UNIVERSITY OF HAWAIʻI SYSTEM ANNUAL REPORT

REPORT TO THE 2021 LEGISLATURE

Annual Report on Findings from the
Hawaiʻi Physician Workforce Assessment Project

Act 18, SSLH (Section 5)
Act 186, SLH 2012
Act 40, SLH 2017

December 2020

In accordance with Act 18, SSLH 2009; Act 186, SLH 2012; and Act 40, SLH 2017; A report to the 2021 Hawai‘i State Legislature:

Findings from the Hawai‘i Physician Workforce Assessment Project

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Hawai‘i Physician Workforce Report

Executive Summary

There are currently 10,227 physicians licensed in Hawai‘i, with 3,290 physicians actively providing patient care to patients in Hawai‘i. The physician effort totals 2,812 Full Time Equivalents (FTEs) of direct care to patients as some of the doctors don’t work full time. The national demand model applied to the State of Hawai‘i indicates a need for 3,529 FTEs indicating a shortage of 710 FTE of physician services. However, when island geography and unmet specialty specific needs by county are examined, the estimated unmet need for physicians (accounting for geographic distance and air travel) increases to 1,008 FTEs (up from 820 last year). Primary care represents the largest shortage statewide (412 FTEs needed) across all islands. Statewide, the greatest specialty shortages by percentage are: Colorectal Surgery (65%), Pathology (64%), Pulmonology (63%), Infectious Disease (58%), Allergy/Immunology (55%), and Hematology/Oncology (44%). The coronavirus pandemic has challenged continued physician practice in Hawai‘i and contributed to an increased gap in the number of needed physicians and available supply in our state. Given the generally more elderly physician population in Hawai‘i, the coronavirus pandemic is expected to increase the relative shortage of physicians for the state for the next several years as older physicians leave their practices.

To help meet these needs, the Hawai‘i Physician Workforce Special Fund has supported the following new and ongoing activities:

- Assisting with providing personal protective equipment to healthcare providers, senior care organizations, clinics, small hospitals, schools, small businesses and non-profit organizations;

- Recruiting providers available to assist given an anticipated pandemic surge;

- Creating a telehealth network to provide mental health and COVID care;

- Maintaining the workforce database and providing de-identified data and presentations as requested throughout the state;

- Providing continuing education including the Hawai‘i Health Workforce Summit (535 participants in 2020) and Project ECHO (4,000 people-hours of case-based education);

- Providing Educational Loan Repayment to 52 individuals during the eight years of program existence. The need is great, as nine qualified applicants were unfunded last year, and five more have applied subsequently. **Unfortunately, this valuable program will probably be phased out as the legislative match required for the federal grant was not funded;**

- Promoting physician job opportunities in Hawai‘i through collaboration with the Hawai‘i

Physician Recruiters Group, supporting online job postings, and hiring a statewide physician recruiter;

- Coordinating neighbor island clinical teaching, travel, lodging, community activities and recruitment of health career-focused learners;

- Assisting with O‘ahu and Maui Health Sector Partnership activities to include partnership with the Healthcare Association of Hawai‘i Health Workforce Initiative to bolster non-physician health professions in order to lighten the load on the physicians by maximizing teamwork and health professional collaboration;

- Assist with administering Hawai‘i Preceptor Tax Credit for healthcare preceptors offering professional instruction, training, and supervision to students and residents in medicine, nursing and pharmacy. For the 2019 year, $371,000 in tax credits were provided to 263 individuals for teaching Hawai‘i students pursuing health careers.

- Assist in the administration of JABSOM scholarships that require pay back of academic education through time practicing in Hawai‘i.

Project Methodology

Supply and Demand

The **supply** of physicians in Hawai‘i is estimated based on responses to a voluntary survey of physicians administered between November 2019 and January 2020 for medical doctors and May to June 2020 for osteopathic physicians (at the time of state medical license renewal). The survey questions are included in Appendix 1. All physician addresses were confirmed between June and August 2020 through queries of local community contacts, internet searches and direct calling of physician offices to confirm hours of active patient care. The phone calling was performed by prehealth interns working with the Area Health Education Center (AHEC) and included confirming whether Dr. X works at the office, his/her specialty, how many hours s/he works each week on average, if s/he has other office locations or partners working in the office. A question was added during the research on whether COVID-19 has had an impact. Appendix 2 includes this methodology.

