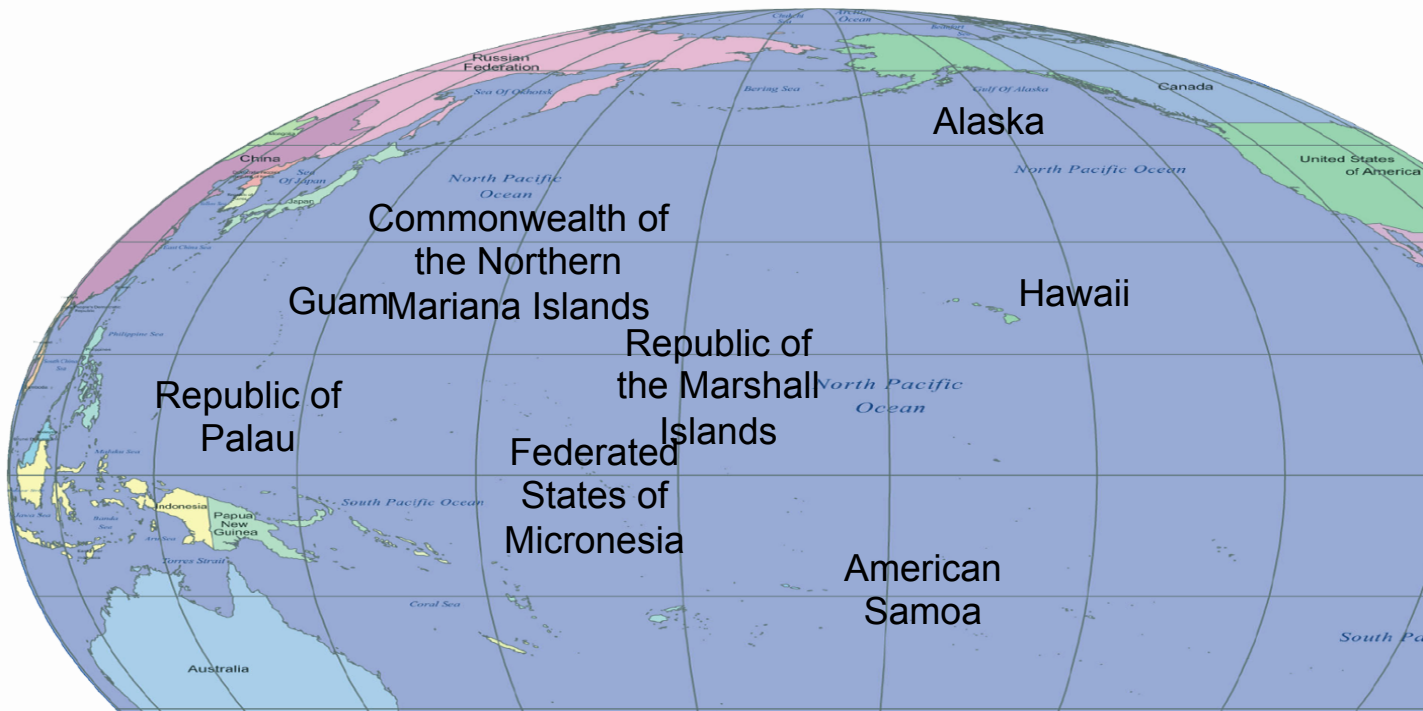


CHL Program

National Research Initiative of the USDA National Institute of Food and Agriculture, grant award #2011-68001-30335

Novotny R, Deenik J, Kim J, Leon-Guerrero R, Luick B, and Vargo D



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CHL Children's Healthy Living Program for Remote Underserved Minority Populations in the Pacific Region
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Learning Objective

- To describe the vision and strategy of the Children's Healthy Living Program for Remote Underserved Minority Populations of the Pacific (CHL) to prevent child obesity.



