Art & Science of
HEALTH PROMOTION
INSTITUTE
best science + practical experience = best outcomes

Universal Access to Health Promotion

A Sustainable Strategy to Reduce Health Disparities, Improve the Health of an Entire State, and Accelerate the Evolution of Health Promotion

Michael P. O'Donnell, MBA, MPH, PhD

“The three pillars critical to improving the health of the residents of a state or nation are enhancing the social determinants of health, providing universal access to medical care and providing universal access to health promotion.

The missing element for most large-scale efforts is providing universal access to health promotion, even though that may be the most cost-effective method to improve the health of the people of a state and even a nation.

To do this well, we need to deliver a therapeutic dose of scientifically valid health behavior change strategies (summarized here in the AMSO Framework). Funding this effort is likely to cost 10 or more times the amount available through foundations, public charities and public health departments. Therefore, these groups need to focus a portion of their resources on mobilizing funding from entities that have sufficient resources and that will also benefit from improved health status of their constituents.

The most important contribution of this paper may be the financial analysis that illustrates how sufficient resources might be mobilized and how the overall effort can be maintained by capturing a small portion of these funds to maintain internal operations indefinitely, and in the process, stimulate investments several hundred times the initial investment.”

Michael P. O’Donnell, MBA, MPH, PhD

Table of Contents

EXECUTIVE SUMMARY

Despite successes in improving the health of individuals in organizations through workplace health promotion programs, clinical treatments that have prevented the onset of diabetes and reversed heart disease through lifestyle change, and even in nationwide reductions in tobacco use, life expectancy in the United States declined slightly in 2015. Equally important, spending on medical care has reached a level that is not sustainable for individuals, employers, state governments or the federal government. This may be a critical time to expand the geographic focus of health promotion efforts to reach entire states, with the goal of providing universal access to all residents.

This paper describes an approach to provide universal access to health promotion to all of the residents of an entire state. It is based on reviews of the literature on successful workplace and large community programs and interviews with people involved in Colorado's effort to be the healthiest state in the nation. The approach builds on five key elements: 1) Improving individual lifestyle, 2) Deploying all the components of the Awareness, Motivation, Skills and Opportunities (AMSO) Framework, 3) Delivering each of the AMSO elements with sufficient intensity that they represent a therapeutic dose likely to have an impact, 4) Engaging geographic and social communities to embrace the goal of good health and serve as conduits to reach the full population and 5) Mobilizing other resources (MORe) from nontraditional sources to provide the social and political will and sufficient funds necessary to be successful.

Data from the State of Colorado are used to illustrate how this approach can be applied at the state level, with an annual budget of $1.385 billion, representing $250 for each of the 5.54 million residents. Funding would be provided by employers motivated to control their own medical costs, health plans agreeing to support the effort on a breakeven basis, increased tobacco taxes, and tapping into existing health promotion services covered by Medicare and Medicaid. Interventions would be delivered through worksites, hospitals and clinics, schools and other community settings, supported by a buyer's coalition and reinforced by local and state policy changes. Seed funding of approximately $32 million is required over seven years, most likely from local and national foundations. This effort is projected to become self-sustaining in year seven by capturing 1% of the $6.97 billion in new spending on health promotion it is projected to stimulate over 11 years; this represents a return of 219 times the $32 million in seed funding invested by foundations, in addition to improving the health of residents, creating more than 10,000 new jobs and generating more than $60 million in new annual state income tax revenues.

The primary purpose of this paper is to provoke active discussion among scholars, policy planners and practitioners on how this innovative approach could be implemented at the state or major metropolitan area level. The best outcome would be for a state or large metropolis to step forward and work toward implementing it.

INTRODUCTION

Despite successes in improving the health of individuals in organizations through workplace health promotion programs[1] clinical treatments,[2,3] and even in nationwide reductions in tobacco use,[4] life expectancy in the United States declined slightly in 2015.[5] Equally important, spending on medical care has reached a level that is not sustainable for individuals, employers, state governments or the federal government. Annual medical care expenses for a family of four are estimated to be $26,944 [6] and median per capita medical spending for the nation are estimated to be $10,345 in 2017.[7] Both amounts represent a huge portion of the estimated household income of $68,260 and the per capita income of $29,979 for 2015.[8] (Note income numbers for 2017 will not be available until 2019, but costs are expected to increase by approximately 3.5 % -4.0% annually). Medicaid is the largest budget item for many states and continues to be difficult to fund, and future federal medical spending is projected to reach a level that could literally implode the federal government during the lifetime of millennials.[9] It may be possible to reduce medical cost increases at the individual, state and national level, and improve the health of the population by providing universal access to health promotion to all residents of a state. Focusing on the state level adds challenges and opportunities relative to focusing on individual organizations. The challenges include reaching greater numbers of people who are part of different social groups, most of which do not have a financial incentive to improve their health. The opportunities include working at a governing level that allows passage of state and local laws that support healthy lifestyle through policies related to food supply, transportation, zoning, education, health insurance regulation, taxation and shaping the built environment, as well as crafting delivery mechanisms that allow people to access programs and opportunities not only in their preferred learning style, but also from their preferred learning source.

A core element in this approach is replicating the most effective workplace and clinical health promotion programs in all workplaces and clinical settings, and identifying the most effective strategies implemented in schools, faith communities, recreation enterprises and other community settings and replicating them in all communities throughout a state or major metropolitan area. For the purposes of this effort, health promotion is defined as "the art and science of helping people discover the synergies between their core passions and optimal health, enhancing their motivation to strive for optimal health, and supporting them in changing their lifestyle to move toward a state of optimal health. Optimal health is a dynamic balance of physical, emotional, social, spiritual, and intellectual health. Lifestyle change can be facilitated through a combination of learning experiences that enhance awareness, increase motivation, and build skills and, most important, through the creation of opportunities that open access to environments that make positive health practices the easiest choice."[10]

The conclusions and hypotheses in this white paper are based on reflecting on successes the author has seen in workplace and clinical settings through his direct involvement as the leader of the program, or indirect exposure as a consultant or reviewer over the span of several decades, intensive study of the peer reviewed literature in those areas, and collaborating with colleagues to produce five editions of *Health Promotion in the Workplace.*[11] They also involve more intensive reviews of ambitious efforts to improve health in large communities, including but not limited to recent efforts in New York City, so well documented in *Saving Gotham,*[12] as

well as classic efforts,[13] and more decentralized statewide efforts,[14,15] as well as more limited applications in smaller communities by Blue Zone.[16] Finally, they involve close examination of Colorado's effort to be the Healthiest State in the Nation[17] including reviewing published materials and speaking with many of the people leading this effort. (See Appendix A for Notes from the Author on this effort, and Appendix B on Colorado's efforts)

This working paper starts with a review of five key elements important to success in a statewide effort, provides a conceptual review of how this approach might be funded at a state level, uses data from the State of Colorado to make the approach more tangible, and closes with reflections on next steps to move this approach forward. The Appendices provide additional backup detail. This paper is not a systematic review of the literature, a critique of the programs cited and it does not provide details on specific intervention strategies, although references are provided to many of these.

The primary purpose of this paper is to provoke active discussion among scholars, policy planners and practitioners on how this innovative approach could be implemented at the state or major metropolitan area level. The best outcome would be for a state or large metropolis to step forward and work toward implementing it.

KEY ELEMENTS IMPORTANT TO SUCCESS

A central recommendation of this paper is that successful efforts will require five core elements. This conclusion is evidence and experience informed, not empirically derived. All five elements have not been present in any one effort described in the literature, and the relative importance of one over the other has not been empirically tested. In fact, one of the five (Mobilize Other Resources) has not been described in the literature. The other four build on concepts that have been well established in the scientific literature. The five elements are briefly described below.

1. Adding **Universal Access to Health Promotion** to the critical pillars of population health.
2. Improving awareness, enhancing motivation, building skills and creating opportunities for each of these behaviors. This approach is articulated in the **Awareness, Motivation, Skills and Opportunities (AMSO) Framework**.
3. Providing each of the AMSO elements with sufficient intensity that they represent a **Therapeutic Dose** likely to have an impact.
4. **Engaging Geographic and Social Networks** to embrace the goal of good health and serve as conduits to reach the full population.
5. **Mobilizing Other Resources (MORe)** from nontraditional sources to provide sufficient funds, and political will to be successful.

Adding Universal Access to Health Promotion to the Critical Pillars of Population Health

Improving the social determinants of health (SDH), providing universal access to medical care and providing universal access to health promotion are three critical pillars necessary to improve the health of a population. The approach advocated in this paper focuses primarily on providing universal access to health promotion, with the ultimate goal of improving lifestyle practices of the population and placing a strong emphasis on addressing the elements of SDH that impact lifestyle, especially in creating new opportunities that allow underserved populations to gain access to high quality programs that teach behavior change skills and to environments that make the healthy choice the easy choice. These three pillars and their relative importance are briefly reviewed below.

Social determinants of health. The significant impact of SDH [18] and income inequality on health status[19] have become well documented in the last two decades. SDH impacts health status directly through exposure to hazardous conditions including poor water and air quality, unsafe housing, violence, poor access to medical care, nutritious affordable food, safe places to be physically active, and indirectly through poor access to educational and career opportunities as well as the challenge of focusing on healthy lifestyle habits when basic necessities of life are at risk. People with low incomes are more likely to have lower perceived health status, higher rates of coronary heart disease, stroke, bronchitis, diabetes, ulcers, kidney disease, liver disease, arthritis, and hearing and vision problems and lower life expectancy.[20] Inequality exacerbates the problems of absolute poverty by adding the emotional strain of discrimination and self-

reflective social evaluative threat. There is growing evidence that income inequality, separate from absolute poverty, has a significant impact on disease and life expectancy.[21] In fact health disparities are one of the primary reasons the United States ranks among the worst third in many areas of health (obesity 34th, life expectancy 22nd - 29th, cardiovascular disease 20th, insurance coverage 33rd, admissions for COPD 24th, diabetes 24th, cervical cancer 21st) among the 34 developed nations in the Organisation for Economic Co-operation and Development (OECD), despite spending more than twice as much as 30 of the nations.[22] Recent research has shown that the county level health is directly associated with county level wealth, measured by the mean household income, mean home values and portion of children living in poverty, but that those differences are reduced based on the amount spent by the county on social services, including community health care and public health, parks and recreation, public welfare, housing and community development, police protection, solid waste management, natural resources and fire protection.[23] Similarly, there is persuasive evidence the reason the United States has such poor health outcomes among developed nations despite spending almost twice as much as any of them is because it spends less than most of them on social services.[24] This growing body of evidence on the link between health status and SDH, and between increased social services and improved health status motivated the National Academy of Medicine to form a committee in 2009 to consider data and measurement, law and policy related to population health. Their findings were released in a seminal report titled *For the Public's Health: Investing in a Healthier Future* [25] and summarized here: "In this final report, the Institute of Medicine (IOM) assesses both the sources and adequacy of current government public health funding and identifies approaches to building a sustainable and sufficient public health presence going forward, while recognizing the importance of the other actors in the health system, including clinical care, governmental public health, and others. For health outcomes to improve in the U.S., we will need to transform the way the nation invests in health to pay more attention to population-based prevention efforts; remedy the dysfunctional manner in which public health funding is allocated, structured and used; and ensure stable funding for public health departments." That report stimulated Resnick and colleagues to suggest a Foundational Public Health Services framework to help describe the level of funding public health departments need to provide the foundational services necessary to improve the health of the nation. [26] It is understandable that a growing number of health advocates and non-profit health foundations are focusing on eliminating health disparities, and doing so needs to be a central component of enhancing the health of a state population, but doing so is a daunting task. Effective techniques to provide high quality education to all children, provide high paying jobs to all adults, and eliminate racial and other forms of discrimination have not been well studied or documented. For example, a recent systematic review of the literature of interventions to address patients social and economic needs found weak study methodology but encouraging mixed outcome success.[27] Sixty-seven studies were found reporting the results of 37 programs; 19 were randomized controlled trials, 7 were quasi-experimental designs and 40 were non-experimental designs. Most studies focused on process issues. Of the 20 studies that measured 26 different health outcomes, 16 showed favorable outcomes and 4 did not. Of the 18 that measured 11 financial outcomes, 14 showed positive outcomes. In addition to lack of consensus on best practice strategies, the societal and political will to make this a priority has not been established.

Access to medical care. One of the core strategies to reduce health disparities is to provide access to medical care for all people, something every other developed nation besides the

United States has achieved. Getting close to this goal was a central tenet of the Affordable Care Act (ACA). Having affordable access to high quality medical care makes it possible for people to avoid many diseases through vaccines, detect and treat others before they become serious through regular preventive screenings, as well as reduce pain and disabling consequences of serious or chronic diseases. In fact, lack of medical coverage was estimated to cause an estimated 44,789 annual deaths [28] among the estimated 44 million people uninsured prior to passage of the ACA.[29] It is difficult to argue that the richest nation in the history of civilization should not provide medical care to each of its residents as a basic human right, or that doing so should not be a central component of any effort to improve the health of a population. However, achieving such a goal will be remarkably expensive, perhaps costing approximately $10,345 anually per capita, as cited earlier in addition to the challenge of developing the political will to make this a priority.

