

Work-in-Progress ***Intervention Options for Simulation Scenarios***

The following options are in the current version of the *ReThink Health* simulation model.



Enable healthier behaviors

Promote healthy behavior and help people to stop behaviors that can lead to chronic physical illness—smoking, poor diet, inadequate exercise, alcohol and drug abuse, unprotected sex, etc. (One may choose, for budgetary or equity purposes, to focus this intervention on the disadvantaged only.)

Consequences: Reduces onset of mild and severe chronic physical illness, the likelihood of urgent events (e.g., heart attacks from cigarette smoke), as well as the onset of mental illness associated with drug abuse. Also reduces the need for medications for lifestyle-related disorders including asymptomatic hypertension and high cholesterol.

Time and cost assumptions (modifiable): Risky behavior prevalence declines over time as cessation increases (by a factor of 2.5) and new onset decreases (by 50%). Costs \$100 per capita per year for population engaging in risky behavior.



Reduce environmental hazards

Reduce the fraction of people with significant exposure to environmental hazards and pollutants in their homes, neighborhoods, or workplaces. (One may choose, for budgetary or equity purposes, to focus this intervention on the disadvantaged only.)

Consequences: Reduces onset of mild and severe chronic physical illness (e.g., cardiovascular disease, asthma, cancer, chronic lead poisoning), and the likelihood of injuries (e.g., due to fire, falls, drowning, heat stroke) and other urgent events (e.g., heart or respiratory attacks triggered by air pollution) requiring an ER visit.

Time and cost assumptions (modifiable): Takes an average of 5 years to remediate hazards. Costs \$200 per capita per year for population in hazardous surroundings.



Reduce crime

Reduce the fraction of people who live and work in high crime areas. (One may choose, for budgetary or equity purposes, to focus this intervention on the disadvantaged only.)

Consequences: Reduces the likelihood of injuries requiring an ER visit, and also helps to discourage unhealthy behaviors (physical inactivity, drug abuse, unprotected sex) and encourage healthy ones.

Time and cost assumptions (modifiable): Takes an average of 5 years to reduce crime prevalence. Costs \$200 per capita per year for population in high-crime areas.



Create pathways to advantage

Move a significant portion people from disadvantaged—below twice the federal poverty level—to advantaged. This may be done, for example, through better education, job training, or living wage policies.

Consequences: The advantaged are less likely to engage in unhealthy behavior, or to live in hazardous or high-crime environments, or to develop chronic physical or mental illness, or to be uninsured, or to go to the hospital for non-urgent care; and more likely to engage in self-care and care-seeking activities.

Time and cost assumptions (modifiable): Takes an average of 9 years to move people from disadvantaged to advantaged. Costs \$200 per capita per year for disadvantaged population.



Improve routine preventive and chronic physical illness care

Improve physician compliance with all recommended guidelines for preventive and chronic physical illness care. Preventive care includes screening, immunization, lifestyle counseling, and referral to behavioral and mental health counselors as needed. Implementation may require investment in reminder systems and related training.

Consequences: Reduces death rates and the frequency of acute and urgent episodes among patients with chronic physical illness, and rates of onset of mild and severe chronic physical illness; and increases rates of behavioral reform and mental illness control. These benefits are attained at the cost of additional physician visits and increased use of medications.

Time and cost assumptions (modifiable): Takes average 1 year to implement initiative features, and then average 2 years for improved care to reduce acute and urgent episode rates. Costs \$20,000 per office-based physician as initial investment, then subsequent maintenance investment at rate of 10% per year.



Improve care for chronic mental illness

Help the mentally ill better control their symptoms and live more positively and productively. (One may choose, for budgetary or equity purposes, to focus this intervention on the disadvantaged only.)

Consequences: Reduces urgent psychological visits to the ER, and unhealthy behaviors; and improves routine physical care-seeking and self-care. These benefits are attained at the cost of increased use of medications and additional visits to mental health care professionals.

Time and cost assumptions (modifiable): No delay in implementation. Costs \$800 per capita per year for previously uncontrolled mentally ill population.



Redesign primary care practices for efficiency

Increase the fraction of PCPs whose practices or clinics are streamlined to run as efficiently as possible. This is sometimes referred to as idealized design of clinical office practices (IDCOP). The IDCOP approach comprises a number of techniques for appointment scheduling, staff utilization, and use of information technology. (One may choose, for budgetary purposes, to focus this intervention on Safety Net PCPs only.)

