REWARDING PREVENTION, REDUCING RISK

Addressing the global non-communicable disease epidemic with a new community-based health financing model that capitalizes on healthy living

Judith van Andel, Michiel Heidenrijk, Marleen Hendriks
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Contents

Abstract 4
Global NCD epidemic 8
• Healthy living saves lives and improves social welfare 13
• Healthy living to address NCDs and achieve universal health coverage 14
• Lifestyle change: difficult and beyond individual choice 15
Why the time is right to make a change 20
• Public opinion is changing 21
• Social impact investment gains ground 22
• The mobile revolution enables inclusive, low cost personalized services 22
• Big data generated through digitalization enable new models for healthcare delivery and financing 23
The way forward: a multisectoral approach 24
• Starting bottom-up with a new community-based insurance model 28
• What about the ethics? 41
Conclusion 42
Acknowledgements 42
References 44
Disease prevention through healthy living is the only way forward for health systems worldwide, to address both the growing non-communicable disease (NCD) epidemic and the goal of achieving universal health coverage (UHC). However, the transition to healthier living is about more than just individual choice. It requires the joint effort of governments, the healthcare sector, private sector players such as the food industry, and communities and individuals. Together they can change the focus of healthcare systems from treatment to prevention and transform our default lifestyle to a healthier one.

This paper addresses several issues surrounding these topics. First, we present the case for healthy living and prevention as a solution to the NCD epidemic and examine the role that factors such as social determinants of health play in complicating the transition to a healthier lifestyle. Next, we suggest how the combined impact of evolving societal trends and mobile technology can influence key stakeholders, who can then effect change in healthcare delivery and financing. We propose a new community-based insurance model, wherein population health goals are aligned with patient, provider and payer incentives. This includes a move away from fee-for-service models towards population health financing in which healthcare providers are rewarded for keeping the full population healthy. It also includes the development of shared value insurance models, in which individuals and groups are rewarded for healthy behavior. Using real-world examples, we discuss the benefits of, and potential issues with, our proposed insurance model’s three core elements: (1) prevention-oriented healthcare delivery; (2) community and individual incentivization to live healthier; and (3) the use of data pools to both “predict, personalize and prevent” community health needs and to return value to the communities who own and control the rights to their data. Given that under our current healthcare system we cannot sustainably finance the growing NCD epidemic and also achieve UHC, now is the time to act so that communities worldwide are encouraged to invest in their own health.
Global NCD-epidemic linked to unhealthy lifestyles and social determinants of health

We are currently facing a global epidemic of lifestyle-related diseases like cardiovascular diseases, cancers and chronic lung diseases. These NCDs are the leading causes of death and disability worldwide (1).

NCDs kill 41 million people each year, accounting for 71% of all deaths globally (2).

The costs of care for NCDs are rising rapidly. They currently comprise 40% of direct global health care costs, accounting for approximately 4 trillion USD, and are expected to exceed 9 trillion USD by 2030 (3).

Total deaths

71% NCD deaths

41 M deaths

NCDs kill 41 million people each year, accounting for 71% of all deaths globally (2).

4 trillion USD

9 trillion USD

2018 2030

The costs of care for NCDs are rising rapidly. They currently comprise 40% of direct global health care costs, accounting for approximately 4 trillion USD, and are expected to exceed 9 trillion USD by 2030 (3).
DISEASE BURDEN PER TYPE OF DISEASE GLOBALLY AND PER REGION
Source: WHO data, 2018

2000

2016

RCC's:
- Other NCD
- Cardiovascular
- Cancer
- Mental health
- Respiratory
- Diarrhea
- Infectious diseases
- Maternal & neonatal
- Injuries
- Other

Other NCD
NCDs result from a combination of physiological and socio-economic factors. Metabolic and physiologic risk factors including hypertension, raised lipids and obesity cause the majority of NCDs. Often, these risk factors result from an unhealthy lifestyle - poor nutrition, limited physical activity, tobacco use and excessive alcohol consumption. Social determinants such as education, employment status, work and living environment and social support networks are often underlying drivers of unhealthy lifestyles (5) (see Figure 2). Worldwide demographic changes such as aging populations and massive urbanization further accelerate the NCD epidemic.