Universal access to health promotion. The critical element missing from most efforts to improve the health of large populations by reducing health disparities is providing universal access to health promotion, with the goal of improving the health habits of individuals, including getting regular physical activity, eating a nutritious diet, and avoiding tobacco, excess alcohol and other toxic substances. This is despite the fact that lifestyle factors are the primary cause of 7 of the top ten causes of death,[30] and 40% of all premature deaths.[31] Tobacco use alone causes an estimated 450,000 premature deaths annually, in addition to 16 million chronic diseases.[32] In addition to reducing lifespan an estimated 10 - 15 years, poor lifestyle habits are estimated to increase disability at the end of life by 10 years.[33] A growing body of literature is demonstrating that lifestyle can turn on or off the genetic propensity of genes for 80% of diseases.[34] From a financial perspective, more than two decades of research findings from large studies has shown that about one of every four dollars of medical care spending by employers can be explained by lifestyle related factors.[35] Furthermore, a systematic review of the literature on the financial return on investment of workplace health promotion programs found that 46 of 47 programs reduced medical costs or absenteeism, and savings were greater than program costs for 41 of 47 of them. The return on investment for all the 25 programs in which medical costs were measured directly averaged $3.74 in savings for every dollar invested.[36] However, nationwide, only 5% of all healthcare spending is devoted to "prevention" in all forms, including medical screening.[37] Fortunately, these efforts have been growing in some sectors, especially among employers, in the form of workplace health promotion programs, with an estimated 83% of employers with 200 or more employees offering some type of program, but only 46.6% of working adults report having access to a program.[38] Unfortunately, most of these programs are too superficial to have much impact, offering a level of intensity lower than a therapeutic dose. In fact, only 13% of programs are judged to be comprehensive.[39] Furthermore, the size of the provider community supporting these programs is tiny. The entire workplace health promotion industry is estimated to have revenues of only $6 billion. If the entire industry were one company, it would rank 435th in the Fortune 500 list, just behind St. Jude Medical ($6.004 billions) and just ahead of Harley-Davidson ($5.997 billion).[40] A discussion of the employer business case for health promotion is in Appendix C. Cost effectiveness and cost benefit analysis research is more limited for state and federal spending on health promotion efforts, but the Centers for Medicare and Medicaid Services (CMS) has concluded that heart disease reversal [41] and diabetes prevention and treatment [42] produce positive health outcomes and are at least cost neutral, meaning they save at least as much as they cost. This positive financial

outcome is not surprising given that 83% of all Medicaid and 96% of all Medicare spending is tied to chronic diseases,[43] and lifestyle factors are the primary cause of chronic diseases.

At a cost of several hundred dollars per resident, universal access to high quality health promotion may prevent or at least delay most chronic diseases, reduce disease related disability at the end of life, reduce the need for medical care and improve wellbeing and quality of life. Achieving universal access to health promotion could probably be achieved in one generation or less and may be the most cost effective means of reducing health disparities. Moreover, universal access to health promotion could be achieved at a fraction of the cost of eliminating disparities for the other social determinants of health, such as education, income access to medical care. Furthermore, the disease prevention and chronic condition management benefits of universal access to health promotion may pay for itself in medical cost reduction. States need to focus on all three pillars, but states that want to have the fastest and greatest impact on the health of their residents need to increase their focus on providing universal access to health promotion now.

Relative importance of the three pillars. The relative importance of these three pillars on health outcomes has not been well documented through rigorous analysis, however, McGinnis and Foege estimated that hazardous environments account for 5% of premature death, poor access to medical care for 10%, poverty for 15% and individual lifestyle for 40%, making the SDH, collectively associated with 60% of premature deaths, thus a slightly more powerful predictor than individual lifestyle at 40%.[44]

It is important to stress that these three approaches, increasing access to medical care, enhancing health equities and improving individual health behavior are complementary, not competing. Improving health behaviors like eating nutritious foods or being physically active in structured exercise programs will be far more challenging for someone living in poverty than a middle class person, and more feasible for someone already in good health than someone suffering from a chronic or acute medical condition. However, a person in any income class or health condition will lose an estimated 15 years of life and add years of disabling illness by using tobacco, drinking excessively, being sedentary and not eating nutritious foods.

Awareness, Motivation, Skills, Opportunity (AMSO) Framework

The AMSO Framework recognizes that efforts will be successful in stimulating health behavior change for population groups only when they do more than educate people on the benefits of healthy lifestyle (Awareness). Efforts also need to 1) tap into each person's core priorities in life and clarify how improving health will help achieve those priorities (Motivation), 2) train people in the skills required to learn each new health behaviors (Skills), and most importantly, 3) provide abundant opportunities to practice newly learned healthy behaviors (Opportunities). The AMSO framework was developed based on several systematic reviews of the literature,[45,46] a large benchmarking study,[47] and validation against programs that have won national awards.[48] It incorporates many of the most highly validated health behavior change theories and provides the conceptual framework for the 700+ page *Health Promotion in the Workplace, 5th edition* text,[49] which can be downloaded at no charge from the website listed in the reference below.

Providing a complete review of the AMSO Framework is beyond the scope of this paper, but

several of the most important elements within the AMSO Framework can be summarized:

1. Best results are achieved when efforts are integrated within existing social settings including workplaces, families, schools, faith communities, and social clubs and existing transactional entities including health plans, hospitals, and local governments.
2. Different people have different preferred learning styles, be they cognitive, experiential, or emotion driven; different preference for communication mediums; different preferences in sources from which they receive education, training and support; and different sizes and composition of social groups to which they feel connected.
3. Strategies, including messaging, and skills training, need to be tailored to each geographic, cultural and age group.
4. Low income populations are likely to need several times the investment of other populations to achieve the same results.
5. State and local laws need to reinforce healthy lifestyle practices.
6. Conflicting forces need to be acknowledged and incorporated into solutions.
7. Changing health behavior may take years and support needs to be maintained indefinitely after those changes have occurred.
8. Intensive grass roots outreach efforts will be necessary to engage active participation among a critical mass of organizations and entities in each target sector as well as individual community members.

Of all the social settings, workplaces may have the greatest potential to influence health behavior for several reasons. First, it is possible to create physical and cultural norm environments in which the healthy choice is indeed the easiest choice, and to teach employees the skills they need to learn and adopt healthy lifestyle habits. Second, most employees remain in the same work setting for several years, the amount of time often necessary to transform newly adopted health practices into long term habits. Thousands of studies have demonstrated that health promotion programs can be successful in improving health habits and related conditions cost effectively, and best practice methods have been well documented.[50] Perhaps most importantly, employers are willing to fund these programs because healthy employees have lower medical costs and are more productive, and the most talented employees are attracted to work settings that offer comprehensive health promotion programs.

For children, schools provide an outstanding setting to help them learn and also practice healthy lifestyle habits. Furthermore, a growing body of literature is demonstrating that well-nourished and physically active students are better behaved, more able to focus on learning, and often perform better on tests.[51,52] However, schools do not have the same financial incentives for having healthy students as employers do for having heathy employees and the level of rigor used to test best practice standards for schools are not as rigorous as those for workplaces, despite the emergence of growing documentation of encouraging case studies.[53]

Therapeutic Dose

In medical care, achieving the desired outcome is dependent upon a patient receiving a sufficient amount (or dose) of care to produce the desired outcome. This concept is most tangible for medications. For example, to overcome an acute condition, like an infection, a patient needs to take the prescribed number of pills over the prescribed number of days in the prescribed concentration. To manage a chronic condition, like high blood pressure, the patient needs to

follow the prescription guidelines over a long period of time. The concept of therapeutic dose also applies to health promotion on the individual, organization and community level.[54]

Therapeutic dose levels have been set for some areas of lifestyle improvement. For example, the highest success rate will be achieved in quitting smoking through a combination of brief motivational counseling from a physician and referral to a clinic that includes a combination of "talk" (or cognitive) therapy and medication. Meta-analyses have shown that the optimal amount of talk therapy may be 300 minutes presented in 8 sessions; success rates do not seem to improve above those amounts. Meta-analyses have also shown the likely quit rates achieved by different types of talk therapy and different medications.[55]

Improving the health of a state size population will require reaching each person with a therapeutic dose of each of the AMSO elements relevant the each of the health behaviors that drive health conditions, including regular physical activity, eating a nutritious diet, and avoiding tobacco, excess alcohol and other toxic substances.

The therapeutic dose of funding required to support an effective comprehensive health promotion program has not been established through rigorous methods. Therefore, it must be estimated based on practical experience. For this proposal, a per capita annual value of $250 is used. This figure is derived from a bench marking study of the best workplace health promotion programs, adjusted for inflation, and confirmed by budgets of current programs.[56] This represents the investment made by institutions, and does not include money individuals spend on fitness and sports clubs, recreation, home equipment, sports attire, food and other discretionary purchases.

Engaging Geographic Communities and Social Networks

Statewide efforts are likely to be successful to the extent they engage, work through, serve, learn from, empower and leverage the efforts of the many communities that make up the social, geographic, transactional and communication fabric of the statewide populations. This concept is addressed as point #1 in the AMSO Framework discussion above, but it needs to be discussed in more detail given its importance.

Just as different people have different preferred learning styles, they also have different preferred sources of influence. Some people embrace the programs offered at work, while others don't trust their employer and prefer to keep personal health issues separate from work. Some people respond best to health messages from their doctors and prefer the more structured approach of interventions offered in clinical settings. Some parents may neglect their own health but be totally committed to engaging in programs offered by their children's schools that are focused on parents becoming good health role models for their children. Others may place their trust in their faith communities and be most receptive to messages from their church, synagogue or mosque. Opportunities offered through community recreation centers, private clubs, and sports teams may engage others. These social networks will be especially important in large cities in which people sometimes do not feel a connection to their geographic neighbors and low density rural areas in which people live great distances from each other. The goal of this effort would be to provide each person access to the awareness, motivational, and skill building resources necessary to help them develop healthy practices and

opportunities to turn these new practices into lasting habits from an abundance of sources offered through each geographic community and social network.

Geographic and governmental communities, including villages, towns, cities and counties, are readily visible. Other social communities, including networks of faith organizations, adult and child recreation and sports leagues, cultural exchange communities, online support or gaming clubs, professional societies, employer networks, and other groups are less visible to those not directly involved in them. Providing programs and services through geographic communities may be more efficient from a time and cost perspective, but providing them through social networks may be more effective in terms of behavior change. For example, Christakis and Fowler found that the likelihood of a person changing a health behavior was 45% greater if a friend changed that behavior, but not any more likely to change if an immediate neighbor who was not a friend changed, regardless of geographic proximity. The influence was even stronger for some behaviors, for example, the likelihood of becoming obese increased 180% if a close friend became obese. Distant social connections even had an impact, with likelihood increasing 20% when friends of friends changed, and 10% when friends of friends of friends changed.[57] The people involved in each of these communities have different health behaviors, conditions and related needs, reasons for being attracted to or repulsed by being involved in health initiatives, communication and learning styles, levels of trust and cohesion, connection and isolation, poverty and wealth, as well as wisdom, skills, credibility, funding and access to other resources that can facilitate success. Some of these communities may already have innovative, flourishing self-sustaining programs that can be replicated, and others may have been through less successful attempts that can provide lessons on what to avoid. Indeed, the large-scale efforts from New York City, Ohio and Minnesota cited earlier were built at the village, city or county level. Some of these communities have already begun to collaborate on health initiatives, for example a growing number of employers are collaborating with local community leaders and governments to improve the health of the towns in which they are based.[58] It is very likely that the best approach to launching a statewide effort will be to build on existing geographic, social or transactional community programs. These approaches can be replicated and tested systematically to discover the most effective approach for each set of circumstances.

Specific strategies need to be developed for each of these geographic communities and social networks. An early step will be documenting the social connections and priorities of their individual members, with the goal of documenting people in enough communities and networks that each person in the state population is engaged through several of these communities and networks on a regular basis. The ultimate goal of working with and through these communities and networks is to give each person the opportunity to be involved in health improvement efforts with the people and organizations they encounter most often, have the greatest trust in and enjoy the most.

Mobilizing Other Resources

Providing a therapeutic dose of each of the elements of the AMSO Framework through each of the geographic communities and social networks that reach all the people in an entire state will require mobilizing far more resources in terms of funding and social engagement than are usually deployed in even the most intensive health campaigns. Foundations, public health

departments and other public sector entities do not have sufficient resources to support these efforts, so other sources need to be mobilized.

Funding. Given a target funding level of $250/person/year to fund the therapeutic dose likely to improve health behaviors, an average size state with 6 million residents would need $1.5 billion/year to fund an effective state level program, and the whole United States would need $80 billion/year to fund programs for the entire nation of 320 million people. These sound like enormous sums, and they are in absolute terms, but they border on trivial when compared to the estimated $3.54 trillion[59] (44 times more) spent on medical care in the United States each year, or the $22.23 trillion [60] (278 times more) in liquid assets held by United States businesses, not even including banks or investment firms. Of course, calling the amount trivial, does not mean it will be easy to come by. What are the possible sources?

The most obvious funding source is employers. In addition to having the altruistic goal of enhancing the sense of wellbeing and quality of life of their workforces, employers have a vested interest in improving employee health because of the self-serving goal of reducing illness related absenteeism and presenteeism, and the associated medical costs. For employers who need a guaranteed payback, program costs can be passed along to employees in the form of a higher share of the health plan premiums. The $250/year cost to employees, works out to 12 cents pretax and about 9 cents post tax per hour assuming 2080 work hours/year. If and when the programs improve health, reduce medical utilization and related costs, the resulting savings can be shared with employees, potentially making the cost for employees zero. As mentioned above, an estimated 83% of employers with 200 or more employees provide some form of health promotion program, but only 13% are estimated to be comprehensive.[61] Most of those comprehensive programs do not engage spouses or dependent children. The goal of this effort would be to deploy rational arguments that persuade employers who do not have programs to implement them, and persuade employers who have them to enhance quality and intensity, to better engage employees, spouses and dependent children and to increase funding to $250/year/person. Employers can also serve as important health change agents in their communities. The salaries they pay provide the economic life force of their communities, and members of their senior staff serve in leadership roles on local foundations and community organizations. If they are contributing funds to the community to support health promotion efforts for their dependents, they are going to want to ensure these funds are used wisely.

