

Workshop of the Roundtable on Population Health Improvement

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Main Points

- Be clear on our goal: Long, healthy lives for all
- Healthy communities produce healthy people
- We must re-frame the debate on investment in health
 - Express opportunity costs in meaningful human terms
- We describe the problem well, but we need a broader portfolio of effective interventions
 - Need to invest in demonstrating the effectiveness and value of interventions



Goal: Long, Healthy Lives for All

- If this is our goal, we must measure it
- Recommend Using:

Healthy life expectancy

- And use the terminology often and consistently so it is as intuitive as the Gross Domestic Product or Consumer Price Index



But a community's health is more than
the sum of the health of individuals



Healthy People Live in Healthy Communities

- Meet basic needs of all
 - Safe, sustainable, accessible and affordable transportation
 - Affordable, accessible and nutritious healthy foods
 - Affordable, high quality, socially integrated and location-efficient housing
 - Affordable, high quality health care
 - Complete and livable communities including affordable and high quality schools, parks and recreational facilities, child care, libraries, financial services, and
 - other daily needs
- Quality and sustainability of environment
- Adequate levels of economic and social development
- Social and health equity
- Social relationships that are supportive and respectful



Opportunity Cost

US spends **\$2.7 TRILLION** on medical care
(17.9% of GDP, \$8,680 per capita)

50% more than the next highest country

Open-ended, poorly controlled spending in medical care
siphons resources from other goods and services,
many of which provide much more health and value.



The U.S. wastes **\$700-\$750 BILLION**
each year in health care costs.

What is the Waste?



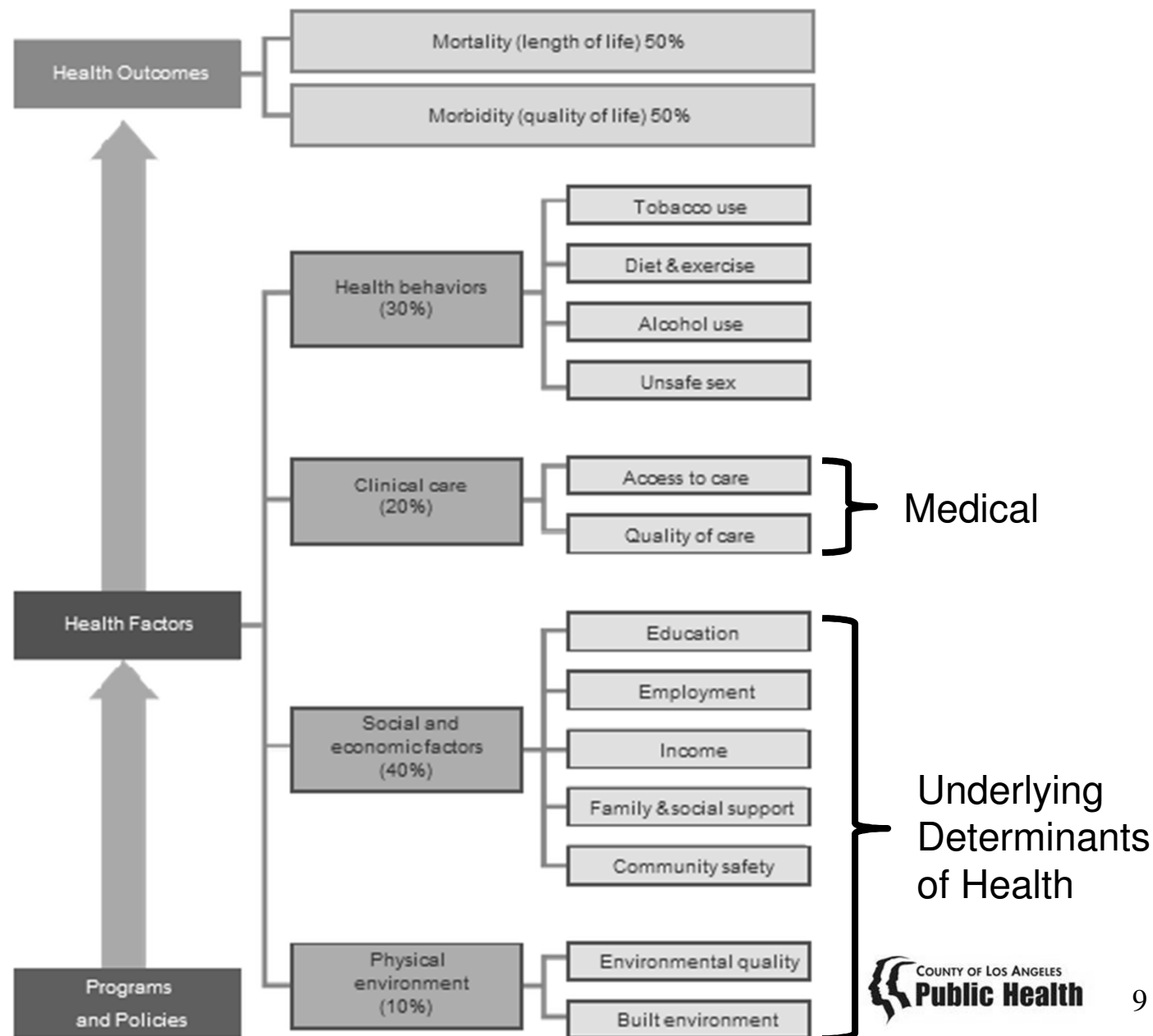
Source: Data from workshop presentations and discussions summarized in *The Healthcare Imperative*

