

The Great Challenges Program

**AN OVERVIEW OF
PROPOSED 2012
CHALLENGES**

Challenges

The
Great

Introducing The Great Challenges Program at **TEDMED**2012



What are the Great Challenges of health and medicine?

They are complex, persistent problems that have medical and non-medical causes...impact millions of lives...and affect the well-being of all of America.

There may be hundreds of Great Challenges. With help from leading health institutes, think tanks, foundations and individual experts, TEDMED has identified 50 of the most pressing.

Each year at our annual gathering, the TEDMED community will vote to determine which 20 Great Challenges will be TEDMED's focus for the coming year. The TEDMED community will then engage in a year-long series of lively national discussions designed to generate broad, multi-disciplinary understanding of each Challenge that can set the stage for truly effective action.

This booklet provides an overview of our 50 proposed Challenges for the community's consideration in 2012. Many of these Challenges will be revisited and reconsidered in future years.

TEDMED thanks the Robert Wood Johnson Foundation for its sponsorship of the Great Challenges Program.

Sincerely,

A handwritten signature in blue ink, appearing to read "Jay Walker". The signature is fluid and cursive, with a long horizontal stroke extending to the left.

Jay Walker
Curator, TEDMED



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SECTION 1
 Why America
 needs a
 Great Challenges
 Program



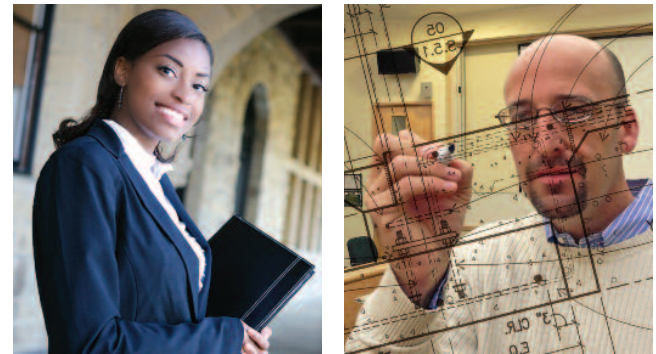
Why America needs a Great Challenges Program

America has enjoyed a century of scientific breakthroughs in health and medicine by applying more and more specialized approaches.

But today we live in a complex socio-economic-cultural-technological “ecosystem” that surprises us every day with new emergent properties. This surprising complexity extends to the fields of health and medicine. That’s why many of the Great Challenges we face today in health and medicine are fundamentally different from those of the past.

From childhood obesity to the “caregiver crisis” and barriers to medical innovation, our most puzzling problems have many simultaneous causes. Their contributing factors cut across every sector of society. With this in mind, America needs to move beyond specialization. If we want to tackle these new challenges successfully, we must see them as a whole.

A broadly inclusive, multi-disciplinary understanding of the Great Challenges of health and medicine is absolutely essential if we’re going to create the healthiest possible future for 300 million Americans—and the world.



Why TEDMED is hosting the Great Challenges Program

The TEDMED community includes thoughtful individuals and institutions from the fields of medicine, the sciences, technology, government, business, education, the law, religion, the armed forces, media and the arts. This extraordinarily diverse community gathers at The John F. Kennedy Center for the Performing Arts in Washington, DC and—via remote simulcast—in big-screen auditoriums across America in medical schools, research institutions, teaching hospitals, universities, foundations, non-profits, health-focused corporations and state and federal agencies.

TEDMED is hosting the Great Challenges Program because our community is dedicated to sharing cutting-edge ideas and unusual perspectives. TEDMED believes that before America can effectively address its most complex and persistent health issues, we need a broader, richer understanding of these Challenges.

Accordingly, the mission of the Great Challenges Program is not to “solve” America’s most confounding health and wellness problems. Instead, we seek to provide America and the world with a comprehensive view, incorporating multiple perspectives, that can set the stage for truly effective action.



SECTION 2

How the Great
Challenges
Program Works



The Great Challenges Program engages the entire TEDMED community

Delegates vote at the TEDMED gathering.

During the annual TEDMED gathering in Washington, DC, 50 knowledgeable individuals will serve as Advocates for 50 different proposed Great Challenges. These Challenge Advocates will circulate among the 1,200 onsite TEDMED Delegates at the Kennedy Center, explaining the nature and importance of their individual proposed Challenge and “lobbying” for Delegate votes.

Simultaneously, at hundreds of auditoriums nationwide, as many as 50,000 offsite Delegates will engage the TEDMED stage program via a remote simulcast called TEDMEDLive. Onsite and offsite Delegates will be able to learn more about the 50 proposed Great Challenges by using a free mobile app called TEDMED Connect.

Voting for the 20 final Great Challenges will take place throughout the TEDMED gathering. Delegates will use TEDMED Connect to cast their votes. The app will also allow Delegates to get more information on each Challenge and to see running vote totals on the Great Challenges website.



The Great Challenges Program fosters year-long dialog and invites everyone to take part.

In the months following each year’s TEDMED gathering, the Great Challenges Program will generate a lively national dialog on the 20 Challenges chosen by the TEDMED community.

Many of our Champions, the outstanding leaders from a variety of fields who graced the TEDMED stage, will be interviewed in-studio for their thoughts on specific Great Challenges. The result will be a series of TV program style segments called “Perspectives.” These segments will be shared with the world for free at TEDMED.com. TEDMED community members will be able to post their own thoughts and feedback to each Perspective.

TEDMED.com will also host and facilitate a series of 40 webinars throughout the coming year, two on each of the 20 Great Challenges. These webinars will consist of roundtable panel discussions, each featuring four to six qualified individuals who engage in multi-disciplinary dialog.

The webinars will be permanently available to the world, for free, at www.TEDMED.com. Here again, TEDMED community members will be invited to take part in the discussion by posting their own comments and feedback.



