My Last Lecture

American Journal of Health Promotion
2016, Vol. 30(8) 588-593

DOI: 10.1177/0890117116671802
ajhp.sagepub.com

Abstract

In celebration of my final comments as editor in chief of the American Journal of Health Promotion, I offer reflections on the importance of workplace health promotion, the impact of financial incentives on program effectiveness and financial sustainability, return on investment (ROI) analysis, reducing the federal debt by improving health, balancing high technology approaches with human touch, focusing on passions and sense of purpose, and nurturing a loving and caring community of professionals.

This issue, Volume 30, Number 8, of the *American Journal of Health Promotion*, published in November 2016, is the last one for which I will serve as editor in chief. My first, Volume 1, Number 1, was published in June 1986, 176 issues, 30 years and 5 months ago.

Given that this is my last issue; I am going to invoke a privilege that is sometimes bestowed upon esteemed professors in academia; the honor of presenting a "Last Lecture." Last lectures allow the professor the opportunity to share wisdom that has accumulated over a decades-long brilliant career, and insights that can serve as foundation building blocks for students constructing their careers and against which colleagues can compare their own contributions to knowledge and society. Sometimes last lectures do meet those lofty standards. Other times, they confirm that it is indeed time for the professor to retire. The message is greeted with vociferous and sincere heart felt applause and celebration in either case. My goal with this editorial is to fall somewhere in the middle on the performance and importance spectrum, and my hope is that it will be greeted with vociferous and sincere heart felt applause and celebration, not for me, but for all that our field has accomplished in the past 30 years. Rather than trying to weave a coherent single message, I would like to reflect on several somewhat unrelated points, some tactical, some aspirational, and some existential, in a rambling fashion.

Workplace health promotion Is indeed the best thing since sliced bread. After nearly 4 decades of studying, designing, and managing workplace health promotion programs, I still think it is one of the best concepts that has emerged in health care in the past century, up there with vaccines, sanitation, and antibiotics. I come to this conclusion after examining it from the 3 areas in which I have formal training—hospital management, business, and public health. In hospital management, our core goal is to provide the highest quality medical care in the most efficient and cost-effective way. Workplace health promotion programs certainly meet that standard. The annual health screening and feedback provided at the front end of a typical program costs $US25 to $US75. The same screening and feedback might cost $US250 to $US500 if offered by a clinic or hospital. From a business perspective, health promotion programs offer an employee benefit that can, if done right, improve health, quality of life, and sense of community; help attract and retain talented employees; enhance productivity, and more than pay for itself in measureable medical care cost savings. In all seriousness, I have never seen another employee benefit that can meet those standards. Finally, from a public heath perspective, and this is the most important to me, workplace health promotion programs are one of the most cost-effective ways to improve the health of the population. First, they focus on the factors that can prevent 80% of all diseases: tobacco use, physical inactivity, and nutrition.[1] Second, the concentration of a large group in the relatively stable environment of a workplace makes it possible to engage a large group of people in complex health campaigns in a supportive community over an extended period of time and thus allow people to cycle through the cognitive, emotional, and behavioral processes necessary to make lasting behavior changes. Furthermore, the cost, from the perspective of the public health community, is zero because the funding comes from the employer, not the government or a foundation.

Note that I said the *concept* is brilliant, not that most programs achieve their potential in reality. I have seen programs that have detected early stage preventable cancers, reversed heart disease and diabetes, helped people through the most difficult times of their lives and given them a reason to want to live, become the focal point that allows an organization to develop a sense of community, made organizations the most popular place in town to work, and eliminated annual increases in medical costs and employee health plan premiums for several years.

I have also seen many programs that are too superficial to have any impact on health or cost and a few that dispensed incorrect and even dangerous health information and were so poorly managed that they alienated large portions of the population because they made sick people feel disrespected. My unscientific guess is that only 5% to 10% of the programs follow the best practice standards necessary to make a significant impact on population health or change organization cost trends.[2] The concept is solid, but we still need to figure out how to motivate every employer to implement a program, and to follow best practice standards in doing so.

