

# ReThink Health

## *Simulation Models Supporting Local Solutions to a National Problem*



**Jack Homer, PhD**  
*Homer Consulting*  
**in association with**



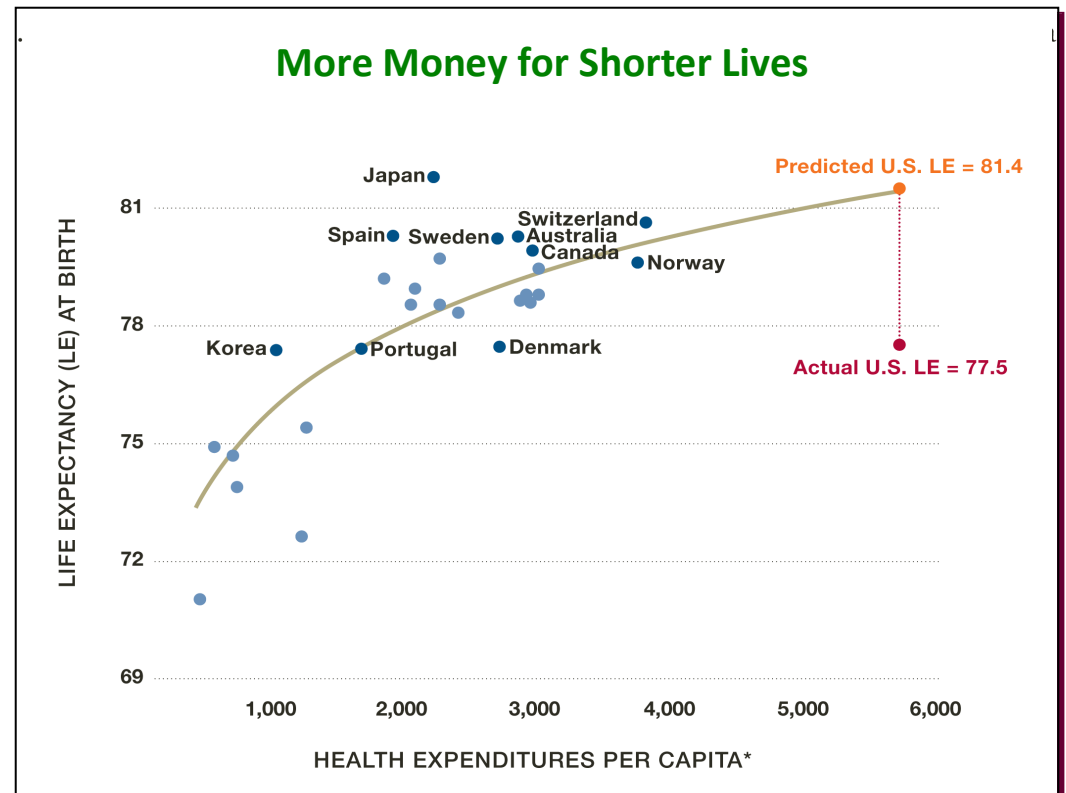
ReThink  
Health

<http://www.rethinkhealth.org>

**XMILE Webinar #2**  
**October 29, 2013**

# A National Problem...Needing Local Solution

- Americans pay the most for health care, yet are not very healthy...especially the economically disadvantaged
- Over 75% think the current system needs fundamental change
- The Affordable Care Act (ACA) extends health coverage and encourages other good changes
- But solution of the problem will require much more...and this transformation will have to come mostly at the local level, where health care and social services are delivered.

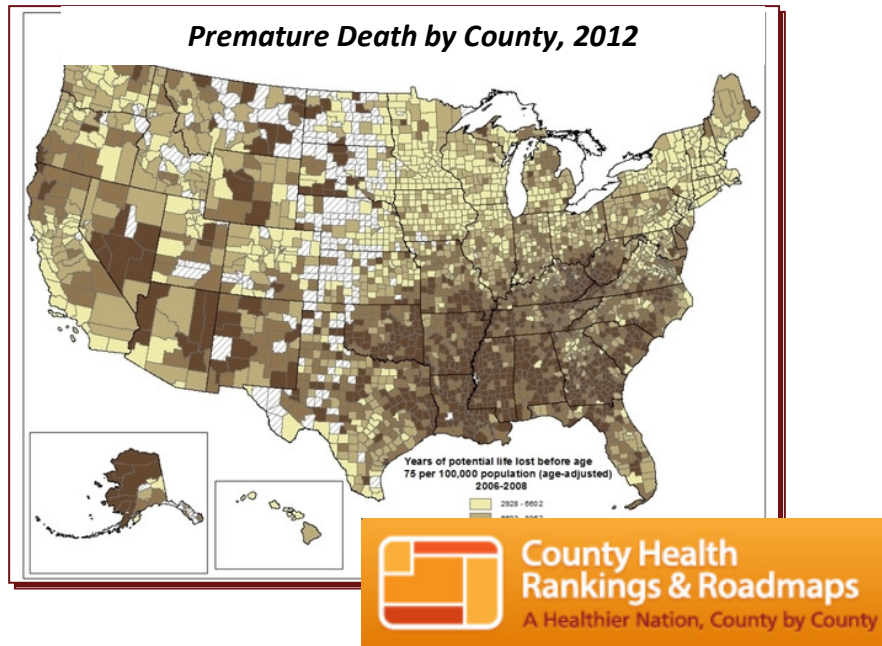


Commission to Build a Healthier America. America is not getting good value for its health dollar. Robert Wood Johnson Foundation 2008.

