

# INVESTMENT IN SCHOOL HEALTH CAPACITY

Payoffs in HEALTH, ACHIEVEMENT and STRONGER COMMUNITIES

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Oregon  
**Health**  
Authority

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Adolescent and School Health Unit

HEALTHY KIDS   
LEARN BETTER

A Coordinated School Health Approach

# Guiding Questions

1. How do we measure “school health”?
2. What is the impact of key school health practices on schools and students?
3. How does school health impact community level measures?
4. If we implemented these practices what would the return on investment be?
5. What were the findings, challenges and limitations of the ROI analysis?

# What is “School Health?”



# Coordinated School Health



# How do you measure school health?

- Benchmark made using a combination of 4 questions
- Reflects the research base for what is needed to support a Coordinated School Health approach.



## PROFILES 2010

### School Health Profiles

Characteristics of Health Programs  
Among Secondary Schools

National Center for Chronic Disease Prevention and Health Promotion  
Division of Adolescent and School Health



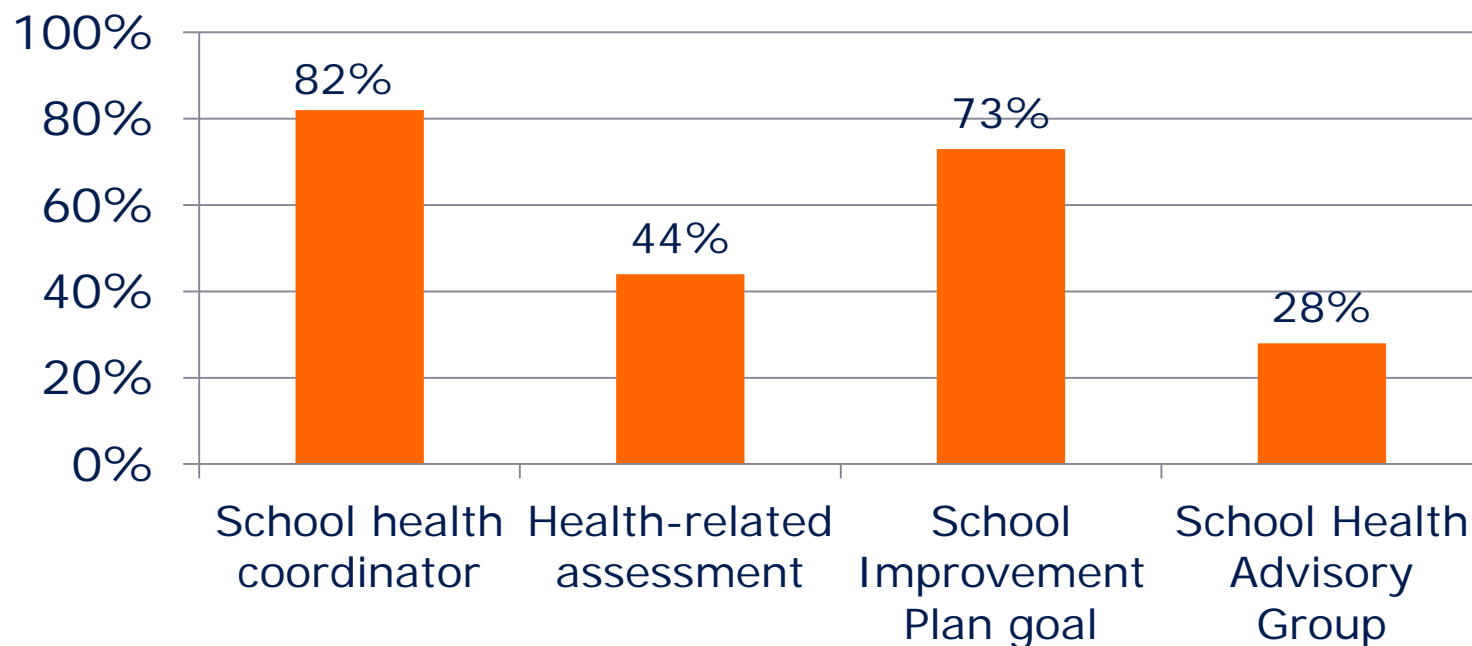
# Core Capacity Benchmark

(Profiles Principal Questionnaire 2010)

