

**Early Childhood Predictors and
Prevention of Adolescent and
Young Adult Violent and
Aggressive Behavior**

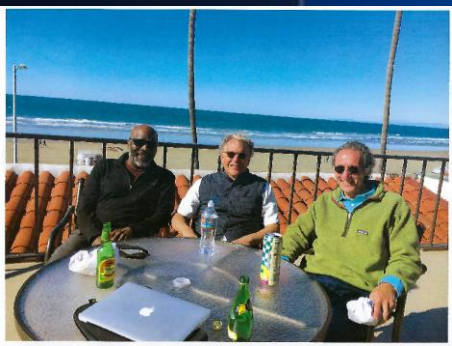
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Special Thanks to:

- Staff and Participants of the Pitt Early Steps Project and Early Steps Multisite Study
- Women, Infants, and Children Nutritional Supplement Program (WIC)
- National Institute of Mental Health
- National Institute on Drug Abuse

Overview

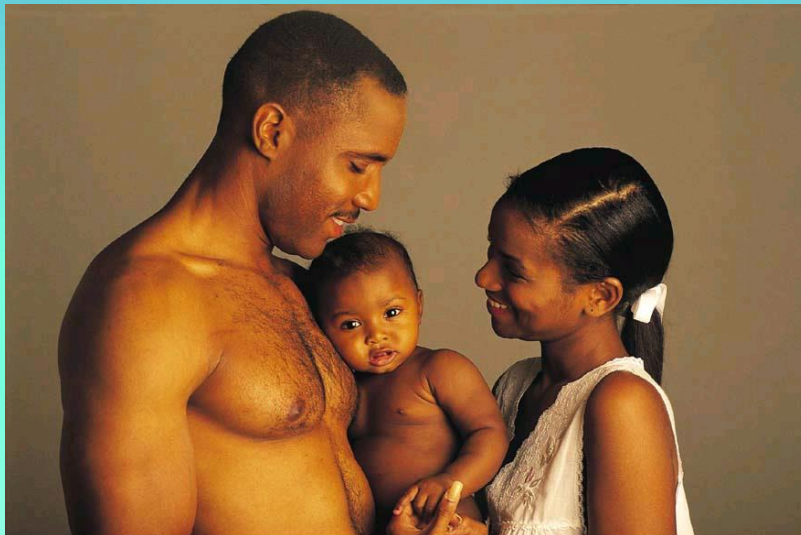


- **Review our prior research on early childhood predictors of CP using 20 years of data from the Pitt Mother & Child Project**
- **Provide overview of the Family Check- Up (FCU) and demonstrate how it has been applied to toddlers in WIC clinics across the US**
- **Discuss recent forays in using the FCU in other public health settings serving low-income parents with young children**

**Evidence of
Predictive
Validity of
Early Risk
Factors and
Antisocial
Behavior
at School-
Age or
Adolescence**

- **Child Behavior (ages ≥ 3)**
- **Child Inhibitory Control & Fearlessness**
- **Prenatal Exposure to Tobacco & Alcohol**
- **Parenting/Maltreatment**
- **Parental Age – teen parent**
- **Maternal Depression**
- **Parenting Hassles**
- **Parental Social Support**
- **Neighborhood Disadvantage**

Parent, Family, and Neighborhood



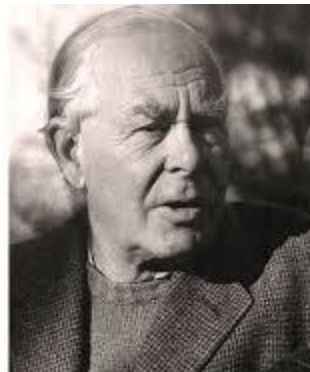
Developmental Transformations: 12 to 24 Months

- ❑ Increase in undirected anger
- ❑ Walking to toddling

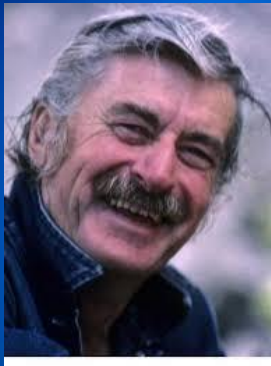


**Attachment
Theory:
Early
Starting
Conduct
Problems
(Ainsworth,
Sroufe,
Greenberg)**

- **Sensitivity in 1st two years promotes child compliance**
- **Preschool age, parental requests should be honored differentially based on the quality parent-child relationship and stakes for displeasing parents**
- **Supports parents making investment in child early on**