SECTION 3

TEDMED 2012:
50 Proposed
Great Challenges
of Health and
Medicine

1

Achieving More Medical Innovation, More Affordably

New medical tests, treatments and devices are often very expensive when first introduced. Eventually, market forces bring the prices down. However, since most patients don't pay for healthcare out of their own pockets, they don't want to wait.

Patients disproportionately demand the latest, best medical products and services immediately—often, even if the demanded good is of marginal relevance to their condition. Leaving out questions of universal access and rationing, how can we make more medical innovations more affordable, more quickly, for more people?

Which proven strategies from Silicon Valley, the Moon landings, the Manhattan Project or other successful models could be applied effectively to achieving faster, yet less costly innovation in health and medicine?

2

Coming to Terms with the Obesity Crisis (Adults)

In 40 years, the U.S. population has gone from 40% overweight to 68% overweight. Half of American adults are dangerously obese, leading to many chronic conditions and deadly (and expensive) diseases.

Scientists and doctors generally agree the obesity epidemic is behavioral in nature (not the result of a pathogen).

The key drivers are our choices of food and activity, but multiple additional factors also play a role—from family dynamics to cultural roots, stress, economics, lifestyle and many more. Unlike smoking or drinking, eating is not optional. How can Americans move to healthier lifestyles—or, if we can't change these trends, how can the healthcare system cope with the results?



Making Prevention Popular and Profitable

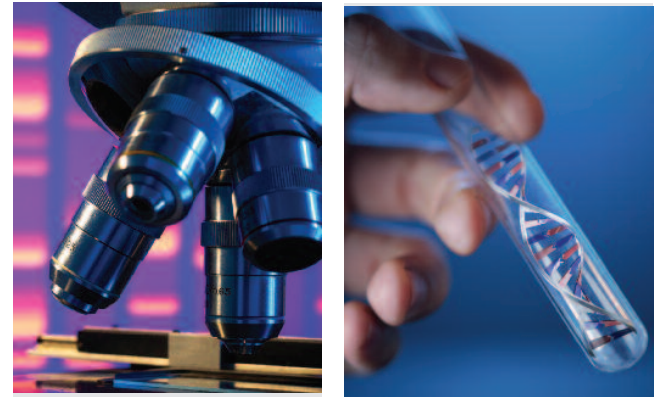
America spends \$2 trillion a year on healthcare—mostly treating people after they become sick. How can we unlock prevention as a trillion-dollar business in America so we spend less on “sick care” and get Americans to “buy” healthy lifestyles?

Shaping the Future of Personalized Medicine

Science is harvesting more and more information about the human population, and individual patients specifically. Medicine is understanding the roles of genomics and the environment in a patient's medical history. Yet translating this data to practice has proved difficult. The fundamental question for a physician is still: will this treatment work for my patient?

How can the wealth of medical information be factored into patient medical records and into everyday care—more quickly, more usefully and more completely?

How can insights into individual patients—gleaned from *in vitro* and *in vivo* diagnostic tests—allow us to zero in on targeted therapies?



5

Achieving Medical Privacy and Transparency

Electronic health records will soon make it possible to aggregate data from the health records of virtually every American, to create a complete data set about many diseases and conditions for the first time. Yet there are many obstacles: regulatory, technological and political, as well as public attitudes and beliefs about medical privacy (mistaken or not).

How can we enable society to make “big science” medical progress by aggregating “big data,” yet also provide reasonable assurance that individuals’ personal medical records will not be released to anyone without the patient’s permission?

What areas of U.S. health and medicine would be better off with more transparency, and what areas would be better off with less transparency (i.e., when less transparency means more privacy)? Should every study be published or should some studies be withheld?

6

Addressing the Doctor/Nurse Shortage

America is losing its base of primary care physicians and nurses—not from lack of demand or need, but because financial incentives, limited numbers of medical and nursing schools, their admissions policies, social prestige, government regulation and other factors arguably work against certain specialties and professions.

What elements should be built into the U.S. healthcare system to help ensure that the supply of medical personnel (all types) meets demand/need?



Medical Innovation: Balancing Risk and Rewards

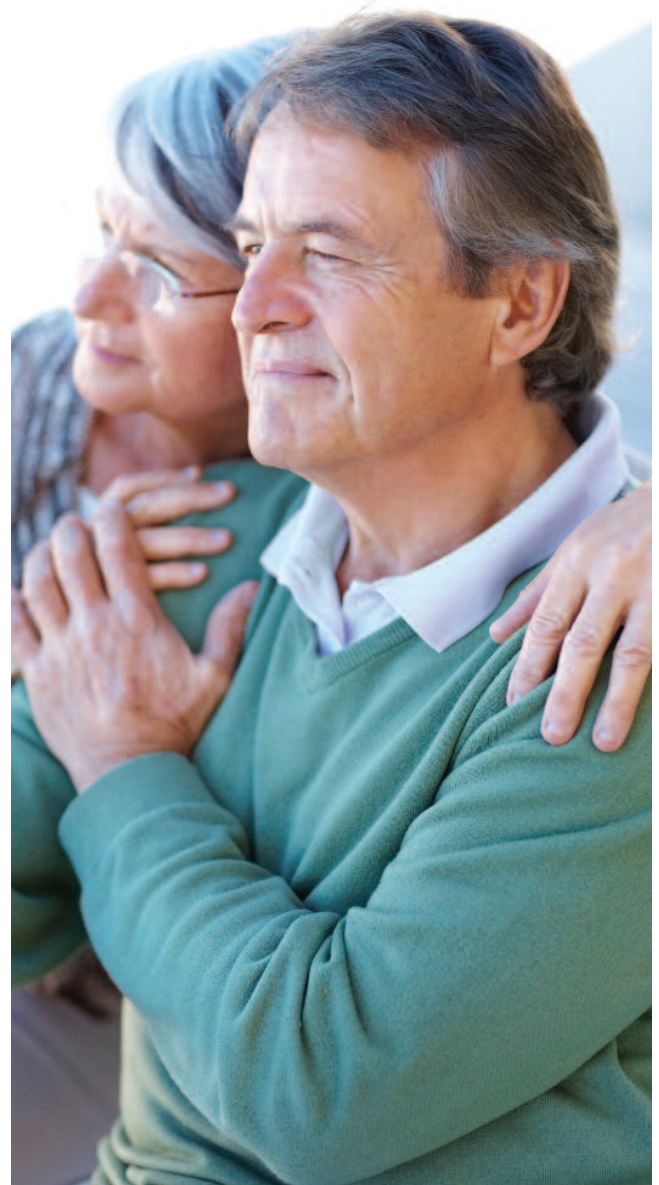
All vaccines kill some of the people who are inoculated. Society has recognized it is a price worth paying to accept these low but real costs to achieve the benefit of vaccinating much of the population. But the FDA is asked to approve drugs and devices in an environment that carries legal and political risk if any fatalities result.

