HEALTHBOUND
Get in the game to Redirect the U.S. Health System

Revision: October 13, 2010

Instructions for Team Play

Objective

Score as high as possible on all four goals simultaneously AND learn the reasons *why* you got those results. For each game (5 rounds of 5 years = 25 years), you must

- Save lives (reduce mortality rate)
- Improve health (reduce unhealthy days)
- Achieve equity (reduce health inequity index)
- Lower health care costs

Average annual net benefit is a summary measure combining health and economic consequences (but it does not weigh progress on inequity)

Player Tips

- **Press F11 to view the full screen**
- **Do not use back/forward buttons**
- **Give scenarios descriptive names**
- **Consider the *reasons* for your results**
- **If you have software problems, logout then login again**

Test Single Interventions (N=2-5; ~15 minutes)

- Deliberate and decide which intervention to study
  Consult the causal pathways for ideas
- Anticipate the likely consequences for each scorecard variable
  Do you expect no change, slight change, or big change; and in which directions?
- Test the intervention for a full 25 years
- Review the Progress Report and trace patterns using the Big Picture to learn what happened—and why.
- Fill out the worksheet (with percent changes where appropriate).

Explore Combinations or Sequences (~45 minutes)

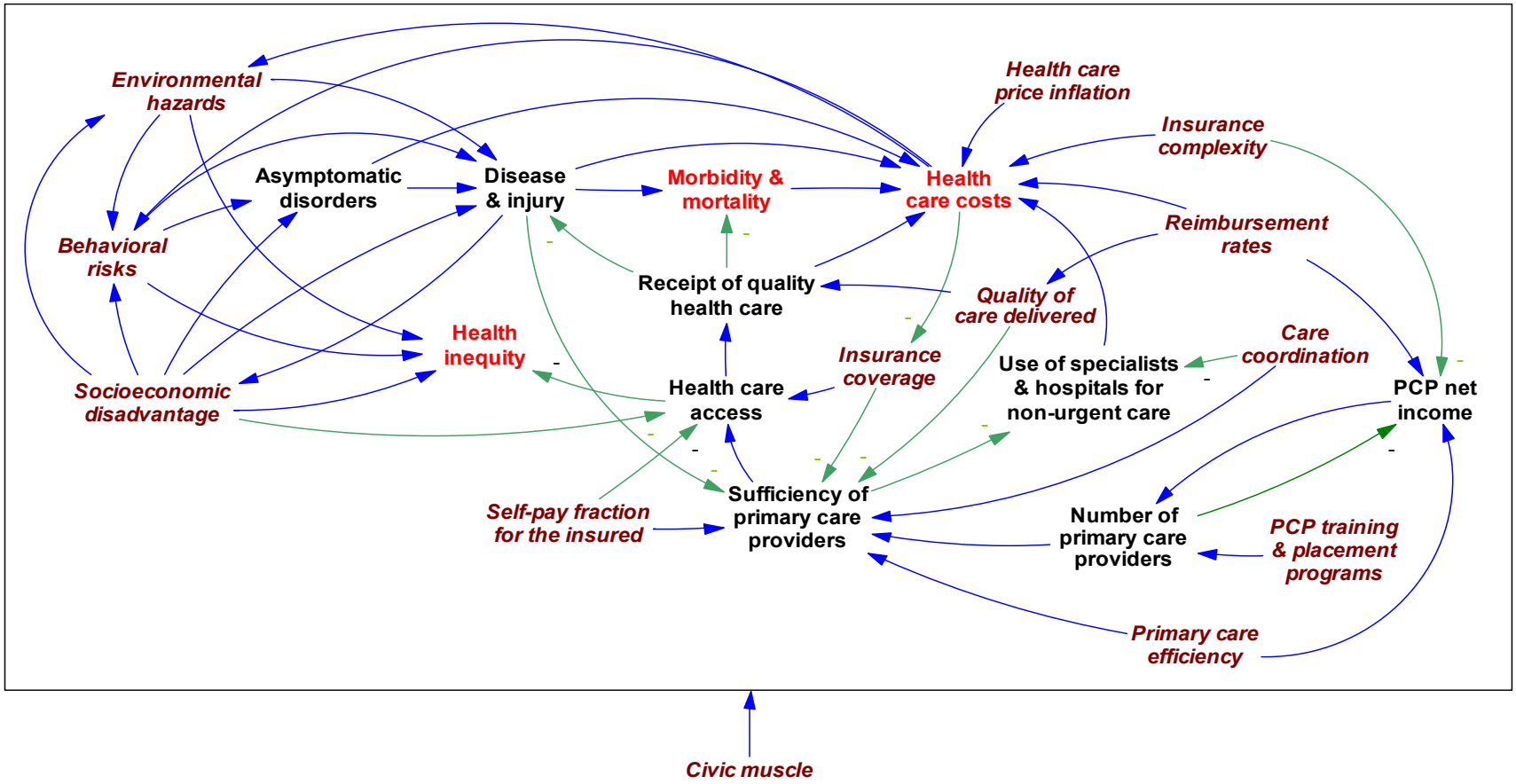
- Deliberate and decide how to mix interventions for better results
  Are there synergies or complementary effects that might compensate for shortcomings?
  Limit = 5 areas/icons per 5-year round
- Anticipate the likely consequences for each scorecard variable
  Do you expect no change, slight change, or big change; and in which directions?
- Test the intervention strategy for a full 25 years, or sequence the efforts in 5-year phases
  Give your scenario a unique descriptive name
- Review the Progress Report and trace patterns using the Big Picture to learn what happened—and why.
- Fill out the worksheet (with percent changes where appropriate).