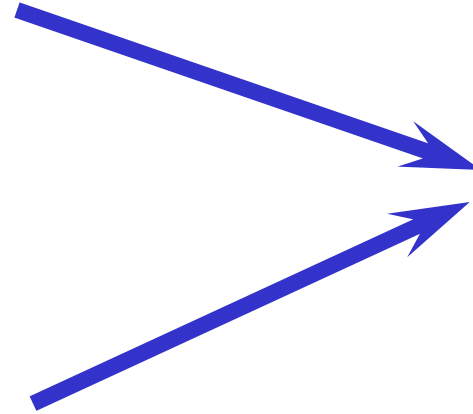
Patterson's Early Starter Model



PARENTS:
Deficits in Family
Management skills

CHILD
Irritability,
Hyperactivity

Coercive
Cycles of
Interaction

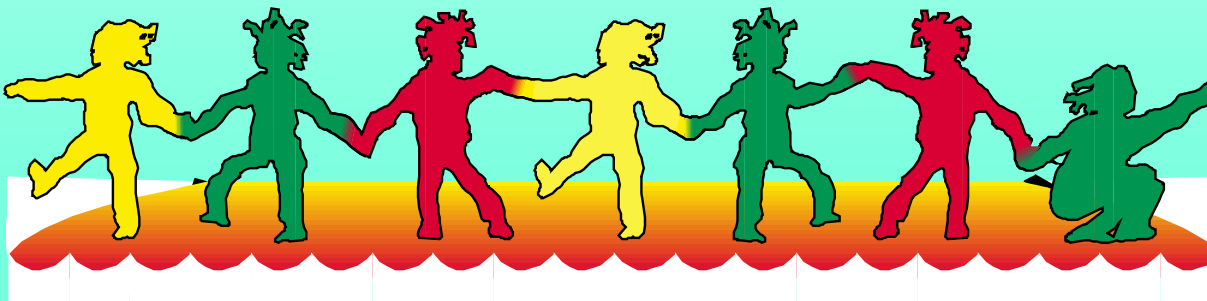


Demographics of Pitt Mother & Child Project

Sex of child	310 boys
Yearly Income	\$12,708
Mother's age	28, range 17-43
Maternal education	12.6 years
% Married/ Living Together	62
% White/Afr. Amer.	53/36
Criminality	36%

Pitt Mother & Child Project: Follow-Up Schedule of WIC Participants

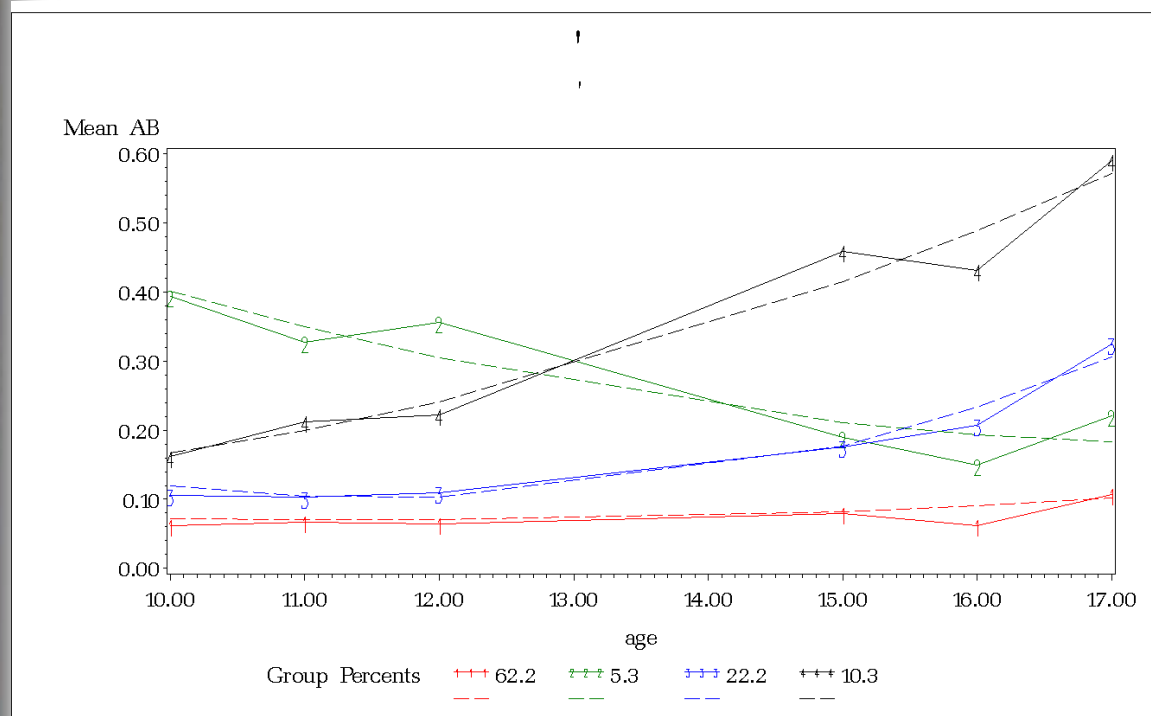
1 yr.	1.5 yr.	2 yr.	3.5 yr.	5 yr.	5.5 yr.	6 yr.	8 yr.	10 yr.	11 yr.	12 yr.	15 yr.	17 yr.	20 yr.	21 yr.	22 yr.	23 yr.
Lab	Lab	Lab/ Home	Lab	Home Twice	Home	Lab	Home	Home	Lab	Home	Home	Home	Home/ MRI	Intern.	Home/ MRI	Internet
							---- Camp ----			--- Court Data ---						
-----Teacher and School Data -----																



