

# The Healthy Lifestyle Team is Central to the Success of Accountable Care Organizations

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Mr Smith is a 45-year-old man at substantial risk for cardiovascular disease (CVD) because of the following laboratory findings: body mass index (BMI; calculated as the weight in kilograms divided by the height in meters squared), 29.5; resting blood pressure (BP), 130/85 mm Hg; low-density lipoprotein cholesterol (LDL-C), 130 mg/dL (to convert to mmol/L, multiply by 0.0259); high-density lipoprotein cholesterol (HDL-C), 38 mg/dL (to convert to mmol/L, multiply by 0.0259); triglycerides, 180 mg/dL (to convert to mmol/L, multiply by 0.0113); fasting blood glucose, 110 mg/dL (to convert to mmol/L, multiply by 0.0555); hemoglobin A<sub>1c</sub>, 6.4% (to convert to a proportion of total hemoglobin, multiply by 0.01); sedentary lifestyle; and poor dietary habits. However, Mr Smith has never smoked, and his family history does not indicate a genetic predisposition for hypertension, dyslipidemia, or CVD. Mr Smith is going to his primary care physician for a health assessment; he completes forms pertaining to general health information and insurance coverage and is brought to an examination room by a nurse, who measures his heart rate and BP. To this point, everything described is consistent with how health care in this setting has been conducted for decades.

However, in the not too distant future, the following will take place next. The nurse then asks him to complete physical activity (PA)/exercise training (ET) and dietary questionnaires, explaining that this is part of his vital signs assessment. The physician enters the room, exchanges some introductory dialogue, listens to heart sounds, and asks some standard questions pertaining to symptoms of CVD, of which there were none. The physician reviews Mr Smith's questionnaire responses: (1) low daily PA (approximately 3000 steps per day), (2) not participating in regular ET, (3) high total fat intake (approximately 40%), and (4) high sodium intake (approximately 3000 mg/d). The conversation then quickly centers on PA, ET,

and diet.<sup>1,2</sup> Mr Smith shares more information regarding his predominantly sedentary lifestyle; the physician is acutely aware that this pattern is a significant health concern. He then provides more detail regarding his dietary habits, which the physician also recognizes to be rather poor and disconcerting. After Mr Smith answers all questions pertaining to these core lifestyle habits, the physician is ready to provide a diagnosis and care plan: "Mr Smith, you have poor lifestyle habits, which, if not treated immediately, will likely lead to the development of one or more non-communicable diseases (NCDs)." The physician then explains to the patient that BP, cholesterol, and blood glucose medications may be unnecessary. To treat the patient's condition, the healthy lifestyle team will prescribe the following medical interventions: (1) strategies to increase daily PA, (2) a regular ET program, (3) guidance on a healthy diet, and (4) behavioral strategies to optimize healthy lifestyle success. This program will be individually tailored, and the patient will need to be an active participant in developing this plan. Mr Smith is then scheduled for appointments with 3 other members of the healthy lifestyle team, in this case an exercise physiologist, dietician, and behavioral counselor.

Mr Smith has his appointments with the exercise physiologist, dietician, and behavioral counselor within the next week, all on the same day. The exercise physiologist performs an exercise test to assess aerobic capacity, which was 20% below the predicted norm. The exercise physiologist discusses the test results followed by a conversation regarding ways to increase daily PA and how to initiate an ET program with an ultimate goal of 150 minutes or more of moderate-intensity exercise per week. Mr Smith has a smartphone, and the exercise physiologist instructs him on how to use an application that allows for tracking of daily PA and the ET program. The dietician then meets with Mr Smith in the healthy lifestyle counseling

room in this clinical practice. The exercise physiologist shares the PA recommendations and ET program provided to Mr Smith with the dietician. Mr Smith is present and encouraged to engage in this dialogue. The dietician then performs an in-depth assessment of Mr Smith's current dietary patterns. This assessment is followed by a conversation regarding strategies for a healthier diet from both a total daily calorie and food-choice perspective. The dietician and Mr Smith develop a mutually agreed on dietary program; weight loss is a desirable goal, and the diet is designed to create a negative caloric balance projected to decrease body weight by 1 to 2 lb per week. The dietician incorporates the PA/ET plan into the caloric intake projections. The mobile phone application previously downloaded during the appointment with the exercise physiologist also tracks dietary patterns, and the dietician reviews how to use this portion of the application with Mr Smith. Lastly, Mr Smith meets with a behavioral counselor, who assesses for potential barriers to successful integration of the prescribed healthy lifestyle interventions. Through this assessment, the behavioral counselor determines that Mr Smith is highly motivated to adopt these recommendations and no further interventions are needed at this time.