Financial Incentives authorized by the Affordable Care Act have the potential to transform workplace health promotion. Section 2705 of Title I in the Patient Protection and

Affordable Care Act passed in 2010[3] provided legal statute authorizing employers to have differential health plan premiums for employees based on their participation in health promotion programs and their success in achieving health goals. Implementation of these provisions has the potential to rapidly expand and transform workplace health promotion programs. However, I suspect that their biggest impact will not be in motivating people to practice healthy lifestyle but in providing a mechanism to finance comprehensive programs.

The statute and subsequent regulations allow employers to finance the entire cost of incentives and comprehensive health promotion programs by building their cost into the health plan premiums. This allows the program to have a positive ROI in the first year, even if it does not improve health or change utilization of medical care. Expressed differently, the regulations allow employers to shift the cost of the health promotion program from the employer to the employees but do so in such a way that reduces the burden on employees who are doing everything possible to practice healthy lifestyle and are achieving health goals, and reduces the extent to which those employees are forced to subsidize those who are not. Theoretically, it also provides a mechanism to reduce the burden on those who are not practicing healthy lifestyles by allowing them to earn back lower premiums through participating in programs and meeting a "reasonable alternative standard" of outcome goals when they are not able to meet the initial goal.

The other important impact of the financial incentives will be to nudge people to participate in programs. Some will join with joy and excitement, and others will come kicking and screaming with resentment, but most, maybe 90%[4] will join if they have the opportunity to reduce their health plan premiums by $US1000 or more.

I hope I am wrong, but my expectations are low that these financial incentives will have much impact on motivating people to changes their health behaviors. My primary expertise is not the science of Skinnerian behavior modification, but I trust the repeated admonitions from my professors in graduate school, and contemporary psychologists who continue to say that the science is not sufficiently well developed to guide even the most well-informed experts in how to design and implement financial incentives to successfully motivate people to move through the many cognitive, affective, and behavioral processes necessary for most lasting health behavior changes. Instead, my opinion is that programs will be successful in stimulating health behavior change only if they follow best practice standards in improving awareness of the links between lifestyle and health, enhancing motivation to practice healthy lifestyle, building the skills necessary to change behavior, and creating opportunities to practice healthy lifestyle.[5]

One spin-off benefit of the implementation of so many financial incentive programs may be a lot of data that can be analyzed to improve both our underlying scientific knowledge and our best practice strategies to implement incentive programs. If so, in another decade, or maybe sooner, we may have a solid foundation to guide the development of financial incentives that motivate people to change complex health behaviors.

The Return on Investment (ROI) from workplace health promotion programs is very strong, but we may want to reduce expectations and shift our focus to Return on Allocated Assets (ROAR). I feel confident saying this from the perspective of the quality of methodology used in the published literature, the outcomes achieved to date, and the ability of employers to achieve a positive ROI if that is a priority. The highest quality studies on the financial ROI of workplace health promotion programs use quasi-experimental designs with propensity score matching of participants and nonparticipants, measure medical costs at the individual level claims for tens of thousands of employees over a series of years before and during the program, use sophisticated protocols to handle missing data, and use a combination of parametric and nonparametric statistics to account for complex data distributions.[6] Dozens of high quality studies have been conducted. The overall quality of these studies is good, not excellent, but exceeds the level of quality of ROI analysis for any other public health investment and any other human resource benefits. I suspect they also exceed the level of quality for ROI studies on medical care procedures with similar costs, and for 90% of all ROI analysis for business investments of any kind. Most importantly, they meet the standard required by any employer for an investment of this order of magnitude.

