

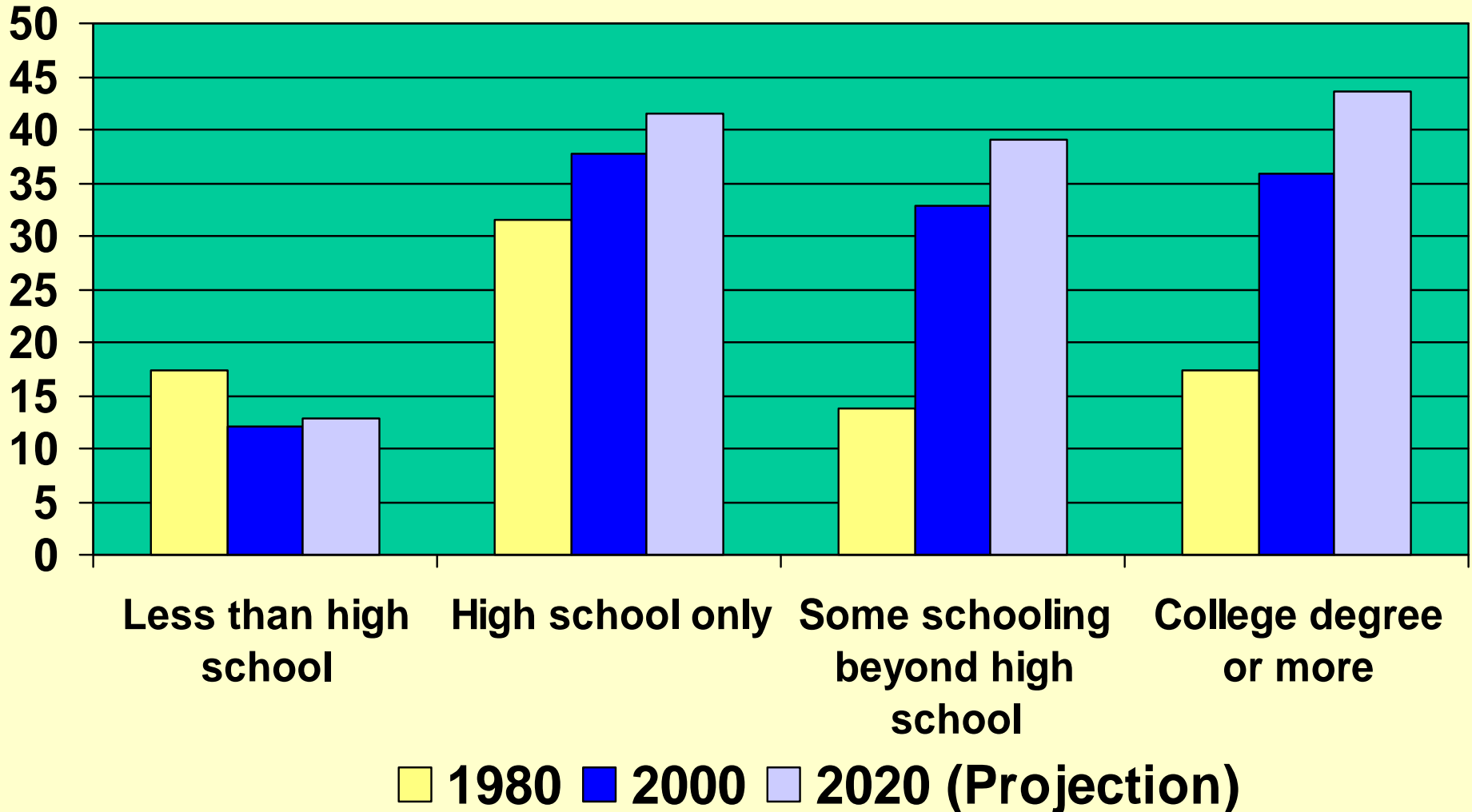
# Early Childhood Development: Economic Development with a High Public Return



**Rob Grunewald and Art Rolnick**  
**Federal Reserve Bank of Minneapolis**

# Educational Characteristics of the Labor Force

## Millions of Workers Age 25 and Over

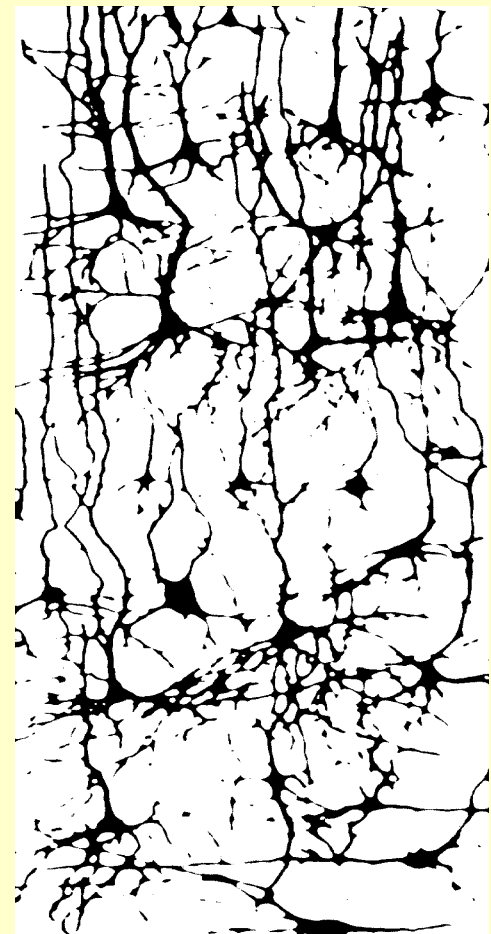
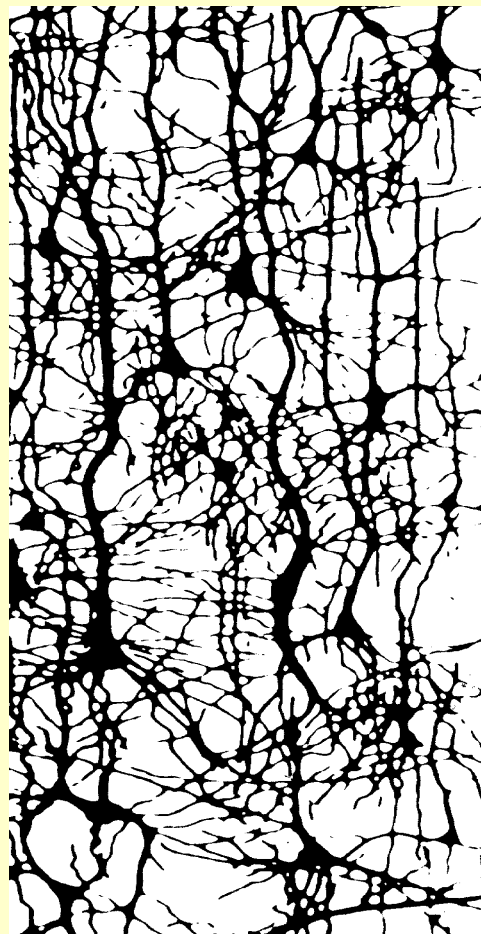


