
Health and Economic Benefits of Public Health Modernization

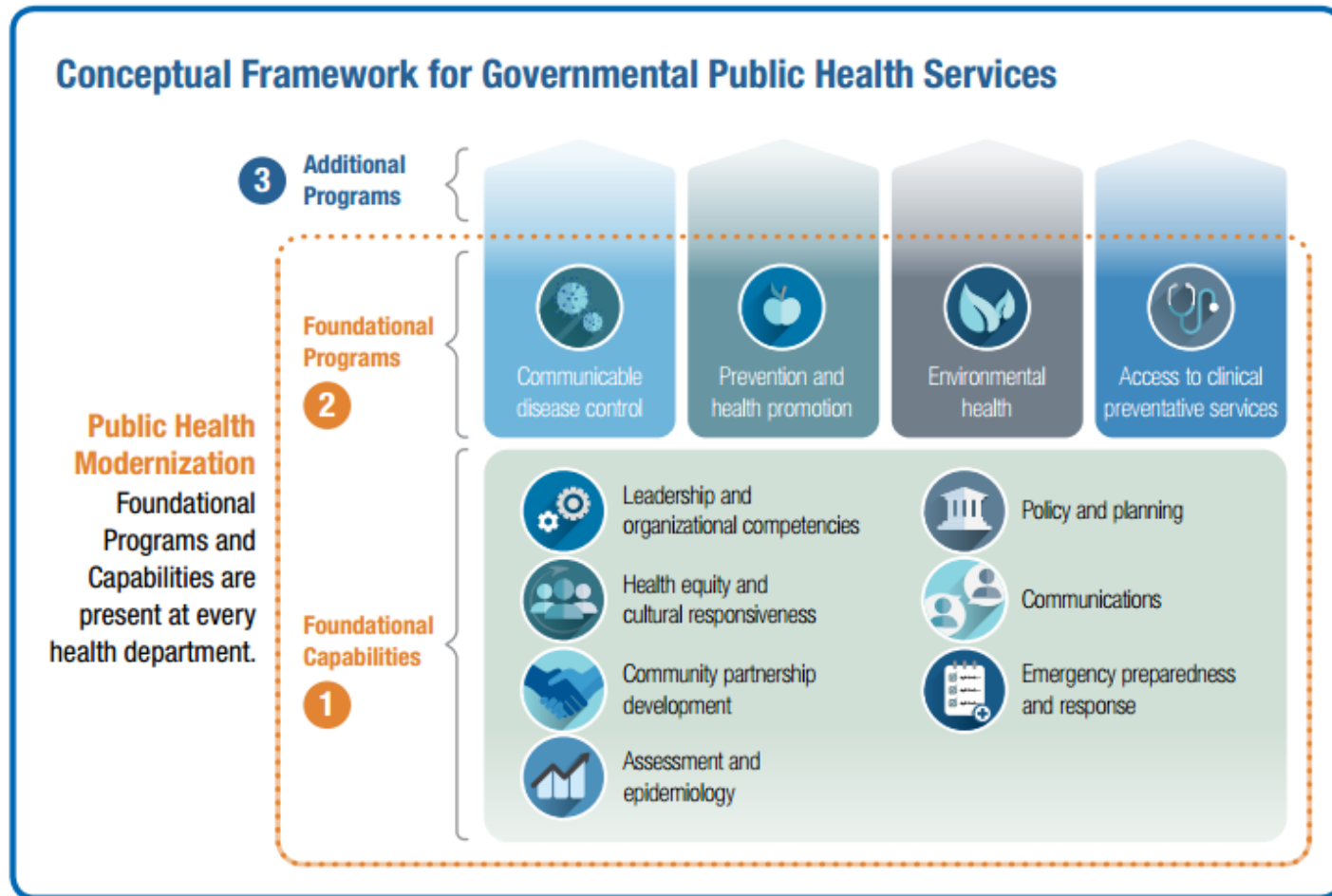
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Program Design and Evaluation Services
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Acknowledgments