83% retention at age 22

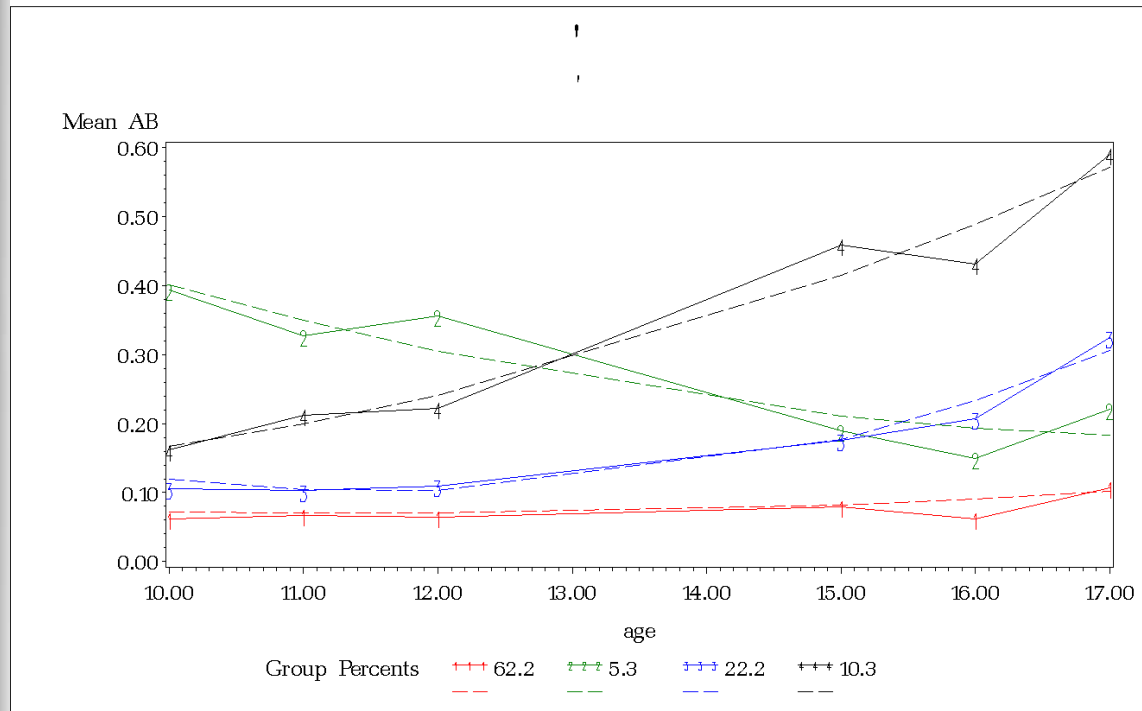
Trajectory Group Differences on Juvenile Court Petitions

- Low Stable -- 62% of sample: **25%**
- High 'Decreasing' -- 5% of sample: **60%**
- Late Increasing -- 10% of sample: **49%**
- High Increasing -- 22% of sample: **78%**



Trajectory Group Differences based on *Early Childhood Risk Factors*

- Accounting for predictors in early childhood,
- Factors that discriminated high increasers from low stable: *maternal depression* at ages 1.5-3.5 years
- Factors that discriminated 'high decreasing' group: *rejecting parenting and maternal depression*



Early Childhood Predictors of Serious Violent* Behavior in Adolescence

- **Early childhood factors that discriminated:**

- **Nonoffenders vs. nonviolent offenders**
 - Family income
- **Violent offenders vs. nonoffenders**
 - Family income, oppositional behavior, emotion regulation (ER), minority status
- **Violent vs. nonviolent offenders**
 - Rejecting parenting, **oppositional behavior, ER**

*homicide, forcible rape, sexual/physical assault, robbery, arson, weapons possession

Primary Findings from Pitt Mother & Child Project



- **Observed parenting quality, maternal depression, and other family stressors before age 3** are best predictors of persistent trajectories of antisocial behavior from ages 2 - 17.
- **Beginning at ages 2-3, child issues with emotion regulation, oppositional and aggressive behavior**, also consistent predictors of adolescent and young adult antisocial behavior.
- **Adolescent violent behavior** best predicted by income, minority status, parenting, and child emotion regulation and conduct problems before age 3.
- Results suggest targeting these behaviors in early childhood that are more malleable than others:
 - parenting, parent-well being and family stress, child emotion regulation and oppositional/aggressive behavior.