Institute of Medicine. *The Health Imperative: Lowering Costs and Improving Outcomes*. 2011

Accessed at: <http://iom.edu/Reports/2011/The-Healthcare-Imperative-Lowering-Costs-and-Improving-Outcomes.aspx>



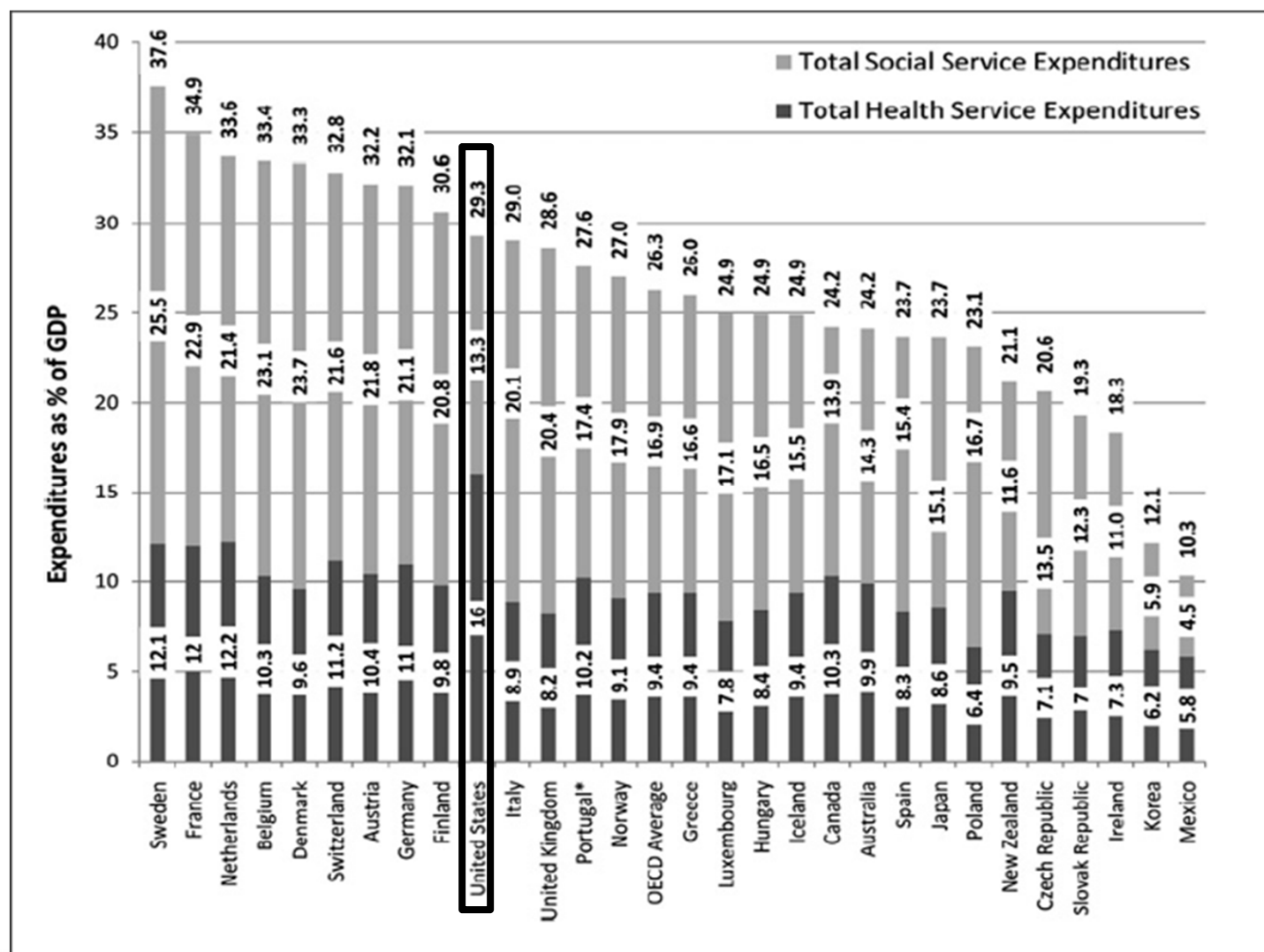
Medical Care is Not the Primary Determinant of Health



Health-care related spending **crowds out** expenditures on social goods including education, economic development and maintenance of critical infrastructure.