1. Has your school ever used the School Health Index or other **self-assessment tool** to assess policies, activities, and programs?
2. Does your school's written **School Improvement Plan (SIP)** include health-related goals and objectives?
3. Does **someone** at your school oversee or **coordinate** school health and safety programs and activities?
4. Is there one or more than one group (e.g. **School Health Advisory Council**) at your school that offers guidance on the development of policies or coordinates activities on health topics?
  - School Administrator
  - Community members

# Core Capacity Measures

## % OR High Schools with Core Capacity Measures



2010 Oregon School Health Profiles Survey



## School Health Capacity and Intervention

### A1. "Core School Health Capacity" Measures

- School health coordinator
- School health advisory group (including administrator and community members)
- School Improvement Plan (SIP) goals related to health
- Assessment of health-related school policies, procedures, curriculum and services

### A2. School Health Issue-specific Interventions

- Health-related school policies, procedures, rules
- Health education curriculum
- School-based health services

## Student Health

### B. Student Health Outcomes

- Improved physical activity, nutrition
- Decreased unhealthy/early sexual behaviors, pregnancy
- Decreased tobacco/substance use
- Improved mental health
- Reduced aggression/bullying
- Controlled chronic disease (asthma, diabetes, obesity)
- Controlled infectious disease (colds, flu, STDs)

## Student Achievement

### C. Student Achievement Outcomes

- Increased school connectedness
- Improved attendance
- Increased on-task behavior
- Decreased disciplinary problems
- Improved grade level achievement
- Reduced dropout rates
- Improved graduation rates

## Community Health and Benefits

### D. Community Health and Benefit Outcomes

- Educated, healthier community members
- More productive workforce
- Healthier children in subsequent generations



# Core Capacity & Health Policies/Programs

Schools with Core Capacity are more likely to:

- Use strategies to promote healthy eating
- Provide tobacco cessation services for students & staff
- PE teachers provided with goals, written curriculum, assessment plan
- Offer intramural activities to all students
- Offer fruits/veggies in vending machines and school stores

# Oregon Data Sources

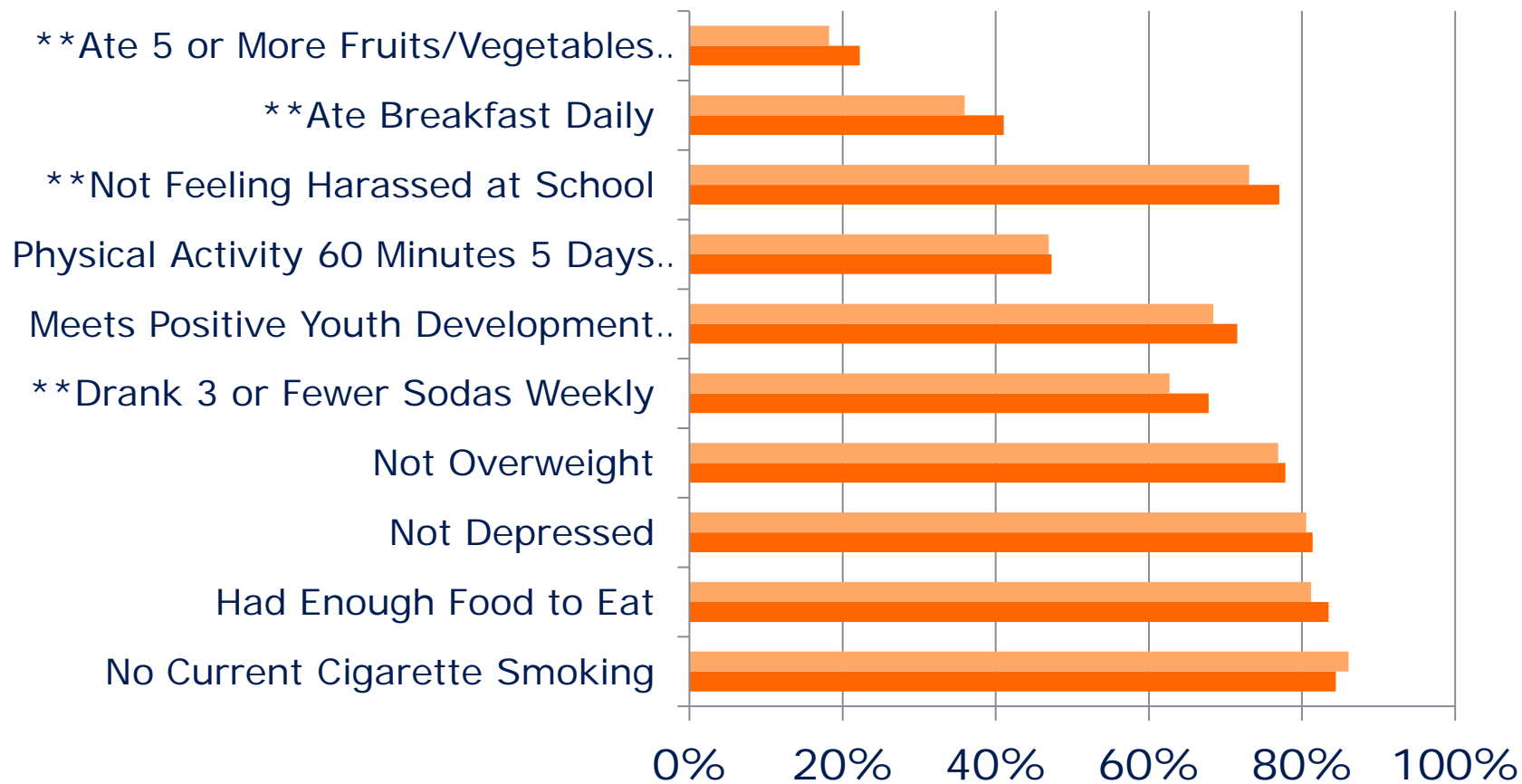
Level/Topic	Health	Education
School/District	School Health Profile Survey	High school graduation rates, Discipline Incidents Collection System
Student	Oregon Healthy Teens survey	Oregon Healthy Teens survey (self-reported grades)