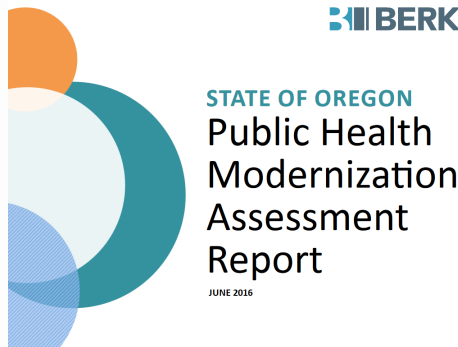
- David Solet, PhD, study co-author
- Oregon Public Health Division staff and leadership
- External experts:
 - Glen Mays and colleagues, University of Kentucky
 - Betty Bekemeier, University of Washington

Public Health Modernization



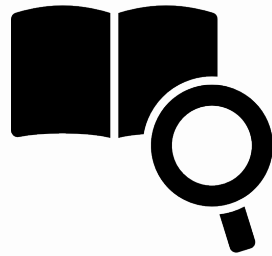
Project Objectives

- Companion to Public Health Modernization Assessment



<https://public.health.oregon.gov/About/TaskForce/Documents/PHModernizationFullDetailedReport.pdf>

- Estimate economic benefit of fully implementing public health modernization
 - Foundational programs & capabilities, aka foundational public health services (FPHS)
- Evidence base: peer-reviewed studies
- Extrapolate study results to Oregon



Topic Selection

Major areas

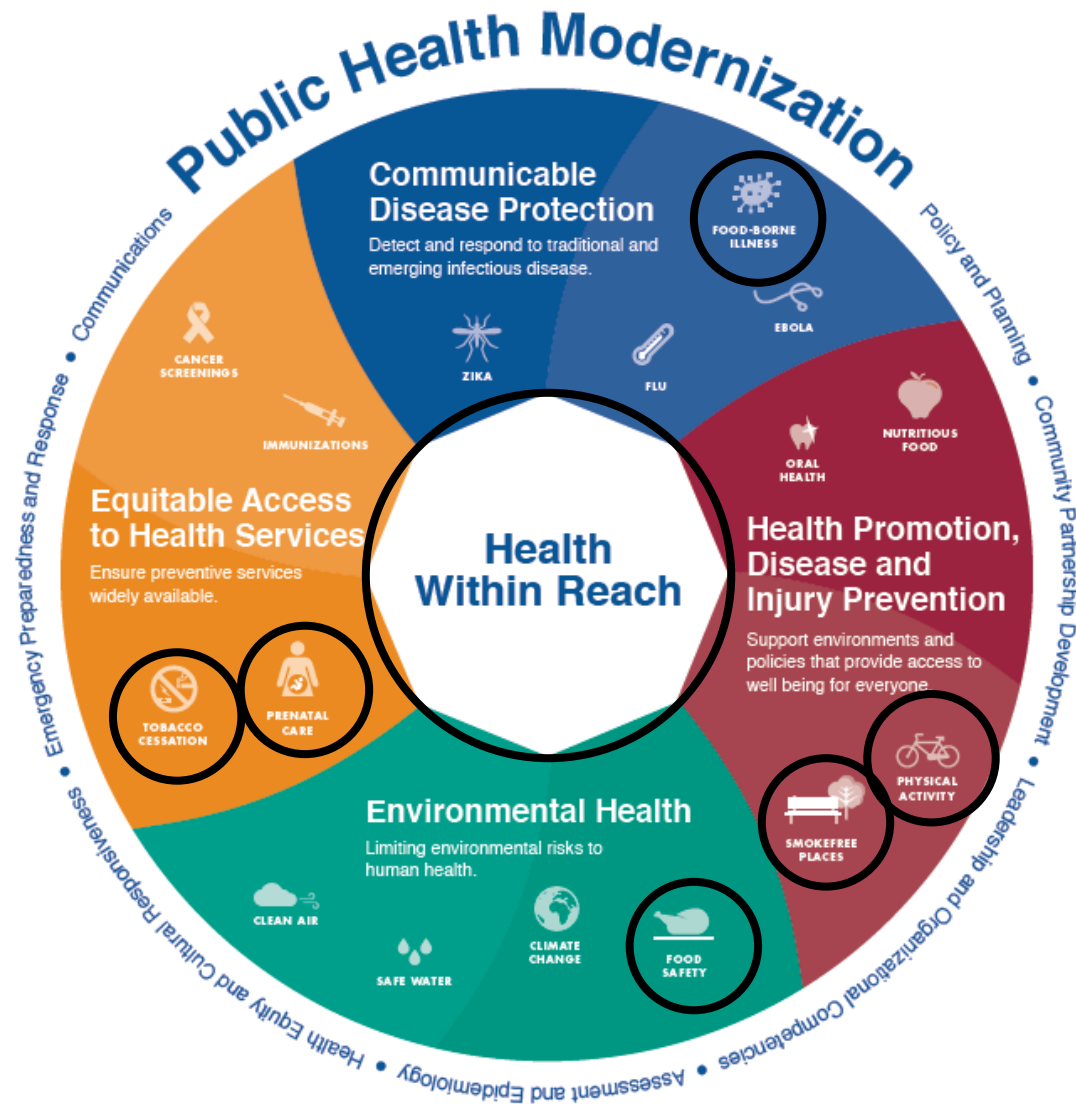
- Benefits of public health spending
- Economic burden of conditions related to FPHS