In addition to having high-quality study methodology, most programs reported in the scientific literature save money, a high percentage of programs save more than they cost, and some save a remarkable amount. A systematic review of the literature on ROI studies that also critiqued the quality of the studies found that programs produced savings in 46 (97%) of 47 cases and the savings exceeded the program costs in 41 (87%) of 47 cases.[7] Among the 25 programs that measured medical claim cost directly, the ROI was 3.74, a return that is rarely achieved by any business investment in a commercial product, let alone an employee benefit. It is important to note that we do not expect all programs to save money. Indeed, we do not expect superficial or poorly designed or managed programs to have any impact on health or anything else. It is also important to point out that many thousands of programs have been implemented but most have not conducted formal ROI analyses and only 47 have published their findings. We cannot extrapolate the findings of 47 studies to the entire field of workplace health promotion; we cannot say that 97% of programs will save money or even that 97% of programs have saved money. What we can say is that at least 41 programs have documented that their programs saved more than they cost. I am not aware of any other treatment in all of health care or any employee benefit program that can make a stronger claim.

Perhaps most importantly, if saving money through the health promotion program is the employer's top priority, a positive ROI can be virtually guaranteed by implementing the program in conjunction with benefits policy changes including not hiring smokers, building the cost of the program into the health plan premium through an outcome-based incentive program, and requiring employees to pass a job-specific fitness test before confirming employment.[8] Some may argue that

benefits changes of this nature are not health promotion programs per se, which is a valid argument, however, the counter argument is that a health promotion program provides a positive context in which to implement policies that might otherwise not be acceptable.

Despite my positive comments above, we have a lot of room for progress in examining the ROI of workplace health promotion programs. First, we do not know which programs will produce a positive ROI. We also don't know whether the programs that produce the best health outcomes also produce the best ROI. This prevents us from designing programs to achieve the best ROI. Second, our analyses usually do not capture the indirect costs of programs and rarely capture savings beyond medical care costs. Savings from enhanced productivity may be greater than those from medical care costs, and enhancements in quality of life of participants will be more important in attracting and retaining the best employees and making the world a better place. For this reason, I have advocated an approach called Return On Allocated Resources (ROAR), to help us capture all the direct and indirect costs, all the tangible and nontangible costs and to help us remember to focus our programs on enhancing quality of life, on making people roar because they feel great![9]

Perhaps the most important shift we need to make in this area is changing our expectations related to the return on our investment. Employers invest thousands of dollars per employee in efforts to improve their health, ability to work, and quality of life, with no expectation of a direct measureable financial return. Do we really need to tell employers that a health promotion program will save more than it costs? If it breaks even, it will produce a better return than any other employee benefit. Perhaps an ROI of 1:1 should be our goal.

Workplace Health Promotion may play a critical role in preserving civilization as we know it. Yes, I am serious, and no, I am not self-absorbed in an alternate reality.

The 2016 Long Term Budget Outlook[10] released in July 2016 by the non-partisan Congressional Budget Office(CBO) warned that federal debt is now projected to grow from 75% of gross domestic product (GDP) in 2016 to 141% by 2046. CBO has drawn similar conclusions in each of its Long-Term Budget Outlook reports since 2011, but projections have worsened in the 2016 report because of recent federal income tax cuts. Increases in federal spending on Medicare, Medicaid, and Social Security are the primary causes of increased spending, with federal spending for Medicare and Medicaid projected to grow from 5.5% of GDP in 2015 to 9% in 2046, and Social Security to grow from 5% to 6.5%. By 2046, just as millennials are beginning to retire, these programs would consume 82% of all federal revenue. This will make it impossible to pay the interest on debt that year (estimated at 21% of the total federal spending) let alone pay for national defense, social service programs, or education, not to mention maintaining the basic administrative operations of the federal government, including the White House, Congress, or the Judiciary, without increasing the deficit. The federal government has traditionally borrowed money from individuals or foreign governments to cover the cost of deficit spending, but eventually this will not be possible because investors will consider the loan too risky. When this occurs, the federal government of the United States will default on its debts and other financial obligations. It is difficult to imagine a scenario in which that would not trigger a fiscal implosion of the entire US economy, and then the world economy, and the social systems upon which civilization relies.