Obesity in the US – Affiliated Pacific Region

- Understudied population
 - Not included in National Health & Nutrition examination system (NHANES) since 1978
- Pacific populations at risk for obesity due to:
 - Western influences / acculturation of Native populations (nutrition transition)
 - Shortage of trained nutrition & health professionals





Children's Healthy Living Program
for Remote Underserved Minority Populations
in the Pacific Region

Young Child Overweight & Obesityⁱ (%) US Affiliated Pacific Region

Age, y	US 48 states	Alaska	Am Samoa	CNMI	Guam	FSM	Hawaii	Palau	RMI
2 - 4.9	22 ^h	40 ^a	37 ^a	25 ^b	33 ^c		17 ^a		
5 - 7.9	33 ^h		47 ^f	26 ^b	35 ^j		32 ^d [69 Samoan & 41 Native Hawaiian]		
8 - 9.9	33 ^h		47 ^f	45 ^b	43 ^j		44 ^g		

- a Supplemental Feeding Program for Women Infant & Children (WIC): 2009 AL, 2010 AS, Baruffi et al. 2004 HI
b 2-3, 4-6, 7-10 y, Paulino et al 2008, cluster survey
c Headstart Program
d Kaiser Permanente Hawaii, Novotny et al. 2012 FASEB
f 6-11y, <http://www.ctahr.hawaii.edu/adap/> ASCC_LandGrant / technical_papers.asp, Reports 47, 48, 56
g 6-13y, Healthy Foods Hawaii, Hawaii (Novotny PI), predominantly Native Hawaiian
h NHANES, Ogden et al 2012, JAMA
i 6-11y, >85th percentile BMI for age & sex, CDC
J Paulino Y, DOE data 2011, Guam, ages 7-8y, and 9-10y



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CHL Program Design

- Researchers from US-affiliated Pacific academic institutions formed CHL to develop a common vision and a multi-level strategy to prevent early childhood (ages 2- 8 y) overweight & obesity & improve health
- Local Advisory Committees have been formed in each jurisdictions
- External Advisory Board provides guidance

