



# Stanford Clinical Excellence Research Center

 **Stanford  
Medicine** **+** **you** **=** **less U.S. spending  
with better outcomes**

We are all part of the equation.



## **Finding solutions to the nation's health care affordability crisis**

“Federal creditworthiness and therefore American prosperity now hinge on continuously attaining better health with less health spending. By rapidly mobilizing emerging science and technology from engineering, management, and medicine, the Clinical Excellence Research Center will enable Stanford to help solve a seemingly intractable human challenge.”

– *Arnold Milstein, MD, MPH*

## **RISE IN HEALTH CARE COSTS**

threaten our economy and societal harmony. Inefficiently delivered health care is estimated to comprise at least 20 percent of U.S. health spending. The upward spending trajectory jeopardizes federal creditworthiness and chokes off investment in our children's education and basic research. It also slowly strangles job and wage growth and weakens the global competitiveness of U.S. employers.

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Life expectancy at birth in the United States is 78 years, placing it last compared to Western Europe, Canada, and Australia. Our health system is ranked 37th by the World Health Organization. Tens of thousands of Americans are killed or disabled each year because of flawed care delivery and public health methods. Patients receive treatment that is consistent with evidence-based clinical guidelines in only 55 percent of cases.

The U.S. health system could move from a global laggard to a global leader in health gain per dollar invested.

The Stanford Clinical Excellence Research Center (CERC) was established in 2011 expressly for this purpose. Led by Arnold Milstein, MD, MPH, the center's director and a professor of medicine with deep experience in large-scale clinical value improvement, CERC brings together the brightest minds in medicine, engineering, and

management science to re-engineer facets of care that consume the greatest share of U.S. health spending.

Stanford is the first major research university to invest in the science of producing better patient-defined health outcomes with less money. As a leader in transforming electrical engineering research into high value information and communications technologies, the university can now play a catalytic role in the science of efficient health care delivery.

**Arnold Milstein, MD, MPH**, changed the ground rules of the U.S. health care system, blazing a trail now being followed by Medicare and private payers. As a health care strategy advisor to the Business Roundtable, he organized the Leapfrog Group, which materially improved hospital patient safety and reduced costly treatment complications. As a congressional advisor on Medicare, he was the first to propose subsequently enacted legislation that stopped payments to hospitals for the costs of treating preventable treatment complications, such as patient falls or certain worker-spread infections. Stanford University recruited Milstein to establish its Clinical Excellence Research Center (CERC).

Milstein founded CERC after two decades of improving health care value in the private sector and advising the White House and Congress. He is now training America's next generation of health care innovators to replace the wasteful and dangerous inefficiencies that ail the U.S. health care system.

"We recruit exceptional postdoctoral and masters-level research fellows and expose them to global exemplars of value in health care. Mentored by diverse Stanford faculty and Silicon Valley innovators, they formulate better and more affordable health care delivery methods. We then partner with diverse U.S. health care organizations to demonstrate that they perform as designed," says Milstein.





# Mobilizing engineering, management, and medicine

**THE HEART AND SOUL** of the CERC innovation process are the talented and committed “young inventors” who are recruited each year to design and help launch multi-state pilot tests of innovative care delivery methods. Design teams – physicians who have

both lower per capita health spending and improve patient outcomes.

To structure their search for solutions, CERC adapted the Stanford Biodesign innovation design method, which has already spawned more than 300 patents and 24 medical tech-

from onset to end game, and then design, demonstrate, and disseminate less costly care delivery methods that better serve patients’ currently unmet needs.

To discern unmet needs of clinicians and patients, CERC fellows have local access to

## **The method teaches young inventors to identify the most pressing unmet patient and clinician needs.**

completed residency training and postdoctoral fellows from engineering and management sciences – use disciplined innovation development methods to design and demonstrate “double win” care delivery innovations that

nology companies. The method teaches young inventors to identify the most pressing unmet patient and clinician needs.

CERC fellows analyze categories of health care that consume the most U.S. health spending

the two hospitals at Stanford, two county health systems, and a network of more than 20 affiliated community clinics, which also function as an adjacent clinical “lab” for early innovation concept testing. To quantify results, CERC relies on its national network of distinguished health systems willing to pilot test the new care models.