# Linking Student Health & Core Capacity

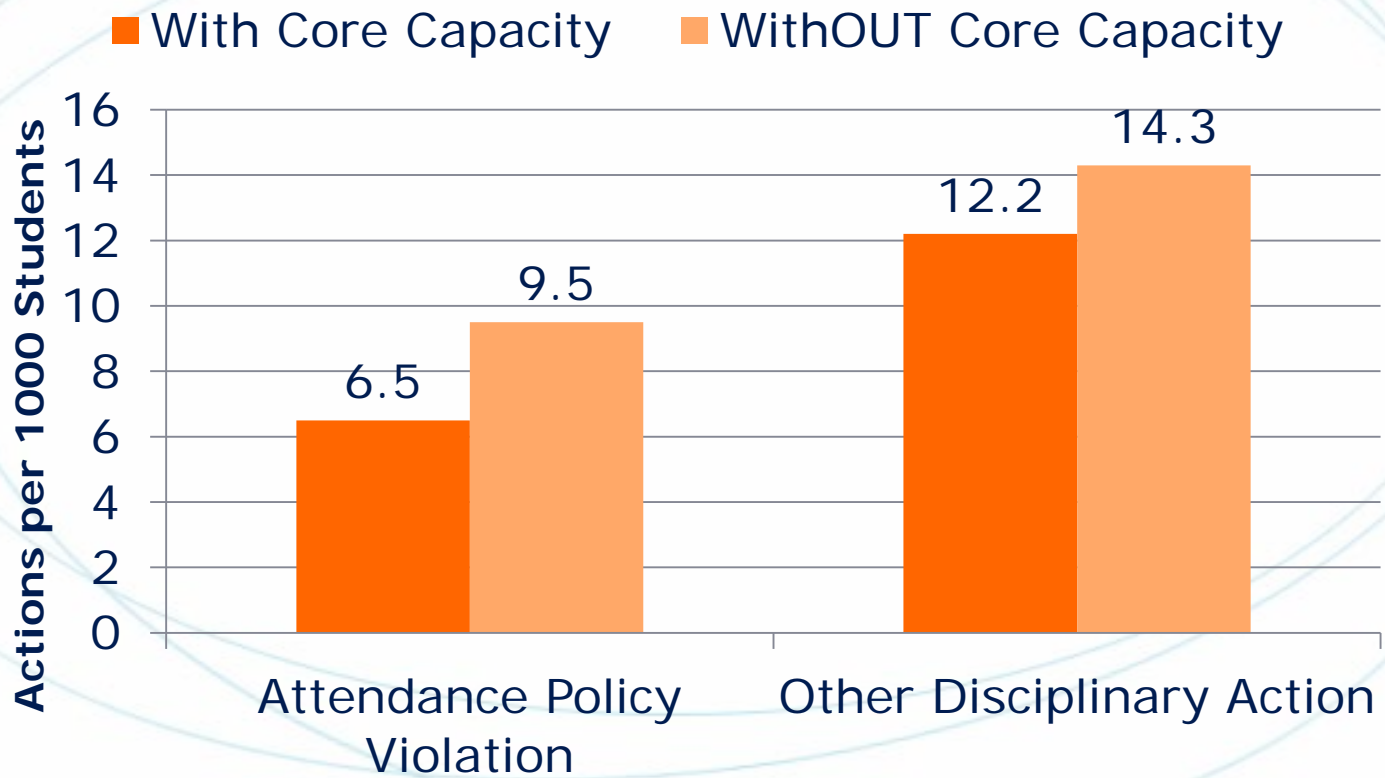
- Linked Oregon Healthy Teens and School Health Profiles data
- Healthier behaviors
- Most other areas in expected direction

