

Implementing Evidence-Based Parenting Programs at Scale to Achieve Population Impact: *A Social Engineering Challenge*

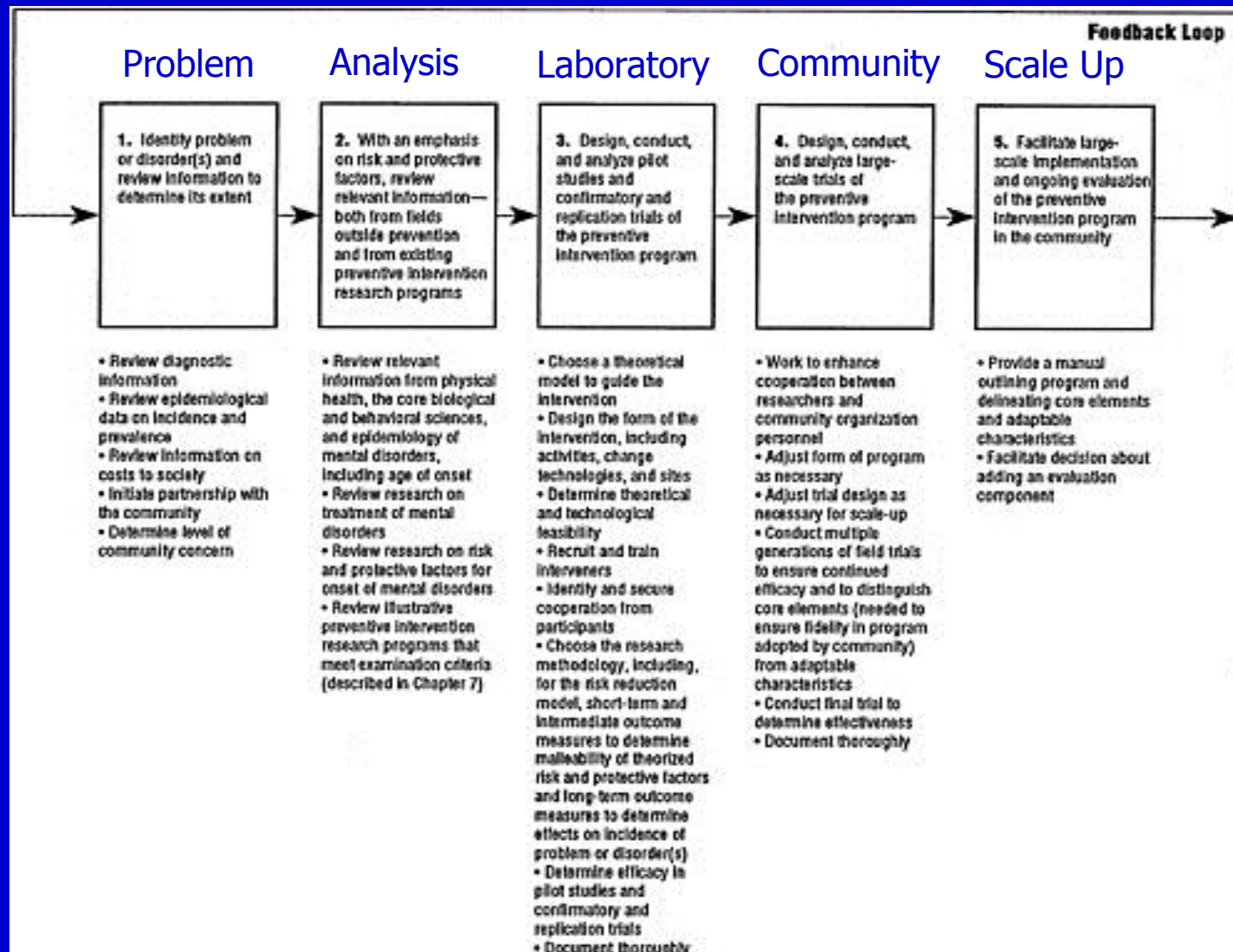
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Collaborators are Robert Murphy, Karen O'Donnell, and Ben Goodman.*



Institute of Medicine Model for Preventive Intervention Research Cycle



Strong Scientific Evidence for Importance of High-Quality Parenting in Early Years

Humans among most helpless species at birth.

Evolved to need early parenting for:

- Nutrition

- Emotional security

- Social connection

- Socialization of behavior

Less than optimal child development related to parenting.

