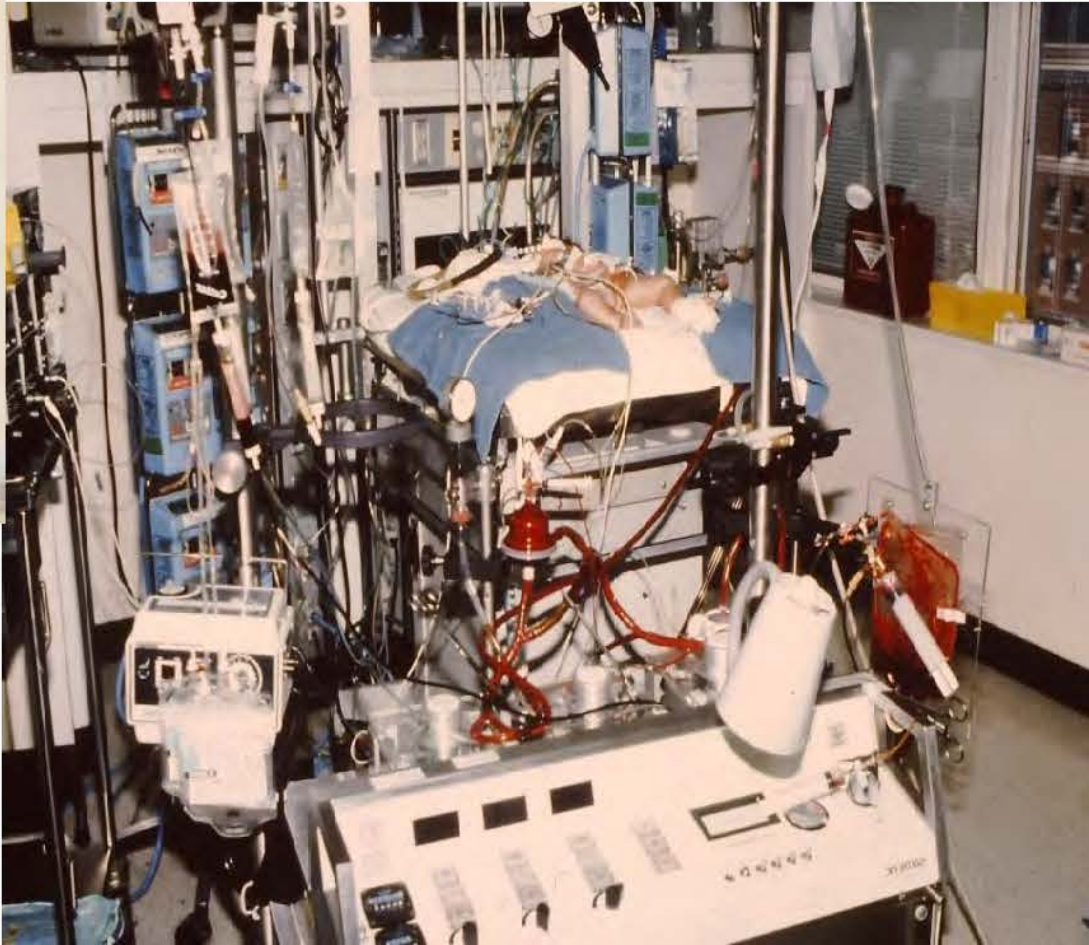


Nurturing A Culture of Value-Based Care for Lasting Results

R. Lawrence Moss, MD
*President and Chief Executive Officer
Nemours Children's Health System*

Nemours Children's Health System







My Goals as CEO of Nemours

1. Raise awareness of the POWER of investing in children's health
2. Transform the way America pays for children's health
3. Fundamentally change and expand our country's definition of health in children



Nemours Children's Health System



By the Numbers

1.8 million	Unique patients/annual encounters
874	Employed physicians
8,000	Employees
3,800	Trainees
1.7 million	Annual Revenue

- A leading multi-state, multi-site children's health system
- Commitment to all aspects of children's health
- Enduring legacy of Alfred I. duPont
- Academic pediatric system fully-committed to the tripartite mission of clinical care, research and education



One premise:

Investing in children's health is the single most powerful means to insure a healthy generation of Americans and a robust economy.

One action:

We must transform our definition of child health and the way we pay for it to leverage this power.



We **spend \$3.5 trillion annually** (18% of America's GDP) on healthcare.

Almost every penny goes toward paying for the opposite of what we want – HEALTH

Instead of health we pay for volume and complexity

We are getting **exactly** what we are paying for.