How do we give the FDA the ability to take a prudent risk by approving a drug that successfully serves a particular cohort, but may have undesirable side effects for some?

Managing Chronic Diseases Better

Chronic disease is America's leading cause of premature death and disability. Heart disease, cancer, respiratory illness and certain others are among the most costly and common health problems, yet they are often among the most easily prevented and controlled.

How can we innovate better approaches to help patients prevent, manage and treat their chronic diseases and achieve better outcomes?



Coming to Grips with End-of-Life Care

Modern medicine has extended the life expectancies of many terminally ill Americans. In turn, prolonging lives can mean incurring more intensive care and the associated costs.

In 2010, Medicare paid \$55 billion for doctor and hospital bills during the last two months of patients' lives. Quality end-of-life care requires balancing the input of doctors, families and patients themselves. And making crucial end-of-life decisions can take physical and emotional tolls on patients and their loved ones.

How should we help people manage end-of-life care choices to maximize individual well-being and minimize social cost?

Preparing for the Dementia Tsunami

It's no secret that mental health tends to decline as we age (Alzheimer's, dementia, etc). Some is natural cognitive decline; some is disease with severe cognitive impairment due to diseases associated almost entirely with aging.

By 2020 there will be 43 million Americans over 65 and 15 million over 85 (double the figures of 1980). Almost certainly, we are facing an unprecedented number of mentally impaired citizens.

Hope for cures is not a strategy. What should we be doing to prepare to meet the needs of tens of millions of mentally impaired older citizens?



Making “Informed Choice” Work Better

The U.S. healthcare system increasingly assumes an active, aware, health-literate patient is capable of making “informed choices” about treatment options.

For almost every disease and condition, there are different therapies to choose from, each with its own benefits and trade-offs, and frequently with variable nuances according to individual patient conditions. Doctors are not trained in how to communicate effectively to patients, and patients are not educated to make a scientific evaluation of complex choices—yet we ask doctors to explain and patients to choose more and more.

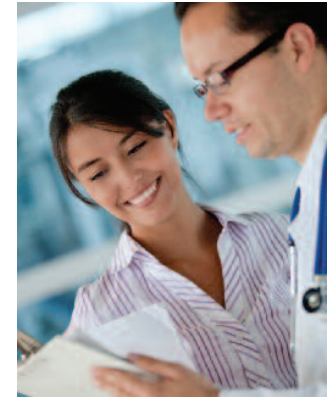
With no right or wrong answers available, and with quality of life being a significant factor in many cases, how can doctors and patients work together more successfully to achieve better outcomes?



Faster Adoption of Best Practices

Medical progress only occasionally depends on double blind, placebo-controlled studies. Most healthcare improvements come through small, incremental steps across tens of thousands of surgeries, procedures and protocols—from a better way to take a temperature to a better stitch or a better way to ask a question in the ER. But most of these improvements are not captured, shared and replicated across the healthcare system.

Even when best practices are identified and publicized, many providers seem slow to adopt them. What can we do to capture millions of improvements per year and make best practices available to benefit many more providers and patients?



Setting R&D Priorities and Allocating Resources

Churchill described democracy as “the worst form of government, except for all the others.” Our current system of allocating government funds for medical R&D priorities is strongly influenced by political factors at times, and is constantly criticized from all sides.

Are there better systems to rank medical R&D priorities and if so, what are they and how can they be integrated into America’s public allocation system?

Reforming the Medical Ecosystem

The U.S. healthcare system has evolved over the past century into a complex, interdependent organism where simple inputs are not predictive of simple, linear outputs.

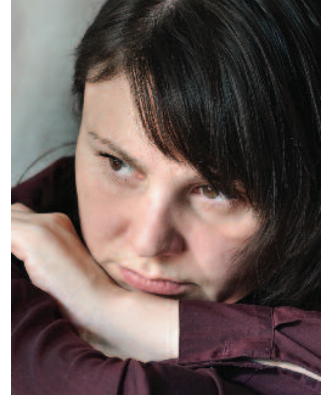
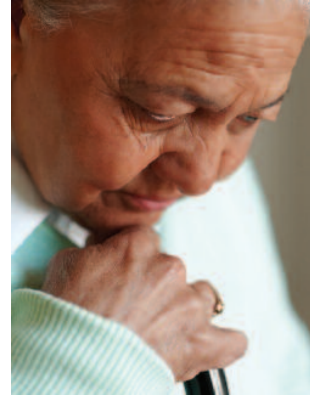
Faced with similarly complex public systems in the past, America sometimes wipes the slate clean and replaces a hodgepodge of systems with a centralized, simple, single system (the interstate railroad and highway systems, the Bell telephone monopoly on long distance calling, etc.).

In medicine, what are the pros and cons of “wiping the slate clean” in hopes of creating a clean, simple system, vs. reforming and preserving the existing system?

Addressing the Impact of Poverty on Health

The 46 million Americans who live in poverty are measurably less healthy and have far worse health outcomes than the rest of the population. Less certain is how much of these negative health outcomes are directly caused by poverty and how much is caused by other factors.