Disparities in child outcomes related to disparities in parenting.

Replicated Evidence for Technology of Parenting Interventions

Early parenting support by home visiting

Nurse Family Partnership, Healthy Families

Early parent training to interpret infant behavior / support

Attachment and Biobehavioral Catch-Up (Dozier)

Parent support in context of child care program

Perry Preschool, Abecedarian

Parent training for conduct problems

Forehand, Patterson, Chamberlain, Incredible Years

Scaling Up of Major Parenting Support Programs

- Head Start and Early Head Start
- Maternal, Infant, and Early Childhood Home Visiting (MIECHV)
 - Nurse Family Partnership

No program has been scaled up to achieve population impact.

Reasons Why Scaling Up Programs Has Not had Population Impact

- Rarely intend to have population impact at the outset
 - Selection bias in who participates in study (paid volunteers with no stigma)
- Heterogeneity of population needs, cannot be met by one program
 - Parent skill deficits, stressors, mental health impairments, culture
- Selection bias in who participates in scaled-up program
- When scaling up, penetration and retention low (35-50%)
 - Stigma, hard-to-reach, mobility, no incentives
- Degradation of intervention fidelity and quality (“scale-up penalty” of 50%)
- Over-estimate of community capacity to meet needs
 - NFP relies on nurse to assert competitive advantage for resources

The Public Health and Public Policy Models: Start AT Scale (with thanks to Michael Wald)

Major challenge:

How to deliver a universal system to meet diverse needs

Positive examples:

- Schooling (universal plus special ed when needed)
- Dentistry (daily brushing plus braces when needed)
- Health care delivery model of annual checkup

Population models of parenting support:

- Communities That Care (CTC)
- Triple P
- Family Checkup

Individualized Parent Interventions Implemented Universally

1. Top down infrastructure:

- Preventive System of Care
- Align community resources
- System to reach and screen all families

2. Bottom up with each family:

- Assess to identify unique risks/needs
- Short-term interventions
- Connect with ongoing community resources

The *Durham Connects* Model

Began in 2001, funded by The Duke Endowment
Called the Durham Family Initiative

Encouraging impact on reducing population rates
of child abuse

Move to:

- Focus on early life

- Get MOAs with community agencies

- “Manualize” for replication

- Subject to randomized controlled trial

Three Steps to *Durham Connects*

1. Connect with family

- Universal recruitment at birthing hospital
- Home visit(s) by public health nurse
- Screen, assess risk factors, quantify risk
 - Health care, financial stability, child care, parent mental health

2. Connect family with community, as needed

- Professional, paraprofessional, and natural

3. So that parents can connect with infant

- Improve cognitions, parent-infant relationship

Evaluation Design for *Durham Connects*

- Randomly assign by even-odd birthdate
 - 4,780 births between 7-1-09 and 12-31-10
 - Recruit even birthdates into intervention
 - No contact with controls

- Analyze by intent-to-treat
 - Administrative record review of all births
 - Random sample (n=686, 80.0% participation) from birth records for in-home interview at age 6 months

Implementation Findings

- Penetration
 - 80.0% of families agree
 - Of these, 85.9% complete
- Fidelity to protocol
 - Independent rater for 11%
 - 85% compliance by nurse

Scoring of Risk

Nurse scores each of 12 risk factors on 4-point scale

“1” indicates no risk

“2” indicates minor risk, resolved by nurse

“3” indicates considerable risk, referral

“4” indicates imminent risk, emergency

-- Inter-rater reliability of scoring of risk: Kappa = .69

45% of families score at least one “3”

