

**The Nurse Family Partnership Program:
Adolescent Outcomes in the Elmira
Randomized Controlled Trial**

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Background

- Preventive interventions for young parents may reduce health and developmental problems later in life
- There is much recent interest in home visitation services aimed at promoting maternal health and caregiving
- There have been no studies of children in randomized trials of home visitation programs as they enter young adulthood

Objectives

- To review the long-term effects of the Nurse-Family Partnership program on mothers and children through age 19
- Special focus on prevention of child abuse and neglect in the Elmira Trial
- Discuss implementation



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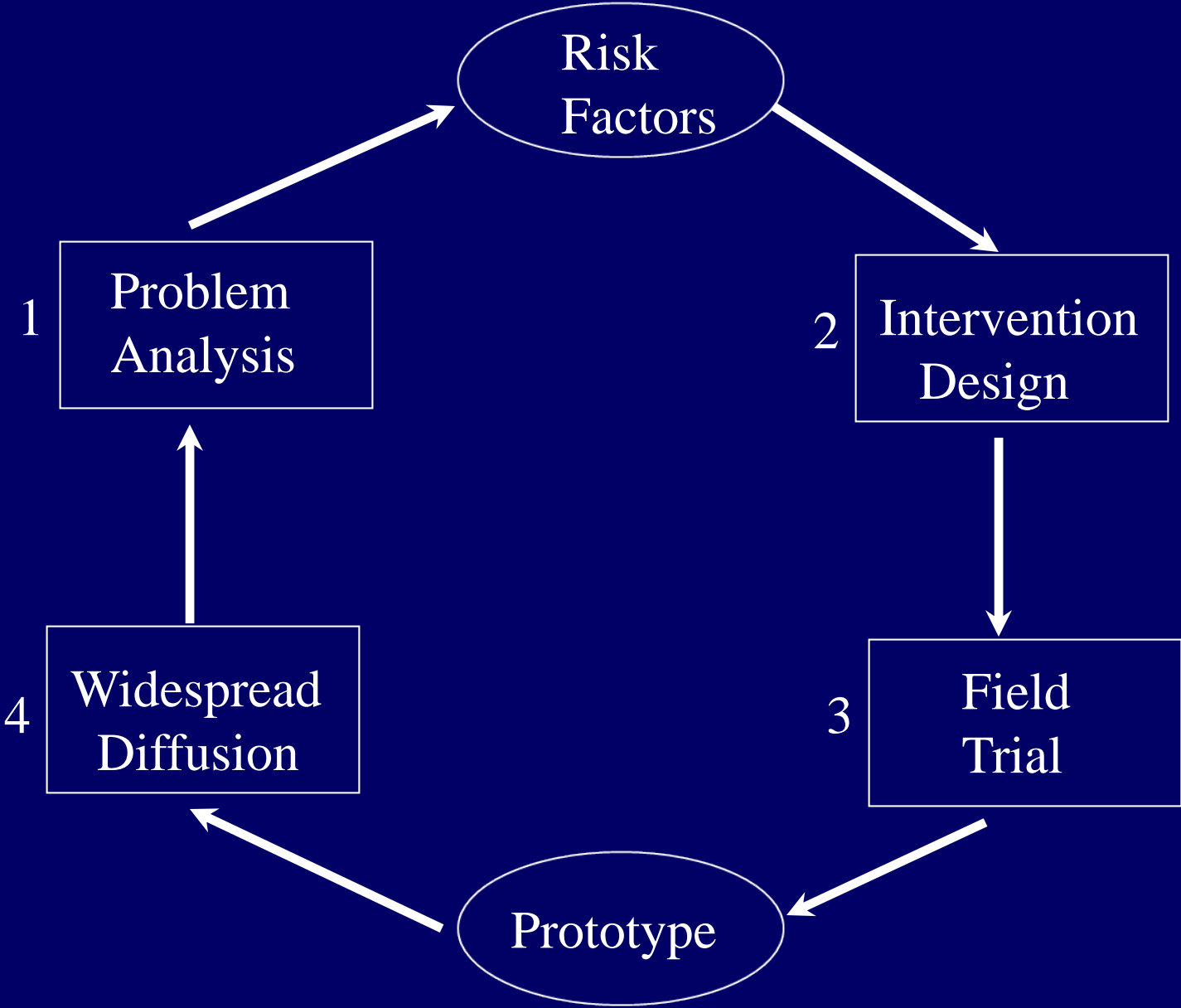
Dennis Luckey

