ANALYTIC
R E V I E WRoss Arena, PhD, PT, FAHA, Carl J. Lavie, MD, and
Marco Guazzi, MD, PhDPrescribing a Healthy Lifestyle
Polypill With High Therapeutic
Efficacy in Many Shapes and
Sizes

Abstract: *The paradigm allowing for a lifestyle immersed in unhealthy behaviors to perpetuate to a point where a non-communicable disease (NCD) is eminent or manifests, and then initiating health care interventions, is deeply flawed, results in poor outcomes, and is unsustainable. This paradigm describes the current predominant healthcare model in many countries around the world and has resulted in the continual increase in unhealthy lifestyle patterns that have led to the global NCD epidemic. It is now broadly recognized that rapid integration of a new healthcare model, one heavily focused on primordial and primary NCD prevention, is needed. Being physically active, eating healthy and nutritious foods, not smoking and minimizing second-hand exposure, and maintaining an appropriate body weight are central to this new prevention model. Combined, these four characteristics can be viewed as the key ingredients for the “healthy lifestyle polypill”. Recently, the American Heart Association (AHA),*

European Society of Cardiology (ESC), European Association for Cardiovascular Prevention and Rehabilitation (EACPR), and American College of Preventive Medicine (ACPM) came together

is not needed to start manufacturing and distributing this medication. The polypill can take many forms and have differing ingredients and dosages while still maintaining high therapeutic efficacy.

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to publish, in both the Mayo Clinic Proceedings and European Heart Journal, a policy statement entitled “Healthy Lifestyle Interventions to Combat Non-Communicable Disease: A Novel Non-Hierarchical Connectivity Model for Key Stakeholders”. We hope the AHA-ESC-EACPR-ACPM healthy lifestyle policy statement prompts a massive increase in production of the healthy lifestyle polypill. Regulatory approval

Keywords: healthy lifestyle; exercise; weight loss; smoking cessation; nutrition

The paradigm allowing for a lifestyle immersed in unhealthy behaviors to perpetuate to a point where a noncommunicable disease (NCD) is eminent or manifests, and then initiating

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health care interventions, is deeply flawed, results in poor outcomes, and is unsustainable. This paradigm describes the current predominant health care model in many countries around the world and has resulted in the continual increase in unhealthy lifestyle patterns that have led to the global NCD epidemic; the trajectories of obesity, physical inactivity, and unhealthy diet are particularly disconcerting.^{1,2} It is now broadly recognized that rapid integration of a new health care model, one heavily focused on primordial and primary NCD prevention, is needed. Being physically active, eating healthy and nutritious foods, not smoking and minimizing secondhand exposure, and maintaining an appropriate body weight are central to this new prevention model. Combined, these 4 characteristics can be viewed as the key ingredients for the *healthy lifestyle polypill*.

The value of leading a healthy lifestyle is no secret, with its benefits espoused for thousands of years.³ The intent of this analytic review is not to analyze and posit why modern-day health care has not embraced the healthy lifestyle polypill and prescribed it universally. Rather, this analytic review looks forward, to a day where the vast majority of the global population are prescribed and routinely take the healthy lifestyle polypill.

Recently, the American Heart Association (AHA), European Society of Cardiology (ESC), European Association for Cardiovascular Prevention and Rehabilitation (EACPR), and American College of Preventive Medicine (ACPM) came together to publish, in both the *Mayo Clinic Proceedings* and *European Heart Journal*, a policy statement titled "Healthy Lifestyle Interventions to Combat Noncommunicable Disease: A Novel Nonhierarchical Connectivity Model for Key Stakeholders."^{4,5} The intent of this policy statement was to first comprehensively identify all individual healthy lifestyle stakeholders and provide examples of unilateral initiatives that have demonstrated a positive impact on one or more facets of lifestyle. The writing group of this policy

statement believes the stakeholders identified are central to healthy lifestyle initiatives moving forward. While a substantial proportion of this policy statement was committed to the exercise of demonstrating the individual value of each stakeholder, which was necessary, the true value and novelty of this policy statement was in proposing a nonhierarchical connectivity model with unlimited approaches to collaboration and programing structure. The writing group, with members from the United States and several European countries, felt such an approach is the only way to spur innovation and ultimately be successful. This model is made possible by the fact that healthy lifestyle initiatives do not require substantial regulation—there is essentially no side effect profile to the healthy lifestyle polypill—and everyone, regardless of age, sex, race/ethnicity, or health status, should be prescribed this medication. Moreover, the dosage and composition of the healthy lifestyle polypill can differ dramatically and still be highly effective. For example, numerous studies have demonstrated that increasing physical activity to levels above a sedentary lifestyle but still far below the recommended amount (ie, 30-60 minutes of moderate physical activity most if not all days of the week) can have tremendous health benefits; we have known this for decades and more recent analyses continue to support this premise.^{6,7} Thus, even a healthy lifestyle polypill routinely taken at a submaximal dose remains a highly worthwhile endeavor. In fact, in order to increase the likelihood of medication compliance, prescribing the healthy lifestyle polypill at a lower than optimal therapeutic dosage, especially in those who are starting from predominantly or completely poor lifestyle habits, may be the best approach and a more realistic goal for a large percentage of the population. The dosage of this polypill can always be increased to derive greater benefit. From a global population level, small changes in physical activity patterns can have dramatic positive health effects.⁸