Healthy living saves lives and improves social welfare

According to the World Health Organization (WHO), exercise, a healthy diet, no smoking or alcohol, enough sleep and reduced stress can prevent up to 80% of cardiovascular diseases, and around 40% of cancers (9). Healthy living can also reverse chronic conditions like type 2 diabetes (10).

Moreover, the benefits of healthy living extend beyond the individual to society as a whole. A population with increasing healthy life years, and with compression of morbidity to the end of life, improves social welfare. It reduces inequality and increases individual contributions to society. For example, the Dutch Bureau for Economic Policy Analysis concluded that a healthier lifestyle has a net positive effect on government-income per individual of 0,1% due to longer life expectancy, rising to 1,4% if this extra time is spent learning and working (11). The WHO analyzed the costs and benefits of preventive (lifestyle) interventions and defined a set of ‘best buy’ interventions. The WHO’s report demonstrated that for every US dollar spent to address NCDs, such as increasing taxes on tobacco and alcohol, there is a societal return on investment of at least seven US dollars in work performance and increased life span (12).

Poverty and NCDs are also closely linked. Poor people are at a greater risk of exposure to both unhealthy products and unhealthy environments. Over 80% of all NCD-related deaths occur in low- and middle-income countries (7,8). Even in high-income countries, NCDs have a greater impact on people from lower socio-economic classes.
Healthy living to address NCDs and achieve universal health coverage

Worldwide there is a movement towards universal health coverage (UHC), which means that people receive the healthcare services they need without financial hardship. However, UHC will never be achieved if the growing NCD burden is not addressed. Even in high-income countries that have achieved UHC, healthcare costs continue to rise, as does the pressure on national budgets. This pressure is mainly due to the rise in chronic conditions, the majority of which are NCDs. The only way forward for health systems worldwide is prevention. A healthier lifestyle can prevent individuals from becoming patients. Lifestyle as medicine and better management of chronic conditions like hypertension and diabetes prevents complications. Both have large individual and societal benefits. Substantial investment in prevention is the only way UHC can be sustainably financed.

Lifestyle change: difficult and beyond individual choice

Though healthy living has clear benefits, it is difficult to change individual behavior. People make many decisions automatically with a bias towards easy actions that provide instant gratification. They take the elevator instead of the stairs and prefer convenient and tasty processed food with excess salt, sugar and fat to healthy, home-cooked meals. Especially when faced with decision fatigue and high stress levels, the easier choice often determines the outcome of a decision process (14).

In addition, many health determinants are beyond individual choice. An individual’s health status is in part determined by what happens when he or she is in the womb and during childhood. For example, babies of women with malnutrition during pregnancy have a higher risk of obesity and other chronic illnesses such as cardiovascular disease, cancers and mental health issues later in life (15,16). Childhood obesity is often the result of parental choice. In adulthood, many poor people live under conditions in which healthy living is not an option. Healthy food, especially fruits and vegetables, continues to increase in price and in “food deserts”, it is not even available (17). Conversely, unhealthy processed food prices have decreased in recent years (18).
To be widely adopted, healthy living needs to become the easiest, most attractive and most affordable option. This requires governments, employers and the private sector to contribute to changing the environments in which we live and work. It also requires the health sector, both providers and payers, to support individuals and communities in leading healthier lives.

Currently, incentives for all parties are such that preserving the status quo is more beneficial. For governments, measures affecting consumers’ free choice and market regulation are sensitive, even if the health benefits are obvious. Returns on investment are long term and politicians often need quick wins, due to short-term election cycles. Most health systems are designed with a focus on illness treatment versus prevention due to “fee-for-service” reimbursement systems. For healthcare providers, treatment of patients with medication is often more lucrative than coaching people towards a healthier lifestyle. Insurers focus on measures that can cut healthcare costs in the short term. And the food industry profits by marketing unhealthy products (see Box 1).
The role of the food industry: creating a world of temptation

The food industry has built its business model around unhealthy processed foods. Products with excessive sugar, salt and unsaturated fat are great moneymakers. They are cheap to produce, tasty, can be preserved for a long time, and trigger the human brain to crave more. Research and Development departments hire the best nutritional scientists to find the “Bliss point”, the right mix of sugar, salt and saturated fat that increases taste and consumer cravings (19). The Access to Nutrition Index 2018 classified only 32% of the product portfolios of the 20 largest food and beverage manufacturers as healthy. Only two companies generate more than 50% of their sales from healthy products (20).