Criteria

- Results of peer-reviewed studies could be applied to Oregon

Priorities

- Public Health Advisory Board priorities for 2017 biennium **or**
- Included in 2015 State Health Improvement Plan **or**
- Recommended for inclusion by Public Health Leadership



Results

Disease Burden Compared to Modernization Investment in FPHS

Topics: Disease burden compared to modernization investment in FPHS



Tobacco Use



Physical Inactivity



Foodborne Illness



**Births from
Unintended Pregnancies**



Health Inequality



Tobacco Use

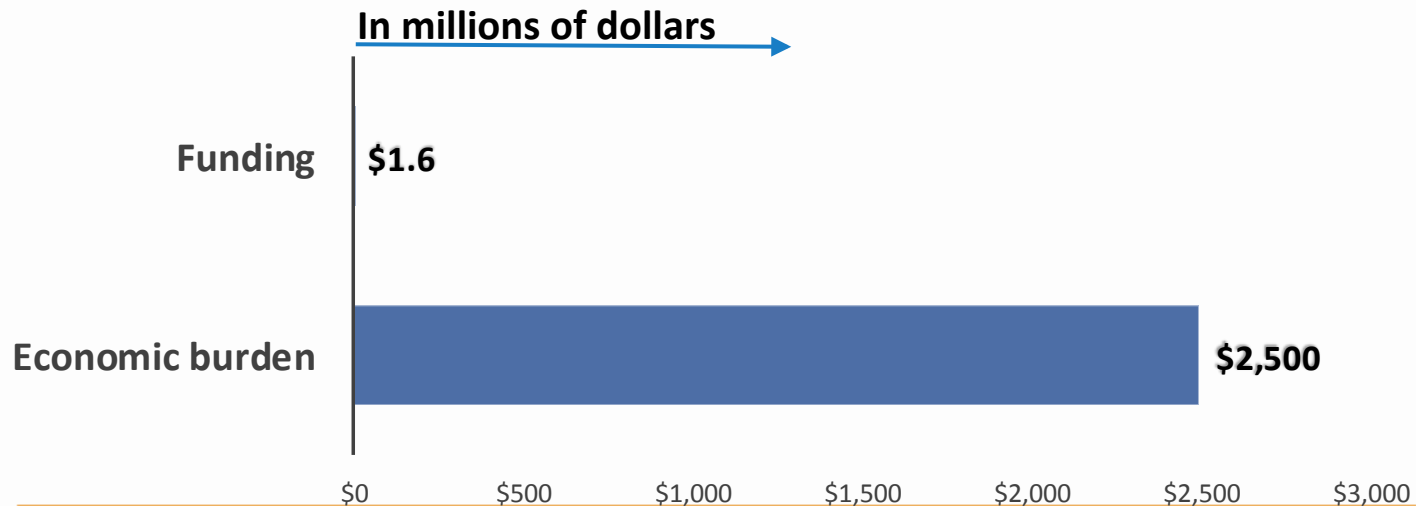
Significance

Leading cause of preventable death.

