about nutrition, transportation, recreational activities, and other issues. Survey data indicate that PA and dietary patterns are poor in college students.^{36,37} Not surprisingly, the first years of college are associated with notable weight gain.^{38,39} Long-term follow-up of alumni cohorts reveals that early adulthood weight gain increases the lifetime risk of diabetes and obesity-related morbidity.^{40,41} Alternatively, high levels of PA in college is associated with lower risk of mortality,^{42,43} CVD,^{44,45} and cancer.^{46,47}

For these reasons, interventions on the college campus have been proposed, often in the form of optional courses/lectures, and in recent years have been offered increasingly through webinars or online interactive material⁴⁸; we propose that institutions consider requiring these educational experiences as part of undergraduate education. College students are greatly influenced by their peers' choices; thus, HL program implementation ideally involves group support or a social component to influence

behaviors. Modification of the built environment, including on-campus bike racks, bike paths, safe sidewalks, and healthy food options, are other ways that institutions may influence students' health behaviors. Illustrating a simple, inexpensive example, a recent study at the University of Glasgow found that calorie labeling in the school cafeteria, for evening meals only, resulted in a significant reduction (3.5 kg) in weight gain over a 36-week period.⁴⁹

HL Education in Medical Schools and Other Health Professions. Physicians and other health care professionals must increasingly become major stakeholders and promoters of an HL. Patients highly value recommendations given by their physician.⁵⁰ A few medical schools are leaders in the field of medical education concerning lifestyle counseling. In the United States, the National Institutes of Health supports educational improvements in nutrition⁵¹ and behavioral sciences.⁵² Yet, participating schools currently do not reflect the standard curriculum model in which HL education is lacking.^{53,54} The Liaison Committee on Medical Education, the accrediting body for US and Canadian medical schools, recommends that "the curriculum of a medical education program must include behavioral and socioeconomic subjects in addition to basic science and clinical disciplines."⁵⁵ Despite these encouraging signs, much still needs to be done to ensure adequate training to effectively

support and counsel patients on leading a healthier lifestyle. Moving forward, it is critical that, as part of the medical school didactic and practical education, medical students understand the importance of identifying stages of behavior change and how to address a specific behavior at the individual patient and/or family unit level in an effort to facilitate positive change toward an HL. The likelihood of success in this new approach to clinical care is increased if physicians are properly/adequately trained in all aspects of HL programming as part of their core curriculum.

Other health professionals (ie, nurses, exercise physiologists, physical therapists, registered dietitians, psychologists) also play an important role in addressing patients' behavioral change toward an HL. Physicians should be cognizant of the role these other health professionals can play and refer patients appropriately when more intensive lifestyle counseling/interventions are warranted.

Government

Policy change is vital to improve health, reduce NCD burden, and drive community, social, and economic development.⁵⁶ We urge governments around the world to take a leading role in the HL campaign that is needed. Government at the local, state/regional, and national level has an inherent and legitimate interest, if not obligation, in protecting the health of the population and reducing the NCD burden.⁵⁷ Supporting primordial and primary prevention initiatives is of primary importance. The implementation of a single law or regulation can positively impact hundreds, thousands, and even millions of people. For example, comprehensive smoke-free air laws implemented across localities, states, and countries have lowered NCD incidence.⁵⁸

When there is a need for consistency or nationwide impact (eg, nutrition labeling), national government action is best. In appropriate situations, state/local government can be a proving ground for action or policy or can be the most appropriate level for sustained policy change. Policymakers contemplating legislation, regulation, or policy change should take into account feasibility, reach, potential impact, and cost and forecast possible unintended consequences.⁵⁹

Lastly, governments house/support entities (ie, branches, divisions, departments, institutes,

commissions) that focus on the prevention and treatment of NCDs and on HL initiatives. The European Commission⁶⁰ and the Centers for Disease Control and Prevention (CDC)^{61,62} are examples of entities with ties to government infrastructure that are committed to NCD prevention and promoting an HL on a population level.

Health Care Organizations

Health care organizations play a central role in the prevention and management of NCDs. These organizations need to recalibrate their care model to include lifestyle assessments, counseling, and interventions in a much more meaningful and substantial way. In the United States, the emergence and proliferation of accountable care organizations (ACOs), which are rewarded for reducing health care expenditures, will help to drive this recalibration. It is already recognized that for ACOs to be successful, they will have to focus primarily on preventive care for NCDs, which now account for a large portion of health care spending.⁶³

The most simplistic and immediately feasible approach to HL integration into the medical model is brief assessment, including determining a patient's "stage of change,"⁶⁴ followed by counseling during clinical visits in all patient populations.⁶⁵ Evidence does indicate that counseling patients on adopting an HL is effective.⁶⁶⁻⁶⁹ Initiatives that promote exercise as a vital sign⁷⁰ or medical intervention⁷¹ are starting to be promoted and implemented globally.

Lastly, use of the electronic medical record (EMR) can optimize communication within and among health care organizations. The widespread adoption of an EMR within health care delivery systems around the world has the potential to improve patient care and clinical documentation, increase administrative efficiency, optimize patient safety, and create better quality and coordination of care.⁷²⁻⁷⁴ In fact, a recent report by the Institute of Medicine recommends capturing PA patterns in the EMR.⁷⁵

Health Insurance Industry

Health care payer systems and markets throughout the world are tailored to the type of government, regulatory structure, marketplace, health care philosophy, and national infrastructure. This industry is central to providing essential health benefits and coverage for

primordial, primary, and secondary preventive services and behavioral counseling about HL promotion and NCD prevention/management. These kinds of services include behavioral counseling to address diet and PA for obese patients, hypertension screening and treatment, cholesterol management, and tobacco cessation counseling and pharmacotherapy. To optimize implementation of these recommended preventive service benefits, they should be clearly defined in health plan benefit language and communicated to consumers and providers with consistent implementation of eligibility criteria.⁷⁶ Increasingly, the health insurance industry is providing higher reimbursement to providers who adhere to clinical guidelines and provide high-value, evidence-based care.⁷⁷⁻⁷⁹ Additionally, the industry is creating incentives for individuals to adhere to HL behaviors.⁸⁰

