



Knowing Well, Being Well

well-being born of understanding

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A Rationale and Framework for Activating Employers as Agents of Change in the Implementation of Lifestyle as Medicine

Sara S. Johnson, PhD¹

“The fuel of a nation’s wealth is the health of its people. Not only must we lower the overall cost burden of sick care, we must reduce the very need for sick care. We must work towards a future where transformation...informs the creation of a true health ecosystem—an ecosystem of informed and self-directed well-being.” Robert Sundelius¹

Achieving the vision of human flourishing that Sundelius envisions will require a fundamental shift in our current approach to healthcare.¹ Many would argue that the transformation is long overdue. Chronic diseases take an enormous toll on individuals’ quality of life and are a key driver of healthcare costs—in part because 40% of U.S. adults have 2 or more chronic conditions.² The Centers for Disease Control reported that chronic health conditions account for 90% of our nation’s \$4.1 trillion in annual healthcare costs.^{2,3} Even more troubling is the fact that the prevalence and burden of chronic diseases continues to rise, often disproportionately affecting individuals from Black and Brown communities. A recent study reported that, from 1999-2020, 1.63 million excess deaths and

more than 80 million excess years of life lost were experienced by Black Americans compared to white Americans, with cardiovascular disease being the leading driver of excess mortality.⁴ Declining life expectancy in U.S.—now at lowest since 1996²—is partially attributable to cardiovascular disease, and young adults represent growing proportion of cardiovascular disease events.⁵ The prevalence of cardiovascular risk factors (most notably diabetes and obesity) among adults aged 20-44 increased from 2009-2020 in the U.S.—and in particular among Black, Hispanic, and Mexican Americans.⁶ Recent modeling studies predict an increase in diabetes in the U.S. among individuals younger than 20 that is expected to disproportionately impact Black youth.⁷ Despite spending more per capita on healthcare than other developed nations, our current healthcare system is failing—and that failure is captured in Americans’ sentiment of widespread dissatisfaction. In a recent Harris Poll, 60% of U.S. adults gave the healthcare system a grade of C or worse.⁸

There is, therefore, an urgent need for increased implementation of lifestyle change as medicine, but barriers remain (eg, current reimbursement models). The predominantly fee-for-service healthcare model in the United States is riddled with perverse incentives that lead to a prioritization of pharmacological and procedure-based interventions rather than addressing root causes.⁹ What is clear is the need to redefine healthcare—to move away from a system of sick care to a new model focused on centering equitable access to a healthy lifestyle as a key pillar of prevention, management, and treatment of chronic diseases that are consuming far too many healthcare dollars and robbing us of precious time with loved ones. Lifestyle modifications (eg, plant-based diets, physical activity, adequate sleep, strong social connections) can prevent, treat, and in some cases reverse chronic conditions.⁹ The quintuple aim for healthcare adds health equity to the prior priorities of improved patient experience, improved outcomes, lower costs, and clinician well-being¹⁰—Lifestyle as Medicine has potential to help achieve all of those critical objectives.⁹

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¹ProChange Behavior Solutions, Inc., South Kingstown, RI, USA

Corresponding Author:

Sara S. Johnson, PhD, ProChange Behavior Solutions, Inc., South Kingstown, RI, USA.
 Email: sjohnson@prochange.com

“Together, we must work to identify the social determinants of health; target prevention through multiple channels by identifying the intersections of various diseases; use data to understand the individuals and the populations we serve; be diligent about removing implicit bias and structural barriers; and harness technology to move health care from episodic, siloed ‘sick care’ to continuous and integrated ‘healthcare’.”¹⁰

Preliminary studies^{9,11,12} and systematic reviews¹³ have demonstrated the effect of lifestyle medicine interventions. Dr. Richard Safer provides a case study from Johns Hopkins Medicine later in this issue that describes a very compelling example. Accumulating evidence outlined in depth by Dr. Dexter Shurney in another article later in this issue supports the effectiveness of Lifestyle as Medicine in improving health outcomes. This evidence is aligned with the consistent findings that lifestyle behaviors are associated with disease and mortality risk.¹⁴ In addition to compelling data on the benefits of physical activity,¹⁵ a recent prospective cohort study involving more than 126,000 adults in the United Kingdom with outcomes measured at 10-12 years demonstrated that a healthful, plant-based diet was associated with a reduced risk of cardiovascular disease, cancer, and all-cause mortality.¹⁶ Another larger prospective cohort study demonstrated that replacing just 10% of processed or ultra-processed foods with minimally processed foods decreased overall cancer risk.¹⁷ Yet another cohort study involving more than 135,000 adults reported that higher scores on the American Heart Association’s Life Essential 8 (an index of cardiovascular health) were associated with a longer life expectancy free from major chronic diseases (ie, cardiovascular disease, cancer, diabetes, and dementia).¹⁸

While value-based care models are gathering momentum⁹ and have the potential to promote heavier emphasis on Lifestyle as Medicine,¹⁹ there is a critical role for employers to play. And employers may be uniquely suited for championing Lifestyle as Medicine. In fact, at the 2022 American College of Lifestyle Medicine Annual Conference, Dr. Jerome Adams, the former U.S. Surgeon General, said that employers are the most important partner in advancing the practice of Lifestyle as Medicine. Employers have long been recognized as having a significant influence on the health and well-being of their employees and, more recently, were acknowledged as a key potential influence on the health of their communities. Advancing Lifestyle as Medicine aligns with other priorities employers may have including meeting Environmental, Social, Governance objectives (eg, addressing climate change and sustainability); reducing healthcare costs for employees (including younger members of the workforce who may be at higher risk now); and promoting health equity.²⁰

The purpose of the initiative summarized below was for the Health Enhancement Research Organization (HERO) to facilitate and accelerate the implementation of Lifestyle as Medicine by identifying pathways for employers to: (1) create the conditions for Lifestyle as Medicine to be integrated into employers’ health and well-being offerings; (2) relate Lifestyle as Medicine to key business outcomes; (3) consider how they can extend the influence of their whole-person health initiatives into their communities; and (4) advocate with their health plans, brokers, and legislators for Lifestyle as Medicine reimbursement.

The specific aims of this effort were to:

- Capture the perspective of employers of various sizes and “bright spot” organizations who are innovators in Lifestyle as Medicine in a series of in-depth interviews

- Identify emerging promising practices for employers to advance and advocate for Lifestyle as Medicine
- Seek input on and refine the list of emerging promising practices in three interdisciplinary workshops
- Broadly disseminate the findings
- Create a set of actionable deliverables (eg, toolkits, infographics, white papers) to enable employers to apply the key learnings

Approach

From May 2022 through April 2023, HERO engaged in a series of activities to gather and qualitatively code data; synthesize insights; and identify recommendations and emerging promising practices regarding how employers can be agents of change to advance the implementation of Lifestyle as Medicine.

HERO first convened and solicited input from an Advisory Board comprised of national thought leaders over the course of three 2-hour meetings. The Advisory Board included:

- Mary Delaney, MSPT; Managing Partner, Vital Incite
- Padmaja Patel, MD, FACLM, DipABLM; Medical Director, Lifestyle Medicine Program, Midland Memorial Hospital; President Elect, American College of Lifestyle Medicine
- Eduardo Sanchez, MD, MPH, FAHA; Chief Medical Officer for Prevention, American Heart Association
- Dexter Shurney, MD, MBA, MPH, FACLM, DipABLM; President, Blue Zones Well-Being Institute
- Terri Stone, MD, FACP, DipABLM; MedStar Health

Additional input was also obtained through a series of expert interviews with a number of additional thought leaders, including:

- Diana Han, MD; Chief Health and Well-Being Officer at Unilever
- Michael Parkinson, MD, MPH, FACPM; Principal at P3 Health, LLC Prevention, Performance, Productivity
- Kavitha Reddy, MD; Associate Director of Employee Whole Health in the VHA Office of Patient-Centered Care and Cultural Transformation
- Kenji Saito, MD, JD; President & Chief Medical and Science Officer, LiveWell, WorkWell; President, American College of Occupational and Environmental Medicine
- Joel Spoonheim, MA; Sr Director for Worksite Health & Population Well-being at HealthPartners
- James Tacci, MD, JD, MPH FACPM, FACOEM; Attending Physician, University of Rochester Medical Center; Medical Director, New York State Workers’ Compensation Board
- Roberta Wachtelhausen, Advisor and Board of Directors Member, WellSpark

Those initial Advisory Board meetings and expert interviews were used to: (1) achieve consensus on an operational definition of Lifestyle as Medicine; (2) obtain initial input into the barriers to and facilitators of employers being engaged as agents of change to advance Lifestyle as Medicine; (3) understand the potential impact of integrating Lifestyle as Medicine into employers’ health and well-being offerings; and (4) identify key roles employers can play in advancing the implementation of Lifestyle as Medicine. The virtual meetings were recorded, transcribed, and qualitatively coded for

themes using an inductive approach. The resulting themes were used to refine an employer interview guide.

The HERO Board of Directors and the HERO Advisory Group were also consulted on numerous occasions to suggest additional expert interviewees, share insights, and react to emerging promising practices.

An appreciative inquiry approach was then utilized to further refine the questions for a series of in-depth interviews conducted with employers considered to be “bright spots”—three employers who were setting the standard for successfully implementing Lifestyle as Medicine within their organizations. The employers considered to be exemplars were Carmel Clay Schools, Johns Hopkins Medicine, and Rosen Hotels & Resorts. A detailed case study of the approach Carmel Clay Schools implemented is available later in this issue. Additional in-depth interviews were also conducted with employers at varying points along the continuum of integrating Lifestyle as Medicine into their existing health and well-being initiatives. Those employers were Hasbro, Victoria’s Secret, and Goodwill (Indiana). All employer interviews focused on perceived benefits of and barriers to the employer driving demand for, implementing, partnering to increase access to, or otherwise supporting Lifestyle as Medicine. Questions and prompts regarding organizational factors (eg, leadership support, policies, conducive environments, expansive benefits, engaged peers) and the frequency and extent of efforts to collaborate with the local community and health systems to promote or offer Lifestyle as Medicine were included. All interviews were recorded, transcribed, and qualitatively coded for themes using an inductive approach.

The insights captured from the interviews were then synthesized into a preliminary list of guiding principles, internal strategies, and external strategies employers could utilize to advance the implementation of Lifestyle as Medicine within their organizations. Additional insights around offering evidence-based, whole-person health and well-being initiatives; how employers can demonstrate the business case of, create demand for, and promote advocacy for lifestyle medicine; and how Lifestyle as Medicine initiatives can be integrated with efforts to promote broader community health, diversity, equity & inclusion (DEI) strategy, and sustainability initiatives were also curated.

In September 2022, a half-day interdisciplinary workshop comprised of key stakeholders from the employer ecosystem (eg, thought leaders from brokers, health plans, onsite clinic providers, health systems, community health settings, and employers) was convened at the HERO Forum to react to and further refine the emerging promising practices identified in the qualitative research effort to date. The theme of Forum 2022 was “How the Choices We Have Influence the Choices We Make: Diversity, Inclusion, and the Integration of Lifestyle Medicine and Population Health Promotion.” In addition to HERO’s typical promotional efforts for the HERO Forum, the workshop was advertised in the *Journal of Occupational and Environmental Medicine* with support from the Ardmore Institute of Health. The interactive, interprofessional workshop was attended by 56 participants and involved a series of breakout discussions. The breakout groups reacted to prompts related to the definition of lifestyle medicine; the potential for it to be integrated into employer health & well-being offerings; recommendations for enhancing or refining the emerging interview themes (eg, guiding principles, internal and external strategies and models); and potential dissemination strategies and channels to share and promote the insights. Note

takers recorded group discussions, and group report outs led to additional whole group discussions following each breakout. The session transcript was combined with each group’s notes and drawings, and the resulting recommendations and refined list of guiding principles and strategies were presented to two additional interactive virtual workshops conducted in December 2022.

One of the December workshops (12/8/2022) was heavily promoted by the American College of Lifestyle Medicine (eg, to their Workplace Interest Group and Health Systems Council). The other was promoted by HERO and American College of Preventive Medicine. Both workshops capped registration for the virtual event at 100 and reached that cap (with a waiting list). Seventy-eight participants attended on 12/7, and approximately 50-60 participants attended on 12/8. Each workshop involved a series of interactive breakout rooms that followed a similar process to the September workshop. Discussions were recorded, transcribed, and qualitatively coded to inform the final set of guiding principles and actionable strategies for employers.

Definitions

One of the first steps in activating employers as agents of change in increasing reliance on lifestyle modifications as a first line of prevention and treatment of chronic conditions is to develop a shared understanding of the terminology being used.

There is no shortage of definitions in current ongoing dialogue about this topic, and the terms have evolved over the past decade.²¹ Whole Health. Total Person Health. Lifestyle Medicine. Lifestyle as Medicine. The American College of Occupational and Environmental Medicine (ACOEM) addresses this topic area in their core competencies under Health and Human Performance, underscoring that OEM physicians should “be able to identify and address individual and organizational factors in the workplace toward optimizing worker health and enhancing human performance.” Additional core competencies include the ability to assess the impact of lifestyle factors; consult on or create data-informed programs to address them; and to provide guidance to the organization on optimal delivery channels, strategies for promoting a culture of health, and methods for demonstrating value and alignment with business goals.²² Other common current definitions from various medical specialty professional organizations and additional experts are summarized in [Table 1](#).

