Using Systems Thinking and Collaborative Modeling to Inform State Policy-making on Childhood Obesity in GA

A presentation for the Innovations in Collaborative Modeling Conference
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Purpose

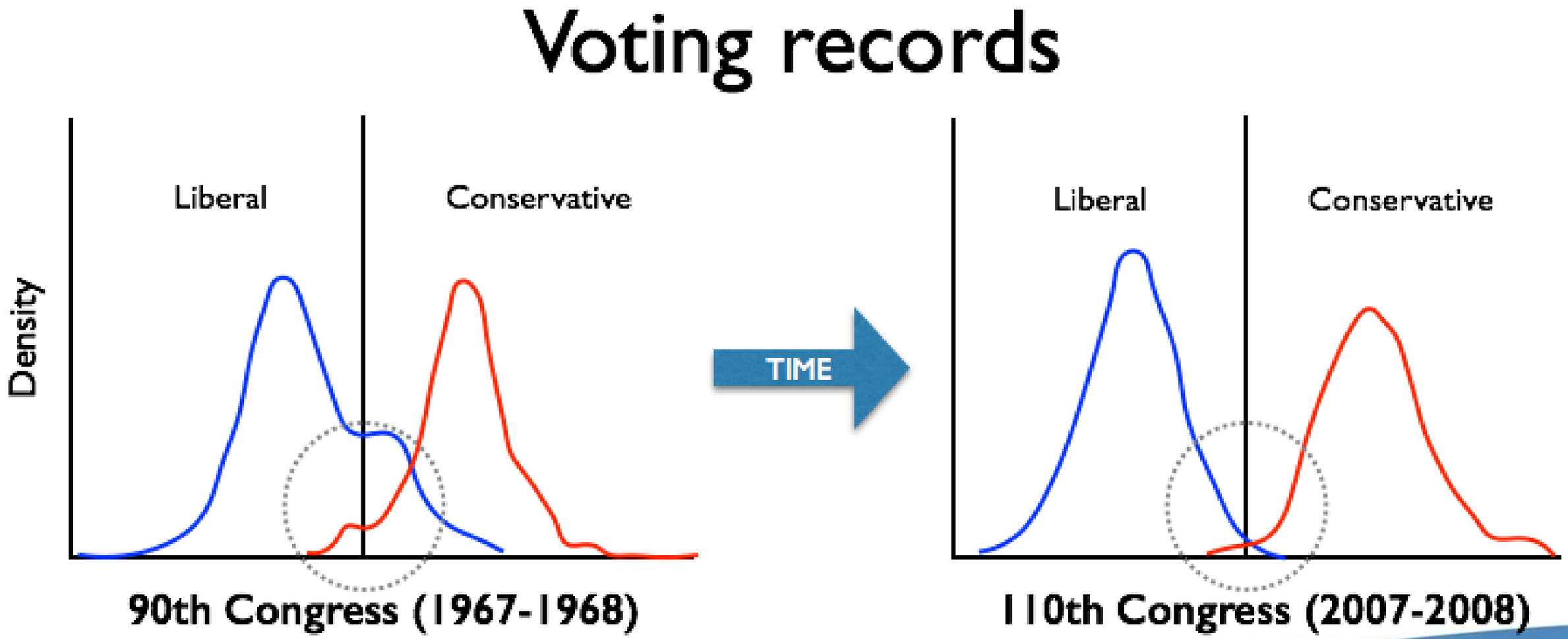
- Demonstrate the use of simulation-based learning labs to build legislator capacity to think systemically
- Provide an overview of developing and applying a specific lab: childhood obesity

The Policymaker Perspective

- Spiraling health costs, yet dubious outcome
  - ★ More $
  - ★ More regulations
  - ★ More subsidies
- Aging infrastructure – invest now or later
- Economic disruptions – bubbles & regulation
- Social media and technology – net neutrality

Legislative Gridlock: Polarization increasing (at least in US)!

Peter Orzsag's analysis of voting records



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YOU FIRST.
LEFT
MIDDLE
RIGHT
AREA of AGREEMENT.

Routine Problems vs. Adaptive Challenges

Routine/technical Problems

- Easily defined
- An obvious, proven solution
- Often an expert on whom we can call to solve the problem for us

There is, in other words, a routine for dealing with the problem.

Improving population health is one issue where there is a preponderence of adaptive challenges – so learning is essential!

Adaptive Challenges

- Often hard to define
- No clear solution, and different people hold different views about its source
- No expert who can solve the problem for us

They are fundamentally different

100 % Routine=BIAS for ACTION

100 % Adaptive=BIAS for LEARNING

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When Addressing Adaptive Challenges, Policymakers are Caught in Conundrum

- It is difficult to imagine a politician saying the above statements without political retribution from their party
- Unlikely that politicians expressing even one of these statements will remain in office – or get elected

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Legislative Health Policy Certificate Program

- Sponsored by the Georgia Health Policy Center
- Designed to prepare legislators and their staff to address challenging health issues
- Eight educational sessions over nine months
- Topics chosen based on priorities set by participants
- Those who complete 3 of 4 sessions receive Health Policy Certificate from Andrew Young School of Policy Studies

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Legislative Health Policy Certificate Program

Core Sessions:

- Evaluating Health Policy: The Framework
- The Impact of Health Status on the State
- Financing Health Care: Challenges and Opportunities
- Health Coverage and Access to Care

Issue Specific Sessions (Sample):

- Children's Behavioral Health
- The Mental Health System
- Addressing Georgia's Trauma Care Network
- Public Health Challenges
- Interventions to Reduce Childhood Obesity
- Health Reform
- Healthcare Financing II: Program Specifics & Payer Interactions