Another obvious source of funding is health plans. Some health plans, including health management organizations (HMOs) like Kaiser Permanente and those who fully insure individuals or small groups, have the same financial incentives as employers, ie, to reduce utilization and the related costs by improving health. They receive a fixed monthly or annual payment from individuals, employers or governments to cover medical services provided. If their efforts to improve health result in cost savings, they retain the savings. This might be a sufficient incentive for them to fully fund the health promotion program, but if not, they have the option of paying their programming costs by adding them to the health plan premium, and then also passing savings back to the members if and when savings occur. Other health plans, including those who process claims for self-insured employers, do not have the same financial incentive to provide a program because they earn profits by charging an administrative fee. Generally, they do not save money when medical spending is lower, but they could gather the

funds by increasing the amount of the premium to cover the cost. Health plans will be reluctant to raise premiums to cover these costs, even when they believe in the efficacy of health promotion, because they want their prices to be as low as possible to be able to compete with other health plans. However, they can maintain their price competitiveness if all the health plans in a geographic region agree to add these costs, voluntarily to support an effort like this, or at the direction of the state insurance commissioner.

Medicare and Medicaid are also viable sources of funding for programs offered to their respective members. Both are authorized to fund specific health promotion programs. The biggest challenge in these programs is finding qualified providers to offer them. Successful state level programs might be able to stimulate growth of qualified providers by increasing demand for programs from Medicare and Medicaid recipients. This approach is discussed in more detail in the Conceptual Scenario discussion below.

"Sin taxes" on tobacco, sugary beverages, alcohol, and marijuana have the potential to generate significant sums of money, in addition to reducing the consumption of the items taxed.[62] For example, a $1.00 /pack increase in tobacco taxes nationwide would generate about $6 billion/year, about 7.5% of the $80 billion total cost of a nationwide health promotion effort. A tobacco tax of two thirds of this magnitude was passed by the federal government in 2009, with new tax revenues used to support the Childhood Health Insurance Program (CHIP).[63] State and local tax increases could raise additional funds. These taxes usually require passing a ballot initiative, and organizing such a campaign might have a one-time cost of $6 million for a typical state and generate $200 million annually for every $1.00/pack increase. However, success is not guaranteed because the tobacco industry typically provides 10's of millions of dollars to fight each of these campaigns. The additional benefit of tobacco taxes is that they reduce tobacco consumption, especially among youth, young adults and light smokers.[64] It might be possible to generate similar payouts from sin taxes on the other items. It is important to note that public health groups have typically not been very successful in capturing funds generated by these taxes, so sophisticated strategies need to be deployed to capture these funds.

Stimulating employers, health plans, bureaucrats and voters to invest in health programs will require development of the same type of scientifically valid behavior change efforts embodied in the AMSO Framework that are required to change health behaviors of individuals; equally important, these strategies need to be delivered with enough intensity to reach the therapeutic dose necessary to get these groups to act.

Health foundations, charities and federal, state and local health departments are the normal source of funds for these types of programs, but they do not have funds to support investments of this magnitude. The best use of foundation funds may be in providing startup funds to coordinate the overall effort to mobilize these new sources of funds and provide technical support to ensure the scientific validity of all efforts. The most important contribution of health departments and charities from a programming or direct service perspective, may be in supporting the most difficult to reach and disadvantaged groups and individuals.

It may be possible to set up a structure that captures a small portion of the spending on all programs being provided to all people. These funds could support overall coordination of the

effort and make it self-sustaining from the perspective of foundation and government funding. These funds might be captured by taking a portion of the savings achieved through bulk purchasing discounts negotiated by a buying coalition and passed on to employers and health plans, a "commission" paid by providers from increases in revenues earned as a result of participating in this effort, a set fee agreed to by employers and health plans as they become engaged in the program, a mandatory fee required by the state government for all health plans providing services in the state, a rebate from the state government based on increases in tax revenue from this sector, or other mechanisms. An illustration of how this might be implemented is described in the Illustration for the State of Colorado below.

Social mobilization. Another critical but less obvious resource is the support and even excitement in supporting this effort from the people of the state. That excitement is a prerequisite to engaging people in efforts to improve their own health, but equally important in motivating the above funders to support this effort, and those who control policies and laws that impact health to change those policies and laws.

Engaging people will require a sophisticated marketing campaign that resonates with the priorities of each segment of the population. Improving health is the default value used in most public health campaigns but engages the small portion of the population that places health at the top of their priorities. Opportunities for social connection, enhancing a career, saving money, being a good parent, more worthy witness to their faith, personally responsible member of society, a better role model, or strengthening an affiliation with admired groups or individuals and other values need to be leveraged. Identifying these priorities will require extensive market research and implementing a campaign will require sophisticated marketing expertise.

An important early step in this process will be engaging a critical mass of champions, perhaps represents 5% of the entire population, who will serve as core supporters and ambassadors, each one agreeing to personally recruit others to become engaged. Recreational athletes, parents of small children and public health supporters are obvious sources of these champions. Reaching them can be facilitated by first engaging a group of 100 or so of the most visible, respected and influential professional athletes, musicians, TV personalities, movie stars, and community leaders who will agree to promote and be engaged in the campaign in addition to recruiting their celebrity peers to play a similar role. Elected officials need to be actively engaged to support policy changes, but it might be most effective to have them be less visible, at least initially, to avoid tarnishing the effort with partisanship. The most enthusiastic supporters will probably be the owners of health promotion companies. Most of them started their business because of a personal passion for healthy lifestyle and will celebrate the opportunity to share this passion. They can justify devoting work time and financial resources to the effort because they have the potential to profit financially from a local market that has the potential to grow to 10 or more times its current size. These owners may also be able to provide marketing expertise, mobilize their own employees to serve as champions, and be a source of startup funds. Their buy-in will be critical in setting up the structure that captures a small portion of the cost of all programs being provided to all people, and allows the effort to be self-sustaining. Engaging each of these early champions will require the same sophisticated behavior change strategies required to engage employers and health plans mentioned above, as well as

professional staff. The illustration for the State of Colorado allocates 10 full time professional staff to this work.

Other entities that may be financially motivated to make these efforts successful are state governments and local communities. An influx of an additional $250/year/resident will create new jobs, which will in turn increase tax revenues and decrease the need and cost of some social services. In addition to embracing efforts that improve the health and wellbeing of their residents, local communities also welcome the flow of new resources into schools and other community organizations that provide programs to students and residents.

CONCEPTUAL SCENARIO ON SOURCES AND USES OF FUNDS

One scenario on amounts of funding contributed from different types of employers and health plans, and how these funds would be distributed to various entities is described below. This scenario could be applied to any state. The goal of this proposed approach is to draw funds from organizations that have the greatest motivation and ability to contribute them, and distribute them to entities most likely to be able to reach and engage each of the adults and children in the state, with total funding of $250/person/year. Table 1 shows sources of these funds for people, based on employment status and source of health care coverage and how these funds would be distributed to various entities in the state. A more specific scenario, using data for the State of Colorado is described in the next section.

Sources of Funding

Employers who are self-insured, regardless of size, will provide the full $250 for each covered life (employee, adult dependent and child dependent). Health plans will also pay the full $250 for each covered life (employee, adult dependent and child dependent) for people working in firms whom they fully insure. Tiny employers (1-49 employees) that do not offer health insurance, will contribute $100 for each employee and their dependents; the source of the $150 balance of the $250 for these employed people is not specified in this conceptual scenario. Increasing tobacco taxes is one possible source of these funds and this is included in the illustration below for Colorado.

Funding sources for people who are Not Employed or Not Dependents of people who are employed are shown at the bottom of Table 1. For those on Medicare or Medicaid, full funding will be provided by those programs. The value shown in the table is $250, but the actual costs are likely to be greater because services provided by those programs are normally provided in clinical settings and are usually very labor intensive and expensive. Sources of funding for people not employed and not on Medicare or Medicaid, are not identified in this conceptual scenario.

Applications of Funding

Funds would flow into five basic pools. Applications of funds are shown on the right side of table 1 and described below.

Employer internal programs are services provided by employers for their own employees. These might include onsite staff, fitness centers, nutritious food, group sessions and other onsite programs.

Community programs are for services provided in the local community. These might be programs provided in local schools or colleges for students, enhancements to fitness facilities, walking paths available to the public, and other services that stimulate physical activity, nutritious eating and other healthy lifestyle habits. To qualify for funding, local communities might be required to engage their local school system, economic development group and elements of the local governance structure in supporting the overall effort.

Table 1: Additional Sources and Uses of Funds; Conceptual Scenario

	Annual funding	Source of funding					Application of Funding				
Type of Person		Employer	Healthplan	Medicare	Medicaid	Unknown	Internal	Community	Coalition	Health Plan	Clinical
Employee											
Large Employers (1000+ self funded health insurance)	$250	$250					$150	$50	$50		
Medium Employers (200 -999 employees +self funded)	$250	$250					$100	$50	$100		
Small Employers (50-199 fully insured)	$250		$250				$100	$50	$50	$50	
Tiny Employers (1-49, with insurance): 44.9%^	$250		$250				$100	$50	$100		
Tiny Employers (1-49 w/out insurance): 55.1%	$150	$100				$150	$100	$100	$50		
Adult Employee Dependent											
Large Employers (1000+ self funded health insurance)	$250	$250					$50	$150	$50		
Medium Employers (200 -999 employees +self funded)	$250	$250					$50	$150	$50		
Small Employers (50-199 fully insured)	$250		$250					$150	$50	$50	
Tiny Employers (1-49, with insurance): 44.9%	$250		$250					$150	$50	$50	
Tiny Employers (1-49 w/out insurance): 55.1%	$250	$100				$150		$150	$100		
Child Employee Dependent											
Large Employers (1000+ self funded health insurance)	$250	$250						$250			
Medium Employers (200 -999 employees +self funded)	$250	$250						$250			
Small Employers (50-199 fully insured)	$250		$250					$200		$50	
Tiny Employers (1-49, with insurance): 44.9%	$250		$250					$200		$50	
Tiny Employers (1-49 W/Out, with insurance): 55.1%	$250	$100				$150		$250			
Not employed & not dependent											
On Medicare *	$250			$250							$250
On Medicaid*	$250				$250						$250
Others not on Medicare or Medicaid	$250					$250					
*Funding is for inkind clinical services											

Buying coalition programs are services that can be developed collaboratively or purchased collectively by employers at a lower volume based cost, and possibly at a higher quality level. These might include web based portals offering skill building programs for quitting smoking, managing stress, losing weight, nutritious eating, fitness instruction and other areas. The development costs for these web based programs is significant, but once they are developed, the marginal cost per use is almost zero. Volume based discounts could be negotiated for programs purchased from outside venders. Other services could include volume discounts on fitness center memberships, or health screenings. The range of services offered would be determined by the needs of the employers.

Health plan programs would include programs offered directly from the health plan to their insured members. These might include web based skill building portals, counseling services or whatever services the health plan chooses to provide. Some health plans might choose to purchase these services from the Buying Coalition to reduce costs and avoid the time necessary to develop them internally, while others might choose to provide higher quality or more personalized services to create a competitive advantage.

Clinical services are provided by hospitals and other clinical groups, primarily to Medicare and Medicaid recipients. For example, all Medicare recipients are eligible for a "Welcome to Medicare" wellness visit with their doctor to identify health problems and referral to programs that can help them address those problems, like quitting smoking, and losing weight, many of which are provided by hospital staff. Medicare recipients are also eligible for intensive programs like the Dean Ornish Heart Disease Reversal Program,[65] the Benson-Henry Institute's Cardiac Wellness Program,[66] Pritikin Longevity Center Intensive Rehabilitation Program,[67] and the YMCA Diabetes Prevention Program,[68] if they meet the health standards for these programs. Medicare recipients are also eligible for free access to fitness programs and other health services through Silver Sneakers, depending on their health insurance provider.[69] Knowledge about access to these programs is uneven among Medicare recipients and availability is limited in some communities. State wide efforts might include increasing awareness of and demand for these programs, thus stimulating the development of programs by providers in communities that do not offer them.

Health promotion programs available to Medicaid recipients are far more limited, but do exist. The "Medicaid Prevention Pathways Toolkit" recently released by Nemours Foundation, describes the range of services covered and how to maximize them.[70]

Allocation of Funds to Different Applications for Different Employer and People Types

Portions of the $250 total funds per person are allocated to different applications for different types of employers and people. For example, large employers are likely to allocate a larger portion (assumed to be $150 in this illustration) of funds to programs offered internally to their employees than smaller employers ($100) because larger employers have a greater capacity than small employers to develop and manage these programs internally. Similarly, programs provided to adult dependents will draw more from the Community and Buying Coalition sources than programs for employees because employees come to the worksite and

dependents do not. Funds for children dependents may be provided primarily by schools, so all those funds for children are allocated to the community.

ILLUSTRATION FOR THE STATE OF COLORADO

Data from the State of Colorado and its approximately 5.5 million residents are used to provide a more detailed example of how this approach might be applied at the state level. Colorado was selected because it's Governor (John Hickenlooper) committed to make Colorado the healthiest state in the nation in 2013, the state brand is associated with recreational sports and good health, and several well-funded foundations in the state are committed to health. More details on Colorado's actual efforts are provided in Appendix B.

