

“SUPPORTING SCHOOL READINESS THROUGH HEALTH”

HEAD START 2013

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Hawaii Dyson Initiative / Healthy Child Care Hawaii - Early Childhood Component

- AAP - CATCH Pediatric Residents
as Early Childhood Educators



- Medical Home Consultation Project
- Healthy Child Care Hawaii Project
- Dyson Initiative



Collaborating Partners

- Early Child Care Centers
 - Honolulu Community Action Program (HCAP) - Head Start
 - Roland Gella, Director
 - Toni Farm, Assistant Director
 - University of Hawaii at Manoa Children's Center
 - Jackie Dudoit, Acting Director

Collaborating Partners

- American Academy of Pediatrics, Hawaii Chapter
- AAP - Community Access to Child Health (CATCH)
- University of Hawaii Department of Pediatrics
- Hawaii State Department of Health - Family Health Services Division
- Good Beginnings Alliance

Community Pediatricians

- **Ricky Ricardo, MD**
 - Kalihi-Palama Community Health Clinic

- **May Okihiro, MD**
 - Waianae Comprehensive Health Center



Impact on Pediatric Resident Training

- Comprehensive, cross-cultural, community-based training in early childhood
 - Immersion into the community
 - Develop pediatricians sensitive to the needs of their communities
 - Foster pediatric involvement in early childhood health and development issues



Impact on Child Care Community Based Organizations

- Child care health consultation
- Parent and staff education on early childhood health and development
- Improved integration of community-wide services facilitated by residents, child care health consultants, and the Healthy Child Care Hawaii program



Present Collaboration

- Healthy Child Care Hawaii
 - Health Advisory Committee
 - Rotation with residents
- Hawaii Pediatric Residency Program
 - Developmental Pediatrics Rotation
- PACT Head Start

Children in Hawaii

- 2010: 104,033 children 0-5 years old (Total population of 1,363,621 and 0-18y population 320,333)
- 2011: 95.9% of children had insurance (2010: 97.8%)
- 2011: 16.8% child poverty rate under 18y (2010: 14.7%)
- 2011: 5% confirmed abuse and neglect children 0-17y (2010: 4.6%)
- 2010: 14.5% adult smokers (7.8% of pregnant mothers smoking in last 3 months)

Children in Hawaii

- Foster care children 0-5y
 - 2010: 40% (482)
 - 2011: 40% (427)
- Children 1-5 who's family members read to them <3days/week: 2011-12: 9%
- Head Start 0-5y
 - 2010: 3735
 - 2011: 3739
 - 2012: 3818

Children have 3 Basic Needs to be Ready to Learn

- Protection of children's health and safety and prevention of abuse and neglect
- Building relationships with children, parents, extended family, and community
- Opportunities for stimulation and learning from experiences

Children Needs

- **Health**

- Nutrition
- Sanitation
- Personal Hygiene/Self Help
- Measures to reduce infectious disease in group settings
- Parent education materials and references

- **Safety**

- Precautions to prevent injury
- Supervision
- Prevention of abuse and neglect
- Parent education

- **Building relationships**

Medical Home

- Accessible
- Continuous
- Coordinated
- Family-centered
- Compassionate
- Comprehensive
- Culturally effective

Medical Home

- Physical and Mental Health screening
 - Beyond the “well check” and “sick visit”
- Developmental screening
- Immunizations
- Appropriate Referrals
- Communication with community resources

ECOBIODEVELOPMENTAL FRAMEWORK

- Interactions – “nature dancing with nurture over time”
 - Neuroscience
 - Molecular Biology
 - Genomics
 - Social Sciences

EcoBioDevelopmental Framework

- Indicates the future of Pediatrics
 - Lies in translating the scientific advances in creating more effective strategies and interventions to reduce ACE that can lead to lifelong disparities in learning, behavior, and health
 - Help leaders in policy and practice to develop innovative solutions to the challenges of disparities in health, learning, and behavior
- Understand the evolution of adult health and diseases
 - Began early in life, affecting the developing brain, cardiovascular system, immune system, and metabolic regulatory controls

STRESS OR ADVERSITY

- Definition: “a state of emotional or mental strain or tension resulting from a demanding circumstance”
- Individual variability
 - Perception of stress (subjective)
 - Reaction to stress (objective)
 - Responds by previous experience

Adverse Childhood Experiences

- Abuse
 - Emotional
 - Physical
 - Sexual
- Household dysfunction
 - Domestic violence (mother)
 - Mental health
 - Substance abuse
 - Parental separation or divorce
 - Incarcerated household member
- Neglect
 - Emotional
 - Physical