Source: Ellwood (2001)

Human  
Brain  
at Birth

6 Years  
Old

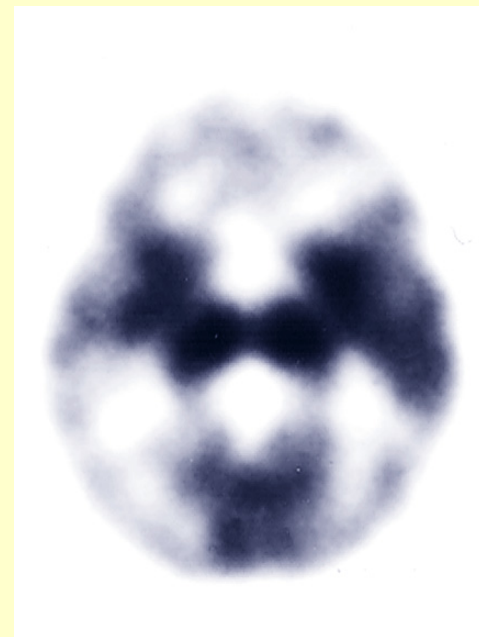
14 Years  
Old



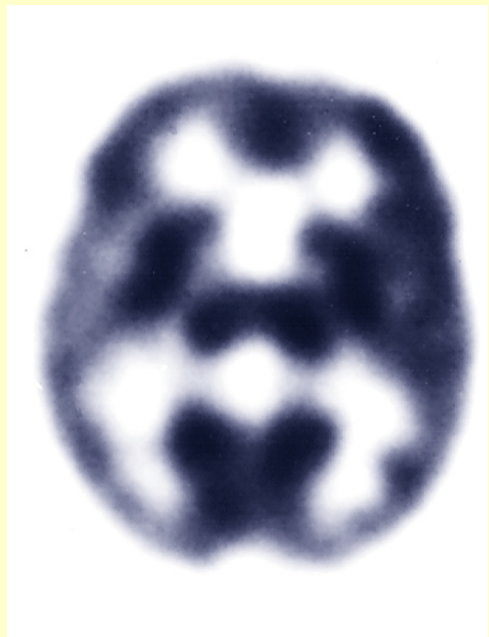
5 Days



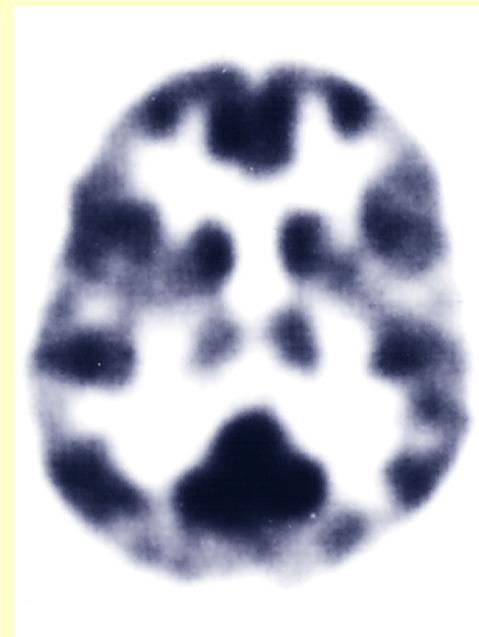
2  
Months



1 Year



28 Years



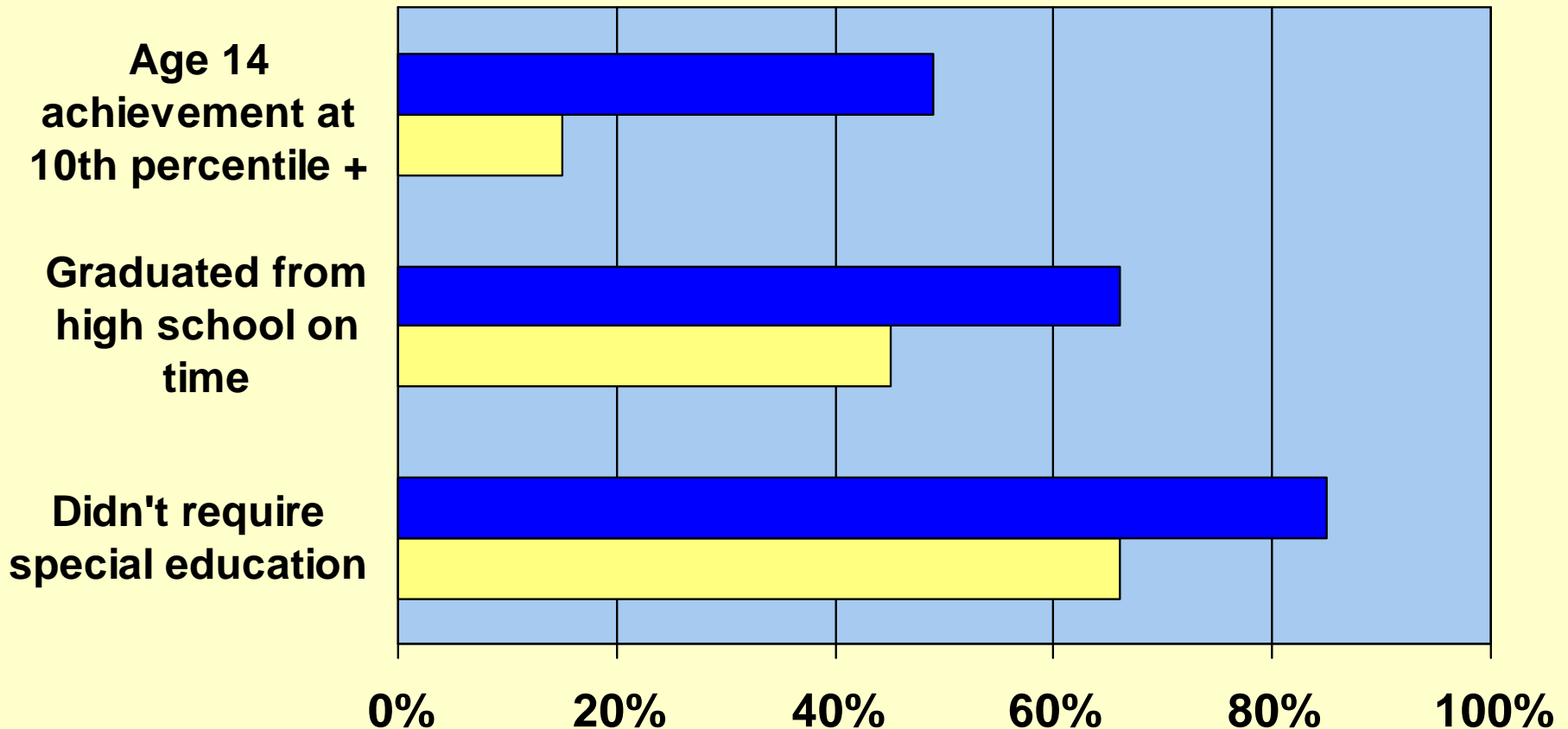
# **High/Scope Study of Perry Preschool**

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- **In early 1960s, 123 children from low-income families in Ypsilanti, Mich.**
- **Children randomly selected to attend Perry or control group.**
- **High-quality program with well trained teachers, daily classroom sessions and weekly home visits.**
- **Tracked participants and control group through age 40.**