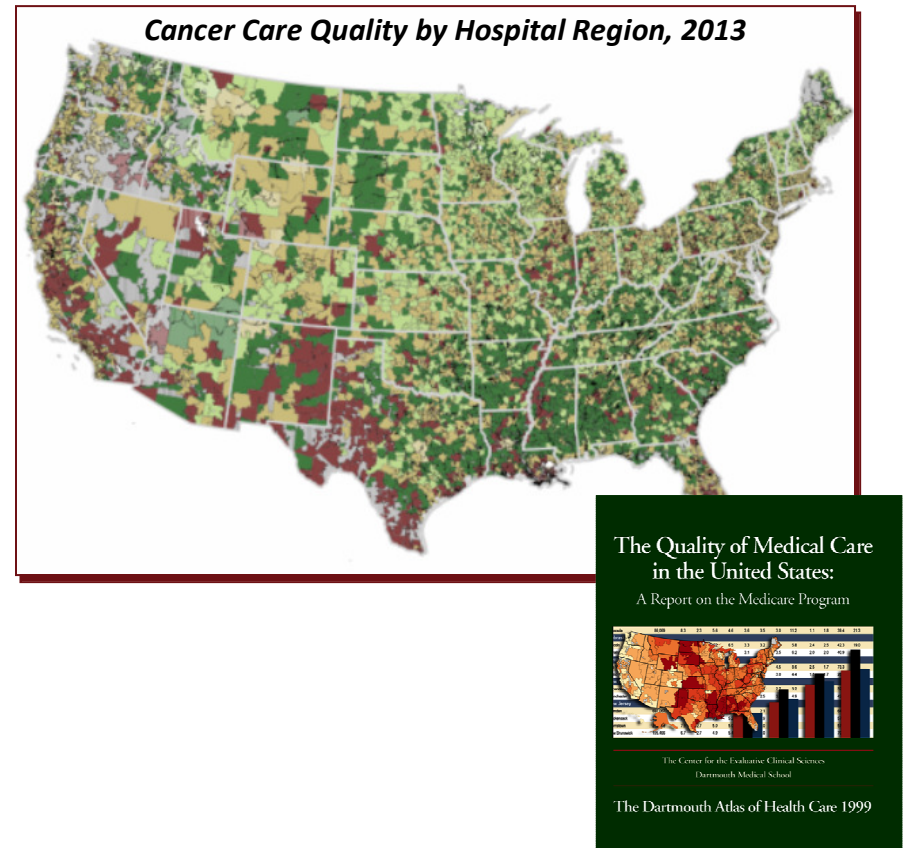
Institute of Medicine. US Health in International Perspective: Shorter Lives, Poorer Health. Washington, DC. National Academies Press; 2013.

# Regional Differences Show Room for Improvement

## Variations in Health and Risks *The County Health Rankings*



## Variations in Practice and Spending *The Dartmouth Atlas of Health Care*



# Local leaders are beset—and often bewildered—by diverse issues and opportunities

The collage features several background images: a park with children on a bicycle, a close-up of a person's mouth with a finger pointing to a tooth, a 'CRIME WATCH' sign, a 'NO SMOKING' sign, a stethoscope over a dollar bill, a doctor in a library, a person holding a 'HEALTH INSURANCE' sign, a group of people sitting on steps with a 'HEALTH CARE FOR' sign, and two men in a meeting. Overlaid on these are 18 yellow text boxes with purple borders, each containing a key issue or opportunity.

- Sustainable Funding
- Healthier behaviors
- Crime
- Environmental Hazards
- Socioeconomic disadvantage
- Mental Illness
- Physical Illness
- ER use
- ACOs
- Pay for Performance
- Provider income
- Adherence to Guidelines
- Access to care
- Insurance coverage
- Post-Discharge Care
- Coordinated Care
- Hospice
- Medical homes
- Provider capacity
- Provider efficiency



# Local Health Collaboratives

## ARCHI Steering Committee (partial list)



Atlanta Regional Commission  
Carter Center Mental Health Program  
Centers for Disease Control  
DeKalb County Board of Health  
Fulton County Department of Health Services  
GA Association for Primary Health Care  
Georgia Department of Public Health  
Georgia Health Policy Center  
Georgia Hospital Association  
Grady Health Systems  
Kaiser Permanente  
Oakhurst Medical

Georgia

### Why is this important, now?

The Atlanta region has a great opportunity to change the culture of healthcare. A number of converging forces encourage providers to take a collaborative approach to health assessments and interventions:

1. Public health departments who seek accreditation must perform community assessments;
2. Local governments are thinking seriously about their investments in health, assessing needs and setting priorities;
3. Foundations are increasingly choosing to invest in collaboratives rather than single agencies;
4. Federally Qualified Health Centers must assess the need for expansion; and
5. Hospitals are pressed to assess, plan, and invest to meet new IRS regulations. It's tempting to approach this work

***Great! But what should their priorities should be, given many needs and options but limited resources?***

# The ReThink Health Initiative

Tools for local health leaders, developed with recognized experts & innovators

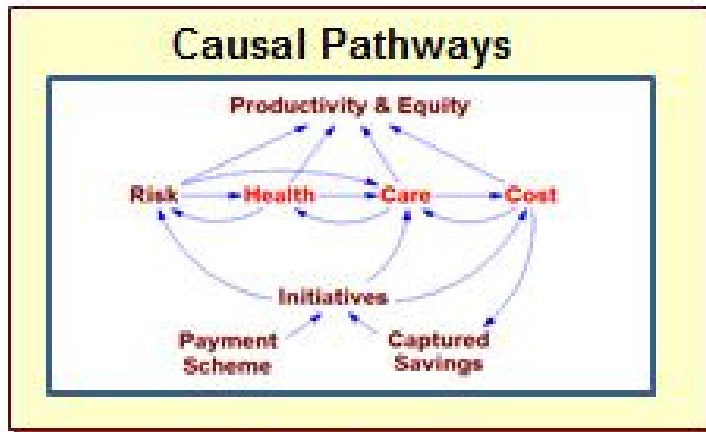
1. **Coaching local teams and organizing constituencies for change**
2. **Using simulation with local teams to decide on priorities**
3. **Using simulation with experts and innovators to refine understanding and inspire new ideas**



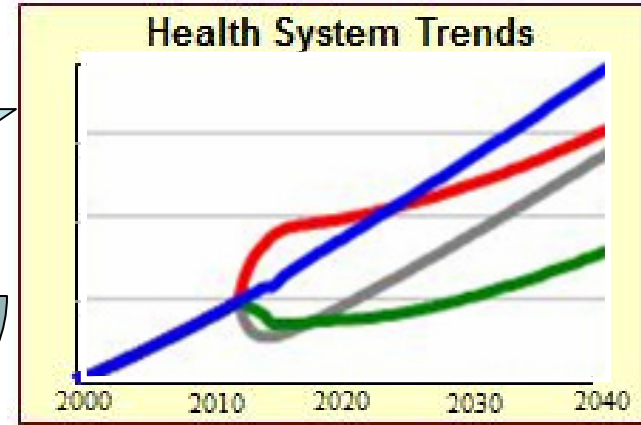
# ReThink Health Dynamics Simulation Model

*Realistic but simplified representation of a local health system*

## System



## Dynamics



- Use a carefully calibrated model to test scenarios
- Address simultaneous goals (and weigh trade-offs):  
**save lives, lower costs, achieve equity, boost productivity**
- Not a prediction, but a way for diverse stakeholders to see and feel how their local health system could change under different conditions and choices

# Building on Prior Models & Trusted Data Sources

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## Prior Models

- **“HealthBound” (US health system)**

*Am J Pub Health* 2010; 100(5):811-819

*Health Affairs* 2011; 30(5):823-32

→ Winner of AcademyHealth’s 2012 Public Health Article of the Year

- **“PRISM” (chronic disease risks & outcomes)**

*Preventing Chronic Disease*, Jan. 2010; 7(1) (online)