Consequences: Practice redesign helps PCPs better accommodate demand.

Time and cost assumptions (modifiable): Takes average 1 year to implement initiative features. Costs \$20,000 per PCP as initial investment, then subsequent maintenance investment at rate of 10% per year.



Provide adherence support for routine care

Help disadvantaged people who currently have problems with adherence to get regular preventive and chronic care and to follow physician orders for use of medications and other self-care.

Consequences: Improves the extent and effectiveness of preventive and chronic physical illness care for the disadvantaged (with effects as described in the option above), and also reduces the likelihood of hospital readmission.

Time and cost assumptions (modifiable): Takes average 1 year to implement initiative features. Costs \$100 per capita per year for previously non-adherent disadvantaged population.



Prevent hospital-acquired infections

Implement procedural changes in hospitals to reduce the fraction of inpatients that develop an HAI.

Consequences: A lower HAI rate means fewer deaths and fewer extended lengths of stay for inpatients. Although most insurers today reimburse for the additional costs of an HAI, the trend is toward non-reimbursement. Thus, in the near future, a lower HAI rate will improve a hospital's profit margin.

Time and cost assumptions (modifiable): Takes average 1 year to implement initiative features. Costs \$3,000,000 as initial investment, then subsequent maintenance investment at rate of 10% per year.



Recruit primary care providers in private practice

Recruit more private PCPs serving the non-poor (both insured and self-paying) and, to a lesser extent, the insured poor (Medicaid). Some tactics include first-year income guarantees and local PCP residency programs.

Consequences: An expanded supply of private PCPs can better accommodate demand from the non-poor and from the insured poor.

Time and cost assumptions (modifiable): Takes average 2 years for private PCPs to consider options, including recruitment offers and negotiations, and to relocate. Costs \$200,000 per newly arriving PCP including costs of search and subsidy to guarantee minimum PCP income for some time after arrival.



Recruit primary care providers for Safety Net clinics

Recruit more PCPs serving the poor (both insured and uninsured) in Safety Net clinics, including Federally Qualified Health Centers and government grant-supported teaching centers.

Consequences: An expanded supply of Safety Net providers can better accommodate demand from the insured poor and from the uninsured poor.

Time and cost assumptions (modifiable): Takes average 2 years for safety net PCPs to consider options, including recruitment offers and negotiations, and to relocate. Costs \$200,000 per newly arriving PCP including costs of search and subsidy to guarantee minimum PCP income for some time after arrival.



Coordinate health care

Coordinate patient care and provide coaching for patients and physicians to reduce duplicative or unnecessary referrals and admissions and to reduce medication costs. Care coordination requires sophisticated integrated information systems as well as coaching arrangements.

Consequences: Reduces follow-up actions from an initial physician visit that might result in duplicative or unnecessary services—referrals to specialists, ambulatory tests and procedures, hospital admissions—without adversely affecting health outcomes. Also reduces ongoing medication costs by rationalizing use of prescription drugs.

Time and cost assumptions (modifiable): Takes average 1 year to implement initiative features, and then average 1 year for physicians to change their behavior. Costs \$30,000 per office-based physician as initial investment, then subsequent maintenance investment at rate of 10% per year.



Create medical homes

Ensure that more patients go to PCPs, rather than specialists or hospitals, for their routine care and as their first stop for non-urgent episodic care. Medical homes need electronic medical records and perhaps decision-support systems for more effective referrals.

Consequences: Has the potential to reduce the cost of routine visits and non-urgent episodic care and to reduce the number of referrals and admissions generated by non-urgent episodic visits. Also, decision support for PCPs should reduce their susceptibility to the allure of costly new hospital service offerings. However, more patients means more demand on PCPs, creating the possibility (unless averted through other means) of a PCP shortage for some population segments.

Time and cost assumptions (modifiable): Takes average 1 year to implement initiative features. Costs \$20,000 per PCP as initial investment, then subsequent maintenance investment at rate of 10% per year.



Improve hospital efficiency

Make process improvements that reduce the average length of stay for inpatients.

