The Challenge to Change Community Rates of Child Maltreatment

- The Duke Endowment had interest and ten-year commitment

- Requirements in a response:
  - Replicable model based in developmental science
  - Rigorous evaluation of impact
  - Community rate of maltreatment / child well-being as the dependent variable

- Plan:
  - Formulate a model of child maltreatment based on study of risk and processes
  - Pilot several intervention and policy ideas
  - Test through randomized controlled trials
  - Disseminate
Risk Factors for Early Child Maltreatment
Vary across Families

**Healthcare:**
1. Parent healthcare
2. Infant healthcare
3. Health insurance

**Parenting/childcare:**
4. Childcare plans
5. Parent-infant relationship
6. Manage infant crying

**Family safety:**
7. Family financial stability
8. Family violence
9. History of parenting difficulties

**Parent mental health:**
10. Depression
11. Substance abuse
12. Emotional support
Every family is vulnerable at birth, but in different ways.

- Across areas of demographic risk, 94% of families in Durham had 1+ needs for education and/or community resources.
- The needs vary across families.

Universal is the best route to community-level change.

Universal efforts should not replace more intensive targeted programs, but they complement each other.

- Analogy to a family practitioner working with specialized care.
Model of Universal Parent Intervention

1. Top down policy for community resources
   -- Preventive System of Care
   -- Align community resources
   -- Reach and screen all families

2. Bottom up practice with each birthing family
   -- Assess to identify risks/needs
   -- Brief interventions or motivational interview
   -- Improve community connectedness
Every family in the identified “community” with a newborn is eligible.

- City, county, neighborhood, health system

Family Connects is voluntary.

Family Connects works to align community resources with input from families about the care and support they need.

The model also leads to identification of gaps in the local system of care.
Three Steps to *Family Connects*

1. Connect with every family (3-7 contacts)
   - Universal recruitment at birthing hospital
   - Home visit(s) by public health nurse
   - Screen, assess 12 risk factors, quantify risk

2. Connect family with community, as needed
   - Professional, paraprofessional, and natural

3. So that parents can connect with infant
CORE FAMILY CONNECTS PROGRAM COMPONENTS

- Community Alignment
- Home Visiting
- Data & Monitoring
1. COMMUNITY ALIGNMENT
Community Alignment Framework

- Identify existing services supporting child and family needs, ranging from housing, to mental health services, to early intervention.

- Establish an Agency Finder for Family Connects program implementation and documentation.

- Identify service delivery gaps for feedback to community and key stakeholders.

- Identify key stakeholders to provide community context and support expanded program reach.
Establish a community advisory board (CAB) for ongoing communication among agencies relevant to Family Connects

- The CAB allows for assessment of community readiness prior to program installation, as well as ongoing monitoring of community alignment during program implementation.

- The CAB provides a major source for formative evaluation.

- Also fosters community buy-in and ownership of the program.
2. NURSING INTERVENTIONS
Engagement & scheduling the home visit(s)
Ideally face to face in hospital post-delivery

The integrated home visit (IHV; ~2 Hours) at 2-3 weeks

Follow-up visits (0-2 Total) and telephone calls as needed for further assessment, facilitating linkage to community services, and family support.

Post-visit call (PVC)
- For customer satisfaction, quality assurance, and confirmation of connections to community resources
### The Family Support Matrix

<table>
<thead>
<tr>
<th>Support for Health Care</th>
<th>Support for Safe Home</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Infant Health</td>
<td>2. Family and Community Safety</td>
</tr>
<tr>
<td>3. Health Care Plans</td>
<td>3. History with Parenting Difficulties</td>
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<th>Support for Parent(s)</th>
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<td>2. Parent-Child Relationship</td>
<td>2. Substance Abuse</td>
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Each factor is rated as:

- 1 = No needs
- 2 = Needs addressed during visit
- 3 = Community resource needed
- 4 = Emergency intervention needed
3. DATA AND MONITORING
PROGRAM DATA

- DOCUMENTATION of clinical encounters
  - Electronic medical record and billing

- MONITORING program components for quality assurance
  - Population reach (scheduling & IHV completion)
  - Program implementation quality (fidelity & reliability)
  - Referral rates and outcomes
  - Family-consumer satisfaction

- IDENTIFYING community-level rates of risk and community capacity to support family needs
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 mos.

- Replicate
  - Second RCT
  - Field quasi-experiment
Implementation Findings

- High penetration
  - 80.0% of families agree
  - Of these, 85.9% complete

- High fidelity to protocol (Independent rater for 11%)
  - 85% compliance by nurse
  - Kappa for scoring = .69

- 45% of families show need for community resource
  - 39% connected community service
Mean Number of Community Connections Reported at Age 6 months

(Dodge et al., 2013, Amer J Pub Health)

Effect Size = .28, 
p < .01
Impacts at Age 6 Months
(Dodge et al., 2013, Pediatrics)

1. Mother-reported positive parenting behaviors
   -- higher for intervention than control
   (ES = .25, p < .01)

2. Blinded observer-rated mother parenting quality
   -- higher for intervention than control
   (ES = .23, p < .05)

3. Child care center quality rating (when in care)
   -- higher for intervention than control
   (ES = .85, p < .01)
Impacts at at Age 6 Months

(Dodge et al., 2013, Pediatrics)

4. Mother-rated father-infant relationship
   -- better for intervention
   (ES=.21, p<.07)

5. Observer-rated home safety
   -- better for intervention
   (ES=.22, p<.05)

6. Probability of mother clinical level anxiety
   -- lower for intervention
   (OR=.65, p<.04)
Mean Cumulative Number of Emergency Care Episodes across First 12 Months of Life

(Dodge et al., 2013, Pediatrics)

Effect size = .28
p < .001

Control Families

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

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Intervention effect is 59% reduction
Mean Cumulative Number of Emergency Care Episodes across First 12 Months of Life

(Dodge et al., 2013, Pediatrics)

- Intervention effect is 59% reduction
- Intervention effect is 31% more reduction

Effect size = .28
p < .001
Cumulative Emergency Care at Age 12 Months for High-Risk and Low-Risk Families

(Dodge et al., 2013, Pediatrics)

Interaction Effect p<.001

ES=.19
ES=.51

Mean # Emergency Episodes

Low Risk  High Risk

Birth Risk Status

Interaction Effect p<.001
Cumulative Emergency Care at Age 12 Months For Insured and Medicaid Families

(Dodge et al., 2013, Pediatrics)

Mean # Emergency Episodes

ES=.22
ES=.27

Control
Durham Connects

Health Insurance

Private
Medicaid/None
Cumulative Emergency Care at Age 12 Months for Majority and Minority Status Families

(*Dodge et al., 2013, Pediatrics*)
DC Impact at Age 24-Months

Mean Cumulative Number of ED Care Episodes
Birth - 24-Months

- Control Families
- DC Families

Cumulative Emergency Care Episodes
Child Age in Months
Mean Number of Reports to Child Protective Services for Child Maltreatment through Age 48 Months

36% reduction
Benefit-Cost Analysis of Intervention Impact at Age 12 Months

*Durham Connects* intervention costs: $700/assigned family

Emergency Care Outcome Costs:

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\]

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
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*Family Connects* is MIECHV-approved and is being disseminated to sites across the nation.
Lessons Learned in Infant Home Visiting

- Universal penetration is possible
- Short-term screening and connection vs. ongoing treatment
- Clarity of goals
- Administrative home
- Financing