The U.S. Overinvests in Clinical Care and Inadequately Invests in Social Services



Bradley, EH et al BMJ Qual Saf 2011;20:826e831.

Data Source: OECD Health Data 2009 (accessed June 2009); OECD Social Expenditure Dataset



Of the \$700-\$750 BILLION Wasted Each Year in Health Care Costs:

- Approximately 55% accrues to the private sector
 - Over **\$400 billion**
- The remaining 45% accrues to the public sector (federal and state government)
 - Over **\$330 billion**





Getting rid of waste wouldn't
be easy, but what if...

What if we eliminated the wasteful medical
care spending and used it for something more
productive?



What Could \$750 Billion – the Health Dividend-- Do?

Private \$412b

- Increase business investment: add jobs, international competitiveness
- Bolster economic growth: increase wages, leisure, consumer purchases
- Increase living standards



Public \$338b

- Stabilize the nation's fiscal health
- Address failing infrastructure
- Improve the population's well being

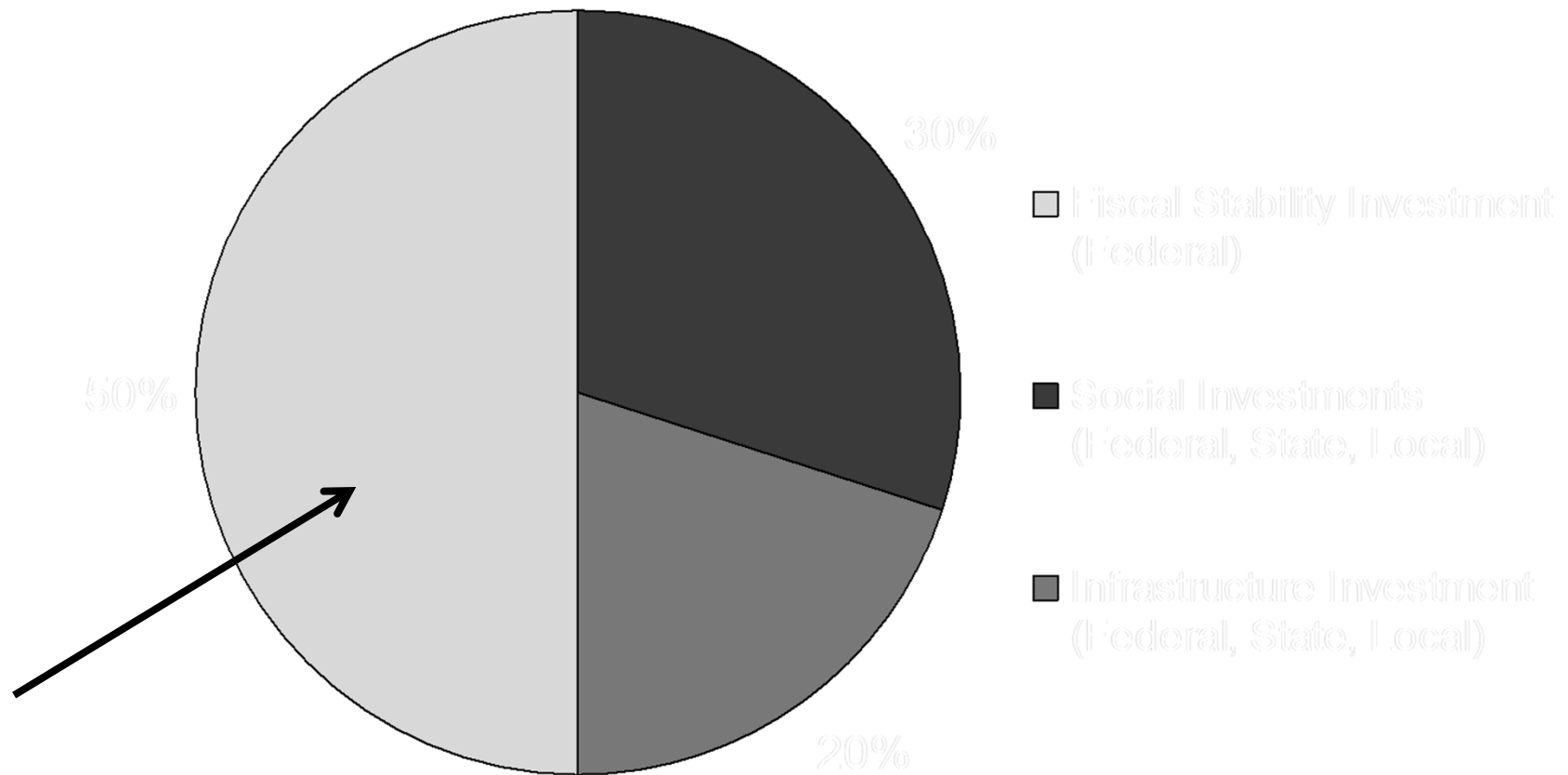
What Could the Public Sector Do With Its \$338 billion Share of the Health Dividend?