Nonprofit and Community Organizations

Nonprofit Organizations. Nonprofit organizations use a variety of strategies and tactics to achieve their missions and conduct HL promotion including advocacy, programming, patient education, media campaigns, and grassroots mobilization. These types of organizations emulate “targeted universalism,” which in its simplest definition alters the usual approach of universal strategies (ie, policies that make no distinctions among citizens’ status, such as universal health care) to achieve universal goals (ie, improved health) and instead suggest that we use targeted strategies to reach universal goals.⁸¹ Such an approach has the potential to be highly advantageous for HL initiatives. Successful nonprofit organizations maintain a steady, persistent focus in their work, developing expertise, resources, and a strong reputation for their mission.⁸²

Community Organizations. A community consists of a group of people living in proximity and serves as the undeniable center of culture and influence, primarily through organized groups within the community (eg, school groups, recreation centers, youth groups). As such, it is the ideal unit for promoting HL initiatives that are in a community’s best collective interest. It is imperative for communities to join together to promote healthier living through numerous initiatives such as (1) providing access to healthy affordable foods, (2) increasing

PA opportunities through school programs, recreational spaces, street level design, and other resources, and (3) supporting prevention programs for the early detection and treatment of NCDs and associated risk factors. If the default community options concerning key factors such as diet and PA are health-conscious, it becomes easier for individuals to make daily healthy choices.

Media Outlets

Print Media, Television, and Radio. Health-related information from credible sources is routinely retransmitted and disseminated by way of traditional media outlets including print, television, and/or radio newscasting.⁸³ Within these media, the credibility and quality of information is often bolstered by individual experts or expert panels comprised of health care professionals, researchers, policymakers, and/or experts on other subject matter. Packaged information is then sought out and referenced by individuals who wish to improve their health knowledge and subsequent health status.^{83,84} Through efficient communication that is both objective and factual, such media channels can greatly expand the reach and overall impact of HL information among the lay population.⁸⁴

Internet and Digital Media Channels. With nearly 3 billion users worldwide,⁶ the Internet is an important method for disseminating HL information and services to the masses.^{85,86} Current online communication and information dissemination strategies broadly encompass a 2-fold approach that involves (1) content development by way of articles and blogs, self-help guides, how-to videos, podcasts, and electronic books and (2) content repurposing and marketing through curation, aggregation, and syndication across multiple digital media channels. Numerous Web and digital media have already been proved effective in fostering positive behavioral change and facilitating successful execution of HL-related interventions for primordial, primary, and secondary prevention.^{87,88}

Social Media and Networking Sites. Advances in social media offer a unique approach to HL promotion and NCD prevention because they are accessible, approachable, and affordable.⁸⁹ Social media also introduces a global market for cross-platform

interaction, communication, and expansion of health-related content by way of multiple channels including Facebook, Twitter, Google+, Pinterest, and Instagram. Further, video-sharing sites like YouTube enable innovative and effective exchanges of testimonials and anecdotes among individuals, which, along with other social media, have proven beneficial in improving adherence to HL behaviors through increased social support.^{90,91}

Mobile Health and Technology Companies, Telehealth and the Medical Electronics Industry. Digital technology support services for health care professionals and patients have an increasing role in routine patient management, including patients receiving HL medicine services. This emerging area offers the potential for cost-effective approaches for collecting and sharing meaningful physiologic information and health-related data between patients and health care professionals. Technologies can also facilitate health care education and delivery processes, rehabilitative services, and home monitoring.

Specific areas in which technology can be especially useful include the delivery of telephone/mobile-based diagnostics (ie, telehealth), counseling, and monitoring health behaviors through mobile applications and sensors. Developing interoperable systems and addressing issues related to proprietary software is essential for physicians to seamlessly access an EMR and make HL recommendations to patients.

Wearable Technology Manufacturing Companies. Self-monitoring by way of pedometers, accelerometers, heart rate monitors, and other wearable sensors and systems (eg, smartphones) provides a convenient and resourceful means by which individuals can manage all aspects of their personal health and wellness. Further, wearable technology is a cost-effective approach for collecting and sharing meaningful physiologic information and health-related data between patients and health care professionals. A clear strategy for increasing adoption of HL behaviors among the lay population is one that capitalizes on the potential role of wearable devices in facilitating self-monitoring because many have been found to boost motivation and improve adherence.^{92,93} Privacy issues are

paramount, and long-term efficacy is still being elucidated.

Video Gaming Industry. Given the widespread use of video games among the lay public,⁹⁴ the gamification industry can play an integral role in promoting and increasing adoption of HL behaviors. The novel approach of gamification can be used strategically to motivate and engage users by employing HL information, education, and activities through interactive modules incorporating familiar video game mechanics with a very low learning curve. Telehealth systems incorporating video game technology appear beneficial in optimizing the health of patients with LRDs.^{95,96} The effectiveness of such mediums has also been reported in primordial and primary prevention by encouraging increased PA levels and supporting healthy weight management.^{97,98}

Mobile Device and Software Application Developers. Increased adoption and use of mobile phones and smartphones, tablet computers, and applications have introduced new and innovative ways to improve health and health care delivery.⁹⁹ Within the context of preventing and treating LRDs, such technologies provide a readily accessible, cost-effective, and easy-to-use medium that enables efficient delivery of sophisticated HL interventions along with time-unlimited coaching and support. The use of mobile technology also facilitates the virtual collection and sharing of meaningful physiologic information from patients while maintaining essential patient-clinician relationships, which is especially useful when individuals are not in close proximity to their physician.