America would be better off if everyone were healthy, regardless of income—especially since government programs cover some of these costs directly. How should we think about the role and impact of poverty within the larger question of health?



Addressing Healthcare Costs and Payment Systems

The U.S. remains locked in a decades-long controversy over how citizens should pay for healthcare, what healthcare should cost, who should pay, how much, and what incentives, if any, should be “paid” to patients who stay well (or try to).

How do we foster a thoughtful, civil dialog that focuses on science and the public interest, in a way that has a reasonable chance of eventually creating an approach we can all support?



Balancing Private Rights and the Public Good

Some individual behaviors can lead to long-term healthcare problems—the costs of which are borne by society. For this reason, behaviors once considered to be individual liberties are increasingly discouraged in the greater interests of the community.

For example, riding a motorcycle today without a helmet on public highways is legal in only two U.S. states. Likewise, if you abuse or don't feed your children, the state will take them away.

Today, whether the issue is drinking while pregnant or secondhand smoke, America seems increasingly willing to intervene as science demonstrates more and more threats to children's lives, development or well-being.

What is the extent of the nation's interest, responsibility and rightful authority to intervene so as to incentivize (or compel) individuals to live a healthy lifestyle? How should we rethink the state's role in the protection of children in the context of the family unit?

Improving Medical Communication

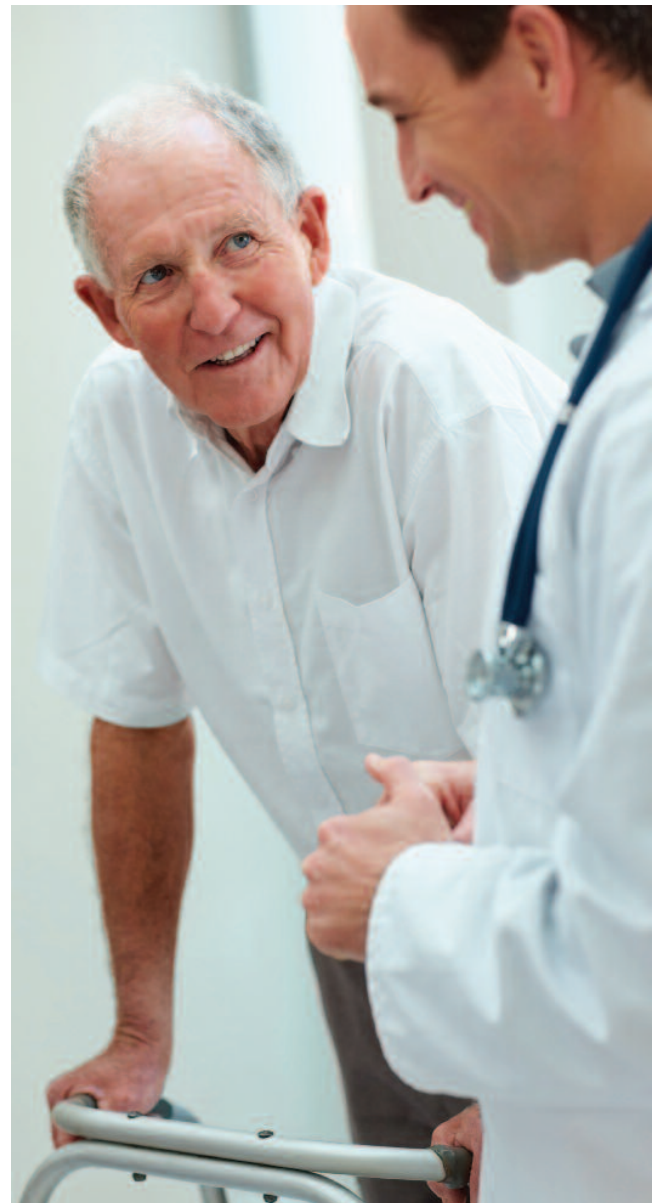
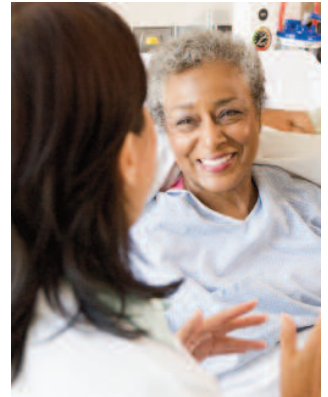
Physicians are not typically trained in interpersonal communications and are not rewarded based on their communication skills.

Equally important, patients are often intimidated when talking to doctors and often feel they don't have a receptive audience, especially when doctors are rushed. What can be done about this on both sides of the challenge (patients and doctors)—including possible initiatives in areas ranging from education to technology, to possible changes in the physical workspace? How do we make this issue a priority?

The Role of the Patient

Patient empowerment can be a double-edged sword. From hospitals and insurance companies to doctors and patients themselves, much of the medical system increasingly treats patients as “customers” or “consumers,” terms that some people love and others hate. If patients are customers, does that mean “the customer is king” or does it mean “buyer beware”—or both?

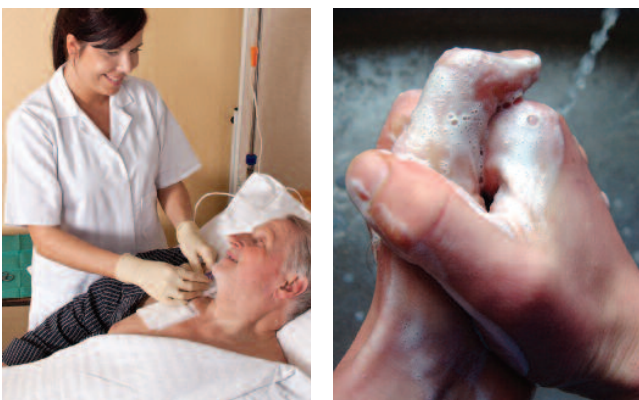
If patients retain their traditional role, does that mean doctors are in charge? Are both in charge somehow? How is “power” shared among all stakeholders and how should it be shared?



