

# 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

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