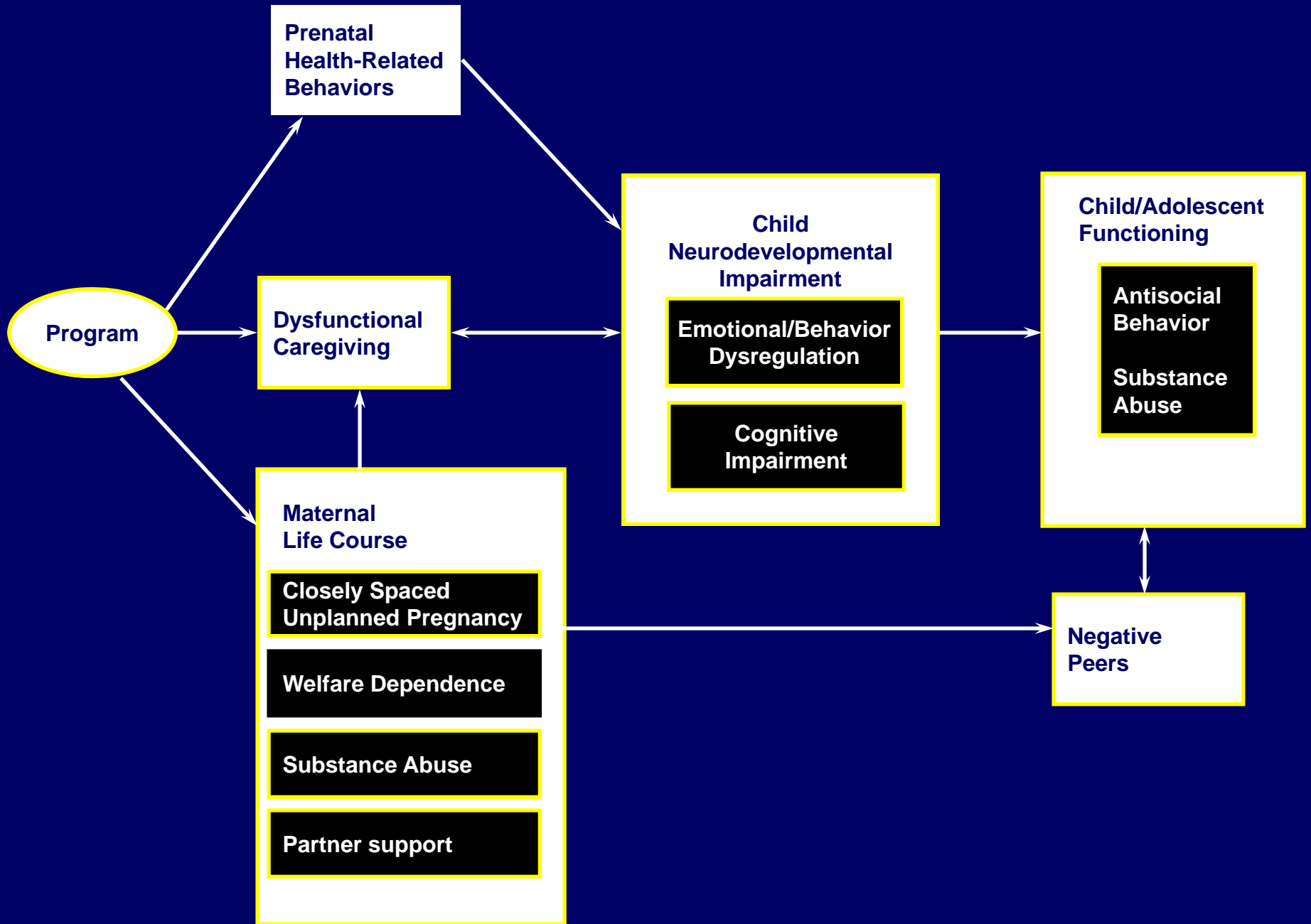
John Holmberg

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FOUR PHASES OF PREVENTION RESEARCH





TRIALS OF PROGRAM

Elmira, NY



N = 400

- Low-income whites
- Semi-rural

Memphis, TN



N = 1,138

- Low-income blacks
- Urban

Denver, CO



N = 735

- Large portion of Hispanics
- Nurse versus paraprofessional visitors



FAMILIES SERVED

- **Low income pregnant women**
 - Usually teens
 - Usually unmarried
- **First-time parents**



THREE GOALS

- 1. Improve pregnancy outcomes**
- 2. Improve child health and development**
- 3. Improve parents' economic self-sufficiency**

Elmira Trial

Families Served

- 400 women
- First live birth
- Demographic risk
(teen, poor, or single)

(Random Assignment)

Comparison Group

Screening & referral
only

Nurse Visited Group

Screening & referral

plus

Nurse visitation through
child's 2nd birthday

15-Year NFP Sample

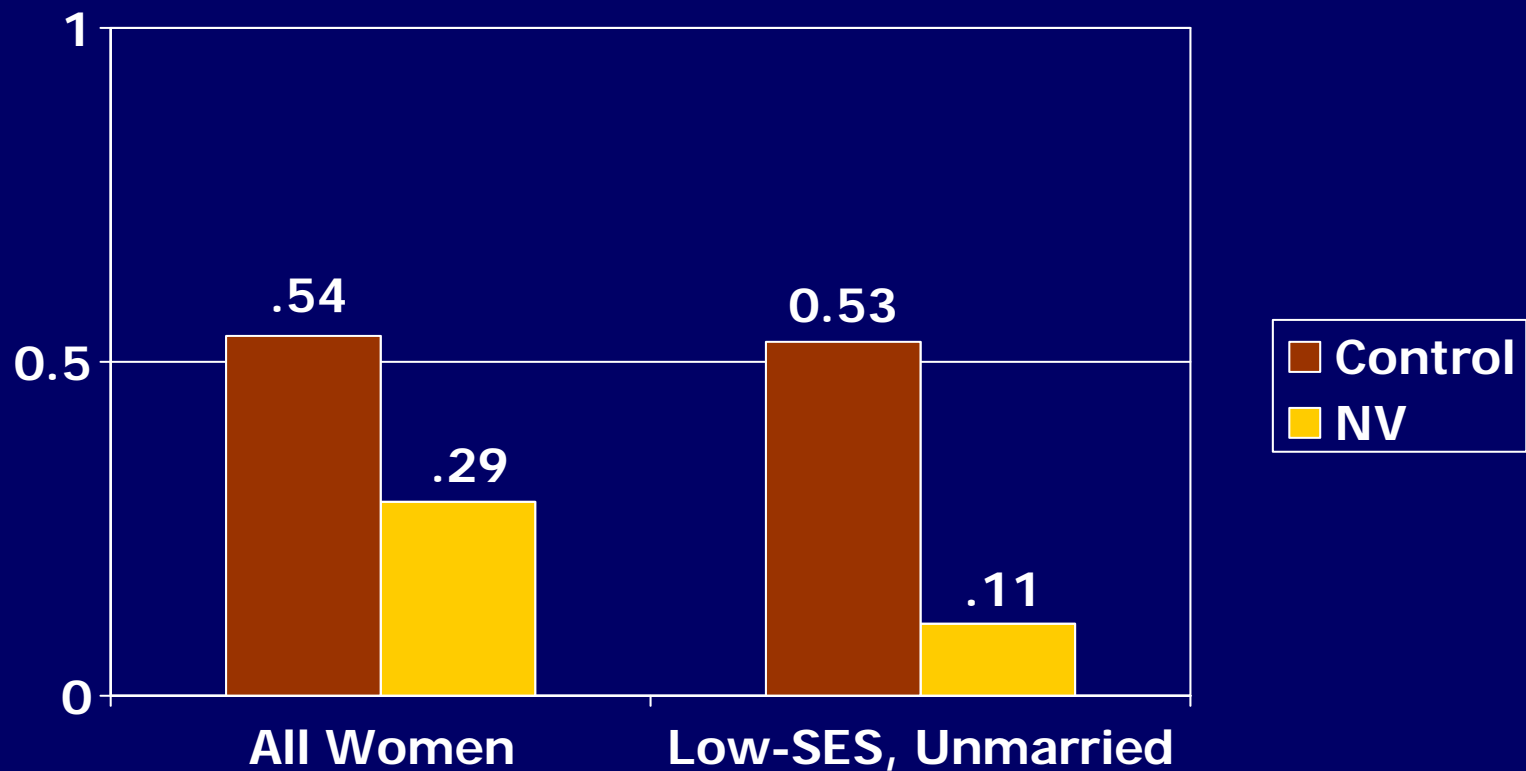
- 324 Families were Assessed
 - 81% of the Randomized Sample
 - 92% of Families Eligible at 15 Years
- No differences in attrition based on:
 - Treatment group status
 - Key demographics

Enduring Effects on Low-Income, Unmarried Mothers' Behavior Elmira 15-Year Follow-up

- **79% fewer verified reports of child abuse and neglect**
- **32% fewer subsequent births**
- **30 fewer months of welfare use**
- **44% fewer behavioral problems due to alcohol & drug abuse**
- **69% fewer arrests**

Olds, D., Eckenrode, J., Henderson, Jr. C., et al. (1997). Long-Term Effects of Home Visitation on Maternal Life Course and Child Abuse and Neglect: 15-Year Follow-Up of a Randomized Trial. *JAMA*, 1997; 278: 637-643.