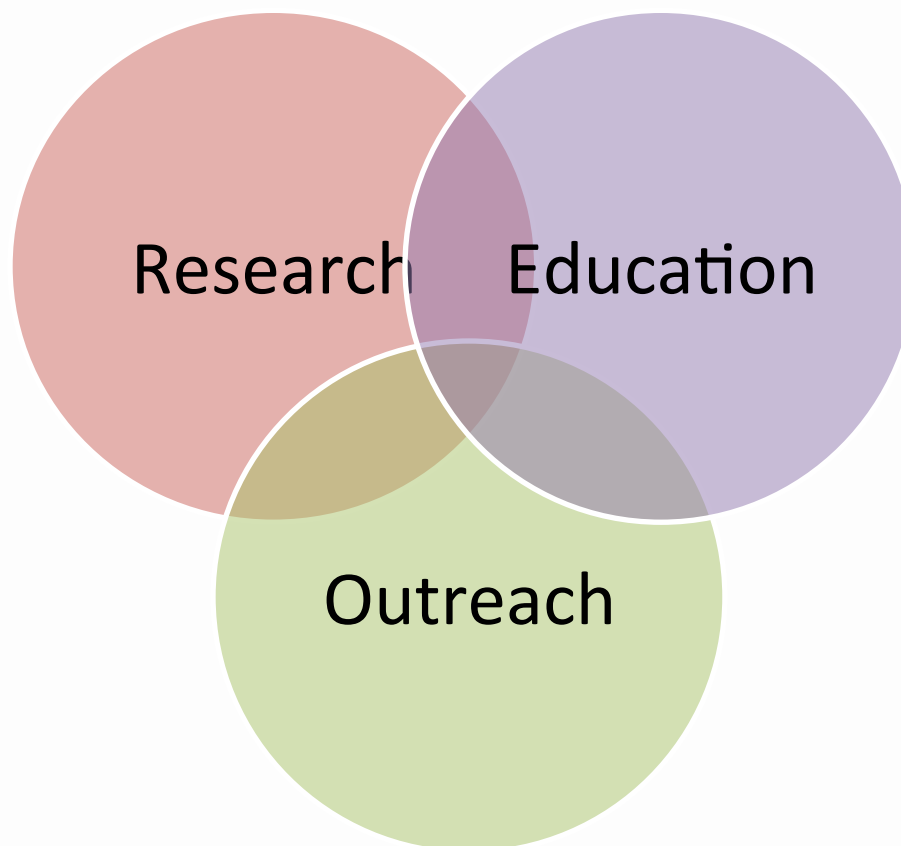


Integrated USDA AFRI Coordinated Agricultural Program (CAP) competitive grant for Child Obesity Prevention

- Community based Capacity building, systems change & policy change to prevent child obesity
- Preliminary work
 - Healthy Living in the Pacific Islands (HLPI, 2003 – 2006)
 - HLPI- Healthy Pacific Child Project (2004 – 2009) which Included CNMI Survey & Healthy Foods Hawaii Intervention
 - Pacific Kids DASH for Health (PacDASH, 2008 – 2011)
 - Stakeholder meeting of Pacific Land grants (4/30/10 - 5/3/10)



Integration of Research, Education, & Outreach



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CHL Objectives

1. Conduct program / data inventories & situation analysis
2. (Degree) Train 22 professionals & paraprofessionals in obesity prevention
3. Develop Pacific food, nutrition & physical activity data management & evaluation system
4. Develop & conduct an environmental intervention (to prevent, maintain or decrease young child overweight & obesity in the Pacific Region)
5. Evaluate the community - based primary - prevention environmental intervention
6. Incur at least one obesity prevention policy change per state / jurisdiction



7 Time Zones, 2 Days

East to West

			Times in this section are the next day							
Alaska (DST*)	Hawa ii	Americ an Samoa	Marsh all Islands	Pohnpe i	Kosrae	CNM I	Gua m	Chuuk	Yap	Pala u
8 am (9 am)										
9 am (10 am)	8 am									
10 am (11 am)	9 am	8 am								
11 am (12 pm)	10 am	9 am	8 am							
12 pm (1 pm)	11 am	10 am	9 am	8 am	8 am					
*DST = Daylight Savings Time (March-November)										
1 pm (2 pm)	12 pm	11 am	10 am	9 am	9 am	8 am	8 am	8 am	8 am	
2 pm /3	1 pm	12 pm	11 am	10 am	10 am	9 am	9 am	9 am	9 am	8 am

CHL Management Structure



External Advisory Committee
 Jennifer Anderson
 Frank Chaloupka
 Kathryn Kolasa
 Suzanne Murphy
 Boyd Swinburn

Program Steering Committee
 Lead Site Co-I :
 Deenik, Kim, Luick,
 Leon-Guerrero, Novotny,
 Vargo

Principal Investigator or
 Novotny

Performance Sites
 FAS: FSM, RMI, Palau;
 CNMI; Alaska;
 Guam; Hawaii; Am.
 Samoa

Local Advisory Committees
 LG Dir. Chair:
 Currie,
 Samson, Taro;
 Manglona;
 Lewis,
 Yudin, Grace,
 Aqa

Data Center
 Lead: Wilkens / Su
 Data Coordinator: TBD

Training / Education Center
 Lead: Dunn /Leon Guerrero
 Education Coordinator: Leslie

Coordinating Center
 Program Director: Novotny
 Assistant Program Director: Fialkowski
 Program Administrator: Jong
 Conference Coordinator: Berry
 Web / IT Specialist : Hill

External Communication Center
 Lead: Hollyer / Takahashi

Situation Analysis Center
 Lead: Fialkowski / DeBaryshe

Intervention Center
 Lead: Nigg / Braun
 Intervention Coordinator: Butel



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Influential Theoretical Frameworks

- Social Ecological Model
- Multilevel Model of Influences on Obesity
- Social Cognitive Theory
- Angelo Framework (Community-based participatory research)
- RE-AIM (reach, effectiveness, efficiency, impact & sustainability) framework for evaluation



CHL Model

Build the social / cultural, physical / built & political / economic environment to promote active play and intake of healthy food to prevent young child obesity in the Pacific Region.