# Perry: Educational Effects

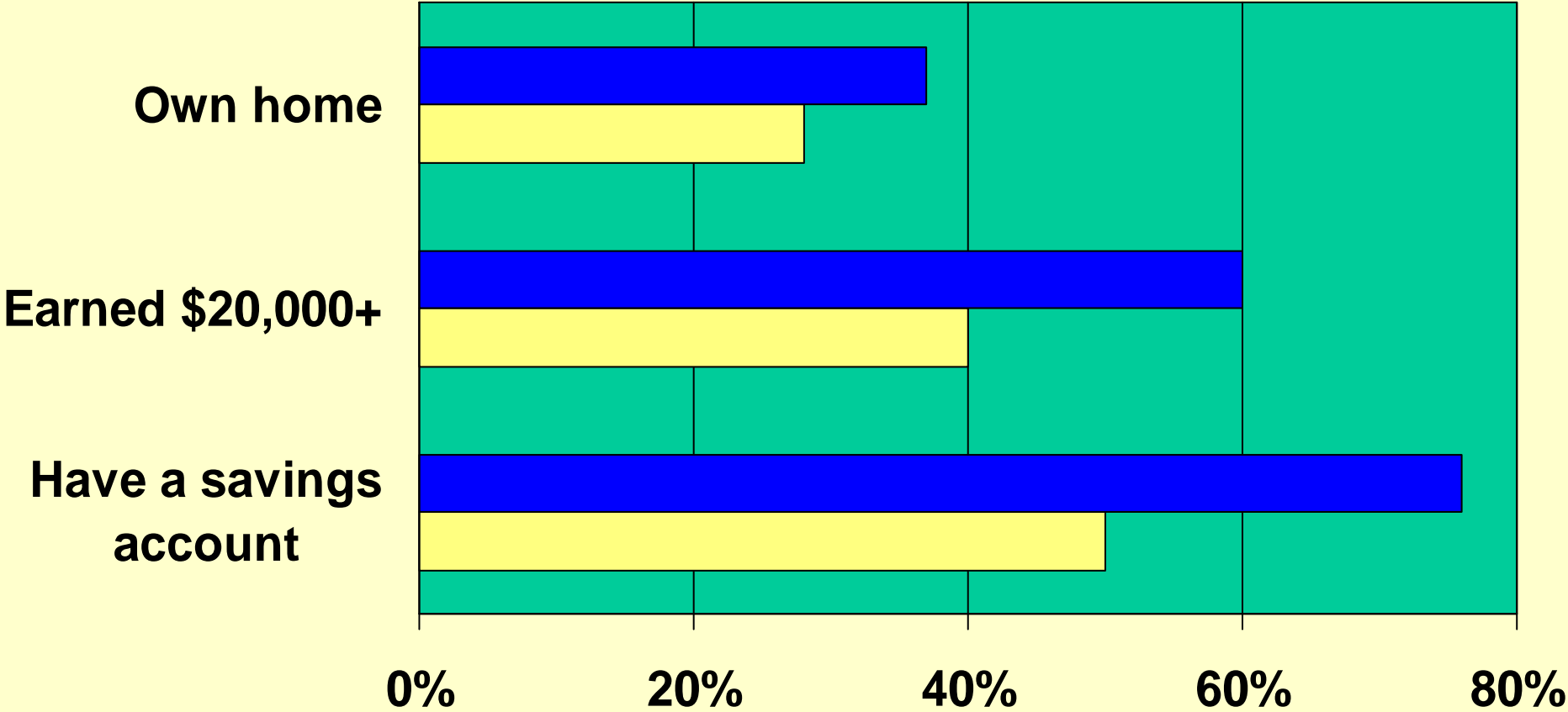
□ No-program group    ■ Program group



Source: High/Scope Educational Research Foundation

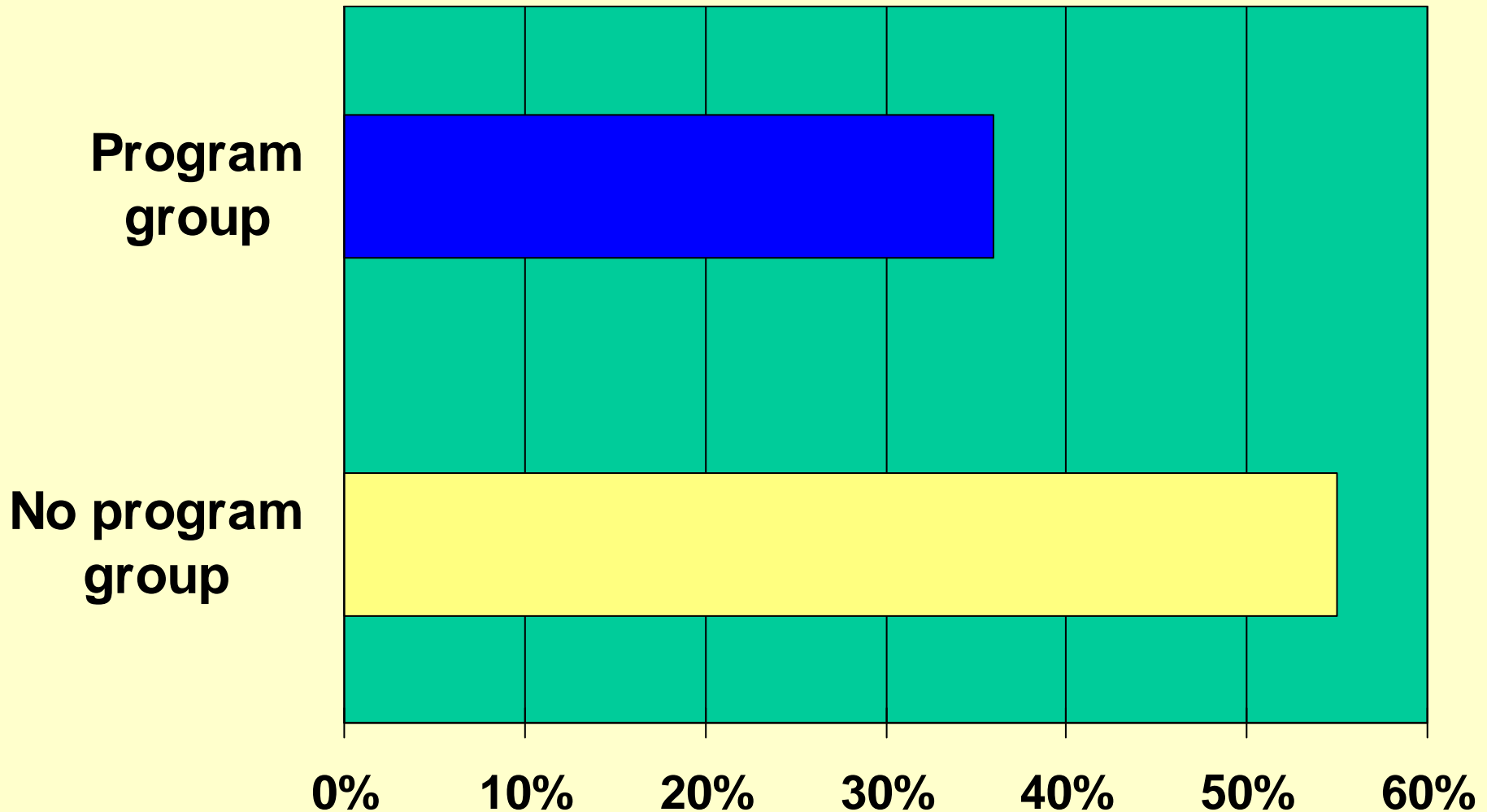