# % of HS Students with Healthy Factors, by School Core Capacity Status

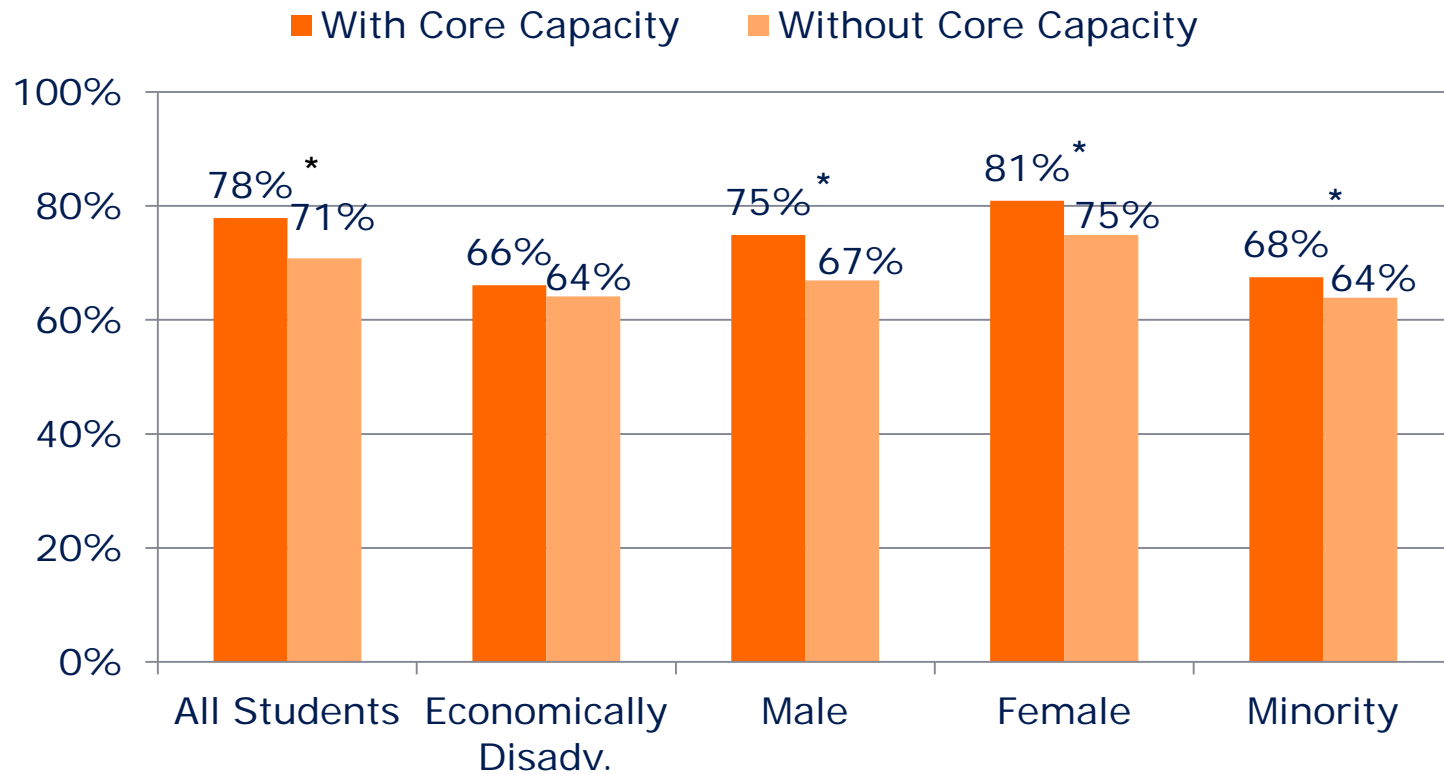
WithOUT Core Capacity      With Core Capacity