Paying for Volume and Complexity Rather Than Health

	United States	OECD Average
MRI exams	97.7 per 1,000 population	46.3 per 1,000 population
CT scanners	40.7 per million population	22.6 per million population
CT exams	265.0 per 100,000 population	123.8 per 1,000 population
Tonsillectomy	254.4 per 100,000 population	130.1 per 100,000 population
Coronary bypass	79.0 per 100,000 population	47.3 per 100,000 population
Knee replacements	226.0 per 100,000 population	121.6 per 100,000 population

Although the United States spends more on health care than other developed countries, its health outcomes are generally not any better

Health Status

Life Expectancy at Birth

Infant Mortality

Quality of Primary Care

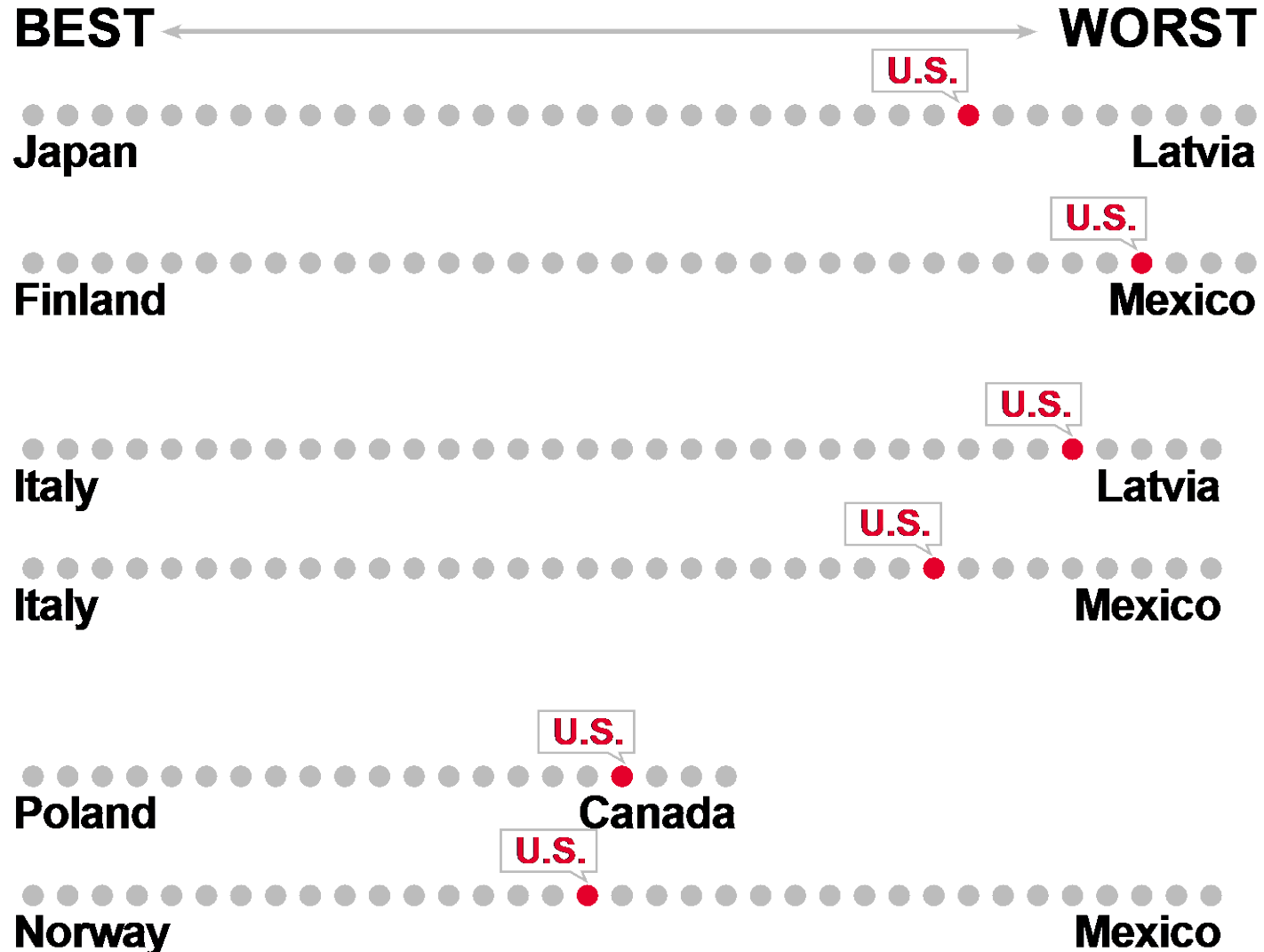
Unmanaged Asthma