Sources and Applications of Funds in Colorado

Table 2.a. shows estimates of the sources and application of funds to implement this effort in Colorado. These estimates were calculated by multiplying the target budget values in Table 1 times estimates for each of the types of residents in the State of Colorado shown in Table 2.b. This estimate shows sources for the $1,385,136,250 budgeted for this effort. The sources of funds column labeled "Unknown" in Table 1 is labeled "Tobacco Tax" in Table 2.a. As explained in the previous section, the funds in the "Unknown column are all for the 830,308 people employed in tiny work settings and their 193,873 dependents, and total $140,569,794 of the $256,045,184 budgeted for them. A $2.00 per pack tax increase would produce am estimated $400.4 million in additional annual tax revenues assuming each of Colorado's 668,000 smokers consume .8 packs per day. [71] Allocations of funding to different programming outlets are shown on the right side of the table.

Sources of data. Data about distribution of firm size, ratio of employees and dependents, population age distributions and sources of coverage were drawn from reports issued by the Bureau of Labor Statistics in the US Department of Labor,[72] US Census, Small Business Administration,[73] Health.Org,[74] Henry J. Kaiser Family Health Foundation[75] and Medicare Resouces.org.[76] Details on calculations of numbers in each of the population segments, raw data and data sources shown in Table 2.b. are available upon request. The dates of these original data sources range from 2011 to 2016; it is important to acknowledge that combining data for different years reduces the accuracy of the estimates. Furthermore, sources for some data could not be found and had to be estimated through calculation. For example, data on numbers of adult and child dependents were calculated based on reported numbers of employees, total population and age distributions. Also, the number of people not employed who do not have Medicare or Medicaid coverage could not be found, so it was left blank. Considering all these factors, the number of people estimated to be in each of the population types might be off by 5% to 10%, but the total cost estimate of the effort is correct assuming a Colorado population of 5,540,545.

Table 2a: Annual Sources & Uses of Funds:

Type of Person		People		Target funding	Source of Funding					
Employee	Firms	%	#	$250	Employer	Healthplan	Medicare	Medicaid	Tobacco Tax	total
Large Employers (1000+ self funded health insurance)	2,295	46.52%	1,306,294	$326,573,441	$326,573,441	$0	$0	$0	$0	$326,573,441
Medium Employers (200 -999 employees +self funded)	1,985	11.71%	328,843	$82,210,870	$82,210,870	$0	$0	$0	$0	$82,210,870
Small Employers (50-199 fully insured)	3,444	12.21%	342,855	$85,713,643	$0	$85,713,643	$0	$0	$0	$85,713,643
Tiny Employers (1-49, with insurance): 44.9%^	52,526	13.28%	372,808	$93,202,093	$37,280,837	$0	$0	$0	$55,921,256	$93,202,093
Tiny Employers (1-49 W/Out, with insurance): 55.1%	64,459	16.29%	457,500	$114,374,952	$45,749,981	$0	$0	$0	$68,624,971	$114,374,952
total		100.00%	2,808,300	$702,075,000						$702,075,000
Adult Employee Dependent not employeed										
Large Employers (1000+ self funded health insurance)	2,295	46.52%	84,466	$21,116,380	$21,116,380	$0	$0	$0	$0	$21,116,380
Medium Employers (200 -999 employees +self funded)	1,985	11.71%	21,263	$5,315,790	$5,315,790	$0	$0	$0	$0	$5,315,790
Small Employers (50-199 fully insured)	3,444	12.21%	22,169	$5,542,281	$0	$5,542,281	$0	$0	$0	$5,542,281
Tiny Employers (1-49, with insurance): 44.9%	52,526	13.28%	24,106	$6,026,488	$0	$6,026,488	$0	$0	$0	$6,026,488
Tiny Employers (1-49 W/Out, with insurance): 55.1%	64,459	16.29%	29,582	$7,395,534	$2,958,214	$0	$0	$0	$4,437,320	$7,395,534
total		100.00%	181,585.89	$45,396,473						$45,396,473
Child Employee Dependents not employed										
Large Employers (1000+ self funded health insurance)	2,295	46.52%	220,547	$55,136,786	$55,136,786	$0	$0	$0	$0	$55,136,786
Medium Employers (200 -999 employees +self funded)	1,985	11.71%	55,520	$13,880,012	$13,880,012	$0	$0	$0	$0	$13,880,012
Small Employers (50-199 fully insured)	3,444	12.21%	57,886	$14,471,400	$0	$14,471,400	$0	$0	$0	$14,471,400
Tiny Employers (1-49, with insurance): 44.9%	52,526	13.28%	62,943	$15,735,707	$0	$15,735,707	$0	$0	$0	$15,735,707
Tiny Employers (1-49 W/Out, with insurance): 55.1%	64,459	16.29%	77,242	$19,310,411	$7,724,164	$0	$0	$0	$11,586,246	$19,310,411
total		100.00%	474,137	$118,534,315						$118,534,315
Not employed & not dependent										
On Medicare *			720,271	$180,067,713	$0	$0	$180,067,713	$0	$0	$180,067,713
On Medicaid*			1,356,251	$339,062,750	$0	$0	$0	$339,062,750	$0	$339,062,750
Others not on Medicare or Medicaid			0	0					0	
Grand total			5,540,545	$1,385,136,250	$597,946,475	$127,489,519	$180,067,713	$339,062,750	$140,569,794	$1,385,136,250
*Funding is for inkind clinical services										

Scenario #1 State of Colorado

Application of Funding					
Internal	Community	Coalition	Health Plan	Clinical	total
$195,944,065	$65,314,688	$65,314,688	$0	$0	$326,573,441
$32,884,348	$16,442,174	$32,884,348	$0	$0	$82,210,870
$34,285,457	$17,142,729	$17,142,729	$17,142,729	$0	$85,713,643
$37,280,837	$37,280,837	$18,640,419	$0	$0	$93,202,093
$45,749,981	$45,749,981	$22,874,990	$0	$0	$114,374,952
					$702,075,000
$4,223,276	$12,669,828	$4,223,276	$0	$0	$21,116,380
$1,063,158	$3,189,474	$1,063,158	$0	$0	$5,315,790
$0	$3,325,369	$1,108,456	$1,108,456	$0	$5,542,281
$0	$3,615,893	$1,205,298	$1,205,298	$0	$6,026,488
$0	$4,437,320	$2,958,214	$0	$0	$7,395,534
					$45,396,473
$0	$55,136,786	$0	$0	$0	$55,136,786
$0	$13,880,012	$0	$0	$0	$13,880,012
$0	$11,577,120	$0	$2,894,280	$0	$14,471,400
$0	$12,588,565	$0	$3,147,141	$0	$15,735,707
$0	$19,310,411	$0	$0	$0	$19,310,411
					$118,534,315
$0	$0	$0	$0	$180,067,713	$180,067,713
$0	$0	$0	$0	$339,062,750	$339,062,750
$351,431,122	$321,661,186	$167,415,575	$25,497,904	$519,130,463	$1,385,136,250

Table 2b: Population, Employment and Health Coverage Assumptions Used in Scenario #1 Estimates

	Colorado							
Population July 1, 2015 or 2016 (US Census)	5,540,545							
Employment status (US Department of Labor)								
Employeed	2,808,300							
Unemployeed	93,500							
Not in labor force (18-64)	1,574,960							
Not in labor force <18 or >64	1,063,785							
total	5,540,545							
Age distribution	#	%		Children	#		Dependents of employees (not on Medicaid)	
Less than 5 years	343,514	6.20%		0 -18	1,274,325		Adults	181,586
5 - 17 years	930,812	16.80%		on Medicaid	800,188		Children 0 - 18	474,137
18-64 years	3,545,949	64.00%		Not on Medicaid	474,137		total	655,723
65 and older	720,271	13.00%						
total	5,540,545	100.00%						
Households, 2011-2015	2,024,468							
Persons per household, 2011-2015	2.55							
Health coverage (2015 Kaiser FHP)	%	#		Medicaid distribution	%	#		
Employer self insured	50%	2,770,273		Seniors	7.0%	94,938		
Employer fully insured	0%	0		Disabled	13.0%	176,313		
Non Group (Individual self insured?)	6%	332,433		Adult	21.0%	284,813		
Medicare	13%	720,271		Children	59.0%	800,188		
Medicaid	19%	1,052,704			100%	1,356,251		
Other public	3%	166,216						
Uninsured	9%	498,649						
total	100%	5,540,545						
Medicaid coverage June, 2016		1,356,251						
Medicare coverage, 2015		785,398						

Implementation Timetable and Budget in Colorado

Engaging the full population of the State of Colorado in this effort is projected to take 11 years after the completion of a one year feasibility study. The implementation timeline is shown in Table 3, titled "Timeline, Budget & Funding Colorado." The focus of efforts during each of the development stages are briefly described below. Funding required during each stage are estimated in Table 3, and briefly described below.

Table 3: Timeline, Budget &

Year:	0	1	2	3	4	5	6
Stage	Feasibility study	Early development	Early development	Rollout	Rollout	Refinement	Refinement
Funds mobilized & captured							
Percent of population served	0%	1%	2%	4%	8%	16%	32%
Funds mobilized	$0	$13,851,363	$27,702,725	$55,405,450	$110,810,900	$221,621,800	$443,243,600
Percent of mobilized funds captured	0%	1%	1%	1%	1%	1%	1%
Funds captured for operations	$0	$138,514	$277,027	$554,055	$1,108,109	$2,216,218	$4,432,436
Budget							
Staff	$350,000	$1,800,000	$2,600,000	$2,730,000	$2,866,500	$3,009,825	$3,160,316
Travel	$30,000	$120,000	$120,000	$126,000	$132,300	$138,915	$145,861
Misc	$20,000	$300,000	$700,000	$735,000	$771,750	$810,338	$850,854
Technology		$52,500	$102,500	$107,625	$113,006	$118,657	$124,589
Facilities ($20/sq ft x 100 sq ft/person)		$31,500	$52,000	$54,600	$57,330	$60,197	$63,206
Marketing		$1,000,000	$3,000,000	$3,150,000	$3,307,500	$3,472,875	$3,646,519
Evaluation & Dissemination		$600,000	$630,000	$661,500	$694,575	$729,304	$765,769
total	$400,000	$3,904,000	$6,574,500	$6,903,225	$7,248,386	$7,610,806	$7,991,346
Source of Funds & Reserve							
Foundations	$400,000	$3,765,486	$6,297,473	$6,349,171	$6,140,277	$5,394,588	$3,558,910
Operations	0	$138,514	$277,027	$554,055	$1,108,109	$2,216,218	$4,432,436
total	$400,000	$3,904,000	$6,574,500	$6,903,225	$7,248,386	$7,610,806	$7,991,346
Financial Reserve							
Annual	$0	$0	$0	$0	$0	$0	$0
Commulative	$0	$0	$0	$0	$0	$0	$0
Foundation funders							
local foundation #1	$450,000	$3,165,486	$5,667,473	$5,687,671	$5,445,702	$4,665,284	$2,793,141
National foundation		$600,000	$630,000	$661,500	$694,575	$729,304	$765,769
total	$400,000	$3,765,486	$6,297,473	$6,349,171	$6,140,277	$5,394,588	$3,558,910
Return on Foundation Investment	0	4	4	9	18	41	125

Funding, State of Colorado

7	8	9	10	11	Years 0-11	
Early Maturity	Early Maturity	Early Maturity	Early Maturity	Maturity	Total	Return on Investment
64%	78%	93%	100%	100%		
$886,487,200	$1,086,487,200	$1,286,487,200	$1,385,136,250	$1,454,393,063	$6,971,626,750	
1%	1%	1%	1%	1%		
$8,864,872	$10,864,872	$12,864,872	$13,851,363	$14,543,931		
$3,318,332	$3,484,249	$3,658,461	$3,841,384	$4,033,453		
$153,154	$160,811	$168,852	$177,295	$186,159		
$893,397	$938,067	$984,970	$1,034,219	$1,085,930		
$130,819	$137,360	$144,228	$151,439	$159,011		
$66,367	$69,685	$73,169	$76,828	$80,669		
$3,828,845	$4,020,287	$4,221,301	$4,432,366	$4,653,985		
$804,057	$844,260	$886,473	$930,797	$977,337		
$8,390,913	$8,810,459	$9,250,982	$9,713,531	$10,199,207		
$0	$0	$0	$0	$0	$31,905,904	
$8,864,872	$10,864,872	$12,864,872	$13,851,363	$14,543,931		
$8,864,872	$10,864,872	$12,864,872	$13,851,363	$14,543,931		
$473,959	$2,054,413	$3,613,890	$4,137,832	$4,344,723		
$473,959	$2,528,372	$6,142,262	$10,280,094	$14,624,817		
$0	$0	$0	$0	$0	$27,874,757	
$0	$0	$0	$0	$0	$4,081,148	
$0	$0	$0	$0	$0	$31,905,904	
					219	

Feasibility study. The focus of the feasibility study period is to determine if it is feasible to secure the seed funding and stakeholder engagement necessary to successfully implement this effort, outline the most effective strategies to do so, and articulate an 11-year operating plan. A principal investigator and two staff members would complete the feasibility study. Fiduciary and advisory boards would be developed, and an evaluation provider secured during this time. Specific questions addressed in the feasibility study are discussed in Appendix D.