Here is one scenario:

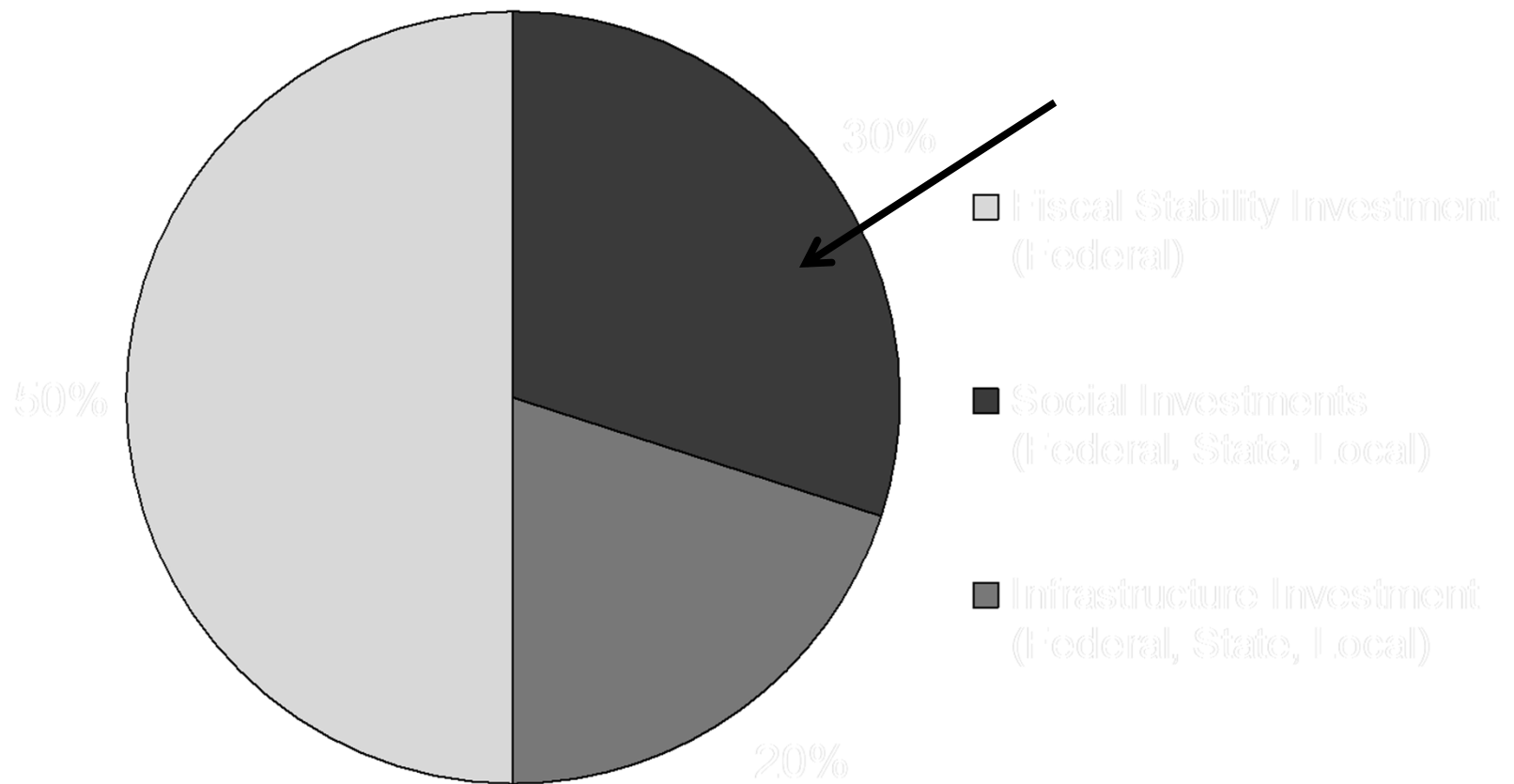
- Devote 50% to Federal Fiscal Stability Investment
- Devote \approx 30% to Social Investments
- Devote \approx 20% to Infrastructure Investments



