



# Healing Waves: Pacific Islander Populations of the US

Improving Cancer Health Outcomes  
Cancer Research Capacity & Cancer Risk Reduction

Association of American Cancer Institutes (AACI)  
Webinar  
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# Positionality Statement

- Son of plantation labor immigrants, born and raised in Hawai'i
- Professor at UH JABSOM and UH Cancer Center
- Practicing Academic Family Physician
  - Medical Student and Resident Physician Training
- Duo Citizen: Republic of the Marshall Islands (RMI) and US
- Lived RMI 9.5 years 1982 - 1991
  - Medical Director for Preventive Health
  - Programs to Care for Nuclear Weapons Testing Affected People
- Worked for 30 years across Pacific (FSM, RMI, Palau, American Samoa, Guam and CNMI)
  - Cancer Council of the Pacific Programs
- PACe (Pacific Against Cervical Cancer), Pacific Cancer Registry
- Research: NIH Cancer Infrastructure Research Grants Hawaii and Pacific





# COI and Financial Disclosures

- I have no personal financial relationships or affiliations with commercial interests.
- The views expressed in this presentation are those of the presenters and do not reflect the official policy or position of the UH John A. Burns School of Medicine or the UH Cancer Center.





# Objectives

- Define Pacific Islander Populations of the US
  - Hawai'i
  - US Affiliated Pacific Island Nations (USAPIN)
- Discuss cancer health disparities in the USAPI Populations
- Discuss initiatives to move towards decreasing cancer health disparities