## Annual Attendance & Discipline Violation Rates by Core Capacity Status



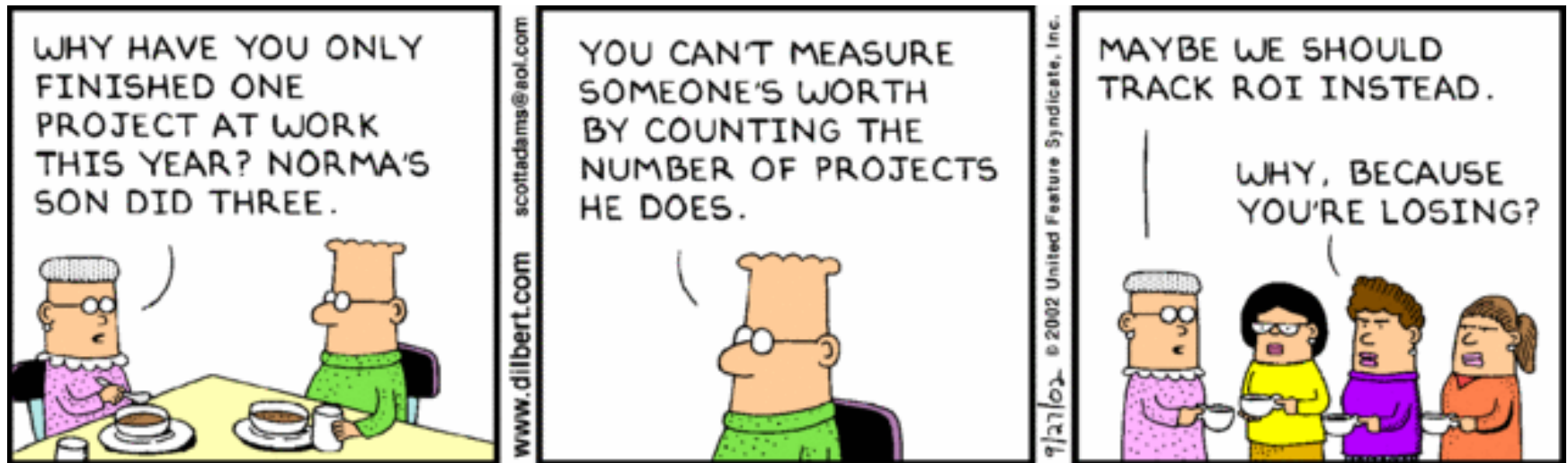
# Core Capacity & High School Graduation



\* =  $p < 0.05$



# What is ROI?



# ROI : Valuing What We Do

- In the Public Health world, ROI can be scary!
- ROI is another tool to capture the work that we do, beyond outputs and outcomes
- Putting our outcomes into economic terms is challenging

$$V(s) = \max \left\{ \sum \beta^t \bar{u} + \beta^{s-1} \sum \rho^{t-s}(s) [u(w_t(s)(1 - k_t) + R(k_t, s)) - \rho(s)\pi(k_t)P] \right\}$$

# The “R” of ROI: RETURN

- Several health & educational outcomes with possibilities for financial return
- Focus on high school graduation rates
- WHY?
  - Healthy People 2020 Indicator
  - Robust difference (7%)
  - Straightforward & appealing concept
- What if we only saw a 1% increase in graduation rates?