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Course Curriculum

Four Sessions

1 2 3 4

Health
policy content

Systems thinking &
conversational capacity skills

Application

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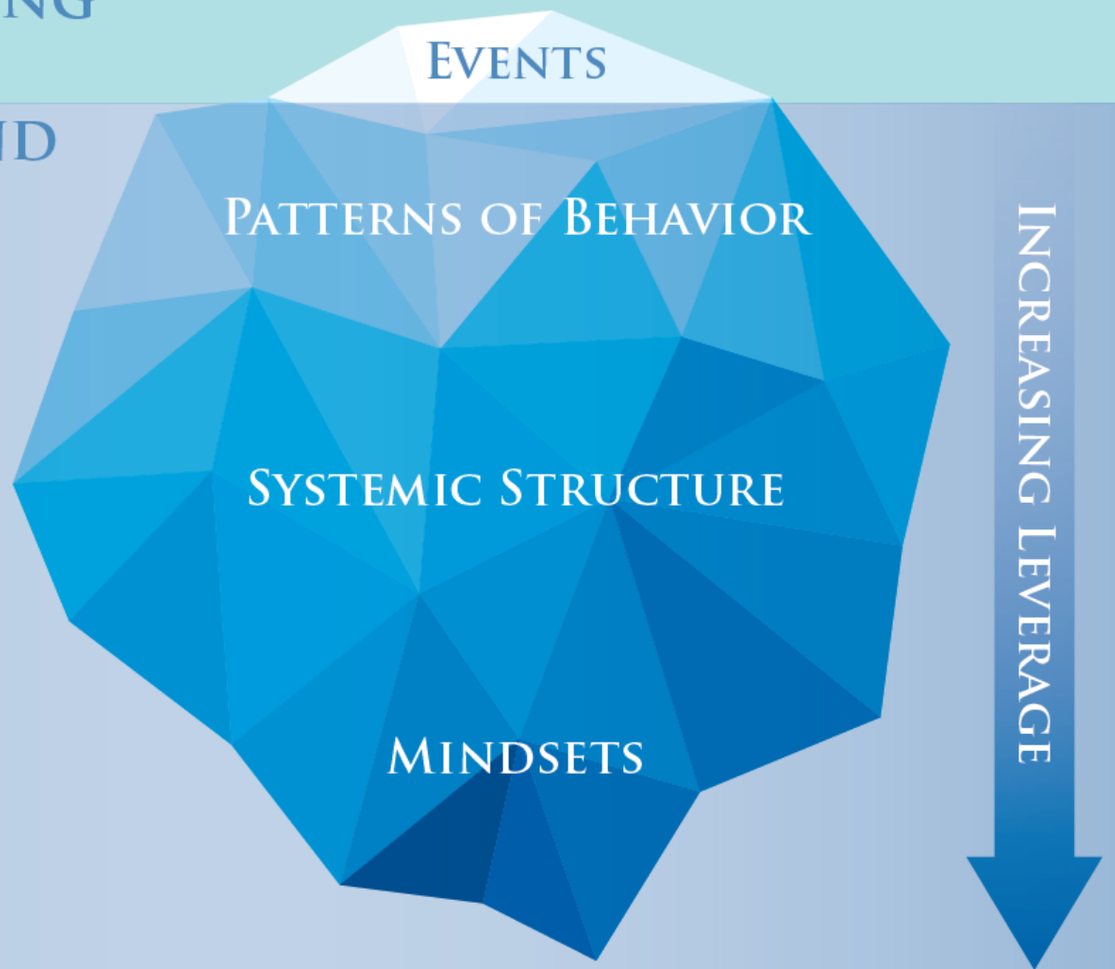
The Iceberg

A Framework for Guiding Systemic Thinking

Looking Deeper to Find Higher Leverage



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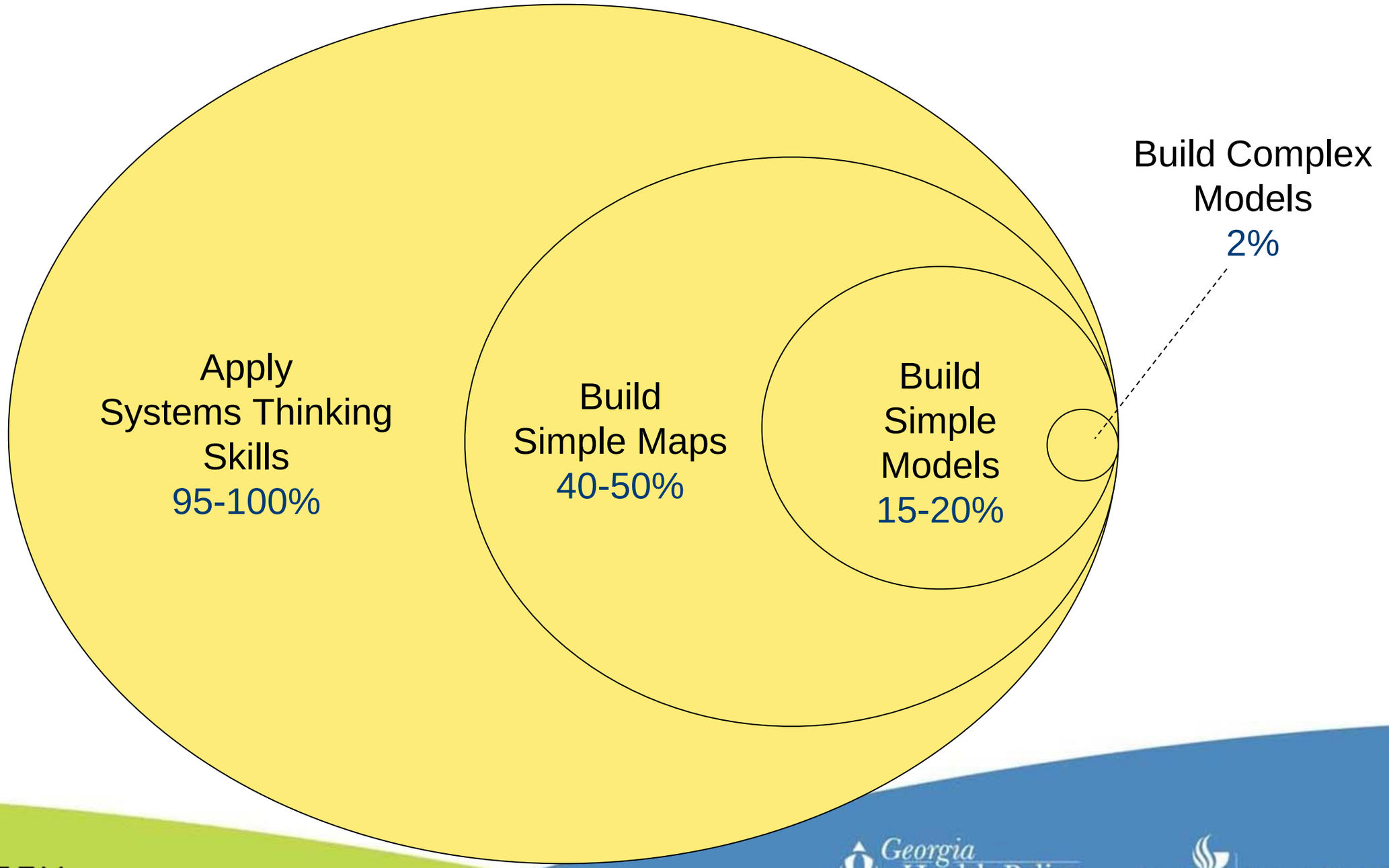
A Range of Systems THINKING Skills
–Barry Richmond