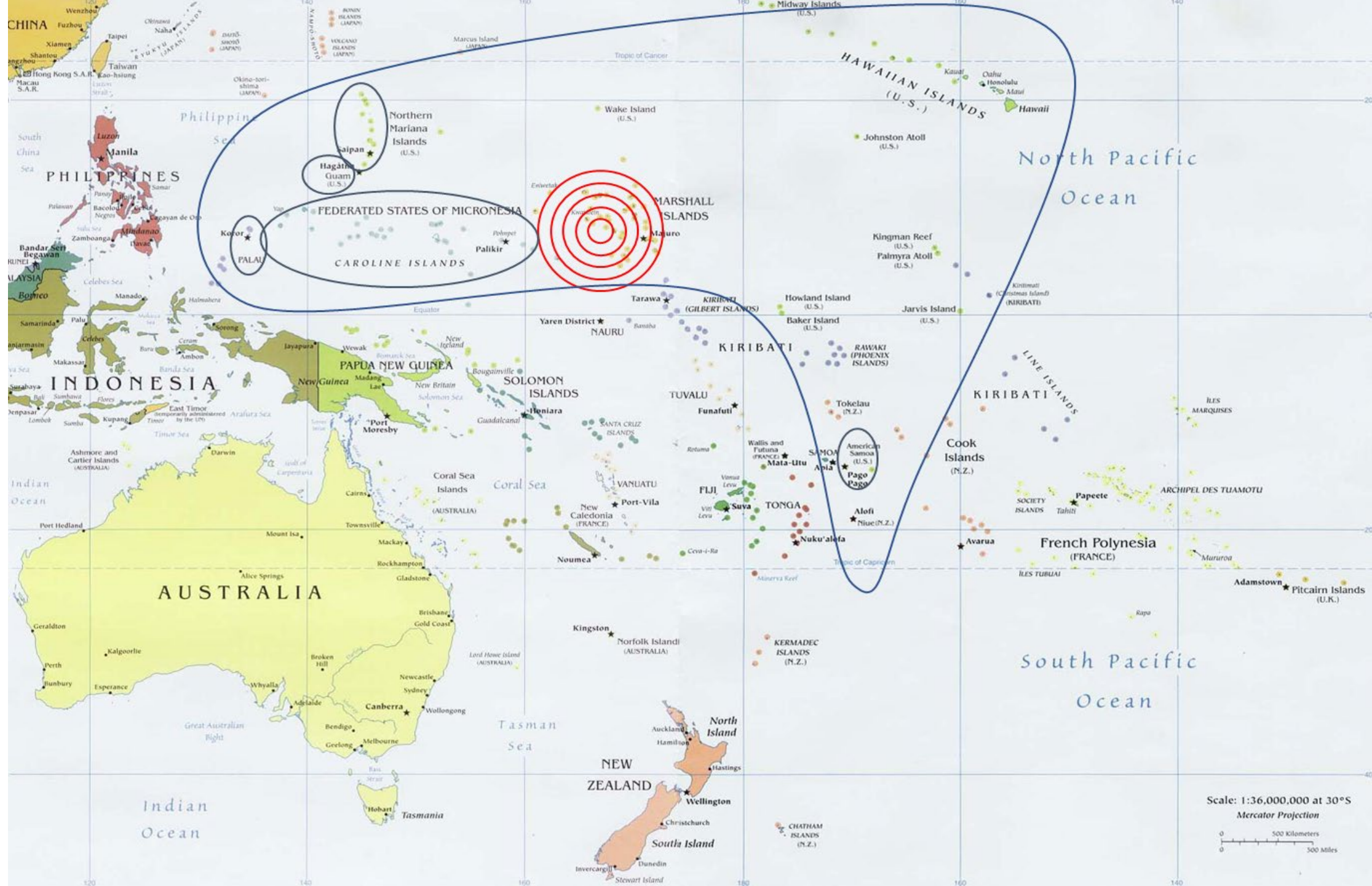
# Indigenous People of the US Pacific

- Native Hawaiians
- Belauans
- Samoans
- Marshallese
- Kosraeans
- Chuukese
- Chamorros
- Carolinians
- Pohnpeians
- Yapese





# USAPI



# United States Affiliated Pacific Island Nations

## **Flag Territories and Commonwealth**

Guam

American Samoa

Commonwealth of the Northern Mariana Islands (CNMI)

## **Freely Associated States (FAS)**

Federated States of Micronesia (FSM)

Republic of the Marshall Islands (RMI)