Document Your Best Result

- Bring a completed worksheet for the run that you are most proud of—and can explain.

HealthBound

High-Level Map of Causal Pathways, with Intervention Options



Most parts of the health system—so often discussed separately—are in fact connected

- **The main values (or outcomes) at stake in any scenario for health system change are shown in red and bolded**
  (i.e., health status, health inequity, and health care costs)
- **Brown Italics indicate broad classes of potential intervention**
  (e.g., organized actions could expand coverage or alter any of the other italicized factors, either alone or in combination)
- **Blue arrows indicate same-direction effects**
  (e.g., more environmental hazards lead to more disease and injury)
- **Green arrows indicate opposite-direction effects**
  (e.g., greater sufficiency of primary care providers leads to less use of specialists and hospitals for non-urgent care)

CDC Syndemics Prevention Network

Version 11, February 18, 2010

Revision: February 18, 2010

Intervention Options

Players may enact one or more options from the following list of national programs or policies.

Expand insurance coverage
Increase the fraction of people with private or government-provided health insurance. You may expand coverage for the advantaged and/or the disadvantaged population.

Consequences: *Greater coverage improves access to quality office care, but as a result increases spending on visits, procedures, and medications. It also puts more demand on limited supply of primary care providers (PCPs) and increases insurance administration expenses*.

Improve quality of care
Enhance the degree to which physicians and hospitals enact best practices and make effective clinical decisions. You may improve the quality of preventive and chronic care, which includes screening to identify health concerns, as well as enhanced management of diseases, injuries, and asymptomatic disorders. Separately, you may improve the quality of urgent care for events that require emergency and perhaps intensive care.

Consequences: Better preventive and chronic care slows the progression of asymptomatic disorders into disease, and reduces the frequency of acute and urgent episodes. It also, however, increases spending on office visits and medications, and puts more demand on limited supply of PCPs. Better urgent care reduces the need for inpatient stays and reduces the fatality of urgent events. Quality urgent care also reduces the risk of disability and the subsequent need for extended care in nursing homes or home health care.

Simplify insurance
Reduce the complexity of different health plans and the associated burden on the billing function of provider offices. This may be accomplished through standardization of health insurance plans (analogous to what some states have done with auto insurance) or through a single-payer approach. Single payer goes beyond standardization by reducing overhead costs for not only providers but also insurers.