# Perry: Economic Effects at Age 40

■ No-program group   ■ Program group



Source: High/Scope Educational Research Foundation

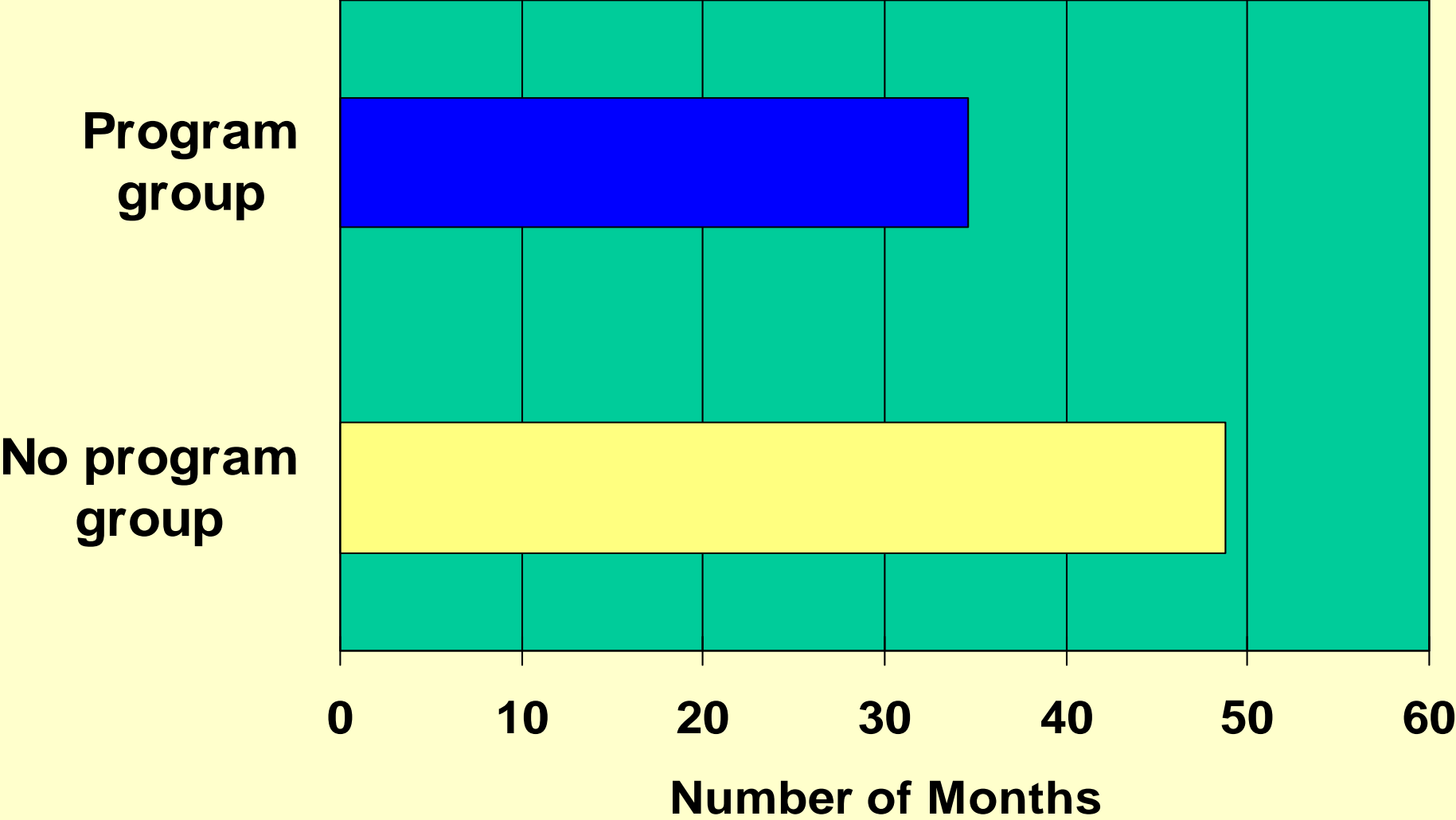
# Perry: Arrested 5 or More Times Before Age 40