Republic of Palau



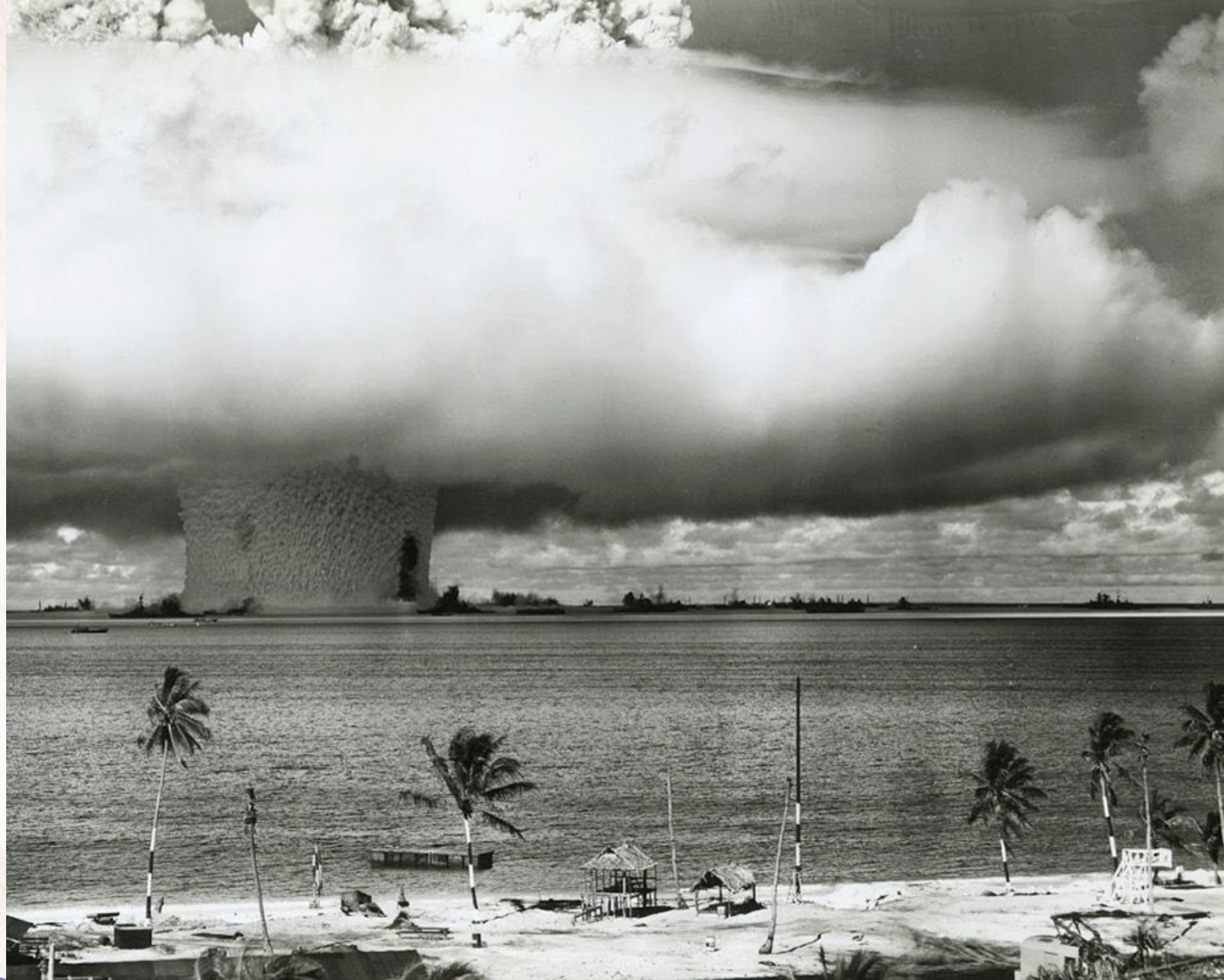


# Nuclear Legacy





Nuclear  
Weapons  
testing  
Marshall  
Islands  
1946-1956





# Lukunoch Atoll, Chuuk State

## Saltwater Intrusion Destroys Crops





# Typhoon Maysak – Ulithi, Yap



PHOTO: Houses were blown apart by Typhoon Maysak, their contents strewn in the wreckage of trees on Ulithi atoll. (Supplied: Brad Holland)



# Freely Associated States (FAS) Compacts of Free Association (COFA)

- Sovereign Nations linked to US by a Treaty
- Legislation signed into law in 1986
  - Federated States of Micronesia (FSM)
  - Republic of the Marshall Islands (RMI)
  - Republic of Palau (ROP)
- Military Provisions— Strategic Denial
- Political Provisions – COFA citizens can freely travel, live and work in the US without a visa and with no time restraints
- Financial and grant assistance commitment by the US





	Population (Census 2021, 2020, 2010)	Political Status	Passport	US Citizen	US National	Vote for US President	Reside/ work in US w/out Visa or Green Card	US Federal Medicaid eligible	Serve in US Military
American Samoa	49,710	US Unincorporated Territory	United States	No	Yes	No	Yes	Yes	Yes
C. Northern Mariana Islands	47,329	US Common-wealth	United States	Yes	Yes	No	Yes	Yes	Yes
Guam	153,836	US Unincorporated Territory	United States	Yes	Yes	No	Yes	Yes	Yes
Hawai'i	1,455,271	US State	United States	Yes	Yes	Yes	Yes	Yes	Yes
Rep. of Palau	17,614	Sovereign Nation, except for military matters	Rep. of Palau	No	No	No	Yes	No/Yes	Yes
Rep. of the Marshall Islands	42,160	Sovereign Nation, except for military matters	Rep. of Marshall Islands	No	No	No	Yes	No/Yes	Yes
Fed. States of Micronesia	102,843	Sovereign Nation, except for military matters	Fed. States of Micronesia	No	No	No	Yes	No/Yes	Yes



# USAPI Per Capita Total Expenditure on Health - 08232021

(in Purchasing Power Parity (PPP) terms, International \$ for FSM, RMI, PW, AS, CNMI, GU, USA)  
(in unadjusted USD for FSM States and WPRO)



\*Macrotrends.net online Database 2018 (USA, FM, MH, PW); †Audit Report in accordance with the uniform guidance 2019 (FSM States); ‡The Lancet 2016 article (American Samoa, CNMI, Guam); ¶WHO - WPRO Health expenditure Dashboard 2015 (WPRO)



# Pacific- USAPI

- US Territories and COFA Nations
  - Diabetes
  - Cancer
  - Atherosclerotic Heart Disease
  - Renal Failure
- FAS - COFA Nations
  - Syphilis Epidemic
  - Endemic: TB / Hansen's Endemic
  - Cholera