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Background on the Collaborative Systems Inquiry

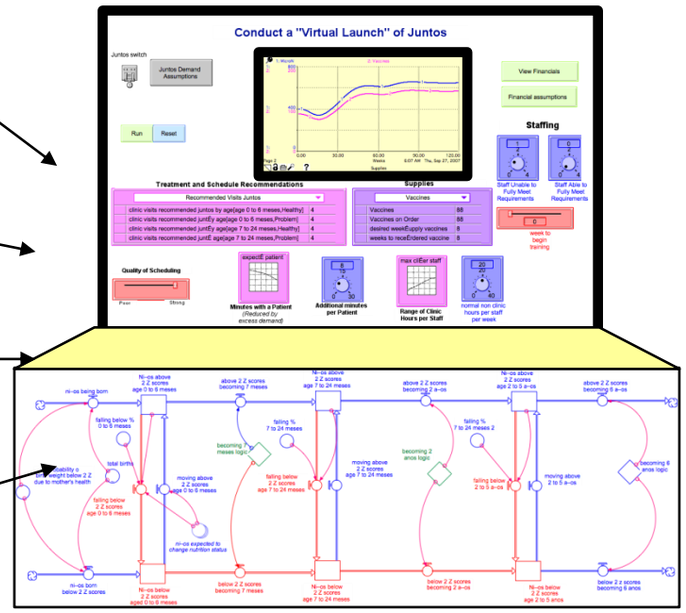
- GHPC received funding from the Georgia Health Foundation to build upon the work of the Legislative Health Policy Certificate Program (LHPCP)
- LHPCP participants chose childhood obesity as an issue about which they wanted to learn more
- A team of 12 (mostly volunteers) worked for five months on developing the model and supporting materials
- The CSI project provided a tool for legislators trained in basic systems thinking to have a more rigorous discussion about an important policy issue

Collaborative Modeling

Experts provide input to model

- Legislators & Staff
- Nutritionists
- Epidemiologists
- Physical Activity Experts
- Economists

Model is used to rigorously tests assumptions



The Process

- Develop Purpose
- Build/Revise Model
- Test Model
- Add/Revise Policies
- Test Policies
- Engage Policymakers

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Members of the Childhood Obesity Collaborative Systems Inquiry Team

- Jeremy Betts, Georgia House of Representatives
- Margie Coggins, Georgia House Budget Office
- Rep. Sharon Cooper, R-Marietta, Chair, Health and Human Services Committee
- Heather Devlin, MA, Georgia Health Policy Center
- Rachel Ferencik, MPA, Georgia Health Policy Center
- Mara Galic, RD, BlazeSports America
- Dafna Kanny, Ph.D., Georgia Division of Public Health
- Patricia Ketsche, Ph.D., Georgia State University
- Debra Kibbe, MS, ILSI Research Foundation
- Rep. John Lunsford, R-McDonough
- Karen Minyard, Ph.D., Georgia Health Policy Center
- Mary Ann Phillips, MPH, Georgia Health Policy Center
- Kenneth Powell, M.D., MPH, Consultant
- Robin Tanner, RD, DeKalb County Board of Health
- Fredrick Trowbridge, M.D., Consultant
- Jesse Weathington, Georgia House of Representatives

How to BE when using the Lab

A Learner

MINDSET = Learner!

- Participate with intention to learn
- Participant goals
- Articulate "theories" and predict outcomes
- Engage with any gap between a prediction and simulated outcome

I'm here to learn about
- the issues
- myself
- my colleagues' perspectives

What do I know about childhood trauma?
If we did X, what do I predict would happen?

Hmm! Why didn't what I expect happen?!
What assumptions are different in the lab than mine?