Employers

Moving forward, employers must play a key role in supporting employees in achieving an HL from primordial to secondary prevention of NCDs.¹⁰⁰ The worksite is an optimal place for conducting health screening programs that are central to evaluating lifestyle behaviors.¹⁰¹ Worksite health screenings should also include education about leading an HL and follow-up recommendations for identified risk factors and unhealthy behaviors. For employer support to be most effective, employees should also be offered a worksite

health and wellness program (WHWP) to continually reinforce HL behaviors. The workplace environment must emulate an HL (ie, healthy food choices in the cafeteria, walking paths, on-site exercise facilities, a smoke-free policy).

Worksite health and wellness programs can be administered in different ways, including company-run on-site programs, external vendor on- or off-site programs, and hybrid programs that combine company-sponsored and external vendor interventions.¹⁰² Given the potential positive impact employers can have on the lifestyle patterns of their employees, future efforts should be directed toward increasing (1) WHWP infrastructure, (2) employee participation in WHWPs, and (3) the body of scientific research on WHWPs in order to establish best practice standards.

Food Industry

The food industry is central to increasing adoption of healthy eating habits in a large percentage of the population. This especially holds true if companies are willing and able to improve the overall nutritional quality of their products, offer healthy food and beverage options that are affordable, and modify their advertising approaches and practices. In relation to the latter, implementing simple front-of-package labeling tactics (ie, color-coded, traffic-light, “positive” labeling) to identify healthier foods has been found to be effective in beneficially altering population dietary behaviors.¹⁰³⁻¹⁰⁵ Moreover, new and innovative ways for food labeling may be championed by the food industry. For example, Bleich et al¹⁰⁶ reported that labeling sugar-sweetened beverages in a way that linked “the number of minutes of running or miles walking necessary to burn off a beverage” significantly reduced the total calorie load of purchased beverages.

It is also important for governments to recognize their unique oversight role in protecting consumer health by implementing legislation and regulation that guide the food industry toward a healthy and safe food supply. Examples include implementing more robust dietary standards for meals and competitive foods in schools and other government feeding programs, revision of the Nutrition Facts label,^{107,108} menu labeling for restaurants,¹⁰⁹ targets for sodium reduction across the food supply, and taxing

less healthy foods/beverages or subsidizing the purchase of healthier foods/beverages such as water, fruits, and vegetables. The food industry may work alongside the government to make healthy changes in the food supply as exemplified by the Healthy Weight Commitment Foundation with the Let’s Move! initiative¹¹⁰ and the Public Health Responsibility Deal in the United Kingdom.¹¹¹ In the European Union, the Confederation of the Food and Drink Industries has promoted initiatives in favor of healthy diets and other lifestyle traits.¹¹²

Health and Fitness Industry

The health and fitness industry plays an important role in a broad-based mission of HL promotion and NCD prevention. Optimally, 3 issues are of primary importance: (1) development of health and fitness industry standards (ie, accreditation or certification) for facilities, documenting that the appropriate personnel and programs are available,¹¹³ alleviating concerns over the potential for exercise-related adverse events, and preventing unnecessary barriers to initiating an exercise program^{114,115}; (2) establishment and broad adoption of standards for the preexercise health assessment using established risk stratification models, recognizing when additional assessment is required before initiating an exercise program¹¹⁶⁻¹¹⁹; this strategy should focus on the primary target of assessing physical fitness (maximal exercise capacity) or PA (daily step counts, activity sensors) as primary measures for all individuals; and (3) provision of structured programs at health/fitness centers targeted to specific risk factors and NCDs and individualized exercise training for both primary and secondary prevention. The health/fitness employee training requirements and competencies should be higher for work with individuals who have or are at increased risk for an NCD.

Individuals and Families

The individual is both a key stakeholder and the ultimate recipient of HL interventions. Involving individuals who require HL interventions and their families as key stakeholders and decision makers in preventing disease and promoting health is central to HL medicine advocacy. Importantly, family involvement and

support is crucial because an individual's lifestyle behaviors are likely to mirror those of the people they live and closely associate with.¹²⁰ Having individuals in need of care, their families, and their physicians working together as a team to achieve HL goals is optimal; the Internet has helped facilitate this model.^{121,122} The primary care medical home (PCMH) is a health care model that embraces patient-centered care, defined as "relationship-based primary care that meets the individual patient and family's needs, preferences, and priorities."¹²³ The PCMH coordinates and supports comprehensive care, including HL interventions. This model has been reported to be accessible, safe, generally of high quality, and cost-effective.^{124,125} Through PCMHs, individuals will have enhanced opportunities to determine how best to manage their lifestyle risk factors with guidance and support from health care professionals managing their care. Lastly, the PCMH model is an approach that can be employed in any country. A key and globally applicable characteristic of this model is care that is patient-centered.

Regardless of the model employed, efforts to promote self-care and engage individuals and their families must be well coordinated. A strategy that will advance HL medicine, for which improved outcomes depend on successful HL behavior change, is to develop an integrated approach that is seamless from the viewpoint of the individual in need of care.¹²⁶ An effective interface is needed between the individual, the family, and all other HL stakeholders.

CONNECTIVITY: HOW DO THE STAKEHOLDERS COME TOGETHER AND AMPLIFY HL EFFORTS?

Stakeholder collaboration is critical for increasing the proportion of the population that adopts an HL. Factors related to education, socioeconomic status, crime, safety, the environment, medical research, policy, professional organizations, the workplace, and health care systems are prime examples of forces influencing lifestyle choices that affect health. While there are numerous stakeholders,^{22,127-129} they often lack adequate integration and collaboration, which if present would most certainly foster more effective HL initiatives. Although it is by no means an exhaustive account of models, the following

sections provide examples of connectivity between key HL stakeholders. These examples should spur readers to think creatively and conceptualize additional collaborative models and action plans. Moving forward, key stakeholders must continually communicate and find ways, both established and novel, to effectively partner in implementing HL initiatives.