Eliminating Hospital-Acquired Infections

In the U.S. alone, HAIs directly cause a reported 50,000 to 200,000 deaths each year, depending on how they're counted. However, a few hospitals have measurably reduced infection rates to nearly zero through a combination of dozens of different small changes, rigorous measurement and intense feedback.

Why aren't more hospitals adopting this proven, successful model and what steps could help spread the use of these "best practices"?



Improving Evidence Reliability and Validity

Each year, at least 20% of authors of scientific papers disagree with their co-authors about conclusions so strongly that they remove their names. In the past decade, scientists have increasingly found that original study results cannot be reproduced by subsequent experiments.

Doctors base billions of life-or-death decisions on the best available science, but confidence in research quality and result reproducibility is steadily eroding—not just among the public but also among professionals. What innovations could counter this trend?

Inventing Wellness Programs that Work

From corporate America to the U.S. government and its armed forces, small businesses and even religious and educational institutions, many large-scale organizations have a strong economic motive to encourage their workforces to adopt healthier lifestyles (worker wellness means lower insurance rates for employers).

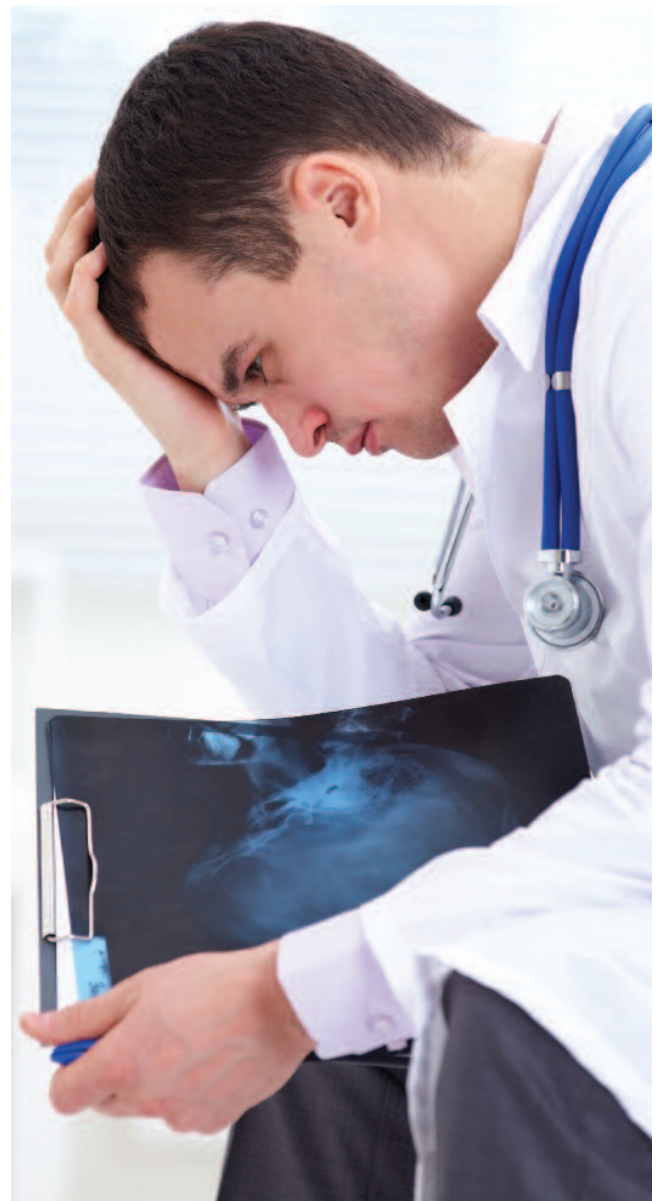
Many organizations have discovered elements that support worker wellness to some degree, but no group has put it all together for large scale, long-term success. Compounding this problem is a disagreement over the relative responsibility of the individual versus the responsibility of the organization for employee health (with issues ranging from workplace environment and stress, to on-the-job support for healthy lifestyles—or the lack of such support).

What kinds of innovation should we be thinking about and how can we encourage them to come to market as soon as possible?

Eliminating Medical Errors

All humans make mistakes. Doctors and nurses are human; they make mistakes. All systems are imperfect. Medical professionals use systems.

Errors by medical professionals and systems are inevitable (unfortunately, they send 2.4 million patients to hospitals yearly and are directly linked to 200,000 annual fatalities). Regardless of methods used to detect, prove and compensate for medical errors, how much better can we do in reducing or eliminating medical errors and what areas should we focus on to get the best improvements?



Food and Technology: Balancing the Trade-offs

Since the Green Revolution of the 1970s doubled crop yields, we have been committed to feeding an ever-growing planet with finite arable land and water resources. Science and technology have been increasingly applied to food, pesticides, modified organisms, etc. to the point where we can now feed seven billion people.

However, there has been some backlash over the potential for hidden long-term impact and unexpected, emergent properties. How do we identify and maximize the potential benefits (and minimize potential drawbacks) to this global homogenization of our food supply?



Integrating Effective Complementary and Alternative Medicine

Government surveys show 38% of Americans use complementary and alternative medicine (CAM), from acupuncture to vitamins and supplements, along with traditional medicine.

How can patients and medical professionals evaluate CAM practices, and integrate the best of them in a way that assists traditional treatment?

Reducing Childhood Obesity

The challenge of childhood obesity is significantly different, some argue, from the challenge of adult obesity. Children don't have the power over their lives, decisions, and lifestyles that adults have (parents and adults make many decisions for them and have the power to enforce certain behaviors).

Social institutions have more impact on kids than on adults (like church, YMCA, and especially school—including school lunch programs, mandatory gym classes, possible nutritional education, etc.).