The healthy lifestyle team, composed of the physician, nurse, exercise physiologist, dietician, and behavioral counselor, discusses Mr Smith's assessment and plan of care during their weekly meeting. All agree with the plan of care, and Mr Smith is instructed to update the healthy lifestyle team on progress and program adherence via e-mail every 2 weeks. He is encouraged to contact the healthy lifestyle team if any questions or concerns arise and is scheduled to return for a reevaluation by the team's nurse in 3 months.

At Mr Smith's reevaluation, his assessment reveals the following: BMI, 26.3; resting BP, 122/78 mm Hg; LDL-C, 110 mg/dL; HDL-C, 40 mg/dL; triglycerides, 110 mg/dL; fasting blood glucose, 95 mg/dL; hemoglobin A<sub>1c</sub>, 5%; physically active lifestyle (consistently >10,000 steps per day) and participation in a regular ET program (175 minutes of moderate-intensity exercise per week); and health dietary habits (25% of calories from predominantly unsaturated fats and <2000 mg/d of sodium intake). The nurse member of this team has undergone significant healthy lifestyle training and is cognizant of the excellent progress Mr Smith is making; she

encourages him to continue his program. The nurse reports her findings to the healthy lifestyle team during the weekly meeting, and all concur that the intervention is effective and appropriately titrated.

### **NCDs: WHY A CHANGE IN APPROACH TO HEALTH CARE IS NEEDED**

The world is well aware of the current burden of NCDs. As the leading cause of morbidity and mortality in developed countries around the world, CVD is the most disconcerting NCD.<sup>3</sup> The risk of developing an NCD, CVD in particular, is substantially higher in individuals with unhealthy lifestyle characteristics, including obesity, physical inactivity, poor diet, and cigarette smoking. Globally, a BMI prevalence of 25 or higher in adults is now greater than 35%; excess body mass, particularly class II/III obesity, substantially contributes to higher morbidity and mortality<sup>4</sup> and higher health care costs (approximately \$147 billion in annual health care costs currently attributable to obesity in the United States alone<sup>5</sup>). Approximately 31% of adults around the world are not meeting minimal PA requirements, with 1 in 5 adults being completely sedentary.<sup>6,7</sup> In 2008, physical inactivity caused approximately 5.3 million deaths globally,<sup>8</sup> and being physically inactive is now the fourth leading cause of death globally<sup>7</sup>; even time spent sitting is an independent risk factor for CVD.<sup>9</sup> It is projected that time spent being physically inactive will continue to substantially increase,<sup>10</sup> with valid concern that lack of PA will continue to threaten global health and the economy (approximately \$75 billion in annual health care costs currently attributable to physical inactivity in the United States alone<sup>5</sup>). Dietary quality and excess caloric intake are unhealthy in many industrialized nations and significantly add to the NCD burden.<sup>11,12</sup> Smoking has decreased over time but is still a significant health problem and likewise contributes to the global NCD burden.<sup>13</sup>

It is clearly established that the incidence and prevalence of NCDs can be significantly curtailed if a healthier lifestyle is adopted globally.<sup>14-18</sup> Because of this link, NCDs are now being referred to as lifestyle-related diseases. A recent study<sup>19</sup> analyzed myocardial infarction risk in a large (>20,000) male cohort in Sweden and found leading a healthy lifestyle could prevent 79% of the adverse events that

occurred. The editorial associated with this study 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."<sup>20</sup> Simply stated, individuals need to exercise, improve nutritional quality and manage caloric balance, not smoke, and maintain a healthy body weight.<sup>21</sup> To achieve this goal, assisting individuals to lead a healthy lifestyle should and in fact must become a recognized medical intervention, standard of care, and quality indicator.