Federal Fiscal Stabilization: \$168 billion annually



Social Investments: \$104 billion annually



Reduced Class Sizes

\$53.3 billion annually

- All 24 million¹ elementary students could have smaller class size
 - A reduction from 22-25 students to 13-17 students^{2,3}
- Recent study shown class size reduction could lead to 70,000 to 140,000 additional HS graduates⁴



1) U.S. Dept of Education. National Center for Education Statistics. *Public School Student, Staff, and Graduate Counts*. 2003; 2) Tennessee Department of Education. *The State of Tennessee's Student/Teacher Achievement Ratio (STAR) Project*1990.; 3) Krueger AB. *Economic Considerations and Class Size*. The Economic Journal. 2003;113(485):F34-F63; 4) Muennig P, Woolf SH. *Health and economic benefits of reducing the number of students per classroom in US primary schools*. AJPH 2007;97(11):2020; Shin Y, Raudenbush SW. *The Causal Effect of Class Size on Academic Achievement*. Journal of Educational and Behavioral Statistics. April 1, 2011;36(2):154-185, Nye B, Hedges LV, Konstantopoulos S. *The long-term effects of small classes: A five-year follow-up of the Tennessee class size experiment*. Educational Evaluation and Policy Analysis. 1999;21(2):127., Chetty R, et al. *How Does Your Kindergarten Classroom Affect Your Earnings? Evidence from Project Star*. National Bureau of Economic Research;2010

Additional Graduates Means More Tax Base

Over the course of a lifetime:

- Each high school graduates contributes \$287,000
- Those with some college contribute \$462,000
- Those with a college degree contribute \$793,000
- Those with a masters degree or higher contribute \$1.1 million
- Each high school dropout costs over \$292,000
 - Lower tax revenues, higher cash and in-kind transfer costs, and imposed incarceration costs compared to a high school graduate over his/her lifetime.

Smoking Prevention Education

\$100 million annually

- All 2.5 million¹ graduating high school students could receive smoking prevention education
 - Could prevent 300,000 students from smoking²
 - Could save nearly 3 million life years³



1) U.S. Dept of Education. National Center for Education Statistics. *Public School Student, Staff, and Graduate Counts*. 2003; 2) National Center for Chronic Disease Prevention and Health Promotion. *Tobacco Use and the Health of Young People*. 2010; 3) Doll R, Peto R, Boreham J, Sutherland I. *Mortality in relation to smoking: 50 years' observations on male British doctors*. BMJ. 2004;328(7455):1519.



Regular Home Visits From Nurses

\$4.2 billion annually

- Nurse home visits for all 700,000¹⁻³ pregnant smokers and pregnant teens
- Could reduce the number of low birth weight newborns by almost 35,000⁴⁻⁵
- Could reduce ER visits by over 435,000 during the first 2 years of life⁴⁻⁵



1) Hamilton B.E., Martin J.A., S.J. V. Births: Preliminary data for 2009. *National vital statistics reports* 2010;59(3); 2) The Annie E. Casey Foundation. KIDS COUNT Data Center. 2010; 3) Tong V, et al. CDC. *Trends in smoking before, during, and after pregnancy: Pregnancy Risk Assessment Monitoring System (PRAMS), US, 31 sites, 2000–2005*. MMWR Surveill Summ. 2009;58(4):1-29.; 4) Olds DL, et al. *Improving the delivery of prenatal care and outcomes of pregnancy: a randomized trial of nurse home visitation*. Pediatrics. 1986;77(1):16.; 5) Olds DL, et al. *Effects of Home Visits by Paraprofessionals and by Nurses: Age-Four Follow-up of a Randomized Trial*. Pediatrics. 2004;114:560–568.

Social Development Program

\$13.6 billion annually

- Half of all 3.9 million¹ first grade students along with parents and teachers could participate in a social development program² that:
 - Decreases risky sexual behavior and drug use³⁻⁴
 - Improves work, social and emotional functioning as adults⁴

1) U.S. Census Bureau. *School Enrollment: Social and Economic Characteristics of Students*. 2011; 2) Seattle Social Development Project. *About the Seattle Social Development Project*. 2011; 3) Lonczak HS, et al. *Effects of the Seattle Social Development Project on Sexual Behavior, Pregnancy, Birth, and Sexually Transmitted Disease Outcomes by Age 21 Years*. Arch Pediatr Adolesc Med. May 1, 2002;156(5):438-447; 4) Hawkins JD, et al. *Promoting Positive Adult Functioning Through Social Development Intervention in Childhood: Long-term Effects From the Seattle Social Development Project*. Arch Pediatr Adolesc Med. Jan 2005;159(1):25-31