Example 1: Multisector Initiatives and Private/Public Partnerships

Multisector initiatives and private/public partnerships, working together to promote and sustain environment and systems change, can facilitate and amplify eventual government efforts/policy.¹³⁰⁻¹³² Increasingly, social enterprise funding is allowing foundations, nonprofit/private organizations, or individuals to support or initiate efforts that potentially have an important public health impact. The National Forum for Heart Disease and Stroke Prevention, initially established within the CDC and now an independent nonprofit organization, serves as an example of how a well-positioned, motivated organization can initiate and lead collaborative initiatives¹³³:

The National Forum for Heart Disease and Stroke Prevention builds a collective voice for a heart-healthy and stroke-free society through its collaborative policy and programmatic efforts. Members include more than 80 US and international organizations representing public, private, health care, advocacy, academic, policy, and community sectors.... The National Forum's mission is to lead and encourage collaborative action among stakeholders committed to heart disease and stroke prevention. The National Forum creates opportunities for multi-sector groups to work together by convening member organizations, facilitating discussions, and creating partnership opportunities.¹³⁴

If multisector initiatives and private/public partnerships are successful, the government can take that "proof of concept" and provide long-term funding and sustainability as well as craft and implement new supportive legislation. Governments can provide resources, technical assistance, and capacity building

and seek effective partnerships to coordinate action and sustain change.²⁵ Government support programs should then be evaluated for the impact of their publicly funded initiatives and for their effort to support systems, the environment, and behavior change over the long term.¹³⁵

Example 2: Science Should Lay the Foundation for Public Policy

Science should lay the foundation for public policy; these policies are guided by a synthesized body of original science and expert opinion by professional organizations or governmental health agencies. Professional organizations and the government may pool resources and expertise to jointly work on science-based policy statements and recommendations. These stakeholders are best suited to assess scientific evidence in an unbiased fashion, make recommendations based on evidence, and reinforce these recommendations to the public. Numerous professional and government organizations have developed guidelines related to the importance of HL, including the AHA,¹²⁸ ESC,¹³⁶ ACSM,²² WHO,²⁵ CDC,¹²⁷ and US Preventive Services Task Force.¹³⁷ Health advocacy organizations (eg, the President's Council on Fitness, Sports & Nutrition¹³⁸ and the European Public Health Alliance¹³⁹) often have the best exposure, resources, and infrastructure to disseminate health information to the lay public. Many specific health conditions have their own organizations or foundations designed to educate, support, and advocate for the lay public (eg, the AHA,²⁶ International Diabetes Federation,¹⁴⁰ and Childhood Obesity Foundation¹⁴¹); they are particularly helpful in terms of taking scientific information and conveying it in a way that is understandable to the lay public. Optimal connectivity among professional organizations, the government, and health advocacy organizations is therefore critical.

Although not always reflecting the reality in practice, health policy position statements, guidelines, task force statements, and advisories from professional organizations and/or governmental entities should lay the foundation for public health policies and legislation. Governmental agencies are in the best position to support and implement policies that are aligned with the scientific evidence synthesized

by a panel of experts in a given field. On the basis of priorities identified by science, government can help to implement strategies that are proven to be effective and support further research when evidence is lacking. Policymakers can also increase the availability and application of HL research to identify effective environments, policies, and systems that reduce NCDs and health disparities. National policymakers should support and encourage local governments to enhance the health and livability of communities, including increasing access to healthy food, opportunities for PA, and alternative transportation modes. For example, both government and private foundations have supported a Healthier Communities Initiative through the YMCA (Young Men's Christian Association) to facilitate collaboration among community leaders to increase access to PA opportunities and healthy food.¹⁴² As another example, the Ciclovías Recreativas de las Américas is a global network that supports initiatives to close city streets to motorized traffic at scheduled times, creating a safe zone for physical and social activities.¹⁴³ Ciclovías, requiring partnership between community organizers and local government, have great promise to increase PA patterns at the community level worldwide.¹⁴⁴⁻¹⁴⁶ Lastly, public safety measures such as community-based anticrime and antigang initiatives can prevent injury and violence as well as facilitate higher levels of PA.^{147,148}

Evidence-based guidelines also provide the impetus for the government to support practices in the school system that promote HL behaviors. Research has documented that programs that increase the length or quality (ie, time spent being active) of school-based physical education improve overall student activity levels and academic performance.¹⁴⁹ Consistent with recent government efforts to reduce childhood obesity in both the United States and Europe, federal and local advocacy organizations have promoted a greater focus on health and PA inside and outside the classroom.¹⁴⁹⁻¹⁵³ Finally, new national standards were developed under the US Department of Agriculture National School Lunch and Breakfast Programs to align them with the Dietary Guidelines for Americans,¹⁵⁴ requiring schools to increase the availability of fruits, vegetables, and whole grains and reduce sodium and trans fats. Similar

programs have been developed in the European Union.^{153,155}

Example 3: Preventive Services and Collaborative HL Efforts

A major goal of the Affordable Care Act (ACA) of 2010 is to enhance connectivity between health care resources. The ACA includes federally mandated preventive services for adults that incorporate counseling on health and wellness issues, including PA. Although the ACA faces challenges in terms of how federal, state, and local policymakers allocate new funding, these mandated preventive services represent a paradigm shift in the US health care system, and they have the potential to be an important means to reverse the epidemic of physical inactivity and promote HLs.^{156,157} An extensive body of research, including cost-effectiveness studies, along with the ACA and other government support has led many health care systems to shift from a focus on sickness and disease to wellness and prevention. An increasing number of health care systems are incorporating performance measures that include counseling on diet and PA during every clinic visit.^{156,157} These measures have been found to be effective and should be implemented more broadly.

The emergence and proliferation of ACOs, facilitated by the ACA, will also encourage collaborative efforts centered around HL interventions.⁶³ Contrary to the traditional health care model that is based on fees for services rendered, ACOs will be financially rewarded for minimizing expenditures within their pool of covered lives by, for example, preventing hospital admissions. In this model, HL initiatives will become a central intervention for this preventive model. To increase preventive care efficacy and reach, ACOs will recognize the benefit of collaborating with other stakeholders who come in regular contact with a covered lives population. For example, an ACO may partner with (1) community organizations to deliver HL messaging and programming, (2) local government to create a built environment that is more conducive to PA (eg, walking paths, public transportation, bike sharing programs), (3) local restaurants/grocers to increase offerings for and showcase healthy food options, and/or (4) employers to offer WHWP.