#### ENTER THE HEALTHY LIFESTYLE TEAM

The clinical scenario that served as the opening passage of this commentary presents a new paradigm for health care, one that encompasses a team of professionals who, collectively, have the expertise to comprehensively provide effective healthy lifestyle interventions. The clinical scenario described herein specifically identifies several integral members of the healthy lifestyle team, but additional members, not required for this specific case, are essential nonetheless. Specifically, physical and occupational therapists serve a valuable role in treating those individuals with functional deficits that result from a condition that compounds unhealthy lifestyle behaviors and impairs the ability to initiate healthy choices. Once that condition has been addressed, the physical and/or occupational therapist would transition the patient to the exercise physiologist for the long-term PA/ET program. There is also the opportunity to enhance staffing efficiency, including identifying health care professionals who may serve dual roles. For example, if properly advertised, an individual with degrees in both exercise physiology and physical therapy may be recruited for a position on a healthy lifestyle team. Moreover, although each team member has unique skills and expertise, all should have a strong cognitive and practical foundation in all facets of healthy lifestyle programming, be it through academic training, advanced certifications, continuing education courses, in-servicing, or a combination thereof. A cohesive and consistent message by each

team member is essential, and this is only achieved if all team members have an understanding of the concept of a healthy lifestyle and why it is important.

The healthy lifestyle team must also embrace flexibility in its approach to each individual under the team's care; it is not a one-size-fits-all approach. Some individuals already have a healthy dietary pattern but are sedentary, others require smoking cessation programming, and still others require more intensive behavioral counseling. Moreover, the intensity, or dosage, for a given healthy lifestyle intervention to be effective will vary on a continuous scale, where some individuals will be self-motivated and embrace interventions independently, whereas others will be less motivated and require more attention and interaction. Medical history and risk associated with unsupervised ET, for example, being higher in patients with heart failure, also influence the degree of interaction needed for healthy lifestyle interventions. Therefore, the healthy lifestyle team needs to be flexible in strategizing optimal interventions, specifically targeting identified unhealthy lifestyle behaviors and appropriately titrating intervention intensity and frequency of interaction, as well as forming strategic partnerships that extend the level of interaction (eg, cardiac rehabilitation, fitness clubs, community organizations, school systems, and worksite wellness programs). Moreover, the healthy lifestyle team must be vigilant in monitoring progress and adjust accordingly when progress is not being made.

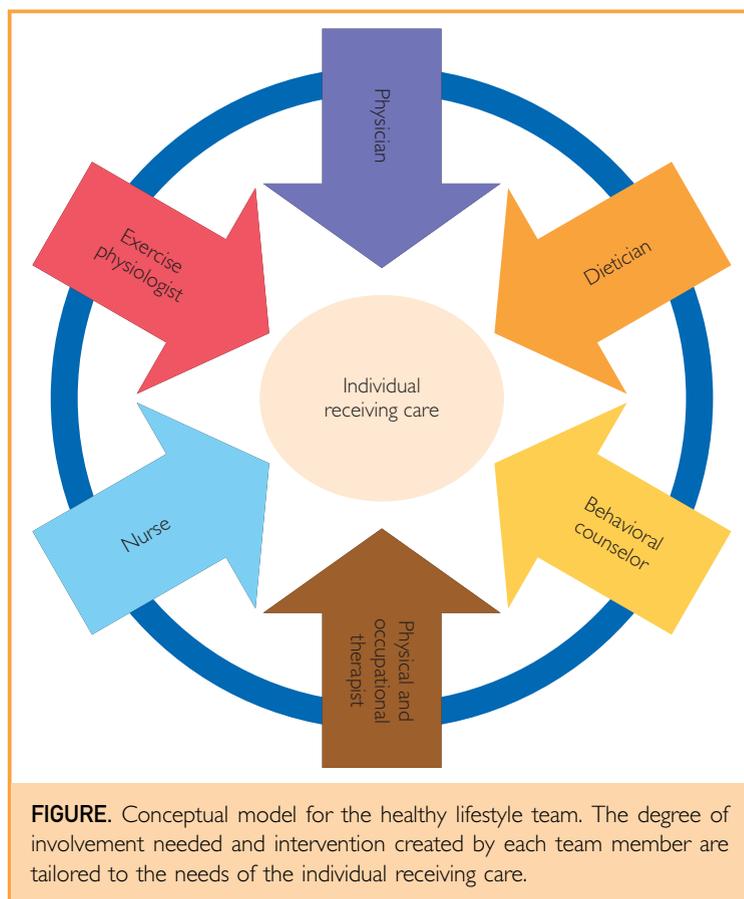
The clinical scenario in this commentary highlights a primary prevention model. However, a clear case can be made for imbedding healthy lifestyle teams in all settings, from individuals who are not diagnosed as having a medical condition to virtually all patient populations, because the clinical benefits of a healthy lifestyle are universal. The [Figure](#) illustrates the conceptual model of the healthy lifestyle team. There is no hierarchical structure, and all members of the team are connected, signifying a shared understanding of the importance of leading a healthy lifestyle and strong communication among the group. Moreover, this model illustrates the team encapsulating the individual, providing comprehensive and holistic care with no gaps. We propose that such healthy lifestyle teams be embedded in all clinical settings.