Some experts with whom we spoke expressed concern that using the term *medicine* inadvertently over medicalizes positive lifestyle change. One expert said, “Even though obviously by nature, lifestyle medicine is the opposite of medicalizing things, the word medicine accidentally medicalizes it from a branding standpoint.” Another clarified, “Lifestyle medicine is about affirming the health promoting ways we can live our lives that lead to health and the absence of disease.”

Given that employers are operating outside of clinical settings and for the purpose of clarity, the remainder of this report will adopt a definition that most closely resembles that recommended by Lianov & Johnson but also draws from some of the core aspects of existing definitions.²¹ This definition is meant to convey that, while many Lifestyle as Medicine efforts can be centered in existing and future health and well-being offerings from employers, there are unrealized opportunities to intersect more effectively with the healthcare system

Table 1. Definitions.

Organization	Definition
National Academies of Sciences, Engineering, and Medicine Committee on Transforming Health Care to Create Whole Health	“Whole health is physical, behavioral, spiritual, and socioeconomic well-being as defined by individuals, families, and communities. To achieve this, whole healthcare is an interprofessional, team-based approach anchored in trusted longitudinal relationships to promote resilience, prevent disease, and restore health. It aligns with a person’s life mission, aspiration, and purpose.” ²³
American College of Preventive Medicine	“Lifestyle medicine is a medical approach that uses evidence-based behavioral interventions to prevent, treat and manage chronic disease.” ²⁴
American College of Lifestyle Medicine (2022)	“Lifestyle medicine is a medical specialty that uses therapeutic lifestyle interventions as a primary modality to treat chronic conditions including, but not limited to, cardiovascular diseases, type 2 diabetes, and obesity. Lifestyle medicine certified clinicians are trained to apply evidence-based, whole-person, prescriptive lifestyle change to treat and, when used intensively, often reverse such conditions. Applying the six pillars of lifestyle medicine—a whole-food, plant-predominant eating pattern, physical activity, restorative sleep, stress management, avoidance of risky substances and positive social connections—also provides effective prevention for these conditions.” ²⁵
Lianov & Johnson	“Evidence-based practice of assisting individuals and families to adopt and sustain behaviors that can improve health and quality of life.” ²¹

and community-based initiatives to maximize impact on whole health.

Lifestyle as Medicine involves implementing a continuum of health-equity centered, comprehensive, integrated, evidence-based initiatives in multiple domains (including healthy eating characterized by a whole-food, plant-predominant eating pattern; regular physical activity; adequate and restorative sleep; stress management; positive and meaningful social connection; time in nature; and avoidance of risky substances) as the foundational, first-line of efforts to promote whole health.

As is explained above, The American College of Lifestyle Medicine definition explicitly refers to six pillars of lifestyle medicine for which there is well-established evidence of the benefit, including a whole-food, plant-predominant eating pattern, regular physical activity, restorative sleep, stress management, avoidance of risky substances and positive social connections.²⁵⁻²⁷ The definition of Lifestyle as Medicine that this project adopted includes time spent in nature given the accumulating evidence of the powerful and potentially sustained impact of nature on whole health.^{28,29} For example, one review of 28 studies of forest bathing (ie, a meditative, “five senses experience” conducted in a forest environment) concluded that this intervention has the potential to have substantial impacts on numerous physiological outcomes, including—among other things—cardiovascular function and indices of hemodynamic, neuroendocrine, metabolic, immune, and electrophysiological function, as well as mental health symptoms.³⁰ Those findings are consistent with a recent meta-analysis of 28 studies which revealed that nature prescriptions resulted in decreases in both systolic and diastolic blood pressure, had moderate to large effects on both anxiety and depression symptoms, and led to increases in daily step counts.¹³

Barriers Employers Face in Implementing Lifestyle as Medicine

Many of the experts and workshop participants cited very real barriers to implementing Lifestyle as Medicine within their organizations. One of the most frequently cited barriers was that siloed parts of the organization bear responsibility of addressing employee health and well-being creating complexity, particularly in large matrixed organizations. Often one department or individual has responsibility for internal employee well-being, whereas human resources or a benefits manager who is responsible for the health plan is making a lot of decisions regarding where their dollars are spent on prevention for their employees.

Other barriers include:

- Limited awareness of the transformative power of Lifestyle as Medicine
- Limited awareness of which providers in a region or network are credentialed to implement lifestyle medicine in their practices
- Current reimbursement models

To be widely adopted and sustained, Lifestyle as Medicine must be integrated with existing health and well-being and occupational health initiatives. Some have argued that it can be seen as a natural fit with or extension of such programs. Others contend that Lifestyle as Medicine could become the organizing construct or foundational framework for those efforts. One employer said that they are treating Lifestyle as Medicine as “the foundation to program planning in regards to workplace well-being. We’re asking how we can drive all of our programs into that synergy of message of Lifestyle Medicine and get the employee population to understand that at the end of the

day, that’s what we’re trying to accomplish as your lifestyle is your medicine.”

Framework for Advancing Lifestyle as Medicine

The framework below is inspired by and intentionally modeled after the American Heart Association’s CEO Roundtable Report on Advancing Health Equity in the Workplace³¹ to enable and encourage employers to integrate these two frameworks. Advancing health equity and ensuring equitable access to Lifestyle as Medicine initiatives is a critical element of addressing persistent disparities in whole health.

There was widespread agreement that employers could play an outsized role in advancing Lifestyle as Medicine through practices, policies, and programs in the workplace and by creating increased access and an opportunity to engage with lifestyle medicine providers or other primary care providers in the name of health promotion, screening, early detection, and condition management. There was also consensus about the fact that employers can interact with and exert influence on other spheres in the ecosystem of influences on whole health (see Figure 1 reproduced with permission from HERO). Thus, the framework below summarizes guiding principles, as well as a series of internal and external strategies employers could implement in their efforts to increase adoption of Lifestyle as Medicine to promote whole health.

Guiding Principles

Employ an Equity-Centered Approach That Optimizes Whole Health for All

Perhaps no other singular issue is as fundamental to realizing the vision of whole health as the need to advance health equity.³² Healthy People 2030 defines health equity as “the attainment of the highest level of health for all people.” That definition, however, fails to explicitly address the need for fair and just opportunity to attain one’s highest level of health. Unfortunately, persistent systematic barriers related to structural racism, socioeconomic status, gender identity, sexual orientation, and other factors continue to perpetuate and exacerbate glaring health disparities.

A national and international call to action for equity-centered approaches to promoting whole health has been issued. More than 260 local and state leaders throughout the U.S. have declared racism a public health emergency.³³ The Centers for Disease Control Core Commitment to Equity underscores their agency-wide strategy to integrate equity into the fabric of all of their initiatives.³⁴ The Achieving Whole Health Approach for Veterans and the Nation emphasizes that central tenets of whole health care include that it is upstream-focused (ie, address root causes and social drivers of poor health) and that it is equitable.²³ The World Economic Forum’s Global Health Equity Network recently launched a first-of-its-kind global health equity pledge to create a healthier and fairer world with Zero Health Gaps.³⁵ The pledge was signed by 39 government agencies, academicians, corporations, and associations.²⁰

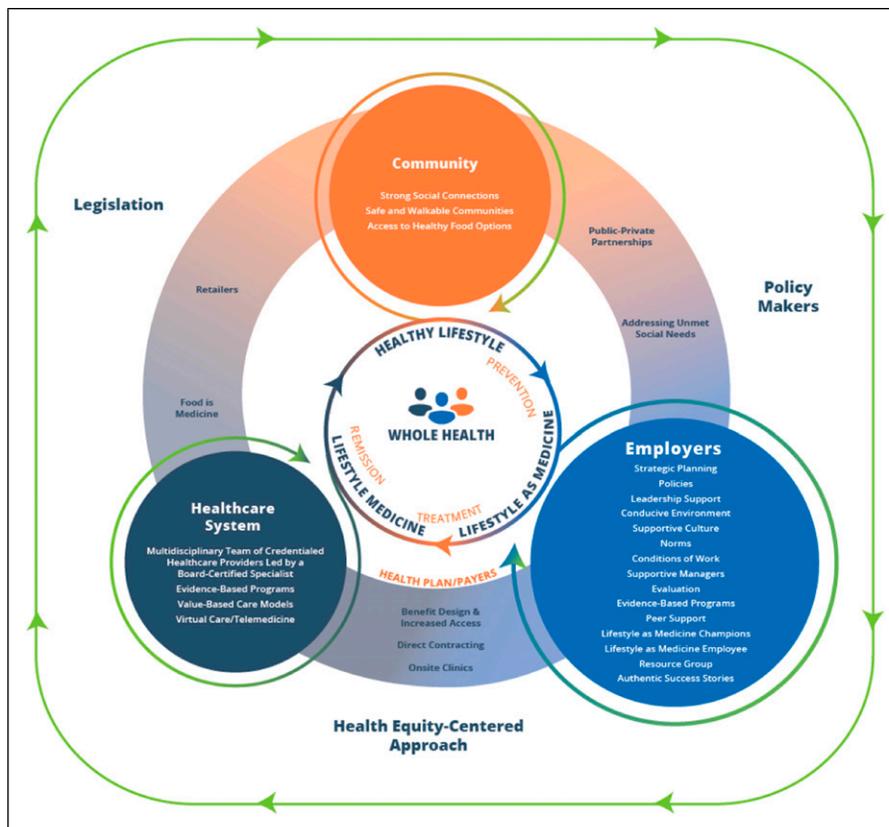


Figure 1. Employers can play an important role in advancing lifestyle as medicine.

Thus, a health-equity centered approach should be a foremost consideration in all Lifestyle as Medicine initiatives.

Collaborate With Aligned Stakeholders to Advance Lifestyle as Medicine

Employers don't have to go it alone—they can raise voices in concert with others who have aligned interests and missions. A growing number of diverse professional organizations, institutions, foundations, and other groups are working in parallel to advance Lifestyle as Medicine in diverse settings and implementing it in various ways.³⁶ At the White House Conference on Hunger, Nutrition, and Health, the Biden-Harris administration announced \$8 billion in private- and public-sector commitments in part to address diet-related diseases. Among them, The Rockefeller Foundation teamed up with the American Heart Association and an inaugural grocery retailer (Kroger) to create a \$250 million Food is Medicine research initiative.³⁷ The Office of Nutrition Research at the National Institutes of Health recently announced that they will be creating Food is Medicine Centers of Excellence to evaluate, refine, and implement novel approaches to Food is Medicine services (eg, medically tailored meals, medically tailored groceries, teaching kitchens, produce prescriptions) that they hope will inform the dissemination of other lifestyle medicine interventions.³⁸ Payers and health systems³⁹ are making investments in food-is-medicine approaches. And some have argued that employers can play an active role in this rapidly expanding national movement.⁴⁰ The Physical Activity Alliance has made substantial gains in a nationwide effort to systematically integrate physical activity assessment, prescription, and referral into our healthcare system and workplace health and well-being interventions.⁴¹ To date, they have created a set of standardized assessment questions that can be used in electronic health records or other health assessments; developed a proof of concept for HL7 integration into an electronic health record; and are preparing to beta-test transmitting physical activity-related observations, updating physical activity goals and plans, and retrieving physical activity orders. Their progress on making physical activity a standard of care will pave the way for other similar efforts in the future. As is described in more depth below, they are also activating employers in this effort by creating the CEO Pledge for Physical Activity.⁴² The U.S. Veteran's Administration has created a comprehensive and integrative Whole Health model for the Veterans they serve as well as for their workforce.⁴³ The vision of the Ardmore Institute of Health is to create a future in which healthy lifestyles will be the preferred method to prevent, treat, and reverse chronic diseases.⁴⁴

Given the shared goals of achieving the quintuple aim and optimizing health and human flourishing, there are numerous opportunities to organize, collaborate, amplify each other's work, and collectively work toward advancing Lifestyle as Medicine. These collaborations can include human resource organizations (eg, Society for Human Resource Management); educational institutions; onsite clinic providers; unions; local, state, and national groups whose mission is to improve employee and community health and well-being; medical associations; and foundations and associations (eg, Health Enhancement Research Organization, American Public Health Association). There may also be promising opportunities to collaborate with NIOSH Centers of Excellence for *Total Worker Health*[®] who are committed to implementing comprehensive approaches to advance worker well-being. Finally, health systems

represent another potential partner. More than 80 health systems have joined the American College of Lifestyle Medicine's Health Systems Council.

Recognize That Lifestyle as Medicine is a Continuum

The recently revised definition of Lifestyle Medicine from the American College of Lifestyle Medicine and data from intensive therapeutic lifestyle change programs implemented in clinical settings by certified clinicians represent one end of a continuum of the application of Lifestyle as Medicine that has been demonstrated effective in promoting remission of chronic illnesses. Community-based programs, such as the Diabetes Prevention Program, have also been demonstrated effective,⁴⁵ even when implemented by lay health coaches.⁴⁶ And as Dr. Safer illustrates in the description of Keep Your Pressure Down, Lifestyle as Medicine initiatives in workforce programs can be impactful. Thus, employers have a unique opportunity to act as a conduit to intensive programs in the healthcare system as well as in community-delivered programs for prevention, but should not overlook the opportunity to offer integrated internal initiatives for prevention and management of chronic conditions and the promotion of whole health. Another example of the continuum is evident in the Food is Medicine movement. The Food Is Medicine Research Action Plan reviews 49 studies that have been conducted on a range of Food is Medicine interventions, ranging from medically-tailored meals and medically-tailored groceries (more intensive interventions) to produce prescriptions.⁴⁷ While most, if not all, of the studies examining the effect of produce prescriptions were conducted in healthcare settings, many involved farmers' market vouchers or discounted community-supported agriculture programs that could easily be integrated into an employer's existing health and well-being offerings.