Health care has historically existed in a silo—not prone to creatively collaborating with other entities to expand the impact of the interventions delivered under their purview. Moreover, in the United States in particular, reimbursement for health care has traditionally followed a fee-for-service model. The emergence of the Affordable Care Act (ACA) has the potential to catalyze tremendous change in the current US health care model—in particular through accountable care organizations (ACOs).⁹ Through ACOs, the fee-for-service model is replaced by a covered-lives model. The goal of an ACO is to recruit a covered lives population and do one of the following: (a) prevent the development of the risk factors associated with NCDs (ie, primordial prevention); (b) if NCD risk factors are present, improve/reverse the trend before an NCD manifests (ie, primary prevention); or (c) if an NCD is already diagnosed, improve/reverse the trend to minimize the likelihood of subsequent adverse events (ie, secondary prevention). The goal is to minimize costly health care expenses, such as hospitalizations and surgical procedures, which are highly prevalent with NCDs. In a financial model where there is a fixed pool of resources, the incentive for ACOs to provide high-quality and cost-efficient care is critical. In fact, an ACO would not be able to survive without this approach. Given the current approach to treating the at-risk and diagnosed NCD population, and its unsustainable economic burden, we now recognize preventative care must replace reactionary care (ie, waiting for a diagnosis or adverse event to occur before initiating medical treatment). Health care organizations must also look beyond the walls that have long-defined its organizational infrastructure—an infrastructure that waits for patients to come inside the walls of the health care organization to receive care. Instead, health care organizations would be better served by substantially increasing efforts to engage individuals within the community setting. Keeping individuals healthy and productive within the community they live, particularly from a

primordial prevention approach, has the potential to significantly alter the trajectory of population health. A capitated, covered lives model requires a paradigm shift, allowing for creative thinking as to how resources are committed to optimizing health and minimizing costly procedures. The nonhierarchical connectivity model proposed in the AHA-ESC-EACPR-ACPM lifestyle policy statement endorses such creative partnerships, deconstructing silos and replacing them with open environments and clear communicative lines of site. With a shift in the financial model and what constitutes quality medical care, health care organizations can and should become a key stakeholder in this area. In fact, health care organizations are central to the success of healthy lifestyle initiatives given they employ professionals who, moving forward, should be well-versed in this area through their academic preparation. Their expertise and guidance will be a crucial component. While the ACA and ACOs are United States based, changes in the health care landscape, the shift to NCD prevention through healthy lifestyle initiatives, is a global imperative. The unifying global message is preventative health care, in large part through promoting a healthier lifestyle, is needed. As such, all countries, regardless of their health care infrastructure or payer model, will find applicability in the model proposed by the AHA-ESC-EACPR-ACPM healthy lifestyle policy statement. In fact, the writing group conceptualized the model to ensure flexibility in thinking and therefore global applicability. Stakeholders listed in the policy statement do not have to have the same infrastructure; not all stakeholders even need to be present in a given country, although the vast majority of countries do have all listed. Being physically active, partaking in a healthy and nutritious diet on a daily basis, not smoking and avoiding secondhand exposure, and maintaining a healthy body weight is a universal language that everyone around the world should speak.

Currently, despite our deep understanding of how important leading a healthy lifestyle is, global health continues to decline. Our true hope is that this policy statement helps facilitate finally reaching a critical mass, one that substantially expands healthy lifestyle initiatives on a global scale. To this end, we included a call to action that encourages all stakeholders to embrace their defined healthy lifestyle roles set forth in the policy statement. We also proposed all stakeholders designate *Health Lifestyle Ambassadors* within their respective organizations. No initiatives are successful without people who are invested and the health lifestyle ambassadors will serve this role. The time for talking and writing about how important it is to lead a healthy lifestyle is over, as is the time to continually set targets and then titrate them when they are not achieved.¹⁰ Immediate action is needed, measureable change is needed; the consequences of inaction and maintaining the same global NCD trajectory will be catastrophic.

In closing, we hope the AHA-ESC-EACPR-ACPM healthy lifestyle policy statement prompts a massive increase in production of the healthy lifestyle polypill. Regulatory approval is not needed to start manufacturing and distributing this medication. The polypill can take many forms and have differing ingredients and dosages while still maintaining high therapeutic efficacy. Last, there are no contraindications and only one indication for prescription of the healthy lifestyle polypill—being a member of the human race. We look forward to this new policy statement prompting meaningful and positive change.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article. [AJLM](#)

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