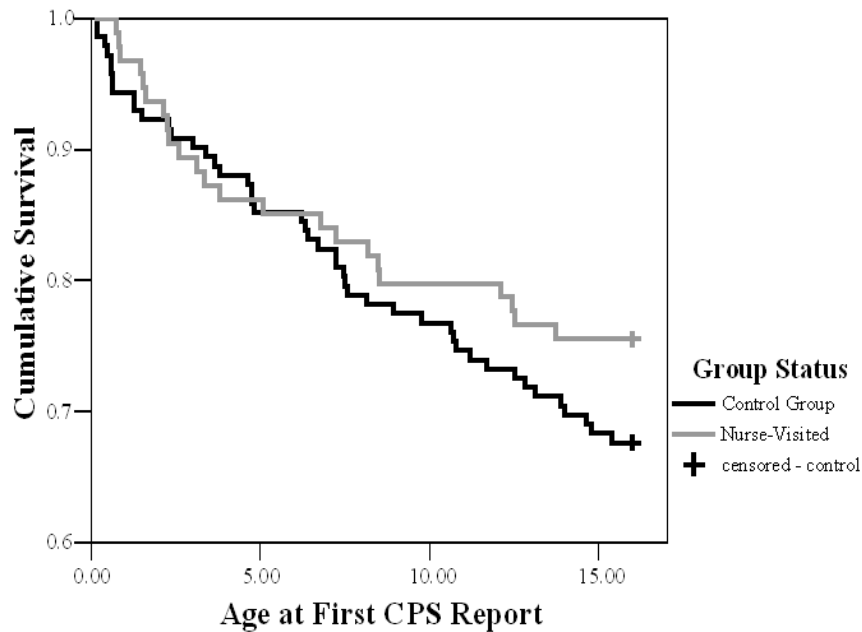
Number of Substantiated Child Protective Services Reports by 15



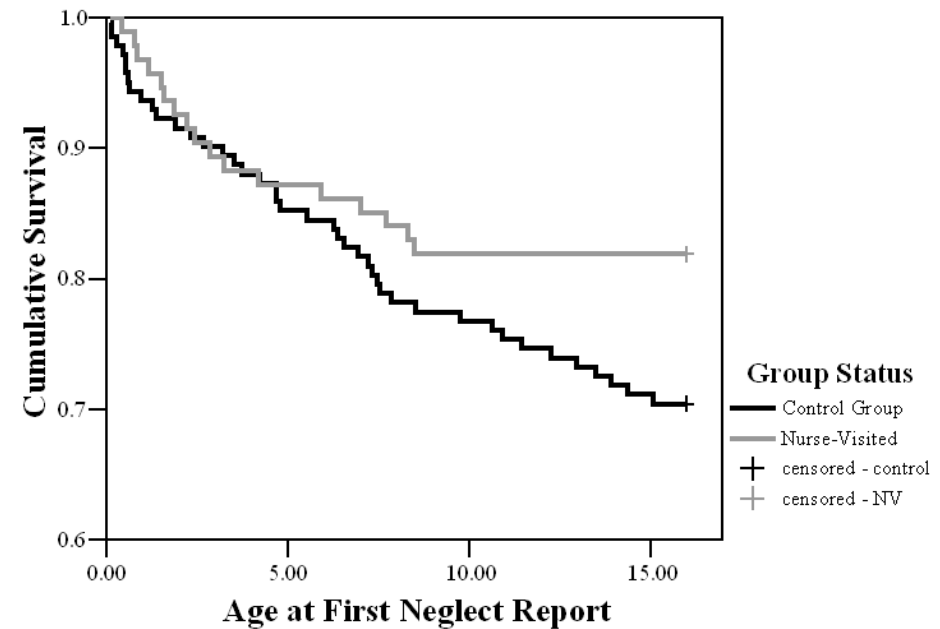
Olds, D. L., Eckenrode, J., Henderson, C., et al. (1997). Long-term effects of home visitation on maternal life course and child abuse and neglect: 15-year follow-up of a randomized trial. *Journal of the American Medical Association*, 278, 637-643.