Doubling Head Start \$12.8 billion annually

- Head Start could be doubled to include an additional 900,000 children¹⁻²
- Head Start enrollment has been linked with a reduction in childhood obesity³ and decreased smoking prevalence later in life⁴



1) U.S. Department of Health and Human Services Administration for Children and Families. *Head Start Program Fact Sheet*. 2010; 2) U.S. Department of Health and Human Services. *Head Start, Early Head Start Programs to Receive Over \$2 Billion in Recovery Act Funding*. 2009; 3) Frisvold DE, Lumeng JC. *Expanding Exposure: Can Increasing the Daily Duration of Head Start Reduce Childhood Obesity?* J. Human Resources. April 2011;46(2):373-402.; 4) Anderson KH, Foster JE, Frisvold DE. *Investing In Health: The Long Term Impact of Head Start on Smoking*. Economic Inquiry. 2010;48(3):587-602.

Universal Preschool Education

\$19.3 billion annually



- For all pre-kindergarten students in the U.S. that do not already attend a Head Start program
- Leads to long-term gains in cognitive ability and socialization¹⁻⁵

1) Barnett WS. *Long-term effects of early childhood programs on cognitive and school outcomes*. The future of children. 1995:25-50. 2) Bowman BT, et al. *Eager to learn: Educating our preschoolers*: National Academy Press; 2001.; 3) Yoshikawa H. *Long-term effects of early childhood programs on social outcomes and delinquency*. The future of children. 1995:51-75; 4) Gomby DS, et al. *Long-term outcomes of early childhood programs: Analysis and recommendations*. The future of children. 1995:6-24 5) Henry GT, et al. *Georgia pre-k longitudinal study: Final report 1996-2001*. Atlanta, GA: Georgia State University, Andrew Young School of Policy Studies. 2003. Photo credit: www.preschool4all.com

Teenage Pregnancy Prevention

\$1 billion annually

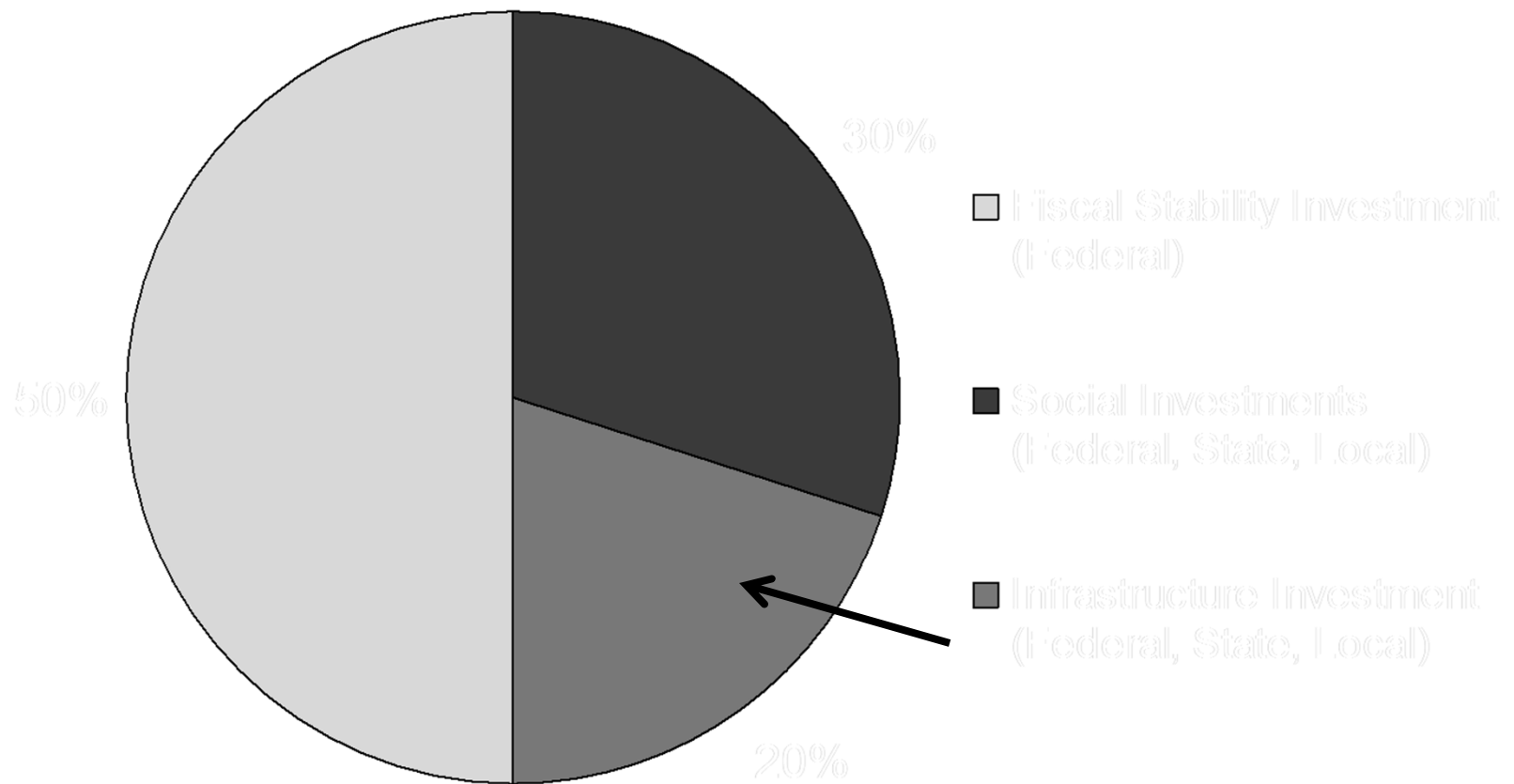
- All junior and senior high students could receive effective teen pregnancy prevention education, counseling, and clinic visits
- Could reduce teen pregnancies by some 45,000 per year¹⁻³