The underlying causes of the increasing medical spending are increases in the cost of medical procedures, an aging population, and worsening of lifestyle habits. The number of people aged 65 and older is projected to increase from 49 million in 2016 to 85 million in 2046 and 7 of the top 10 causes of death in the United States are caused by tobacco use, lack of physical activity, and poor nutrition.

My preliminary analysis shows the federal debt could be reduced by 31% if the annual rate of cost increase of Medicare is reduced by 1 percentage point and the health of the population improves to the extent that people are able to extend the years they work by 4 years, or 10%.[11] Is it possible to achieve improvements of this magnitude by offering high quality health promotion programs to all US residents? Maybe, Johnson & Johnson, sponsor of what may be the best employee health promotion program in the world, was able to reduce the annual rate of increase of its medical costs to 1% for the years 2002 to 2008. This was 3.8 percentage points lower than the 4.8% annual increase of its peers.[12] Furthermore, an ongoing study of students who graduated from the University of Pennsylvania in 1939 to 1940 showed that those who did not smoke, were physically active, and not overweight have been able to delay the onset of disability by 10 years compared to those who smoked, were not physically active, and were overweight. They delayed death only 3.5 years, for a net reduction of 6.5 years of disability in their lives.[13]

How might we achieve these improvements in health? By providing comprehensive best practice health promotion programs to every resident in the United States. This would cost about $US62 billion per year assuming a cost of $US200 per person. This could be done at no net cost to state or federal governments if all employers made the commitment to provide comprehensive programs to all of their employees plus spouses and children. Employers would be motivated to do this not to prevent the collapse of the global financial system, but to moderate increases in their own medical costs, expecting the investments to pay for themselves. Effective programs for employees could be provided directly through worksites, but programs for spouses and children would need to be offered throughout the entire community where people live, work, play, and pray, especially in schools, colleges, faith communities, and clinical settings. Providing these new programs would create an estimated 280 000 new jobs for the health promotion industry. The taxes from these new jobs would result in $US4.5 billion in new state taxes and $US22.5 billion in new federal taxes, which would be enough to provide comprehensive programs for all Medicare and Medicaid recipients.[11]

Making this happen would start with persuading every business leader in the United States that it makes sense. Next, we

would need to initiate the single largest mobilization of effort in the history of public health. Indeed, this new investment of $US62 billion would represent 10 to 30 times the amount now spent for workplace health promotion,[14] and 82% of the total estimated funding for public health by the federal government in 2014.[15] As huge as this amount is, it represents only about 2% of the estimated $US3 trillion the United States spends on medical care,[16] and 0.29% of the $US18.2 trillion US businesses have in liquid assets held by businesses, not including those held by farms and financial institutions.[17] It would require implementing best practice strategies in all work settings,[5] and implementing best practice strategies in all public health departments,[18] and developing new best practice strategies that work in schools, colleges, and other settings. Then again, if it succeeds only half way, it will create 280 000 new health promotion jobs and improve the health and quality of life of more than 300 million people. If it succeeds fully, it might save civilization as we know it.

I call this concept Health Solvency and Jobs. For a 10-minute summary video, see: https://www.youtube.com/watch?v=SOqaVQ_cunA. For a series of papers, a webinar and more background information see the Health Promotion Advocates Web site: http://healthpromotionadvocates.org/debt-jobs/