Survival functions for age at first CPS report: All respondents

All Maltreatment

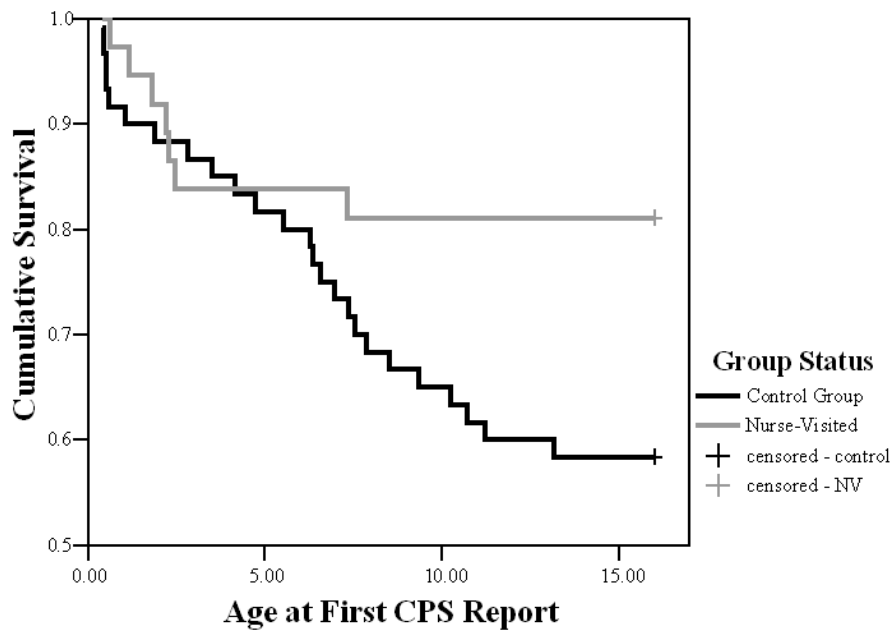


Neglect

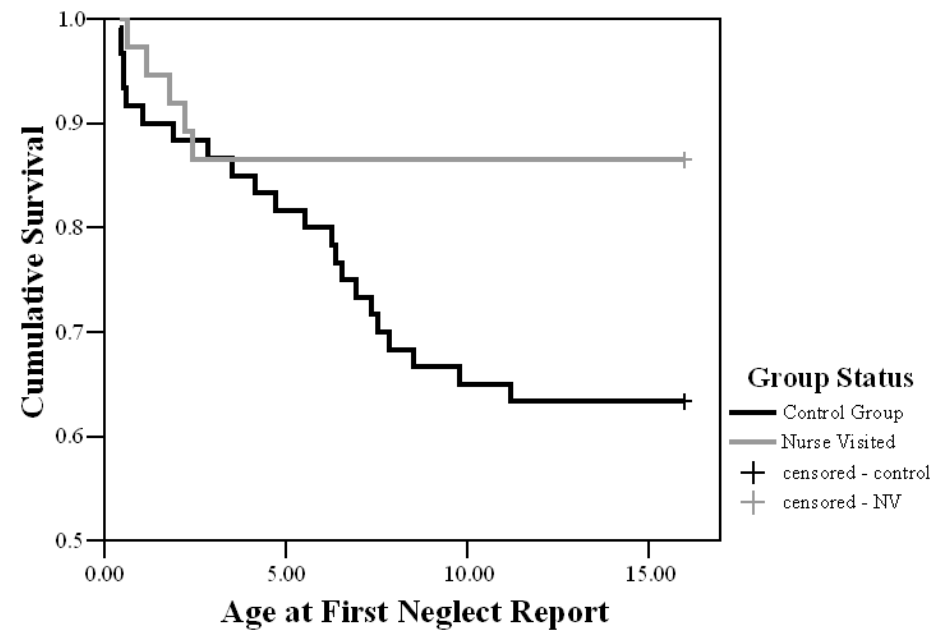


Survival functions for age at first CPS report: High-risk sub-group

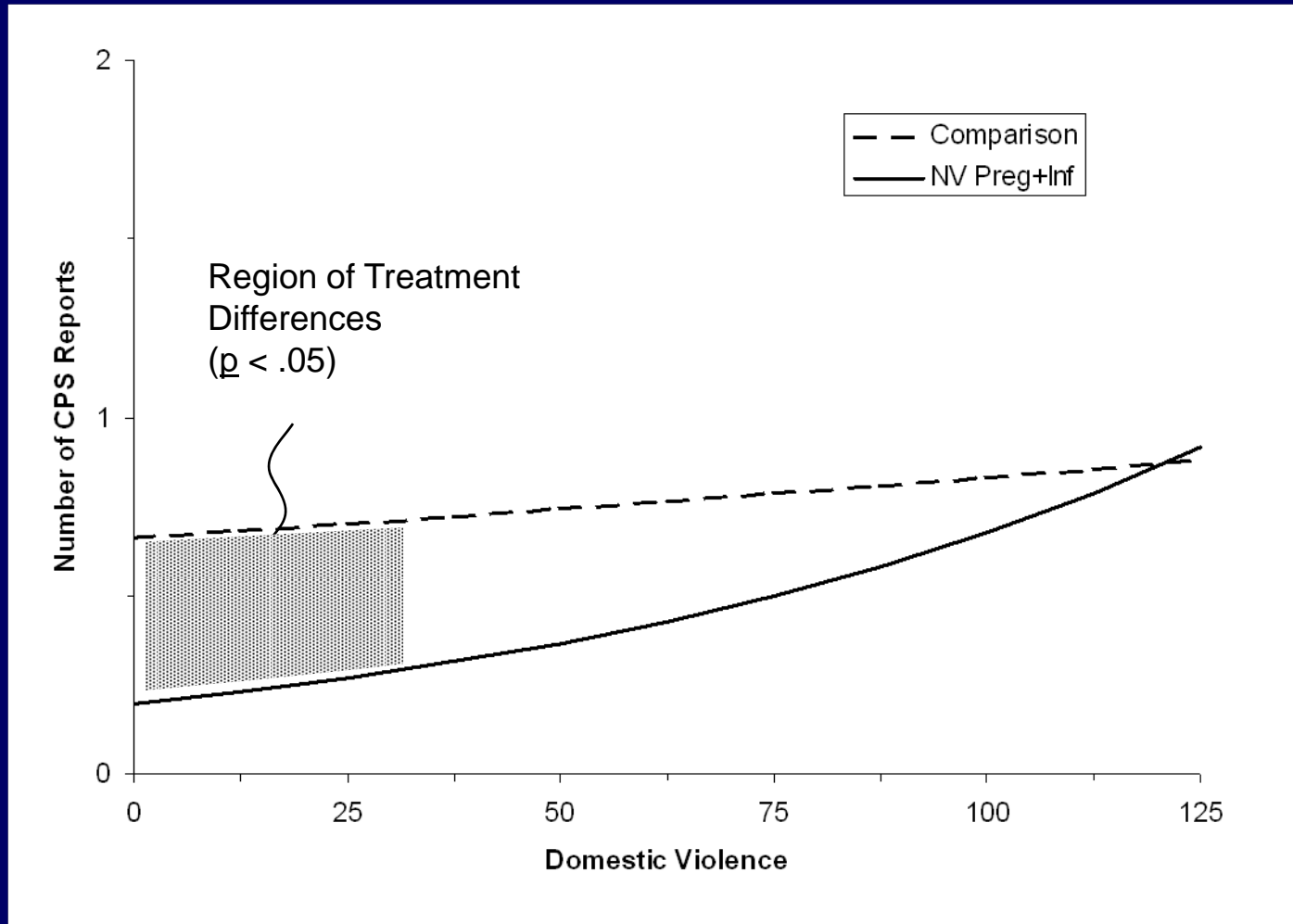
All Maltreatment



Neglect

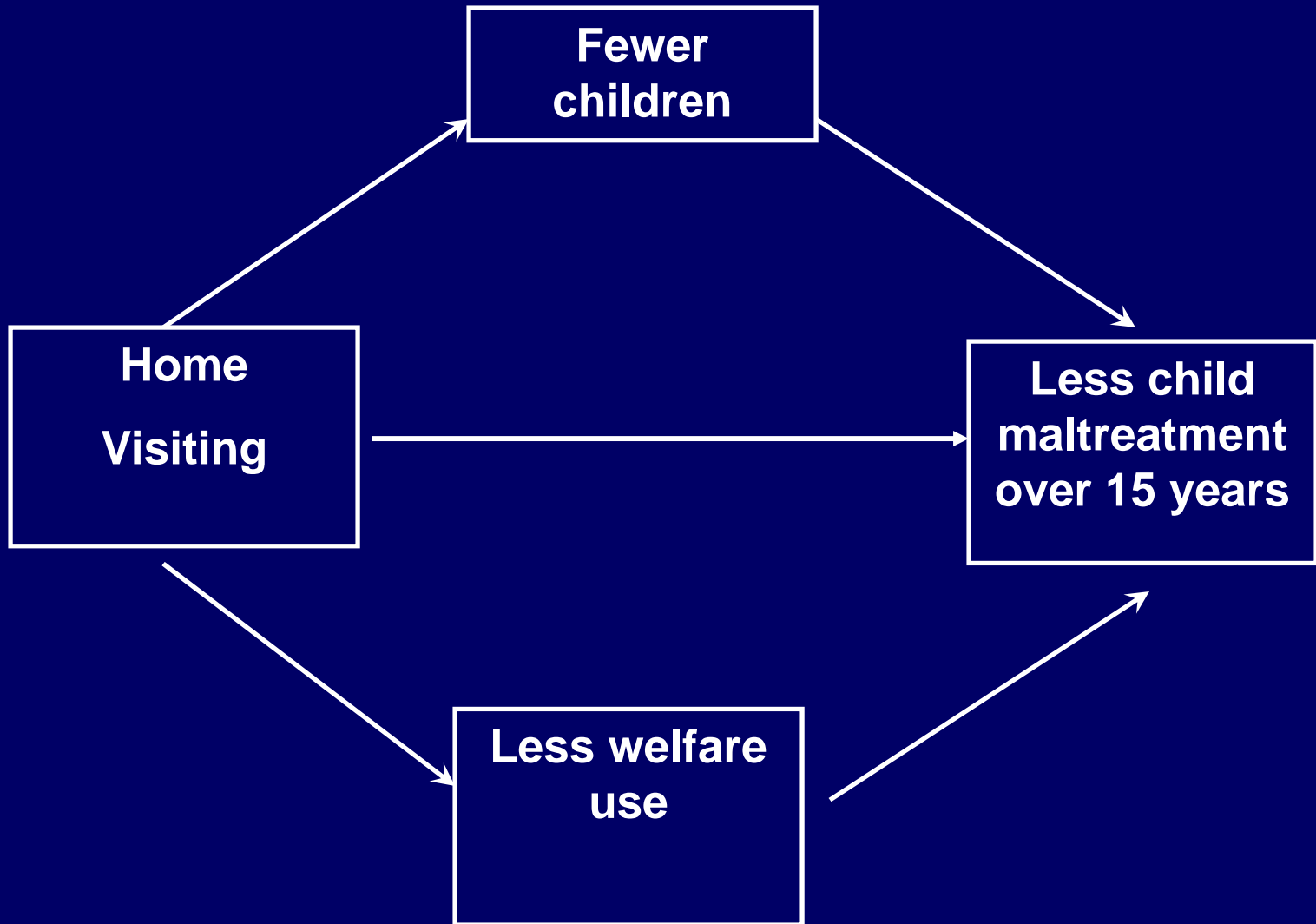


Number of Maltreatment Reports by Treatment Status and Level of Domestic Violence