Chasm between basic and applied research

- Despite predictive validity of several risk factors...
- Rates of successful clinical referrals in our basic research
- How to bridge gap by identifying *and* motivating families with at-risk children



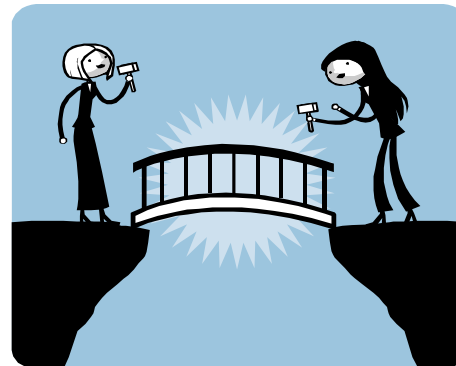
Capitalizing on Normative Developmental Milestones & the Terrible Twos:

- Increase in undirected anger
- Walking to Toddling



**Family
Check-Up
in Early
Childhood:
The Early
Steps
Multisite
Study**

- **Intervention tailored to ‘answer the call’**
- **Provide means for engaging families with high-risk profiles during times of developmental transition**
- **Help fill chasm between knowledge of risk factors and applying this knowledge in community settings**



**The Right
Stuff to
Promote
Change:
Dishion's
Family
Check-Up**

•How many therapists does it take to change a light bulb?

–One, but the light bulb has to want to change

– **OR MAYBE**

▪How many therapists does it take to change a light bulb?

▪ One, but you need to motivate the light bulb to change.

- - Desire
- - Accessibility
- - Persistence

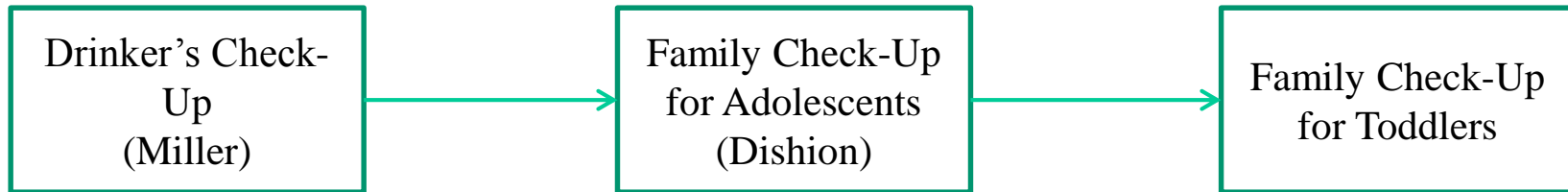


Motivation and Motivational Interviewing: Getting Help

- **Process of investment:**
Motivational interviewing
using assessment-driven data to promote change
 - **Feedback, client's responsibility,**
 - **advice from expert, menu of change**
 - **options, empathy, and self-efficacy**
 - **via collaborative relationship**



Evolution of the Family Check-Up in Early Childhood



- **Family Check-Up (FCU) adapted from Bill Miller's initial work using motivational interviewing with adult alcoholics**
 - Equivalent effects with 30 days of inpatient stay with 3 sessions of motivational interviewing
- **Dishion & Stormshak adapted for use with families with problem adolescents**
 - **Dishion & Shaw then adapted FCU for use for toddlers based on comparable developmental transitions facing toddlers & adolescents during 'terrible 2s'**



Six Features of an Ecological Approach to Child and Family Interventions

(From Dishion & Stormshak, 2007)

An ecological approach...