Unmanaged Diabetes

Quality of Acute Care

Safety During Childbirth

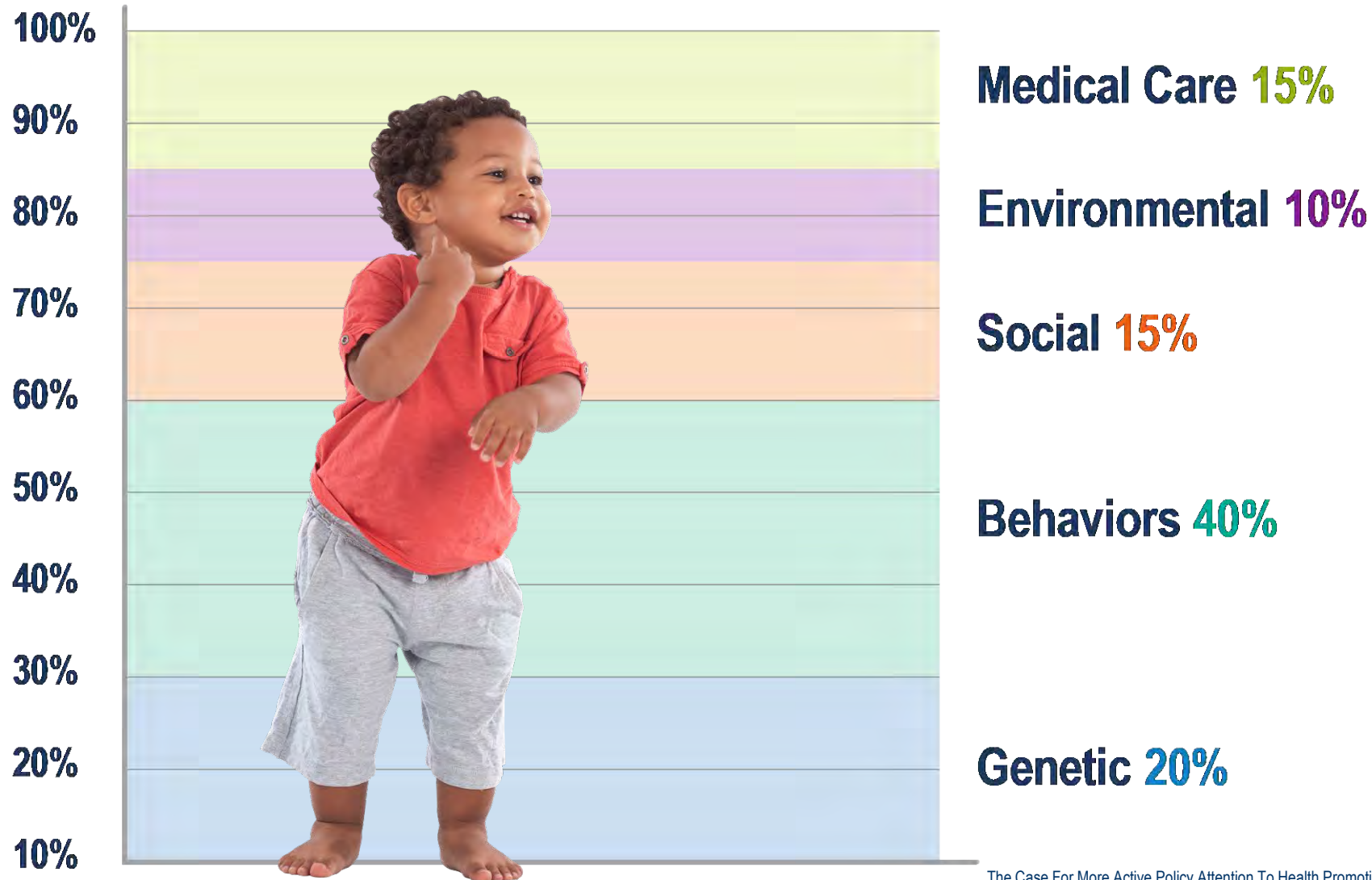
Heart Attack Morality



SOURCE: Organization for Economic Cooperation and Development, OECD Health statistics 2019, July 2019.
 NOTES: Data are not available for all countries for all metrics. Data are for 2017 or latest available.
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What comprises health?

Degree of Influence in Shaping the Health of Populations



The Social Determinants of Health

Why they matter - ESPECIALLY to Children

- The conditions in which people are born, grow, live, work and age.
- Shaped by the distribution of money, power and resources at global, national and local levels.
- Responsible for most health disparities.