# The “I” of ROI - Investment

- How to monetize implementing Core Capacity?
- Half-time School Health Coordinator for each middle/high school in Oregon
- # schools = 620
- Salary = \$45,070 (+ benefits)
- **TOTAL TAXPAYER COST = \$18,861,795**

# ROI: Where to Start?

Measure	Data Point
Size of 2010 Oregon HS 4-year cohort	50,170
Total # of HS grads, 2010	33,254
# of new grads, assuming 1% increase	502
# of years for projections	46 (ages 19-64)

# ROI Domains

Domain	Measure	Data Sources
Health care	Medicaid enrollment	OR Health Insurance Survey, Kaiser State Health Facts
Economic Capacity	Household income	American Community Survey
Economic Capacity	Tax revenue	Nat. Bureau of Economic Research
Crime	Arrest rates among males	FBI crime data, OR Judicial Information System, economic research



# ROI Analysis: Medicaid

What would happen to Medicaid enrollment if the 2010 graduation rate increased by 1%?

Measure	Data
% Oregon HS graduates on Medicaid	7.7%
% Oregon non-HS graduates on Medicaid	21.6%
Average annual State cost for adult Medicaid enrollee	\$1,710
# adults expected to avoid Medicaid enrollment	70
Year 1 estimated State savings	\$119,345
Lifetime Estimated State Savings	\$6,131,177

# ROI Analysis: Income & Tax Revenue

What would happen to income and tax revenues if the 2010 graduation rate increased by 1%?

Median Earnings by Education Level - Oregon (2010 ACS)	% of Individuals	Income
< High school graduate	11.2%	\$17,970
High school graduate	25.0%	\$24,147
Some college or associates	35.0%	\$28,783
Bachelors degree	18.3%	\$41,884
Graduate/Professional degree	10.5%	\$54,217

# ROI Analysis: Income & Tax Revenue

What would happen to income and tax revenues if the 2010 graduation rate increased by 1%?

Oregon Measures	Without HS Degree	With HS Degree
Median pre-tax individual income	\$17,970	\$24,147
Estimated state tax	\$1,008	\$1,481
Estimated federal tax	\$874	\$1,801
Median post-tax individual income	\$16,088	\$20,865
<b>Yr 1 est new State tax revenue</b>	<b>\$237,446</b>	
<b>Yr 1 est new Federal tax revenue</b>	<b>\$702,800</b>	
<b>Yr 1 estimated new individual income</b>	<b>\$2,398,054</b>	