Oregon: Estimated economic burden=\$2.5 billion a year for health care, lost productivity and premature death.

Recommended investment to close the gap

- Cost to fully implement foundational tobacco prevention: **\$1.6 million**
- Reducing the economic burden of tobacco use by **1/16 of 1%** would cover this cost





Tobacco Prevention Estimated Savings

Funding of **\$1.6 million** would result in:

- An estimated **534** fewer smokers.
- Savings of **\$6.5 million** in medical costs over the former smokers' lifetimes.

Funding of **\$342,000 to the Medicaid population** would result in:

- An estimated **202** fewer smokers.
- Savings of **\$2.5 million** in medical costs over the former smokers' lifetimes.

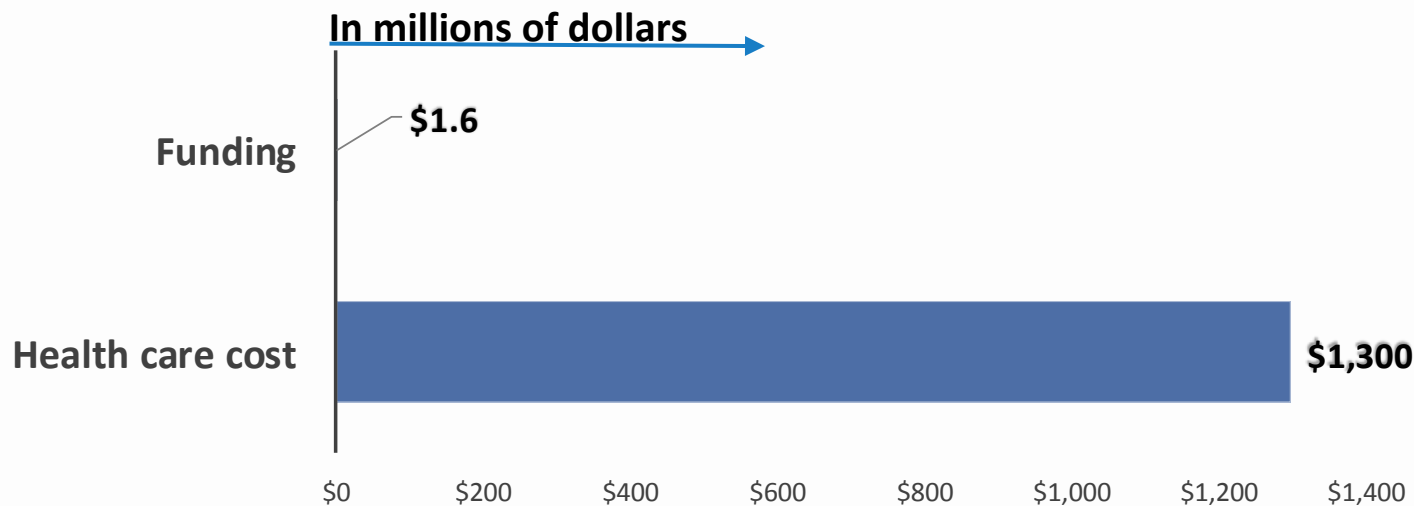


Physical Inactivity

Oregon: Estimated health care cost=\$1.3 billion
overall, including **\$360 million** in Medicaid costs a year.