Consequences: Standardized insurance and single payer both lower PCP billing costs and thereby improve PCP income. Single payer also reduces the marketing and negotiation associated with private insurance and thereby reduces insurance overhead costs.

Expand primary care supply
Increase the number of new practicing primary care providers (PCPs) through incentives such as scholarships, subsidies, and/or guaranteed placement programs. You may offer these incentives for providers to the advantaged population, and/or for providers to the disadvantaged.

Consequences: The supply of PCPs is increased, but if this leads to a surplus, then average net income may decline.

Improve primary care efficiency
Increase the fraction of primary care providers (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.

Consequences: Greater efficiency could alleviate a shortage of PCPs and increase PCP average net income.

Change reimbursement rates
Amounts per visit paid by insurers to physicians or hospitals, expressed relative to their initial values (=1). The relative reimbursement rate for office visits affects payments for visits to primary care physicians and specialists. The relative reimbursement rate for hospital visits affects payments for hospital inpatient stays as well as visits to emergency and outpatient departments. You may modify these reimbursement rates up or down.

Consequences: Lowering reimbursement rates can reduce health care costs. However, it hurts the quality of preventive and chronic care and reduces PCP net income, which may lead to a decline in primary care supply. Similarly, lower reimbursement for hospital visits hurts the quality of urgent care and also may reduce elective hospital capacity, thereby impairing the effectiveness of disease and injury management in some cases.

Coordinate health care
Create coordinated, integrated systems of accountable health care that can reduce unnecessary office and hospital visits.

Consequences: The number of visits for people with disease and injury are reduced, with no adverse effect on health. This means fewer office visits for both PCPs and specialists (less referral and follow-up) and consequently fewer referrals for elective hospital procedures and inpatient stays. The effect is stronger for the advantaged than for the disadvantaged population, because the disadvantaged are already less likely to be referred to specialists for their care. Although this intervention does reduce provider incomes, it also alleviates some of their load, a fact which may help improve access somewhat for the disadvantaged population.

Change self-pay fraction for the insured
Raise or lower the fraction of health care costs, including self-paid premiums and out-of-pocket expenses such as co-pays and deductibles, that is paid by those who have insurance coverage, sometimes known as the "cost sharing fraction."

Consequences: Increased cost sharing reduces the affordability of quality preventive and chronic care and therefore its use.

Enable healthier behaviors
Enable a greater fraction of people to engage in healthy behaviors, including not smoking, eating a healthful diet, being physically active, avoiding drug and alcohol abuse, engaging in safer sex, washing hands, refraining from violence, and others. You may enable healthier behaviors among the advantaged and/or the disadvantaged population.

Consequences: Healthier behaviors reduce the risk of disease or injury, and also reduce the risk of developing asymptomatic disorders (such as hypertension, high cholesterol, and pre-diabetes) that may subsequently lead to symptomatic disease.

Build safer environments
Increase the fraction of people who live, work, travel, and play in places that are free from environmental hazards. You may build safer environments for the advantaged and/or the disadvantaged population.

Consequences: Safer environments reduce the risk of disease or injury. Outdoor safety also supports healthy behaviors such as physical activity.

Create pathways to advantage
Increase the fraction of people who maintain a household income above $25,000 per year by assuring, for example, better education, job training, and/or living wage policies.

Consequences: Having moved from disadvantaged to advantaged, a person is less likely to experience stress-related disease, more likely to engage in healthy behaviors, more likely to live in a safe environment, and more likely to have health insurance and access to quality health care.

Strengthen civic muscle
Increase people's power to overcome resistance and enact chosen interventions. You may strengthen civic muscle in preparation for intervening more effectively elsewhere in the system.

Consequences: Greater civic muscle increases the extent or coverage of all interventions listed above aside from changes in reimbursement rates, gatekeeper requirement, and self-pay fractions.

Intervention Specifications

The table below lists assumptions regarding the effectiveness, implementation cost, and time delays for each intervention option.