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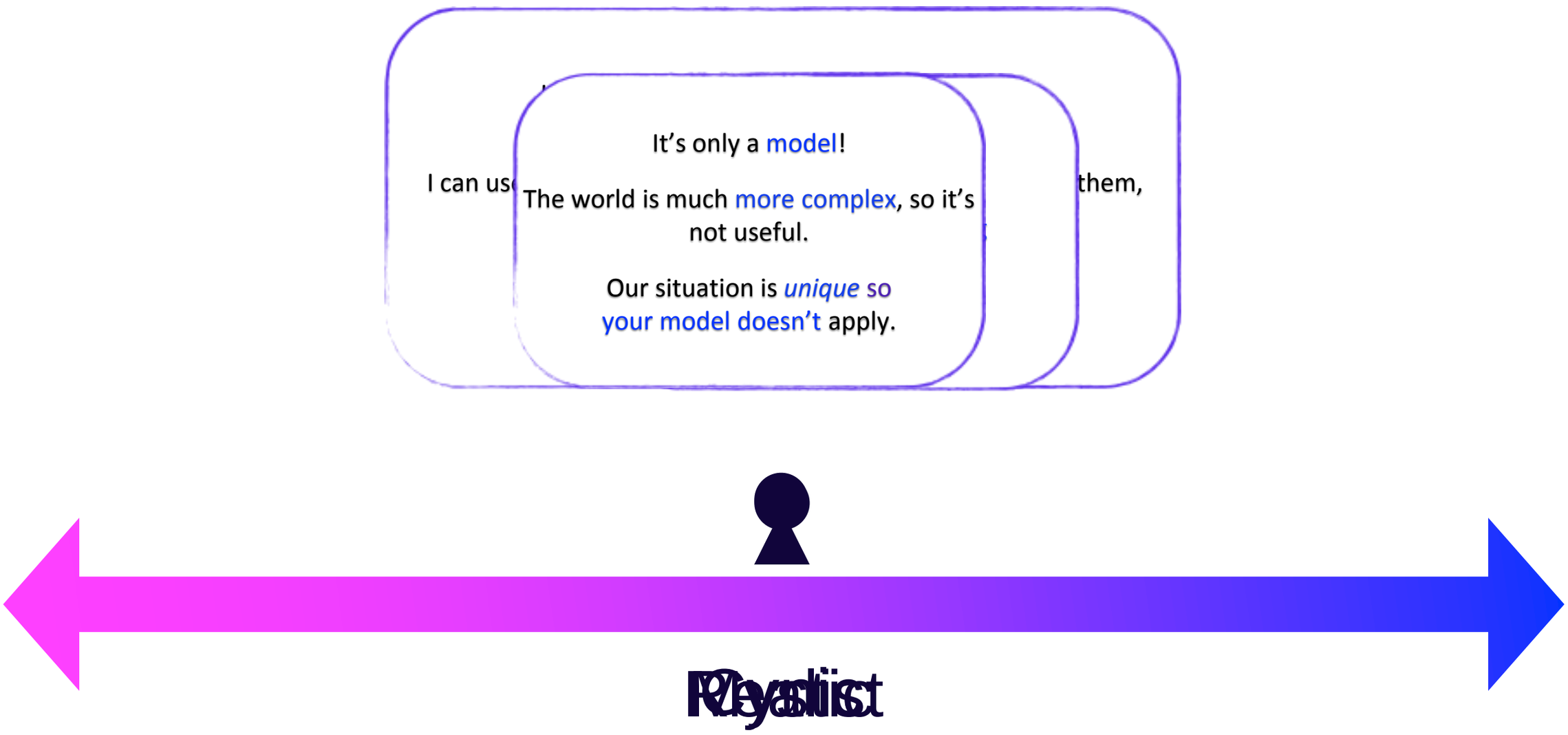
Perspectives on Models



All models are wrong. Some are useful!

–George Box & Ed Deming

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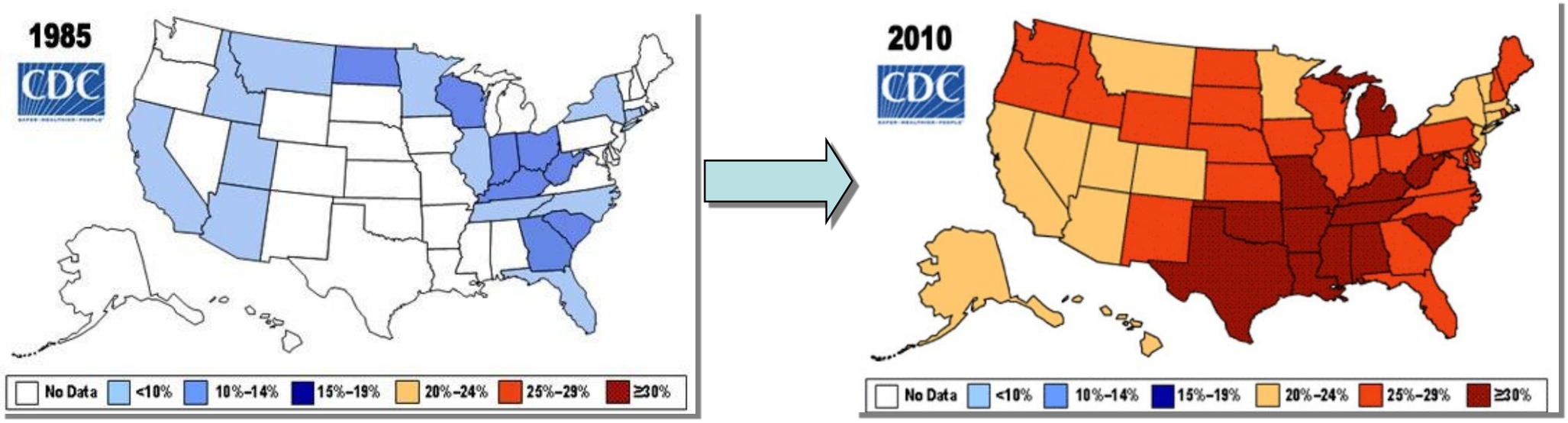
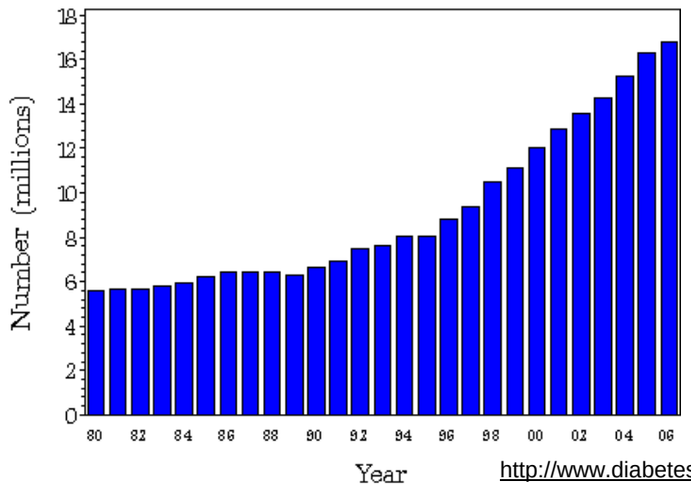
Obesity in the US