Early development. The focus of the early development period, years 1 and 2, is to build organization staff, engage all stakeholders, assemble programming tools, begin implementing state policies, start rolling out programs, and begin the process and structure evaluation. Evaluation efforts, including outcomes evaluation, will be conducted by an outside evaluator to insure an independent and unbiased investigation. Staff members will include 5 health policy experts who will support state agencies in developing policies to improve health, 10 outreach experts who will engage each of the 10 stakeholder groups (celebrities, employers, health plans, schools, local governments, health promotion providers, faith communities, social organizations, individuals, and other groups), 5 program content experts who will secure or develop resources in each of the 5 primary health focus areas (physical activity, nutrition, weight control, stress management and smoking cessation), and 3 management staff, including a CEO. Health policy options will be developed based on a thorough review of current policy, successful strategies in other states, the political climate and other factors. Some possible policy options are described in Appendix E. The principal investigator of the feasibility study is expected to serve as an advisor to the CEO for the first year. Sixteen staff will be hired in year one and the balance (10) in year 2. For the purpose of this illustration, 4% of the state population is projected to be engaged by the end of the early development period.

Rollout, refinement, early maturity and maturity. The focus of the rollout (years 3-4) and refinement periods (years 5-6) is more aggressive outreach and engagement of all the key stakeholder groups, and review, reflection and refinement of all scientific, programming, outreach and financial protocols and the internal procedures supporting them, with the goal of engaging a critical mass of the population, i.e. 32% by the end of year 6. During the early maturity period (years 7- 10), the focus will be engaging 100% of the state population. The effort will be considered mature in year 11, with a focus on continuing to serve 100% of the population of the entire state.

State wide spending and internal operating budget. The scenario illustrated in Table 3 assumes that 1% of the population (55,400) will be engaged by the end of the first year and $13,851,363 in funds will be mobilized by capturing 1% of total spending. The portion of the population assumed to be engaged and funds mobilized is projected to double each year, reaching 64% by year 7, then growing to 78% and 93% in years 8 and 9, before reaching 100% of the population and $1,385,136,250 in year 10. After year 10, funds mobilized are projected to increase by 5% to account for inflation. This represents $6,971,626,750 in funds mobilized, the vast majority from private sector sources and the balance from Medicare, Medicaid, and new tobacco tax collections.

The outcome goal of all these efforts is to create a state in which every resident is exposed each day to overt and covert reminders to practice healthy lifestyle habits through encounters at work, in school, through their health plan, in faith communities and other groups that are

part of their lives; have access to multiple opportunities to gain the skills necessary to change health habits; and have the opportunity to live in a state that provides fresh air to breath, clean water to drink, affordable nutritious food to eat and numerous safe and engaging places to be physically active.

The operating budget in this scenario will grow from $400,000 during the feasibility study to $10,199,207 in operating year 11. The largest operating cost will be staff, growing from $1,800,000 in year 1 to $4,033,453 in year 11. The second biggest cost will be marketing, growing from $1,000,000 in year 1 to $4,653,985 in year 11. This large marketing budget is important because the concept of therapeutic dose applies not only to programming but to marketing. Sophisticated and intensive marketing efforts will be required to craft messages that are persuasive to each market segment and penetrate their consciousness on a regular basis. All other costs are projected to increase by 5% per year to keep up with inflation and small enhancements.

Seed funding from foundations. While funding for the overall effort will be drawn primarily from the private sector sources (employers, health plans, providers, Medicare, Medicaid, sin taxes), organizational seed funding is proposed to be provided by foundations. Conducting the feasibility study will cost $400,000 over 12 months. Developing and implementing the full effort is projected to require $31,905,904 in outside funding during the 11-year period, as shown in Table 3. Starting in year one, 1% of funds mobilized will be captured to support operations, allowing the amount of foundation support required to begin decreasing in year four, and reach zero by year seven, at which point a financial reserve would begin to be accumulated and reach $14,543,931 by year 11. This is an optimistic scenario in which 100% of the population of the state is engaged and associated funds are mobilized. Captured funds would decrease if a smaller portion of the population is engaged but operating costs would not. The breakeven level in this illustration occurs when 64% of the population is engaged and the associated funds are mobilized.

A viable funding strategy might be to secure a contribution of $27,874,757 from Colorado based foundations during the 6-year period in which outside funding is required, and supplementing this with contributions of $4,081,148 from one or more national foundations to support evaluation and dissemination of results. The 10 largest Colorado based foundations that focus on health and quality of life invest approximately $268 million annually. Foundation names and spending levels are shown in Table 4. The $27,874,757 required from Colorado foundations for this effort would represent 2.12% of the annual investments by these foundations during the highest funding year (year 3) and 1.73% during the six years of funding, making this a major project, but probably not the largest for any of them. The foundation investment multiplier or financial return on investment (ROI) in terms of outside funds mobilized for health would be $4 for every dollar invested starting in year 2, grow to $125 by year six and to $219 for the 11-year period. One or more national foundations may be interested in funding the evaluation component because this effort has the potential to serve as a sustainable model that can be replicated by other states in addition to making a significant contribution to improving the health of the nation, and improving the long term financial viability of Medicare and Medicaid for the federal government.[77, 78]

Table 4: Colorado Foundations Focused on Health and Quality of Life

	Annual giving
The Colorado Health Foundation	**$84,689,039**
The Anschutz Foundation	**$50,000,000**
Daniels Fund	**$50,000,000**
The Colorado Trust	**$16,000,000**
El Pomar Foundation	**$19,864,939**
Gates Family Foundation	**$16,969,887**
The Denver Foundation	**$8,794,979**
The Piton Foundation	**$7,722,803**
Adolph Coors Foundation	**$7,400,903**
Rose Community Foundation	**$7,054,558**
total	**$268,497,108**

Financial Sensitivity Analysis

The budget analysis above assumes that the number of people engaged doubles (i.e. 100% annual growth) each year, 100% of the population are engaged by year 11 and 1% of all revenue flowing from this effort are captured to support operations. Table 5 shows the financial implications of three other scenarios. For example, if the growth rate were maintained at 100% but the portion of revenue captured for internal operations increased from 1% to 2% (scenario 2 in table 5), the effort would reach breakeven in year 6, the investment required from foundations would be reduced to $24,053,072, the foundation investment multiplier (ROI) would increase from 219 to 290, and the financial reserves in year 11 would increase to $76,488,253. In contrast, if the annual growth rates were decreased to 50% and the revenue capture remained at 1% (Scenario #4), the portion of the population engaged by year 11 would drop to 57.7%, breakeven level would not be reached until year 12, financial reserves in year 11 would be $0, and the investment required from foundations would increase to $63,312,201. Nevertheless, the ROI on foundation investments over the 11 years would remain very high at

37. Scenario #4 could be significantly improved by increasing the revenue capture rate from 1% to 2% (Scenario #3); this would move the breakeven to year 10, reduce the foundation investment required to $46,338,955, increase year 11 reserves to $15,974,787 and the ROI on the foundation investment to 51, even though only 57.7% of the population is engaged. This sensitivity analysis exercise shows the value of increasing the revenue capture rate. It might be prudent to set the goal for the revenue capture rate goal at 2% instead 1%. Other sensitivity analyses might include examining various levels of reductions in operating costs by directly transferring sets of expense areas to employers, providers or health plans.

Table 5: Sensitivity Analysis

Scenario:	#1	#2	#3	#4
Annual growth rate	100%	100%	50%	50%
Revenue capture rate	1%	2%	2%	1%
Population engaged by year 11	100%	100%	57.70%	57.70%
Breakeven year	7	6	10	12
Foundation investment	$31,905,904	$24,053,072	$46,338,955	$63,312,201
Foundation investment multiplier (ROI)	219	290	51	37
Financial reserves by year 11	$14,624,817	$76,488,253	$15,974,787	$0

Economic Impact on Colorado

In addition to improving the health of residents, this effort has the potential to add more than $1.3 billion to the state economy annually through new private sector spending on health promotion. This level of new spending could translate to more than 10,000 new jobs and more than $60 million ($1.3B x 4.63% income tax rate = $60.19 million) in new annual state income tax revenue.

SUMMARY

The most important elements of this proposal can be summarized in five core points listed below.

1. **Lifestyle matters**. Lifestyle related health behaviors like inactivity, poor nutrition, and use of tobacco, excess alcohol and other harmful substances, are responsible for nearly half of premature deaths, can activate or deactivate genes that influence the expression of most of the diseases influenced by heredity, are linked to a significant portion of employer medical costs, and are the primary cause of most of the leading causes of death, including most chronic diseases, which in turn are responsible for most of federal medical care spending.

2. **Health promotion is a cost-effective way to improve health and reduce health disparities.** Providing universal access to health promotion may be the most cost effective strategy to reduce health disparities for the population of a state and even a nation. For an annual cost of several hundred dollars per person, universal access to high quality health promotion may prevent or at least delay most chronic diseases, reduce disease related disability at the end of life, and reduce the need for medical care in addition to improving wellbeing and quality of life. Moreover, universal access to health promotion could be achieved at a fraction of the cost of eliminating disparities in the other social determinants of health, such as education, income or access to medical care.

3. I**t needs to be done right, and we know how to do it right.** Engaging each member of the population of an entire state in successful efforts to improve all aspects of their health related lifestyle will require providing a therapeutic dose of influences to improve awareness, enhance motivation, build skills and create opportunities to practice healthy lifestyle, and working through each of its geographic communities and social networks.

4. **Funding can be identified**. It may be possible to motivate employers, health plans and even individual taxpayers to fund the entire cost of a comprehensive health promotion program of an entire state with the right combination of policy incentives, education, technical support, peer pressure, community demand and recognition of the possibility of recouping most or all of their investments in tangible, measureable savings. Achieving universal access to health promotion may be achieved in one generation or less if a broad swath of society embraces this goal.

5. **A feasible illustration can be articulated**. The illustration using data from the State of Colorado shows that it is possible to articulate the amount of funds required to reach each segment of the population and identify sources of these funds. It also shows that the initial investment required to launch and sustain such an effort has the potential to stimulate collective spending on health promotion several hundred times the initial investment.

6. **This may be a boon to the state's economy.** Providing universal access to the entire population of a typical state will stimulate more than a billion dollars in new economic activity, create an estimated 10,000 new jobs and $60,000,000 in new annual state income tax revenues. New federal income tax revenues may be two to four times that amount for each state.

NEXT STEPS: SEIZE THE OPPORTUNITY

Providing universal access to health promotion for all the residents of a state or major metropolitan area has the potential to dramatically enhance the health of its population, and create new jobs and new sources of state and local income tax revenue, in addition to enhancing the overall quality of life for residents, and helping to build an attractive workforce for employers.

The next step in making an effort like this a reality at the state or metropolitan level is to continue to refine the approach through open dialogue with scholars, practitioners, and policy leaders to highlight the strong elements, challenge and correct any faulty assumptions or conclusions, and develop more effective approaches to fill in any conceptual or strategic gaps. Conducting a feasibility study as a first step provides an excellent context in which to address these issues.

Once the approach is refined, the next step is for an individual or organizational champion to step forward to implement it. The champion might be a group driven to serve the public, including a foundation or consortia of foundations, a city, county or state health department, a mayor or a governor. Alternatively, the champion might be a social entrepreneur who is mission driven to enhance the health of the public, but also interested in earning a profit. The champion could also be a consortium of health promotion providers driven to increase the market potential of their collective businesses, or an employer coalition focused on improving the health of it's workforce. The best champion is likely to be different for each state or metropolitan area, based both on the health status and social determinants in the state and the abilities and passions of those in a position to make this a reality.

Readers are encouraged to share reactions, constructive criticisms and other comments at the this link: https://www.artsciencehpi.com/universal-access-health-promotion

Appendix A. Notes from the Author

This paper grew out of an effort to learn about the strategies being used to achieve Governor John Hickenlooper's 2013 commitment to make Colorado the healthiest state in the nation. My intention was to document the strategies, share them with other states and nudge some of those states to set and pursue similar goals. I also hoped I could contribute to these efforts, especially in Colorado. This state level focus is part of my bigger dream to enhance the health-related lifestyle of the entire nation, with the ultimate goal of improving health and quality of life, reducing disease prevalence, and reducing federal spending on medical care. Doing so is necessary to ensure the survival of the United States. That is a strong statement, but it is true. For nearly a decade, the non-partisan Congressional Budget Office has been projecting that federal spending on medical care will exceed total federal tax revenues by 2085, based primarily on an aging population, federal income tax cuts in the last decade and relatively modest growth trends in medical procedure costs.[79] If these spending trends continue, the financial foundation of the federal government of the United States will implode several decades before 2085, which may cause the world economy to implode. If we wait even a decade to address this problem, raising taxes, cutting other spending, or borrowing more money will no longer be viable options. However, it may be possible to reduce federal spending on medical care by improving health through universal access to health promotion, with the outcome being reducing the federal debt by 10%, 20%, 30% or more…but we need to start now. These ideas are explained in more detail in papers, videos and webinars on the website of Health Promotion Advocates.[80]

As I took a close look at the work being done in Colorado to improve the health of its residents, I saw remarkable reductions in the number of uninsured people since the passage of the Affordable Care Act, with coverage added for an estimated 600,000 people, and the uninsured rate dropping from 15% to 6.5%.[81] I also discovered hundreds of dedicated and talented professionals providing programs that were scientifically valid, expertly implemented, and indeed seemed to be transforming health related lifestyles and quality of life for thousands of people. But, these programs were not transforming the lives of millions of people, which will be necessary to achieve the Governor's goal of making Colorado the healthiest state in the nation. When I realized this, I stepped back to reexamine other well documented efforts to improve the health of large populations and saw the obvious: most of these efforts, including the effort in Colorado, have too few resources to reach the entire population, both in terms of funding, but also in terms of social capital.