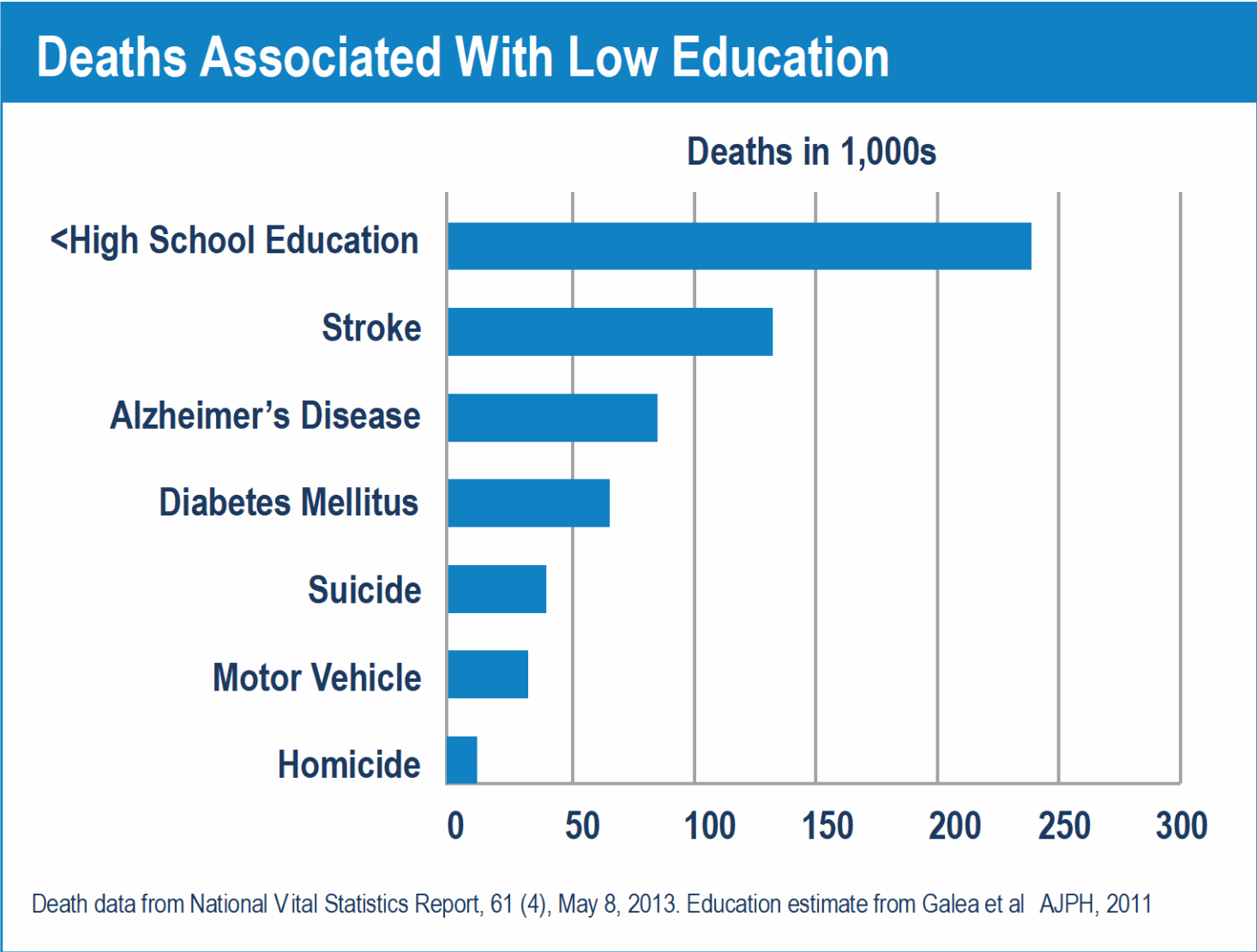
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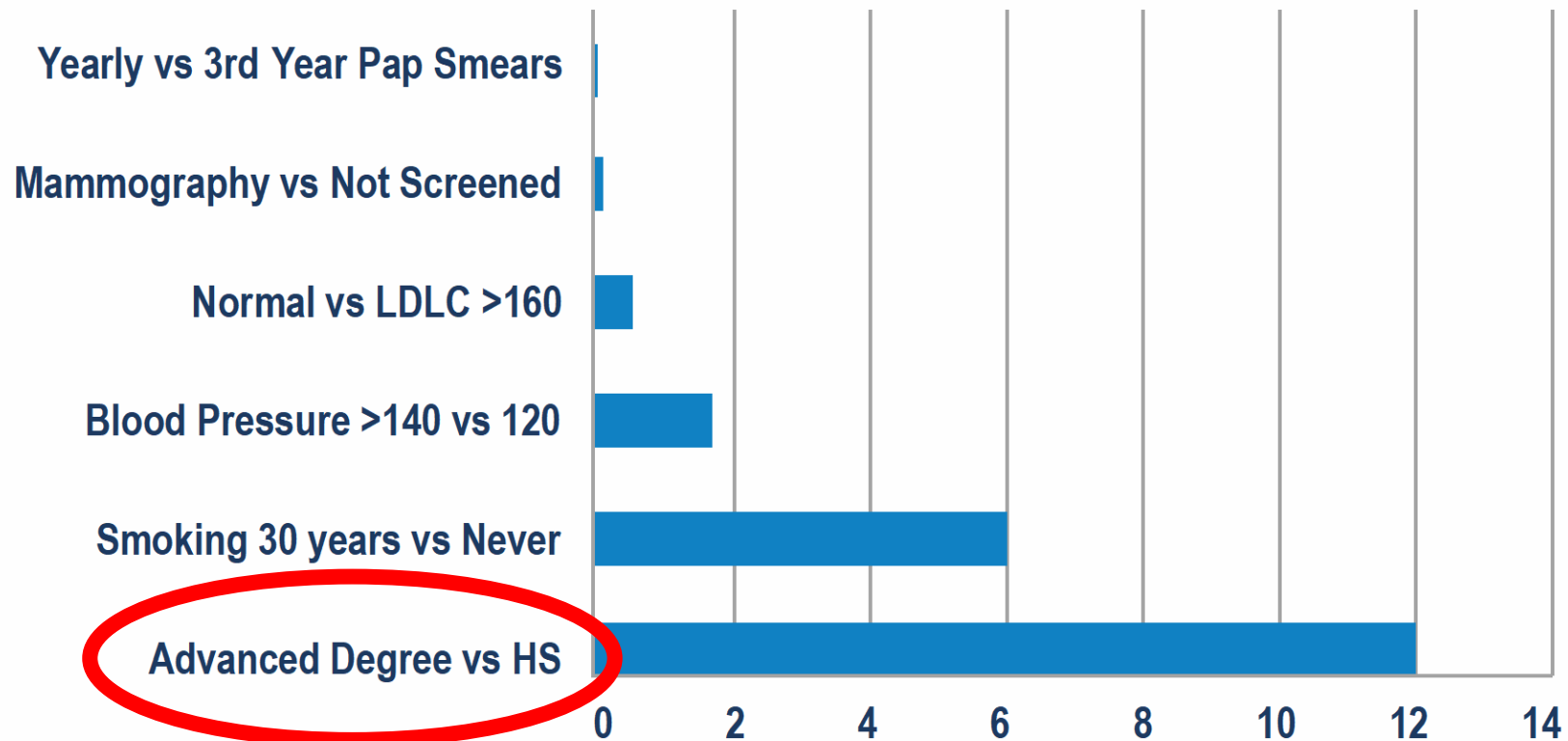