Because unhealthy products are such good business, the industry spends massive amounts of money using behavioral science to market those products. They are experts in triggering the human tendency of instant gratification to make us buy and consume more, all for the sake of increasing profits. Processed foods seduce the time-pressed consumer with convenience. Candy, soda and chips are available on every street corner. Cartoon figures are used to entice children, advertising sugar-saturated cereals and fruit juices as “healthy breakfast” options. Supermarkets use nudging techniques to seduce people to buy more, a strategy that unconsciously influences behavior and decision making. The food industry’s latest strategies include sophisticated online and social media marketing techniques, mainly targeted at young people, or neuromarketing that uses neuroscience to trigger subconscious, emotional arousal (21).

Besides influencing individuals, the industry also has a very powerful lobby to oppose regulation. They employ strategies parallel to those of the tobacco industry: question the science that shows your products are harmful, even when you know they are, emphasize personal responsibility and fund health research (22,23). And, like the tobacco industry, companies that produce unhealthy products, such as fast food and soft drinks, are investing heavily in developing countries where regulation and public awareness is weaker. For example, Yum! Brands, owner of KFC, Taco Bell and Pizza Hut, derives 60% of its profit from the developing world (23).
Why the time is right to make a change

While the importance of healthy living is not a new concept, large-scale investments in healthy living have not yet been made. However, due to several societal trends and technological developments, we believe that now is the right time to make the shift. Public opinion is changing. Social impact investment is on the rise. And, the mobile and technological revolution enables new models for healthcare delivery and financing that were previously not possible.

Public opinion is changing

While it was completely normal to smoke during a flight 20 years ago, smoking is now banned on most (if not all) airlines and from public places in many countries. Increasing public awareness about the importance of a healthy lifestyle and changing social norms are important drivers for change. They increase the demand for healthy products, thereby creating new business opportunities. Although price levels for healthy products and services mainly target the higher socio-economic classes, changing public opinion also increases and encourages the acceptability of government interventions that benefit the lower socio-economic classes. For example, Amsterdam’s city council started the Amsterdam Health Weight Program to fight the prevalence of childhood obesity, particularly in the city’s lower socio-economic population. By utilizing interventions specifically targeted at this segment of Amsterdam’s population, since the program’s inception the prevalence of childhood obesity among children with a low or very low socio-economic status has dropped 11% and 9% respectively (see Box 4) (24).
Social impact investment gains ground

In parallel to changing public opinion about health, an increasing number of investors and businesses are looking into ways to align their business interests with social impact (25). The Access to Nutrition Index (ATNI), for example, rates food and beverage companies based on how they address dietary issues such as obesity and malnutrition. The ATNI is used by a growing number of investment funds to evaluate responsible investments. Pressure exerted by investors can push the large industry players towards making and selling healthier products. Within the healthcare industry, social impact thinking is reflected in the value-based health care movement, which prioritizes patient health outcomes over volume in healthcare delivery and financing (26). As more health systems move towards outcome-based payment models, the risk of investment in prevention decreases, including investment in social determinants of health such as working and living conditions.

The mobile revolution enables inclusive, low cost personalized services

Previously unreachable segments of the population are now accessible at very low costs via the ubiquity of the mobile phone. The mobile revolution and the data generated through digitalization created unprecedented opportunities for health management. Behavioral data can be used to test the efficacy of certain technologies, and to offer personalized services. For example, US-based Omada Health has digitalized large parts of the evidence-based Diabetes Prevention Program. The program delivers personalized advice and utilizes online peer groups. A three year evaluation demonstrated long-term reduction in participants’ body weight and HbA1c (27). Health-tech company Lark showed that weight loss achieved through the use of an artificial intelligence-based health coach was comparable to in-person lifestyle interventions (28). With mobile technology, people can access support 24 hours a day, not just during a live coaching session.