49% of families score “2”s but no higher

6% of families score all “1”s

39% of all families connected to community service

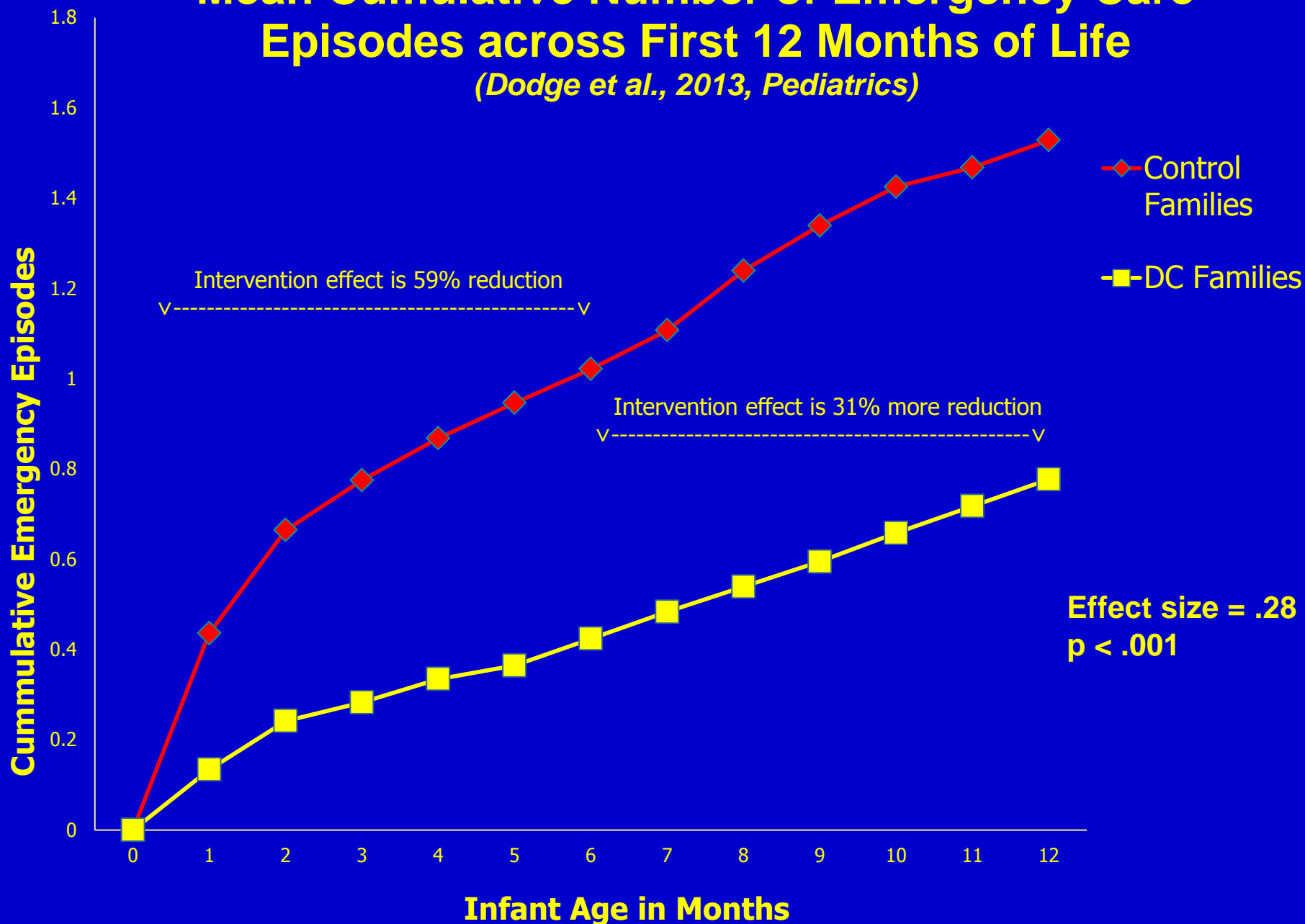
Impacts at Age 6 Months

(Dodge et al., 2014, American Journal of Public Health)

1. More mother-reported positive parenting behaviors (ES=.25, $p < .01$)
2. Higher blinded observer-rated mother parenting quality (ES=.23, $p < .05$)
3. Higher child care center quality rating (when in care) (ES=.85, $p < .01$)
4. Better mother-rated father-infant relationship (ES=.21, $p < .07$)
5. Better observer-rated home safety (ES=.22, $p < .05$)
6. Lower probability of mother clinical anxiety (OR=.65, $p < .04$)