Propelled by new incentives for value from public and private health care purchasers, the Stanford Clinical Excellence Research Center aims to serve as a national value-of-care accelerator of more affordable paths to the best possible clinical outcomes.

*CERC’s three elements are illustrated at right:*



CERC seeks more affordable ways to deliver better care for conditions consuming the bulk of the country's health care spending. This includes helping patients to avoid selecting risky, debilitating treatments unlikely to confer health benefit, as well as delivering valuable treatments more safely and affordably.

## Clinical Excellence Research Center (CERC) Another Stanford National "Accelerator"

# 1

### design

Diverse teams design and forecast gains from innovative care models.

# 2

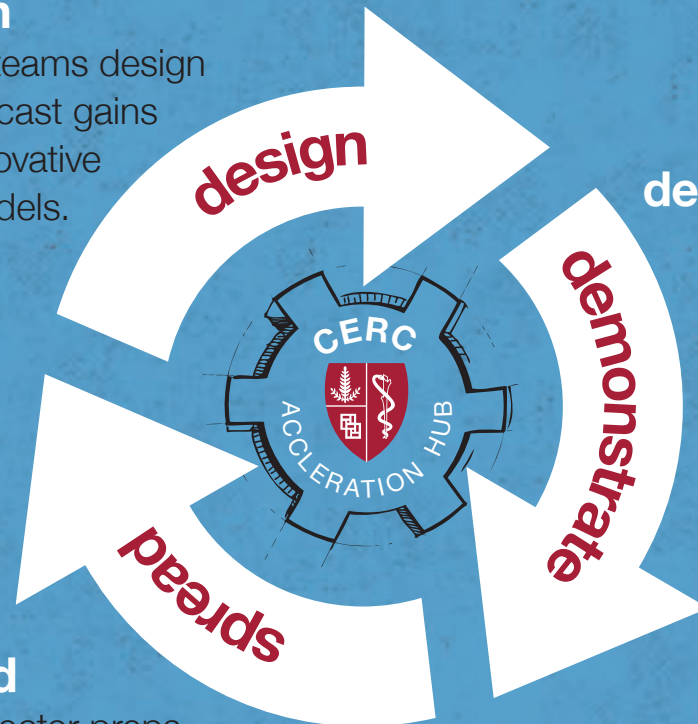
### demonstrate

Diverse health systems implement and refine innovative care models.

# 3

### spread

Private sector preps innovative care models for national spread by clinicians and payers.



# Breakthroughs in health care innovation

## WHAT IS A HIGH-VALUE care method?

In the 1950s, an imaginative Baltimore physician named Peter Safar realized that outcomes might improve if hospitals consolidated the location of their sickest patients and used a dedicated clinical team to increase the frequency of patient observation and treatment adjustments. His intensive care unit or “ICU” model spread to many aspects of hospital care. Hospital mortal-

## A FRESHLY TESTED new care model:

the ambulatory care ICU. People living at home with chronic conditions – such as diabetes, depression, asthma, heart disease, hypertension, and those taking five or more prescription medications – often find themselves bouncing between specialists, who typically lack a full picture of their patients’ health needs, too often leading to preventable visits to emergency rooms.

medical regimens, and an unrushed opportunity to clarify their health goals with an accountable team of physicians, nurses, nutritionists, behavioral coaches, and physical therapists.

The model was first tested by Dr. Milstein among medically fragile Boeing employees in Seattle and hotel employees in Atlantic City, resulting in improved workers’ health and satisfaction with their health care, an 18-20 percent

**Dr. Milstein originated the concept of the “ambulatory care intensive care unit,” or A-ICU, designed to provide intensified support to patients with chronic conditions like diabetes, depression, asthma, hypertension, and heart disease in order to prevent dangerous health crises and services offering no likely health gain.**

ity and complications for the sickest patients plunged. Successful variations on his innovative care method theme include neonatal ICUs, burn units, and surgical ICUs.

The concept of redesigning care delivery methods to rapidly meet the needs of distinct patient groups has inspired other health care improvements, though much more slowly than emerging science and technology would allow.