Number (in Millions) of Civilian/Noninstitutionalized Persons with Diagnosed Diabetes, United States, 1980–2006

From 1980 through 2006, the number of Americans with diabetes tripled (from 5.6 million to 16.8 million).



- Total annual economic cost of diabetes (2007) = $174 billion.
- Increased $42 billion since 2002 (32% increase!)
- $8 billion more each year
- Per capita annual health care costs diabetics is $11,744 a year
- $6,649 (57%) is attributed to diabetes.

- American Diabetes Association

http://www.diabetes.org/diabetes-statistics/cost-of-diabetes-in-us.jsp

One out of every **five** health care **dollars** is spent caring for someone with diagnosed **diabetes**, while one in the health care dollars is attributed to diabetes.

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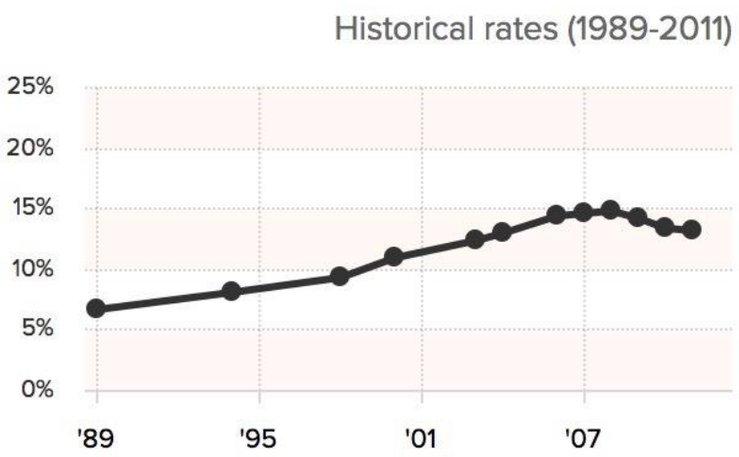
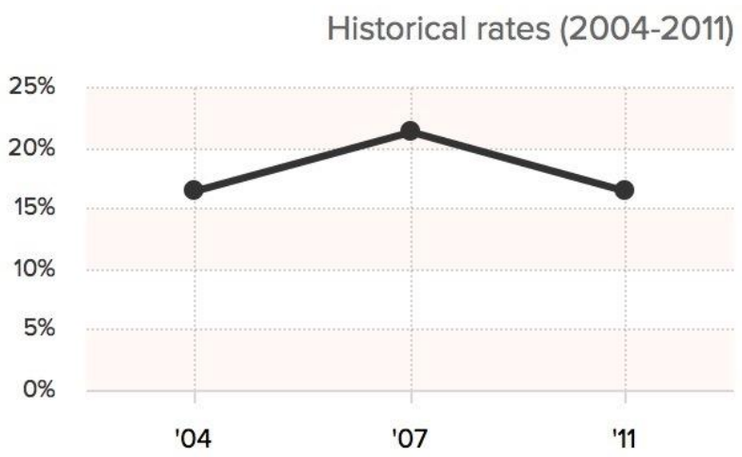
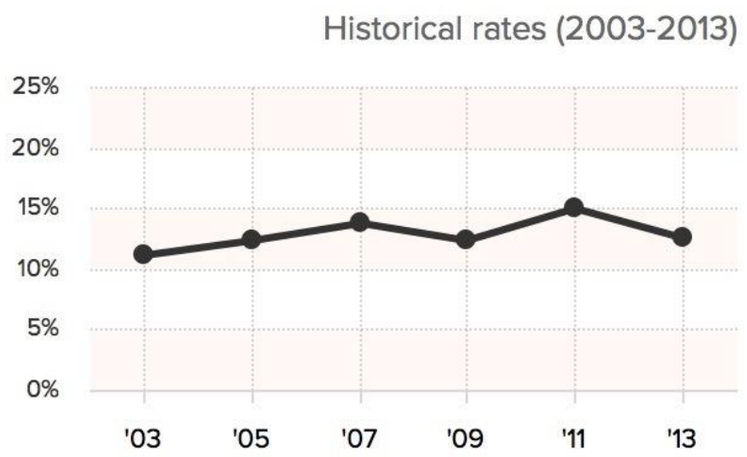
Childhood Obesity in GA