Recommended investment to close the gap

- Cost to fully implement foundational nutrition programs: **\$1.6 million**
- Reducing physical inactivity health care costs by **1/8 of 1%** would cover this cost



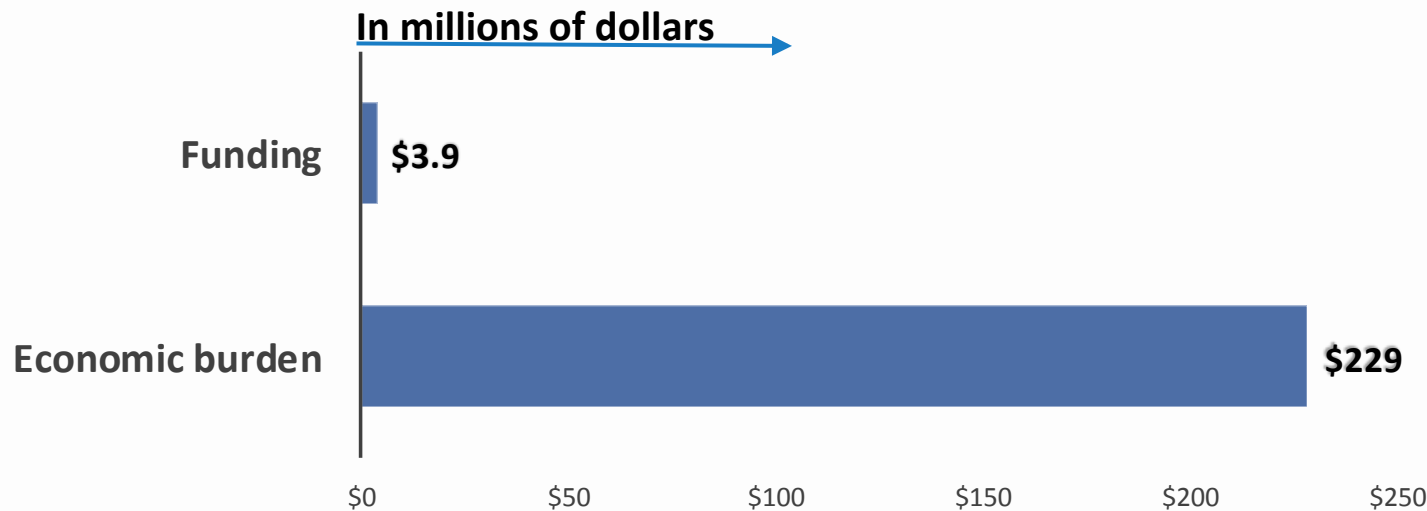


Foodborne Illness

Oregon: Estimated economic burden=\$229 million
a year for health care, lost productivity and premature death.

Recommended investment to close the gap

- Cost to fully implement foundational communicable disease programs related to foodborne illness: **\$3.9 million**
- Reducing the economic burden of foodborne illness by **2%** would cover this cost