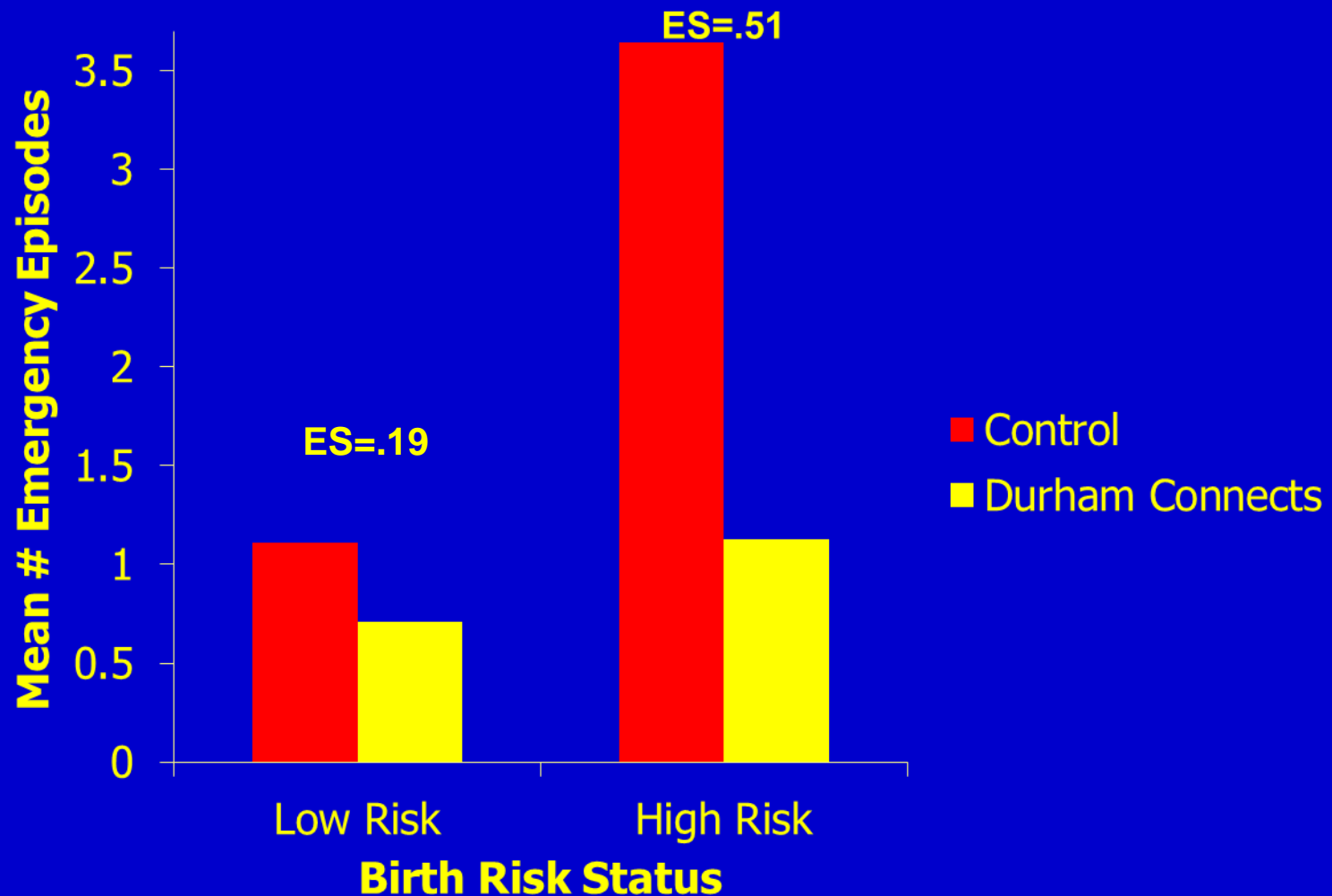
Mean Cumulative Number of Emergency Care Episodes across First 12 Months of Life

(Dodge et al., 2013, Pediatrics)