Eckenrode, J., Ganzel, B., David Olds, Charles Henderson, et al. (2000). Preventing child abuse and neglect with a program of nurse home visitation: The limiting effects of domestic violence. Journal of the American Medical Association, 284, 1385-1391.

How Does Nurse Home Visitation Prevent Child Maltreatment?



ELMIRA SUSTAINABLE RESULTS:

Adolescents

Arrests



54%

Convictions



69%

Sexual Partners



58%

Cigarettes Smoked



28%

Number of days
consuming alcohol



51%

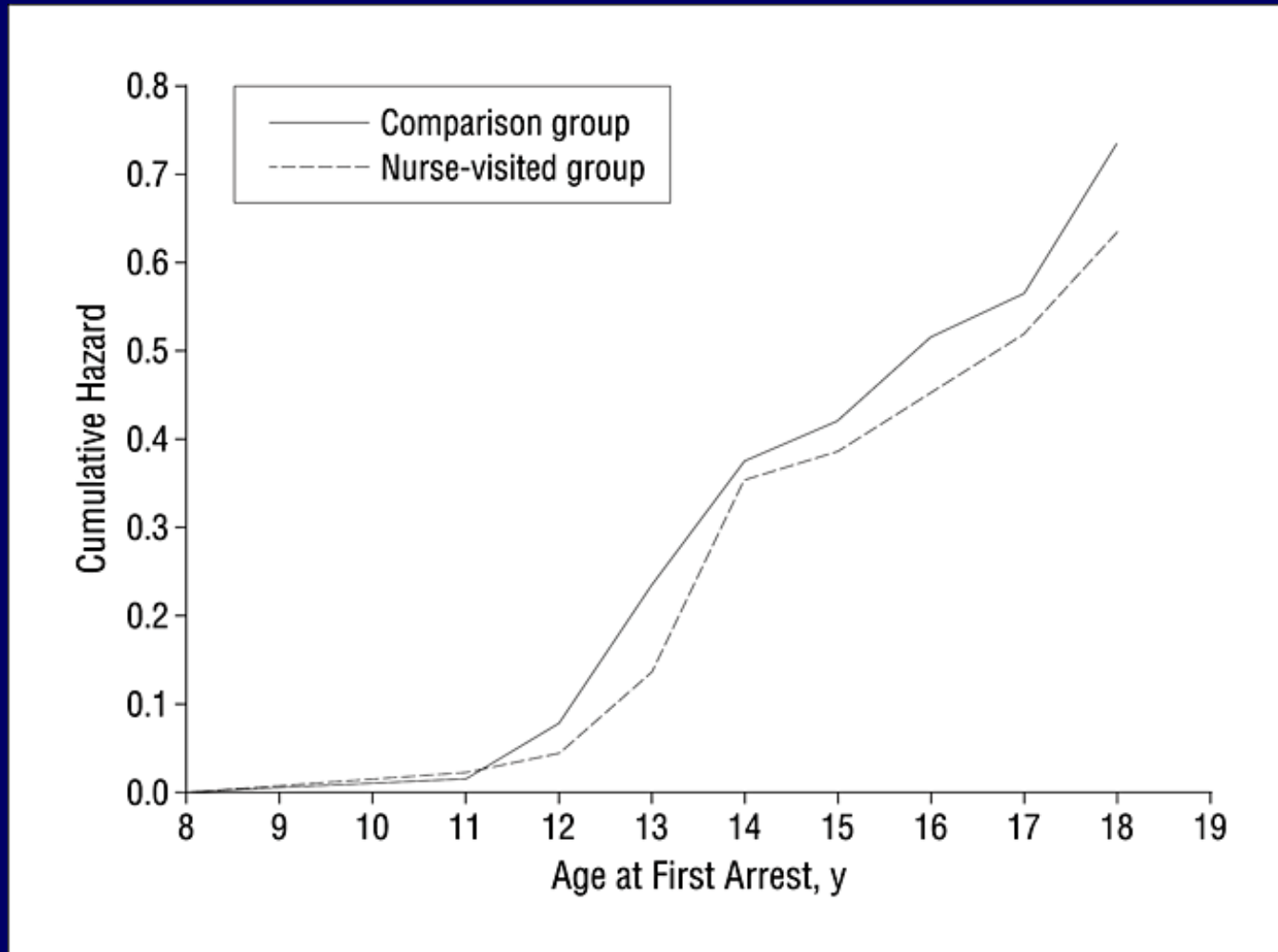


15-YEAR OLDS BORN TO
UNMARRIED, LOW-INCOME
MOTHERS

19-Year Follow-Up

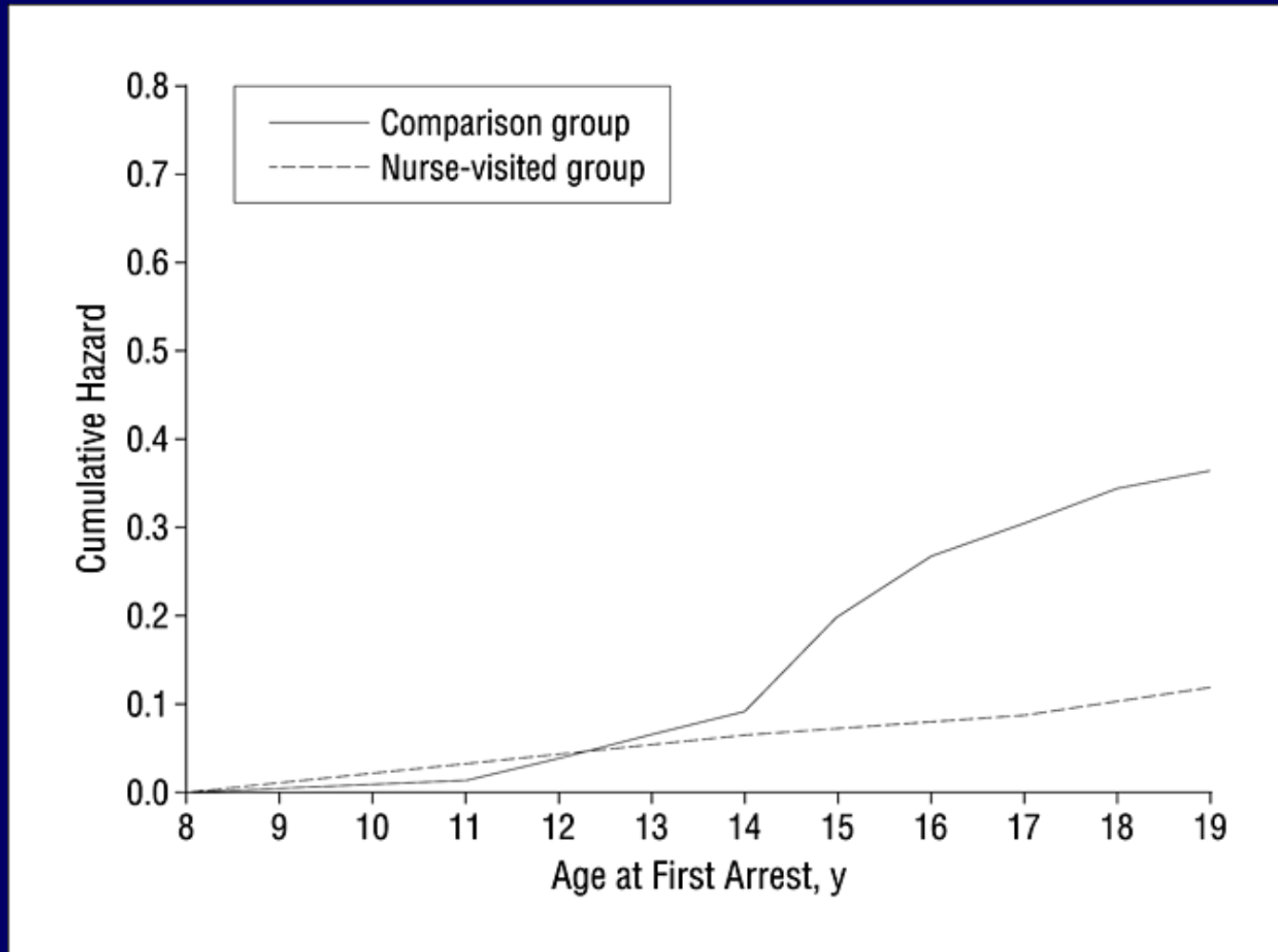
- N = 310 with an average age of 19, representing 78% of youth eligible for follow-up from earlier phases of the research
- There was no indication of attrition bias
- Data were collected through phone interviews