### THE INDIVIDUAL'S VOICE MATTERS

The individual in need of healthy lifestyle interventions should be an active participant in the plan of care. As an example, patient-centered medical homes place the individual receiving care in the center (Figure), supporting the patient's needs. This model provides coordination and support for comprehensive and communicative care that is highly relevant to healthy lifestyle interventions.<sup>22</sup> Ultimately, a healthy lifestyle intervention will only be successful if the individual the intervention is directed toward takes ownership of the recommended changes. Having the individual involved with the care plan from the beginning is therefore a necessary component.

### ACOs: THE BIRTHPLACE OF THE HEALTHY LIFESTYLE TEAM

The US health care system is on the verge of enormous and needed change, which is being ushered in by the passing of the Patient Protection and Affordable Care Act.<sup>23</sup> This changing landscape and the Patient Protection and Affordable Care Act have also brought about the inception and proliferation of the accountable care organization (ACO), which "is a group of health care providers who agree to share responsibility for the quality, cost, and coordination of care for a defined population of patients."<sup>24</sup> An ACO provides care to a population of covered lives; reduced costs, through lower hospital admission rates or procedures, for example, without compromising quality of care, result in higher revenue for the ACO. Some contracts specify that ACOs will pay penalties for higher health care costs. This is a notable deviation from the traditional fee-for-service model in which higher revenue is generated by a higher volume of visits and procedures. There are currently more than 400 ACOs in operation or in development, and this number will certainly increase.<sup>24</sup> In the NCD era, if the goal of an ACO is to provide high-quality care yet reduce expenditures, it could not hope for a better partner than the healthy lifestyle team. The fact that individuals who lead a healthier lifestyle are at substantially lower risk for developing NCDs, and thus requiring medical procedures and hospital admissions less frequently, is undeniable.<sup>19</sup> In fact, recognition of the importance of healthy lifestyle interventions to ACO success is already



**FIGURE.** Conceptual model for the healthy lifestyle team. The degree of involvement needed and intervention created by each team member are tailored to the needs of the individual receiving care.

under way.<sup>25</sup> Thus, the stage has been set: the Patient Protection and Affordable Care Act has catalyzed a new way of thinking about health care in the United States, and ACOs have emerged as a way to deliver this new model. The focus is shifting toward preventing disease, adverse events, and associated treatment costs. This new health care model will serve as the birthplace of the healthy lifestyle team, which, in our view, is a positive event that has the potential to substantially reduce the NCD burden on a population level.

### CONCLUSIONS

We are on the verge of a new health care model in the United States, one that is focused on accountability, quality care, decreased costs, and ideally the prevention of NCDs. For this endeavor to succeed, healthy lifestyle interventions must be integrated into the health care system. The emergence of ACOs will create the infrastructure and financial model needed for healthy lifestyle teams to be created and flourish.

**Abbreviations and Acronyms:** **ACO** = accountable care organization; **BP** = blood pressure; **BMI** = body mass index; **CVD** = cardiovascular disease; **ET** = exercise training; **HDL** = high-density lipoprotein; **LDL** = low-density lipoprotein; **NCD** = noncommunicable disease; **PA** = physical activity