Treat Lifestyle as Medicine as a Team Sport

The practice of lifestyle medicine in clinical settings is inherently a multidisciplinary endeavor that often involves physician leadership of teams that include health coaches, nurses, nutritionists/registered dietitians, exercise physiologists, physical therapists, occupational therapists, social workers, community health workers, and more. As is evident in the case study about Carmel Clay Schools later in this issue, that type of multidisciplinary treatment approach is being employed in some employer onsite or near site clinics. One of our experts shared that their approach to musculoskeletal pain in their onsite clinic was also inherently multidisciplinary:

“When it came to musculoskeletal, we had a lifestyle approach and brought in physical therapy, orthopedics, massage, chiropractor, and acupuncture. We'd have a team meeting where all of those disciplines would ask, what's the best approach for this patient—a person had low back pain? And it might have been one of those or it might be a sequential effort depending on where the patient was. It was really the whole person approach. We also had an embedded psychologist as well. We called them a lifestyle coach and a well-being coach to de-stigmatize it. But we bring all of that into play, to deal with whatever the patient needed at the time.”

One workshop participant relayed another example of that approach in obesity medicine onsite clinics in which they had worked in

the past. The clinics included a registered dietician and exercise physiologist. Employers need not, however, have all of those capabilities in house to advance Lifestyle as Medicine. Many employers with whom we spoke shared examples of allied health professionals from different specialties leading the charge within their organization. Others explained that they collaborate actively with local healthcare systems, physician practices, and community-based organizations to increase employee involvement in a range of initiatives. As is described later in more detail, many workshop participants also emphasized that within their organization, implementing Lifestyle as Medicine is a shared responsibility. One participant said:

“So for example, as a well-being leader, I feel like it’s my role to get the conversation started, but then we get the momentum from upper leadership to get that rolling. Then it’s on the employees to continue to be advocates for themselves and request the changes that they want to see. And then for mid-level leaders to be that example, to set the example and to practice what you preach.”

Be Inspired by Success Stories

One of the goals of this initiative was to shine a light on bright spots—organizations and leaders who are exemplifying the implementation of Lifestyle as Medicine from whom others can learn. Other bright spots^{48,49}—including the Air Force⁵⁰—are gaining increasing attention. Others, such as the Blue Zones, have been the subject of much media coverage. Eric Adams, the mayor of New York City, is building upon his personal success with lifestyle medicine to transform healthcare and hospital systems in his community. He has forged an alliance with the American College of Lifestyle Medicine and has been promoting lifestyle medicine in Health and Hospitals Corporation, which is the New York City owned hospital system. Many others have joined in this. He also changed the defaults in the city school lunch program where, once a week, the school lunch is plant-based.

Rely on Evidence-Based Interventions

A longstanding central tenet of all successful health and well-being initiatives applies equally to Lifestyle as Medicine efforts: Show us the data. Fortunately, evidence-based programs have been developed, and others are emerging and being evaluated. Full Plate Living, for example, is a digital, multicomponent nutrition education program offered to workplaces and communities by the Ardmore Institute of Health.⁵¹ Research on a 16-week implementation of Full Plate Living among more than 4400 U.S. employees from 72 companies indicated significant effects from pre-post intervention⁵² on weight loss; consumption of fiber-rich foods (ie, servings of fruit, vegetables, beans, nuts, whole grains) and water; and self-perceived health, energy, and confidence in making healthy choices. The effectiveness of the Coronary Health Improvement Project (CHIP) intervention,⁵³⁻⁵⁵ an intensive lifestyle change program now renamed Pivio, has also been demonstrated in multiple samples of self-selected employees.

Make a Compelling Business Case (Based on More Than Cost Savings)

There were extensive conversations throughout this process about the need to make a compelling business case that addressed, but did not

rely exclusively on, cost savings. The metrics that carry the most weight may vary from organization to organization. One expert shared that in one organization with whom they worked, the internal business case began with sleep due to concerns about OSHA recordables and near misses in a manufacturing setting. Improving sleep decreased the rate of accidents. What was abundantly clear was the need to reflect the impact on multiple levels in an ecological fashion (eg, individual employee disease remission, sustained behavior change, success metrics in health and performance outcomes (eg, reduced claims/plan cost; lower risk; increased well-being, retention, productivity) and to evaluate potential ripple effects. Carmel Clays Schools has a strong story to share about the multi-faceted business case they’ve created.

Internal Strategies

There is a well-established literature on best practices in the design and deployment of employee health and well-being programs.⁵⁶⁻⁵⁸ Previous research that compared various practices employers utilize to advance employee health and well-being, for example, revealed that organizational and leadership support (inclusive of strategic planning) was the best and most consistent predictor of participation, improvements in healthcare costs, and perceived organizational support.⁵⁹ It was therefore not surprising that workshop participants cited those internal strategies—and many other commonly suggested best practices—as key to the success of implementing Lifestyle as Medicine.

Elevate Lifestyle as Medicine to a Strategic Objective

Ideally, organizations can make Lifestyle as Medicine the unifying construct for their health and well-being strategy, but at a minimum should consider aligning internal metrics (eg, having Lifestyle as Medicine metrics tied to annual performance reviews and strategic objectives). Elevating Lifestyle as Medicine to a strategic objective ensures the involvement of cross-functional partners within the organization (legal, finance, operations), which can facilitate adoption and sustained delivery. While some may question its relevance to larger business objectives, the role of Lifestyle as Medicine to broader organizational objectives can be highlighted. Promoting more plant-predominant diets has implications for climate change; Lifestyle as Medicine is widely viewed as a mechanism for addressing health disparities and is therefore a DEI strategy; and evidence is mounting that Lifestyle as Medicine can reduce healthcare costs.

Create and Enforce Supportive Policies

Having formal policies that reflect and support the organization’s values around Lifestyle as Medicine is essential. A systematic review of 24 culture of health elements reported that policies were among the most commonly cited strategies employed to influence an organization’s culture of health.⁶⁰ Rosen Hotels and Resorts, for example, has policies around direct contracting for health care that reflect their commitment to optimizing health and quality of care. Johns Hopkins Medicine also implemented a number of policies to support their culture of health.

Clear and consistent policies are also instrumental in avoiding perverse incentives or mixed messages. One workshop participant

shared that a manager was reluctant to replace vending machine content with healthier options because the funds from vending machine sales were used to finance team parties. The manager was concerned that sales would be adversely impacted if the vending machines had fewer candy and soda options. An organizational policy around vending and dining food options could help resolve this concern by making clear what options could be made available and how they should be presented (eg, displaying healthier options at eye level) and perhaps also funding celebrations that included healthier food options. Another participant stated that employers could be evaluating their food policies (eg, what food is served at meetings—apples or donuts).

Policies can also facilitate engagement in Lifestyle as Medicine initiatives. One workshop participant suggested creating an incentive through a policy change by, for example, providing paid time off for attending an onsite or nearby farmers' market.

Provide Visible Leadership Support for Lifestyle as Medicine

There was an almost universal consensus among experts, employers, and workshop participants that senior leadership support for Lifestyle as Medicine was essential to its success within an organization. Many underscored that the senior leadership support influences mid-level managers and trickles down throughout the organization, which has a direct impact on making the culture of the organization more supportive. Leaders modeling engagement with and practicing Lifestyle as Medicine is also critical.

One workshop participant said, "I think that implementing lifestyle medicine for employees has to have buy-in from administration. Individual employees can try to have healthy habits, but there really is such an influence we can have as administrators in HR. I mean, probably all of us know that, but sometimes you can feel like Sisyphus with the rock up the hill if you don't have an administration's buy-in."

Another said, "When the leadership team is excited about this and they're helping to promote and it's showing up in company newsletters, and maybe we even have somebody from our company that's on site at that client location, that's when we see the most participation." Yet another participant suggested that interview questions for leader candidates should include "How will you support Lifestyle as Medicine?"

Another said that participation of leaders in Lifestyle as Medicine initiatives was part of their performance review.

Create a Conducive Environment & Supportive Culture

Previous research has consistently demonstrated that establishing a culture of health is a key contributor to the success of employer's efforts to promote whole health.⁶¹ This theme emerged repeatedly during the expert interviews and workshops, with several participants citing the necessity of structural changes, environmental nudges (eg, positioning water more prominently and removing the sodas from the counter) and other cultural shifts (eg, availability of plant-based options in cafeteria, work time to participate). One participant said: "What is the environment of the workplace that is making it conducive to do the things that then that person needs to do to help manage or lower said condition? Do they provide opportunities for physical activity? If they have onsite cafeterias, are they looking at

how they're making sure the offerings are more conducive and nudge people in the right direction toward better choices for them than what is considered a standard offering?" One employer shared that they supplemented healthy meal options in the cafeteria and at onsite meetings with a low-cost meal of the day, free or subsidized fruit, and local farm deliveries once a week.

"Even if you deliver a lifestyle medicine program, but if you haven't created a culture of wellness, the likelihood for that program to be successful is very bleak. People need that ongoing support. They need that healthy environment, which will continue to help them and nudge them to continue the changes they have made or improve their behavior, at least it's supporting them. So I think that's a very important part. This is not just a short term, delivering this program and looking at the outcome. We're looking at the long term, how can we sustain what we have gained? And I think the culture of wellness is very much part of that."

Dr. Padmaja Patel

Multiple workshop participants commented that creating a supportive culture was instrumental in employee's perceptions that Lifestyle as Medicine initiatives were an authentic reflection of the organization's commitment to their health and well-being, which in turn could foster trust. There were several discussions about how a supportive culture for Lifestyle as Medicine is built upon the foundation of a culture of safety. One participant said, "If your work is inherently hazardous, whether it's from a physical or a psychosocial standpoint, I come in and I'm abused by my supervisor or I don't have proper PPE, but you're telling me that I just need to focus on what my nutrition is. Well it's going to feel disingenuous and won't be able to build trust."

Consider Whether Conditions of Work are a Social Determinant

The Surgeon General's Framework for Workplace Mental Health and Well-Being provides guidance about creating workplaces that promote flourishing.⁶² One of the five essential factors identified is protection from harm—which involves prioritizing physical and psychological safety and ensuring adequate rest. Ensuring that work conditions (eg, long hours, lack of a living wage, unpredictable shifts) are not a determinant of health is also imperative for advancing Lifestyle as Medicine. One workshop participant noted that, "We have to really promote people having work-life balance. If you're going to have time to prepare healthy food and be active and get good sleep, you can't be expecting people to work 12 and 14 hours a day." Employers can consider the ease of access to healthy food options in and around their location(s) and what options exist for increasing availability. One workshop participant had a client who built a 'store' next to their healthcare facility so that employees and patients could more easily access fruits and vegetables.

Deploy Strategic Communications

Multi-channel, tailored, strategic communications have also been identified as a key contributor to the success of employee health and well-being initiatives,^{60,61} and programs related to Lifestyle as

Medicine are certainly no exception. One workshop participant encouraged others to ensure that strategic communications connect people to their “why”—their overarching purpose and reasons for wanting to be healthier. Another remarked on the need to tailor content based on age of the workforce: “Not only do different modes of communication appeal to different generations, but the content should differ. The value of lifestyle medicine for someone who is entering retirement age is very different from someone who is in their forties or in their thirties. It should be communicated that way.” Yet another mentioned that employers who have platform providers or wrap-around navigation systems need to ensure that the messaging there is aligned with all Lifestyle as Medicine initiatives.

Some of the dialogue about strategic communications related to the positioning and branding of Lifestyle as Medicine. One participant commented that internal communications may need to be tailored to different audiences within the organization (eg, leaders, workforce). Several workshop participants noted that communications about Lifestyle as Medicine initiatives must consider health literacy, particularly to convey the meaning and power of Lifestyle as Medicine given some of the dominant public narrative around reliance on medications to treat chronic conditions. One said:

“So it speaks to some health literacy issues as well...So educational awareness and trust to augment what you are saying. People don’t understand what is being offered or they don’t trust the programming or because people, we are creatures of habit and we have been told for eons that this is what works in terms of medicine and health and now you’re telling me I should do this instead. It will take some education, some fantastic consistent messaging, communications and trust.”

Create Organizational Norms

The case study from Carmel Clay Schools and Dr. Safeer’s commentary on Keep your Pressure Down, underscore the importance of norms—a culture of a health element that repeatedly emerges in the literature on successful employer-administered health and well-being programs.⁶⁰

The need to ensure that the norms of an organization support Lifestyle as Medicine was also identified in the workshops. One participant noted, “Is it a norm that you actually take a break or don’t take a break? Is it a norm that you take a lunch or don’t actually get to take a lunch? Is it a norm that you’re expected to stay until it’s all done no matter how late it is? Those are all norms that can work for well-being or against it.”

Enable Supportive Managers

There are widely cited statistics about the enormous contribution managers can make to the engagement of their team members.⁶³ The need for managers to be on board to support Lifestyle as Medicine was a common sentiment among workshop participants.

