Nurturing A Culture of Value-Based Care for Lasting Results

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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
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

By the Numbers

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

<table>
<thead>
<tr>
<th>Procedure</th>
<th>United States</th>
<th>OECD Average</th>
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<tbody>
<tr>
<td>MRI exams</td>
<td>97.7 per 1,000 population</td>
<td>46.3 per 1,000 population</td>
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<tr>
<td>CT scanners</td>
<td>40.7 per million population</td>
<td>22.6 per million population</td>
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<tr>
<td>CT exams</td>
<td>265.0 per 100,000 population</td>
<td>123.8 per 1,000 population</td>
</tr>
<tr>
<td>Tonsillectomy</td>
<td>254.4 per 100,000 population</td>
<td>130.1 per 100,000 population</td>
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<tr>
<td>Coronary bypass</td>
<td>79.0 per 100,000 population</td>
<td>47.3 per 100,000 population</td>
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<tr>
<td>Knee replacements</td>
<td>226.0 per 100,000 population</td>
<td>121.6 per 100,000 population</td>
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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**
- **BEST**: Japan
- **WORST**: Latvia

**Infant Mortality**
- **BEST**: Finland
- **WORST**: Mexico

**Quality of Primary Care**

**Unmanaged Asthma**
- **BEST**: Italy
- **WORST**: Latvia

**Unmanaged Diabetes**
- **BEST**: Italy
- **WORST**: Mexico

**Quality of Acute Care**

**Safety During Childbirth**
- **BEST**: Poland
- **WORST**: Canada

**Heart Attack Morality**
- **BEST**: Norway
- **WORST**: Mexico
What comprises health?
Degree of Influence in Shaping the Health of Populations

Medical Care 15%
Environmental 10%
Social 15%
Behaviors 40%
Genetic 20%
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.
The Social Determinants of Health
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Lack of Education Links Directly to High Risk of Death

Deaths Associated With Low Education

- <High School Education
- Stroke
- Alzheimer’s Disease
- Diabetes Mellitus
- Suicide
- Motor Vehicle
- Homicide

Deaths in 1,000s

The Most Powerful Intervention to Promote Health: STAY IN SCHOOL

Quality Adjusted Life Years by Risk

- Yearly vs 3rd Year Pap Smears
- Mammography vs Not Screened
- Normal vs LDLC >160
- Blood Pressure >140 vs 120
- Smoking 30 years vs Never
- Advanced Degree vs HS

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

The Social Determinants of Health

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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%**
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

Source: The California Endowment
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.

**The Social Determinants of Health**

*Why they matter - ESPECIALLY to Children*
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

Felitti et al, 1998
Health Costs of Adverse Childhood Experiences (in 1/400th of the country!)

41% of Medicaid enrollment in Alaska can be linked back to ACEs.

22,000 Alaskans rely on Medicaid due to ACEs at an estimated cost of $360 million.

32% of Alaskan smokers likely smoke due to ACEs.

Each year, 37,000 Alaskans with ACEs smoke at an estimated cost of $190 million.

24% of non-gestational diabetes cases are linked with ACEs.

10,000 Alaskans with ACEs have diabetes and annually cost $110 million.

14% of obesity in Alaska is linked with ACEs.

Each year, 22,000 Alaskans with obesity health issues related to ACEs cost more than $31 million.

11% of binge drinking is linked with ACEs.

Each year, 11,000 Alaskans likely binge drink due to ACEs at a cost of $70 million.

Source: Adverse Economic Costs of ACEs in Alaska. Prepared for the Alaska Mental Health Board and the Advisory Board on Alcoholism and Drug Abuse. Available at: http://dhss.alaska.gov/abada/ace-ak/Pages/default.aspx
Total Health Care Spending

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

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<th>Children</th>
<th>Adults</th>
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<td>7%</td>
<td>93%</td>
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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*

Source: James Heckman, Nobel Laureate Economics
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

Campbell et al Science 343:2014
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%)

Campbell et al Science 343:2014
James Heckman, Nobel Laureate Economics
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

Source: James Heckman, Nobel Laureate Economics
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

Source: James Heckman, Nobel Laureate Economics
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)

- 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.**
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?
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.