Source: High/Scope Educational Research Foundation

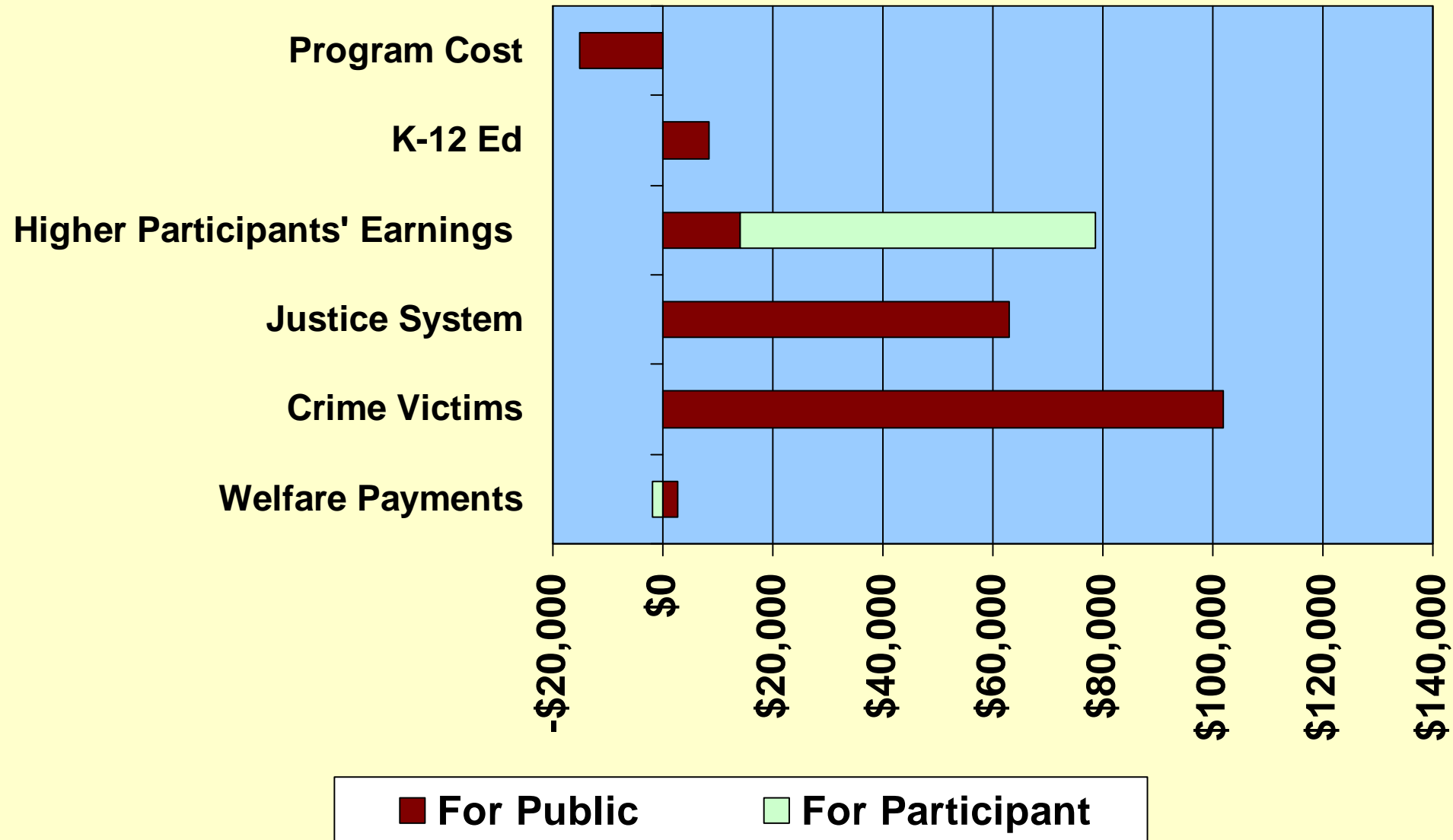


# Perry: Average Number of Months Served in Prison by Age 40



Source: High/Scope Educational Research Foundation

# Perry Preschool Costs and Benefits Over 62 Years



# **Perry Preschool — Estimated Return on Investment**

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- **Benefit-Cost Ratio = \$17 to \$1**