→ Winner of System Dynamics Society’s 2011 Applications Award

*Health Promotion Practice*, Jan. 2013, 14(1):53-61

→ Winner of Society for Public Health Education’s 2013 Paper of the Year

## Local Data Sources

- Surveys
- Research reports
- Administrative data

## National Data Sources

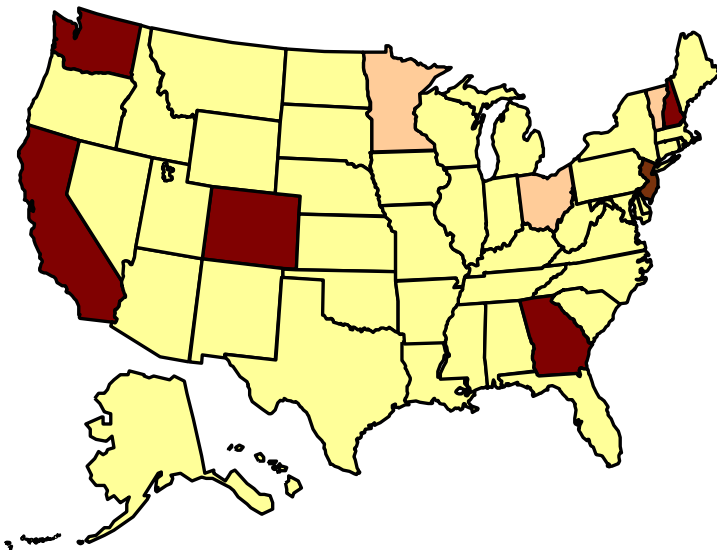
- **Demographics: Census, Vital Statistics**
- **Behaviors and Conditions: NHIS, NHANES, BRFSS**
- **Costs: NHE, MEPS, CPI**
- **Utilization: NAMCS, NHAMCS, NNHS, NHHCS**
- **Resources: Dartmouth Atlas, AMA Surveys**

## Research Literature and Experts

- **Literature on health system performance, policy, and economics**
- **Discussions with experts at Dartmouth, IHI, Kaiser, RWJF, Commonwealth Fund, etc.**



# Local Case Studies Lead to Local Models—Online



Models available at

<http://www.rethinkhealth.org/dynamics>

\*We also offer the “Anytown” model, based on US national-level data, scaled down by a factor of 1,000. Some local groups prefer to use the Anytown model rather than commission a customized local model. We also use Anytown with national experts.

## Local Case Studies to Date

### Phase 1 (2011-12)

- Pueblo, CO
- Manchester, NH
- Alameda, CA
- Contra Costa, CA
- Whatcom, WA

### Phase 2 (2013)\*

- Atlanta, GA
- Morris, NJ
- under discussion—*
- Upper Valley, NH/VT
- Cincinnati, OH
- State of Minnesota

## Online Access for Each Local Model

**ReThink Health - Pueblo**

Logout ReThink Health

Introduction Create New Scenario Results Compare Scenarios Map Help

*Welcome to ReThink Health - Pueblo*

Where is the greatest leverage for improving local health system performance?

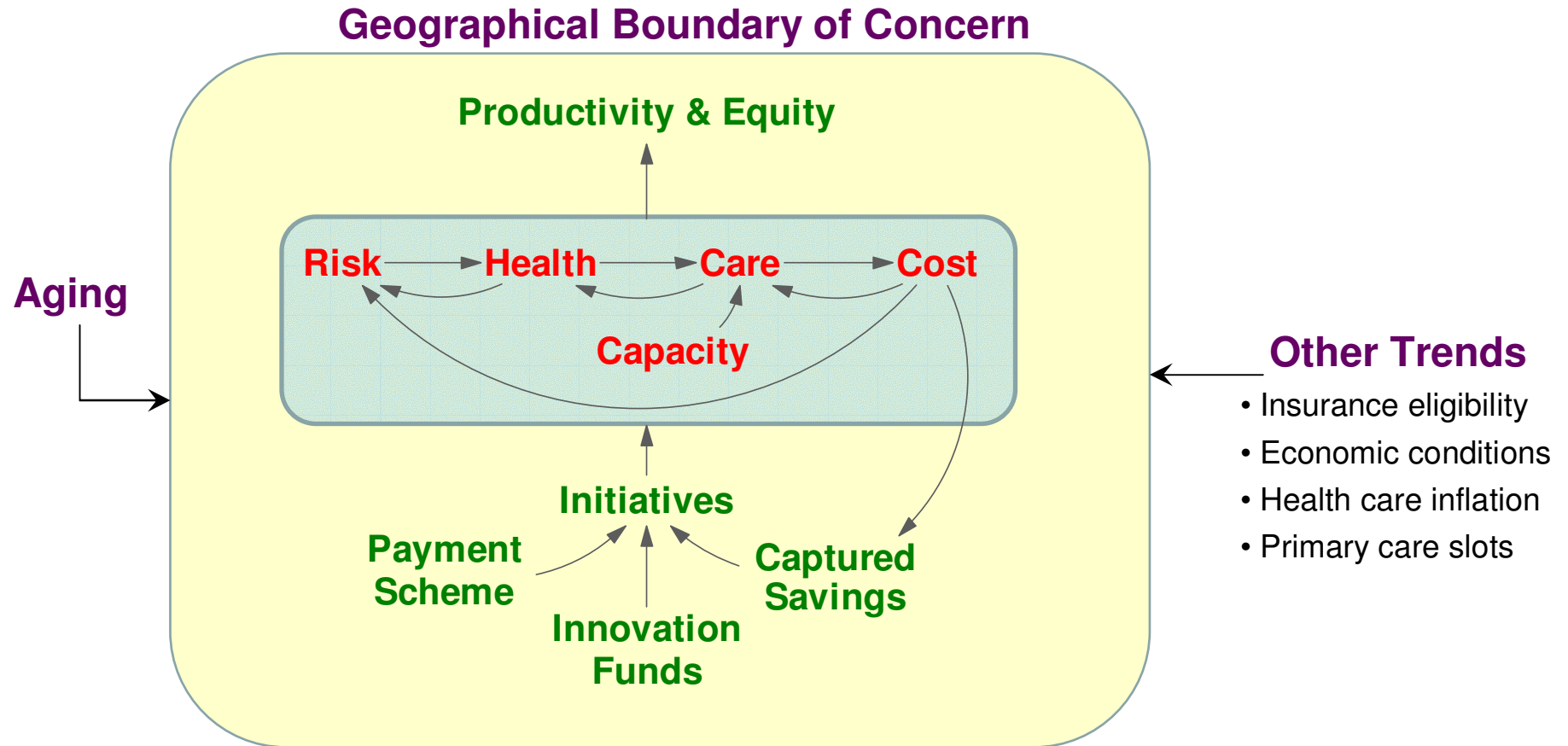
This health policy simulation offers a realistic, but simplified portrait of the health system in Pueblo County, Colorado. Use it to

- Play out the likely consequences of new scenarios;
- Learn how the system tends to change over time;
- Find promising ways to enhance population health, care for those who are ill, achieve health equity, and lower health care costs -- all together, without enhancing one at the expense of the others.