Although the ACA was conceived in the United States, health care organizations around the world, regardless of differences in regulatory structure and payer model, can benefit from initiating and championing collaborative HL efforts; Europe has embraced this philosophy.^{158,159} Keeping individuals healthy and minimizing the need for hospital admissions associated NCDs is a primary goal for health care organizations globally.

Example 4: Employers

An increasing number of employers recognize the simple fact that anything done to improve the overall health status of the community will have positive effects on the health status of the workforce they acquire from those communities.¹⁶⁰ Thus, leading employers are extending their reach into the communities in which they serve and reside. They understand that making such connections has tangible value not only for their employees but also for their customers and suppliers. The needs of some communities are especially pressing when one considers marginalized populations who make up our most vulnerable individuals in terms of their health status. Such populations include persons without access to healthy foods, those who live in “food deserts” (ie, “urban neighborhoods and rural towns without ready access to fresh, healthy, and affordable food”¹⁶¹), and those without access to safe environments and resources that help support daily PA. These are some of the most essential elements to leading an HL. Given the numerous struggles faced by many communities, companies have an opportunity to make a difference. Rockford, Illinois, is an example of a city where employers have banded together to support a community lifestyle initiative, the Complete Health Improvement Program.¹⁶² The results of such efforts, based on HL initiatives, have been unquestionably favorable.¹⁶³ Employers can and many do have a great deal to say about the built environments and the societal value they create through their influence. Additionally, in some countries, employers are a primary payer of employee health services (ie, health insurance). As such, large employers are able to leverage their benefit designs in ways that can greatly influence and direct health care systems that are vying for “preferred provider” status. In this context, employers can become change agents by ensuring that health care

systems they choose to partner with provide high-quality HL interventions for their employees. In a single-payer health care system, the government replaces the employer to serve as the change agent in driving implementation of HL interventions.

Example 5: Partnerships With the Health Insurance Industry

The health insurance marketplace must connect with communities to address primordial and primary prevention and connect with assets in the community that can extend delivery of care and even provide funding or resources for prevention activities. Partnerships between the health insurance industry and other entities including community organizations, physicians, and individuals/families to conduct evidence- and community-based HL programming may be an effective means by which to address the most prevalent NCD risk factors. However, the greatest chance of success for such programming as well as return on investment is if they are combined with reporting and follow-up to an individual's primary care physician.¹⁰² This combination would include assessment data collected in the health/fitness setting and incorporated within an individual's EMR. There are examples in which model evidence-based interventions are done with diabetes prevention programs, exercise programs, cardiac rehabilitation, diet counseling, or educational offerings in community-based settings, reimbursed by health plans, to help people make lifestyle changes that address risk factors or manage NCDs.¹⁶⁴⁻¹⁶⁶ These kinds of partnerships and initiatives can establish important linkages across services and bring important resources to underserved communities where prevention efforts are so critical.

Example 6: Mobile Devices and Applications

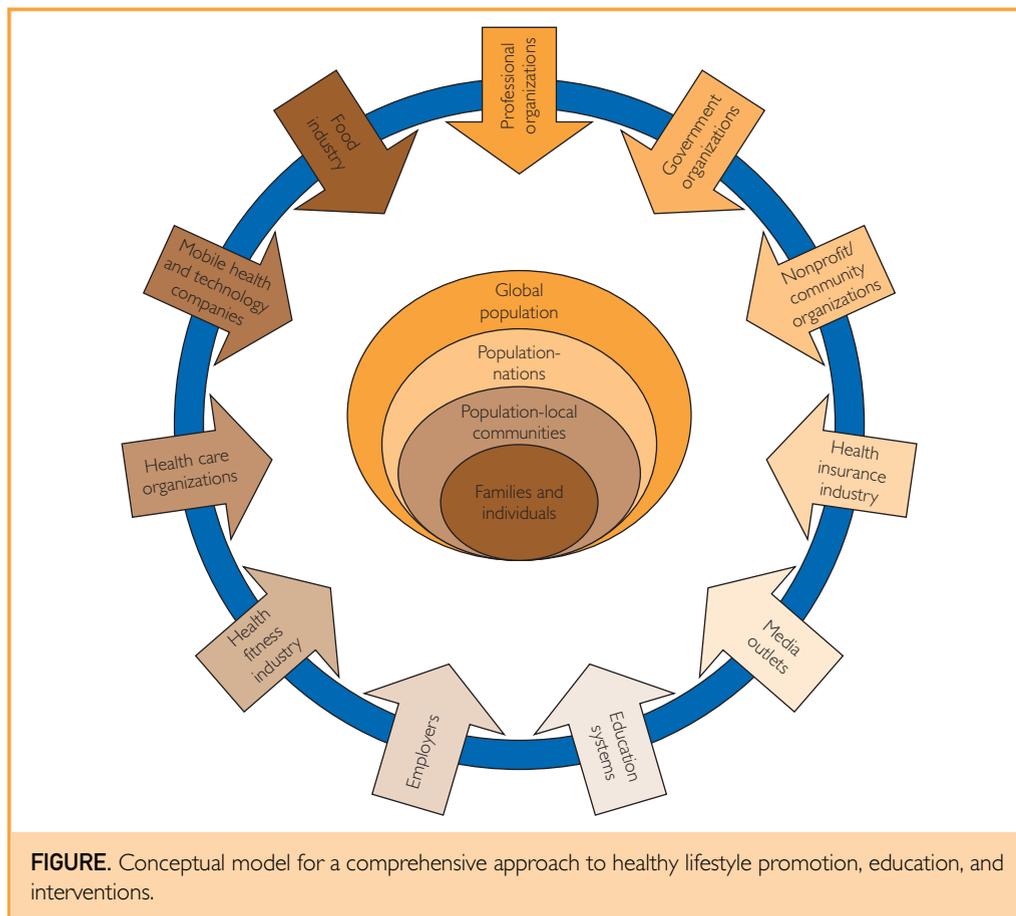
Professional organizations with access to health and medical experts in lifestyle medicine can play a pivotal role in the curation and rating of mobile devices and applications to help patients, caregivers, and physicians sort through the myriad of currently available and emerging technologies. These societies can convene consensus panels to provide guidance based on the scientific evidence and expert opinion on HL interventions integrating advanced technologies. Moreover, professional organizations can develop and test practice models that leverage