1) Zabin LS, et al. *The Baltimore Pregnancy Prevention Program for Urban Teenagers: I. How Did It Work?* Family planning perspectives. 1988;20(4):182-187; 2) Frost JJ, Forrest JD. *Understanding the impact of effective teenage pregnancy prevention programs.* Family planning perspectives. 1995;188-195; 3) Zabin LS, et al. *Evaluation of a pregnancy prevention program for urban teenagers.* Family planning perspectives. 1986;18(3):119-126.

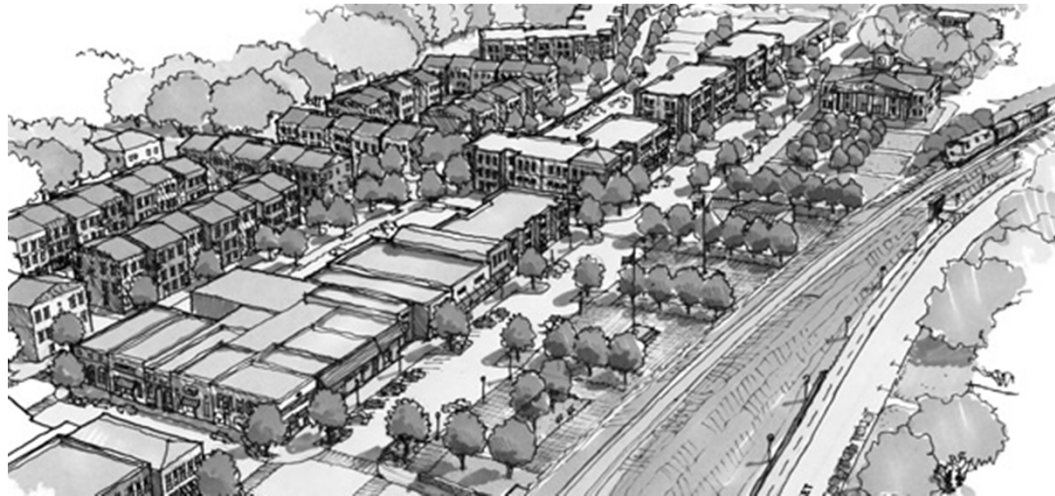


Infrastructure Investments: \$60 billion annually



Infrastructure Investment

- Direct and meaningful health benefits for individuals and communities can occur when people live in healthy natural and built environments.
 - I.e. clean air, green spaces, complete streets, and affordable, safe and accessible public transportation



One Example: Light Rail Use in Charlotte, NC



- The use of a light-rail transit system to commute to work was associated with:
 - a 1.18 point reduction in Body Mass Index; and
 - an 81% reduced odds of being obese over time.

30 years ago over 66% of American children walked to school...



today only 13% do.