- Main outcomes: criminal involvement, reproductive behaviors, educational achievement, public assistance use
- Funding: Smith Richardson Foundation

Cox proportional hazard curves showing the hazard of first arrest for boys in the comparison (n = 67) and nurse-visited (n = 47) groups



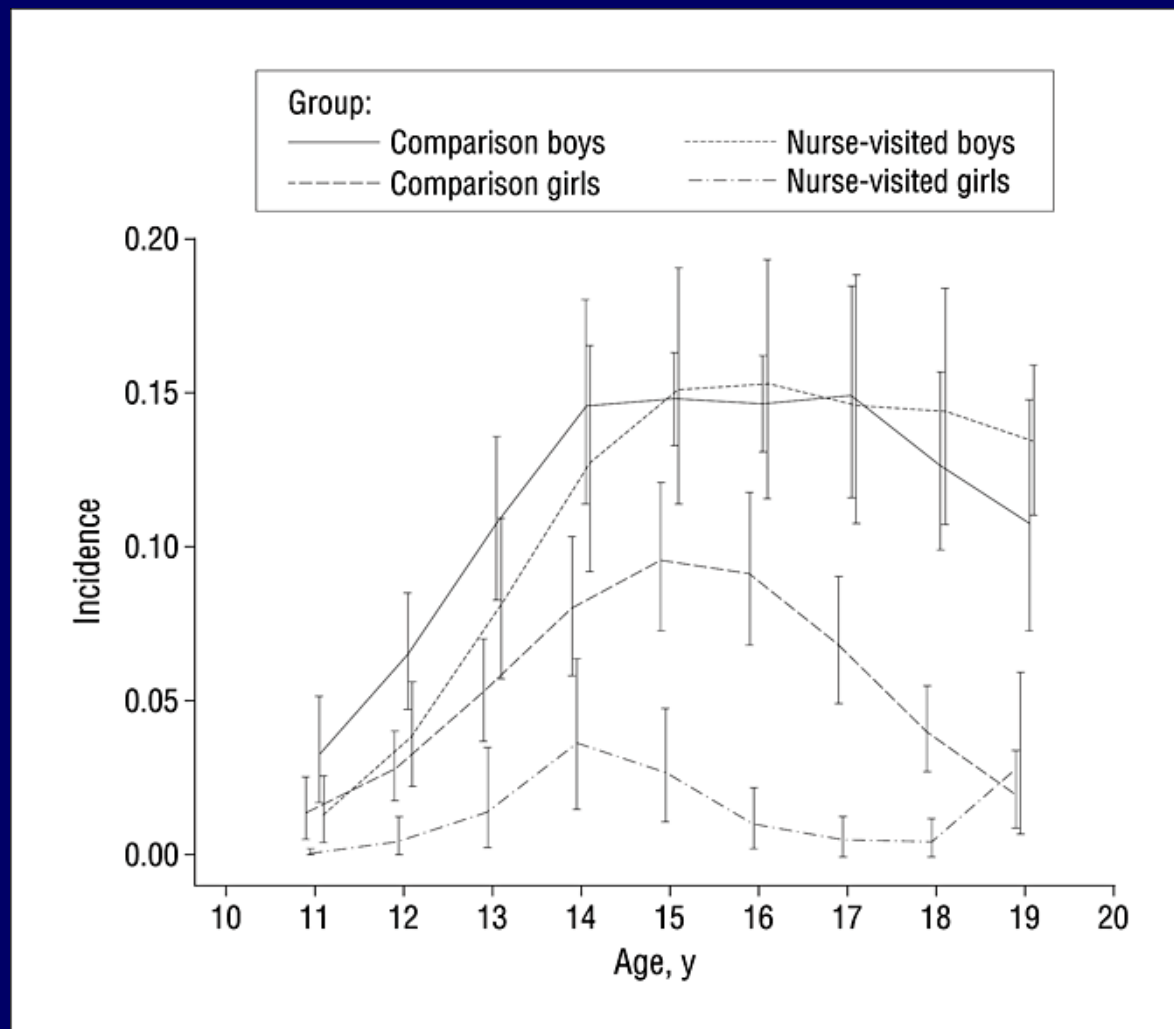
Eckenrode, J. et al. Arch Pediatr Adolesc Med 2010;164:9-15.

Cox proportional hazard curves showing the hazard of first arrest for girls in the comparison (n = 73) and nurse-visited (n = 43) groups



Eckenrode, J. et al. Arch Pediatr Adolesc Med 2010;164:9-15.

Estimates of rates of arrest from cubic regressions by treatment and the youth's sex using a generalized linear model assuming a negative binomial distribution and a log link



Eckenrode, J. et al. Arch Pediatr Adolesc Med 2010;164:9-15.