*This is not a prediction, but a way for diverse leaders to see and feel how your local health system could evolve over time.*

Work-in-Progress Model Version: 10.7.11

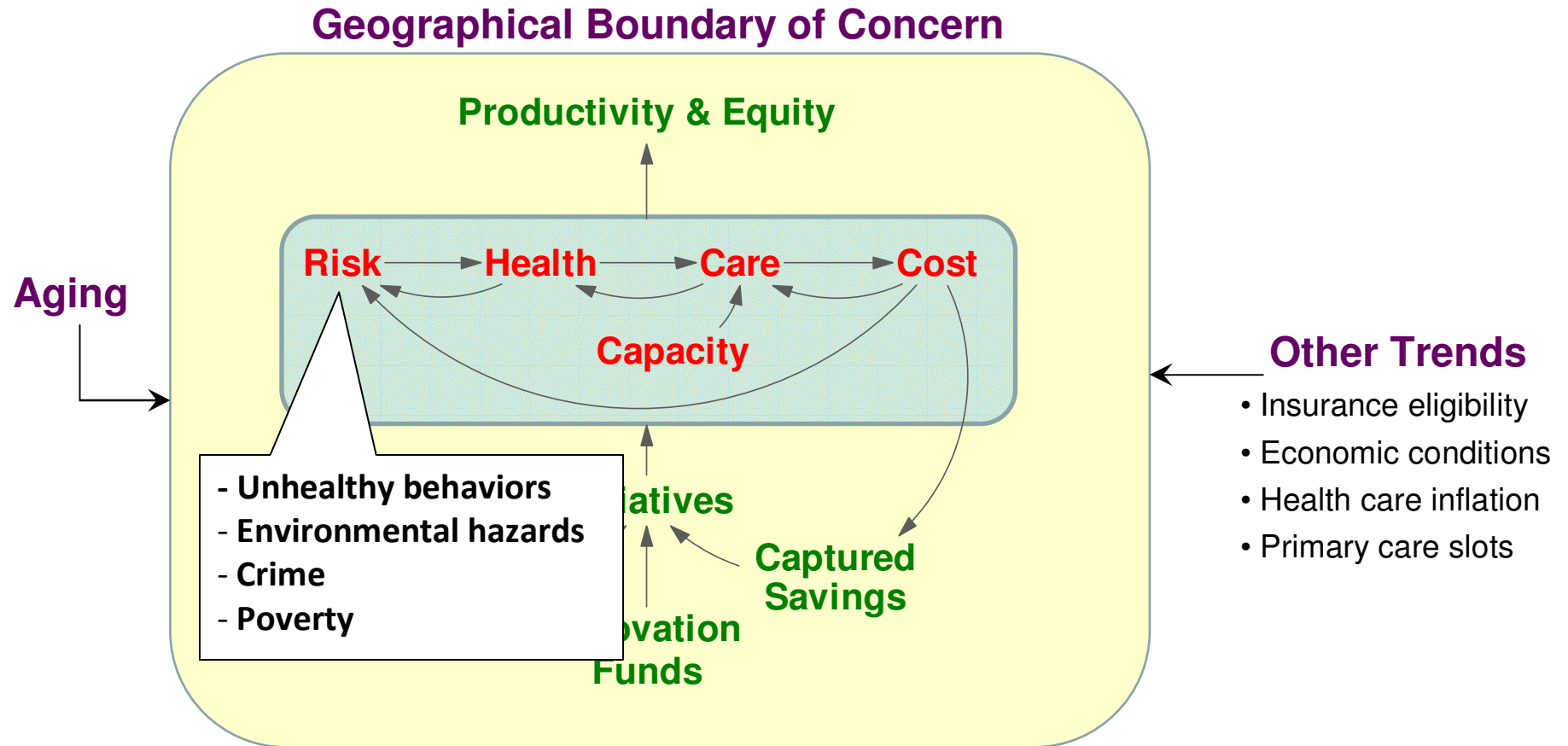
# Model Overview



**Population variables split out by 10 segments determined by:**

- **Age:** Youth 0-17, Working age 18-64, Seniors 65+
- **Socioeconomic status:** Advantaged, Disadvantaged
- **Health insurance status:** Insured, Uninsured