Source: stateofobesity.org/children24



Source: stateofobesity.org/children1017



Source: stateofobesity.org/high-school-obesity

http://stateofobesity.org/states/ga/

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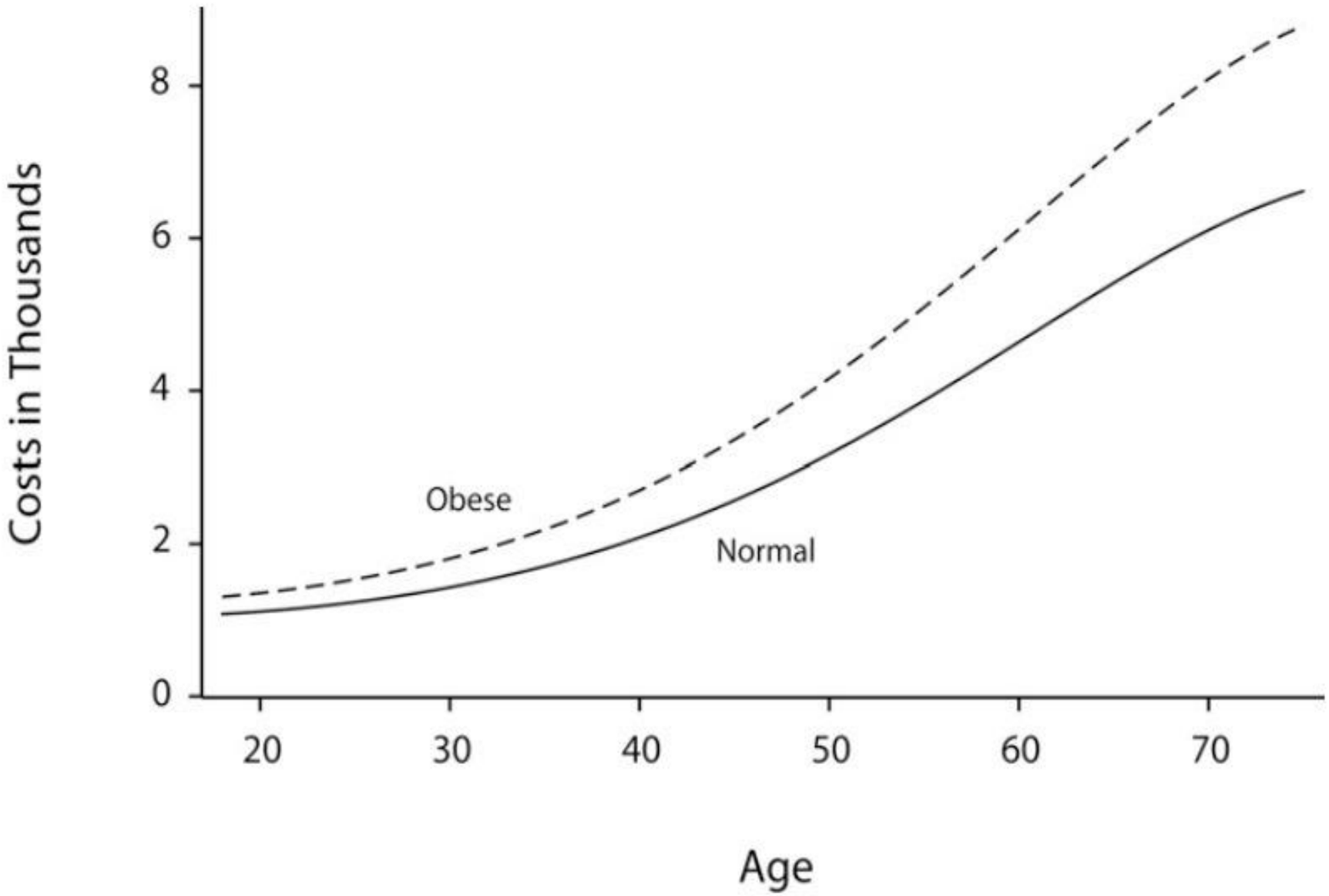
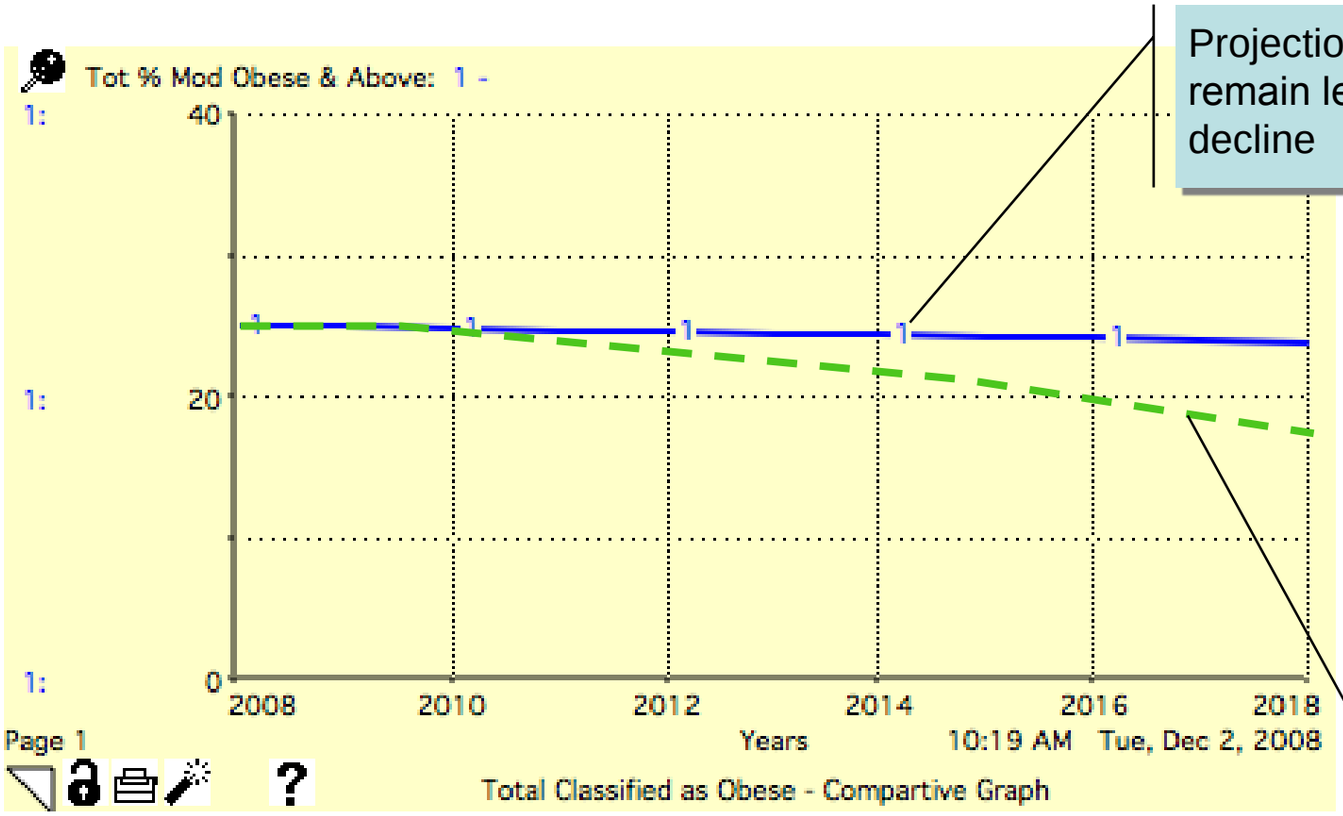