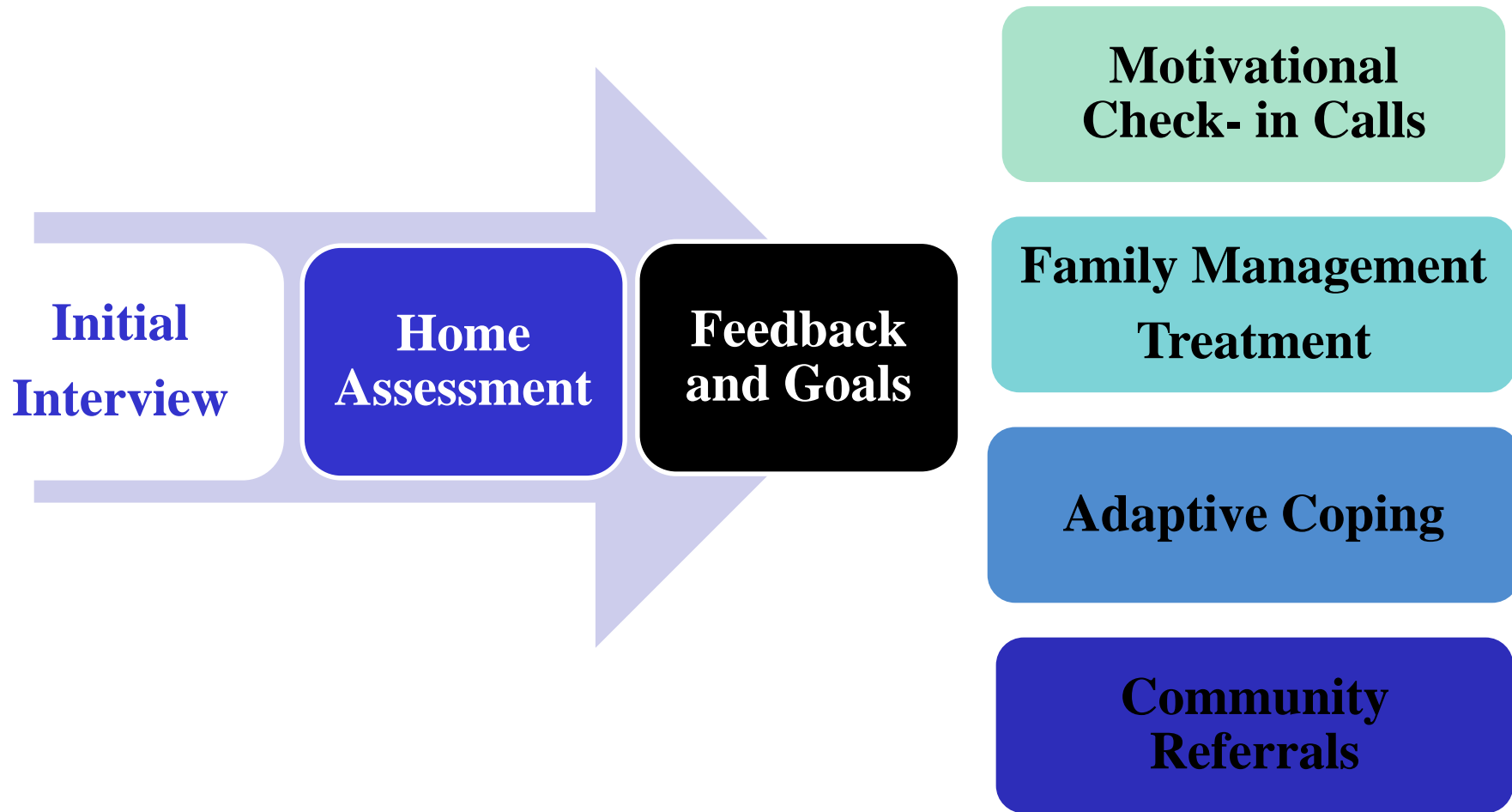
- ✓ is based on an *empirically based model* of child and adolescent problem behavior;
- ✓ is *family-centered*, addressing adult leadership and support in the change process;
- ✓ is *assessment driven*, with decisions regarding intervention needs following careful assessments;
- ✓ targets *social interactions* with parents and peers to make long-lasting change;
- ✓ addresses *client motivation to change* as a core component;
- ✓ utilizes a *health maintenance model* delivered in service settings that involve children and families.

Family Check-Up



- Initial screening at WIC offices for SES, family, and child risk
- 2.5-hour assessment at age 2 and randomized group assignment
- Initial get-to-know-you visit with parent consultant at home (30-50 minutes)
- Feedback with family at home
 - **92%** (56/61) of families randomly assigned to treatment group had get-to-know-you visit and feedback session; **75%** in multisite study
- Eliciting goals
- Menu of options
 - Varied in intensity and content with focus on goals that will promote child's well being
- Average number of sessions **2.95** per family (sd = 2.85) in pilot study and **3.7** in multisite study