Finally, there is the fact that kids are less set in their ways than adults, so it's easier to change their behaviors and teach them new concepts. The number of obese children has just passed 20% and continues to grow. What is the full range of underlying causes for this trend and which combined causes are chiefly responsible?

The Overlooked Cancer Cohort

Certain age cohorts tend to be under-represented in medical research, funding, diagnosis and publishing. For example, the Adolescent/Young Adult sector (ages 15-39) is significantly often under-represented—especially in cancer.

This occurs even though AYA cancers have certain unique properties—and despite the disparity in AYA five-year survival rates compared to other populations. How do we ensure that this cohort receives attention, resources and energy commensurate with the breadth and gravity of the problem?



Reducing School Violence and Bullying

Bullying and school violence remain critical issues affecting the health and well-being of young Americans. Research shows that one in five teens said they had been bullied at one time, and nearly 160,000 kids miss school each day because they are too afraid to go.

There are long-term emotional and physical health consequences of violence among school-aged children. What is the full range of causes behind this growing problem, and what intervention or prevention strategies might be most successful?



Achieving Better Mental Health Literacy and Treatment

America's mental health challenge has many dimensions. There are competing fiscal priorities, conflicting public attitudes and questions of knowledge and training (even among some medical professionals).

Mental health issues such as addiction, stress and depression are often considered secondary issues and are widely misunderstood, as are bipolar disorder, schizophrenia and others. How did this come to happen... can and should it be changed...and what would happen if mental health treatment were integrated with primary care?

Taking Our Medicine

According to the U.S. Department of Health & Human Services' Office of Behavioral and Social Science Research, on average 50% of patients don't take their prescription medications as prescribed. Various studies report that patients cite literally hundreds of different reasons for non-adherence.

Some studies appear to contradict widespread assumptions about this problem. For example, adherence does not necessarily go up as price goes down or even when medications are free; nor do "reminder systems" typically generate sustained improvements in adherence rates.

What actual factors cause, and contribute to, prescription drug non-adherence becoming an epidemic in the U.S.? What strategies (including behavior modification, professional-patient interaction, technology, home or work environmental changes, and others) show the most promise to increase adherence, especially by addressing many patients' reasons simultaneously?



Choosing Better Foods

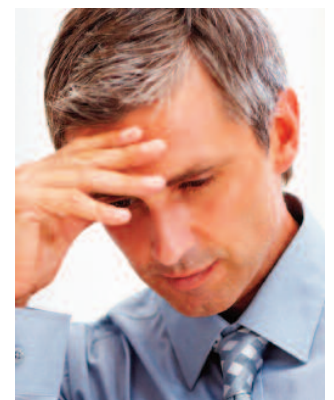
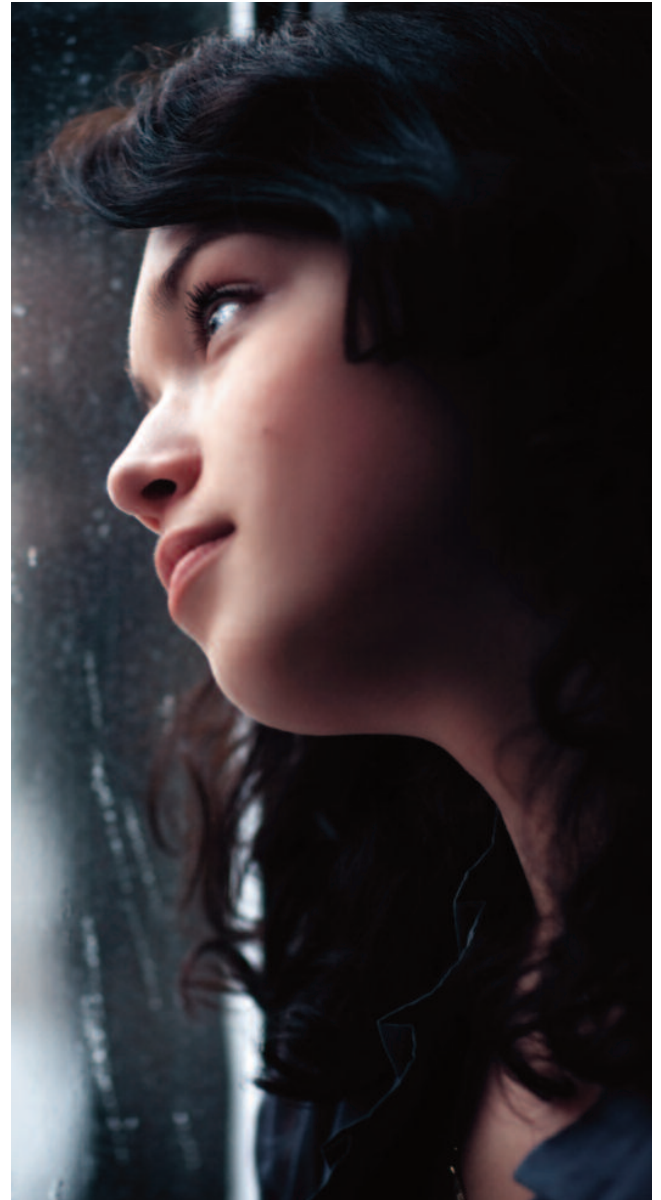
There is a general consensus that the food choices Americans are making in aggregate are driving current and long-term health problems.

As we sort out the major and minor contributors to the unhealthy ways that Americans eat, where should we focus our energies to stop and reverse this trend?

Coping with the Impact of Stress

Tranquilizers, antidepressants, sleeping pills and anti-anxiety medications exceed 33% of annual U.S. prescriptions. Unhealthy levels of stress are far more prevalent than most people recognize, and stress contributes to many other mental and physical health problems.

Given that stress is difficult to quantify and varies from person to person, how do we better understand the role of stress in the larger picture of health?