Align All Internal Stakeholders

Workshop participants discussed the need to align all internal stakeholders (eg, senior leaders, human resources, occupational health) and emphasized that, in organizations that have labor unions, the unions can have a major impact on benefits. Thus, ensuring all

internal stakeholders understand the potential benefits of Lifestyle as Medicine is critical.

Conduct Rigorous, Multi-Level Evaluations

Rigorous evaluations play a crucial role in every aspect of Lifestyle as Medicine initiatives. First, demanding a compelling evidence base will enable an informed selection of interventions. The need to rigorously evaluate Lifestyle as Medicine initiatives to demonstrate their value, inform refinements, and add to the evidence base is clear. To ensure the data captured can refine initiatives over time, it is critical to establish baseline measures and to define goals and metrics to track effect in multiple levels (eg, employee disease remission, sustained behavior change, increased well-being, retention, productivity, reduced claims/plan cost). In aggregate, those data can continue to enhance and strengthen the business case.

There were extensive conversations throughout this process about the need to evaluate process measures (eg, numbers enrolled); pre-post program results (short- and long-term); and impact (logic model). Employer-level evaluations may also have a unique opportunity to leverage frameworks like the 4-S Model (size, scope, scalability, and sustainability)¹² and the Penetration, Implementation, Participation, and Effectiveness (PIPE) impact metric^{12,64} because they have a defined population.

A phased evaluation approach is important in that immediate post-intervention or interim outcomes often cannot capture the total impact of an initiative. Behavior changes in the short-term may lead to delayed improvements in clinical outcomes. One participant said, “I think something particularly with lifestyle medicine that’s very important is stressing to those C-suite individuals, you might not see the return on investment (ROI) in year one or year two if you’re looking in your medical claims, or your worker’s comp claims, whatever you’re looking at.” In addition to ensuring that you are setting realistic expectations for how long it will take to see improvement, a variety of other recommendations emerged, including:

Define a wide range of outcome metrics, such as:

- Participation and engagement across various groups and individuals from differing SES, wage categories
- Work satisfaction
- Reduced biometric risk (eg, reduction in HbA1c, blood pressure)
- Remission of chronic conditions (eg, diabetes, hypertension)
- Behavior change
- Physical health
- Mental and emotional health
- Well-being
- Productivity
- Absenteeism
- Business outcomes
- Quality of life improvements
- Energy
- Risk migration
- Full claims analysis

Thinking holistically about organizational outcomes is important. A recent study indicated that overall diet quality related to burnout in a sample of healthcare workers.⁶⁵ Lifestyle as Medicine initiatives could play a role in attracting and retaining talent.

There were some cautionary tales about potentially misleading or insufficient outcome metrics, such as medication adherence. Given that the goal of Lifestyle as Medicine is to improve whole health, reduced medication use or titration of pharmacy usage may be a more appropriate metric than medication adherence. Thus, tracking medication pharmacy claims is important. Often, there is a short lag period on such claims, so the value can be realized quickly.

Workshop participants also stressed the importance of apple-to-apple comparisons, particularly if the dialogue reverts to ROI. They said, “It’s ironic because sometimes these really low-cost solutions get so scrutinized for their ROI, like education programs. But then, if we look at really high-dollar interventions that are occurring in healthcare, we don’t always have the exact outcome of that. It’s just interesting how sometimes we scrutinize a \$300 education program, but not potentially a \$35,000 bariatric surgery. We just have to be able to speak the same language...”

The final evaluation recommendation from workshop participants related to ensuring that the voice of employees was captured—to inform the development and delivery of initiatives, but also to ensure all needs were being met and any barriers to participation were adequately addressed.

Implement Tailored, Evidence-Based Programs

There is clear and compelling evidence for the power of tailored behavior change interventions in promoting Lifestyle as Medicine.⁶⁶⁻⁶⁹ Dr. Prosser, the physician who leads the onsite clinic at Carmel Clay Schools, emphasized the personalized approach she and her multidisciplinary colleagues adopt to create a unique treatment plan for each patient. One expert shared that their organization offers intensive therapeutic lifestyle change programs for employees based on the claims data for the top 13% of high-risk claimants. Another expert underscored that a targeted approach of this nature is particularly beneficial if the realized and accrued savings are reinvested into lowering that pool of high risk people over the long run.

Multiple workshop participants shared that tailored approaches are a fundamental component of successful Lifestyle as Medicine initiatives. One described beginning with a personalized assessment identifying actionable lifestyle and physiological risk factors to create a map for the individual, linking the needs identified with resources in the workplace, in the community, and in their homes and following up over time to evaluate if and how they engaged with those resources to refine the plan as needed.

The need to base the tailoring on rigorous behavior change science was clear. One participant said, “We focus on the behavior change...we’re in the health coaching aspect of our products, and it is all behavior change science and understanding what people want to do, how they want to get there, what their baseline education is, and where they’re ready to take steps to move forward.” Another participant emphasized the need to address employees’ readiness to change, emphasizing that programs and benefits go unused when we fail to consider individual’s readiness to engage in them. One of the experts emphasized that tailoring to readiness to change is essential. They said, “So, having so many levers in lifestyle medicine, 6 or 7 levers allows you to start where the patient is. And so, it also gets to that question about readiness to change because you can engage them in multiple areas where they may or may not want to change and that could be good starting points, but the sleep and the stress too, they may want to say, ‘I want to manage my stress.’ And so we can help them with that to start.”

Some organizations are automating the personalization. Blackstone’s start up, Twin Health, is utilizing an AI-driven, individualized coaching app to reduce reliance on costly diabetes drugs in 14 companies. Using glucose-monitoring data, activity trackers, and self-report, they are providing tailored guidance to end users to promote behavior changes that will help manage blood glucose.⁷⁰

Cultural tailoring is also essential. As one participant explained, “We are a multinational organization. We have many different workers from different groups and different backgrounds. And so, when we’re talking about cultural health now, and part of the message is also about changing in lifestyle and so on, we do need to think about the different groups and the different things that might be available in the different countries... We also work a lot with employee network groups, and these are network groups that tailor to different communities. For example, we have the Latin network group, or the Asia-Pacific network group. We do work very closely together with them to understand what are the health issues that they see and where they need help and where there’s gaps in health and their lifestyle as well.”

Involve Lifestyle as Medicine Champions

Internal champions can catalyze change within the organization—gathering buy-in from different parts of the organization and garnering support and resources. One of our experts stated that within their large global organization, “From a peer support standpoint, absolutely this is where a champions network, peers being equipped to support peers, is baked into our program design, not only in the physical health side, but importantly in the mental health side.” Several workshop participants also spoke to the importance of internal champions to amplify the organization’s messaging and to encourage participation. One said, “When we do have those advocates that are the utilizers, your employees, your feet on the ground, to come in and advocate for whatever program it is. Again, it’s that water cooler talk. We do see more buy-in. It’s that cross-functional conversation vs top-bottom.” Another shared an example of the power of an internal champion in their organization: “We have a person that is so passionate about lifestyle medicine that it is in her core, and she happens to be an extreme extravert... And that’s made our whole program because she cares about it. And then she does a radio show. She’s always on Facebook. And because she’s an extravert, she’s got all these followers...”

Build in Peer Support

Peer support is another critical contributor to successful health and well-being initiatives.⁶⁰ One employer created a time-limited 6-week group in which the employees discussed and provided support to one another around the six pillars of lifestyle medicine with the thought that the insights gained would filter to co-workers and family members. Others have formed more formal Lifestyle Medicine Employee Resource Groups.

Use Storytelling

Many participants echoed the sentiment that leveraging the undeniable power of storytelling (eg, highlighting internal personal success stories) is a potent strategy to increase buy-in for Lifestyle as Medicine throughout an organization. Storytelling appeals to

feelings, and thus can be an influential strategy to change hearts and minds. In addition, compelling stories enable people to see Lifestyle as Medicine in action so they can envision themselves doing it. As a result, storytelling can lead to vicarious learning. One workshop participant shared her organization's success with storytelling. They conducted a four-week plant-based eating educational initiative that culminated in a week-long plant-based challenge. Prior to and immediately after the plant-based challenge, they measured participant biometrics (eg, cholesterol) via a blood draw. The individuals who participated were so stunned at the dramatic changes in such a short interval that they shared their stories widely with co-workers.

Another workshop participant emphasized the need for the stories to be authentic (eg, including the bumpy spots on the road). Yet another stressed the importance of telling the stories through multiple channels (eg, video). Some participants are relying on the personal narratives shared by other employers to influence decision makers within their organizations. And one recommended that we create a Netflix series with a celebrity to highlight the power of Lifestyle as Medicine.

Start Small and Build Momentum

In the spirit of diffusion of innovation, many workshop participants discussed the value using a phased approach within their organization—starting small, conducting pilots, and encouraging employees to experiment with lifestyle medicine initiatives—particularly if leaders participate. The “start small” approach was widely advocated for to reduce perceived risk and gain some small, early wins. Another advantage of pilot programs is that they can help overcome misconceptions that individuals may have (eg, about plant-based diets not tasting good). One person commented that “planting seeds” in one year was paving the way toward making Lifestyle as Medicine the centerpiece of their health and well-being initiative the following year. Workshop participants also commented on the potential to build momentum in a community by implementing a pilot with an anchor institution (eg, a hospital who is the role model of health for that community) who could inspire other organizational leaders to follow suit.

One workshop participant advocated for focusing on a single division, location, or department. Another suggested building one minute into every meeting (eg, for a meditation, moment of gratitude, or movement). Others suggested focusing on a single pillar of Lifestyle as Medicine as a launching point. One participant described offering an annual, three-week plant-based diet challenge paired with recipes, shopping lists, cooking demonstrations, opportunities to submit ideas and photos, and social connections via optional group sessions. Participants had the opportunity to have their labs checked at the beginning and the end via a blood test. Each year, more and more employees participated, and not coincidentally, more of their on-staff clinicians began getting certified in lifestyle medicine. The groundswell of enthusiasm affected the culture of the organization over time. One hospital system described preparing a plant-based Thanksgiving meal for their employees. They used feedback to help evaluate the feasibility of making the majority of their food lines for employees and patients plant-based.

The phased approach was at the heart of the recommendation that each organization create a roadmap that is simple, actionable, and matched to their capabilities and previous experience implementing Lifestyle as Medicine. For some organizations, that may entail

changing networks or adding resources/benefits. For others, that may mean asking for clinicians certified or educated in Lifestyle Medicine to staff an onsite clinic.

External Strategies

Modify Benefit Design to Increase Access to Lifestyle as Medicine

A key strategy for increasing access to and coverage for Lifestyle as Medicine is through benefit design and a robust network of multi-disciplinary healthcare providers that practice and appreciate the value of lifestyle medicine. Unfortunately, the predominant fee-for-service model of healthcare reimbursement isn't well aligned with lifestyle medicine. In fact, short fee-for-service visits actually perpetuate prescribing medication vs having more time-intensive discussions about lifestyle change.⁷¹ One workshop participant described their frustration with the current system:

“Right now, the way that quality metrics are designed, it reinforces throwing people on medications as quickly as possible to get their numbers down as quickly as possible rather than reversing disease. So when you're talking about blood pressures, if it's going to take three to six months to reverse things with lifestyle, we're still going to throw people on medications because then our numbers are not going to look good at the end of the year and you won't get any of your metric bonuses. And then once the patient's blood pressure's better, then they're not motivated to make the lifestyle change to reverse it themselves. And the same thing with diabetes control. So a whole lot of the metrics as-is actually hurt our ability, make it less likely that we're going to employ lifestyle interventions and make it less likely that patients will actually pursue them. Same thing where you're talking about cholesterol. So if we can just put somebody on a statin, why should they change what they're doing? And they think that it's equally as good as if you were actually getting your numbers looking that good from diet. And nobody tells them that that's not true. So I find that incredibly frustrating. It's a vicious cycle.”

There are a number of alternative payment models, including value-based models (ie, payment models based on quality incentive programs that reward providers), that are much more closely aligned with lifestyle medicine.^{71,72} The American College of Lifestyle Medicine reviewed and provided an in-depth perspective on how well nine alternative models (ie, capitation, episode-based and bundled payment, shared savings, pay for performance, retainer-based, accountable care organizations, patient-centered medical homes, value-based payments, and group medical visits (including shared medical appointments and group medical nutrition therapy)) align with the competencies of lifestyle medicine.⁷³ Each alternative payment model has strengths and limitations, and some are more closely aligned with a Lifestyle as Medicine approach than others. Thus, employers can explore their options. One expert shared that a state government who had success lowering healthcare costs through value-based payment models for their employees⁷⁴ is contemplating implementing bundled payments for providers and accountable care organizations within their market with whom they can contract

directly. The expert went on to explain that the state government says to providers:

“We know you have to build the infrastructure for this within your physician practice to be able to track the data, to be able to understand what is an episode of care and then to actually start to reverse diabetes in this case. So for one year, we’re going to increase your payment, increase it by a dollar times the number of patients from the state, and you will build up the infrastructure that will allow us to be able to track and then reward you for improving the health.’ So they’re trying to flip the market as an employer and reward doctors, not for volume—which is the payment model that’s been around forever—but for value and reward a physician practice for actually improving the health of people reversing chronic disease and then through lifestyle medicine as one of those dimensions of that practice. So that is just one example of how one employer in a one location can flip a market.”