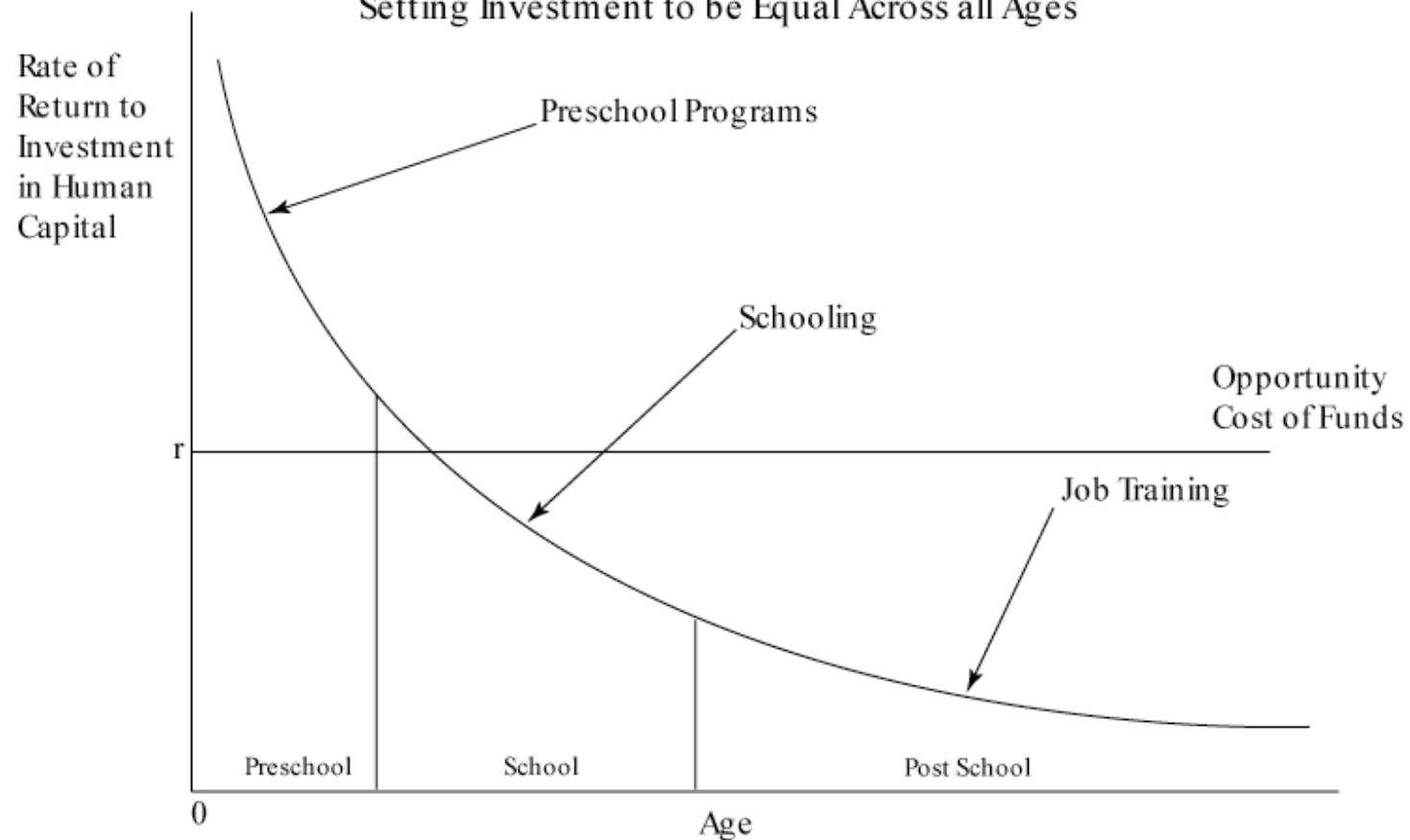
- The program showed enduring effects on girls' criminal involvement
- For girls born to unmarried and low income mothers, childbearing and Medicaid use. These findings were consistent with results reported in earlier phases of the trial for the mothers.
- Further analyses will seek to determine why there were few program effects for boys.

CONSISTENT RESULTS ACROSS TRIALS

- **Improvements in women's prenatal health**
- **Reductions in children's injuries**
- **Fewer subsequent pregnancies**
- **Greater intervals between births**
- **Increases in fathers' involvement**
- **Increases in employment**
- **Reductions in welfare and food stamps**
- **Improvements in school readiness**



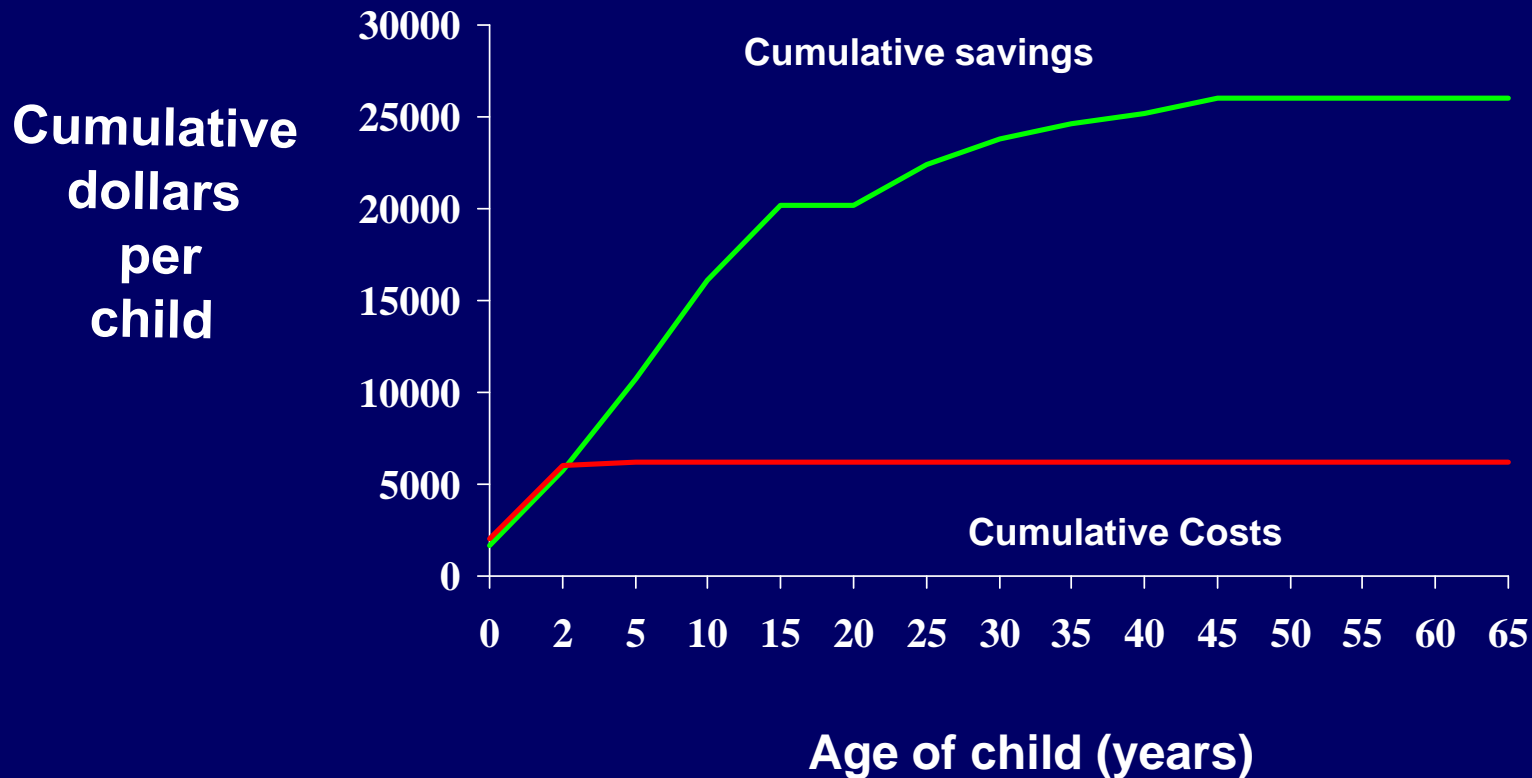
Figure 6-1
Rates of Return to Human Capital Investment Initially
Setting Investment to be Equal Across all Ages