technologies and assist their members in adopting the most appropriate tools that support HL interventions. Wellness companies, health fitness facilities, and health insurance companies are taking the lead in adopting technologies to achieve positive HL changes and health outcomes. As early adopters, these groups could have an important role in sharing lessons learned and best practices for the use of technologies to support adoption of an HL. Entities providing health insurance, both private and governmental, can offer a variety of wellness support programs and tools, including mobile technologies. In addition, health insurers can aggregate and curate applications from the thousands available to guide their covered populations. Companies dedicated to rating and curating digital technologies are testing and exploring effective strategies for achieving this goal to guide providers across health care systems and the public.

New Connectivity Model

The [Figure](#) illustrates a new nonhierarchical connectivity model for key HL stakeholders and the populations they impact. All key stakeholders, described from both an individual and collaborative perspective in previous sections, are along the outer ring with an arrow pointing inward. They all have the ability to independently impact HL patterns in populations and individuals; there are no gatekeepers in this model. Key components of this conceptual model are (1) there is no hierarchical structure; all stakeholders play a valuable role in initiating, developing, and implementing HL initiatives at all levels and (2) all stakeholders in the outer ring are connected, no longer viewed as independent entities working in silos. Stakeholder communication and collaborative efforts will have a much more sizable positive impact and are thus necessary to future progress. In this model, the potential initiatives and stakeholder collaborative models are countless. With respect to HL interventions, which are undeniably an essential component of NCD prevention and treatment, we propose broad adoption of this model moving forward.

We recognize that the model being proposed in this policy statement is originating from a joint US-European effort. We also recognize that the majority of examples provided in this policy



statement are from the United States and Europe. However, the nonhierarchical connectivity model proposed herein has relevance to the vast majority of countries around the world. The essence of this supposition is that all stakeholders are on an equal plane with no restriction on initiative design or connectivity. Moreover, we are not proposing that all HL stakeholders described in this policy statement are needed in a given country to implement this model; creative collaboration using available resources and infrastructure is all that is required. Our hope is that HL stakeholders from countries around the world will agree with this viewpoint and begin to explore how this model can be adapted and applied locally.

CHALLENGES AND SOLUTIONS TO INCREASING HL BEHAVIORS

There are, of course, challenges to proposing this rather substantial paradigm shift aimed at improving HL patterns and behaviors. All

stakeholders involved recognize that this is a monumental task but one that is necessary to improve population health and alter the current deleterious trajectory of NCD incidence and prevalence. Stakeholders should continually be cognizant of potential challenges to HL initiatives, vigilant in monitoring for their manifestation, and proactive in creating solutions when needed. During HL initiative development, there should be abundant discussion on potential challenges and consideration of preemptive solutions. Continual monitoring of the success associated with implementation of HL initiatives by participating stakeholders is also imperative. A flexible plan for all HL initiatives will allow for real-time change as challenges and barriers are identified; such flexibility is essential for the model proposed in this policy statement. Barriers and challenges associated with increasing HL behaviors are considerable and to a degree unpredictable at all levels; all stakeholders must collectively and continually learn and

adapt to overcome barriers and challenges. The following sections describe examples of barriers and challenges associated with HL initiatives and propose potential solutions. The intent of this section is to provide a thought process framework that is applicable to other areas. Because individuals are the ultimate recipients of HL initiatives and interventions, this section will focus primarily on potential challenges and solutions at this level.

Challenge 1: Barriers to Government Intervention or Action

Barriers to government intervention or action often include public perception of a “nanny state” or intrusion into private spaces or individual rights, an attitude that is more prevalent in the United States but less evident in Europe where a public welfare system has been largely adopted. In a free society, this perception leads to a delicate balance between a government’s legal obligation to promote public health and the importance of not trampling on individual freedoms or responsibilities. Proper messaging and well-formulated campaign strategies should help to ameliorate this potential negative perception. Interestingly, an editorial on the obesity crisis in the *Canadian Medical Association Journal* called on the government in Canada to “act to restrict the sale of high-calorie and nutrient-poor food products or reduce the incentive to buy them through increasing their prices via taxation.”¹⁶⁷ This editorial highlights the perceived urgent need for alternative, and in this case potentially unpopular, approaches to curtail the trajectory of NCD incidence and prevalence.

Another potential concern is the pressure applied on government action by powerful lobbying groups that are protecting special interests. This issue can lead to loss of public trust in the actions of government or the reports and guidelines produced by governments that could be rectified with some third-party oversight or partnership with or endorsement by professional organizations.¹⁶⁸ A multiparty political structure is beneficial in serving as a checks and balances system, continually debating the ideal scope, power, and competence of government to address key issues that affect the public well-being. Finally, initiatives such as NCD prevention and HL promotion often take a long time to achieve, but

government officials largely base their priorities on issues with shorter time frames such as the next election cycle.¹⁶⁹ This factor can lead to a lack of congruence between public health goals and government priorities and appropriations. Entities outside of government, such as professional and community organizations, with a long-term interest in HL initiatives need to ensure that their message is continually relayed and reinforced across election cycles.