Overview of the Family Check-Up



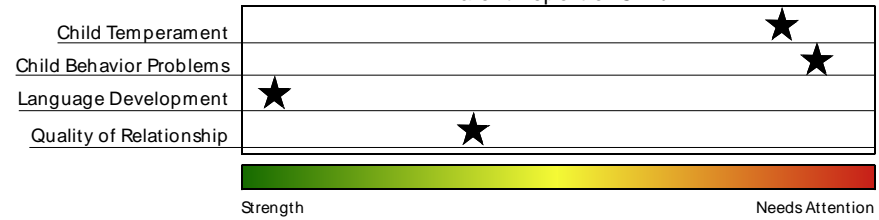
The Child and Family Profile

Profile for: ESE 470

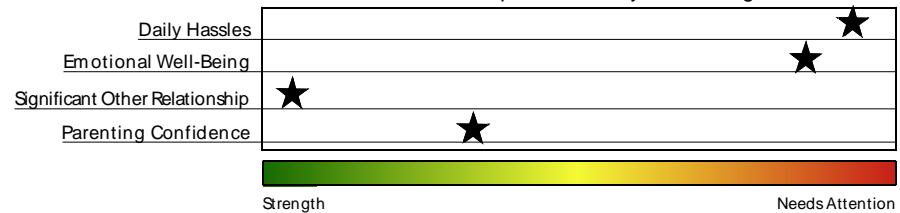
Child's Age: 2 Date: 11-7-03

Child and Family Profile

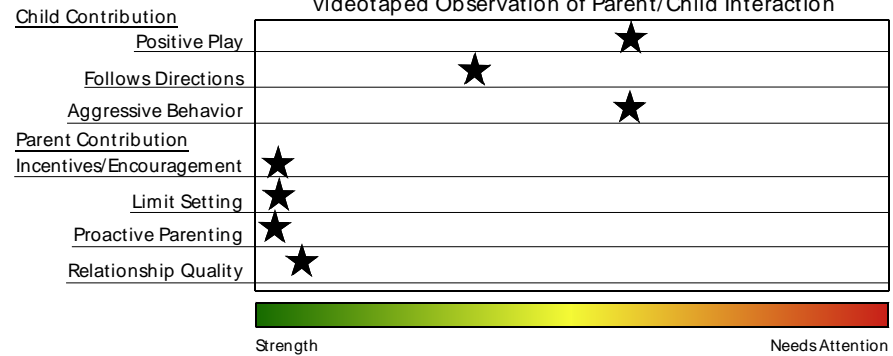
Parent Report of Child



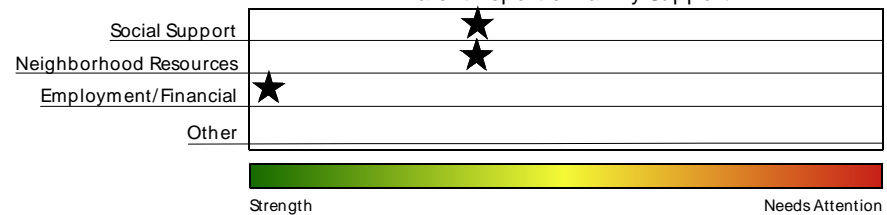
Parent Report of Family Well-Being



Videotaped Observation of Parent/Child Interaction



Parent Report of Family Support



CHILD AND FAMILY GOALS

FAMILIES IN MIND

1. _____

2. _____

3. _____

4. _____

Setting Goals

TYPE OF CONTACT / SERVICE

- Visits with parent consultant
- Phone check-in calls
- Referral to community resources
- Resource materials

FREQUENCY OF CONTACT

- Weekly
- Every other week
- Monthly
- Every other month

Date of Next Contact:

Parent Consultant Contact Information:

Signature

Today's date

Timeline of Early Steps Multisite Study



Age 2.0-2.9

Sample = 731 boys and girls
- Recruitment
- Initial assessment
- Family Check Up (FCU) and follow-up
Intervention

Age 3.0-3.9

Sample=90%
follow-up
assessment
- FCU &
follow-up
intervention

Ages 4-5

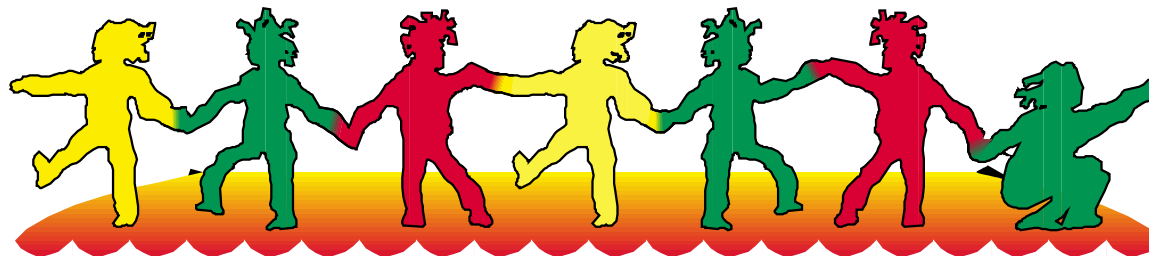
Sample=87-90%
follow-up
assessments
- FCU &
follow-up
intervention

Ages 7.5-10.5

Sample=80-81%
follow-up
assessments
- FCU &
follow-up
intervention

Ages 14 &16

Sample = 81%
Follow-up assessments



Findings
from
Early Steps
Multisite
Study:
Follow-up
through
Preschool

- **Improvements on the following outcomes:**
 - *positive parenting at age 3
 - **maternal depression at age 3
 - ***Child language and inhibitory control at ages 4 and 5
 - ****Child disruptive, internalizing, and co-occurring problems at ages 3, 4, and 5
 - Adult-child relationship quality at age 4
 - Improvements in marital quality ages 2-4
 - #Parental social support satisfaction ages 2-4
 - ##Findings unrelated to severity of sociodemographic or family risk
 - ### Lower BMI
 - #### Lower parental neglect ages 2-5
- **Improvements in child behavior mediated by improvements in parenting and maternal depression from ages 2 to 3**
- **Improvements similar for boys *and* girls, across site, and culture**

*Dishion, Shaw et al., 2008, *Child Development*

**Shaw et al., 2009, *Development and Psychopathology*

***Lunkenheimer et al., 2008, *Developmental Psychology*

****Connell et al., 2008, *Journal of Abnormal Child Psychology*

##Gardner et al., 2009, *J. of Cons. & Clinical Psychology*

#McEachern et al., in press, *Journal of Family Psychology*

###Smith et al., 2015, *Prevention Science*

####Dishion, Shaw et al., 2015, *Development & Psychopathology*

Intervention
findings from
Early Steps
Multisite
Study:
Follow-up to
Middle
Childhood &
Adolescence

- According to teachers at school:
 - *Less oppositional/agg. behavior at ages 7.5-9.5
 - **Less conflict with teachers at age 7.5
 - **** < internalizing symptoms at ages 7.5-10.5, also according to parents & youth
- *** >academic achievement at ages 5 & 7.5 (WJ)
- #> use of service delivery systems for ages 5-7.5
- ##Faster rate of growth in child inhibitory control from ages 2 to 7.5 (Rothbart scale) & higher levels at age 10.5
- ###Reductions in peer rejection ages 8.5-9.5
- ####Lower trajectories of CP ages 2-14
- These improvements typically mediated by improvement in positive behavior support or child disruptive behavior in early childhood