Consequences: Allows for a reduction in beds for a given volume of inpatients, and thereby reduces operating costs and improves hospital profit margin. Could thereby prevent the supply-push response of hospitals facing reduced profits in the face of other initiatives like care coordination, and thus help to ensure health care cost reduction.

Time and cost assumptions (modifiable): Takes average 1 year to implement initiative features. Costs \$5,000,000 as initial investment, then subsequent maintenance investment at rate of 10% per year.



Improve post-discharge care to reduce hospital readmissions

Reduce the risk of hospital readmissions through improved discharge practices, including medication reconciliation and more referral to home health care and skilled nursing facilities for rehabilitation.

Consequences: Reduces hospital utilization and costs, but increases utilization and costs of home health care and nursing facilities.

Time and cost assumptions (modifiable): Takes average 1 year to implement initiative features. Costs \$3,000,000 as initial investment, then subsequent maintenance investment at rate of 10% per year.



Expand the use of hospice care

Increase the fraction of end-of-life patients using hospice services and thereby choosing not to receive other services (e.g., physician, hospital, nursing home) when acute episodes occur.

Consequences: Reduces health care costs.

Time and cost assumptions (modifiable): Takes average 1 year to implement initiative features. Costs \$1.25 per capita per year across entire population.



Establish innovation fund

All of the initiatives on the preceding pages require funding and can only be implemented if an innovation fund is in place. The fund is specified as a given dollar amount per year, starting in a specified year and extending for a specified duration, after which time no new funds are provided. If some of the innovation fund is unused in one year, that remainder rolls over to the next year, and may be used even after the conclusion of new funding.



Capture savings

Capturing savings involves negotiating with payers – commercial, Medicare, and Medicaid – an arrangement in which they calculate healthcare cost savings against appropriate benchmarks and then return to the community some fraction of those savings. These savings may be used to fund the initiatives on the preceding pages, or to share with providers (see below). Like the innovation fund, if some savings are unused in one year, that remainder rolls over to the next year. Captured savings are not segregated from innovation funds; the two are merged as total funds available to the community.



Share captured savings with providers

Some fraction (one fraction for physicians and another fraction for hospitals) of each year's captured savings may be shared with physicians and hospitals to secure their cooperation with community initiatives and to recognize their improved performance as cost-effective providers. Shares to physicians are divided equally among all PCPs and specialists.

Consequences: Distributions from shared savings are intended primarily as a sign of appreciation, to help prevent the “supply-push” responses that might otherwise occur in response to income losses and that could undermine the cost savings that are achieved. The payments do replace some of these income losses, but their effectiveness in suppressing the supply-push response has mostly to do with what sharing these economic dividends represents: namely, that providers are being treated by the community not as adversaries but as partners in transformation.























Expand insurance coverage as a result of Federal mandate

Reduce the fraction of people lacking health insurance. You may do this for the uninsured advantaged population (who would purchase commercial insurance or join insurance exchanges) and/or the uninsured disadvantaged population (who would receive Medicaid coverage.)

Consequences: Having insurance makes people more likely to seek preventive and chronic care, which is good from a health standpoint, but has mixed cost effects (more routine visits, more drugs, fewer acute episodes.) Insurance expansion also takes some of the demand load off of Safety Net PCPs, as the newly insured disadvantaged now have the choice of going to a private PCP; this tends to reduce use of the ER for non-urgent episodes, thereby reducing costs. But at the same time, more of the advantaged can now afford to see specialists, thereby increasing various costs.

Quick Reminder

The table below shows where the direct effects of each intervention concentrate.

Risk	Health	Care	Cost
 Enable healthier behaviors  Reduce environ hazards  Reduce crime  Create pathways to advantage	(affected by Risk & Care)	 Better routine care  Control mental illness  Support adherence  Increase PCP efficiency  Reduce hospital-acquired infections  Recruit PCPs (private)  Recruit PCPs (safety net)	 Coordinate care  Create PCP medical homes*  Better post-discharge care  More hospice use  Increase hospital efficiency*
Initiative Funding			
 Establish an innovation fund (size and duration)	 Capture and reinvest savings (negotiate with payers)	 Share captured savings with providers*	
Non-Local Trends			
 Expand insurance by Federal mandate			

* These interventions have the potential to dampen the “supply-push” backlash of specialists and hospitals responding to cost reduction efforts that reduce their income.