# Contributors to health and cancer health disparities

2021

	American Samoa	CNMI	Guam	FSM	Palau	RMI
SCREENING AND EARLY DETECTION						
CDC Breast and Cervical Cancer Early Detection Program	X	X	X	No	X	X
Mammography	X	X	X	Breast X-ray Only - PNI – Genesis (Private provider)	X	X (Majuro)
What specialty performs the breast biopsies in your Jurisdiction? (surgery, OB)	OB, Surgery, Family Planning, BCCEDPP(DOH)	Radiologist, Surgeon	Surgeons, Interventional Radiologist	Surgeons, OB (PNI, Yap) Surgery (TKK)	Surgery	Surgery
Pap Smears	X	X	X	X	X	X
How long does it take for the pap smears to return to the clinician and/or program staff?	3-4 weeks	2-3 weeks	N/A	3-4 days (PNI) 2-3 weeks (Chuuk) 2-3 weeks (Yap)	1 month	Up to 4 weeks since the COVID-19 pandemic
Cervical cancer screening using VIA	N/A	N/A	N/A	X	No	X
Prostate cancer screening (PSA)	X	X	X	X (PNI,YAP)	X	Available on physician's orders
Transrectal ultrasound	N/A	No	Yes – GRC & MDX	(Yap has equipment, but no personnel to perform the screening)	No	N/A
CT on-island	X	X	X	X (PNI – Private Medpharm)	X	X - Non-operational
Colorectal cancer screening (FOBT)	X	X	X	X (KSA,YAP) PNI – currently N/A (expected in 2022)	X	X (FOBT/FIT)
Colonoscopy	X	X	X	X (Yap) PNI - has the equipment but no specialist to perform the procedure)	X	X (Ebeye/Majuro)
CANCER DIAGNOSIS AND TREATMENT						
Pathologist	X	X	X	No	No	No
Fine needle aspiration is available on island? <i>Yes / NO if Yes – please include who/what specialty does it.</i>	Yes - Surgery	Yes, General Surgeon, GYN, Oncologist	Yes – Surgeon , Interventional Radiologist , Endocrinologist for Thyroid	X (PNI) X (Yap – Surgeon, OBGYN)	Yes available – performed by surgeon	Yes
On-island histopathology	X - some	X	X	X (PNI)	No	No
On-island cytopathology (Paps or fine needle aspiration analysis)	N/A	No	Collection only – Sent to DLS Hawaii	PNI lab telepath	No	No
How long does it take for biopsies to return from off-island?	2-3 weeks	8-10 days	7-10 days	2 weeks avg (PNI) 2 weeks minimum (YAP)	1 month	Up to 4 weeks (under COVID -19)
General Radiologist ON-island	X	X	X	No	No	X (Majuro)

# Contributors to health and cancer health disparities

2021

	American Samoa	CNMI	Guam	FSM	Palau	RMI
CANCER DIAGNOSIS AND TREATMENT						
Tele-radiology ( <i>specify where &amp; what hospital or facility</i> )	X National Diagnostic Imaging main office – Ohio	X	GMHA, GRMC, GRC , MDX ,FHP	X (Yap Doctors consult with off-island experts)	Yes – Asian Hospitals, Philippines	Yes (Majuro reads both Majuro and Ebeye) electronically
How long does it take to get the radiology readings back to the clinicians ( <i>specify for both on- island and teleradiology</i> )	On island-1 day, teleradiology-1 to 2 days	From Guam – within 24 hrs.	Immediate for Guam  Usually same-day on island reading including teleradiology	N/A	2 weeks	Highly dependent on patient loads
MRI on island	N/A	No	X	No	No	No
PET scan on island	N/A	No	X	No	No	No
Bronchoscopy (Lung Mass/Cancer) (i.e., pulmonologist or general surgeon who does bronchoscopy)?	N/A	No	Yes – Surgeon, Pulmonologist, Critical Care Intensivist Specialist	No	No	No
General surgeon	X	X	X	X	X	X
Urologist	N/A	No	X	No	No	No
OB-Gyn	X	X	X	X	X	X
Surgical subspecialists	X	X	X	X (PNI) - Orthopedics X (Chuuk)	No	X - ENT
Oncologist	N/A	X	X	No	No	No
	American Samoa	CNMI	Guam	FSM	Palau	RMI
On-island chemotherapy	X	X (maintenance)	X	X (maintenance, rare)	No	No
On-island radiation therapy	No	No	X	No	No	No
Off-island referral to Philippines for diagnosis / treatment	No	X	X	X	X	X
Off-island referral to Hawaii for diagnosis / treatment	X	X	X	X (not for Yap)	X	X
Off-island referral to New Zealand or Taiwan for diagnosis / treatment	X	No	Yes	No	Taiwan	Taiwan