Another expert, whose company is self-insured said:

“The benefit design piece is really important, especially in countries like the U.S. The health benefit is ultimately the financial vehicle for how people access a lot of services, like nutrition services, and can access discounts, for example, as part of the way we design the health planner incentives for exercise and access to what they need to move and to be more fit. And so that’s really, really important as well. And of course as an employer in the U.S., we’re self-insured, as we are in many countries around the world. And so the health plan and payers piece is one in the same for us. We use third party administrators, but we are the health plan, we are the payers. We’re very clear about that identity. And so therefore, we have to ensure that of course our plan design supports the ability to have the right financing to get what a person needs.”

Some self-funded employers are also taking advantage of direct contracting models⁵³ for some or all healthcare services. Rosen Hotels and Resorts is one notable example.⁴⁹ Other employers (eg, Carmel Clay Schools) have implemented very successful onsite clinics centered on Lifestyle as Medicine. Telemedicine is another approach that supports Lifestyle as Medicine.⁷⁵

In any benefit plan design, there are also steps employers can take to increase access. One contributor (a well-being leader for a large self-insured employer) suggested that they could place expectations on their carrier to have an escalating minimum number of providers in the network who were certified in lifestyle medicine (eg, over the next 7 years, we’re going to ask you to increase the number of providers that are practicing lifestyle medicine so we don’t have to carve out extra weight management and diabetes programs—employees can obtain Lifestyle as Medicine from their clinicians with whom they are connected). One expert suggested that the provider directory be tagged to enable plan members to more easily search for and find clinicians who have earned this certification. The State of Connecticut, for example, denotes Lifestyle Medicine practitioners in provider directories. Another expert shared that employers can influence carriers: “If the employer embraces this, the employer can slowly influence the clinicians to take this on. Employers may hire an onsite coach or create an onsite clinic or top tier network. And they may put as their performance guarantees that these people have to be certified in lifestyle medicine and then put pressure on the carrier.”

Address the Individual and the Collective (Community)

As employers endeavor to advance Lifestyle as Medicine within their organizations, there is a very real opportunity for them to positively impact their community as well, creating shared value. One of the most inspiring examples of this is the community garden created by Carmel Clay Schools, which has contributed to not only increasing access to organically grown produce, but also to advanced educational opportunities for students of all ages, inter-generational social connection, and more positive sentiment among older town residents toward the school system.

Our experts also highlighted that impacting the community will indirectly affect employees as well.

“And so what we’re chasing is the remediation of chronic disease. It’s that simple. But the remediation of chronic disease, not by only an approach that connects our employees and their families to the formal care setting, doctors, nurses, not only an approach that figures out who the best doctors are, what the best pills are, but really much more upstream an approach that is family-based and community-based. Because our employees do not live in a vacuum. They might work with us for eight, nine, 10 hours a day, but they go home and spend much more of their lives with their social circles, inclusive of families. And obviously we know families can look very different, but the journey to health and the remediation of chronic disease is a social journey. So the community is key. The home setting is key. So we don’t just focus on what we do at our worksite. So remediation of chronic disease, taking an approach that doesn’t just push pills and diagnostics and formal therapeutics, but really focuses on lifestyle. What do people put in their mouths? How do people move? How do people manage stress? What does the social fabric look like in a community?”

Actively Engage in Advocacy

Employers have a diverse array of opportunities to advocate for Lifestyle as Medicine.

One such example is the potential to advocate for more rapid shift to alternative payment models—such as value-based models in the U.S.—to accelerate the transition from a sick care system to a true healthcare system that values prevention. There is a legacy of effective preventive interventions being adopted more slowly or not at all because they were held to a higher standard than treatments or procedures in that they were required to show a positive ROI in the short term—a problem that has been exacerbated by turnover in insurance markets.⁷² It took 16 years for the Ornish Reversal Program (a lifestyle medicine based cardiac rehabilitation program) to be approved by Centers for Medicare & Medicaid Services as a form of Intensive Cardiac Rehabilitation.⁷⁶ That program is now also covered by many major insurance companies. A shift to value-based payment models will require treating coverage for preventive services equally—such that they are held to the same standard (can they improve health at reasonable cost?).⁷² In the meantime, employers can advocate for payers to have a Lifestyle Medicine Program Director (as Blue Cross Blue Shield of Vermont recently added to their staff)⁷⁷; better reimbursement of Lifestyle as Medicine; coverage of preventive services (eg, nutritionist or registered dietitian visits prior to a diagnosis with a chronic illness);

and the training of more healthcare professionals in Lifestyle Medicine.

At a more foundational level (for those who are uninsured), employers can also advocate for Medicaid expansion in states that don't have it. As Dr. Eduardo Sanchez explained, "You can't do lifestyle medicine if you don't have access to medical care." He elaborated and said, "But in addition, there's also the advocacy around supermarkets in neighborhoods that don't have them. Parks in places that don't have them. Public safety in places that don't feel it. All your employees cannot reach optimal health if we're not paying attention to the context and the places where they have to live."

Some workshop participants suggested advocacy through sharing inspiring examples of the transformative power of Lifestyle as Medicine with legislators to increase the possibility of policy-level change. Others emphasized the need to lobby (individually and collectively with other employers) to counter the influence of big food and pharmaceutical companies that have a vested interest in maintaining the status quo.

Create Consortiums or Multi-Employer Trusts to Increase Purchasing (& Negotiating) Power

Given the challenges some small to midsize organizations expressed with regard to providing Lifestyle as Medicine initiatives or having limited purchasing power with insurers, several workshop participants suggested that employers consider forming consortiums, co-ops, or trusts to increase access to Lifestyle as Medicine. One participant said, "The term that's coming to my mind is multiple employer trust. Think of a consortium where you each negotiate your own contracts, you each have your own form of bills and finances, but you come together as a buyer consortium to purchase X products. If you get a big enough group with X amount of lives, you have more say, more power." Some participants also argued that even larger employers could benefit from banding together. They said, "We discussed again the banding together of (especially) large employers—in effect to demand that this be built into the plans of the major carriers." Another workshop group concluded that, "Self-insured employers have a lot of power, but collectively they haven't come together to use that power in a way to promote change and ultimately reduce their costs."

Create a Mechanism for Sharing Employer Best Practices

Building on the concept of replicating bright spots, some workshop participants requested a formal vehicle for organizations who are interested in advancing Lifestyle as Medicine to communicate, collaborate, and share best practices. Others requested access to a Lifestyle as Medicine steward who could provide formal assistance to organizations with regard to plan design, employee benefits, program design, etc.

Shift Quality Standards

The workshops also explored the possibility of shifting national quality standards as a way to increase demand for Lifestyle as Medicine. Dr. Dexter Shurney noted that the way the innovation of

laparoscopic surgery diffused through the healthcare system was that a small number of physicians demonstrated that it improved patient outcomes, reduced pain, led to faster healing, and was associated with few complications. Over time, this surgical technique was adopted in centers of excellence where other surgeons came to be trained. Eventually, the American Medical Association and payers shifted policy such that laparoscopic surgery was the standard of care. This example underscores the potential effects of shifting quality standards. For individuals with diabetes for example, HbA1C in conjunction with medication use is a current quality standard. What might it look like if a revised quality standard became A1C control with minimal medication? Or if status on key indicators of whole health (ie, pillars of Lifestyle Medicine) were a vital sign as some have suggested?

Seek out Partners in the Community

Several participants identified potential partners with whom employers could collaborate to advance their Lifestyle as Medicine initiatives. Large retailers and grocery store chains were one example, particularly if they are well-known for fresh produce. Other businesses that are already partially in that realm (eg, sporting goods stores, recreation facilities) may be additional candidates. Local or state associations of allied health professionals (eg, physical therapists, occupational therapists, dietitians) represent another option. Other participants noted that partnering with municipalities, schools, or other local or state organizations (eg, departments of health) may also be an avenue to pursue. Others were referring their employees to programs in the community (eg, healthy cooking classes at local health departments). Local healthcare organizations or hospital associations may be open to collaborating as well.

How the Well-Being Industry Can Support Employers' Efforts

The findings to this point have been focused on the internal and external strategies employers can utilize to advance their implementation of Lifestyle as Medicine. Workshop participants also identified a number of additional strategies that could be employed to assist or incentivize employers to do so and/or facilitate their efforts.

Garner National Media Attention

Increasing awareness of the power and cost-effectiveness of Lifestyle as Medicine will help drive demand among employees and employers. Several workshop participants suggested developing messaging and/or a communication campaign that gets picked up by national media or has the potential to go viral on social media. One participant suggested that we create the equivalent of the ice bucket challenge that was used to raise awareness of ALS for Lifestyle as Medicine. Another suggested that creating a national day akin to the American Heart Association's Wear Red day would be helpful. Yet another provided an example of a substance use prevention media campaign funded by the Nationwide Foundation that focused on living in Denial, OH.⁷⁸ Another suggestion involved having a reality show series about a celebrity adopting Lifestyle as Medicine on a streaming service.

Create Recognition Strategies

An awards program, accreditation, or national recognition (akin to Great Places to Work or Fast Company's Most Innovative Company Award) that celebrates the efforts of companies committed to improving individual, organizational, and community health outcomes could be very powerful. The criteria for such awards help establish expectations and provide aspirational milestones for companies endeavoring to make progress. Awards also shine a light on bright spot employers who are creatively implementing Lifestyle as Medicine, providing inspiring role models to other organizations and driving demand among employees. One participant noted that awards may accelerate the shifting norms by creating a state in which employers would be considered outliers if they're not actively engaged in supporting Lifestyle as Medicine. Another workshop participant suggested that HERO and other similar organizations could create national standards for employers to strive toward for recognition as silver, gold, or platinum levels of achievement or "badges" that could be displayed physically and virtually (eg, on LinkedIn or other social channels).

Connect Them With Resources

There are a number of free resources available for employers. Full Plate Living, for example, is a free, digital, multicomponent nutrition education program offered to workplaces and communities by the Ardmore Institute of Health.⁵¹ Full Plate Living emphasizes a whole food fiber-rich diet consisting of fruits, vegetables, beans and legumes, whole grains, nuts and seeds, without dietary restrictions of food groups.⁷⁹ Individual and group facilitator materials are available to view and download.⁵¹ The American College of Lifestyle Medicine is currently offering a free 5.5 hour continuing medical education course for those interested in learning more about [Lifestyle Medicine and Food is Medicine](#).

There are also some non-profit organizations who are providing helpful resources and educational materials for one or more domains of Lifestyle as Medicine. The Physical Activity Alliance has created The CEO Pledge for Physical Activity with a goal of assisting 27 million Americans to become more physically active by 2027.⁴² They provide promotional materials and other tools organizational leaders can utilize to ensure that physical activity and movement are a norm among their workforce. The Plantrician Project™ is educating healthcare providers and health influencers as well as actively advocating for whole plant-based nutrition in a Food-is-Medicine approach.⁸⁰ ParkRx America is a national non-profit dedicated to ensuring nature is incorporated into daily routines to improve health. They provide free resources and [tools](#) to educate a wide range of healthcare professionals (eg, physicians, nurses, physician assistants, health educators, therapists, educators) and the public on the importance of nature prescriptions for regular time in nature.⁸¹

HERO and the Ardmore Institute of Health hope that these insights will enable more organizations to join in the collective effort to advance Lifestyle as Medicine in the promotion of whole health as a nationwide movement. Collectively, we can catalyze and contribute to the transformation that our healthcare system so desperately needs.

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The Evolution of Lifestyle Medicine

Dexter Shurney, MD, MBA, MPH, FACLM¹

For centuries, the idea that lifestyle plays a significant role in our overall health has been recognized. Hippocrates, the father of modern medicine, famously stated, "Let food be thy medicine, and medicine be thy food," emphasizing the crucial link between what we eat and our well-being.

In recent years, there has been a growing movement towards utilizing lifestyle modifications as a form of medicine. This approach focuses on incorporating healthy habits such as regular physical activity, stress management, and a balanced diet as a means of preventing, treating, and reversing diseases.

In this article, we will explore the concept of lifestyle as medicine. We will also briefly discuss the impact of incorporating healthy lifestyle choices in our lives and lifestyle as a medicine intervention.

When it comes to living a healthier life, the competing viewpoint seems to be lifestyle *or* medicine. You might have noticed the title of this article is, 'The Evolution of *Lifestyle Medicine (LM)*.' This is an important distinction to make. It is not one or the other, but rather a continuum.

The Importance of Lifestyle for Health and Longevity

The tenets of LM are based on several, groundbreaking large observational studies.

First was The Adventist Mortality Study in 1960. Researchers studied Seventh-Day Adventists in Loma Linda, California. What they found over a 25-year follow up was astonishing. The death rates for cancers among Seventh Day Adventists were significantly lower

¹Blue Zones Well-Being Institute, MN, USA

Corresponding Author:

Dexter Shurney, MD, MBA, MPH, FACLM, Blue Zones Well-Being Institute, MN, USA.

Email: dshurney@gmail.com



than the rest of the population. Specifically, 60% lower in men and 76% lower in women.

Next, researchers in The Adventist Health Study from 1974-1988 outlined 5 simple health behaviors that could increase life span by up to 10 years! Notably, they weren't outlandish behaviors by any stretch. Behaviors like not smoking, eating a plant-based diet, eating nuts several times per week, regular exercise, and maintaining a normal body weight.