I think we need more high touch to complement the growing high tech. To paraphrase Michael Jackson, technology has "rocked our world." Expert systems allow us to create algorithms that articulate what the best minds in behavioral psychology have learned through decades of research and practice and apply these to create sophisticated skill building programs within seconds that are tailored to the specific needs and whims of each individual user, at a marginal cost that approaches zero. The Internet makes these programs accessible to half the world's population and allows them to pull in scientific articles, sounds, images, and videos to reinforce or illustrate key concepts and entertain the viewer. Data from all users can be captured and analyzed to help us measure overall effectiveness, and engagement of each element of the program, sometimes at the individual word level. We can ride stationary bikes in our own homes that show us screen images of animated or real city, mountain, rural, or seaside settings and make us feel like we are moving through them or allow us to link into videos of spinning classes led by top instructors and compare our performance to other people taking the same class. I have a watch that tracks and stores all my physical activities by the type of activity, including swimming, and measures my heart rate throughout the day. At the same time, it shows me text messages sent to my telephone, credit card charges, calendar reminders, reports the weather and time, allows me to answer telephone calls, and does other things I do not yet understand. I could go on and on about the marvels of modern technology.

Before the technology revolution, which probably started around 1984 when Apple introduced the first Macintosh home computer, we communicated through static print text or human touch in the form of face to face communication and telephone calls (which were often prohibitively expensive).

We are now faced with the question: Which works better, technology or human touch? Of course, it is not really a binary choice. The real question is more nuanced— How do we best combine high tech and high touch to produce the best outcomes. My answer is I am not sure, and it depends (like most things).

I think about my own case. Three days a week, I get up at 4:30 AM, so I can drive 5 miles to swim with a coach and a team. We don't have much time to talk, usually just during the 10 to 20 seconds between sets, and maybe for a few minutes in the locker room before everyone zooms off to work or back to families. I could sleep in and swim in a pool half a mile from home, but I would be alone. This morning I was in the gym doing my cardio and weight workout. As the end of 40 minutes on the bike approached, I was starting to think I felt a little tired and I had a lot of work to do . . . so maybe I should just skip the weights, take a shower, and get to work. Then, one by one, 4 of my favorite gym mates walked in and started their workouts. I decided to finish my full workout because of their companionship . . . even though each of us was totally absorbed by our own workouts (not to mention music, podcasts, and workout instructions streaming into our ears from our smart phones) and we did not even say "Hi" to each other.

Several years ago, I surveyed a group of several thousand employees about their preferred learning style for a variety of health behaviors. The learning mode options were face-to-face individual, face-to-face group, online, print, and telephone. The health behaviors were stress management, weight control, fitness, nutrition, and smoking cessation. Several trends emerged from the responses. The overall preferred learning style varied by health area with face-to-face group most often preferred for weight control, face-to-face individual for fitness, online for stress management, print, and face-to-face group tied for nutrition, and no clear trend for smoking cessation. There was also high variation in preferred learning style by gender and age, and within each person, depending on the health area. I realized that our short-term strategy could be to engage a large portion of the population by concentrating resources on developing tools that used the most popular learning style for each health area, but we might eventually need to offer all modes for each health behavior, if we wanted to engage everyone. My overall conclusion is that we need to ask people about their preferred learning style for each health area and be prepared to provide our programs in each of these formats.

I used to think that people had to be together in the same room (swimming pool or race course) to support each other, and that is still my bias, but I am beginning to see that online support networks of cyclists, former smokers, disease survivors, students, and many other types can be remarkably effective, much easier to find, and more cost-effective to manage. My personal default approach to learn simple things is to find an online instructional video, rather than asking a person for advice. In my work as the editor of a peer-reviewed journal, I work with a network of several hundred reviewer-scientists to review and critique manuscripts. It is much more efficient for us to work online,

asynchronously, rather than try to meet face-to-face or on the telephone . . . so my bias toward face-to-face is eroding.

However, when I see a program that consists of financial incentives, health screenings, an online portal, telephone coaches, and an in-house benefits manager-in-charge, I foresee a program that probably will not have much impact on anything for most people. My experience and my bias tells me that we need compassionate health promotion professionals, trained in some health specialty, roaming the halls, leading sessions, listening to people, encouraging them, building top and middle management support, implementing policies and building environments that support health . . . but I have little research to support or discredit my belief.