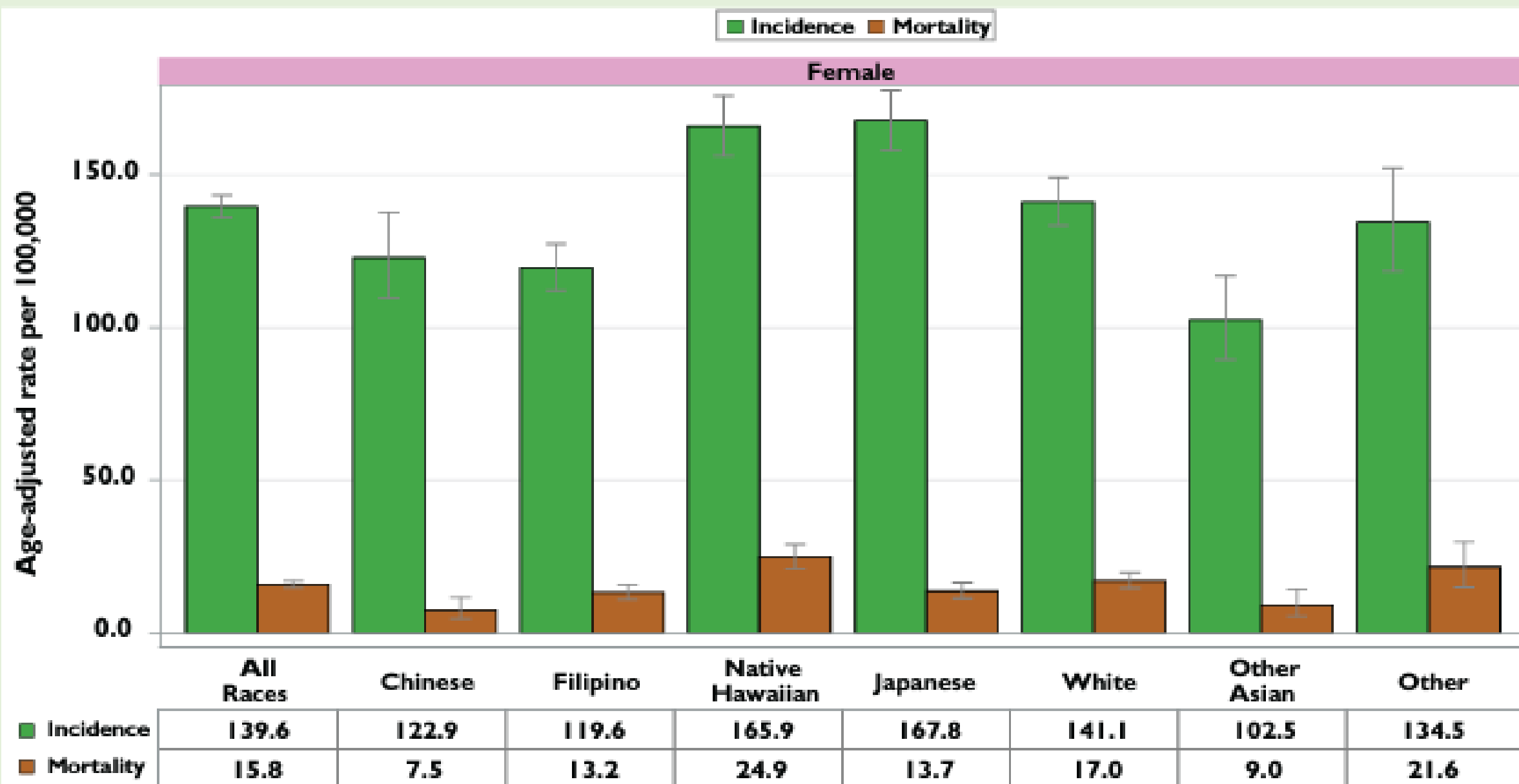


# Cancer Health Care

- Federated States of Micronesia – No Countrywide Mammography
- FSM, RMI, Palau, American Samoa – No Oncologist, No Radiation Therapy
- FSM, RMI, Palau - No on Island Histopathology



Figure 16. Breast Cancer Incidence and Mortality, by Race/Ethnicity, Hawai'i, 2014-2018