- **Annual Rate of Return = 18%**
- **Public Rate of Return = 16%**

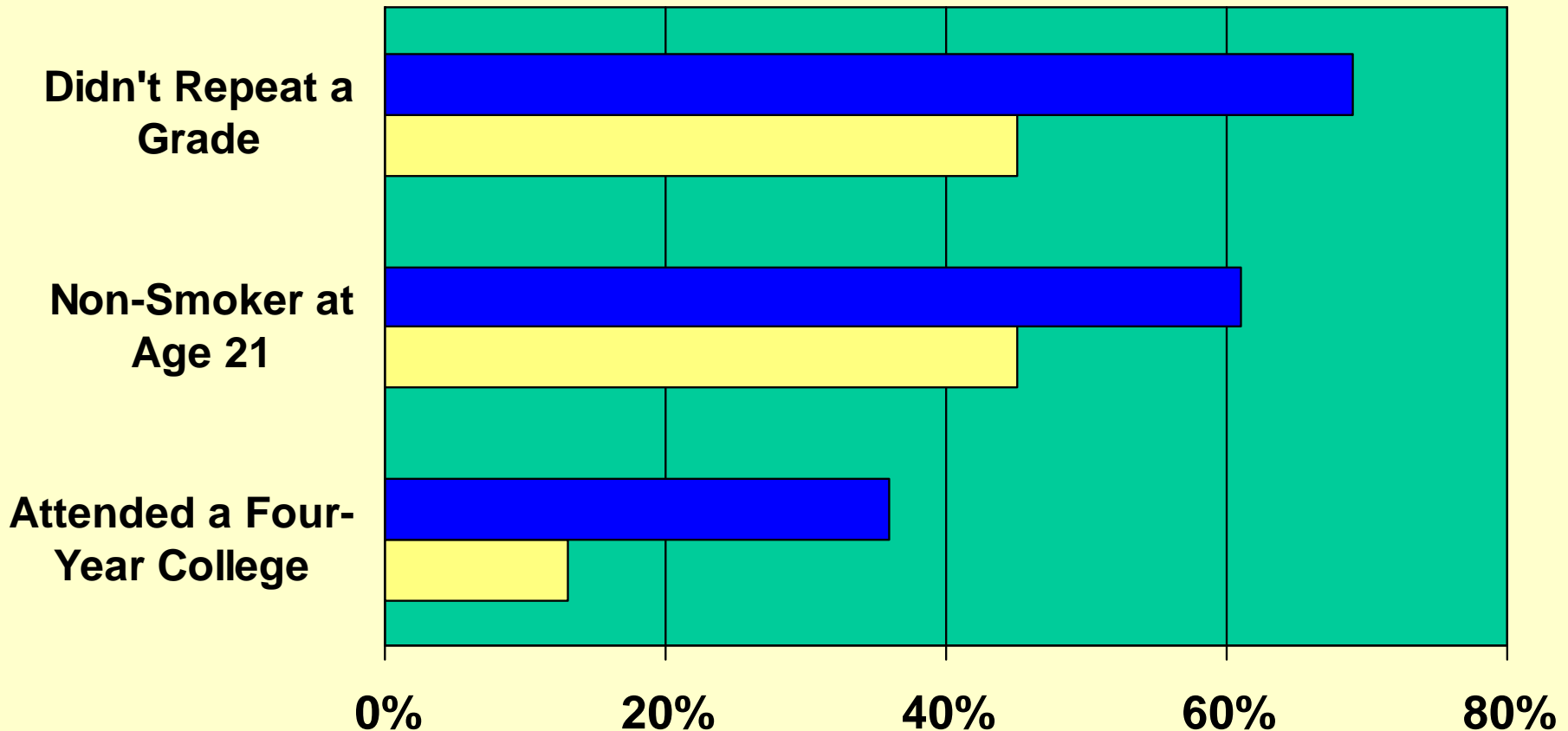
# Abecedarian, Educational Child Care

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*Full-day, year-round program near Chapel Hill, N.C. Children from low-income families were randomly selected to attend Abecedarian or control group.*