Safe Routes to School

\$1.2 billion annually

- Safe routes for every primary and secondary school in the country over the course of 10 years¹⁻³
- Initiatives have shown as much as 30% more students walking or riding bikes to school with an associated reduction in the need for buses and vehicular congestion around schools^{2,4}



1) U.S. Department of Education National Center for Education Statistics. *Number of educational institutions, by level and control of institution: Selected years, 1980-81 through 2008-09*. 2010; 2) U.S. Department of Transportation Federal Highway Administration. *Safe Routes to School*. 2011; 3) U.S. Government Accountability Office. *Safe Routes to School: Progress in Implementing the Program, but a Comprehensive Plan to Evaluate Program Outcomes Is Needed* 2008; 4) National Center for Safe Routes to School. *Spring 2011 SRTS Program Tracking Brief*. 2011



Expansion of Public Libraries

\$6.9 billion annually



- Enhance libraries current positive impact on neighborhood quality of life and provision of activities for children and teens¹⁻²
- Using the Seattle Public Library expansion experience as a model across the nation, opening new sites and renovating older libraries could reach 30.7 million beneficiaries over 10 years³

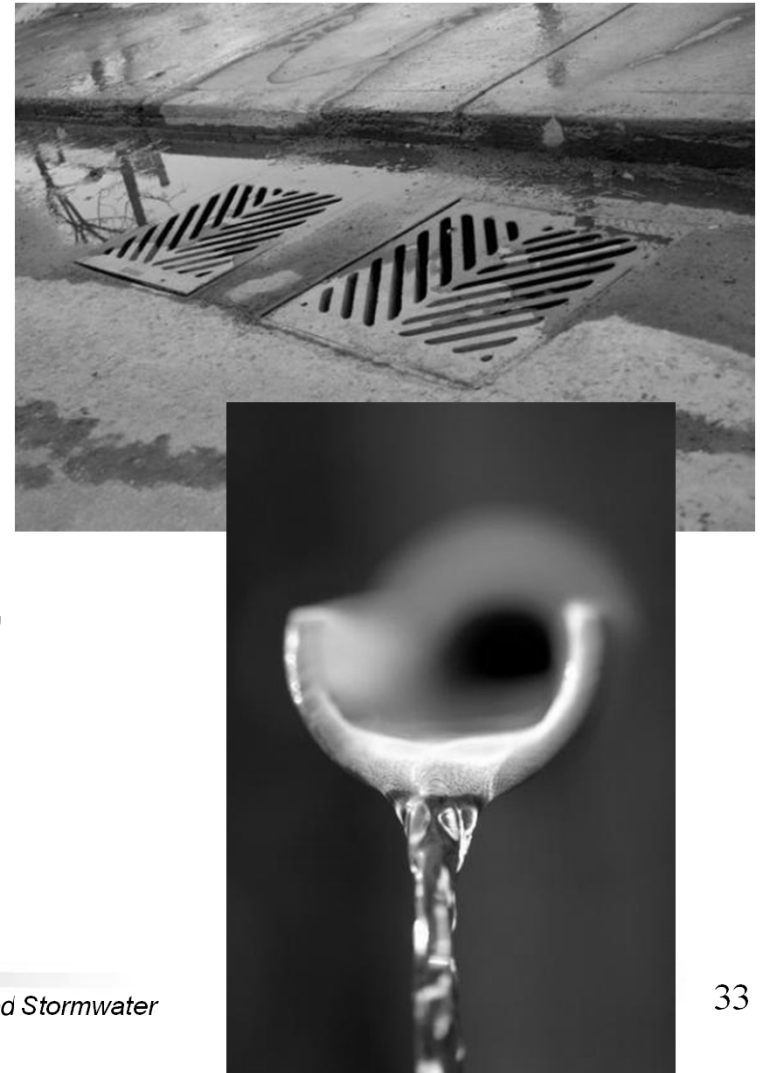
1) Agosto DE, Hughes-Hassell S. *Urban teens in the library: research and practice*: Amer Library Assn 2009; 2) Carnegie Library of Pittsburgh. *Economic Impact Study: Regional Benefits of Carnegie Library of Pittsburgh*. 2006; 3) Seattle Public Library. *Libraries for All: A Report to the Community*. 2008



Improved Drinking Water

\$1.8 billion annually

- Improve waste and storm water treatment over 20 years to improve water quality and reduce waterborne gastrointestinal illness
- Water management strategies have been shown to be successful risk mitigation techniques.
 - I.e. creation of overflow sewers, new or upgraded rainwater storage capabilities, and buffers between impervious surfaces and water bodies



Career Training

\$18 billion annually

- Career training (vocational or technical training) for one quarter of the unemployed
- Successful programs have shown that 27% of people who earn a vocational license or certificate after high school earn more than the average wage for those with a bachelor's degree^{1,2}



Closing Remarks

- There is a large opportunity cost of wasteful health care expenditures
- Difficult decisions and politically difficult reforms need to be made
 - Requires a strong constituency driving the issue
- Need to invest in evaluation of health impact of intersectoral interventions – (need new methods)
- Tremendous short-, medium- and long-term gains that could result from redirection of these funds are worth the difficulty in bringing together those with common interest and effecting systematic change