Big data generated through digitalization enable new models for healthcare delivery and financing

Digitalization of processes in healthcare and general daily living produces a large amount of analyzable data, which makes it easier to monitor behavior, risk factors, care costs and health outcomes of populations at scale and at low costs. Analysis of large datasets can predict who gets ill, when it happens and what disease a person will get, allowing for population risk assessment and targeted prevention. This information is essential to lower the risk for providers and payers to engage in population health management and population health financing.
The way forward: a multisectoral approach

The combined impact of evolving societal trends and mobile technology can influence the key players, who can then effect change in healthcare delivery and financing. The NCD epidemic is a societal problem too large for individual parties to address. Thus, the only way forward is a joint effort of all stakeholders: governments, the healthcare sector, private sector players such as the food industry, and communities and individuals. Together they can change the focus of healthcare systems from treatment to prevention and transform our default lifestyle to healthier living.

Governments should invest in social determinants of health and take intersectoral action, a “health in all policies” approach, and lower the investment risk in prevention for other stakeholders. For example, taxation of unhealthy products incentivizes the industry to change product portfolios and impacts individual purchasing behavior, as demonstrated by tobacco and sugar taxes (29). Subsidies or high-risk social impact capital can help to lower the investment risk in health for private sector “early movers” who want to develop business models around healthy living. On a health system level, population health goals should be aligned with incentives of patients, providers and payers. This includes a move away from fee-for-service models towards population health financing in which healthcare providers are rewarded for keeping the full population healthy. It also includes the development of shared value insurance models, in which individuals and groups are rewarded for healthy behavior (see Box 2).
Vitality Shared Value Insurance: a business model for health

Shared value insurance begins with the notion that insurers can gain competitive advantage by addressing societal needs. When smallholder farmers obtain crop insurance, for example, they plant riskier but more valuable crops, increase their incomes, and are able to send their children to school (30). South Africa’s health insurer Discovery Health is famous for its shared value health insurance model Vitality. The Vitality program is grounded in behavioral economics to support, guide and incentivize individuals to improve their health (31). The wellness program rewards its members for healthy behavior such as physical activity and healthy food purchases. For example, customers earn points by logging their workouts with wearable fitness devices or by going to the gym. Healthy food in partner supermarkets is discounted and rewarded with points. Points can be used for insurance premium discounts, or for food and beverage purchases, gifts, online shopping and holidays.

Shared value health insurance allows for the dynamic pricing of risk over time based on people’s engagement in their health. Benefits are shared between the insurer (more profits), policyholders (greater health and financial rewards) and society (a healthier, more productive workforce). The Vitality model was established over 25 years ago and started with health insurance alone. Now the Vitality Group also uses the model for other insurance products such as life insurance. Technology is used to track behavior, health data and for reward processing. The program’s dataset consists of over 30 million life years of data on correlations between incentives, behavior change and risk. These data feed into a dynamic pricing engine and are used to continuously test what works best to achieve health impact (31). Although there is likely some adverse selection in the people who participate in the Vitality program (many participants are likely already interested in healthier living), key achievements so far include 14% lower hospitalization costs among engaged Vitality members, increased longevity of up to 8 years longer than the rest of the insured population and higher engagement in healthy behavior after joining the program.
Starting bottom-up with a new community-based insurance model

Building on this forward momentum for change, we believe the time is right to develop and test “bottom-up” initiatives while at the same time lobbying for institutional change. Although national government involvement is crucial for long-term success, top-down regulation on a national level is complex and highly political. Thus, starting with a few frontrunners that take the lead, catalyze change and lower the risk of investment for the others is the most realistic approach. Local governments together with insurers are best positioned to take this role and test innovative community-based insurance models that aim for improved population health outcomes.

Local governments are needed for a community-based approach that is broader than just healthcare delivery and addresses social determinants of health. In addition, local governments often bear a substantial part of the long-term costs of illness. For insurers, the benefits of investment in prevention depends on the system they operate in. In systems with a large private market with true competition between insurers, such as South Africa or the US, offering services to support healthy living can create value for their members while at the same time controlling costs. In public and social insurance systems and systems with risk equalization, there is no true competition and insurers are less sensitive to financial incentives. However, social and public insurers have a social mandate and addressing their intrinsic motivation to keep their members healthy can be an even stronger driver for change, as long as it does not substantially increase their costs. We believe social and (semi)-public insurers can and will be motivated to become frontrunners if there is a strong theoretical and fact-based argument behind the implementation of a new model.