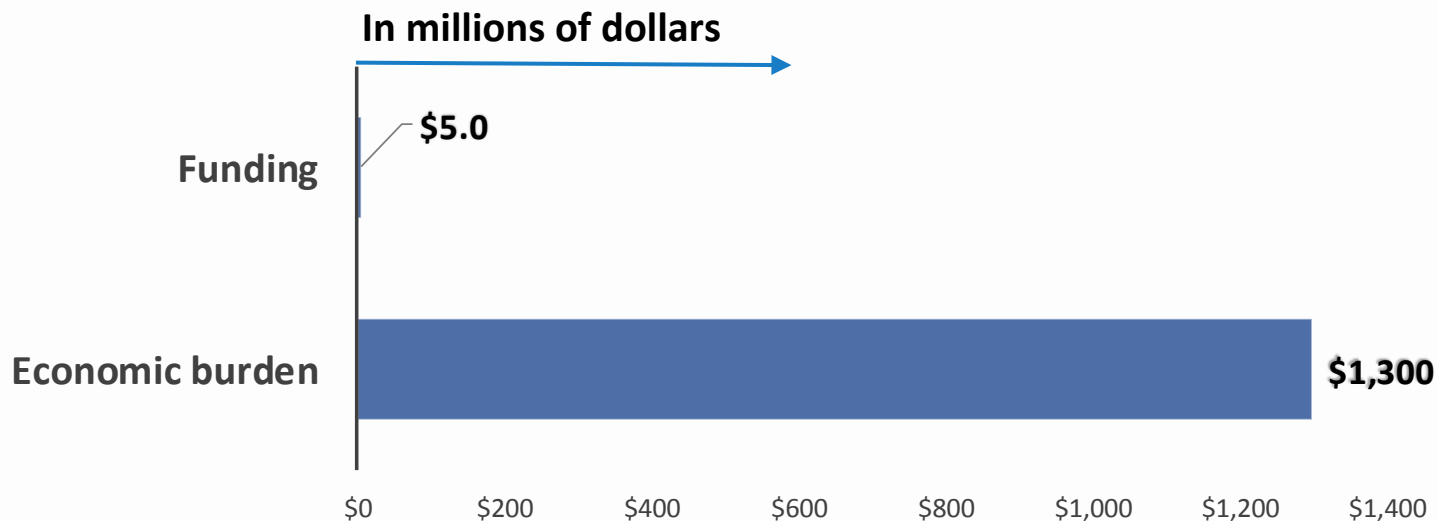


Health Inequality

Oregon: Estimated economic burden=\$1.3 billion a year in health care, lost productivity and premature mortality.

Recommended investment to close the gap

- Cost to fully implement foundational capabilities in health equity and cultural responsiveness: **\$5.0 million**
- Reducing the economic burden of health inequality by **0.4%** would cover this cost



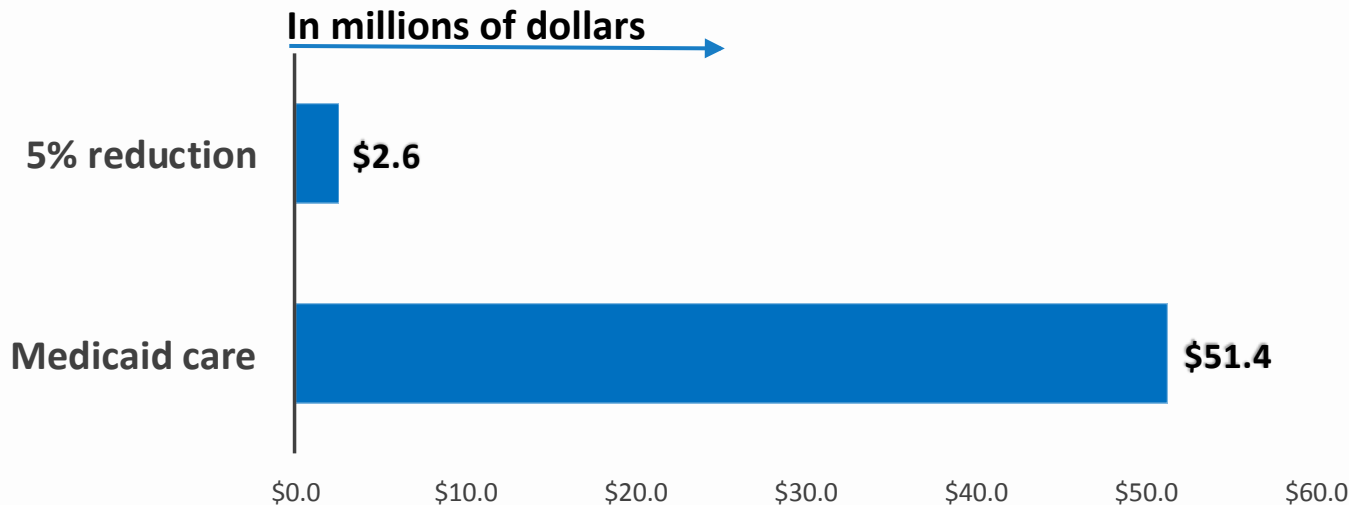


Births from Unintended Pregnancies

Oregon: Estimated cost of Medicaid care=\$51.4 million
a year for prenatal care, delivery and the infant's first year of life.