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## REFERENCES

1. Strath SJ, Kaminsky LA, Ainsworth BE, et al. Guide to the assessment of physical activity: clinical and research applications: a scientific statement from the American Heart Association. *Circulation*. 2013;128(20):2259-2279.
2. Lichtenstein AH, Appel LJ, Brands M, et al. Diet and lifestyle recommendations revision 2006: a scientific statement from the American Heart Association Nutrition Committee. *Circulation*. 2006;114(1):82-96.
3. Anand SS, Yusuf S. Stemming the global tsunami of cardiovascular disease. *Lancet*. 2012;377(9765):529-532.
4. Ng M, Fleming T, Robinson M, et al. Global, regional, and national prevalence of overweight and obesity in children and adults during 1980-2013: a systematic analysis for the Global Burden of Disease Study 2013. *Lancet*. 2014;384(9945):766-781.
5. Centers for Disease Control and Prevention. Chronic Disease Prevention and Health Promotion. <http://www.cdc.gov/chronicdisease/overview/index.htm>. Accessed December 23, 2014.
6. Dumith SC, Hallal PC, Reis RS, Kohl HWI. Worldwide prevalence of physical inactivity and its association with human development index in 76 countries. *Prev Med*. 2011;53(1-2):24-28.
7. Kohl HW III, Craig CL, Lambert EV, et al. The pandemic of physical inactivity: global action for public health. *Lancet*. 2012;380(9838):294-305.
8. Lee IM, Shiroma EJ, Lobelo F, et al. Effect of physical inactivity on major non-communicable diseases worldwide: an analysis of burden of disease and life expectancy. *Lancet*. 2012;380(9838):219-229.
9. Borodulin K, Karki A, Laatikainen T, Peltonen M, Luoto R. Daily sedentary time and risk of cardiovascular disease: the national FINRISK 2002 study [published online August 22, 2014]. *J Phys Act Health*.
10. Ng SW, Popkin BM. Time use and physical activity: a shift away from movement across the globe. *Obes Rev*. 2012;13(8):659-680.
11. Huffman MD, Capewell S, Ning H, Shay CM, Ford ES, Lloyd-Jones DM. Cardiovascular health behavior and health factor changes (1988-2008) and projections to 2020: results from the National Health and Nutrition Examination Surveys. *Circulation*. 2012;125(21):2595-2602.
12. World Health Organization. *Global Action Plan for the Prevention and Control of Noncommunicable Diseases: 2013-2020*. Geneva, Switzerland: World Health Organization; 2013.
13. Lim SS, Vos T, Flaxman AD, et al. A comparative risk assessment of burden of disease and injury attributable to 67 risk factors and risk factor clusters in 21 regions, 1990-2010: a systematic analysis for the Global Burden of Disease Study 2010. *Lancet*. 2012;380(9859):2224-2260.
14. Arena R, Guazzi M, Briggs PD, et al. Promoting health and wellness in the workplace: a unique opportunity to establish primary and extended secondary cardiovascular risk reduction programs. *Mayo Clin Proc*. 2013;88(6):605-617.
15. Davis JC, Verhagen E, Bryan S, et al. 2014 Consensus statement from the first Economics of Physical Inactivity Consensus (EPIC) conference (Vancouver). *Br J Sports Med*. 2014;48(12):947-951.
16. Ezzati M, Riboli E. Can noncommunicable diseases be prevented? lessons from studies of populations and individuals. *Science*. 2012;337(6101):1482-1487.
17. Vouni IM, Lavie CJ, Blair SN. Physical activity promotion in the health care system. *Mayo Clin Proc*. 2013;88(12):1446-1461.
18. Myers J. New American Heart Association/American College of Cardiology guidelines on cardiovascular risk: when will fitness get the recognition it deserves? *Mayo Clin Proc*. 2014;89(6):722-726.
19. Akesson A, Larsson SC, Discacciati A, Wolk A. Low-risk diet and lifestyle habits in the primary prevention of myocardial infarction in men: a population-based prospective cohort study. *J Am Coll Cardiol*. 2014;64(13):1299-1306.
20. Mozaffarian D. The promise of lifestyle for cardiovascular health: time for implementation. *J Am Coll Cardiol*. 2014;64(13):1307-1309.
21. Mozaffarian D, Benjamin EJ, Go AS, et al. Heart disease and stroke statistics-2015 update: a report from the American Heart Association. *Circulation*. 2015;131(4):e29-e322.
22. Agency for Healthcare Research and Quality. Patient Centered Medical Home Resource Center. <http://pcmh.ahrq.gov/>. Accessed July 31, 2014.
23. Kinney ED. The Affordable Care Act and the Medicare program: the engines of true health reform. *Yale J Health Policy Law Ethics*. 2013;13(2):253-325.
24. American Academy of Family Physicians. Accountable Care Organizations: What Is an ACO? <http://www.aafp.org/practice-management/payment/acos.html>. Accessed October 24, 2014.
25. Zusman EE, Carr SJ, Robinson J, et al. Moving toward implementation: the potential for accountable care organizations and private-public partnerships to advance active neighborhood design. *Prev Med*. 2014;69(suppl 1):S98-S101.