Lack of Education Links Directly to High Risk of Death



The Most Powerful Intervention to Promote Health: STAY IN SCHOOL

Quality Adjusted Life Years by Risk



Data estimated from Whitehall 39 year follow-up: Clarke BMJ 2009;339:b3513

The Social Determinants of Health

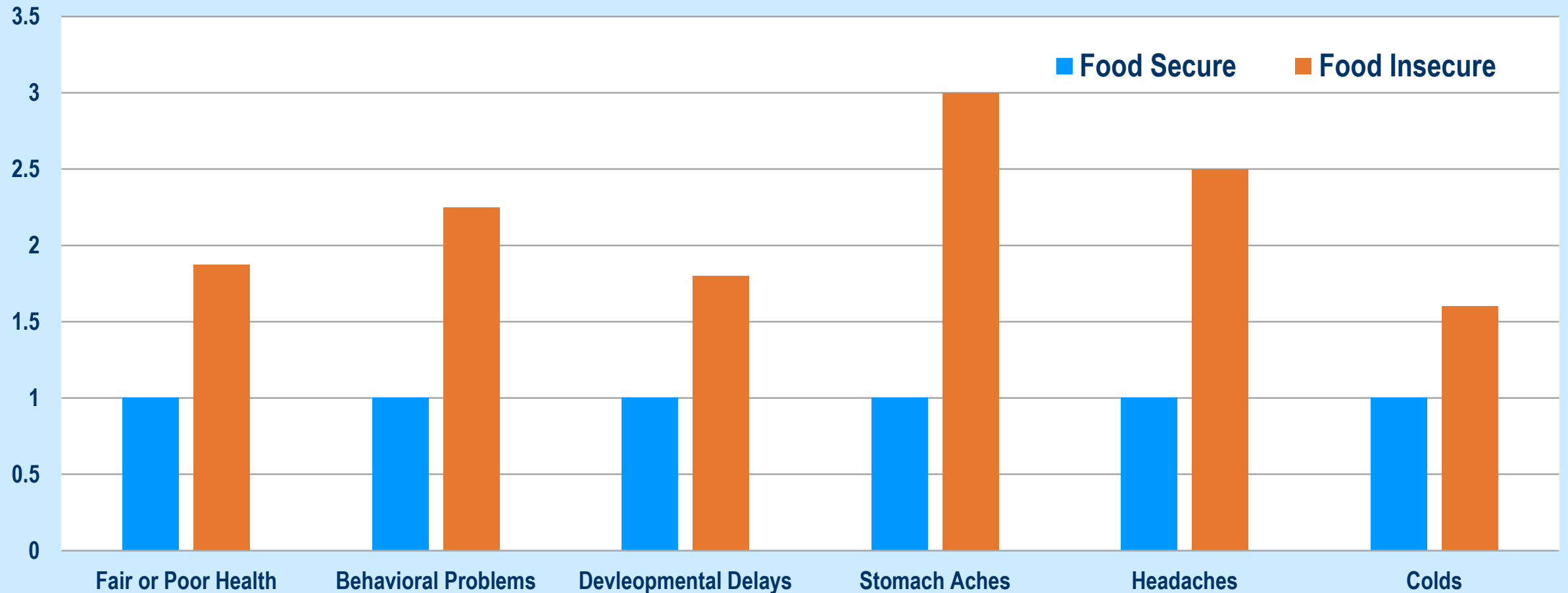
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Impact of Food Insecurity on Health Outcomes

Food Insecure Young Children Face Increased Chances of Various Health Risks



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Housing Status Directly Impacts Child Health

Housing status is an independent variable that correlates with health indices in kids: homeless v. low income

- ED utilization in 1 year: 38% v. 19%
- Hospitalization for acute disease in 1 year: 11% v. 5%
- Children in fair or poor health: 12% v. 6%
- Acute illness symptoms in one month 50% v. 35%
- Insurance coverage (Medicaid) 99% v. 99%



Weinreb et al Pediatrics 102:1998

The Social Determinants of Health

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Your ZIP CODE shouldn't predict how long you live,
BUT IT DOES.