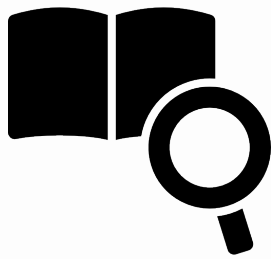
Decrease of 5%

Reducing Medicaid births from unintended pregnancies by 5%
would save **\$2.6 million** in Medicaid costs.



Results

The Benefits of Public Health Spending



County-level Spending I

Study: Total public health spending

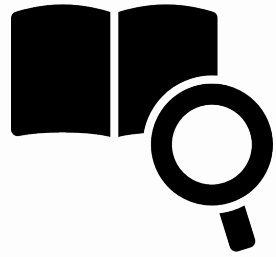
Spending: Local health department (LHD) total spending

Outcome: Mortality

Study findings

10% increase in per capita spending linked to

- **6.8%** decrease in infant mortality
- **3.2%** decrease in heart disease mortality
- **1.4%** decrease in diabetes mortality
- **1.1%** decrease in cancer mortality



County-level Spending I

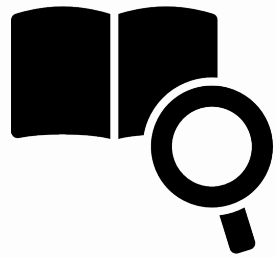
A **10% increase** in total public health spending in Oregon is linked to:

15 fewer infants deaths per year

16 fewer diabetes deaths per year

202 fewer heart disease deaths per year

88 fewer cancer deaths per year



County-level Spending II

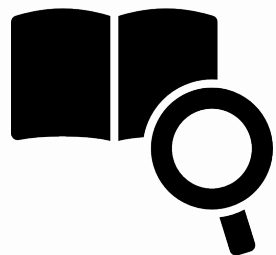
Study: Maternal and child health program spending

Spending: LHD spending on maternal/child health

Outcome: Percent of low birthweight (LBW) births

Study findings

Spending increase of **\$3.52 per capita** is linked to a **1 percentage point decrease** in LBW in Washington state's high poverty counties



County-level Spending II

An annual investment of **\$2.5 million** in high-poverty Oregon counties is linked to:

1% decrease in the low birthweight rate

96 fewer low birthweight births per year

\$4.9M savings in prenatal care and delivery hospital costs

\$3M savings in Medicaid spending

Summary: Disease burden compared to modernization investment

- **Tobacco**
 - Estimated economic burden=**\$2.5 billion** a year
 - To offset investment: reduce economic burden of tobacco use by **1/16 of 1%**
- **Physical inactivity**
 - Estimated health care cost=**\$1.3 billion** overall and **\$360 million** in Medicaid costs a year.
 - To offset investment: reduce physical inactivity health care costs by **1/8 of 1%**
- **Foodborne illness**
 - Estimated economic burden=**\$229 million** a year
 - To offset investment: reduce the economic burden of foodborne illness by **2%**
- **Health inequality**
 - Estimated economic burden=**\$1.3 billion** a year
 - To offset investment: reduce the economic burden of health inequality by **0.4%**
- **Births from unintended pregnancies**
 - Estimated cost of Medicaid care=**\$51.4 million** a year
 - Reducing unintended births by **5%** would save **\$2.6 million**.

Limitations

We assumed national models apply to Oregon.

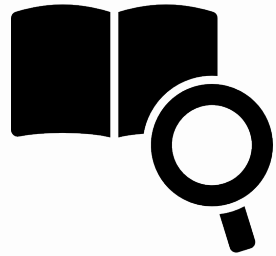
- We adjusted results based on available local data.
- We made other conservative assumptions.
- We stated assumptions in the report for transparency.

The report does not include margin of error.

- Calculating margin of error was beyond the scope of the report.
- We rounded economic estimates in the results sections to reflect limitations in their precision.
- Economic and health figures are best estimates.

Focus on economic cost excludes other consequences of poor health.

- Strains on family budgets
- Restricted personal activities
- Emotional toll of pain and illness



Conclusion

The **economic burden** of population health conditions **far exceeds the cost to fully implement** foundational public health services associated with those conditions.

Investment in **evidence-based public health interventions** offers the best opportunity to reduce the economic burden to society.