Challenge 2: Barriers to Behavior Change

At its core, lifestyle medicine is the “evidence-based practice of assisting individuals and families to adopt and sustain behaviors that can improve health and quality of life.”¹⁷⁰ The impact of HL interventions on improving quality and quantity of life has been described and suggests that modest lifestyle changes, maintained over time, are effective, although long-term adherence to these new behaviors can frequently be difficult.¹⁷¹ The use of various strategies to impact behavior change, and methods by which these strategies can be delivered, has also been characterized. Cognitive behavioral strategies believed to be critical in providing effective behavior modification are identified in [Table 3](#). The processes for providing behavior change, including behavior modification interventions, are diverse, and differences between strategies and interventions continue to undergo study. [Table 4](#) briefly outlines various interventions for consideration that address a variety of barriers to adopting behavior change.

Challenge 3: Barriers to Education

Recent efforts to educate women about highly prevalent NCDs such as CVD and its risk factors have been regarded as successful, although more work is needed.¹⁷² Women are often key decision makers and change agents within their families and their communities. The recognition by women of the magnitude of CVD, not only in general but specific to themselves, has increased considerably, although there is still disparity in racial and ethnic minorities.¹⁷³

A national study identified primary motivators for women to take action for CVD prevention, including “improving health,” “feeling better,” and “living longer.”¹⁷³ Secondly, “avoiding taking medications,” “doing it for family,” and “recently receiving information related to heart disease” were also factors. Barriers to changing

TABLE 3. Strategies for Impacting Behavior Change

- Goal setting—provide goals that are specific, attainable, and realistic
- Self-monitoring—facilitate progress and identify and reduce barriers
- Scheduled follow-up—establish familiarity and trust between patient and physician and provide for modification of the behavior change program
- Feedback and reinforcement—promote positive behaviors and develop personal assessment skills
- Self-efficacy enhancement—promote patient perception of ability to initiate and maintain appropriate behaviors
- Incentivizing—identify strategies to promote behavior modification
- Modeling—observe others who personify commitment to a behavior strategy
- Problem solving—identify barriers to behavior modification and plan for resolutions
- Relapse prevention—recognize risk behaviors and strategies for prevention and support

Data from *Circulation*.¹⁷¹

behavior appeared to be variable, but “too much confusion in the media” was frequently identified by study participants in general. Although the belief that “a higher power determines my health” was common in all participants, it was substantially greater in the nonwhite participants. Interestingly, lack of time was not high on the list of barriers for either group.¹⁷³ These results should remind us that a single approach in program development to address HL in the primordial, primary, and secondary prevention of NCDs may have limitations in addressing the needs in diverse populations.

Importantly, however, the awareness of unhealthy lifestyle risk factors was positively associated with action to reduce risk, not only for women themselves but among family members as well. In this regard, it should be noted that women at high risk were more likely to seek health care, and these women, along with those at moderate risk for CVD, were more likely to encourage family members to be evaluated for

CVD risk.¹⁷³ The challenge here, as with the issue as a whole, is the provision of clear and concise information and education targeted at specific groups within the various communities. If the appropriate message is delivered and awareness is elevated, appropriate action to reduce risk is more likely to be taken. Recognizing barriers to the educational process as well as in taking steps to improve health is essential.

Challenge 4: Barriers to HL Programs

For patients diagnosed with an NCD, educating families and referrals to appropriate HL programs assist in reducing NCD exacerbations, morbidity, and mortality.¹⁷⁴ Services provided within these programs include smoking cessation, exercise training, dietary therapy, and behavior modification.¹⁷⁵ However, a host of barriers to HL programs, such as cardiac rehabilitation, result in participation rates of less than 50% of eligible patients worldwide.¹⁷⁶ Such barriers include poor physician referral,

TABLE 4. Considerations in Identifying Appropriate Delivery Interventions for Behavior Change Programming

- Simultaneous interventions or sequential delivery
- Group-based—provides for social interaction, group support, and a positive observational learning environment among participants
- Individual-based—provides for personalized and tailored recommendations and a sense of confidentiality
- Technology-based—able to reach large numbers of individuals conveniently, can electronically store varying types of material and provide for interaction and feedback
- Print- or media-based—individualized to specific population subsets or nonindividualized
- Multicomponent-based—combinations of technology- and media-based as well as group- and individual-based delivery
- Special considerations for minority or socioeconomically disadvantaged persons—behavior change strategies and delivery systems tailored for diversity within cultures, attitudes, beliefs, and lifestyles, as well as potential education and economic considerations

Data from *Circulation*.¹⁷¹

low patient enrollment, and economic and logistic limitations.¹⁷⁷ Consequently, there should be added emphasis on efforts to increase participation and identify effective alternatives in the delivery systems including individual programming and group interventions, telecare, Internet-based technology, or combinations of these options, with the ongoing potential for personal interactions with clinicians and other health care professionals and educators.¹⁷¹

Conclusions Regarding Challenges and Solutions

Despite evidence of the importance and value of HL interventions in preventing NCDs, the identification of both effective strategies and delivery systems to overcome barriers to utilization continues to be a concern. General awareness of NCD risk through unhealthy lifestyle behaviors among the populous and subsequent improvement through increased HL uptake is the overall goal, but there is continuing need for specific attention to groups and individuals in whom initiatives may not be successful (eg, women, racial and ethnic minorities, those of advancing age, persons with low self-efficacy or low education). An interdisciplinary approach to behavior modification in overcoming barriers to successful HL programming is critical. Successful delivery of HL interventions must be the result of synergistic relationships among public advocacy and policy, the research and clinical communities, and the public.¹⁷⁸

CALL TO ACTION AND NEXT STEPS

The importance of leading an HL in NCD prevention and treatment is undeniable, and the evidence clearly documenting this cause and effect continues to mount. Recently, Larsson et al¹⁷⁹ assessed risk of stroke in more than 30,000 Swedish women and found that leading an ideally HL lowered risk of observed events by 62%. Åkesson et al¹⁸⁰ assessed the risk of myocardial infarction in more than 20,000 Swedish men and found that leading an ideally HL could prevent 79% of the observed cardiovascular events. Unfortunately, in the latter study, only 1% of the cohort assessed was defined as leading an ideally HL. In an editorial commenting on the study by Åkesson et al,¹⁸⁰ Mozzafarian¹⁸¹ concluded: “By pursuing complementary strategies *within and outside the health*

system, we can achieve the promise demonstrated by Åkesson and colleagues, as well as by a wealth of additional evidence, that the great majority of cardiovascular events are preventable or can be delayed until late in life by means of a healthier lifestyle.” This passage from the editorial perfectly summarizes the rationale for the current policy statement and encapsulates the importance of identifying and integrating stakeholders to increase HL behaviors across the global population. We view the message in this editorial as a strong basis for a call to action.