Environmental Changes

Social/Cultural Env.

Possible examples:

- Family, teachers, leaders, other respected role models setting example of healthy living

Political/Economic Env.

Possible examples:

- Change government policies to promote healthy lifestyle

Physical/Built Env.

Possible examples:

- Ensure water fountains are available and maintained



Promote



Outcomes

Healthy Food Intake

Physical Activity

Obesity Prevention

**Overall Outcome:
Healthy Young Child**

RE-AIM



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CHL Targets

Obj 4

Primary



Sleep by 15 min/day

Moderate to vigorous physical activity by 10 min/day

Fruit & vegetable intake by 1 serving/day

Water intake by ½ cup/day



Sedentary behavior (screen time) by 10 min/day

Sweetened beverage intake by ½ cup/day

Prevalence of obesity by 8% (0.10 kg/m² decrease in z-score)

Waist circumference by 2%

Secondary



Acanthosis nigricans by 5%



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Situation Analysis – y 1

(6/11-6/12)

Obj 1

- Community engagement to elicit target behaviors, knowledge & skills & prioritize them
- Tailor action / Intervention plan per site, social marketing, policy & program actions
- Positive deviance emphasis: identify & build on programs that are working (are adapted for that environment)
- Fialkowski talk



Data Center

Obj 3
4, 5

Design, oversee, manage, & train in data instruments, collection, entry, transfer, analysis, & presentation

- Data standardization & training
- IRB documentation & repository
- Data instruments
- Secure transfer of data from sites
- Data analysis of intervention
 - Training for site analysis
- Data dictionary / documentation
- RE-AIM



External Communications

Obj 1, 3, 6

- To plan, develop & manage CHL Outreach activities
 - Website- www.chl-pacific.org
 - Newsletter
 - Policy management
 - Outreach & communication



Physical Activity Pilot

- Accelerometer validated & feasible for use in children 2 – 5 years
 - Ettiene-Gittens et al talk
 - McGlone et al talk