Most scientists and practitioners tend to concentrate on 1 or the other, human touch or technology, and do not explore how best to combine the two. Many commercial venders focus primarily on technology approaches, with human interaction often limited to telephone coaching, in part because technology approaches offer cost and convenience advantages, not to mention higher profit margins.

The bottom line is that we need to enhance our knowledge about how to best blend human touch and technology through a focused applied research effort.

We need to focus more on passion and purpose, and less on pursuit of optimal health. I have confessed publically in print and in person that I am a health nut.[19] My reasoning for wanting to be healthy is circular. I want to be healthy because I want to be healthy because I want to be healthy. Most other people are not like me. They are not health nuts. It took me nearly 20 years working in this field to really understand this. Don't get me wrong, most people are equally nutty, but in other ways. They are sports nuts, food nuts, research nuts, religious nuts, parent nuts, friend nuts, or some other kind of nuts. If they want to be healthy, it is to make them better at whatever they are nuts about. More often, they don't even care that much about health (until they are sick) because they do not understand how better health can help them better achieve their priorities. My response to this realization for at least the last decade has been that we need to focus less on helping people reduce their health risks or even on using more aspirational approaches like pursuing optimal health. Instead, we need to help people discover and embrace their passions and then help them understand how better health can help them pursue their passions. Unfortunately, I have not seen much progress in this direction. Maybe that is because so many new providers keep entering the field every year and they make the same mistake I made and most professionals in our field made in thinking that optimal health is important to most people. Maybe, it is because these professionals, like most professionals, focus on what they are good at, be it nutrition, fitness, technology, or just at selling their products. Then again, maybe it is because linking passions to health is really complicated and no one has figured out how to do it well. Victor Strecher, the person who figured out how to make tailored health messaging a reality in his first major contribution to the field, may have uncovered the key to guiding this transformation; he argues that we should be helping people focus not on their passions but on more basic values, that is, their sense of purpose in life. He explains this in his new book, *Life On Purpose: How Living For What Matters Most Changes Everything,*[20] which is written for the general public, but is also well documented from a scientific perspective. I am looking forward to another breakthrough.

I think we need to refocus on being a loving caring community of professionals. Maybe it is because I am old enough to be a grandfather and I have a distorted memory of what was good about the good old days. What I do remember about my early years in this field is that we were all drawn to it because we wanted to help people. We wanted to help them discover how working out, eating right, and having a positive outlook on life could give them incredible energy and make them feel great. It was almost a religious calling, and we were probably over the top sometimes (some of us probably still are). We were drawn to this field because we felt good every time we helped someone. It was instant reinforcement for our work almost every single day, sometimes every hour. We were also drawn to this work because it brought us close to so many other wonderful people who shared the same perspective. Part of what made us effective in our work was that we really cared about helping other people. Material rewards were not the top priority for most of us. Many of us chose this emerging field over others that provided financial security. We loved what we did, and we felt good every day because we helped other people feel good every day. Sometimes it does not feel that way now. Some of my friends and colleagues tell me it feels more like routine work. It is still important work, but it feels like a business. My friends tell me they do not have that reinforcement of feeling good every day because they are not sure if they are helping other people feel good every day. It could be that technology separates them from the people they serve, so they do not get direct feedback when they help someone. But it could be that they are not touching people, not changing lives, the way they used to. Sometimes, the leaders of their organizations (including me) neglect to remind them that our core goal is helping people. More and more, it feels like the field is dominated by benefits managers who are focused on controlling medical costs and by entrepreneurs who are really good at building technology, managing people, selling products, and growing profitable businesses. Don't get me wrong; growing businesses is necessary to be able to serve more and more people in a cost-effective way and making money is necessary to support families and make it possible for people to retire eventually. But sometimes, I worry that we are forgetting that helping other people is the core goal of our business. What made us special, what made us effective, when we started this field was that we cared about people and we wanted to help people every single day. I hope that can continue to be a central theme we remind ourselves of every day.