We propose a new insurance model that: (1) makes healthcare delivery more effective by focusing on self-management of chronic illnesses and on population health; (2) has a “front-end” decentralized community-based approach including healthy living incentives for individuals and communities; and (3) has a centralized “back-end” with large risk and data pools to “predict, personalize and prevent”. Such a model would need the core elements discussed in the following sections of this paper.

PREVENTION-ORIENTED HEALTHCARE DELIVERY

Self-management of chronic conditions
Preventing complications in people with chronic conditions is a critical starting point. Self-management of chronic conditions, like hypertension and diabetes, with a strong focus on lifestyle as medicine can improve health and lower costs. The Netherlands’ Reverse Diabetes program showed that 25% of the participants were able to completely reverse their condition by healthier living within 6 months and no longer require medication. 68% reported a decrease in medical scale, meaning they went from relying on insulin to oral medication only or from relying on multiple oral medication to only one oral drug (32). In hypertension patients, a combination of self-management and behavioral support improves blood pressure control (33). Mobile technology lowers the cost and increases the efficiency of daily support for people with chronic conditions. These cost savings can then be invested in prevention initiatives for the overall population.

Population health financing and multidisciplinary community health centers
Population health financing is a reimbursement model that aligns provider and payer incentives to improve population health outcomes. Rather than the traditional fee-for-service model, under this model the more providers proactively invest in prevention, the higher their potential earnings are as they either make more profit directly (see Oak Street Health model, Box 3) or receive a bonus from the payer if they keep the population healthy.

At the same time, payers can save money on expensive treatments, which they can reinvest in providers and prevention. Thus, by sharing the risk of their target population’s care costs and the benefits of prevention (including reducing long-term care costs), payers and providers are incentivized to proactively keep populations healthy.

Oak Street Health is a US-based primary care organization emphasizing illness prevention by addressing social determinants of health (see Box 3). They are paid by insurers using a population health financing approach in which they get a capitated fee and assume the full financial risk of their target population’s care, including second and tertiary care. Under this model, providers are incentivized to prevent illness-related costs and reduce hospitalizations.
[A/B] Prevention-oriented healthcare: focus on self-management of chronic conditions and healthy living with a move from fee-for-service to population-based financing.

[C] Sharing benefits and building healthy communities: reward individuals and communities for healthy behavior.

[D] A back-end with a central data pool for risk sharing, data-driven learning, "predict, personalize, prevent", with data rights owned by the communities.
Oak Street Health – Value based primary care

Oak Street Health clinics serve areas where patients have trouble finding physicians. They target the elderly and poor population who are either Medicare or Medicaid eligible. Oak Street takes financial responsibility for all costs, including all primary, specialty, acute and post-acute care. They invest most of their funding in primary care services that have a positive health return. Care delivery at Oak Street involves multidisciplinary care teams with an integral, community-based approach to health. Oak Street clinics do not have traditional waiting rooms. Instead, they have open-access community rooms, where people can go to socialize even when they don’t have an appointment with a doctor. They can have tea or coffee and use the free Wi-Fi. Oak Street also organizes community events such as senior dating. They have a strong data-driven approach. Patients are stratified based on their risk of illness, which determines the frequency of primary care visits and allocation of care management resources. The healthiest 30% of patients are scheduled less frequently while high-risk patients are seen every month even if they do not have complaints. Oak Street showed that with a focus on preventative health in primary care they could reduce the hospital admission rate, which was 43% lower than the Chicago benchmark (35).
Because primary care physicians are typically trusted and well connected in communities, primary care centers seem to be best positioned to lead the delivery of population health management services. However, many primary care doctors are still reactive rather than proactive in their service delivery. They see patients when they have complaints instead of proactively managing their target population’s health. In a model where insurers aim to improve the health status of communities, primary care providers should take a more proactive approach with multidisciplinary teams that also focus on non-healthcare related determinants of health. A recent study screened patients in primary healthcare centers for unmet social needs and linked those who reported a need with community resources. The study demonstrated that addressing unmet needs such as food, shelter and medication can lead to more positive health outcomes (36).