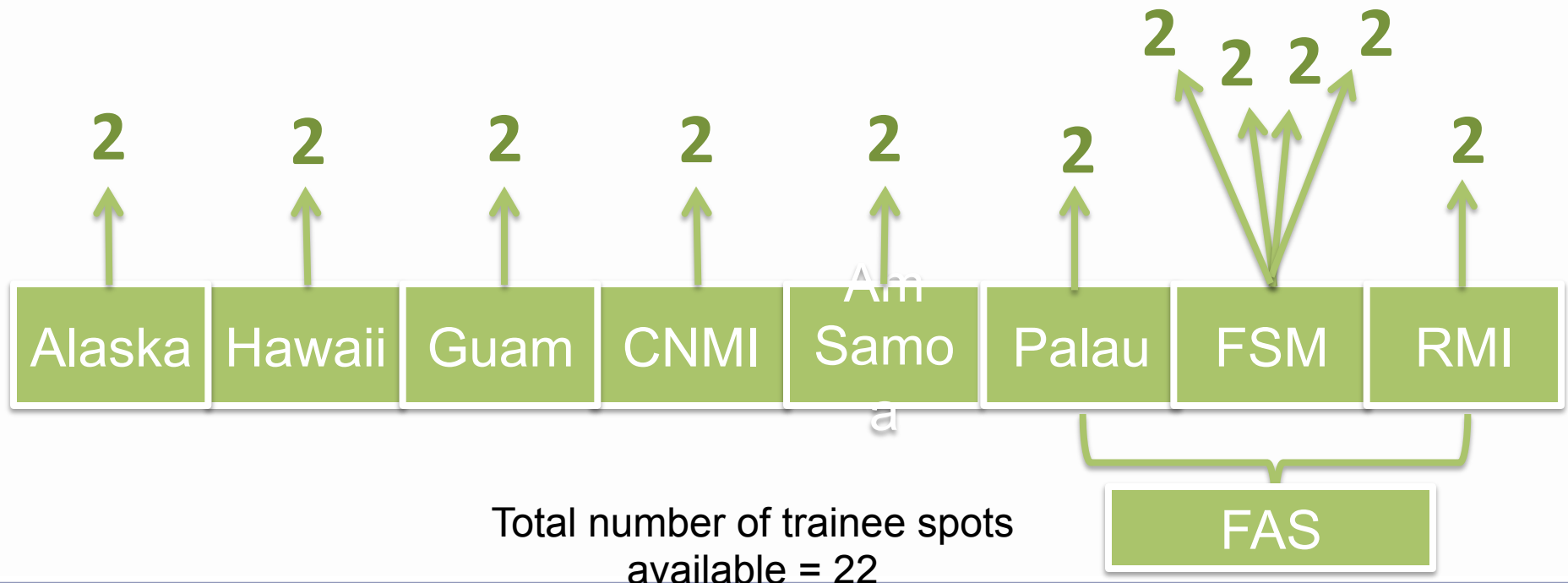
Training/Education

- To identify, develop, manage, recruit, monitor & evaluate CHL training program
- Formal degree training in accredited programs - multidisciplinary aspects of obesity prevention (Associates to Doctorate)
- Two trainees per jurisdiction (8 from FSM)
- Leslie talk Tuesday



Trainee Program

Obj 2



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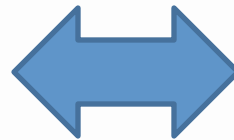


Intervention

Obj 4

- To design, train, implement, coordinate, monitor, analyze, evaluate, publish & disseminate CHL intervention

Suggested
strategies from
**CHL
COMMUNITIES**



Effective
environmental
strategies from the
LITERATURE



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Intervention Development Timeline

	Oct- Dec 2011	Jan- Mar 2012	Apr- June 2012	July- Sept 2012	Oct- Dec 2012	Jan 2013
Scan Community & Lit	X					
Merge Ideas & Strategies		X				
Prioritize Strategies		X	X			
Formulate CHL Intervention at Annual Meeting June 2012			X			
Work within Communities to Plan Intervention Activities				X	X	
Collect Baseline Data					X	
Start Intervention!						X



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MERGE

Literature supports what community wants

	Literature Supports	Community Supports
Policies	X	X
Access to water	X	X
Environmental changes for PA	X	X
Healthy living education	X	X
Product and shelf labeling	X	
Access to affordable produce (including gardening)	X	X



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“The CHL Intervention”

- 1. Introduce, enhance, and support policy for healthy eating and physical activity of 3-5yo children**
- 2. Engage 3-5yo children in growing and eating local healthy foods**
- 3. Train and support role models to promote desired behaviors**
- 4. Increase accessibility of environments for safe play and PA for young children**
- 5. Increase accessibility of good water for young children**
- 6. Provide other education & training related to our 6 behavioral outcomes**



CHL Philosophy/Approach

- **Partner with, support, and “add value” to existing programs conducting activities related to the 6 CHL behavioral outcomes - Positive Deviance**
- **Build local capacity to sustain programs and policy changes - Train**
- **Pacific wide collaboration to promote common messages - Partner**
- **Evaluate and use data to promote policy Pacific-wide - Policy**



Action Planning- June to Dec 2012

Operationalize “The CHL Intervention” in 2 intervention communities per jurisdiction

CHL staff in each jurisdiction are working with key partners to plan:

- Activities for each strategy
- Adapt relevant evidence-based programs & curricula to fit their jurisdictions