So, I shifted my focus to exploring how states might be able to mobilize the resources necessary to impact the entire population. State and local health departments do not have the necessary resources. Foundations do not have the necessary resources. We probably need 10 times the resources those groups can provide. My estimate is that we need about $80 billion to improve the health-related lifestyle of the entire nation as explained in this white paper. That is more than we currently spend for all efforts in public health combined. So, I wondered if it would be possible to start by identifying where funds of this magnitude reside and if it would be possible to construct a persuasive argument that might motivate those who control those funds

to invest them in improving the health of the population. I wondered if we could construct a model that describes how much is required for each segment of the population, how those amounts would flow, from whom, and how they would be applied. I wondered if we could start working toward this dream by breaking it down into parts and developing a game plan to achieve this. Based on the work described in this paper, I think the answer is yes. The math works. The numbers add up. In the next paragraph, I have tried to summarize the solution described in this paper and call out what may be its most important contribution.

The three pillars critical to improving the health of the residents of a state or nation are enhancing the social determinants of health, providing universal access to medical care and providing universal access to health promotion. The missing element for most large-scale efforts is providing universal access to health promotion, even though that may be the most cost-effective method to improve the health of the people of a state and even a nation. To do this well, we need to deliver a therapeutic dose of scientifically valid health behavior change strategies (summarized here in the AMSO Framework). Funding this effort is likely to cost 10 or more times the amount available through foundations, public charities and public health departments. Therefore, these groups need to focus a portion of their resources on mobilizing funding from entities that have sufficient resources and that will also benefit from improved health status of their constituents. The most important contribution of this paper may be the financial analysis shown in tables 1, 2 and 3 that illustrates how sufficient resources might be mobilized and how the overall effort can be maintained by capturing a small portion of these funds to maintain internal operations indefinitely, and in the process, stimulate investments several hundred times the initial investment."

These tables and the associated narrative are rather dense; as such, readers are encouraged to resist the natural tendency to skim through them and instead read them closely.

I have no delusions about this being THE model states must follow. I fully expect, and hope, that people will carefully scrutinize it and make it better. With that in mind, I have two primary target audiences for this paper. First, I hope to reach people in the public health community and encourage them to reflect on this approach and make it better. Second, I hope to reach several major foundations in the United States, and especially in Colorado, and challenge them to also examine this approach closely, refine it, and move forward to implement it.

Please share your reactions, constructive criticisms and other comments at the link below.
https://www.artsciencehpi.com/universal-access-health-promotion

Michael P. O'Donnell, MBA, MPH, PhD

Appendix B: Colorado's Commitment to be the Healthiest State

Colorado's commitment to be the healthiest state in the nation is briefly described below, including a short summary of the history and current status, and people interviewed for this report. Colorado's efforts in this area inspired the approach proposed in this paper. The information on Colorado foundations focused on health and wellbeing support the illustration of the approach proposed in this paper for the State of Colorado.

Background and current status.

In 2013, Governor John Hickenlooper announced his commitment to make Colorado the healthiest state in the nation, with a focus on improving the health of the people through high quality medical care and lifestyle improvement, and also by making Colorado a place where medical care and health promotion businesses can thrive. Goals were set in four major categories and 15 specific areas. This mobilized a diverse group of leaders in healthcare, health promotion, community development and policy to develop and implement a strategic plan.[82] This commitment coincided with the emergence of the newly created Colorado Health Foundation, a conversion foundation with an endowment of more than $2 billion and a stated mission to make Colorado the healthiest state in the nation,[83] although the mission has since changed.

Four years later, the State of Colorado reports that 11 of 15 goals have been achieved, with greatest progress in three broad areas: 1) Expanding medical care coverage, access & capacity, 2) Enhancing value & strengthening sustainability of medical care and 3) Improving quality & system integration within medical care. Less progress has been made in a fourth broad category of promoting prevention & wellness, missing goals related to reducing substance abuse, oral health and obesity.[84] Measurement on the outcome of being the ranked the healthiest state in the nation is difficult because nationwide survey data are released approximately three years after the data are collected. The Colorado Health Foundation releases an annual Health Report Card based on survey findings from the Behavioral Risk Factor Surveillance System (BRFSS) managed by the Centers for Disease Control and Prevention (CDC).[85] In the 2016 Health Report Card, the most recently released, Colorado was rated 24th in Healthy Beginnings, 24th in Healthy Children, 16th in Healthy Adolescents, 13th in Healthy Adults and 10th in Healthy Aging.[86] This was based on surveys conducted in 2014. The 2016 data were released by CDC in mid 2017, but have not been incorporated into any state level report cards released by the Colorado Health Foundation.

The subjective analysis of the author of this paper (O'Donnell), which is based on reviews of the publically available data and interviews with many of the professionals involved in these efforts (See list below), is that great strides have indeed been made in the medical care sphere, primarily through successful implementation of policies included in the Affordable Care Act, especially Medicaid expansion, subsidies offered to low income people through the medical exchange, and allowing children to stay on their parent's health plans until age 26. The remaining challenge is that many hospitals and clinics in urban areas are thriving but struggling to meet demands for care from the newly insured population, and often have long delays for

appointments. Furthermore, hospitals and clinics in rural areas are struggling to serve patients and some are struggling for financial survival. In the healthy lifestyle sphere, there have been many inspiring and well-conceived efforts lead by talented and passionate professionals who are achieving some very encouraging early results, but many of these programs do not address all of the AMSO elements, are not delivered with a therapeutic dose of intensity necessary to have an impact and most importantly, they reach small segments of the population in a limited number of communities. Furthermore, it is not likely that any significant change in health habits, health conditions, or even awareness will occur statewide unless significant resources are devoted to this effort, and major state and local legislative policy changes are instituted to support them. It is also clear that neither the state government nor health foundations have sufficient resources to make this happen without mobilizing more resources.

People interviewed in Colorado.

The people below were interviewed to gather background for this paper. Most of them were involved in efforts to make Colorado the healthiest state in the nation. Some of the recommendations in the proposal were inspired by their observations and suggestions, but including their name on this list does not imply that they endorse any of the proposed elements in this paper.

•Jandel T. Allen-Davis, MD, Vice President, Government, External Relations and Research, Kaiser Foundation Health Plan of Colorado.
•Kyle Brown, PhD, Senior Health Policy Advisor, Office of the Governor, Colorado.
•Tom Clark, MPA, CEO, Metro Denver Economic Development Corp (retired).
•Ned Calonge, MD, MPH, became President and CEO of The Colorado Trust.
•James O. Hill, PhD, Professor of Pediatrics & Medicine, Director of the Center for Human Nutrition, Director of Colorado Nutrition Research Unit.
•Gabriel Guillaume, MS, President and CEO, LiveWell Colorado.
•Amy Latham, MPA, Vice President of Philanthropy, Colorado Health Foundation.
•Michele Lueck, President & CEO, Colorado Health Institute.
•Donna Lynne, MPA, DrPH, Lieutenant Governor and Chief Operating Officer, State of Colorado.
•Katherine Mulready, JD, Vice President Legislative Policy & Chief Strategy Officer, Colorado Hospital Association.
•Donna Marshall, MBA, Executive Director, Colorado Business Group on Health (retired).
•Lee Newman, MA, MD, Director, Center for Health, Work & Environment, School of Public Health, University of Colorado.
•Jake Williams, MSc, Executive Director, Healthier Colorado.
•Larry Wolk, MSPH, MD, Executive Director & Chief Medical Officer, Colorado Department of Public Health and Environment

Appendix C. Employers' Business Case for Health Promotion

Employers have been investing in health promotion programs for decades as a strategy to control medical costs, enhance productivity and attract and retain the most talented workforce. Health promotion is a viable strategy to control medical costs because an estimated 26% of all employer medical costs are tied to modifiable health risks including tobacco use, obesity, inactivity, stress, drug abuse, and hypertension.[87] For example, employees who smoke tobacco cost an estimated $2,056 more in medical costs and an additional $4,056 in lost productivity compared to non-smokers.[88] Employers who implement comprehensive programs can and have achieved saving that are greater than program costs. In fact, a systematic review of all the published studies on the financial impact of workplace health promotion programs found that 46 of 47 programs saved money by reducing medical spending or absenteeism or enhancing productivity, and 41 of 47 saved more than program costs. The average savings for employers for all 47 studies was $2.38 for every $1 invested. For the 25 programs in which medical costs were measured directly through claims analysis, the average savings was $3.74 for every dollar invested.[89] Employers usually see these savings in the second or third year of implementation. Programs may also enhance the value of the overall organization from a stock valuation perspective. A recent series of studies have shown that the stock value of employers that were recognized for implementing high quality health promotion programs outperformed their peers by 8 to 15 percentage points each year, and 48% to 210% over time.[90] At a minimum, that study should allay any fears that shareholders perceive investments in comprehensive health promotion as unwise use of scarce funds for publicly traded firms.

Also, for employers unsure about future savings resulting from health improvements, or needing to achieve those savings in the first year, it is also possible for employers to recover the full cost of the program immediately by building the cost of the program into the health plan premium and thus shifting the cost from the employer to the employee. This ensures that the program has no net cost to the employer from its onset, so any addition savings from improved health and reduced utilization would be bonus savings. This approach is also not a significant burden on most employees, because the cost is small, about 12 cents pretax and about 9 cents post tax per hour assuming 2080 work hours/year. Furthermore, the eventual cost to the employee is expected to be zero. If the program at least pays for itself in medical cost savings, these savings can be passed on to employees in reduced premiums, or at least in reduced increases in premiums. Premium increases can be distributed evenly to all employees or proportionally based on employee's success in achieving health goals. The wellness incentive provisions of the Affordable Care Act allow premium differentials of up to 30%[91] or 50% of the total premium value based on particating in programs and achieving health goals.[92] Distributing costs in this way reduces the extent to which employees who practice healthy lifestyle are forced to subsidize costs of employees who do not.

Another cost saving strategy that can be implemented in conjunction with a health promotion program is to stop hiring smokers. This immediately saves the $2056 in higher medical costs for each smoker not hired and frees up those funds to be invested in a health promotion program. The practice of not hiring smokers is a growing trend, especially among hospitals and other

health related organizations. This organization level policy can be complimented with charging existing smokers a surcharge to help offset the medical cost of their smoking.

Each employer can choose the cost saving strategy most appropriate for its culture and financial situation, but most should be able to gather the resources necessary to create a comprehensive health promotion program that can deliver the Therapeutic Dose necessary to change health behaviors and improve health outcomes.

Tiny employers who do not provide health insurance may be less motivated to fund programs because they will not save money if medical spending decreases. However, they may be more motivated from an employee relations perspective than employers who do provide insurance because they want to offset the fact that they do not provide insurance. Regardless of motivation levels, tiny employers rarely have the internal staff necessary to organize and manage a comprehensive program and will need help from community resources to do so. It is not surprising that the prevalence of employers offering programs decreases as the number of employees decreases.

Appendix D: Feasibility Study Questions

Core questions

A feasibility study on this approach might focus on several core questions:

1. **What is being done now?**
   Who are the non-profit, for profit, and government groups actively involved in efforts to improve health related lifestyle practices now? What are their goals, processes, funding, challenges and outcomes? What are the gaps in service? What types of synergies can be developed with these groups?
2. **What will be required to engage key stakeholders?**
   Stakeholders include employers, health plans, schools, health promotion providers, celebrities, local governments, faith communities and other key groups to support these efforts. Who are they? What are their names, where are they located? What are their priorities and current health promotion efforts? Under what conditions will they agree to be engaged in this effort? What compelling arguments will be most effective in motivating them?
3. **Who are the people of the State**?
   What is their employment status, medical care coverage, location, health habits and interests, health status, education, family structure and age? This data will be used to refine budget estimates.
4. **Can foundations be persuaded to fund this effort?**
   Who are they, what are their priorities? Under what conditions will they support this effort and how much support will they provide? What are their grant proposal requirements? What are the foundation budget cycles and application deadlines?
5. **What are the intricacies of private sector funding?**
   How will the 1% or 2% of funds mobilized be collected and applied to operations? What are possible sources, in addition to increased tobacco or soda tax revenue, for the additional funding needed to support employees and dependents in small business settings?
6. **What are the most likely barriers to success?**
   Are there people, organizations, economic forces, cultural attitudes, resource limitations or other factors that will threaten the success of this effort? If so, how can their impact be mitigated or flipped to enhance its success?
7. **What is the evaluation plan?**
   What are the key process, structural and outcome measures? Who are the providers qualified to conduct the evaluation?
8. **What is the best use of the financial reserve?**
   If a financial reserve is indeed accumulated, how should it be used? Should it be used for internal purposes, including more aggressive marketing to reach the hardest to reach, supplementing programming for the most needy populations, for outreach efforts including conducting more intensive evaluation and more expansive dissemination, providing seed funding to help other states launch similar program, or perhaps to reimburse the foundations that invested in the effort?

Outcomes produced

If this investigation concludes that this effort is feasible, a business plan should to be developed to support its implementation. The business plan should include several key elements:

1. **Staffing Plan**
   This will include detailed definitions of specific skills required to manage each element of the effort and job descriptions for all key positions. Interviews will be conducted for key staff with the goal of the best candidates being confirmed to start work as soon as year 1 funding is received.
2. **Organization Structure Plan**
   This will include the legal structure of the entity managing these efforts. Options include creating a new non-profit organization or being a program of an existing organization.
3. **Administrative Plan**
   This will include specification of facility, technology, accounting and other administrative needs, and securing these resources as needed to begin year one operations.
4. **Stakeholder Engagement plan**
   This will include detailed schedules of outreach efforts.
5. **Marketing Plan**
   This will include guidelines for market research, message development, medium selection, channel distribution, impact measurement and revisions; and experts responsible for all these phases.
6. **Evaluation Plan**
   This will include selection of a provider and rollout timetable.