# COVID-19 Hawai'i



## Race of COVID-19 Cases, Hawaii 2021

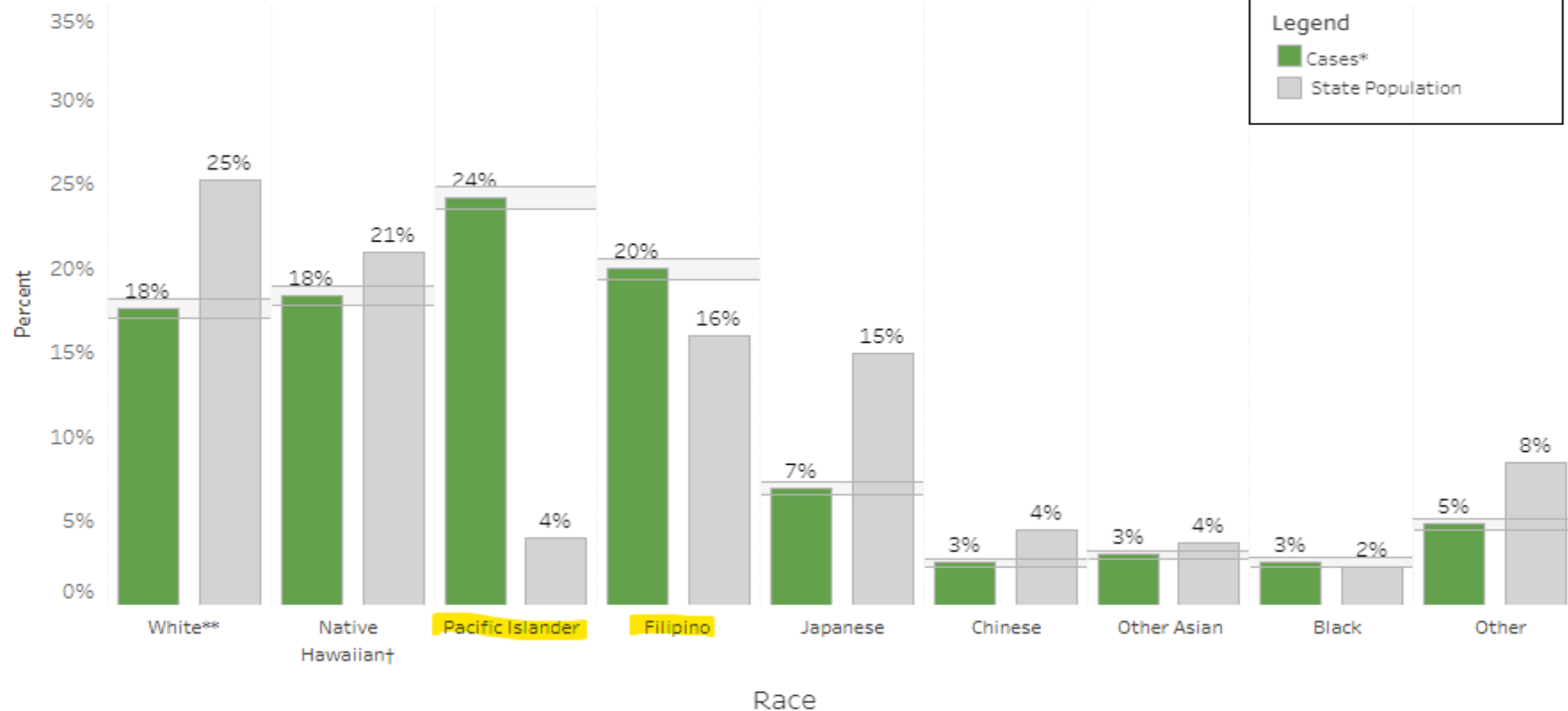
Last updated Monday, January 11, 2021 (updated weekly)

### Metric

- Cases\*
- Hospitalizations
- Deaths

Total Number:

15,690



# Cancers as related to risk factors, availability of screening: drivers for CCC activities

USAPI adult cancers 2007-2022 (20 years and older)	Counts	Tobacco related (lung, OP)	Obesity related	Screening test available	Early Physical diagnosis	% dead within 5 yrs of diagnosis	Tobacco related OC&P	Tobacco OC&P as a % of total tobacco
American Samoa	522	82%	66%	39%	35%	28%	1%	26%
Commonwealth of the Northern Mariana Islands	734	73%	37%	42%	14%	33%	15%	55%
Federated States of Micronesia (combined)	1210	65%	20%	28%	11%	63%	17%	52%
Chuuk State, FSM	235	58%	17%	28%	8%	74%	3%	11%
Kosrae State, FSM	97	62%	34%	27%	15%	77%	7%	33%
Pohnpei State, FSM	561	70%	22%	31%	9%	57%	19%	59%
Yap State, FSM	317	62%	15%	22%	14%	59%	26%	63%
Guam	5425	58%	32%	42%	17%	36%	2%	10%
Republic of the Marshall Islands	740	60%	21%	38%	10%	56%	3%	19%
Republic of Palau	448	59%	24%	29%	17%	58%	10%	35%



# Cervical Cancer Rates

	Crude	U.S. Std	World Std
RMI	69.9	62.4	53.6
WHO Southern Africa	-	-	34.5
Pohnpei State, FSM	51.4	41.2	35.9
WHO Melanesia	-	-	26.9
WHO World	-	-	13.0
USAPI	22.7	16.7	14.6
WHO Southeastern Asia	-	-	17.1
Guam	14.2	10.2	8.8
WHO Northern America	-	-	6.1
U.S. – Hispanic women	-	9.6	-
U.S.	-	7.8	-
Hawai'i	-	7.3	-