*Dishion et al., 2014, *Journal of Abnormal Child Psychology*; Shaw et al., 2016, *Development and Psychopathology*

**Weaver et al., 2015

***Brennan et al., 2013, *Journal of Educational Psychology*

****Reuben et al., 2015, *Journal of Consulting and Clinical Psychology*;

Lemery-Chalfant et al., 2018, under review

#Leijten et al., 2015, *Prevention Science*

##Chang et al., 2014, *Journal of Abnormal Child Psychology*

###Chang et al., 2015, *Social Development*; Hentges et al., 2018, in prep.

Shaw et al., 2018, under review

Treatment
response:
For whom
does the
Family
Check-Up
seem to be
more or
less
effective?

- An issue for basic research is to identify children at risk for early-starting conduct problems
- An independent issue is for whom the Family Check-Up might be more or less effective
- Perhaps a particular *constellation* of family conditions presents a context that affects response to the intervention

Differences in Treatment Response to the Family Check-Up on Child Disruptive Behavior from Ages 2 to 5: Latent Class Analysis

Class	N	Effect Size
I: Very high income, low risk	181 (24.8%)	$d = -.01$
II: Low income, very high maternal Depression, high single parenthood	105 (14.4%)	$d = -.30$
III: Low income, high single parenthood, otherwise low risk	323 (44.2%)	$d = -.08$
IV: High child behavior problems, very High # of kids, high neglect, high Maternal depression	29 (4.0%)	$d = -.82$
V: high law problems, very high neglect, extremely high mental health treatment	93 (12.7%)	$d = -.63$

**Summary and
Next Steps:
Implementations
– where and
with whom?**

- **The Early Steps Project (ESP) represents an effort to develop a model-driven preventive intervention during a critical developmental transition**
- **The ESP help fill the chasm between basic and applied research by using a vehicle (FCU) to motivate parents to become more interested in their children's early conduct problems and factors associated with their persistence**
- **These are families who typically do not use community mental health services**
- **2 to 12 year follow-up data from the ES Pilot and Multi-Site studies encouraging, but...**
- **Clear that only a minority of children screened on the basis of risk for early-starting CP responded to FCU and that other contextual factors attenuate effects**

Next Generation of Trials and Implementations: Use of Novel Platforms and Screening

- Work by Pelham et al. suggests that screening for probability of future problem behavior not sufficient
- Also important to screen for responsiveness to FCU
 - Critical to screen for both child risk and family responsivity to FCU
- For some families with “at-risk” young children, FCU might be overkill or insufficient to effect change
 - “Lighter touch” and less expensive universal programs might suffice, including Video Interaction Project, Durham/Family Connects, classroom-based interventions
- Paradoxically, despite its relative brevity, FCU might be more effective for higher-risk families
 - History of maltreatment, mental health services, antisociality, parental depression

Ongoing RCTs Testing FCU in Novel Platforms



- WIC represents example of novel platform for implementing FCU, as MH services not typically delivered
- However, there are other platforms where parents have greater trust and would therefore likely bring enhanced credibility/openness to FCU
- Using FCU at multiple pediatric centers with 10-13 olds in Pittsburgh, with screen for substance use (T. Ridenour)
- Conducting parallel trials at birth hospitals/pediatrics in Pittsburgh and NYU/Bellevue with universal intervention for all low-income parents having child (Video Interaction Project, A. Mendelsohn & P. Morris), and then screens at 6, 18, and 30 months to determine eligibility for also receiving FCU – will hear more about this shortly



Center for Parents and Children

Director: Dr. Daniel Shaw
Co-Director: Dr. Anne Gill
www.cpc.pitt.edu



Next Generation Implementation of FCU in Novel Platforms



- With advent of Center, can train and supervise existing staff immediately (or down the road) or use Pitt staff
- Have now trained existing staff at Head Start (preschool) Centers in Pittsburgh
- Based on positive intervention effects for those parents with history of child maltreatment, working on utilizing FCU in child welfare settings, WIC, Family Support Centers, and Early Head Start in Pittsburgh
 - Recently funded to implement at 6 Family Support Centers in Pittsburgh
 - Initiated state-wide initiative at WIC
 - Piloting at Early Head Starts
 - Piloting with opioid exposed infants at pediatric and drug rehab centers, and those receiving Early Intervention