Promoting Active Lifestyles

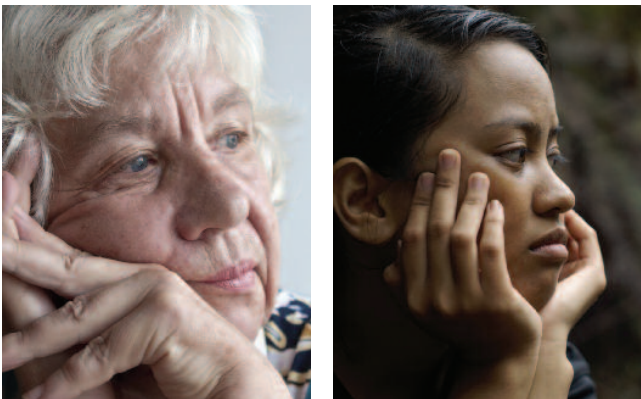
There is no disagreement that people who are more active have dramatically better overall health. Yet today's average American adult burns 500 fewer calories per day than farmers and factory workers did 100 years ago—while consuming many more calories.

How do we invent broadly popular and achievable ways for people to become more active, so as to replace those “lost” energy expenditures?

The Caregiver Crisis

An estimated 44 million people provide full-time or part-time care for the elderly, disabled veterans, new mothers, the injured, the sick, etc.—a problem that eventually impacts everyone in the nation.

Caregivers have few tools, few support systems and receive minimal, if any, training for these responsibilities. What innovations can we develop specifically to support the caregiver community?



The Epidemic of Isolation and Loneliness

As many as 40 million Americans (12% of the adult population) are socially isolated. The impact of isolation and loneliness contributes to a wide range of diseases and undesirable health behaviors, from depression to self-neglect and many, many more.

How can we develop a more complete picture of isolation and loneliness; and, given the success of social networks and the near-universal use of mobile phones today, what innovations (both short-term and long-term) can effectively combat this problem?

The Epidemic of Unwed Teen Motherhood

Despite hitting 40-year lows, America's rate of teen pregnancy remains the highest in the industrialized world (7%). Compared to mothers 20 and older, teenaged mothers receive less prenatal care, get less nutrition, have more preterm babies, and have babies with low birth weight.

What is the full range of factors contributing to teen motherhood, and what price does society pay (in terms of health, education, the economy, culture, etc.) for "children having children?"

Despite the costs to society, little innovation has been offered to reverse the trend. What innovations might work?



Practicing Multi-Cultural Medicine

Good communication between speakers of different languages is already a difficult challenge in U.S. medicine, but it's expected to grow tougher still as minority populations grow and the number of languages spoken in every American city and region also increases—and the number of cultures served by the U.S. healthcare system grows.

How can the healthcare system and providers cope successfully with an ever more multi-lingual, multi-cultural society? For example, could cellphones serve as universal translators? How can medical professionals cope with the sometimes very different value systems of various cultures?

Innovating for Special Needs Patients and Children

The explosion of special needs diagnoses and populations are placing demands on public school and healthcare systems that are unlikely to be met, given limited public financial resources.

What innovative opportunities and alternatives to the current model are the most promising?



Addressing Whole-Patient Care

Regardless of patients' roles in their own healthcare, there will always be questions about how doctors should approach medical problems—by focusing more on the symptoms and disease, or on the patient who has them?

Most doctors specialize due to a variety of pressures and incentives from economic and technological to social, professional and educational. The number of medical specialists (and specialties) continues to grow while the number of primary care physicians continues to shrink.

In the process, the goal of fitting all these specialties together for effective whole-patient care becomes ever more elusive. How can we treat the whole patient rather than the disease?

Reducing Domestic Violence

Recent research suggests that sexual violence is far more pervasive in the U.S. than generally understood. There are key tactics in place designed to address the problem—including efforts to raise awareness, training for healthcare providers, workplace prevention programs and more.

Nevertheless, domestic violence rates continue to increase. What factors are contributing to the rise in domestic violence and what strategies can be implemented to reverse this trend?

Publishing and Accessing Medical Data

In the digital age, publishing models have been revolutionized. Music, news, information and entertainment are increasingly open-source, free access.

This same model is also being promoted for health and medicine. Yet some believe that traditional publishing has served us well by providing information to those who need it, in a way that is economically sustainable. What are the pros and cons of both systems...and how can we preserve the best of both?

Elevating Dental Health

The U.S. is facing a dental crisis. Dental disease is rampant; 50 million Americans don't have access to dental care; and our already-small oral health workforce is shrinking.

Tooth decay is the most common chronic illness in the U.S.—it is five times more prevalent than asthma—yet, it is largely preventable. Why don't Americans prioritize dental care, and how can we reverse these negative trends?



Inventing Better Metrics

Blood pressure, temperature, body weight, life expectancy and other traditional metrics are arguably outdated in the light of today's science.

Perhaps it's not enough to periodically change diagnostics at the margins, for example by decreeing "new normal" ranges of readings for traditional metrics.

What brand-new metrics can and should replace them as our standard gauges of patient health? Should science focus instead on such factors as body fat percentage, blood oxygen levels, healing speed—or how often patients laugh per day? What other new metrics might be superior or preferable to today's standard metrics?

Deciding What's Normal

The Diagnostic and Statistical Manual (DSM) is about to be revised for the fifth time, redefining what counts as mental pathology and what doesn't.

There's already controversy about making it harder to diagnose Asperger's syndrome, and making it easier to count grief as a treatable "condition." But it's not only psychiatry where the boundaries of normal will shift. They also shift with blood pressure levels and cholesterol levels, to name several major parameters. (The metrics themselves don't change—just the ranges that are considered "normal" readings.)

These definitions have huge implications in terms of insurance coverage and reimbursement, pharmaceutical development, and our very sense of ourselves. Who should decide what's "normal"—and how?



Avoiding Over-Diagnosis; Making Trade-offs in Screening & Testing

Commercial factors play a role in medical providers' tendencies to label a growing number of conditions, experiences and patterns as a "syndrome" or a "disease" that lead to a medical remedy or response.