# Differences within the AANHPI population

- A Cancer Journal for Clinicians, January 2016
- Overall cancer incidence rates are 30% to 40% lower in AANHPIs combined than in non-Hispanic Whites
- However:
  - Overall incidence rate in **Samoan men (526.5 per 100,000)** was more than twice that in Asian Indian/Pakistani men (216.8)
  - Breast cancer incidence rates within AANHPI population, ranged from 35 per 100,000 in Cambodian women to **135.9 in Native Hawaiian women**
  - Lung cancer incidence rates in men were among **Samoans at 98.9 per 100,000** followed by **Native Hawaiians 72.1**, Vietnamese 62.7, and Asian Indians/Pakistanis had the lowest rate at 21.1





# Cancer Council of the Pacific Islands (CCPI) 2003

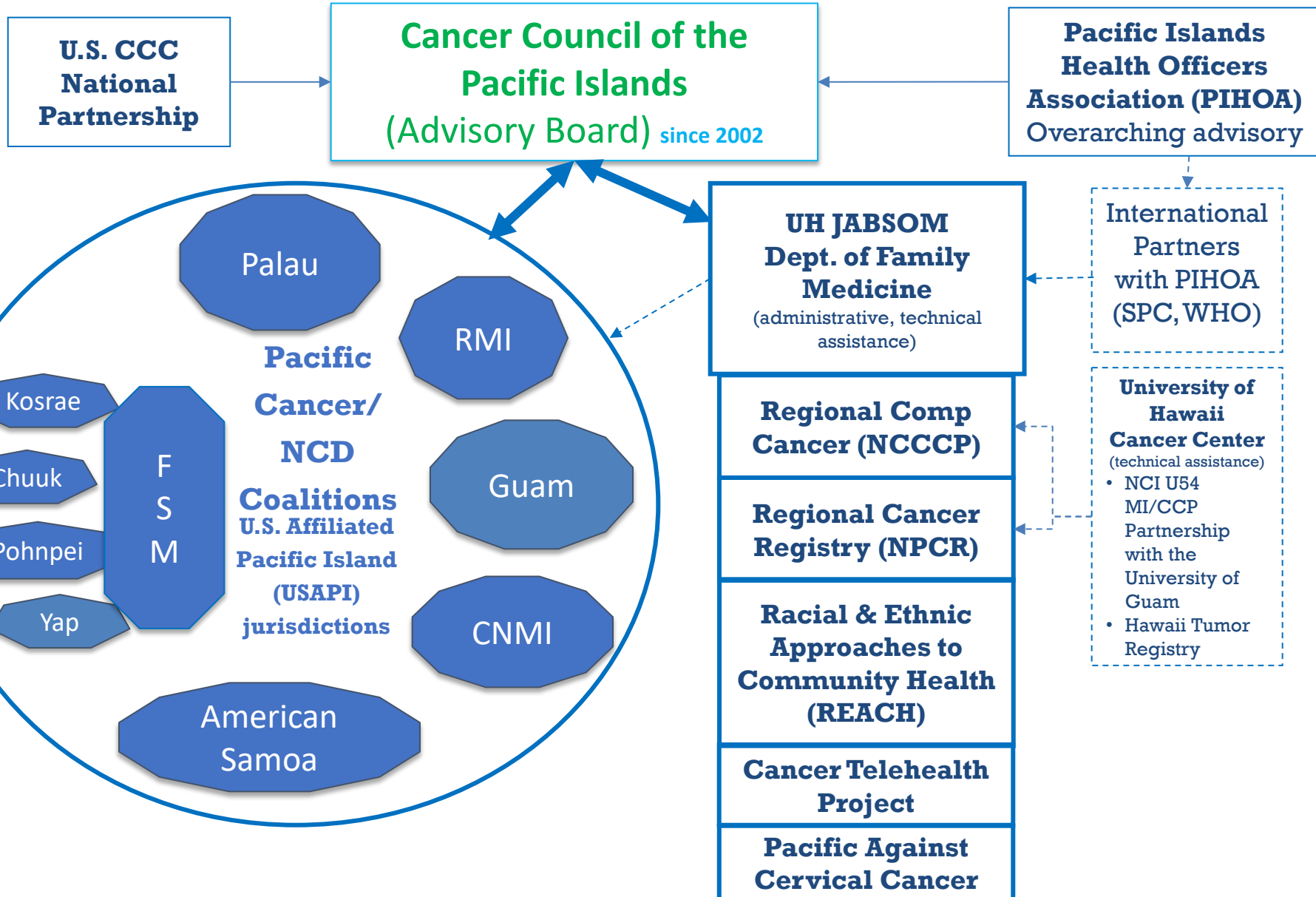




# REGIONAL PACIFIC CANCER PROGRAMS AND PARTNERS



UNIVERSITY OF HAWAII  
CANCER CENTER





# USAPI Cancer Programs – Structural Changes 2019





# Waves of Healing

- Cultural healing through
  - rediscovering and applying indigenous Science
  - Linking Pacific / Hawaiian Peoples history and ancestry
  - Intergenerational Consciousness
  - Cultural Trauma and Healing
- Protect Health through
  - culture and tradition
  - the children (passing knowledge)
  - Malama Honua (being part of and caring for the environment)
  - Space for learning tradition and culture
    - Tradition- change- culture