As an influential national leader in clinical care innovation, Dr. Milstein originated the concept of the “ambulatory care intensive care unit,” or A-ICU, designed to provide intensified support to such patients in order to prevent dangerous health crises and services offering no likely health gain. This innovative care method or “model” provides a locus of care coordination where patients also receive training in self-management skills, close monitoring of their

estimated reduction in annual total per person health care spending and a 56 percent reduction in employee sick days. The A-ICU model is now spreading through eight states, including Stanford’s Coordinated Care Clinic. Medicare recently awarded \$19 million to scale the A-ICU innovation, both to improve care and relieve pressure on federal and state budgets. In addition, both the Veterans Administration and Kaiser are planning to implement the A-ICU model.





Husband-and-wife team Alan Glaseroff, MD (left), and Ann Lindsay, MD (middle), lead the **Stanford Coordinated Care Clinic** aimed at better managing chronic conditions and reducing costs. Based on the A-ICU care model designed by Dr. Arnold Milstein, the Stanford clinic currently serves Stanford employees and their family members, and will soon expand its services to other high-risk patients.

## Our first wave of care innovation design targets

**THE FIRST CLASS** of CERC research fellows and faculty mentors entered in August of 2011. They targeted better care models for chronic kidney disease, colon cancer risk, poor prognosis cancer, and severe obesity. Their solutions are now being implemented by medical leaders, providers, insurers, and policy makers in multiple states. Within 12 months, they will be up and running in over 15 test sites.

**Chronic Kidney Disease:** Only 1 percent of patients with chronic kidney disease will require dialysis, yet many receive this costly and often disabling treatment well before it is needed. CERC's model of care slows deterioration of kidney function and connects patients with the least debilitating and least costly forms of renal replacement if replacement becomes necessary.

**Colon Cancer Screening:** CERC's screening model increases the total percentage of people appropriately screened for colorectal cancer by using a combined low-cost immunochemical test and best-practice colonoscopy screening program.

**Poor Prognosis Cancer:** Half a million people are diagnosed with incurable cancer each year. Too many current treatments lead to unnecessary pain and suffering, and unwarranted low yield treatments that can inadvertently shorten life. CERC's redesign of advanced cancer care places the patient at the center, assuring physician respect for well-informed patients' preferences, immediate relief from pain and nausea, and chemotherapy at home whenever safe.

**Severe Obesity:** CERC's new model reduces co-morbidities that block obesity treatment benefit and provides patients preference-tailored three-year behavior change methods. Integral to the model is a 1:1 tele-mediated relationship with a behavioral coach to sustain weight loss.

**THE SECOND CLASS** of CERC fellows is tackling two new national health system weaknesses: patients at high risk for stroke and adolescents in transition to adulthood with a severe chronic illness.



**Improving Poor Prognosis Cancer Care:** Recent studies show that when cancer patients understand the big picture – treatment side effects, survival odds, and pain-relief options – they select treatments that allow them to live longer and enjoy a better quality of life. CERC's new cancer care model delivers these results and could lower \$174 billion in annual per capita U.S. health spending for these patients by an estimated 30 percent.

## The pivotal role of philanthropy

With your philanthropic support, Stanford's Clinical Excellence Research Center will create a continuous flow of innovations in care delivery that substantially improve the affordability and quality of American health care.

Experienced scientific leadership with a national track record in health care improvement is in place. Your investment will accelerate the work of CERC, and provide what society needs and expects: affordable, high quality health care. To help launch the center and enable it to become financially self-sustaining in less than 10 years, the Sandler Foundation has generously offered a \$15 million challenge gift. Additional gifts of \$30 million from other donors, coupled with programmatic progress, will enable CERC to meet the challenge and provide \$45 million in funding to propel the science of health care value improvement, nationally and globally.

## GIVING OPPORTUNITIES

**Faculty:** To recruit a critical mass of globally distinguished faculty in multiple fields who share a transdisciplinary approach to the problems of affordability and quality in health care. Gifts of \$5 million will support a professor and her or his research staff during CERC's 10-year transition to financial self-sufficiency.

**Fellowships:** To attract the best young minds in medicine, engineering, and management science to the CERC design teams. Gifts of \$2.5 million will support two research fellows and their mentorship during CERC's 10-year transition period.

**Program Support:** To fund research and training, and ensure that CERC fellows and faculty have the resources to design, demonstrate, and spread their innovations to patients and health systems across the nation and eventually around the world.



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