Raising the Bar in Assessment and Research Base



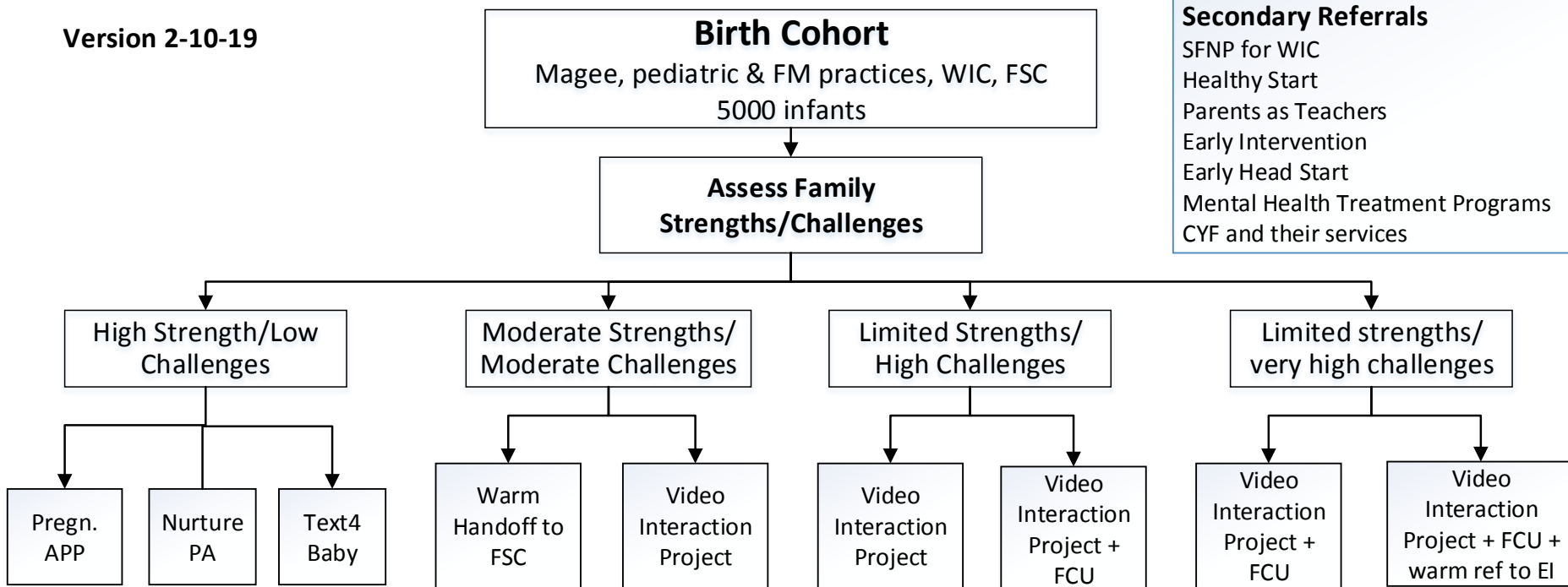
- Innovative part of our recent projects is adoption of screens for all children at 6 month intervals
 - Allows for identification of appropriate interventions and built-in follow-up of intervention effectiveness, as well as tracking of families that qualify for FCU but do not choose to engage
 - Provides us with solid pilot data for local, state, or federal funding and minimal burden on collaborating agencies workload
 - Community agencies looking for both evidence-based intervention methods *and* screening procedures, particularly now with greater emphasis on accountability
 - Hope to extend service to child welfare
 - Allegheny County DHS also now using analytics to identify parents at risk for maltreatment at child's birth
 - Might provide new way to think about conducting implementation trials by accruing research base within agencies

Future Directions: The (Greater) Pittsburgh Study

- We are in the midst of planning a community wide implementation study in the Pittsburgh community involving birth and age 2-3 cohorts of 5,000 and 3,000 children, respectively, in addition to comparable cohorts of 5-6 and 10-12 year olds (2,500 each)
- Based on strengths/challenges ratio, will be offered menu of preventive interventions with hopes of promoting school readiness and high school graduating rates, not to mention socio-emotional developments
- After initial and repeated screenings, parents will select 0 or ≥ 1 interventions
- Hoping to test efficacy at the population level using families' and funders' trust in Children's Hospital of Pittsburgh



Version 2-10-19



Study Design: Birth Cohort

- Recruit 5,000 infants in Allegheny County over 2 years (9/1/19 start)
 - Primarily Magee-Women's Hospital
 - Pediatric and Family Medicine practices
 - WIC, Family Support Centers, Other venues serving young children
- Recruit 60:40 below fed poverty level : above fed poverty level
- Menu of interventions offered following 30-minute screen
- Location of interventions based on family's preference
- Screens repeated every 6 months during 1st 2 years, then annually
- Intervention offerings modified based on results of repeated screens
- Interventions incentivized based on type

Summary and Conclusions

- With resources provided by Center for Parents and Children, quite enthused about prospects for raising bar in using truly evidence-based practices in both identifying at-risk children and providing preventive interventions for select families
- Not everyone, in fact, not half of “at-risk” families seem to benefit from the FCU
- Calls for continuing to refine FCU to address issues such as trauma, family chaos, and abject poverty, but also using complementary approaches that vary in intensity compared to the FCU that are tailored to both child’s risk status and family’s responsiveness.
- Lots of possible novel platforms to explore that have not traditionally provided preventive interventions to high-risk young children (and adolescents)



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