Intervention		Baseline value(s) (~2003)	Value(s) with full intervention	Unit implementation cost	Time delay (years)
	**Expand Insurance Coverage**				
	for the Advantaged	86.8% coverage	100%	$20 per person helped per year	2.5
	for the Disadvantaged	75.9% coverage	100%	$20 per person helped per year	2.5
	**Improve Quality of Care**				
	Preventive and chronic care	80% adoption of best practices	90%	$10,000 per provider helped per year	2.5
	Urgent care	80% for Advantaged, 70% for Disadvantaged	90% for Advantaged, 85% for Disadvantaged	$500,000 per hospital helped per year	2.5
	**Simplify Insurance**				
	Standardize plans	No standardization	100%	$1 per insured person per year	0
	Single payer	No single payer	100%	$2 per insured person per year	0
	**Expand Primary Care Supply**				
	for the Advantaged	No effect	Increase 50%*	$150,000 per additional PCP	10
	for the Disadvantaged	No effect	Increase 50%*	$300,000 per additional PCP	10
	**Improve Primary Care Efficiency**	20% adoption of best practices	100%	$10,000 per PCP helped per year	2.5

Intervention		Baseline value(s) (~2003)	Value(s) with full intervention	Unit implementation cost	Time delay (years)
	**Change Reimbursement Rate**				
	For office visits	1	± 20-40%	No cost	0
	For hospital visits	1	± 20-40%	No cost	0
	**Coordinate health care**	No effect on frequency of non-urgent visits for the symptomatic	40% reduction for Advantaged, 20% for Disadvantaged**	$20 per capita per year	0
	**Change self-pay fraction for the insured (cost sharing)**	25% for Advantaged; 10% for Disadvantaged	0-75%	No cost	0
	**Enable Healthier Behaviors**				
	for the Advantaged	10%/yr behavioral reform	12-30%/yr***	$2,000 per person helped	Varies (~3-8)
	for the Disadvantaged	8%/yr behavioral reform	12-30%/yr***	$2,000 per person helped	Varies (~3-8)
	**Build Safer Environments**				
	for the Advantaged	5%/yr remediation	12-30%/yr****	$500 per person helped	Varies (~3-8)
	for the Disadvantaged	4%/yr remediation	12-30%/yr****	$500 per person helped	Varies (~3-8)
	**Create Pathways to Advantage**	Not-DI 3.1%/yr DI 2.3%/yr become Advantaged	Not-DI 15%/yr, DI 10%/yr*****	$5,000 per person helped	Varies (~7+)
	**Strengthen Civic Muscle**	50% capacity	90%	$1 per capita per year to increase 10 percentage points	2.5

NOTES

PCP = Primary care provider

DI = Population with disease or injury

* The supply of PCPs is also affected by their net income. If increased supply is not met by increased demand, then net income will be hurt by increased supply, and supply will accordingly end up growing by less than the potential 50%.

** Care coordination reduces office referrals for the diseased and injured, which leads to proportionally fewer referrals to hospitals for elective procedures and inpatient stays. The effect is stronger for the disadvantaged population than for the advantaged population, because coordination primarily inhibits unnecessary referrals to sub-specialists. In the base case, the fraction of non-urgent care seen by specialists is only 18% for the disadvantaged, compared with 42% for the advantaged.

*** The max risk reduction rate is greater when unhealthy behavior prevalence is higher, according to a nonlinear function reflecting the "low hanging fruit" idea. Specifically, max reduction=30%/yr when unhealthy prevalence=>50%, but only =12%/yr when unhealthy prevalence<=10%.

**** The max remedy rate is greater when unsafe prevalence is higher, according to a nonlinear function reflecting the "low hanging fruit" idea. Specifically, max remedy=30%/yr when unsafe prevalence=>50%, but only =12%/yr when unsafe prevalence<=10%.

***** The max rate of moving into advantage is greater when disadvantage prevalence is higher, according to a nonlinear function reflecting the "low hanging fruit" idea. Specifically, max movement=15%/yr when disadvantage prevalence=>20%, but then slows as disadvantage prevalence declines.