Appendix E. State Level Policy Options

Below are some policy enhancements that could be implemented at the state level to support efforts by communities, organizations and individuals to improve health habits. Additional policies would be developed by the five health policy experts assigned to develop policies. Areas of major impact are likely to include policies in agriculture, health insurance, transportation, and zoning.

State prevention strategy

Health is impacted by all aspects of life, including education, air and water quality, food supply, economic opportunities, social and recreational opportunities, access to medical care, and much more. As such, assigning responsibility for health only to the state departments responsible for public health, medical care and finance ignores many of the factors that influence health, and limits opportunities to improve health. A State Prevention Strategy would require the directors of each of the state departments and agencies to articulate how the authority and resources under their control can be leveraged to improve health, create an operational plan to do so, and report progress in an annual report. This would have the impact of documenting the health impact of state policies, and generating ideas on how to improve health. The longer-term impact would be to create a culture in which health becomes a priority in all policies. To facilitate this policy work, this effort will provide a team of health policy experts to coordinate preparation of each department and agency plan. A separate group of advisors would be formed to generate ideas and review plans and progress. The process would be managed by the state official responsible for operational management of the state or for all state level health efforts. That person would be the Lt. Governor in some states and the Governor in other states. The National Prevention Strategy included in the Affordable Care Act can serve as a template for state level plans.[93]

Employer tax credit for health promotion spending greater than $250/employee

Businesses that spend more than $250/employee or per employee + dependent on comprehensive health promotion programs and address all of the AMSO components, might be eligible for a state tax credit on a portion of spending greater than $250/employee. The fiscal rationale for the tax credit is that these employers are providing an economic stimulus to the state in excess of employers who are spending less. An economic analysis needs to be conducted to determine the investment threshold, and tax credit amount, at which state tax revenue earned from the stimulus equals the cost of the tax credit.

Establish minimum health promotion services standards for health plans

Minimum standards could be set on the scope and quality of health promotion services provided to members for health plans selling to groups and individuals in the state. Services might include annual health assessments and skill building programs in quitting smoking, weight control, stress management, nutrition and physical activity. Quality standards might include evidence that programs produce positive health changes.

Require schools to meet health promotion standards to be eligible for state financial support.

All schools in the state could be required to actually implement comprehensive health promotion programs, using funds provided by this effort. This would complement existing federal regulations that require each local educational agency participating in the National School Lunch Program or other federal Child Nutrition programs to establish a local school wellness policy for all schools under its jurisdiction.[94]

Tobacco tax and soda taxes increases revisited

Increasing tobacco and soda taxes can raise hundreds of millions of dollars per year in addition to improving health by reducing consumption of these harmful products. State governments could facilitate passage of new taxes and ensure that new tax revenues flow to efforts to improve health. States could also help local governments pass similar taxes.

Enhance Clean Air Laws

Clean Air laws can be enhanced by prohibiting all forms of tobacco smoke in all indoor areas and all outdoor public areas. For example, existing laws in Colorado prohibit smoking indoors but ignore outdoors.[95]

Nutritious Foods

Agriculture policies could be developed that incentivize growing of crops that are the most nutritious, including fruits and vegetables, and dis-incentivize crops that are harmful, including tobacco and livestock. These policies could also focus on crops and land use that is good for the environment.

Appendix F: About the Author and the Art & Science of Health Promotion Institute

About the Author

Michael O'Donnell PhD, MBA, MPH is CEO of the Art and Science of Health Promotion Institute. He is also founder and editor-in-chief emeritus of the *American Journal of Health Promotion,* founder and program chair of the Art and Science of Health Promotion Conference, and founder and chairman emeritus of Health Promotion Advocates.

He has worked directly as a consultant with more than 150 employers, health care organizations, government agencies, foundations, insurance companies and health promotion providers to develop and refine health promotion programs, products, policies, and legislation and has served as an employee in leadership roles in four major health systems, including the Cleveland Clinic, as well as serving as the Director of the Health Management Research Center and a faculty member in the School of Kinesiology at the University of Michigan.

He has authored more than 200 articles, book chapters and columns and 6 books and workbooks, including *Health Promotion in the Workplace*, which has been in continuous publication since 1984 and translated into five languages. He has presented more than 300 keynote and workshop presentations on six continents, partially or fully owned 7 small businesses, served on boards and committees for 49 non-profit and for-profit organizations, and received 15 national awards. He conceived and authored legislation that was incorporated into the Affordable Care Act, including provisions that resulted in production of the annual National Prevention Strategy. He earned a PhD in Health Behavior from University of Michigan, an MBA in General Management and an MPH in Hospital Management, both from University of California, Berkeley, and an AB in psychobiology from Oberlin College. He attended high school and was later a Senior Fulbright Scholar and visiting professor in Seoul, Korea.

About the Art & Science of Health Promotion Institute

The Art & Science of Health Promotion Institute works with employers, health care organizations, health promotion providers and communities to enhance health and improve effectiveness by applying the best science and expert implementation to achieve the best outcomes.

REFERENCES

[1] Solar R, et al. A Systematic Review of Selected Interventions for Worksite Health Promotion: The Assessment of Health Risks with Feedback. Am J Prev Med 2010;38(2S)S237–S262.
[2] Ornish D, The Spectrum: A Scientifically Proven Program to Feel Better, Live Longer, Lose Weight, Gain Health. New York: Ballantine Books, 2007.
[3] Diabetes Prevention Program Research Group. The 10-year cost-effectiveness of lifestyle intervention or metformin for diabetes prevention: an intent-to-treat analysis of the DPP/DPPOS. Diabetes Care. 2012 Apr;35(4):723-30. doi: 10.2337/dc11-
[4] Centers for Disease Control and Prevention, Smoking and Tobacco Use, Data and Statistics https://www.cdc.gov/tobacco/data_statistics/index.htm
[5] Mortality in the United States, 2015, NCHS Data Brief No. 267, December 2016 *https://www.cdc.gov/nchs/products/databriefs/db267.htm.*
[6] Girod CS, Hart SK, Weltz SA, 2017, Milliman Medical Index. http://www.milliman.com/uploadedFiles/insight/Periodicals/mmi/2017-milliman-medical-index.pdf
[7] Keehan SP, National Health Expenditure Projections, 2015–25: Economy, Prices, And Aging Expected To Shape Spending And Enrollment, Health Affairs, August 2016 vol. 35 no. 8 1522-1531. http://content.healthaffairs.org/content/35/8/1522
[8] Department of Numbers website. US Household Income. http://www.deptofnumbers.com/income/us/#percap
[9] O'Donnell MP, 2011, Can We Reduce Our Federal Deficit and Create Jobs by Making the Healthy Choice the Easiest Choice? Am Jour Health Promot, November/December 2011, Vol. 26, No. 2.
[10] O'Donnell MP (2009) Definition of Health Promotion 2.0: Embracing Passion, Enhancing Motivation, Recognizing Dynamic Balance, and Creating Opportunities. American Journal of Health Promotion: September/October 2009, Vol. 24, No. 1, pp. iv-iv, updated from Michael P. O'Donnell (1986), Definition of Health Promotion, *American Journal of Health Promotion,* June 1986; vol. 1, 1: pp. 4-5.
[11] O'Donnell, 2017, Health Promotion in the Workplace, 5th edition. Art & Science of Health Promotion Institute, Troy, MI. https://www.artsciencehpi.com/books
[12] Saving Gotham, Tom Farley, 2015 A Billionaire, Mayor, Activist Doctors, and the Fight for Eight Million Lives. WW. Norton & Company, New York, New York
[13] University of Minnesota. A History of Cardiovascular Disease Epidemiology http://www.epi.umn.edu/cvdepi/the-research/
[14] Minnesota Department of Health, The Statewide Health Improvement Partnership, http://www.health.state.mn.us/ship/
[15] Ohio Department of Health, Creating Healthy Communities, Success Stories 2016, https://www.odh.ohio.gov/-/media/ODH/ASSETS/Files/health/creating-healthy-communities/2016-FINAL-Success-Stories-Booklet.pdf?la=en
[16] Blue Zones Project. https://bluezones.com/services/blue-zones-project/
[17] Colorado.Gov/Health. The State of Health. Colorado's Commitment to Become the Healthiest State https://www.cohealthinfo.com/state-of-health/
[18] The Marmot Review Team. Fair society, healthy lives: The Marmot Review. February 2010. http://www.instituteofhealthequity.org/projects/fair-society-healthy-lives-the-marmot-review.
[19] Wilkinson R, Pickett K, 2009. The Spirit Level: Why Greater Equality Makes Societies Stronger. Allen Lane, London
[20] Wolf SH et al, 2015. How Are Income And wealth linked to Health And longevity? http://www.urban.org/sites/default/files/publication/49116/2000178-How-are-Income-and-Wealth-Linked-to-Health-and-Longevity.pdf
[21] Wilkinson R, Pickett K, 2009. The Spirit Level: Why Greater Equality Makes Societies Stronger. Allen Lane, London
[22] OECD Data, Health. https://data.oecd.org/health.htm
[23] McCullough JM, Leider JP, Associations Between County Wealth, Health and Social Services Spending, and Health Outcomes, American Journal of Preventive Medicine Volume 53, Issue 5, November 2017, 592-598
[24] Bradley EH, Taylor LA. 2013. The American Health Care Paradox: Why Spending More Is Getting Us Less. Public Affairs Books, New York, NY
[25] National Academy of Medicine, 2012. For the Public's Health: Investing in a Healthier Future. http://www.nationalacademies.org/hmd/Reports/2012/For-the-Publics-Health-Investing-in-a-Healthier-Future.aspx
[26] Resnick BA, Fisher JS, Colrick IP, Leider JP. The Foundational Public Health Services as a Framework for Estimating Spending. Am J Prev Med. 2017 Nov;53(5):646-651.
[27] Gottlieb LM, Wing, Adler NE, A Systematic Review of Interventions on Patients' Social and Economic Needs. Am J Prev Med 2017;53(5):719–729.
[28] Wilper AP, Woolhandler S, Lasser KE, McCormick D, Bor DH, Himmelstein DU, Health Insurance and Mortality in US Adults American Journal of Public Health | December 2009, Vol 99, No. 12.
[29] Kaiser Family Foundation, Key Facts about the Uninsured Population, September, 2017. https://www.kff.org/uninsured/fact-sheet/key-facts-about-the-uninsured-population/
[30] Centers for Disease Control and Prevention, Leading Causes of Death, 2016. https://www.cdc.gov/nchs/fastats/leading-causes-of-death.htm
[31] McGinnis JM, Williams-Russo P, Knickman JR, 2002. The Case For More Active Policy Attention To Health Promotion, Health Affairs, 21,3,83.