National Geographic researcher and author Dan Buettner, who wrote "Blue Zones: 9 Lessons for Living Longer from the People who Have Lived the Longest," also identified Loma Linda as one of five regions in the world where a subset of the population is living healthier, longer lives compared to the rest of the population. They are living well into their nineties and even over 100. Some are even absent from disease! They are healthy, happy, and vibrant. Of the 5 Blue Zones, Loma Linda stood out because it does not exist in some idyllic location such as Costa Rica, Italy, or Greece. In fact, just the opposite. Loma Linda is located in the heart of Southern California, less than 60 miles from Los Angeles just off Interstate-10, and shares all the smog, noise, fast-food, and traffic of other Southern California communities.

The Blue Zones research and other similar studies have led to an understanding that we can change our environments and integrate specific lifestyle interventions to positively impact our health - no matter where we live.

The Beginnings of Lifestyle Medicine

You have probably had Kellogg's Corn Flakes at one point in your life. The man behind it was a Seventh-Day Adventist by the name of Dr. John Harvey Kellogg. A part of their gospel mission was that in order to serve the lord best, they must live with a clear mind and a healthy body.

Dr. Kellogg was a big advocate of vegetarianism, and he set up a sanitarium in Michigan - a specialized type of hospital treating specific diseases and ailments - in 1866. People would travel from around the world to become healthy. This was really the first beginnings of a sort of LM.

Dr. Kellogg also had a business partner, his brother Will Keith Kellogg. However, the brothers eventually parted ways over whether to add sugar to their product(s).

We have come a long way since Dr. Kellogg's time. The term "LM" was first used in as a title of a symposium in 1989, it first appeared in publication as a title of an article in 1990. However, the evidence for LM appeared sooner.

Lifestyle medicine, as we now practice it, is using these six elements (see Figure 1) in the right balance, at the right time, in a personalized way to improve the health of an individual.

Lifestyle medicine is a strategic, doctor prescribed intervention that layers on top of healthy lifestyle behaviors. This is the future of medicine, a proactive approach to realize true healthcare, and not sick care.



Figure 1. Six elements of lifestyle medicine.

The Research

More than 2 decades ago, the following study showed that, compared to a placebo, there was a 58% reduction in the risk of diabetes with lifestyle interventions (Figure 2).

Metformin is usually the drug clinicians prescribe first for their patients that have prediabetes. But the lifestyle intervention performed better than the drug. It is worth noting that the lifestyle program that they followed was not nearly as robust of a program as today. Nevertheless, it got lifestyle interventions on the radar.

“...we can change our environments and integrate specific lifestyle interventions to positively impact our health no matter where we live.”

What really brought lifestyle to the forefront was that there were studies that showed not only prevention, but the reversal of disease as well. One study which showcased this well was highlighted by Dr. T. Colin Campbell in his book ‘The China Study.’

Campbell was doing research on impoverished populations in China, looking at protein consumption specifically as there was a push to get more protein into rural areas of China. He noticed that the rates of cancer were different in some of those rural areas compared to urban areas. Campbell looked at the association between protein and cancer. His work found that the growth hormone IGF-1 (found in animal protein) can turn on cancer genes.

Then there was data out of the Cleveland Clinic from Dr. Caldwell Esselstyn, showing the reversal of atherosclerosis. In Figure 3, you can see that the lower ascending distal artery has stenosis.

This was an individual that was not able to undergo surgery. Instead, he was offered a LM intervention including a plant-based diet. Months later, as shown in the repeat angiograms, the stenosis had resolved without the need for surgical intervention. Of course, this may not be achievable for every patient, but the evidence for the positive influence of LM was beginning to build.

Dean Ornish and his team conducted a study on men with low grade prostate cancer to see what the impact of an intensive lifestyle

program would have on their health. The lifestyle intervention was comprehensive: Sleep, meditation, and the addition of soy into their diet.

As Figure 4 illustrates, pre-intervention, the red dots indicate cancer genes that have been turned on. The green dots indicate cancer genes that are not turned on. These changes occurred over a period of only 3 months.

Does this “on and off” of gene expression sound familiar? Remember, T. Colin Campbell found similar patterns of “onco-expression” in the China Study.

Another situation in which we see this occurring in is when people move between countries. Comparing disease rates of individuals that move to the United States to disease rates in their home counties, we commonly find a significant increase in negative health outcomes. Why? Their lifestyle changes.

Nowhere is this more apparent than with the introduction of U.S./ Western diets into other countries. Case in point, over the years, China has witnessed significantly increased rates of certain lifestyle-related diseases like type 2 diabetes as their lifestyle habits have changed. At one point, the rates of type 2 diabetes in China exceeded that of the United States. Historically, China’s a country where type 2 diabetes was not a problem.

The potential for LM to reverse type two diabetes and obesity is enormous. [Here is an article](#) that speaks to the success rates of type-2 diabetes remission with bariatric surgery. What we’ve found is that LM alone can have similar success rates of type-2 diabetes remission.

I use the term “remission” because I do not want to get people excited and debate over the semantics of “reversal,” vs “remission.” However, when you consider diabetes reversal in a similar context to obesity reversal, then it makes absolute sense. Particularly, because obesity is now considered a disease. If a person goes from a BMI of 40 to a BMI of 25, they’re no longer considered obese. Have they not “reversed” their obesity? Or is the person’s obesity only in remission?

The more you dive into this, the more you realize just how powerful LM can be. Unfortunately, it is not, to any significant degree, taught in medical training. Physicians are trained to prevent classic vitamin and mineral deficiencies that result in conditions like

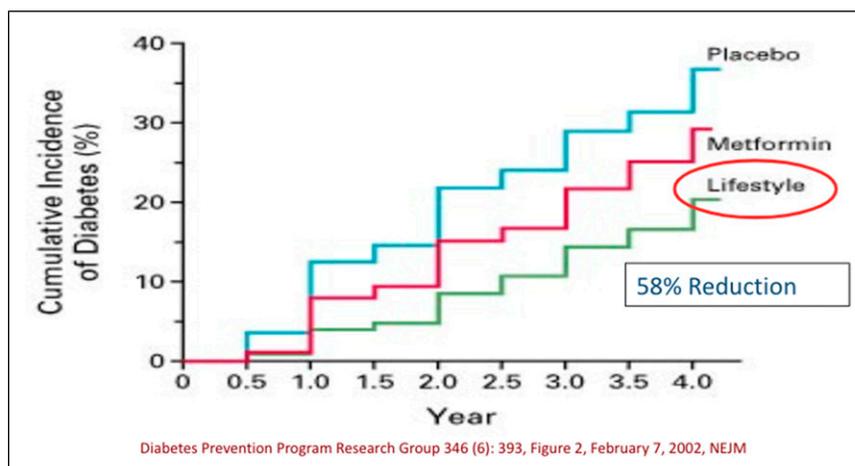


Figure 2. Diabetes Prevention Program Research Group 346(6):343 February 7, 2022 NEJM.

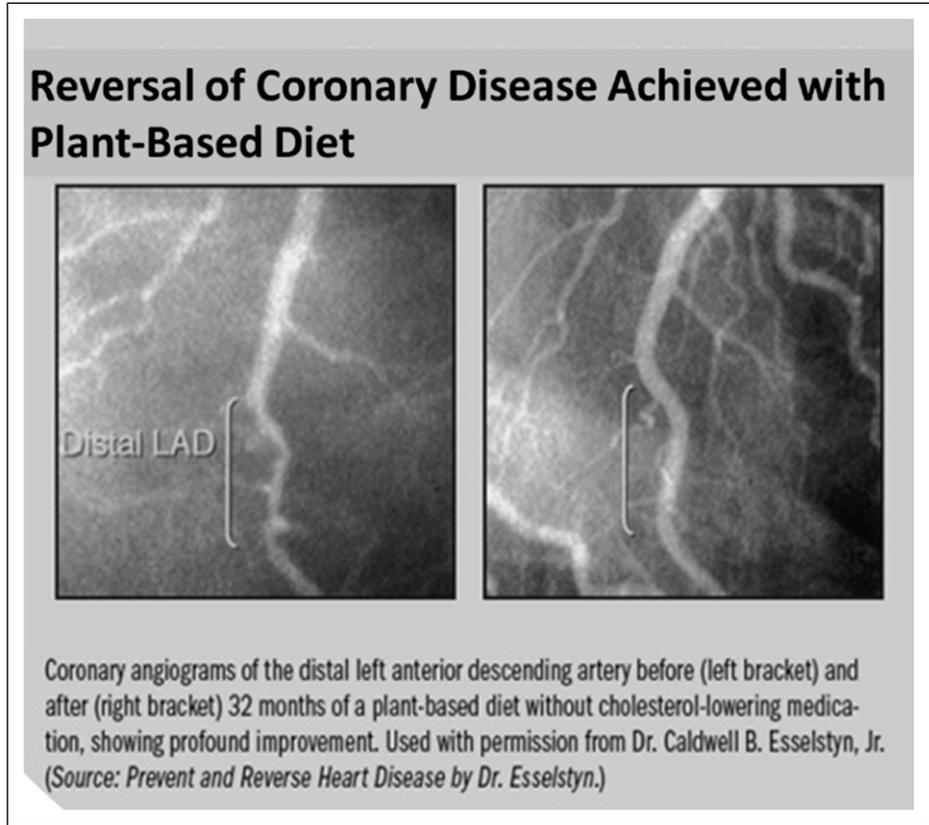


Figure 3. Impact of plant-based diet on coronary arteries.

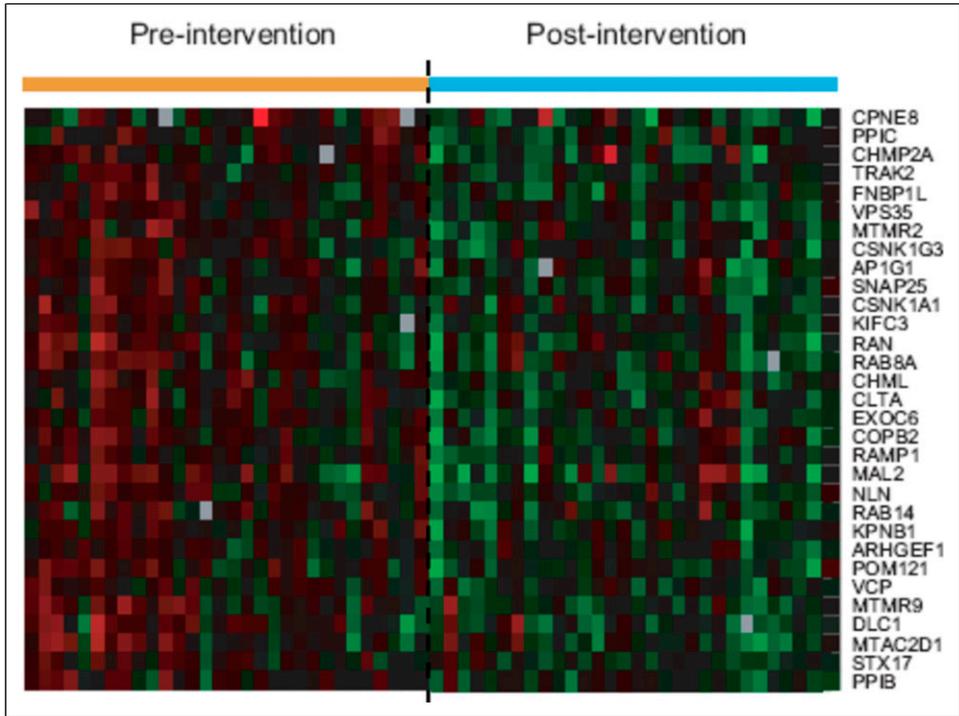


Figure 4. Heat map of the gene ontology group “intracellular protein traffic” illustrating the down-regulation of these 31 transcripts. Pre-and post-comprehensive diet and lifestyle intervention samples are indicated.

beriberi, rickets, and scurvy but not to proactively use lifestyle modifications to prevent, treat, and reverse many of the common modern diseases that we now recognize as far too often being linked to lifestyle imbalances.

This is why the American College of LM was founded in 2004.

Lifestyle Medicine in Action

The American College of LM is predominantly a physician-run organization. However, it provides a broad education continuum that is not just for physicians but for the whole LM team. The practice of LM is much like you might see in physiatry. A physiatrist is a physician, but working with OTs and PTs, each at the top of their licenses. Therefore, LM training needs to be integrated across the board to accommodate the needs of diverse members of the LM team.

Many are amazed to find how little lifestyle training a dietician receives. Training related to total parenteral nutrition (TPN) is important, but it is not LM. Beyond the regular training, ACLM and ABLM provide LM certifications for a variety of health professionals and board certifications for physicians, respectively.

We also now have residency training programs in LM. There are approximately 40 organizations across the U.S. that are offering LM training. There are at least 6 medical schools that have incorporated LM education into their curriculum.

A recent full supplement of the *Journal of a Family Practice*, which was funded by the Ardmore Institute of Health (AIH), is noteworthy. Ardmore Institute of Health has been a leader in the movement to integrate more LM into primary care practice. Again, getting the word out is critical so that family practice doctors can really understand the power of LM. As you go through the supplement, you will see its impact on mental health, you'll see its impact on autoimmune disease, and you'll see its impact on cardiovascular health.