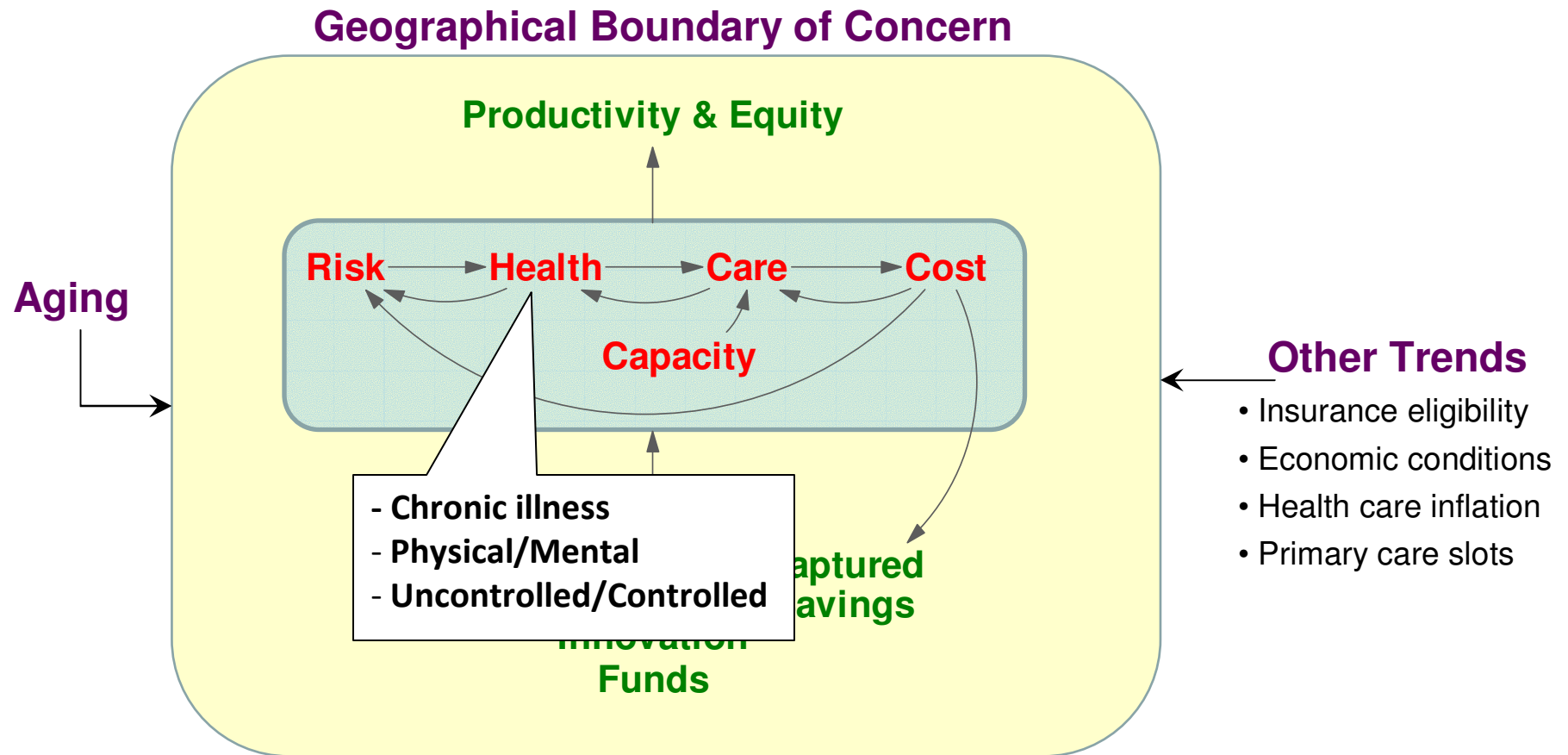
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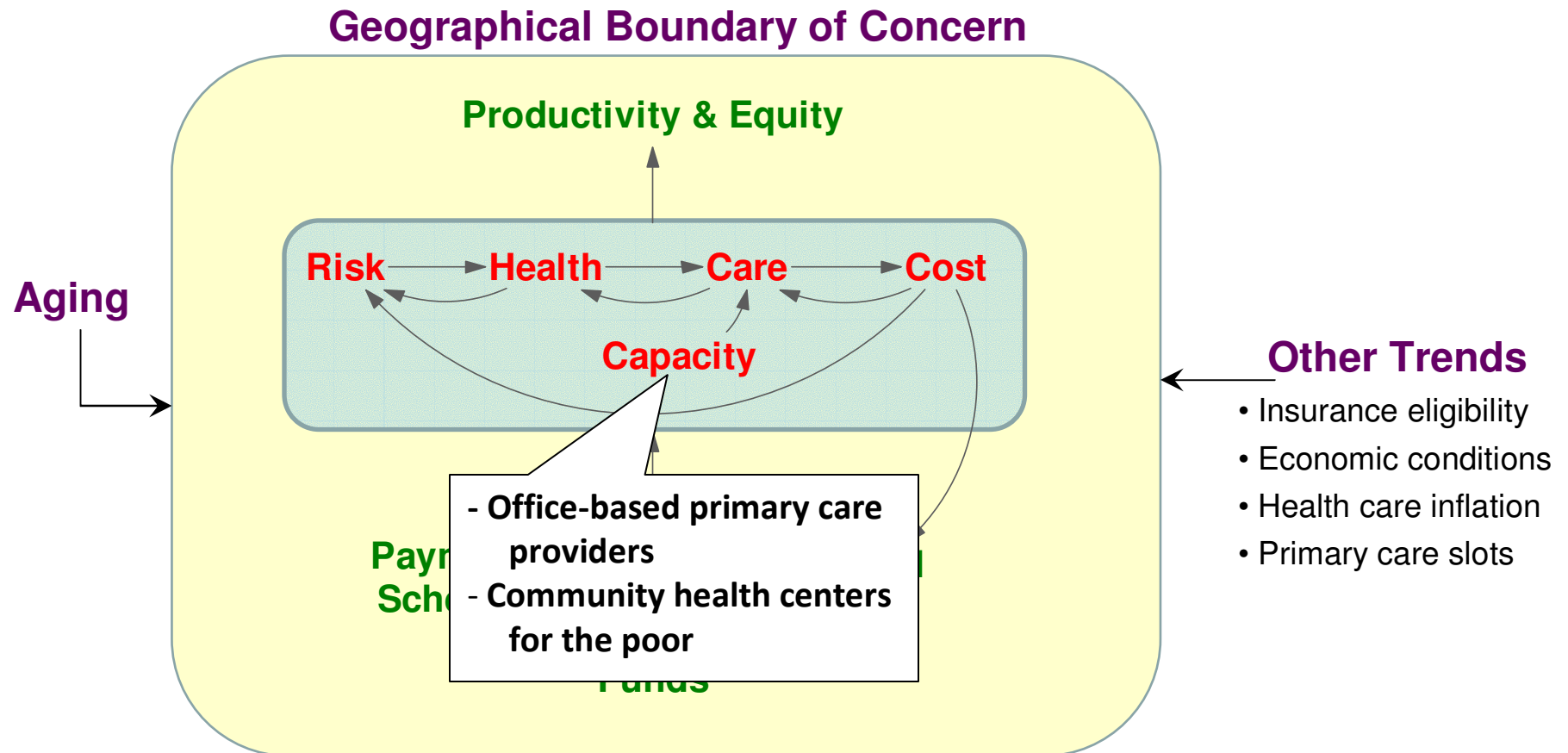