[32] Centers for Disease Control and Prevention, Fast Facts: Smoking and Tobacco Use, Disease and Death. https://www.cdc.gov/tobacco/data_statistics/fact_sheets/fast_facts/index.htm
[33] Fries JF, Bruce B, Chakravarty E, "Compression of Morbidity 1980–2011: A Focused Review of Paradigms and Progress," Journal of Aging Research, vol. 2011, Article ID 261702, 10 pages, 2011. doi:10.4061/2011/261702.
[34] Katz, DI, Colino S 2009 Disease-Proof: The Remarkable Truth About What Makes Us Well, Hudson Street Press, New York City
[35] O'Donnell MP, AB Schultz, Louis Y, The Portion of Health Care Costs Associated With Lifestyle-Related Modifiable Health Risks Based on a Sample of 223,461 Employees in Seven Industries: The UM-HMRC Study. Journal of Occupational & Environmental Medicine: December 2015 - Volume 57 - Issue 12 - p 1284–1290
[36] Baxter S, Sanderson K, Venn AJ, et al. The relationship between return on investment and quality of study methodology in workplace health promotion programs. *Am J Health Promot.* 2014;28:347-363
[37] McGinnis JM, Williams-Russo P, Knickman JR, 2002. The Case For More Active Policy Attention To Health Promotion, Health Affairs, 21,3,83.
[38] Isehunwa OO, Carlton EL, Wang Y, Jiang Y, Kedia S, Chang CF, Fijabi D, Bhuyan SS. Access to Employee Wellness Programs and Use of Preventive Care Services Among U.S. Adults. Am J Prev Med. 2017 Dec;53(6):854-865. doi: 10.1016/j.amepre.2017.08.001.
[39] Kaiser Family Foundation/HRET Employer Health Benefits 2016 Annual Survey, Section 12 http://files.kff.org/attachment/Report-Employer-Health-Benefits-2016-Annual-Survey.
[40] Fortune 500 List. http://fortune.com/fortune500/list/
[41] Centers for Medicare and Medicaid Services. Decision Memo for Intensive Cardiac Rehabilitation (ICR) Program - Dr. Ornish's Program for Reversing Heart Disease (CAG-00419N), https://www.cms.gov/medicare-coverage-database/details/nca-decision-memo.aspx?NCAId=240&ver=7&NcaName=Intensive+Cardiac+Rehabilitation+(ICR)+Program+-+Dr.+Ornish%2527s+Program+for+Reversing+Heart+Disease&bc=ACAAAAAAIAAA&siteTool=Medic
[42] Centers for Medicare and Medicaid Services, Medicare Diabetes Prevention Program (MDPP) Expanded Model https://innovation.cms.gov/initiatives/medicare-diabetes-prevention-program/
[43] Partnership for Solutions. Chronic Conditions: Making the Case for Ongoing Care. September 2004 Update. http://www.rwjf.org/files/research/Chronic%20Conditions%20Chartbook%209-2004.ppt.
[44] G. Pappas et al., "The Increasing Disparity between Socioeconomic Groups in the United States, 1990 and 1996," *New England Journal of Medicine* (8 July 1993): 103–109
[45] Wilson MG, Holman PB, Hammock A. A comprehensive review of the effects of worksite health promotion on health-related outcomes. Am J Health Promot. 1996;10:429–435.
[46] Aldana SG. Financial impact of health promotion programs: a comprehensive review of the literature. Am J Health Promot. 2001;15:296-320.
[47] O'Donnell MP, Bishop C, Kaplan K. Benchmarketing best practices in workplace health promotion. The Art of Health Promotion, Am Jour Health Promot. 1997; 1:12
[48] The Health Project. C Everett Koop National Health Awards. http://thehealthproject.com
[49] O'Donnell, 2017, Health Promotion in the Workplace, 5th edition. Art & Science of Health Promotion Institute, Troy, MI. https://www.artsciencehpi.com/books
[50] O'Donnell, 2017, Health Promotion in the Workplace, 5th edition. Art & Science of Health Promotion Institute, Troy, MI. https://www.artsciencehpi.com/books
[51] McIsaac JL, Kirk SF, Kuhle S, The Association between Health Behaviours and Academic Performance in Canadian Elementary School Students: A Cross-Sectional Study. Int J Environ Res Public Health. 2015 Nov 20;12(11):14857-71. doi: 10.3390/ijerph121114857.
[52] Michael SL, Merlo CL, Basch CE, Wentzel KR, Wechsler H. Critical connections: health and academics. J Sch Health. 2015 Nov;85(11):740-58. doi: 10.1111/josh.12309.
[53] Centers for Disease Control and Prevention. CDC Healthy Schools; Healthy Students Ready to Learn. https://www.cdc.gov/healthyschools/index.htm
[54] O'Donnell MP. What is the therapeutic dose for health promotion? Am J Health Promot. 2009 Jan-Feb;23(3):iv. doi: 10.4278/ajhp.23.3.iv.
[55] U.S. Public Health Service Report, A Clinical Practice Guideline for Treating Tobacco Use and Dependence: 2008 Update . Am J Prev Med. 2008 Aug; 35(2): 158–176. doi: 10.1016/j.amepre.2008.04.009 PMCID: PMC4465757 NIHMSID: NIHMS59469.
[56] Centers for Disease Control and Prevention. CDC Healthy Schools; Healthy Students Ready to Learn. https://www.cdc.gov/healthyschools/index.htm
[57] Christakis NA, Fowler JH. The Spread of Obesity in a Large Social Network over 32 Years. N Engl J Med 2007; 357:370-379, July 26, 2007
[58] Healthy Workplace, Healthy Community. http://get-hwhc.org
[59] Centers for Medicare and Medicaid Services. National Health Care Expenditure Data. Projected. https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/NationalHealthAccountsProjected.html
[60] Federal Reserve, Financial Accounts of the United States - Z.1, B.103 Balance Sheet of Nonfinancial Corporate Business https://www.federalreserve.gov/releases/z1/current/html/b103.htm
[61] Kaiser Family Foundation/HRET Employer Health Benefits 2016 Annual Survey, Section 12

http://files.kff.org/attachment/Report-Employer-Health-Benefits-2016-Annual-Survey

[62] Bader, P., Boisclair, D., & Ferrence, R. (2011). Effects of Tobacco Taxation and Pricing on Smoking Behavior in High Risk Populations: A Knowledge Synthesis. *International Journal of Environmental Research and Public Health*, *8*(11), 4118–4139. http://doi.org/10.3390/ijerph8114118

[63] CDC, Federal and State Cigarette Excise Taxes --- United States, 1995—2009, May 22, 2009 / 58(19);524-527 MMWR Weekly, May 22, 2009 / 58(19);524-527, https://www.cdc.gov/mmwr/preview/mmwrhtml/mm5819a2.htm

[64] Ibid reference 58

[65] Centers for Medicare and Medicaid Services. Decision Memo for Intensive Cardiac Rehabilitation (ICR) Program - Dr. Ornish's Program for Reversing Heart Disease (CAG-00419N)
https://www.cms.gov/medicare-coverage-database/details/nca-decision-memo.aspx?NCAId=240&ver=7&NcaName=Intensive+Cardiac+Rehabilitation+(ICR)+Program+-+Dr.+Ornish%2527s+Program+for+Reversing+Heart+Disease&bc=ACAAAAAAIAAA&siteTool=Medic

[66] Centers for Medicare and Medicaid Services. Decision Memo for Intensive Cardiac Rehabilitation (ICR) Program - Benson-Henry Institute Cardiac Wellness Program (CAG-00434N)
https://www.cms.gov/medicare-coverage-database/details/nca-decision-memo.aspx?NCAId=271

[67] Centers for Medicare & Medicaid Services. Decision Memo for Intensive Cardiac REHABILITATION (ICR) Program - Pritikin Program (CAG-00418N)
https://www.cms.gov/medicare-coverage-database/details/nca-decision-memo.aspx?NCAId=239&NcaName=Intensive+Cardiac+Rehabilitation+(ICR)+Program+-+Pritikin+Program&NCDId=119&ncdver=2&SearchType=Advanced&CoverageSelection=Both&NCSelection=NCA%7CCAL%7CNCD%7CMEDCAC%7CTA%7CMCD&ArticleType=Ed%7CKey%7CSAD%7CFAQ&PolicyType=Final&s=-%7C5%7C6%7C66%7C67%7C9%7C38%7C63%7C41%7C64%7C65%7C44&KeyWord=Pulmonary+Rehabilitation&KeyWordLookUp=Doc&KeyWordSearchType=And&kq=true&bc=IAAAABAAAgEAAA%3D%3D&

[68] Centers for Medicare and Medicaid Services, Medicare Diabetes Prevention Program (MDPP) Expanded Model
https://innovation.cms.gov/initiatives/medicare-diabetes-prevention-program/

[69] Silver Sneakers website https://www.silversneakers.com.

[70] Nemours Foundation. Pathways through Medicaid to Prevention
http://movinghealthcareupstream.org/innovations/pathways-through-medicaid-to-prevention

[71] David Migoya, Cigarette sales up in Colorado, first increase in a decade. The Denver Post, April 16, 2016
http://www.denverpost.com/2016/02/17/cigarette-sales-up-in-colorado-first-increase-in-a-decade/.

[72] Bureau of Labor Statistics US Department of Labor https://www.bls.gov/eag/eag.co.htm.

[73] US Census, Small Business Administration, https://www.census.gov/quickfacts/table/PST045216/08

[74] Health.Org. https://www.healthinsurance.org/colorado-medicaid/

[75] Kaiser Family Foundation. http://kff.org/medicaid/state-indicator/distribution-of-medicaid-enrollees-by-enrollment-group/?currentTimeframe=0&sortModel=%7B%22colId%22:%22Location%22,%22sort%22:%22asc%22%7D

[76] Medicare Resources.org 2015. https://www.medicareresources.org/colorado/

[77] O'Donnell MP, 2011, Can We Reduce Our Federal Deficit and Create Jobs by Making the Healthy Choice the Easiest Choice? Am Jour Health Promot, November/December 2011, Vol. 26, No. 2.

[78] O'Donnell MP, 2012, A Strategy to Create Jobs and Reduce the Deficit by Making the Healthy Choice the Easiest Choice, Am Jour Health Promot, July/August 2012, Vol. 26, No. 6.

[79] Congressional Budget Office 2017 Long term Budget Outlook https://www.cbo.gov/publication/52480

[80] Making America Healthy: Our People and Our Economy Can We Reduce Our Federal Debt and Create Jobs by Making the Healthy Choice the Easiest Choice? Health Promotion Advocates website. http://0400684.netsolhost.com/debt-jobs/

[81] Colorado Health Institute, 2017 Colorado Health Access Survey: The New Normal.
https://www.coloradohealthinstitute.org/research/colorado-health-access-survey

[82] State of Colorado. Colorado's Commitment to Become the Healthiest State.http://ww.cohealthinfo.com/state-of-health.

[83] Colorado Health Foundation, http://www.coloradohealth.org/

[84] State of Colorado. Colorado's State of Health: Progress Scorecard
https://www.cohealthinfo.com/wp-content/uploads/2014/08/State-of-Health-Scorecard-2017.pdf

[85] Centers for Disease Control and Prevention, Behavioral Risk Factor Surveillance System,
https://www.cdc.gov/brfss/index.html

[86] Colorado Health Foundation. Colorado Health Report Card
http://www.coloradohealth.org/reports/colorado-health-report-card

[87] O'Donnell MP1, Schultz AB, Yen L. The Portion of Health Care Costs Associated with Lifestyle-Related Modifiable Health Risks Based on a Sample of 223,461 Employees in Seven Industries: The UM-HMRC Study. J Occup Environ Med. 2015 Dec;57(12):1284-90.

[88] Berman M, Crane R, Seiber E, et al, Estimating the cost of a smoking employee
Tobacco Control 2014; **23:**428-433.

[89] Baxter S, Sanderson K, Venn AJ, Blizzard CL, Palmer AJ. The relationship between return on investment and quality of study methodology in workplace health promotion programs. Am J Health Promot. 2014 Jul-Aug;28(6):347-63. doi: 10.4278/ajhp.130731-LIT-395.

[90] O'Donnell MP. Is There a Link Between Stock Market Price Growth and Having a Great Employee Wellness Program? Maybe. J Occup Environ Med. 2016 Jan;58(1):e18-20. doi: 10.1097/JOM.0000000000000634.
[91] Federal Register. Regulations Under the Americans With Disabilities Act A Rule by the Equal Employment Opportunity Commission on 05/17/2016.https://www.federalregister.gov/documents/2016/05/17/2016-11558/regulations-under-the-americans-with-disabilities-act
[92] Federal Register, Incentives for Nondiscriminatory Wellness Programs in Group Health Plans A Rule by the Internal Revenue Service, the Employee Benefits Security Administration, and the Health and Human Services Department on 06/03/2013. https://www.federalregister.gov/documents/2013/06/03/2013-12916/incentives-for-nondiscriminatory-wellness-programs-in-group-health-plans.
[93] Surgeon General. National Prevention Strategy. https://www.surgeongeneral.gov/priorities/prevention/strategy/index.html
[94] United States Department of Agriculture, Food and Nutrition Service, Team Nutrition Local School Wellness Policy, http://www.fns.usda.gov/tn/local-school-wellness -policy
[95] Tobacco Free. Org. Indoor Air Laws. http://www.tobaccofreeco.org/laws/indoor-smoking-laws

ENDORSEMENTS

"If we are to achieve progress in population health and well-being for our communities, states and the nation we need transformational thinking to change the current trajectory. It will require efforts of many stakeholders, a much more significant focus on upstream, preventive approaches and long term commitment. This paper provides a basis for serious conversation and debate challenging the status quo in search of a better approach."

Catherine Baase, MD; Health Strategy Consultant, Board Chairperson, Michigan Health Improvement Alliance, former Global Director, Health Services and Chief Health Officer, Dow Chemical

"Michael O'Donnell can always be relied upon to push the envelope, think out of the box, and offer creative solutions that are large but make perfect sense. Traditionally, health care has been discussed along the following dimensions: access, cost, and quality. Why not go upstream and consider prevention and health promotion as equally important? If successful, evidence-based health promotion programs will exert a significant impact on the health and well-being of Americans and do so cost-effectively. Why not give it a try – moving money around to pay for expensive illnesses, many of which are preventable, is not smart – and certainly not the long-term solution for ever-increasing healthcare costs."

Ron Z. Goetzel , PhD, Senior Scientist, Johns Hopkins Bloomberg School of Public Health; Vice President, IBM Watson Health; President & CEO, Health Project

"Michael O'Donnell's strategy is buttressed by the sound science on which he builds the case .. his data and arguments are convincing --the time has come (and there is social urgency) for a 'health promotion or wellness moonshot' the chance to dramatically enhance the health of a large population, to build an competitively advantaged workforce for employers."

Mike Roizen MD Chief Wellness Officer Cleveland Clinic, & author of 4 #1 NY Times Bestsellers

"Universal access to evidence based health promotion is a vital dimension of public health. With excellent clinical and cost analyses, Dr O'Donnell has developed a statewide proposal that is both innovative and practical to implement. Such an effort will serve as a replicable, national model for the future of a true health care system."

Kenneth R. Pelletier, PhD, MD, Clinical Professor of Medicine, University of California School of Medicine (UCSF)

"There are countless ways to advance the well-being of communities including job creation, education and increasing equitable access to medical care. Where some continue to labor over the cost benefit of investing in health promotion, Dr. O'Donnell's provocative proposal offers detailed answers along with lofty insights about the return on investment of wellness. But more decidedly, the argument herein transcends such debates and instead begs the question of whether we can afford not to find the collective will to create universal access to health promotion."

Paul Terry, PhD, President and CEO, Health Enhancement Research Organization (HERO); Editor in Chief, American Journal of Health Promotion

"Few people are more knowledgeable about the American healthscape- what's working, what's not; the perils and opportunities- than Michael O'Donnell. This detailed and well-reasoned plan is the consummate blue print for doing well by doing good, an opportunity to measure gains concurrently in years gained, and dollars saved. A meticulous plan for achieving that win-win at scale is transformative."

David L. Katz, MD, MPH, FACPM, FACP, FACLM, Director, Yale University Prevention Research Center Griffin Hospital, Founder, True Health Initiative