Source. Finkelstein and Brown.[25]

FIGURE 1—Annual medical expenditures for normal-weight and obese employees: Medical Expenditure Panel Survey, 2001–2003.

Objective:
Find strategies for reducing future childhood obesity* prevalence



Projections are for childhood obesity prevalence to remain level in the future…with a possible slight decline

Normally, this might be considered a success, but…

This means an unacceptably high and still increasing population with diabetes and other obesity-related conditions for years to come.

1. What strategies can be employed to bring down the % of children who are obese?
2. How long might it take to see some significant drop?
3. How large a drop could be expected?

*Moderately obese and above

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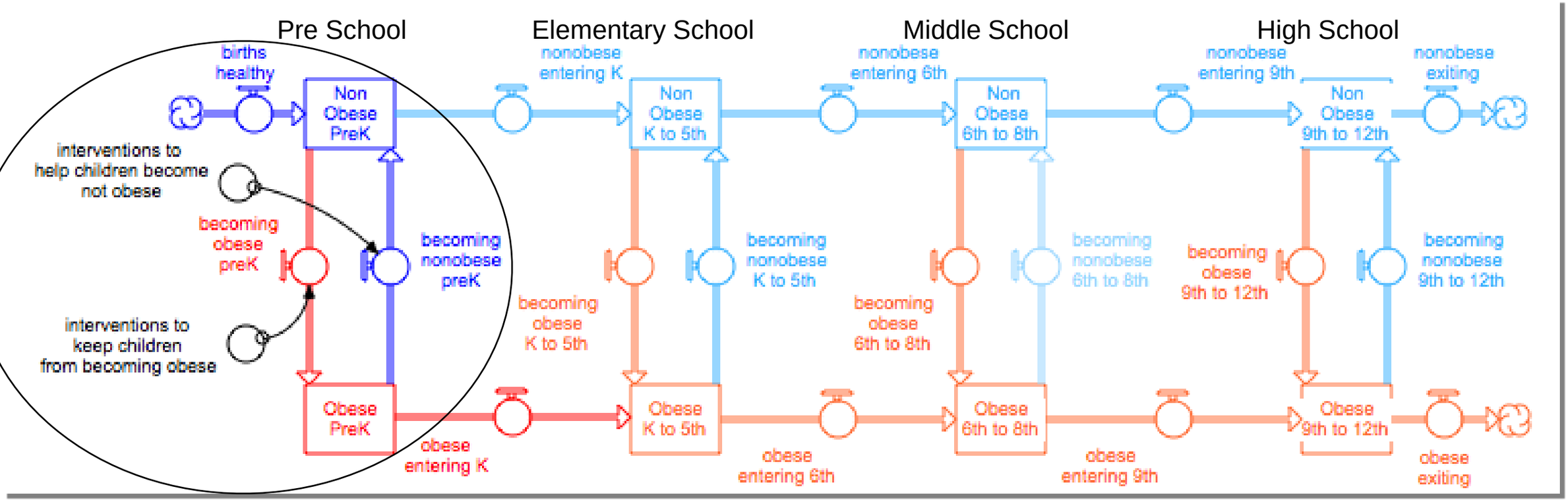
System map
Children age and become obese



- The lab's model assumes children are in different categories
  1. Obese: Severely Obese & Moderately Obese
  2. Non Obese: Moderately Overweight and Not Overweight
- They age, and within age categories, they can stay the same or change categories
- We will use the lab to examine different interventions to help children stay not obese or become not obese

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Policy Options

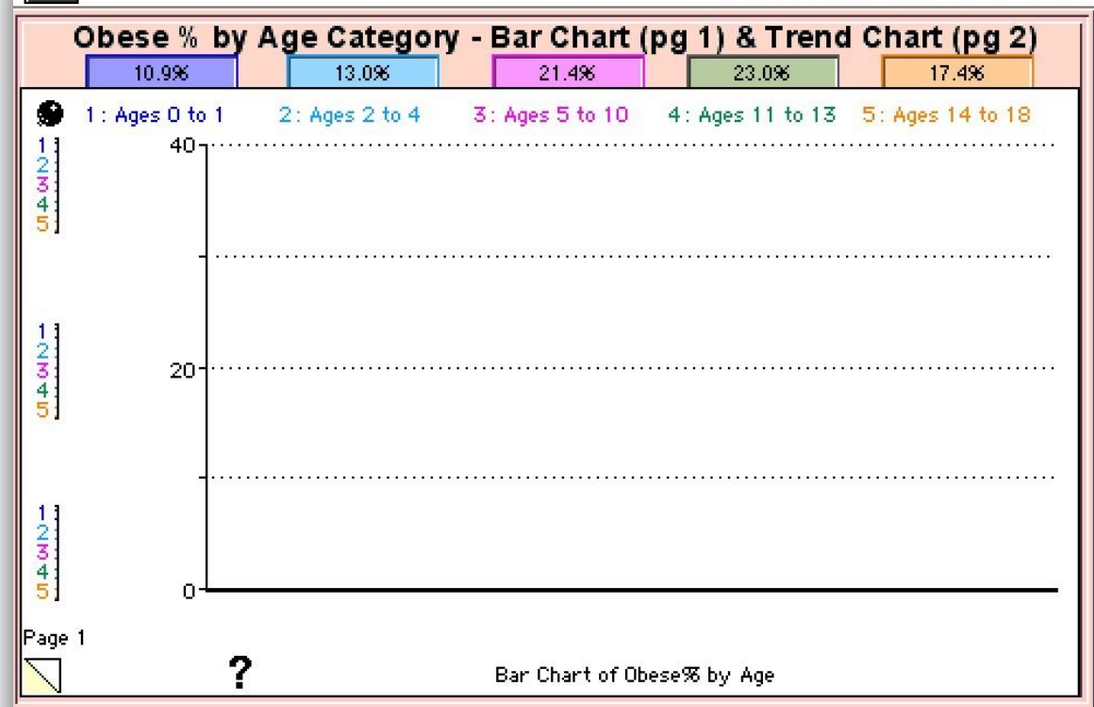
The CSI Team chose a sampling of interventions in schools, communities and health care. They include the following:

- Increase the proportion of school-aged children who walk to school.
- Reimburse for Medical Nutrition Therapy by Georgia Medicaid Care Management Organizations (CMOs).
- Impose limitations on a lá carte foods sold in public schools.
- Increase the number of minutes of Physical Education (PE) in school every week and improve the quality of PE activities.
- Increase the number of licensed preschool programs that incorporate a nutrition education and physical activity component into existing curriculum.
- Increase the number of elementary and middle school children in Georgia participating in after school programs that meet specified nutrition and activity standards.
- Increase classroom physical activity.
- Mandate recess and/or modify existing recess time.
- Increase breastfeeding prevalence.

The Control Panel

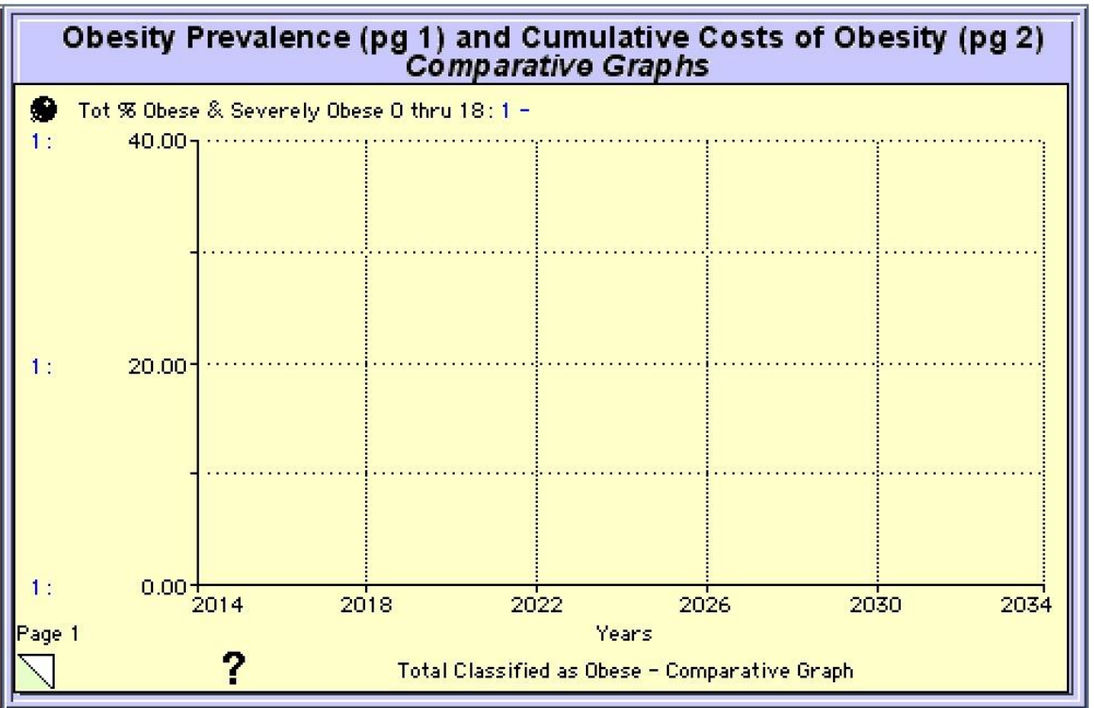
3. Practice Field: Test Policies

Obese % by Age Category - Bar Chart (pg 1) & Trend Chart (pg 2)



Obesity Prevalence (pg 1) and Cumulative Costs of Obesity (pg 2)

Comparative Graphs



Instructions

POLICIES

		Elementary	Middle	High
Physical Education	Keep status quo?	■	■	■
	Require?	□	□	□
	Increase quality?	□	□	□
	Require & increase quality?	□	□	□
After School Programs	Keep status quo?	■	■	■
	Increase afterschool participation?	□	□	□
	Add physical activity?	□	□	□
	Increase participation & physical activity?	□	□	□
Classroom activity	Increase classroom activity?	□	□	NA
Recess	Keep status quo?	■	NA	NA
	Mandate recess?	□	NA	NA
	Modify recess?	□	NA	NA
	Mandate & modify recess?	□	NA	NA

School Nutrition

% of schools w/o a la Carte Lunch Options: ? 13

Preschool

% of Students in Preschool Programs: ? 62

Medicaid

Reimbursement for nutrition counseling: ? 5

Breastfeeding

Increase breastfeeding prevalence □

Community Based

Develop Safe Routes to School □

Performance Measures

Obesity %	19.8%
% chg in obesity	-18.5%
Obesity Cost/Child	$40
Annual Obesity Cost $M	$106
Cume Obesity Cost $M	$0

Impacts at age 40

Cume obesity cases averted	0
Cume Additional QALYs	0
Cume medical costs averted $M	$0

Run | Reset All | Reset Output

Intervention Details

Review Goals

Detailed Output

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