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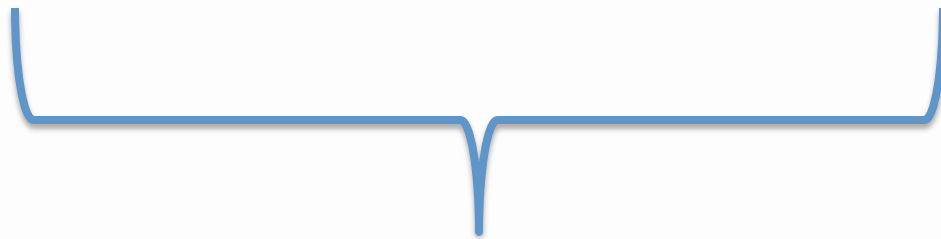


Intervention Program Study Design Overview

- CHL will be testing an environmental intervention to prevent childhood obesity and promote health
- Community-based randomized trial
 - 5 jurisdictions (AK, AS, CNMI, GM, HI)
 - 6 communities/jurisdiction
 - 2 matched communities
 - One randomized to CHL program, starting Fall 2012 - 2014
 - One randomized to CHL optimized program, Summer 2015
 - 2 temporal communities/jurisdiction

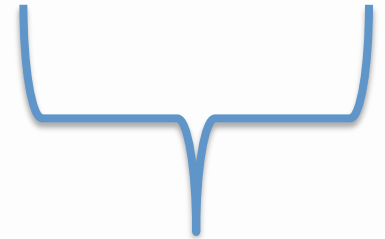


Randomized-Control Design



CHL program

Randomly assigned to
one community in pair 1
& one community in pair
2



Optimized CHL program

Randomly assigned to
comparison communities



Community sampling sites



- Head Start
- Preschool
- Day Care
- Kindergarten
- Other (eg. WIC)



CHL Intervention Program Timeline & Study Sample

	Fall 2012 Baseline	Fall 2012 12 Months	Fall 2014 24 Months
<u>Jurisdictions (#)</u>	5	5	5
Intervention Program Communities (#/jurisdiction)	2	2	2
Cross-sectional participants*			
Intervention (#/pair)- 180 per community	360		360
Embedded Longitudinal participants**			
Intervention only (#/pair)	180	180	180
Optimized (comparison) communities (#/jurisdiction)	2		2
Cross-sectional participants***			
Comparison (#/pair) – 180 per community	360		360
<i>Subtotal Participants (#/jurisdiction)</i>	720	180	720

* Includes the embedded longitudinal sample

** Included in the total as apart of the cross-sectional sample

*** No embedded longitudinal sample in the comparison communities



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CHL Intervention Study Timeline & Samples

	Fall 2012 Baseline	Fall 2012 12 Months	Fall 2014 24 Months
<u>Jurisdictions (#)</u>	5	5	5
Intervention Communities (#/jurisdiction)	2	2	2
Cross-sectional participants*			
Intervention (#/pair)	360		360
Embedded Longitudinal participants**			
Intervention only (#/pair)	180	180	180
Comparison communities (#/jurisdiction)	2		2
Cross-sectional participants***			
Comparison (#/pair)	360		360
<i>Subtotal Participants (# all 10 matched pairs)</i>	3600	900	3600
Temporal Communities (#/jurisdiction)	2		2
Cross-sectional participants (#/jurisdiction)- 180 per community	360		360
<i>Grand Total Participants (# /jurisdiction)</i>	1080	180	1080



CHL Participant Measures

Measures	Anthropometry	Functional outcomes of obesity	Dietary assessment	Physical activity (PA)
Study groups:				
Cross-sectional (including embedded longitudinal)	-Weight & height for BMI -Waist circumference	-Sleep quality & duration (min/d) (questionnaire & accelerometry) -Acanthosis nigricans	-1 d diet logs (parent or guardian recording) - 2 d for sub set	-6 days accelerometer -1 d activity log (2 day for sub set) -screen time & sedentary behavior questionnaires
Temporal	-Weight & height for BMI -Waist circumference			