STOCKTON
95202
Life Expectancy
73



IRVINE
92606
Life Expectancy
88

The Social Determinants of Health

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Adverse Childhood Experiences (ACE)

- Emotional or physical neglect
- Physical, emotional or sexual abuse
- Growing up with family members with mental illness, alcoholism or drug problems
- Family violence
- Incarcerated family member
- One or no parents



Adverse Childhood Experiences (ACE) Study

- Center for Disease Control and Kaiser Permanente Collaboration
- Ten-year study involving 17,000 people
- Looked at effects of adverse childhood experiences (trauma) over the lifespan
- Largest study ever done on the subject
- 67% of kids had at least one, 25% had at least two

ACE Study Findings

Compared with people with no ACEs, those with four or more ACEs were:

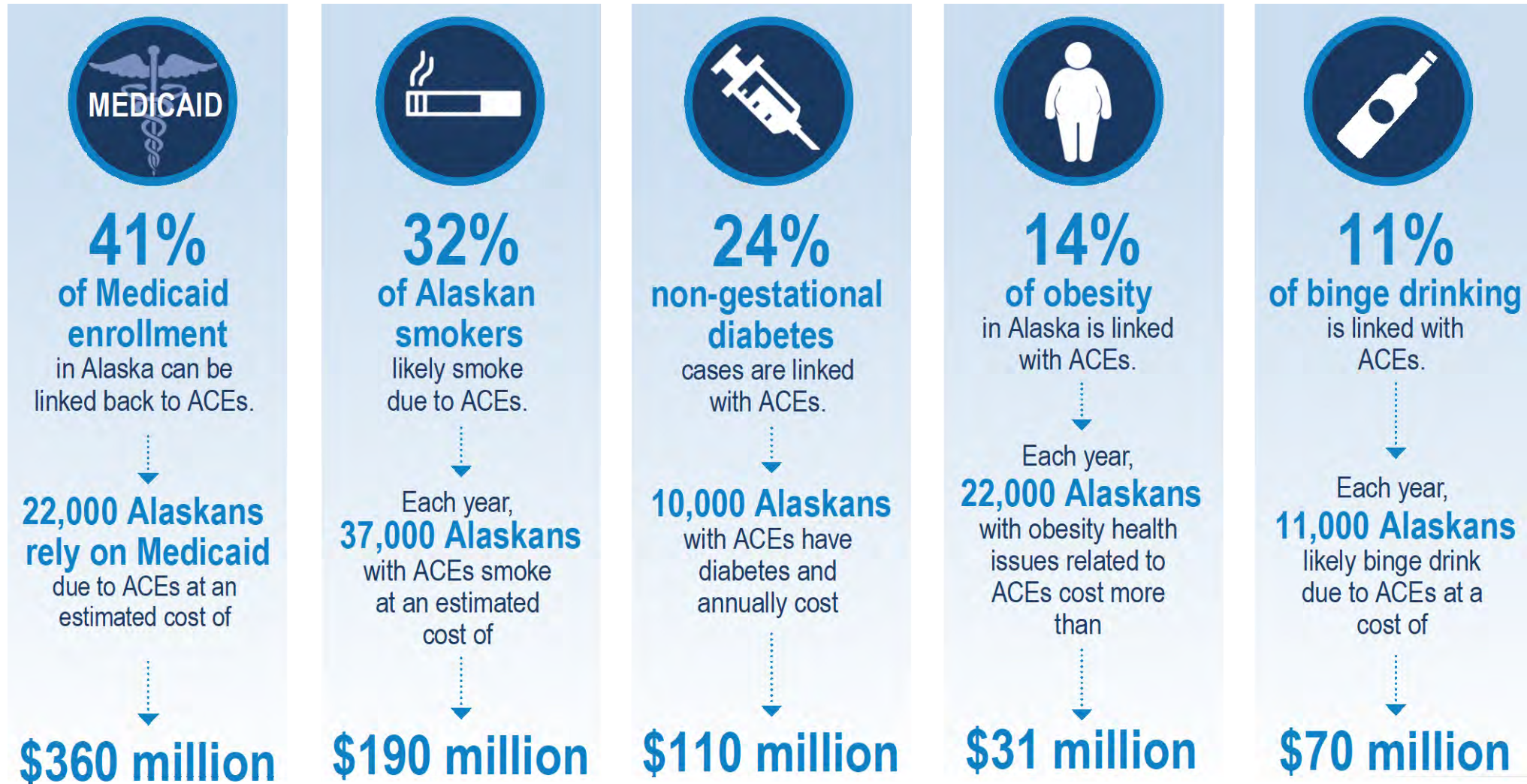
- Twice as likely to smoke
- Seven times as likely to be alcoholics
- Six times as likely to have had sex before age 15
- Twice as likely to have cancer or heart disease
- Twelve times more likely to have attempted suicide
- Men with six or more ACEs were 46 times more likely to have injected drugs than men with no history of adverse childhood experiences

Impact of ACEs Over the Lifespan

Neurological, biological, psychological and social

- Changes in brain neurobiology;
- Social, emotional & cognitive impairment;
- Adoption of risk behaviors (i.e. violence, smoking, substance abuse, self harm, etc.)
- Severe and persistent health and social problems resulting in early death

Health Costs of Adverse Childhood Experiences (in 1/400th of the country!)