# Abecedarian: Educational and Health Effects

□ No-program group    ■ Program group



Source: Carolina Abecedarian Study

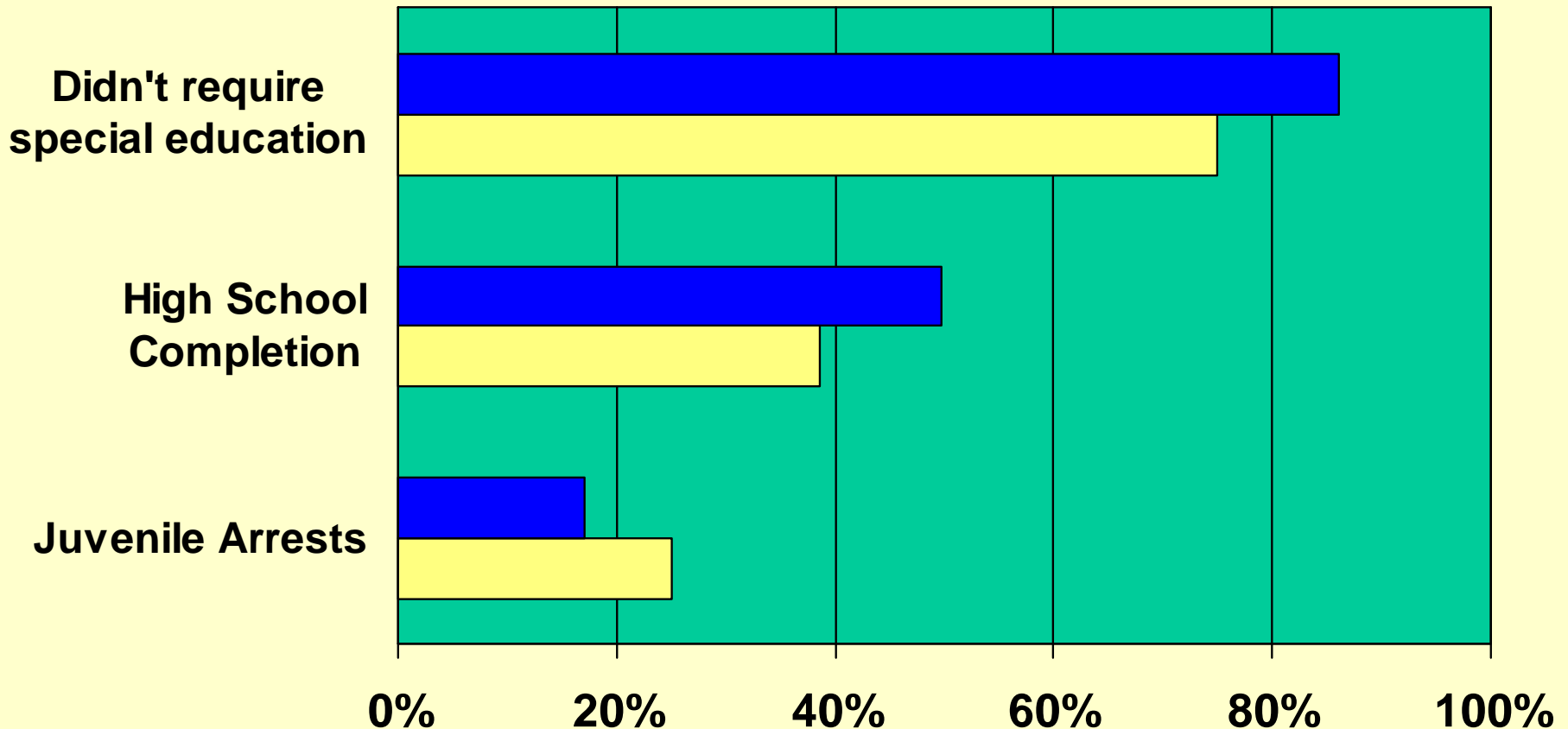
# Chicago Child-Parent Centers

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*Half-day, large-scale program in Chicago public schools. Comparison group was a random sample of eligible nonparticipants.*

# Chicago Child-Parent Centers

□ No-program group    ■ Program group



Source: Arthur Reynolds, et al.