Taking into account the licensure survey, community contact information, internet searches and phone calls, data was obtained for an estimated 95% of the providers who report working in Hawai‘i. Of the 10,227 physicians licensed to practice in Hawai‘i, only 3,290 physicians were found actively practicing in non-military settings. The total FTEs of direct patient care provided by these physicians (including those providing telehealth to Hawai‘i patients from outside the state) is 2,812 FTEs. This is 162 **fewer** full-time equivalents of physician services than were available to Hawai‘i’s patients in 2019 as outlined below in Table 1.

Table 1: Hawai‘i Physician Supply Trend (in Full Time Equivalents)

Year	2013	2014	2015	2016	2017	2018	2019	2020
FTEs	2894	2802	2806	2903	2978	2927	2974	2812

The **demand** for physician services is estimated using a model purchased from IHS Global in 2014. The major components of the demand model include: 1) a population database that contains characteristics and health risk factors for a representative sample of the population in each Hawai‘i county, 2) predictive equations are based on national data that relate a person’s demographic, socioeconomic and health risk factor characteristics to his or her demand for healthcare services by care delivery setting, and 3) national care delivery patterns that convert demand for healthcare services to demand for FTE physicians. For purposes of physician workforce modeling, the relevant settings are physician offices, outpatient clinics, hospital emergency departments, and hospital inpatient settings. While the forecasting equations and staffing patterns are based on national data, a population database was constructed for Hawai‘i that was representative of the population in each county of Hawai‘i. This was done using county-level population information (e.g., age-gender-race/ethnicity), whether a county was considered metropolitan or non-metropolitan, and information from the Behavioral Risk Factor Surveillance System (BRFSS) for the population, including summary statistics by county for factors such as prevalence of obesity, diabetes, current smoking status, and other risk factors used in the model.

Applying the model to Hawai‘i produced estimates of physician demand by select specialty if people in each county were to receive a level of care consistent with the national average, while adjusting for differences across counties in demographics, health and economic factors that

affect demand for health care services. The total estimated demand for physicians in Hawai‘i as a state in 2020 is 3,522 FTEs.

However, in some areas there are overages of physicians of certain specialties. Because we are an island state, it is difficult for patients from a different island to make use of specialty overages, so worst-case shortage numbers were calculated by eliminating the overages in the calculations. This is represented in Table 8 through Table 12 as “Without overage”. Using the first estimate of shortage, we are short 717 physician FTEs, however when eliminating specialty overages in each county, the estimated shortage is 1,015 full time equivalents of physician time (up from 820 last year). Specialty categories are clustered as outlined in Appendix 3 at the end of this document. The actual need for physicians in any area depends upon the productivity of the physicians working there, characteristics and utilization of that unique community, ability of the people of that community to travel to care elsewhere, non-physician clinicians providing care in that community and many other factors. We therefore use the comparison to average US utilization to give us an estimate of what Hawai‘i would have if we were located on the continental US.

Table 2: Estimate of Hawai‘i Demand Trends (in FTE)

Year	2014	2015	2016	2017	2018	2019	2020
FTEs	3276	3317	3358	3399	3440	3481	3522

Shortage is calculated in two ways. The first is by simply subtracting supply from demand. Percent of shortage is then calculated as (Demand-Supply)/Demand. This number is included on the Supply and Demand tables starting on page 11 as “Shortage”. The calculation taking into account geographic differences is included in the Supply and Demand tables starting on page 11 as “Without overage”. The percentage of shortage is calculated by dividing this “Without overage” number by the demand. The actual shortage is most likely somewhere between the two calculations.