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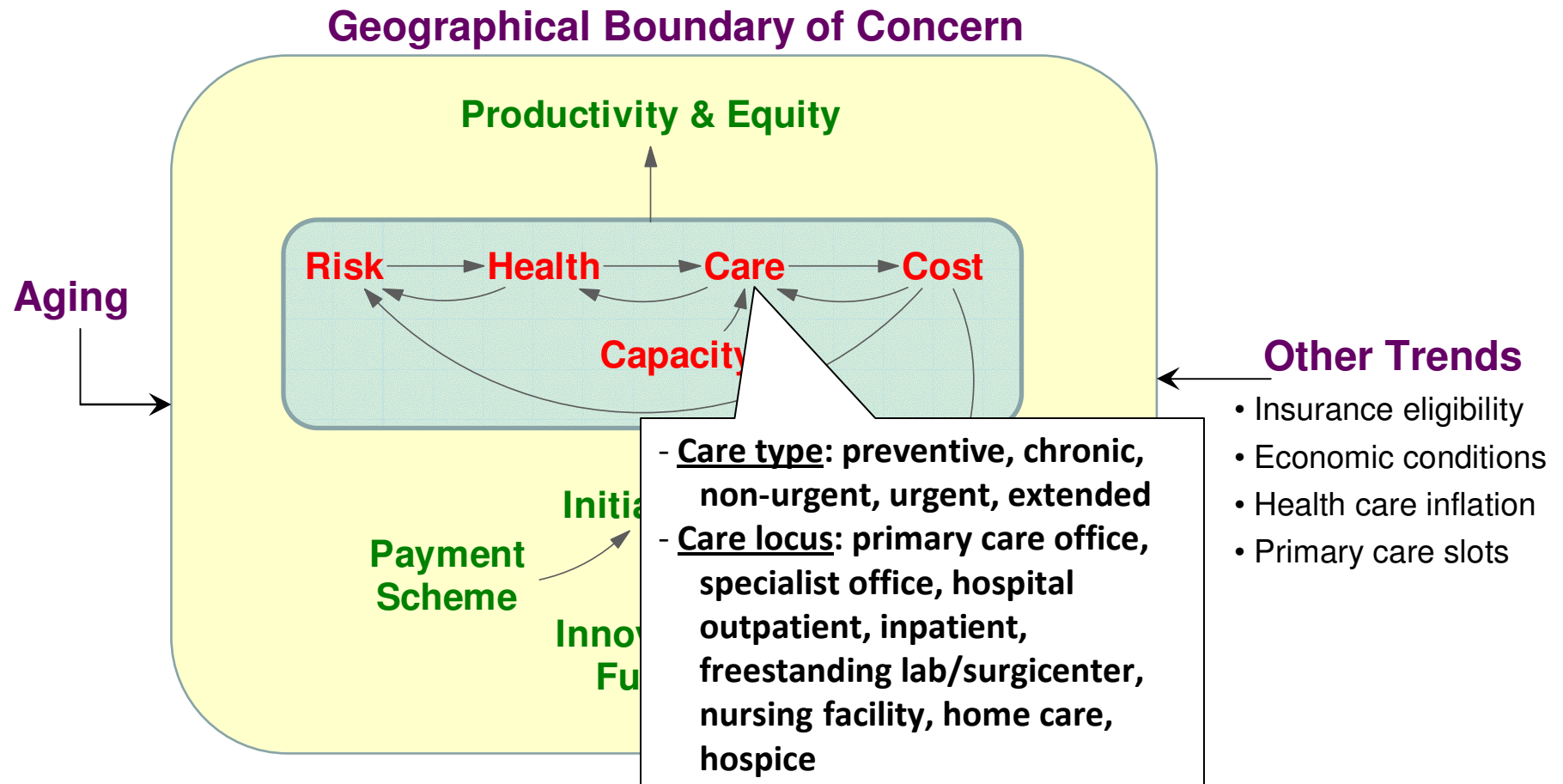
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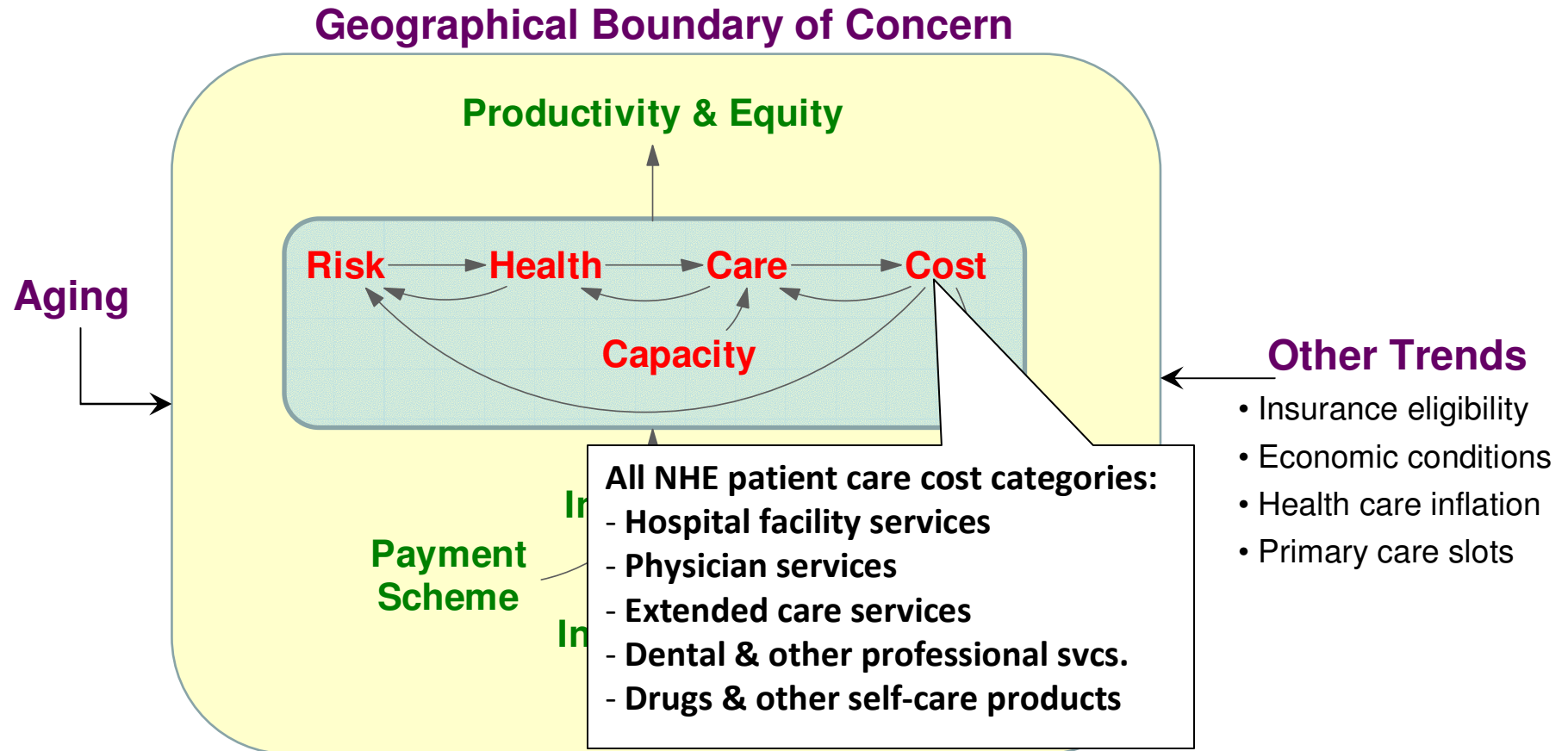
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# Model Overview