**INCENTIVIZE PEOPLE AND COMMUNITIES TO LIVE HEALTHIER LIVES**

**Share benefits, not just risk**

In most health systems with a well-developed insurance market, people share the financial risk of falling ill through risk pools. But they do not share the benefits of illness prevention. What if we could move to a model in which people also share the benefits of healthy living? For example, an insurance model where participants are rewarded for healthy behavior individually and as a group. Rewards can range from “fun things” like loyalty points for consumer goods or a neighborhood playground, to discounted health insurance premiums. This approach has two advantages. First, the long-term benefits of improved health and longevity are experienced in the present through a short-term reward. Second, by rewarding groups for risk reduction through healthy behavior, it is possible to utilize group dynamics such as peer pressure and social norms. Rewards can be given based on relative improvements to account for differences in socio-economic groups. Health insurer Discovery’s Vitality program has elements of this approach. In the Vitality model, individuals (not groups) are rewarded for healthy behavior through loyalty points. Engaged Vitality members generate lower hospitalization costs and live longer than the unengaged, insured population (see Box 2)(36).

**A community-based approach to increase ownership**

We believe that a community-based approach has the greatest likelihood of success to engage and reward groups for healthy living. Insurance started with private, community-based cooperatives that shared risks that were unbearable for an individual. Over the years, these smaller scale insurance models merged for efficiency reasons: to increase the risk pool and to lower transaction costs. However, in current insurance models, people do not feel attached to the risk pool they are part of. They do not know the other people in the risk pool and, although ultimately the behavior of the group determines the groups costs and thus the insurance premium, the scale of (sub-)national risk pools is too large to “feel” a connection between group behavior and costs.

With mobile technology, it is now possible to decentralize again while keeping transaction costs low. It also allows large-scale risk pools with small scale, community-based service delivery and community-based benefit sharing. A model that unites individuals on a community level can potentially increase ownership and trust. The behavior of the community group can potentially be measured and benchmarked against other communities to create competition. Communities can create local solutions, appoint local ambassadors and use community channels such as schools and sports clubs to engage people. For example, the Healthy Weight program in Amsterdam successfully uses the community approach to reduce childhood obesity by changing the surrounding community environment (see Box 4). Our proposed new health insurance model could build on these kinds of programs by fostering community involvement and creating benefits for communities that do well.

**Changing the community environment**

A community that is rewarded for healthy living can also drive change for other local stakeholders. It can pressure local retailers such as supermarkets to change their inventory. It can increase demand for health and wellness services and products, thereby opening the market to new businesses. Public funds can be used to make these services affordable for the lower socio-economic classes. Examples include healthy pre-cooked meal delivery services, or school meals with income-based co-payments. Partnerships between local insurance companies and local governments can address social determinants of health. The Kaiser Permanente Community Health Initiatives (CHI) are an example of this. CHI includes large-scale community programs centered on healthy living, such as increasing the availability of healthier food and the creation of cycling lanes (see Box 5).
In Amsterdam, 1 in 5 children are overweight or obese. The Amsterdam city council started the Amsterdam Healthy Weight Program with the aim of having all children at a healthy weight by 2033. The Healthy Weight Program is a long-term, integrated approach to tackle childhood weight issues and obesity that has broad political support. The program focuses on education, combined with community-based interventions involving schools and local supermarkets. City planners are involved to explore the design of a ‘healthy city’ that encourages inhabitants to run and play on a daily basis. In the program’s first three years, childhood overweight and obesity in the low socio-economic demographic decreased from 22% to 19% (24).
Kaiser’s Community Health Initiatives

Kaiser Permanente is the largest managed care organization in the US, serving more than 12 million members. As both insurer and provider, investment in prevention has a clear financial benefit. They are well known for their population health approach with a strong emphasis on disease prevention and self-management of chronic conditions such as hypertension and diabetes. Kaiser uses population risk stratification tools and focuses on technology and data to improve their services. They have a population financing structure with capitated budgets for all members, doctors are salaried. In the last decade, they have broadened their mission from improving the health of their members to also improving the health of the communities they serve. Kaiser’s Community Health Initiatives (CHI) focus on practice, policy, and environmental changes aimed at the promotion of Healthy Eating Active Living (HEAL) in low-income communities. Examples of interventions and policy programs include improvements in the quality of food banks, school meals, ensuring food stores in deprived areas are stocked with affordable fresh fruits and vegetables, hunger screening in health facilities, safe cycling and walking routes for children and access to green spaces. A large-scale evaluation reported that 51% of the 730 implemented strategies resulted in either policy or environmental changes. Of the 143 individual strategies that were evaluated, 98 (69%) showed positive results related to promoting individual behavior change. Population level behavioral change was mainly shown in strong interventions (so called high dose interventions) and in the youth, with positive population change in six of nine cases (66%) versus seven of 87 (8%) for lower-dose strategies. Investment from Kaiser Permanente in all the regional CHI exceeded $60 million and reached a total of 715,000 people (37). Kaiser also recently launched a 200 million USD impact investment fund to addresses housing stability and homelessness.
What about the ethics?