Not much happens these days in Washington, but this is one thing that seems to be making progress. There is a bipartisan bill to get more LM and nutrition training onto the curriculum for medical schools.

Where We are Headed

Value-Based Care

Lifestyle medicine belongs in value-based care. With it comes the capability to meaningfully transform our "sick-care" into a true healthcare system. Over 60 health organizations have joined as health council members to the American College of LM, including Spectrum Health, Henry Ford Health System, Mount Sinai, Kaiser, and more.

Why are these organizations interested in LM?

Most of them are looking at new risk-based contracts that place them at risk for the cost of care. They know that in the new alternative payment schemes with payers it will be imperative to better manage the total health of the populations they serve. To be successful they

understand the need for LM to create the foundation necessary to optimally prevent, treat and reverse disease.

A Global Movement: The LM Global Alliance Network

There are 28 LM physician organizations across the globe now. Lifestyle medicine is not only happening in the United States. I'm very proud of our associates in the Philippines because now, LM has been recognized as an official medical specialty. We're on our way to doing this in the United States as well, which is very exciting.

Food as Medicine

Healthy food has been, and continues to be, a central tenet of LM. Intuitively, as any parent will likely attest, it is not good to feed children unhealthy food. We know at a basic level that if we feed children cake and ice cream all day, it will harm their health, and over time make them sick.

Food as medicine, or food in medicine, is the concept that what we eat matters greatly to our health and well-being. An apt metaphor would be the kind of fuel you put in your car. Better fuel results in better performance. Putting water in the tank might fill the tank, but it certainly will not result in peak performance.

Food as medicine spans a broad spectrum of interests, and definitions can vary. But all hold commonalities that help support the movement. As a result, food as medicine is gaining momentum and will eventually proliferate within medical practice for several reasons. First, because it matters greatly to our health as previously mentioned. But moreover, it's seen as part of the solution for social determinants of health, food insecurity, and to planetary health and global warming.

"Food is the single strongest lever to optimize human health and environmental sustainability on Earth." - Eat-Lancet Commission Report, 2019

Moving Forward

The earlier description of the Kellogg Sanitarium did not mention a very interesting piece from this story: basic hygiene practices.

It may come as a surprise to you that, historically, surgeons would regularly operate without washing their hands. Some would wash their hands, and they were often ridiculed, even though their patients were doing better and avoiding infections. Thankfully as you know, we have come a long way since those days. Hand washing is now a basic hygiene practice used in hospitals.

The lesson here is that change takes time and is often firmly resisted, even when the evidence is right before our eyes. Nevertheless, we have access to LM, right now, that can make a profound impact on the health of society. The science speaks for itself. Because of the inherent value of LM to change lives like nothing else at our disposal, we should remain intent at cultivating the broadest LM approach to care possible.



A More Sustainable Approach to Supporting a Healthy Lifestyle

Richard Safeer, MD, FACLM, FACMP, FAAFP¹ and Meg Lucik, MPH, MCHES¹

As much as we know how powerful a healthy lifestyle can be, challenges abound for broad adoption and sustainability. Assuming that the economics and time commitment of delivering a comprehensive lifestyle medicine program are not a barrier, there is still the real concern that creating lasting healthy habits as an adult is the exception and not the rule.¹

One of the most studied and successful lifestyle medicine programs, the Diabetes Prevention Program (DPP), was prematurely terminated by the sponsor because of the observed significant benefit of the intervention groups (both the lifestyle medicine and the metformin arms) just before the 3 year mark. Both arms showed an ability to postpone or prevent the onset of diabetes. The metformin arm reduced the progression of impaired glucose tolerance (IGT) to diabetes by 31% and the lifestyle intervention arm by 58%.² These impressive outcomes of course, were achieved and studied with a significant amount of resources.

The Complete Health Improvement Program (CHIP) has been studied in workplaces several times.^{3,4} Most of the studies are in far smaller populations than in DPP and for often only 6 months, with an exception for a 2 years follow up. Ultimately, publication bias keeps us from understanding the full spectrum of outcome possibilities.⁵

Employers, especially self-insured, have several reasons to want their employees to embrace and succeed with lifestyle medicine. For starters, given that we spend the majority of our waking hours at work, the workplace is an essential environment to support and influence healthy behaviors. Healthier employees can make a greater contribution to the organization, cost less to insure and are more likely to remain with the company when they feel like their employer cares.⁶

While the benefits are robust, there are hurdles to offering these programs that give pause for the decision makers. For example, there are licensing fees for commercial programs, salaries for facilitators, and the space needed for programs delivered in person. For some types of businesses, carving out adequate time for delivery may be incongruent for shift workers (ie manufacturing), and businesses with customers that require attention around the clock (ie health care)

Assuming that an organization determines they can provide the right setting and the economics of delivering the program align with available resources, there is a question of whether the gains reported in studies are sustainable. More comprehensively, we know that our health and well-being are influenced by the cultures in which we live, including our workplace.⁷

For the past 3 years, Johns Hopkins Medicine has been offering employees with hypertension or pre-hypertension a lifestyle medicine program entitled Keep Your Pressure Down (KYPD). We chose to focus on blood pressure because of the high prevalence, the high associated cost and the plethora of lifestyle related factors contributing to high blood pressure, providing plenty of opportunities for non-pharmacologic improvements.^{8,9} The program offers an

opportunity to build new skills that create a better opportunity to sleep well, move more, choose healthier foods and drinks, enhance social connections, and minimize stress.

For 8 years prior to launching KYPD, Johns Hopkins Medicine had been on a journey to create a well-being culture. Cultures are defined by having shared behaviors, attitudes and beliefs. It's much easier to make healthy choices and have positive emotions in a culture that supports well-being. Employers can create a culture supportive of health and well-being by focusing their attention on 6 building blocks, as described below. Intentionally cultivating these 6 building blocks ensures that our KYPD participants are supported within our designated sessions as well as outside of the program, throughout their daily work routine.

Peer Support

Our co-workers have a tremendous amount of influence on our habits and our emotions. An individual who wishes to lose weight is likely to lose more weight and keep it off longer when losing weight with a group than when attempting alone.¹⁰ The same is true for smoking cessation.¹¹ Smokers are twice as likely to succeed in quitting when attempting with a friend or family member who is also trying to quit. Regardless of behavior, we are more likely to succeed in achieving a new habit when attempting with our co-workers.¹²

We can easily improve the mood of those around us with a simple smile.¹³ Waiters have learned this simple technique for increasing their customer's generosity on leaving a tip. We are also impacted by the stress of others. We feel their stress and this increases our likelihood of also feeling stressed.¹⁴

We encourage the participants of KYPD to sign up with a co-worker to share the experience together. Even after the registration is completed, we encourage participants early in the program to find a peer to share the experience, even if it is someone not in the workplace.

Leadership Engagement

Although our manager is not a peer, they have an impact on our ability to succeed in creating and maintaining healthy habits. At the fundamental level, our manager approves or denies our request to

¹The Office of Well-Being, Johns Hopkins Medicine, Baltimore, MD, USA.

Corresponding Author:

Richard Safeer, MD, FACLM, FACMP, FAAFP, The Office of Well-Being, Johns Hopkins Medicine, 600 North Wolfe St., Osler 7, Baltimore, MD 21287, USA.

Email: rsafeer1@jhu.edu

participate in health-promoting activities, such as KYPD. Most leadership decisions are not as blatantly and directly tied to our healthy lifestyle success.

Leaders that serve as health and well-being role models give implicit permission and encouragement that it is okay to tend to our needs during the workday. Leaders that practice self-care are more likely to be sensitive to the health and well-being of the people they lead.

Emotional contagion is the spread of emotions within a group. The emotions of leaders have a disproportionately greater impact on the emotions of the people they lead than peers.¹⁴

Most leaders get very little, if any, training on how to support the health and well-being of their team. We created [Ten Minute Well-Being Tips for Managers](#), so that – in short installments – our leaders can enhance their skills and knowledge to be more effective at supporting the health and well-being of the people they lead.

When participants of KYPD are trying to create new habits, extinguish unhealthy habits, and keep their stress levels down, they will be more successful with a manager who is conscious and engaged in creating supportive conditions throughout the workday.

Norms

Norms are the expected behaviors of a group. Workplaces and work teams have healthy norms and unhealthy norms. A healthy norm is to step away from work for a lunch break. Whether it is to eat lunch with others (social connectedness) or a walk (movement and nature), breaks are healthy. An unhealthy norm is to continue working after normal work hours are over. Everyone needs a chance to relax and set themselves up for a good night of sleep.

It's unusual for someone to go against a norm. Most people want to fit in and be accepted by the group. Team and organizational leaders can be intentional in shaping workplace norms. One of the major contributors to high blood pressure is stress. The simple act of rhythmic breathing can help lower blood pressure. At Johns Hopkins Medicine, we are working toward our employees practicing an intentional breathe to slow down and lower their stress level (and in turn, blood pressure).

More specifically, we have been intentional in our attempt to make 4-7-8 breathing a more regularly practiced stress lowering technique. This easy, four second inhalation through the nose, holding the breath for 7 seconds and 8 seconds exhalation out the mouth, is obviously free, portable and quick. We include this exercise in new employee orientation, new manager orientation, on a card that fits behind the employee ID badge and on screen savers throughout clinical stations. The introduction and skill building of the 4-7-8 breathing technique during KYPD will come as no surprise to participants.

A healthy workplace culture makes it easy to choose healthy choices. Various efforts have been created to make healthier foods (including low salt) not only more available, but also more attractive to purchase. We've also made a concerted effort to encourage physical activity (ie enterprise-wide step challenges) and offer guided mindfulness practices regularly in order to make it a more accepted lifestyle practice. Each of these intentional efforts supports lowering blood pressure as well as many other positive health benefits.

Social Climate

Everyone wants to feel like they belong, they fit into a team and a community. This inclusiveness has its own benefits of creating a sense of security, trust and that others are watching out for your well-

being. We also prefer to be embedded in a community that has a positive attitude that persists even when challenges arise, all working toward the same goal.

From the outset, KYPD strives to create a trusting environment that allows participants to share and receive support from their colleagues. The ability to be vulnerable is an essential step to helping participants know that regardless of which part of the organization in which they work, what life circumstances and health care disparities they've previously experienced, they share a common problem of high blood pressure with their colleagues. Vulnerability contributes to trust and collective problem solving.

In addition to working together as a team, but we can also experience well-being and healthy activities collectively. One of our strategies is to encourage the KYPD participants to sign up for our Race the Globe Steps challenge together. This is an instant way to both build connections and to provide support for each other and get more movement throughout the day.

Culture Connection Points

Culture connection points are the nudges that employers can intentionally practice to support healthy decisions and emotions. KYPD takes advantage of the myriad of culture connection points that support the effort to lower blood pressure. Here are just some of the ways our wellbeing culture strategy supports KYPD participants.

Policies – We have a healthy food and beverage policy that makes it easier for our KYPD participants to lower their blood pressure. For example, we mandate a portion of our food choices have a limit on sodium, allowing our KYPD participants (as well as the entire workforce) ample opportunity to choose foods low in salt.

Marketing and Communications – We label the low-sodium foods in our cafeterias with a green leaf, making it easy for our employees to purchase healthier options.

Behavioral Economics – These green leaf food choices also cost less by design, making them financially attractive.

Programs – 'Mindful Monday' allows participants 15 minutes to learn various mindfulness skills, including breathing patterns, that all contribute to lowering stress levels. This in turn has the potential to lower blood pressure. There is a plethora of other programs that support health and well-being.

Benefits – Every KYPD participant who accepts our health insurance benefit has access to a home blood pressure monitor at no cost.

Built Environment - At the majority of our locations, there are self-monitoring blood pressure machines available for employees to check their blood pressure throughout the workday.

Shared Values

Shared values are the elements of highest importance to both the employer and the employee. Values are the guardrails within businesses to make decisions and operate. The intention is that when the values are followed, the members of the culture are supported and that there is also benefit to the organization.

Several of the Johns Hopkins Medicine values, such as respect, collegiality, diversity and inclusion are squarely aligned with well-being. More specifically, they complement the effort to create a good social climate, where everyone feels like they belong and are part of the team. Participants in KYPD benefit from working within a team

and organization that has shared values that support a good social climate, which helps lower stress and in turn can lower blood pressure. Working for an employer without shared values increases stress, which in turn has the potential to increase blood pressure.

Conclusion

The workplace offers a tremendous platform to support employee health through lifestyle medicine programs. Prior to launching a Lifestyle Medicine program for employees, create the necessary supportive conditions for behavior change and emotional support. By creating a well-being culture at work, new health and well-being skills are more likely to be supported, adopted and sustained.

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Carmel Clay Schools: Bringing Lifestyle Medicine to the Classroom & the Community

Roger McMichael, MBA¹, Elisabeth Prosser, MD², and Mary Delaney, MSPT³

The inspiring story of Carmel Clay Schools illustrates much of the Lifestyle as Medicine framework in action.

Roger McMichael got his start as a teacher about 48 years ago before returning to school where he earned a Master's in Business Administration. He is now the associate superintendent for Carmel Clay Schools, where his primary responsibilities relate to non-instructional matters, including finance, operations, facilities, food service, technology, transportation – and fortunately, also the wellness program. The Carmel Clay School district educates approximately 16 500 students and employs approximately 2200 teachers, administrators, and staff.