ACE Score

- Higher ACE score of 4 or more prior to age 18 years
 - Obesity 2x
 - Smoking 2x
 - Alcoholism 7x
 - Illicit drug abuse 4x
 - IV drug abuse 11x
 - Promiscuity 3.5x

Allostasis

- Definition: “the process by which the body responds to stressors in order to regain homeostasis”
- Healthy Behavior attempts to reduce stress
 - Exercise, yoga, listening to music, meditation, cleaning
- UNHEALTHY Behavior attempts to reduce stress
 - Smoking, Illicit drugs, Eating, Alcohol, and Sex

Adverse Childhood Experiences

- Strongly associated with unhealthy lifestyles
 - Obesity
 - Smoking
 - Alcoholism
 - Drug abuse
 - Promiscuity
- May cause poor health decades later
 - Cardiovascular disease
 - Diabetes
 - Lung disease
 - Liver disease
- Could lead to early death

3 TYPES OF STRESS

The National Scientific Council on the Developing Child

- **POSITIVE**
 - Brief, infrequent, mild to moderate intensity
 - Most normative childhood stress
 - Buffered by nurturing adult(s) to return to baseline
 - Builds motivation and resiliency
- **TOLERABLE**
 - More severe and longer lasting adversities
 - Buffered by adult relationships that helps the child adapt
- **TOXIC**
 - Strong, frequent, prolonged adversities
 - Prolonged activation of the stress response can disrupt the architecture of the brain and other organs
 - Insufficient social-emotional buffering

Toxic Stress

- **Adverse Childhood Experiences**
 - Abuse (emotional, physical, sexual)
 - Neglect (emotional, physical)
 - Household dysfunction (mental health, substance abuse, domestic abuse, parental separation, incarcerated household member)
- **Insufficient social-emotional buffers**
 - Lacking: reassurance, support, consolation, helping to adapt
- **Potentially permanent changes with long-term consequences**
 - Epigenetic
 - DNA is the same but depends on which genes are turned on or off
 - Brain architecture
 - Brain development
 - Connectivity

BRAIN MATURATION

- Maturation is from bottom up
- Primitive, survival brain
 - Brain stem
 - Bodily functions
 - Limbic system
 - Impulsive and emotions
- Intellectual brain
 - Cortex
 - Thinking, decision making, controlling emotions



When Children Feel Unsafe or Threatened

- Child's brain focuses on survival
 - Brainstem and limbic system
- Can cause changes in the brain
 - Less development of intellectual brain
 - Smaller brain
 - Fewer brain connections
- Problem behaviors common
 - Difficulty focusing and paying attention
 - Difficulty calming down, anxious
 - Bullying or aggressive behaviors

The Science of Early Brain Development

- **Epigenetics**

- Alterations in the way the genetic program is read
- Stress-induced changes in epigenetic markers
- “Not your parents genes”
- Which genes are turned on or off, when, and where
- Environment/experience influences how the DNA is read and utilized

- **Physiology of Stress**

- Positive (brief increase in HR and mild elevations of hormones)
- Tolerable (longer increase HP, BP, and stress hormones, but time-limited and buffered back to baseline)
- Toxic (prolonged activation or stays activated, wear and tear)

- **Neuroscience**

- Connections are experience and activity dependent
- Environment/experiences influence how the brain architecture is formed and remodeled
 - Disruption of brain architecture
 - Positive stress develops cortex (learning, thinking, decision-making, controlling emotions)
 - Toxic stress stimulates survival brain (emotions, impulsiveness, anxiousness, aggression)
- Diminishing cellular plasticity limits remediation (waned by age 5 yrs)

HELP CHILDREN GROW HEALTHY BRAINS

- **Help me make connections**
 - Right experience at the right time
- **Be there for me**
 - Healthy relationships
- **Understand the building blocks of my brain**
 - Survival brain → Intellectual brain
- **Build my self esteem**
 - Praise, encouragement, and positive experiences
- **I need to feel safe**
 - Safe, predictable, and stable environment
 - Child needs to feel safe and be nurtured
- **Keep being there for me**
 - Even as teenagers





What Can We Do?

- Help children figure out how to turn off their stress response
 - Healthy ways
- Intervene early (Early Education and Child Care is an important time)
 - Many children are in child care fulltime (8-10hrs/day)
 - Nurturing, predictable, and safe environments