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# Intervention Options

RISK	 <b>Behaviors</b> Disadv only? <input type="checkbox"/> Youth only? <input type="checkbox"/> Working age only? <input type="checkbox"/> Seniors only? <input type="checkbox"/>	 <b>Crime</b> Disadv only? <input type="checkbox"/>	 <b>Pathways – Family</b>
	 <b>Environ hazards</b> Disadv only? <input type="checkbox"/>		 <b>Pathways - Student</b>
CARE	 <b>Prev/chronic</b>	 <b>Self-care</b> Disadv only? <input type="checkbox"/>	 <b>Hospital infections</b>
	 <b>Mental illness</b> Disadv only? <input type="checkbox"/>		
CAPACITY	 <b>PCP efficiency</b> FQHC only? <input type="checkbox"/>	 <b>Recruit PCPs: Gen</b> <b>Recruit PCPs: FQHC</b>	 <b>Hospital efficiency</b>
COST	 <b>Pre-visit consult</b>	 <b>Coordinate care</b> Update? <input type="checkbox"/>	 <b>Post-discharge care</b>
	 <b>Medical homes</b>	 <b>Shared decisions</b>	 <b>Malpractice</b>
		 <b>Generic drugs</b>	 <b>Hospice</b>
FUNDING	 <b>Innovation fund</b> \$22M per year for 5 years (\$110M total)	 <b>Capture &amp; Reinvest</b> <input type="checkbox"/> Yes <input type="checkbox"/> No	 <b>Contingent Global Payment</b> ____ % Medicare ____ % Medicaid ____ % Commercial



# Example scenario: Enabling healthier behaviors

## ReThink Health - Anytown

Logout 

Introduction [Create New Scenario](#) Results Select Scenarios Map Info

### Select Initiatives...\*

Sliders Set the Reach, Intensity, and Cost for Each Initiative\*

**Risk**

Care

Capacity

Cost


Trends

Definitions

Specs

Rankings

Assumptions


 **Enable Healthier Behaviors**

0% 50% 100% Start 2012

For DisAdv Only  For Youth Only


For Working Age Only

For Seniors Only

 **Reduce Crime**


0% 50% 100% Start 2012

For DisAdv Only

 **Reduce Environmental Hazards**


0% 50% 100% Start 2012

For DisAdv Only

 **Create Pathways to Advantage**

**Student**

0% 50% 100% Start 2012

 **Family**

0% 50% 100% Start 2012

**Reset All** \* All choices will be retained for new scenarios, until reset

**Fund Initiatives**

Work-in-Progress Model Version 2d: 07.10.13

# Funding the initiative in the usual way

## ReThink Health - Anytown

Logout 

Introduction Create New Scenario Results Select Scenarios Map Info

### Decide How to Fund Initiatives...



#### Establish an Innovation Fund

**\$22 mill/yr x 5 yrs**  
(\$22m = 1% of healthcare costs in year 2010)

How much (millions per year)  \$0 \$200M

How long (years)  0 10 20 30



#### Move to Contingent Global Payments

Change Payment Scheme

What fractions are covered under global payment?

100% Medicare 100% Medicaid 100% Commercial



#### Capture & Reinvest a Negotiated Split of Health Care Cost Savings

Capture and Reinvest

Benchmarks adjust

How much will be available to the community from...

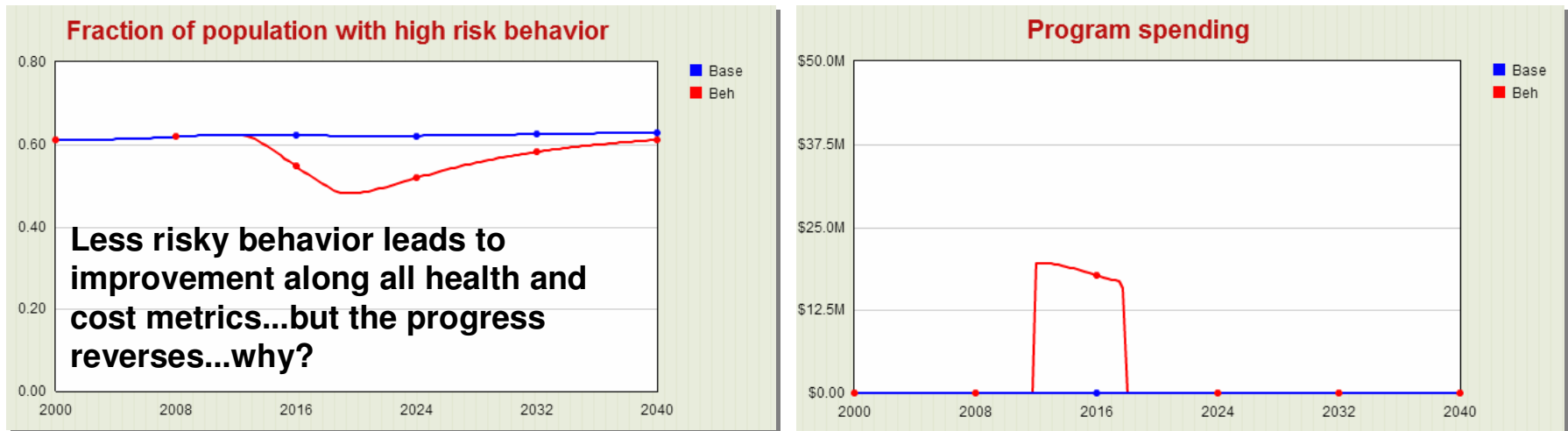
50% Medicare 50% Medicaid 50% Commercial

Definitions Specs Rankings Assumptions

Reset All Back to Initiatives Simulate

Work-in-Progress Model Version 2e: 09.10.13

# Simulated consequences



**Out of money! A common predicament for costly investments that must be sustained** (*others: anti-pollution, anti-crime, anti-poverty, support for self-care, for mental illness care...*)

**What to do? Some ideas:**

- Cut the program effort
- Find more up-front funding
- Another approach to funding?

# Savings Capture\*: a new potential funding stream

## ReThink Health - Anytown

Logout 

Introduction Create New Scenario Results Select Scenarios Map Info

### Decide How to Fund Initiatives...



#### Establish an Innovation Fund

\$0 \$200M 0 10 20 30

How much (millions per year) How long (years)



#### Move to Contingent Global Payments

Change Payment Scheme What fractions are covered under global payment?

100% Medicare 100% Medicaid 100% Commercial



#### Capture & Reinvest a Negotiated Split of Health Care Cost Savings

Capture and Reinvest How much will be available to the community from...