Critics will say that models using big data to predict who gets ill risks abuse of data. Privacy concerns are legitimate and in the insurance context, adverse selection in which high risk patients are excluded from care is a real threat. In addition, there is a question of how much information about risk and health status a person can, and wants to cope with, especially with full genome sequencing becoming more widely available. People must have the right “not to know” and also have the freedom to not engage in prevention. Securing solidarity between groups, including groups of people who do not want to engage in healthy living, will become more challenging with more transparency on who is at risk. We argue that these concerns are valid and warrant a careful approach in testing new models. We also argue that these concerns are not a reason not to act. Solidarity within health systems is already under pressure because of rising costs; tech giants like Amazon and Google already use big data on healthcare and behavior. Thus, government regulation is essential for setting the rules of the game and securing individuals’ protection.

BUNDLE COMMUNITIES IN RISK AND DATA POOLS

A core element of insurance is a large risk pool. This is the reason health systems have national or subnational risk pools. Our model proposes a decentralized “front-end” wherein smaller community groups work together on their members’ health. At the “back-end”, all groups are bundled to share the financial risk of falling ill. Bundling of all the communities should also ensure system inclusivity and equitable premiums. Community data can be pooled anonymously to assess a population’s risk of disease or to predict who is at risk for getting ill at an individual level. This will allow targeted resourcing for prevention to those who need it most. Data can be used to continuously track health outcomes and learn what works best to keep people healthy. It can help to leverage the intrinsic motivation of providers and payers to provide and purchase the best services. However, as the final section of this paper addresses, ethical considerations and government regulation will be essential for this model to work.

Data pools can also be used to create additional value for the communities. In the US, there is a billion dollar healthcare data market in which anonymized data from electronic medical records, insurers, pharmacies, social media and consumer health products are sold to third parties, usually without any value going back to the consumer (38). Publicly owned data mutuals or data commons have been proposed as a way to keep data ownership, and its value, in the community. This could ensure that the community decides what data is shared with whom, such as with a trusted not-for-profit third party that sells customized datasets to other parties, and with whom the community agrees that the data’s value will flow back to the community as well as to the third party. Using this data, pharmaceutical companies could gain insight in real-world drug-effectiveness, and/or insurers could ask a third party to do risk predictions for their members that are shared with providers for preventative interventions or get access to aggregated data on health outcomes, healthcare quality etc. This way the insurer does not necessarily have access to individual-based medical data but can still engage in targeted prevention and data-driven learning to improve services for their members.
Conclusion

Prevention of disease through healthy living is the only way forward for health systems worldwide. Looking at the social determinants of health, it is clear that a healthy life is beyond individual choice. Therefore, (sub)national governments should adopt a “health-in-all-policies” approach that protects individuals from unhealthy environments. Governments are also crucial in ensuring privacy and equity in healthcare access in the data era. Healthcare payers should take the lead in the development of new insurance models in which population health goals become a priority in the delivery and financing of healthcare. Under these insurance models, communities and individuals could share the benefits of healthy living and large and data pools could be used to control costs, improve care and “predict, personalize and prevent”. With changing public opinions about health, a shift to more responsible entrepreneurship, the mobile revolution and the enormous amounts of data that come with it, now is the time to make the shift and to foster communities that truly invest in their own health.

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Rewarding prevention, reducing risk

References


The Joep Lange Institute aims to make health markets work for the poor. Digital technology can revolutionize healthcare, connecting those who are currently excluded to better quality care and more equitable finance. We identify and accelerate innovative (digital) solutions and advocate to scale those that have real impact. Ultimately, we believe that the question isn’t whether or not inclusive healthcare is possible. It’s whether there is enough political will to make it happen.

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