# Elmira Prenatal/Early Infancy Project

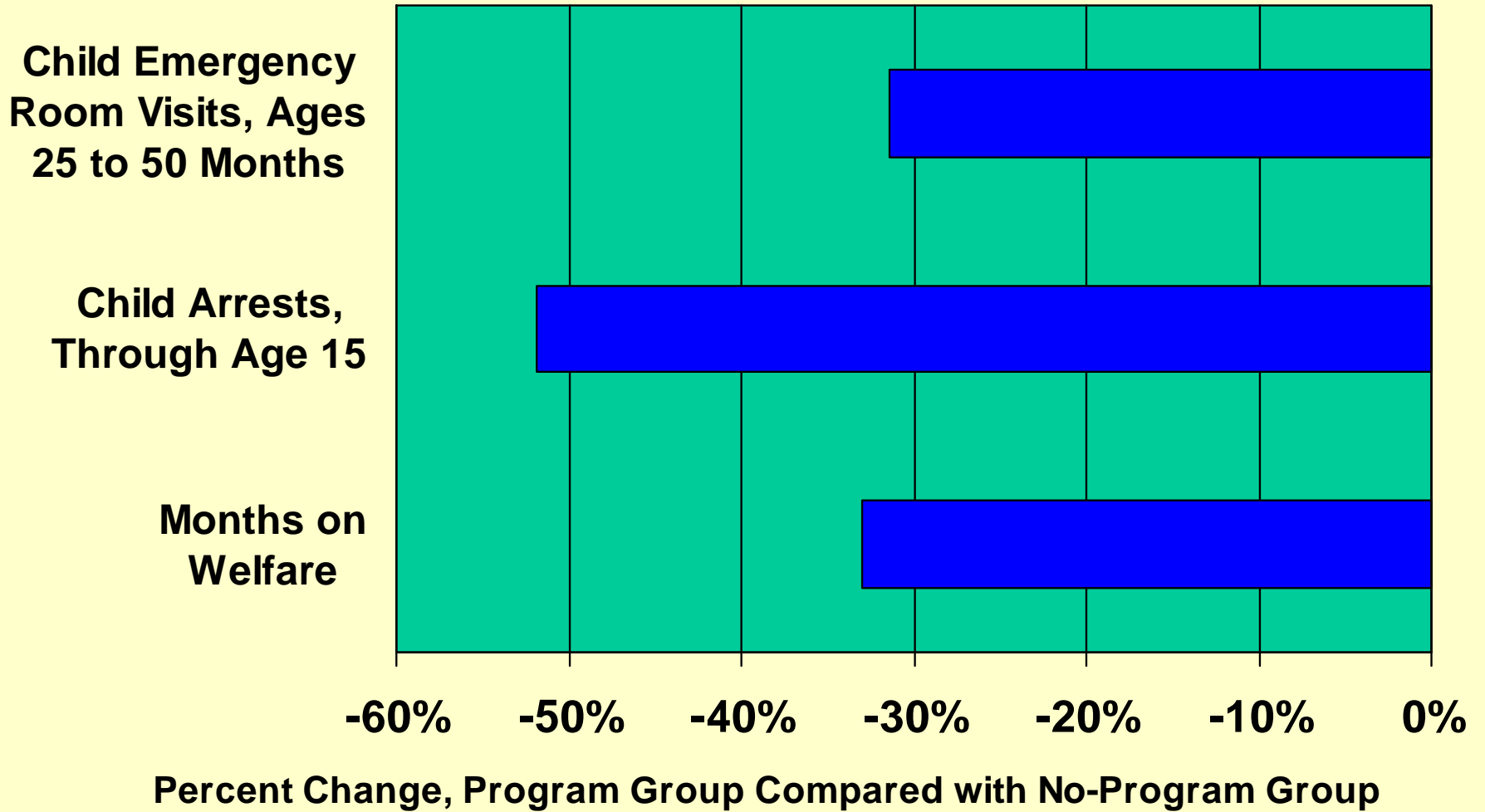
## Higher-Risk Families

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*Home visiting program by registered nurses for at-risk mothers, prenatal through first two years of child's life. Randomly selected participants were compared with a control group.*



# Elmira Prenatal/Early Infancy Project High-Risk Families



Source: David Olds, et al.

# Benefit-Cost Ratios for Other Longitudinal Studies

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- **Abecedarian Educational Child Care**
  - \$4 to \$1
- **Chicago-Child Parent**
  - \$7 to \$1
- **Elmira Prenatal/Early Infancy Project**
  - \$5 to \$1

# Lessons Learned from Research

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- **Invest in quality**
- **Involve parents**
- **Start early**
- **Reach at-risk population**
- **Teach cognitive and noncognitive skills**
- **Bring to scale**

# Moving Forward

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## Broad-based measures

- **School readiness awareness campaign**
- **Family-friendly work environments**
- **Early childhood screening**
- **Incentives to improve child care quality**
- **Access to preschool**

# Moving Forward

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## For children at risk

- **Prenatal/early infant home visits for at-risk mothers**
- **Connect child protection system with early childhood intervention programs**
- **Provide scholarships for at-risk children to attend high-quality ECD program**

# **Market-Oriented ECD Proposal**

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- **Provide scholarships and mentors to parents with at-risk children.**
- **Scholarships designed to reward performance and encourage high-quality and innovative practices.**
- **Financed by endowed fund.**

# **St. Paul Early Childhood Scholarship Pilot, 2008-2011**

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**Families with a 3-year-old receive:**

- **Scholarships to use at a high quality early childhood program for two years**
- **Parent mentoring through age 5**

**Families with a 0-1 year old receive:**

- **Parent mentoring through age 5**
- **Access to scholarships at age 3**

**Cost: \$15 million**

**Children: 1,200**

# **Business Leadership in ECD**

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- **Partnership for America's Economic Success & Committee for Economic Development**
- **Success By 6 – United Way**
- **PNC Financial Services, Gates Foundation**
- **Minnesota Early Learning Foundation**



**“Although education and the acquisition of skills is a lifelong process, starting early in life is crucial. Recent research--some sponsored by the Federal Reserve Bank of Minneapolis in collaboration with the University of Minnesota--has documented the high returns that early childhood programs can pay in terms of subsequent educational attainment and in lower rates of social problems, such as teenage pregnancy and welfare dependency.”**

**Remarks by Federal Reserve Board Chairman Ben S. Bernanke  
Before the Greater Omaha Chamber of Commerce,  
February 6, 2007**

**[minneapolisfed.org](http://minneapolisfed.org)**