“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 <3 days/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 (wanes 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

The Amazing Brain
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