Like many other school districts faced with double-digit inflation in health care costs about 10 years ago, Carmel Clay Schools contemplated adding an onsite or near site clinic as a cost-saving strategy. After reaching agreement with the teachers' union about implementing a high

deductible health plan, the district partnered with St. Vincent's Ascension to open a Wellness Center (ie, onsite clinic) in 2013. Roger and Dr. Prosser both credit Dr. Michael Busk, former Vice President, Clinical Service Line St. Vincent Health, Wellness and Preventive Care Institute, for his vision and insistence on person-centered care with an emphasis on evidenced-based lifestyle medicine. The Wellness Center is located in a 33 000 square foot facility across from the high school.

¹Carmel Clay Schools, Carmel Clay, IN, USA

²Ascension Hospital & Carmel Clay Schools, IN, USA

³Vital Incite, IN, USA

Corresponding Author:

Roger McMichael, MBA, Carmel Clay Schools, Carmel Clay, IN, USA.

Email: rmmicha@ccs.k12.in.us

Nearly a third of the district’s employees work at the high school. Dr. Elisabeth Prosser, a lifestyle-medicine certified family physician, has been leading the Wellness Center’s care team for the past decade. Rather than focusing only on primary care and medications, Carmel Clay Schools truly embraces lifestyle medicine and provides a diverse array of resources and multidisciplinary health promotion professionals to help improve lifestyle choices. Soon after its inception, the focus of the Wellness Center shifted from cost savings to health and wellness and ultimately to well-being as it has continued to grow and add services.

- Guiding Principle: Employ an Equity-Centered Approach that Optimizes Whole Health for All**
- Guiding Principle: Treat Lifestyle as Medicine as a Team Sport**
- Guiding Principle: Recognize that Lifestyle as Medicine is a Continuum**
- Internal Strategy: Create a Conducive Environment & Supportive Culture**
- Internal Strategy: Implement Tailored, Evidence-Based Programs**
- Internal Strategy: Start Small and Build Momentum**
- External Strategy: Modify Benefit Design to Increase Access to Lifestyle as Medicine**

As Roger explained, it did not take long for the district to realize that if you improve people’s health and wellbeing, the money will take care of itself. Early in their journey, there was a realization that well-being was more than physical health. All well-being initiatives are free to employees and include physical, social, financial, and emotional well-being. This multi-dimensional view led to the addition of onsite mental health care, followed by onsite physical therapy and a financial well-being initiative. The PhD level physical therapists from Ascension work closely with the Wellness Center staff in multidisciplinary teams. As Roger said, “we recognized all of these professionals need to work together for the benefit of the patient.”

To enhance physical and social well-being, Carmel Clay offers 38 different fitness classes (eg, yoga, hot yoga, Pilates, TRX, bootcamp, cycling) in a cycle room and 2 other rooms with suspended wood floors, and an enhanced sound and lighting systems. With 2 exercise physiologists on staff, the district considers the classes to be an extension of other health services offered in the center – one the providers often recommend. Roger explained that a physical therapist may tell a patient, “If you would take a yoga class and strengthen your core, you might not need to see me as often.” The boost to social well-being arises from teachers, administrators, and staff interacting in class in a way that they otherwise never would – leading to camaraderie and strong social connections. The district also encourages participation in local charity events (eg, 5k runs or walks), often covering some of the registration fee and providing t-shirts for participants.

An initiative to enhance financial well-being was added in 2020. Employees can engage in telephonic support with financial consultants who assist with various topics, such as how to purchase a first home, retirement savings, and student loan forgiveness. CCS anticipates assisting with approximately a million dollars of student loan forgiveness this year.

“We want you to talk to the financial people and maybe help lower your stress, but until it gets lowered, you may need to see one of our mental health therapists because you have high anxiety or depression. Then, because you have that, you may eat too much because you stress eat. You may need to see our dietician who might also introduce you to our lifestyle coach who will help you lose weight. Most importantly, not only lose the weight, but keep it off by assisting you to actually change your lifestyle. Then, somewhere in there because you’re overweight and have high blood pressure, you might see one of the Wellness Center physicians. “Our intent is to have every means of support a person might need to improve their well-being. As a result, we have doctors and nurses, a lab facility and prescription drugs, as well as a Lifestyle Medicine-certified dietician and an exercise physiologist who also does one-on-one health coaching. We have licensed clinical social workers who provide our mental health services. We have fellowship-trained physical therapists. We have classes that look like fitness classes, but they are also a part of the overall well-being culture we want to foster. They cultivate social well-being and physical well-being”. Roger McMichael

The multidisciplinary team works collaboratively to provide the needed service and support at the right time.

The visionary program and services continue to evolve. The district recently entered into an agreement with a regional Center of Excellence for orthopedic care to ensure optimal outcomes for orthopedic surgery (eg, joint replacements) at pre-negotiated rates. Employees undergoing joint replacement at the Center of Excellence have no deductible (a \$3000 savings in the high deductible plan) and share in the district’s savings by receiving \$1500 in cash and a \$500 of gift certificates for food. Employees have favorably reviewed the program, and the district is considering adding a cardiac and possibly a cancer Center of Excellence.

- Internal Strategy: Provide Visible Leadership Support for Lifestyle as Medicine**
- Internal Strategy: Use Storytelling**

Luck and Leadership Support

Carmel Clay certainly had luck on their side, including the unused building in an ideal location for the Wellness Center. But investing in the Center also required leadership support. Carmel Clay Schools was fortunate to have a very supportive school board, which supported the school administration and continued to allow CCS to reinvest some of their healthcare savings to continue to develop a more robust offering. The leadership also helped progress the program impact by offering access to the Wellness Center during the work day has contributed to high participation allowing for the transformative power of lifestyle medicine.

Roger and Dr. Prosser shared one story of an administrator who reluctantly had an appointment with Dr. Prosser as a means to obtain prescriptions with no copayment. He had reportedly been very happy with his existing primary care provider, whom he had been seeing for 30 years. After a visit with Dr. Prosser the administrator reported that, “In spite of my 30-year history with my primary care doctor, I’ve never had such a good experience” Now, he goes to the Wellness Center not because it’s free, but because he receives the best healthcare. The appointment may be 45 min, not 15 min. Patients

soon realize this is different than anything they've experienced, and it is the best healthcare they've ever experienced.

Word about the unique healthcare experience spread quickly. There is a waiting room in which employees rarely have to wait, and employees don't feel rushed during the visit. The physicians personalize their lifestyle medicine approach to lifestyle medicine for each patient, taking into account their readiness for change, their personal goals and priorities, and the reason for the visit. They rely heavily on the six pillars of lifestyle medicine, emphasizing the ones that are most relevant to the patient at a given moment. There is a strong emphasis on building on each patient's strengths.

Success stories are numerous, and the word has spread. The Wellness Center sometimes literally saved lives – and in other cases transformed lives (eg, through 75 pound weight loss) – and participation is high. Approximately 72% of employees and 58% of spouses utilize the Wellness Center.

Guiding Principle: Make a Compelling Business Case Based on More than the Cost Savings

The adoption of lifestyle medicine in the Wellness Center has improved outcomes and saved money. To the extent possible, Dr. Prosser and her team rely on lifestyle medicine, making a concerted effort to get people off of drugs instead of prescribing drugs. Individuals with diabetes who are seen at the Wellness Center, for example, are often using fewer pharmacological treatments for diabetes and have reduced their medication spend by just under \$2000 a year while also improving the blood sugar control. Similar results have been seen with hypertension and prediabetes.

Compared to the Price Waterhouse Coopers medical trend, Carmel Clay Schools is saving approximately \$8 million dollars annually on a \$25 million dollar healthcare budget. Without changing plan designs, CCS had no premium increase in six of the past 10 years. When premiums have been increased the increase is less than half of medical trend. While the original focus was on financial savings, the financial success pales in comparison to the broader value proposition and the mission of the program.

“The financial savings is clear, but we really think we're onto something in terms of helping people to have an improved lifestyle and increased well-being. Only employers can do this, individuals can't do it on their own”. Roger McMichael

While engaged in rigorous evaluations with Vital Incite, the districts population health analytics and consulting partner the district also recognizes not everything can be easily measured, but that leadership did require objective verification of appropriate use of taxpayers' dollars. And Roger and Ascension realized that data would reveal more opportunity. Vital Incite's role was to integrate historical data from the medical, pharmacy and onsite Wellness Center. Utilizing the Johns Hopkins ACG® system for risk indexing, the Vital Incite strategy team develops quarterly reports. Those reports identify the financial impact of all programs, as well as other opportunities to drive improved outcomes. Whereas most program outcomes discussions are centered around the administrator of the clinic defending their outcomes or lack thereof, these meetings are completely collaborative with Roger and his team, Dr. Prosser, the Benefits Advisors, RE Sutton and the Vital Incite team discussing every detail

revealed in the population health report and strategize on how to best move forward. It is with that collaboration that the group can discuss the link between increased blood pressure to stress at work and create the appropriate wholistic approach to resolve the issue vs just the provider adding more medications to every patient.

Roger explained how their efforts have created virtuous cycles. If the emotional wellbeing of a teacher improves it will have a positive impact on the teacher's performance, enabling them to be a better teacher, which will also improve their emotional well-being because our teachers are very high performing. “We know improving employee well-being will improve attendance and performance. There are a number of positive outcomes when well-being is improved, but it's almost impossible to measure many of them in terms of dollar and cents. We do know there is really no downside to this concept.”

Roger shares that this effort has been by far the most positive employee relations initiative that he's been involved with during his 48 years career in education. “Employees are very appreciative of what is available to them, but when you have employees who believe their employer has positively affected their life, that's pretty powerful...It has a huge impact on our employees' morale and their perspective of their employer.”

One of the district's take-aways is that many employers do not invest more in health promotion efforts because they cannot “find the money”, especially since their health plan is exceeding budget. Carmel Clay has demonstrated investing in impacting the root cause of medical expenses with lifestyle medicine, effective collaboration, and being committed to continuous quality improvement leads to long-term and sustained savings, thus the program is an investment rather than an expense.

Guiding Principle: Conduct Rigorous, Multi-level Evaluations

With the help of their independent evaluator, Vital Incite, Carmel Clay Schools rigorously examines their evaluation data quarterly. Initially, their evaluation was conducted to identify the root cause of medical spend waste and the true needs of their population to ensure their resources are directed at optimizing health. Over time, the evaluation has shifted to include examining cost savings, risk reduction and additional resources to help their population thrive. Their program, in effect for 10 years, has continued to generate unprecedented impact, proving they have been able to reduce total healthcare cost of those engaged by 36%, reverse diabetes and hypertension and reduce dependence on medications for chronic condition management.

The data has been able to objectively demonstrate that the Wellness Center has been able to engage the least healthy population and improve their future risk. Although we are investing a significant amount in our well-being resources, it is far less than what we would in medical care for progressing disease and when comparing those engaged vs not engaged, the engaged members become less expensive. We are able to objectively show that members engaged in the center are improving their health, moving away from pre-diabetes and improving their ability to function without expensive anti-inflammatory medications, as just a few examples. We are able to objectively see that we are now spending less on sickness and our people are becoming healthier. That is real care for health that continues to motivate other projects that lead to community health improvement.

External Strategy: Address the Individual and the Collective (Community)

Carmel is a densely populated community with neighborhood covenants that can restrict resident's ability to plant a garden. CCS created an organic community garden with 150 plots on school property. What had once been an elementary school property, surrounded by large trees and a wooded area, was converted to a community garden. A well previously used to irrigate a nearby football field provides water for the gardens. The soils was remediated and enriched, the garden was fenced, and the use of any chemicals or fertilizers is prohibited. The garden committee named the garden Plates to Table and painted a 20-foot sign. Any resident can rent a plot for \$10 a year. Part of an adjacent playground was maintained so children would be able to play safely while members of their family gardened. The district added an outdoor stage where local musicians can perform, and a few weddings have been held there. The garden also serves an educational role, elementary students have instructional experiences there (eg, growing tomatoes) with a community service element (donating the tomatoes to the food pantry). An added benefit has been the garden is a vehicle to make public schools available to as many people as possible, which can help alleviate negative feelings from community members (eg, senior citizens) who don't have

children in schools have towards paying taxes. The garden also helps promote interactions among multiple generations.

With such dramatic and varied successes, both Dr. Prosser and Roger were asked what they are most proud of and how they will continue to build on the momentum they've created. Dr. Prosser explained she is most proud of supporting the public school system. "Public school systems really are an important part of the backbone of communities. I love the fact we can support these teachers, administrators and all of the other employees who five or more days a week are just pouring their very best into the students. These individuals make a difference, not only in kids' lives, but in the total community. I'm excited about being able to offer support to them, it's just been a real privilege." Roger concurred. "We will never be able to pay teachers as much as I think they deserve, but we can support their well-being which is more important than salary. We can make a positive difference in their lives."

Dr. Prosser is eager to continue to increase the participation at the Wellness Center and is excited about the prospect of expanding their pediatric offering, which currently serves about 28% of those 18 and under. She is also eager to advance their work supporting lifestyle psychiatry. Dr Prosser underscored that with the degree of anxiety and depression, the potential of nutritional psychiatry is high given how the pillars of lifestyle medicine are so important with mood and helping mental health. Roger is excited about the prospect of persuading other employers to consider an employer-based wellness program, which focuses on improving employee well-being.