Total Health Care Spending

Spending on **CHILD HEALTH** provides the largest lever to impact future generations

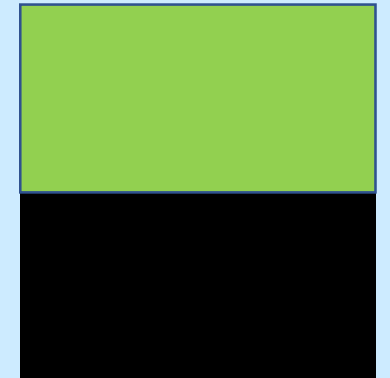
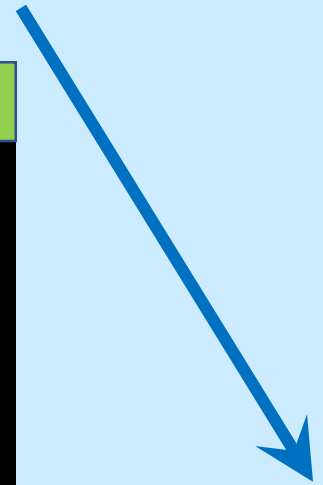


Nemours. Children's Health System

7%
Children



TODAY



10-20 YEARS

Does investing in SDOH work?

Rigorous, randomized, peer-reviewed, and Nobel Prize winning work says yes

- Abecedarian Preschool Project (RCT)
Campbell et al Science 343:2014
- WIC Program reduces infant mortality
Khanani et al Am J Pub Health 2015
- MEND Program for obesity (RCT)
Sacher et al Obesity 2010



Abecedarian Preschool Project

A social experiment based upon early intellectual stimulation in early childhood

- Preschool (Birth – 5)
- Two meals and a snack daily
- Periodic medical checkups
- Primary pediatric care (both well and ill-care)
- Health behaviors and lifestyle



Health Outcomes 30 Years Later

All Changes Statistically Significant at Age 35

- Lower systolic blood pressure v. control (126 v. 143mmHg)
- Less likely to be stage one hypertensive or pre hypertensive
- 0% exhibited metabolic syndrome v. 25% of a controls
- Higher levels of HDL “good cholesterol” (53 v. 42mg/dl)
- Lower incidence of severe obesity (11 v. 37%)



Behavioral Outcomes 30 Years Later

All Changes Statistically Significant at Age 35

- More likely to engage in regular physical exercise
- Less likely to smoke at early age
- More likely to eat nutritious food at age 21
- Less likely to be overweight in childhood
- Less likely to start drinking alcohol before age 17



Economic Outcomes 30 Years Later

All Changes Statistically Significant at Age 35

- Increased high school graduation rate
- Less likely to be convicted of a crime or incarcerated
- Higher median annual income compared to controls
- 13% return on investment per annum
- Two generation effect



Nemours CMMI Asthma Award

Value Based Care in a Fee-for-Service World

Primary aim to improve health of children with asthma rather than to treat medical complications of asthma

- Understand and treat all aspects of asthma
- Keep kids outside of the medical care system when possible

Award Parameters:

- 3-year award beginning July 1, 2012
- \$3.7 million



Navigator/Integrator Approach

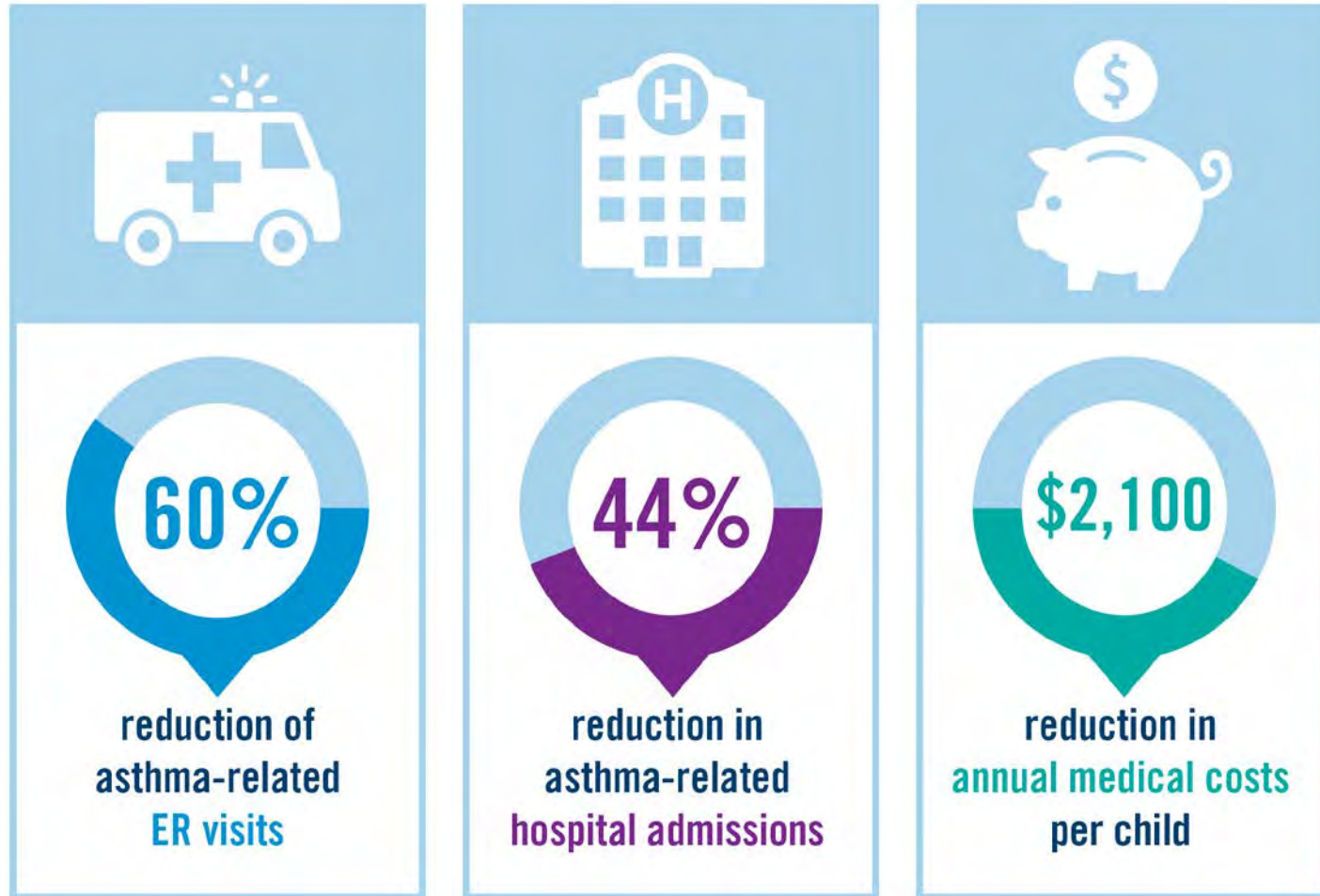
Navigator Workforce – Patient Level

- Link between clinic and home – discovery
- Case management of non-medical issues/concerns
- Home environmental assessments
- Reinforcement of asthma education

Integrator Workforce – Community Level

- Link between clinic and community
- Facilitated partnerships with key stakeholders (HUD, ALA, DPH, etc.)
- Community engagement and mobilization
- Focus on upstream determinants of health

Patient Based Results (Internal Data)



Community Based Results

- Changes to drug formulary – metered dose inhaler. **11,805 children impacted.**
- Smoke-Free Wilmington Ordinance – **19,224 children** impacted
- Reducing school bus idling in Wilmington – **14,029 children** impacted.

Lessons Learned from “Pay for Health” in a “Pay for Sickness” World

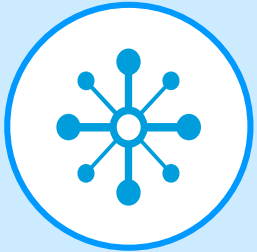
- **These interventions work.** When we invest in health we get health.
 - Not a single new drug or innovative medical intervention
 - The acuity level and complexity of care markedly decreased
- **Partnerships** – communities, social service agencies, government, schools etc.
- These efforts will only be **sustainable when financial incentives are aligned**
 - Investing in SDOH is a cost to the health system with no financial return
 - The better the investment works the greater the cost

Nemours Value-Based Services Organization



■ People

- All teams under a single leadership structure – ALIGNMENT
- Structure enables culture



■ Processes

- “Your patients” are all of your patients. Not just the ones you are seeing
- Align primary care with care coordination and management, CHWs



■ Technology, Data and Analytics

- Systems to find gaps in care, complex pts, pts under unique contracts
- Identify candidates for care management
- Compare medical complexity with “events”



Questions?



Healthy Economy = Investing In Children's Health

- Children are the human capital of the next generation
- Impact on adult outcomes is evident as early as birth
- Massively reduce morbidity and costs in adulthood
- Poor workforce health costs \$530 billion annually
- Employers pay \$880 billion in healthcare costs annually
- Households with poor child health have 20% lower incomes and have \$6000 less disposable income

“ Ill health and poor nutrition have a first-order impact ... causing harm that is impossible or very difficult to reverse. In a world where cognitive skills are rising in value, this damage if widespread impairs a country's economic potential far into the future. ”
— *World Bank*

Aligning Readiness With Data

- **Readiness with payers requires data quality and integrated workflow**
 - Ensure payers have the most current list of employed/contracted/affiliated providers AND clinic locations including provider NPI, not just the payer ID
 - Contractually clear processes for changes, updates AND a turnaround times
 - Ability to share provider data with the payer's quality program
- **Patient rosters — the right age patients (relevant to pediatrics), right market area?**
 - Format that integrates with your EHR/patient records system is optimal
 - How are updates handled when a patient wants to see a different PCP or lives outside of your region, or does not reply after multiple attempts to contact?
- **What risk scoring model/stratification model does the payer use?**
 - Integration with in-house models is most efficient for providers and payers

Partnering with Payers

- Mutual glide path development to accept financial risk between Nemours and select payers
 - Recognition of spend related to SDoH
 - Pediatric quality measures
- Recently selected to participate in the *Advancing Health Equity: Leading Care, Payment, and Systems Transformation*. Three way partnership with a AmeriHealth Caritas Delaware, DMMA and Nemours.
 - Designed to determine effective ways to align and leverage payment and quality improvement activities to improve health equity.

There's No Code For This.