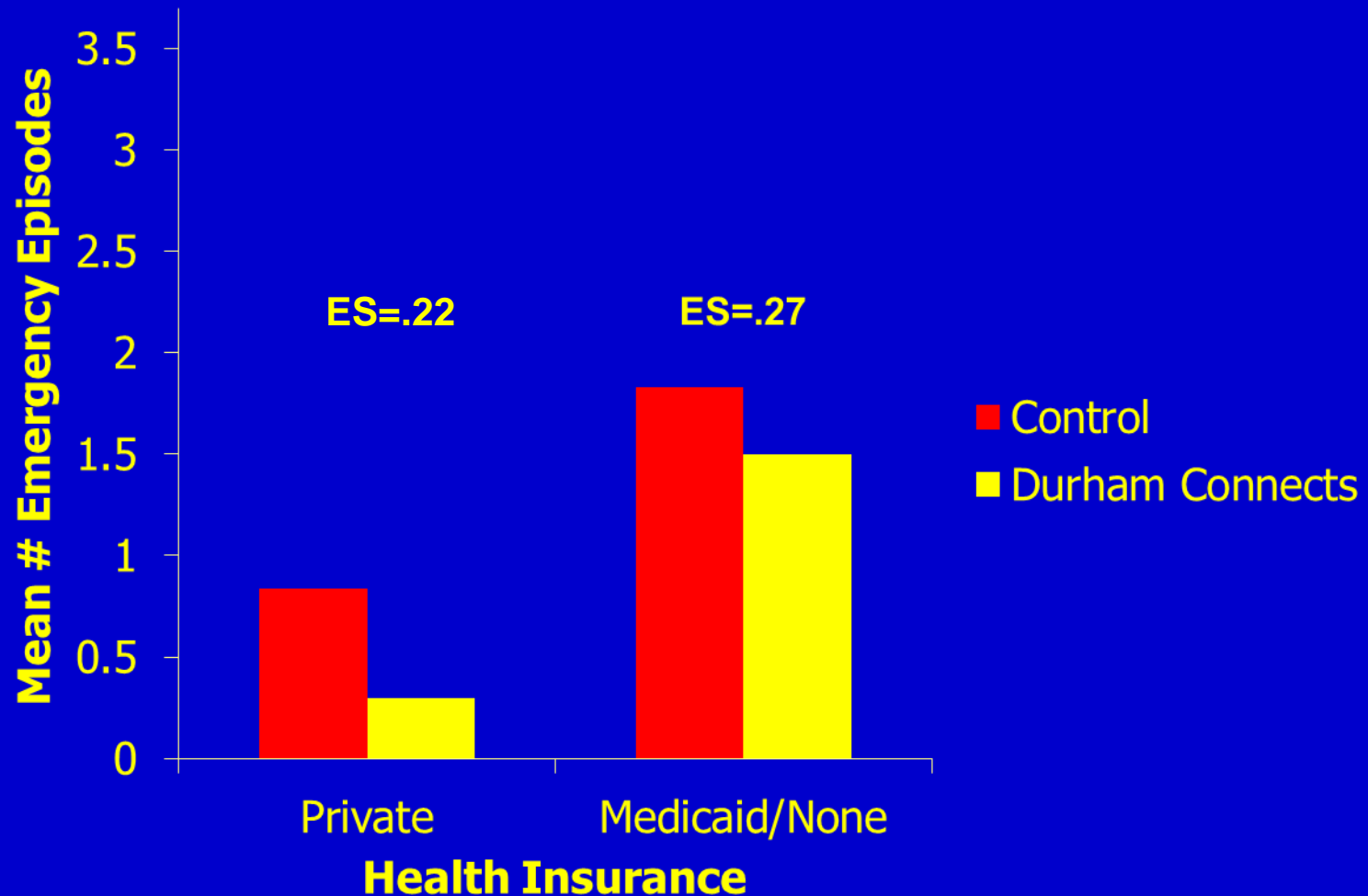
Cumulative Emergency Care at Age 12 Months

(Dodge et al., 2013, Pediatrics)