Rates of Return to Human Capital Investment Initially Setting Investment to be Equal Across all Ages

From: Carneiro, P and Heckman, J.J. *Human Capital Policy*. Paper presented at the Alvin Hansen Seminar, Harvard University, April 25, 2002.

Cumulative Cost Savings: Elmira Home Visits (High-Risk Families)



Karoly LA, Everingham SS, Hoube J, et al. *Benefits and Costs of Early-Childhood Interventions: A Documented Briefing*. Santa Monica, Calif:RAND;1997

- Implications for future research in this area
 - A 27 year follow-up study of the youth in this trial will allow for a more complete assessment of life course outcomes.
 - More scientific attention to girls in observational and interventional studies of criminal behavior is needed.
 - More long-term studies of early intervention trials should be conducted.
- Implications for health policy
 - Prenatal and infancy home visiting by nurses to higher risk mothers having their first child may have a long-term benefits for their children.

FROM SCIENCE TO PRACTICE

- **Nurturing Community, Organizational, and State Development**
- **Training and Technical Assistance**
- **Program Guidelines**
- **Clinical Information System**
- **Assessing Program Performance**
- **Continuous Improvement**

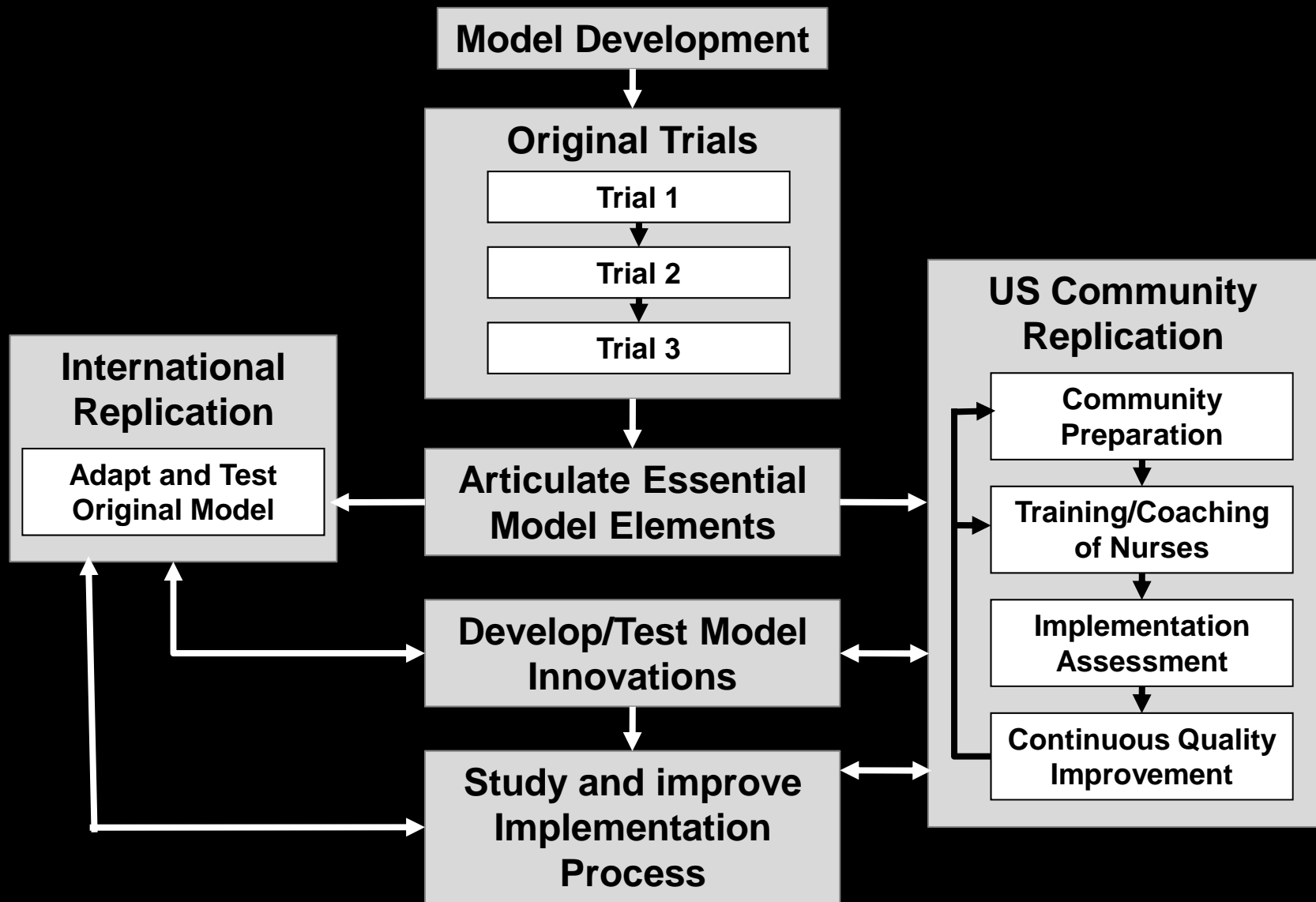


Invest in Ongoing Research

- **Evidence-based programs are works in progress**
- **Building next generation of NFP with national office, local sites, and British government**

U.S. Policy Initiative

- **Patient Protection and Affordable Care Act of 2010**
- **includes \$1.5 Billion over 5 years in mandatory funding for an innovative Home Visitation Grant Program for States**



Program Improvement Research

- **Identify vulnerabilities in NFP in varying settings, with new populations.**
- **Develop NFP program innovations to improve NFP.**
- **Test efficacy and cost-effectiveness of program innovations.**

Implementation/Dissemination Research

- **Examine community, organizational, work-force, and NFP-team factors that affect the translation of the NFP model into effective practice.**
- **Improve selection and preparation of communities and organizations to deliver the NFP with fidelity**
- **Improve selection, education, and on-going support of nurses in delivering the program.**
- **Examine and enhance program reach within communities.**