Tax calculator: <http://users.nber.org/~taxsim>

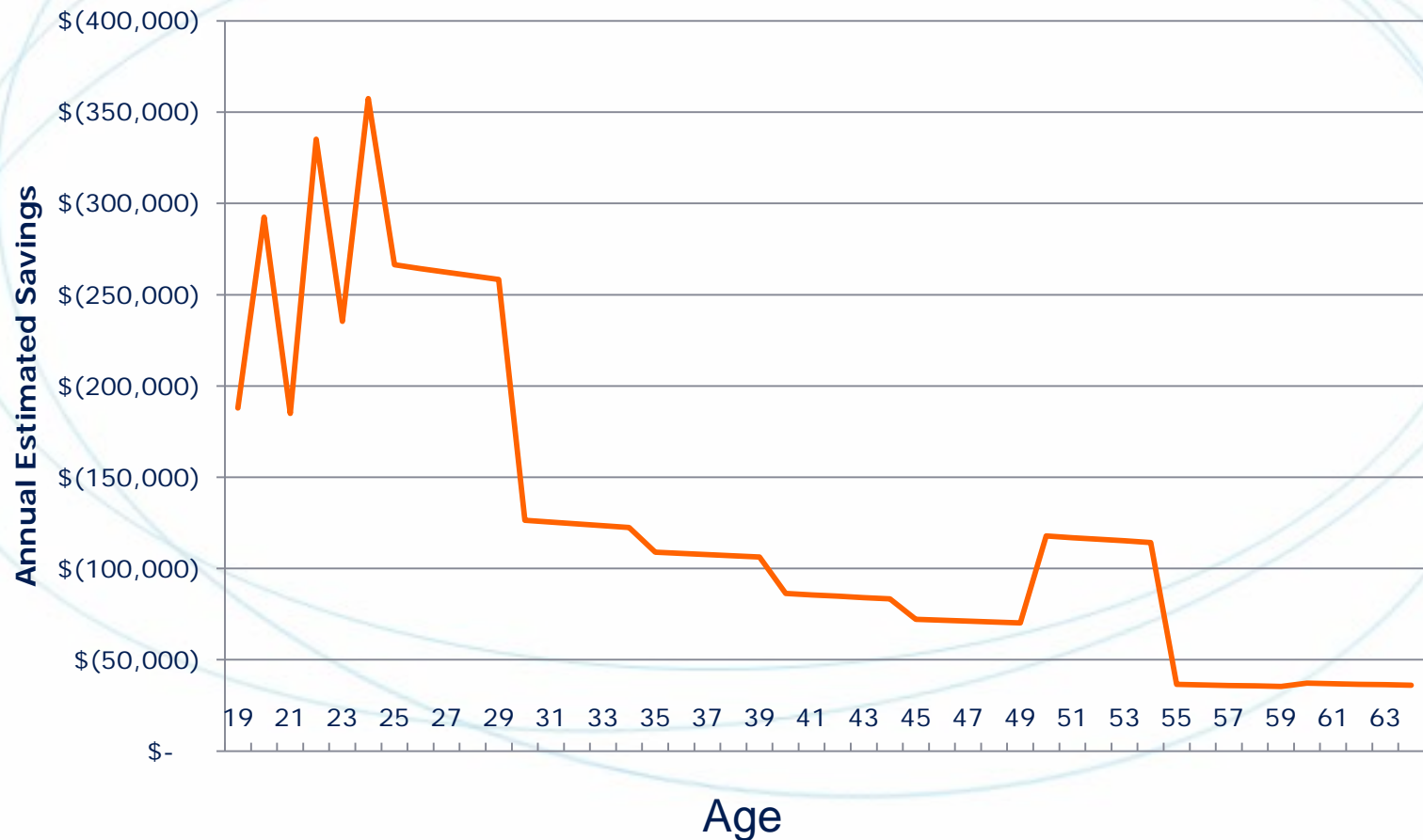
# ROI Analysis: Crime Rates

- What will happen to crime rates if more males graduate from high school?
- Credit to Lance Lochner & Enrico Moretti (economists – U of Rochester)
- Costs of crime include incarceration, property loss, victim costs
- Crimes: murder, rape, robbery, assault, burglary, theft, arson

Measure	Est. Lifetime Impact
Estimated change in arrests	-94.49
Estimated change in crimes	-213.67
Average cost per crime (Yr 1)	\$23,490
Lifetime Estimated Benefit	\$3,814,812

# ROI Crime Savings by Year

## Estimated Crime Savings for Year of Life (OR Males)



# Summary of ROI Measures

Lifetime Cost/Benefit	OREGON	TOTAL (OR + US)
Taxpayer Cost – Core Capacity implementation	(\$18,861,795)	(\$18,861,795)
Benefit – Medicaid	\$6,131,177	\$16,379,982
Benefit – Taxes	\$8,012,997	\$23,717,117
Benefit – Income	\$80,926,190	\$80,926,190
Benefit – Crime	\$3,814,812	\$3,814,812
Total Benefit (2010 dollars)	\$98,885,176	\$124,838,100
<b>Projected ROI</b>	<b>\$5.24:\$1</b>	<b>\$6.62:\$1</b>



# Core Capacity ROI Limitations

- Association vs Causation
- Information Abyss
- Using Proxy for Cost
- Impact of ACA/Health care transformation

# Discussion Questions

- What is the most interesting finding?
- What are the implications for your work?
- What next steps should be taken with this research?

# The Team

- **Isabelle Barbour**, *School Health Coordinator*, Adolescent and School Health Unit
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<http://amishamerica.com/what-happens-at-an-amish-barn-raising/>

# Questions?



Access the full report and this presentation here:

<http://public.health.oregon.gov/HealthyPeopleFamilies/Youth/HealthSchool/HKLB/Pages/index.aspx>

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