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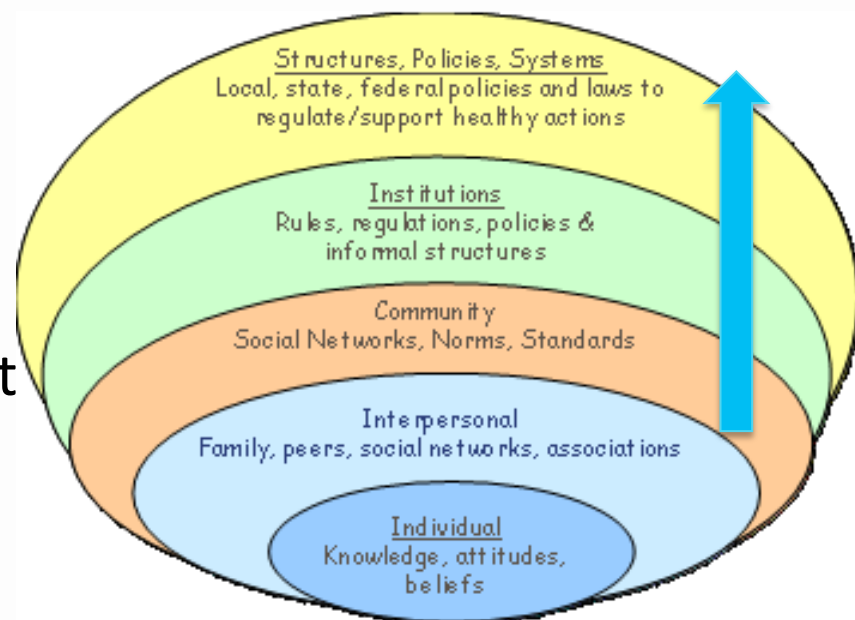
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Community Measures

CHL Community Assessment Tool Kit (CAT)

- Food environment
 - Food Access Survey
 - Food Availability Survey
 - Food Cost Survey
- Physical activity (PA) environment
 - PA Resource Survey
- Policy
 - Wellness Policy Survey



Levels of Influence in the Social Ecological Model



RE-AIM Measures

Reach, Efficacy, Adoption, Implementation & Maintenance

- Framework to document intervention effectiveness and sustainability
- **Reach**
 - measure for element of intervention
- **Efficacy**
 - covered by main analysis of outcomes
- **Adoption**
 - measure what of intervention is adopted in optimized community
- **Implementation**
 - track everything implemented in target communities by CHL
- **Maintenance**
 - track sustainability through partners

Glasgow RE, Vogt TM, Boles SM. Evaluating the public health impact of health promotion interventions: the RE-AIM framework. *American Journal of Public Health*. 1999;89(9):1322-1327.



Sustainability of CHL Program

- Resources/framework for continuation
 - Land Grant College Infrastructure
 - Local Advisory Committees
 - Pacific food, nutrition & physical activity data system
 - Community ownership of intervention changes
- Collaborations/Partnership/Alignment
 - U54 Univ. Hawaii/Univ. Guam Partnership Grant to Reduce Cancer Health Disparities
 - PIHOA - Pacific Island Health Officers Association
- Policy change - redirect resources for healthy living for children & prevention of child obesity



Alaska walking path



President Obama body surfing in Hawaii



Impact

- The CHL program seeks alignment & collaboration from partners with shared vision & goals throughout the Pacific Region, for sustainable changes to prevent obesity & future non-communicable disease, & to improve health in the remote underserved minority populations of the US Affiliated Pacific.



CHL Sessions at Conference

- Tuesday
 - Training (Leslie)
 - Obesity Panel (Novotny)
- Wednesday
 - Overview (Novotny)
 - Situation Analysis (Fialkowski)
 - Accelerometry Validity (Etienne-Gittens)
 - Accelerometry Feasability (McGlone)





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