What are the pros and cons of "medicalizing" more and more conditions...and what kind of oversight might be advisable? In addition, it has become a universal belief that early detection and screening is always better. However, with some chronic long-term conditions, early detection screening sometimes has drawbacks as well as benefits, especially if therapeutic treatments can cause harm, trigger mental distress or are ineffective. For example, in a medical first, delayed screening for prostate and breast cancers have recently been recommended.

What should be our strategy for screening and detection for a broad range of diseases and chronic diseases, taking into account the interests of society and the individual as well as cost/value considerations? (Also, what about the ability of affluent consumers to purchase tests that might not be paid for by other segments of society?)

Childhood Diagnoses: Getting It Right

Even for medical professionals, mental and emotional health diagnosis is often a judgment call. With young children we've learned that early intervention leads to better outcomes.

Yet there are also costs and risks of labeling a child as having a mental or emotional disorder. Among them: prescribing unneeded meds, harming self-esteem or triggering social stigma. Teachers from kindergarten through high school are the front lines of diagnosis, yet they are not currently trained as mental health experts.

When diagnosis is slippery and the front lines are already over-burdened with teaching tasks, how can society do a better job of identifying which children are truly at risk and getting appropriate help for them?

Preparing for “Unimaginable” Possibilities

We are rapidly heading toward the age of the Bionic Human, where prostheses and replacement organs are likely to be superior to the “original equipment.”

Meanwhile, medicine is reaching the point where we'll soon have “designer babies” that have been genetically or otherwise modified to select for certain traits. In the next 20-50 years, it is likely that we will be able to identify and treat the disorder that we today call addiction.

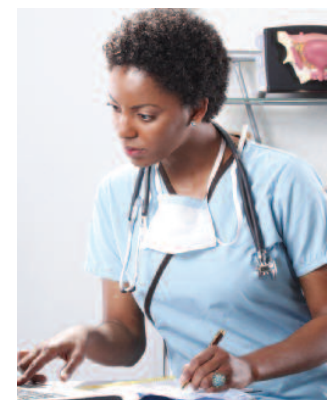
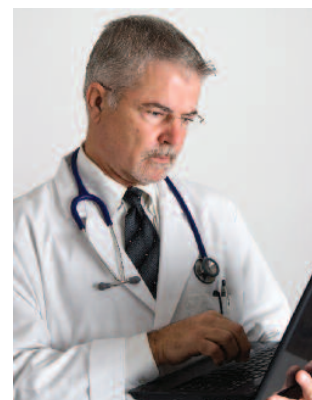
As a government and as a society, should we ever reach into the human brain and “turn off” potential mental disorders, or will we declare human personality and freedom sacrosanct—despite the risk that some percentage of the population will do harm to themselves and others?

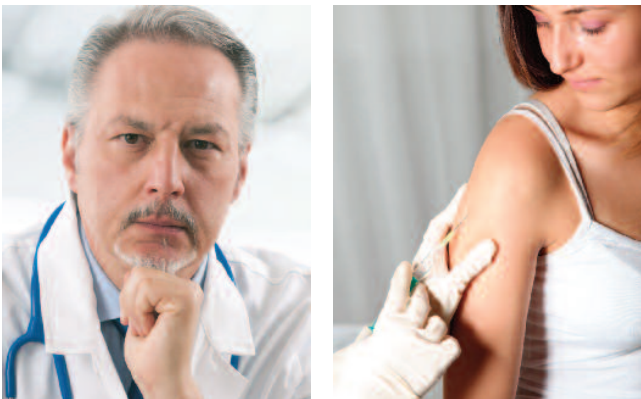
What should we be doing to prepare for the age of “planned evolution,” and are there enhancements and modifications (such as gender pre-determination) that we want to specifically prohibit as a matter of national policy? What does society gain or lose by permitting or prohibiting certain bionic enhancements?

Dealing with Medical Information Overload

The number of medical studies published each decade continues to soar, and the rate at which total medical information is growing is expanding rapidly.

Some people believe the growth of available information will lead to significant opportunities. Others fear it will bury us in “noise,” especially in cases where the data collected is not numerical. What steps should we be taking to maximize the opportunities of the information explosion and minimize the risks of overload?





Addressing the Malpractice Dilemma

Even if the rate of medical errors were reduced by 99% tomorrow, we would still have an ongoing need to prove liability and to compensate victims for the remaining cases where patients are wrongfully harmed.

America's vaccination system compensates people quickly and efficiently for harm done by vaccines—without compromising the effectiveness of the regimen, and without imposing unaffordable costs on society or vaccine providers.

The airline industry likewise compensates families for accident victims, without unduly burdening aviation with “defensive flying.” Surely the medical industry can compensate victims without triggering crippling costs for defensive medicine and “jackpot” jury rewards. How?

Developing Tomorrow's Medical Leaders

While no shortage of medical specialists is likely to occur, there is a broad consensus that America suffers from a critical shortage of multi-disciplinary leaders in health and medicine.

How do we attract, encourage, train, grow and reward the multi-disciplinary leaders who can show the way to the transformation in health and medicine that we all seem to want?



What are the Great Challenges of Health and Medicine?

Obesity.

Prescription non-adherence.

The impact of stress.

**The shortage of nurses and
primary care physicians.**

Barriers to medical innovation.

These are only a few of the Great Challenges that impact millions of people. Their multi-disciplinary causes and cascading effects cut across our entire society.

As research uncovers ever-growing complexities, we realize there is no quick fix for the Great Challenges of health and medicine. We see how genetics and human behavior interact with economics, technology and culture. How pathogens and the environment converge.

Often, our actions don't generate the results we expected, or had hoped to achieve. Due to their complex and surprising nature, the Great Challenges of health and medicine benefit from broad, multi-dimensional understanding that blends medical and non-medical perspectives.

The Great Challenges Program is sponsored by the Robert Wood Johnson Foundation.

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The future of health & medicine is here. **TEDMED**