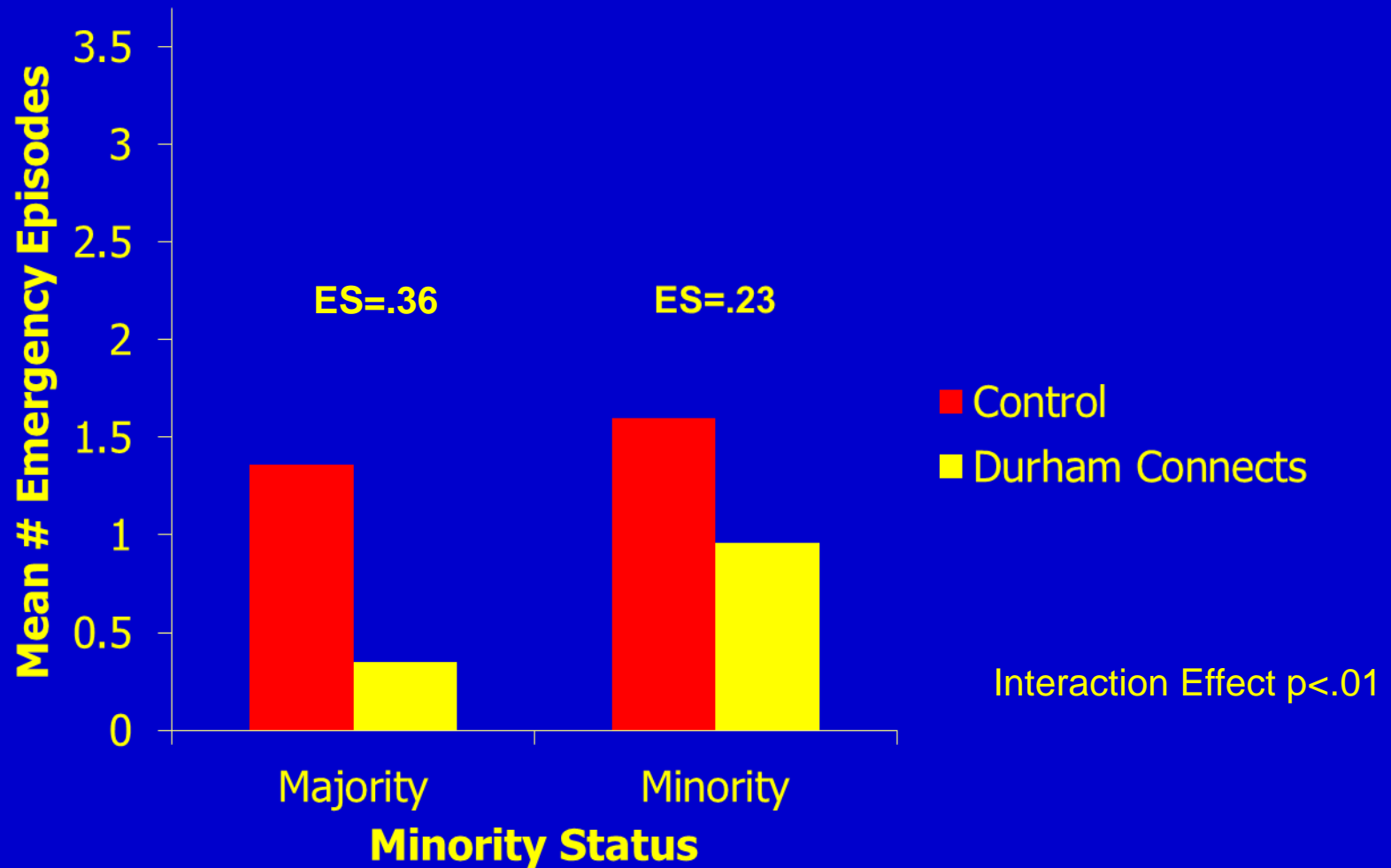
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Benefit-Cost Analysis of Intervention Impact at Age 12 Months

Durham Connects intervention costs: \$700/assigned family

Emergency Care Outcome Costs:	CONTROL	DC
\$ 423 per emergency visit	x .83 = \$ 351	x .68 = \$288
\$3,722 per hospital night	x .74 = \$ 2,754	x .11 = \$409

$$BCR_{DC} = \frac{(OC_C - OC_I)}{(IC_I - IC_C)} = \frac{(\$3,105 - \$697)}{\$700} = \$ 3.44$$

For Durham, NC:

3,187 resident births/year

Total emergency care costs without DC: \$ 9,895,635

Durham Connects would cost: \$ 2,230,900

Durham Connects would yield savings of: \$ 7,674,296

Need Creative Financing for Parenting Interventions

I. Barriers to Medicaid payment:

- Risky
- No upfront capital

Private investor solution:

Social Impact Bonds

- started in UK
- NYC by Bloomberg
- Utah by Goldman/Pritzker
- SC by Goldman/Pritzker

\$250mil fund by Goldman Sachs

II. Integrate social service system with research system

Next Steps in Research

I. Place-based randomized trials

II. Finding effective parenting interventions that market well.

- non-stigmatizing, non-threatening, deep penetration

- perhaps “push out” with texts and related media

III. Creating systems of infrastructure at the population level.

- utilize existing services but enhance quality

IV. Understanding benefits and costs and financing.

V. Understanding policy and politics through framing.

- case study of public schooling: free, compulsory, universal