# La'ikukawa'a

- Ocean (Moana); Land (Aina); Wind (Makani); Stars- (Hoku) –
  - own mana - genetics and environmental dialogue
  - learn, heal, and find cancer health in context of that dialogue
- Environment offers a constant to frame
- Voyagers – different from but integral to the dialogue
  - People are the sailors, the navigator, Wa'a, the Ocean, the wind
  - People with the lived experience should be key to the researcher
    - discoverers of new knowledge , new ways
    - own and are the data, and owner and are the data
    - own and are the genomics
    - own and sustain their dialogue of discovery





# Indigenous Programs / Capacity

- Pacific Island Partnership for Cancer Health Equity (PIPCHE)
  - NCI-funded cancer research collaboration between the University of Hawai'i and University of Guam (Disparities Research Infrastructure)
- Center for Pacific Innovations, Knowledge, and Opportunities (PIKO)
  - IDeA-CTR collaboration with Hawai'i universities (Disparities Research Infrastructure)
- Pacific Regional Comprehensive Cancer Control Program
  - Regional collaboration of cancer control efforts and develop local capacity for effective cancer control programs
- Pacific Regional Central Cancer Registry
  - Develop capacity and infrastructure to manage data collection and entry (Systems Planning)
- Pacific Racial & Ethnic Approaches to Community Health
  - Build capacity to implement nutrition, physical activity, tobacco, and adult vaccination policy, system, and environmental interventions (PSE)
- Pacific Cancer Telehealth Program
  - Bring health care providers and subject matter experts together through videoconferencing to increase workforce capacity to improve cancer care





# Policy Changes

- Tobacco Taxes and Sales
- Betel Nut – Selling to Minors
  - 12-month post-baccalaureate program to support diverse disadvantaged students to medical school
- Standards of Care (FSM Breast and Cervical Cancer Screening )

Increase the numbers and capacity of Peoples with Lived Experience into the health professions who can develop, lead, and conduct high quality relevant research
- Community Engagement
- Research Training and Education





# Research

- Translational and Disparities Research
- Research Capacity in Vulnerable Populations
- Community Ownership and Community Centric
- Using and understanding Indigenous Models of Knowing
- People Capacity
  - Researchers: Increase the numbers and capacity of researchers who have the lived experience into cancer researchers
    - develop, lead, conduct high quality and relevant research







**U56  
(2003-2009)**

1st CA Grant  
on Guam/UOG

1st CA Registry  
on Guam

Creation of UOG CA  
Research Center

Publications (9)

Tobacco Free UOG



**U54-1  
(2009-2015)**

Publications (57)

UOG Research  
Infrastructure  
(RCUOG)

Indigenous ESIs

CHL Grant

Smoke-free Policies



**U54-2  
(2015-2020)**

Publications (60)

ESI R01 Awards

PICCAH (U24) +  
Palau Supplement

U24 Colon CA  
(Am. Samoa)

CA Clinical Trials  
Capacity Bldg (GU)



**U54-3  
(2020-2025)**

Publications (157)

Indigenous  
Leadership

94 students  
trained (88%UR)

New CHD Graduate  
Course (UOG)

R Grants



**U54-4  
(2025-2030)**

PIP Trainee  
Education  
& Mentorship

Regional  
CA Research  
Collaborative

Indigenous  
Leadership

Peer-reviewed  
Publications

R Grants

P50/P20

PIP Trainee  
Education  
& Mentorship

USAPI Community  
Engagement

CA Clinical Trials  
in USAPI

Trainees in CHD  
research & careers

Kulo Malulap  
(Kosraean)

Kammagar  
(Yapese)

Msuulaang  
(Palauan)

Kinisou Chapwur  
(Chuukese)

Si Yu`os Ma`ase  
(Chamorro)

Mahalo  
(Hawaiian)

Kalangan  
(Pohnpeian)

Olomwaay  
(Carolinian)

Fa`a Fetai Tele Lava  
(Samoan)

Kommol Tata  
(Marshallese)