Benchmarks adjust 50% Medicare 50% Medicaid 50% Commercial

**Split Cost Savings 50/50 with Insurers**

Definitions Specs Rankings Assumptions

Reset All Back to Initiatives

Work-in-Progress

\*See the growing literature on Accountable Care financing, including:

Fisher ES, McClellan MB, et al. Fostering accountable health care: moving forward in Medicare. *Health Affairs* 2009; 28(2):w219-w231

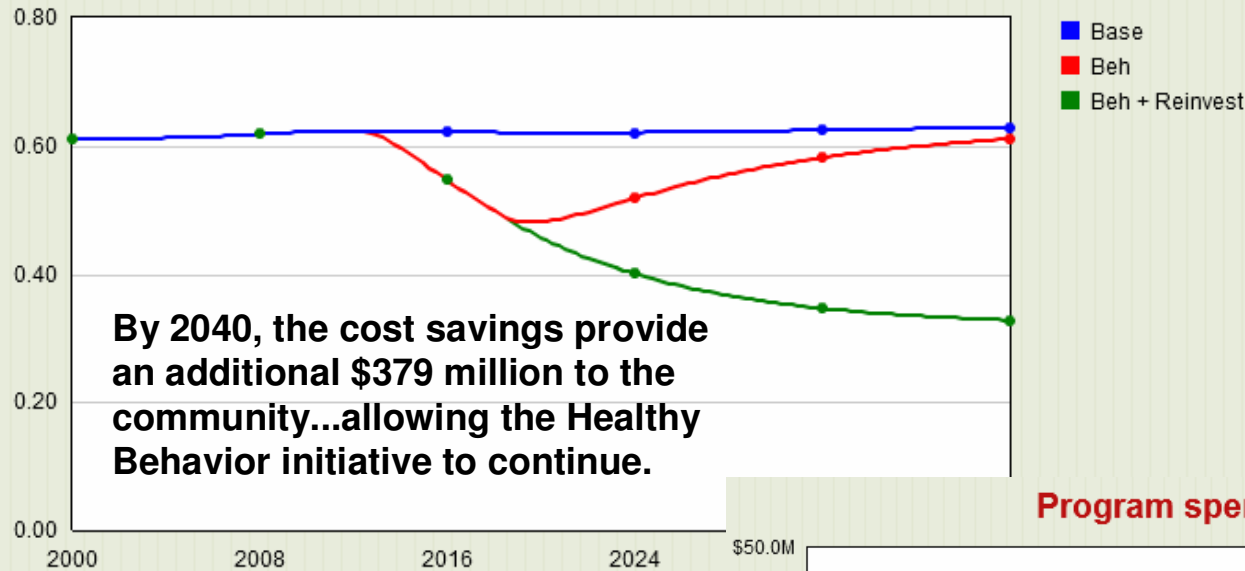
Merlis M. Health policy brief: accountable care organizations. *Health Affairs*, July 27, 2010; 1-6.

Cantor J, Mikkelsen L, et al. How can we pay for a healthy population? Innovative new ways to redirect funds to community prevention. Prevention Institute: Oakland, CA; 2013.



# Simulated consequences with Savings Capture

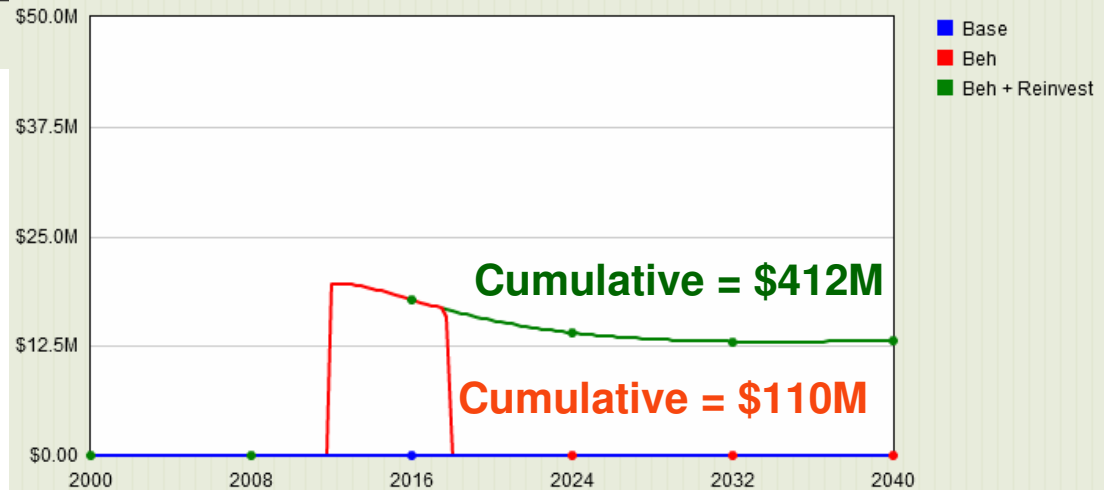
Fraction of population with high risk behavior



By 2040, the cost savings provide an additional \$379 million to the community...allowing the Healthy Behavior initiative to continue.

By 2040, deaths are down 13%, health care costs down 7%, health inequity down 3%, and economic productivity up 3%.

Program spending



# Some Policy Insights from the Model

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- **An optimal package of interventions has**
  - **Sustainable financing, probably via Savings Capture**
  - **“Cost” and “Care” initiatives for focused impact, but also “Risk” initiatives for broad progress on health, cost, equity, and productivity**
  - **A global payment scheme, rather than fee-for-service, to ensure provider cooperation with “Cost” and “Care” initiatives**
  - **Broad application of initiatives across the whole population, not targeted only to certain subgroups (e.g., by age or income)**
  - **Selection of “Care” and “Risk” initiatives based on cost-effectiveness, to avoid spreading limited funds too thinly**
  - **Some interventions included based on the particulars of place (e.g., poverty level and environmental hazard and crime levels)**

# For More Information

<http://www.rethinkhealth.org>

Fannie E. RIPPEL Foundation

HOME > RETHINK HEALTH > RETHINK HEALTH DYNAMICS...

Seeding innovations in health ABOUT US FUNDING RETHINK HEALTH SPOTLIGHT MEDIA CONTACT

ReThink Health

RETHINK HEALTH DYNAMICS

ABOUT ACTIVITIES WHO'S INVOLVED TOOLS & RESOURCES

Can simulating health care improve the real thing?

Important health innovations often begin with a "What if..." question. However, the full implications of such questions are rarely explored because innovators typically cannot think through the complexities of the health system with their unaided minds. To

SPOTLIGHT

Local Leaders ReThink Health Dynamics

Innovators pursuing the goals of better health, better care, and lower costs in their region are beginning to use the ReThink Health Dynamics model as a guide for ambitious, system-wide change.

WHO'S INVOLVED

Bobby Milstein, PhD, MPH, Director, ReThink Health Dynamics, and Director, Systems Strategy and Programs, Fannie E. Rippel Foundation

Jack Homer, PhD, System Modeler, ReThink Health Dynamics; Management Consultant

Gary Hirsch, SB, SM, System Modeler, ReThink Health Dynamics

TOOLS & RESOURCES

Hirsch G, Homer J, Milstein B, et al. **ReThink Health Dynamics: understanding and influencing local health system change.** *Proceedings of the 30th International System Dynamics Conference, July 2012; St. Gallen, Switzerland.*

Milstein B, Hirsch, G, Minyard, K. **County officials embark on new, collective endeavors to rethink their local health systems.** *Journal of County Administration, March/April 2013.*