Michael P. O'Donnell, MBA, MPH, PhD
Editor in Chief, American Journal of Health Promotion

References

1. Katz DL, Colino S. *Disease Proof: The Remarkable Truth About What Makes Us Well*. New York, NY: Hudson Street Press; 2013.
2. O'Donnell M. Does workplace health promotion work or not? Are you sure you really want to know the truth? *Am J Health Promot*. 2013;28(1): iv-vii.
3. Patient Protection and Affordable Care Act. 2010. http://www.hhs.gov/sites/default/files/ppacacon.pdf. Accessed September 21, 2016.
4. Seaverson EL, Grossmeier J, Miller TM, Anderson DA, The role of incentive design, incentive, value, communications strategy, and worksite culture on health risk assessment participation. *Am J Health Promot*. 2009;23(5):343.
5. O'Donnell MP. *Health Promotion in the Workplace*. 4th ed. Troy, MI: American Journal of Health Promotion Inc; 2012.
6. O'Donnell MP. *A Short Primer on How to Evaluate Workplace Health Promotion Programs*. Troy, MI: American Journal of Health Promotion, Inc; 2015
7. 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;28(6):347-363. doi:10.4278/ajhp.130731-LIT-395.
8. O'Donnell MP. Is it time to separate the financial and health goals of workplace health promotion programs? *Am J Health Promot*. 2016;31(1).
9. O'Donnell MP. Evaluating your health promotion program for the return on allocated resources (ROAR) factor. *Am J Health Promot*. 2015;30(2): v-viii. doi:10.4278/ajhp.30.2.v.
10. Congressional Budget Office. The 2016 Long-Term Budget Outlook. 2016. https://www.cbo.gov/publication/51580. Accessed September 21, 2016.
11. O'Donnell MP. Can we reduce our federal deficit and create jobs by making the healthy choice the easiest choice? *Am J Health Promot*. 2011;26(2):iv-xii.
12. Henke RM, Goetzel RZ, McHugh J, Isaac F. Recent experience in health promotion at Johnson & Johnson: lower health spending, strong return on investment. *Health Aff (Millwood)*. 2011;30(3): 490-499. doi:10.1377/hlthaff.2010.0806.
13. Fries JF, Bruce B, Chakravarty E. Compression of morbidity 1980–2011: a focused review of paradigms and progress. *J Aging Res*. 2011; 2011:261702.
14. Ross S. Firms revamping employee wellness programs. *Mod Health Care*. 2014.
15. Centers for Medicare and Medicaid Research. National Health Expenditures Data. 2014. https://www.cms.gov/research-statistics-data-and-systems/statistics-trends-and-reports/nationalhealthexpenddata/nationalhealthaccountsprojected.html. Accessed September 21, 2016.
16. National Center for Health Statistics, Centers for Disease Control and Prevention. Health Expenditures. 2014. http://www.cdc.gov/nchs/fastats/health-expenditures.htm. Accessed September 21, 2016.
17. Federal Reserve Statistical Release. Financial Accounts of the United States: Flow of Funds, Balance Sheets, and Integrated Macroeconomic Accounts. L.103 Nonfinancial Corporate Business page 78. 2016. https://www.federalreserve.gov/releases/z1/current/z1.pdf. Accessed September 21, 2016.
18. Farley T. *Saving Gotham: A Billionaire Mayor, Activist Doctors, and the Fight for Eight Million Lives*. New York, NY: WW Norton; 2015.
19. O'Donnell MP. A simple framework to describe what works best: improving awareness, enhancing motivation, building skills and providing opportunity. *Am J Health Promot*. 2005;20(1):1-12.
20. Victor J. *Strecher, Life On Purpose: How Living For What Matters Most Changes Everything*. New York, NY: Harper Collins; 2016.