From a broader organizational perspective, the stakeholder roles listed in Table 1 serve as the foundation for action plan development. We strongly encourage stakeholders to integrate these roles into their culture, mission, vision, and strategic plan. Individual stakeholders must also be committed to a collaborative model as described in this policy statement. This approach will result in translation of defined roles into HL action plans that are unique and achievable for a given stakeholder and collaborative network.

Development and implementation of an HL action plan ultimately requires individuals committed to ensuring its success. To this end, we propose building a network of “HL ambassadors (HLAs)” as a key next step in realizing this HL call to action. The HLA model should be integrated into the infrastructure of all stakeholders described in this policy statement; even the family unit would benefit from a designated HLA. Depending on the size and scope of a given stakeholder, the number of HLAs needed to ensure that HL initiatives have adequate support for development and implementation will vary. Healthy lifestyle ambassadors are responsible for championing HL initiatives within their organization as well as collaborating with HLAs in other external stakeholder organizations as described in this policy statement. We call upon the stakeholders identified in this policy statement to embrace the HLA concept, creating an official designation with associated roles and responsibilities. At the onset, the roles of HLA(s) should develop as the mission, vision, and strategic plan centered on how HL initiatives will be developed and implemented. The name and contact information of each HLA for a given stakeholder should be readily identifiable both within and outside the organization. A plan for communicating and collaborating with other

stakeholders should also be developed. Formation of formal HLA networks and routine face-to-face meetings among stakeholders within a community or region is recommended.

We hope that this policy statement motivates stakeholders to take the following actions: (1) embrace their defined roles with respect to HL promotion and take action that will result in meaningful and positive change, (2) officially designate one or more HLAs that have the organizational support needed to develop and implement HL initiatives, and (3) commit to ongoing communication among stakeholders that will result in collaborative HL initiatives.

CONCLUSION

This AHA/ESC/EACPR/ACPM policy statement recommends integrated action by all stakeholders to achieve an increase in the adoption of HL behaviors on a global scale. We propose a novel nonhierarchical connectivity model with the hopes of enhancing communication, collaboration, and creativity with respect to HL initiatives. Lastly, we encourage all stakeholders to embrace their respective HL roles defined in this policy statement and designate HLAs to achieve the change in global health that is urgently needed.

Abbreviations and Acronyms: **ACA** = Affordable Care Act; **ACO** = accountable care organization; **ACPM** = American College of Preventive Medicine; **ACSM** = American College of Sports Medicine; **AHA** = American Heart Association; **CDC** = Centers for Disease Control and Prevention; **CVD** = cardiovascular disease; **EACPR** = European Association for Cardiovascular Prevention and Rehabilitation; **EMR** = electronic medical record; **ESC** = European Society of Cardiology; **HL** = healthy lifestyle; **HLA** = healthy lifestyle ambassador; **LRD** = lifestyle-related disease; **NCD** = noncommunicable disease; **PA** = physical activity; **PCMH** = primary care medical home; **WHO** = World Health Organization; **WHWP** = worksite health and wellness program

Author Affiliations: AHA Writing Group—Ross Arena, PhD, PT, University of Illinois, Chicago; Kathy Berra, MSN, RN, Stanford University, Stanford, CA; Donald Dengel, PhD, University of Minnesota, Minneapolis; Nina Cherie Franklin, PhD, MS, LMT, University of Illinois, Chicago; Marie-France Hivert, MD, MMSc, Harvard University, Boston, MA; Leonard Kaminsky, PhD, Ball State University, Muncie, IN; Carl J. Lavie, MD, University of Queensland School of Medicine, New Orleans, LA; Donald M. Lloyd-Jones, MD, Northwestern University, Chicago, IL; Jonathan Myers, PhD, VA Palo Alto Health Care System, Palo Alto, CA, and Stanford University, Stanford, CA; Laurie Whitsel, PhD, American Heart Association, Washington, DC; Mark Williams, PhD, Creighton University, Omaha, NE.

ESC/EACPR Writing Group—Ugo Corra, MD, Università degli Studi di Milano, Milan, Italy; Francesco Cosentino, MD, PhD, Karolinska Institute, Stockholm, Sweden; Paul Dendale, MD, PhD, Universiteit Hasselt, Hasselt, Belgium; Pantaleo Giannuzzi, MD, Scientific Institute for Critical Care and Research, Veruno, Italy; Stephan Gielen, MD, Universitätsklinikum Halle, Halle, Germany; Marco Guazzi, MD, PhD, University of Milano, Milan, Italy; Martin Halle, MD, Technische Universität München, Munich, Germany; Josef Niebauer, MD, PhD, MBA, Paracelsus Medical University, Salzburg, Austria; Antonio Pelliccia, MD, Institute of Sports Medicine and Science, Rome, Italy; Massimo F. Piepoli, MD, PhD, Guglielmo da Saliceto Hospital, Piacenza, Italy; Fausto J. Pinto, MD, PhD, Lisbon University Medical School, Lisbon, Spain.

ACPM Writing Group—George Guthrie, MD, MPH, Center for Family Medicine at Florida Hospital, Winter Park, FL; Liana Lianov, MD, MPH, American College of Lifestyle Medicine, Chesterfield, MO; Dexter Shumey, MD, Cummins Inc, Columbus, IN.

Correspondence: Address to Ross Arena, PhD, PT, Department of Physical Therapy, College of Applied Health Sciences, University of Illinois Chicago, 1919 W Taylor St (MC 898), Chicago, IL 60612 (raarena@uic.edu).

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