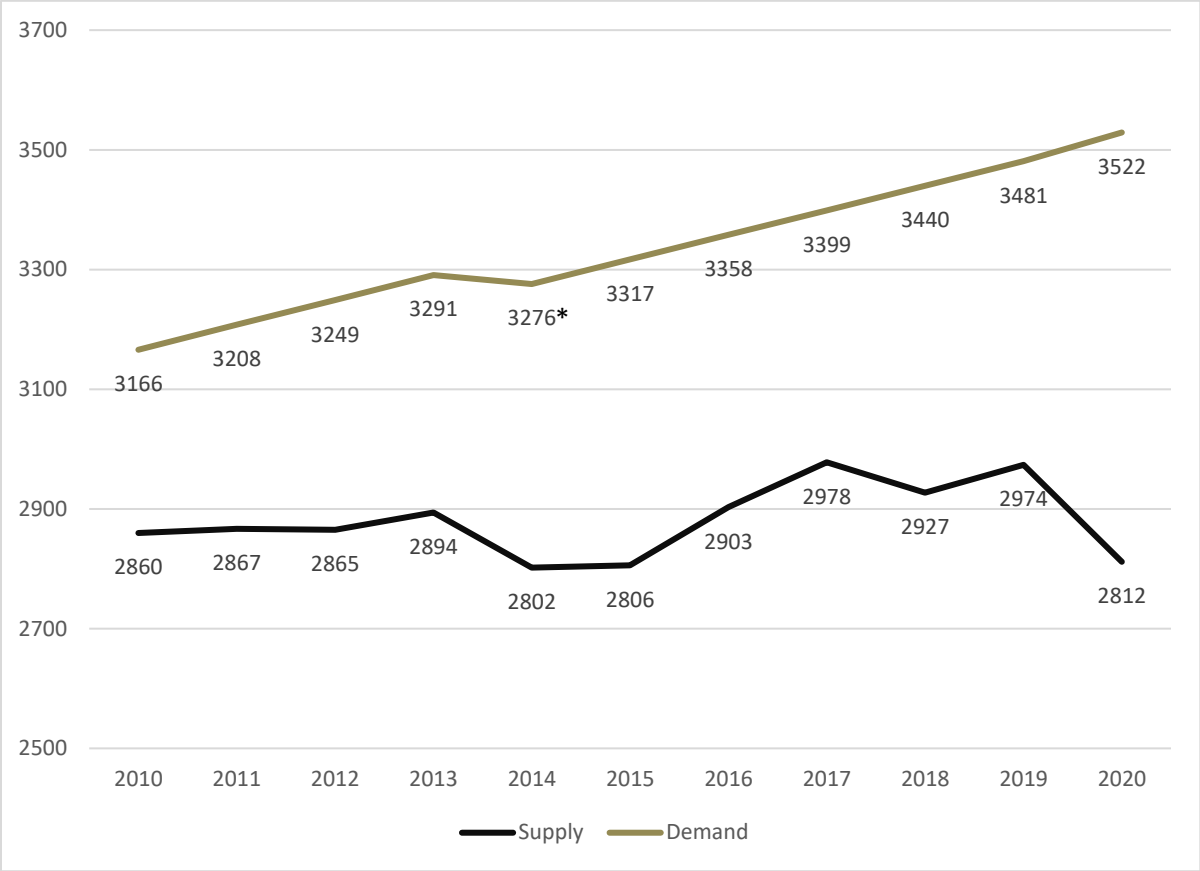
Other data collection:
Physician age and gender are obtained as available from internet searches and the licensure survey. Ethnicity was obtained on the licensure survey for the first time this year and data was obtained for 65% of physicians. Retirement, death, decreased time practicing and moved out of state status is obtained from physician surveys, community contacts, internet search or the physician office upon phone call. In addition, during the data collection, a question was added to the office surveys regarding impact of COVID as described previously and included in Appendix 3.

Project Results

Workforce statistics obtained from survey results, internet searches, community contacts and calling of physician offices indicate that there are:

- 10,227 physicians are currently licensed in Hawai‘i
- 3,290 physicians are practicing in non-military settings in Hawai‘i
- At least 110 physicians were found to have retired in 2020, 120 decreased their work hours, eight passed away and at least 139 physicians left the State in 2020
- 2,812 total Full Time Equivalents (FTEs) of physicians are currently practicing in Hawai‘i as outlined in Figure 1 below

Figure 1: Physician Supply and Demand FTE Comparison Over Time as of 11/2020



*New Demand Model purchased in 2014 to reflect Accountable Care Act

The greatest specialty shortages statewide are: Primary care at 32% or 412 FTEs; Colorectal Surgery (64%) for 5 FTEs; Pathology (64%) for 57 FTEs; Pulmonology (63%) for 36 FTEs; Infectious Disease (58%) for 24 FTEs; and Allergy & Immunology (55%) for 12 FTEs.

Additional demographic facts about the active physician workforce in Hawai‘i

Ethnic Distribution

- For the first time, ethnicity has been included as a question on the physician workforce survey. This allowed for collection of the information for 65% of actively practicing physicians

- Approximately 4.5% of the active physician workforce in Hawaii is of Native Hawaiian descent

- Additional ethnic mix is outlined in Table 3 below. The top of the table counts anyone reporting more than one race as “Two or more races”. The bottom of the table includes all races described and therefore adds to more than 100%

Table 3: Ethnicity of Physician Workforce

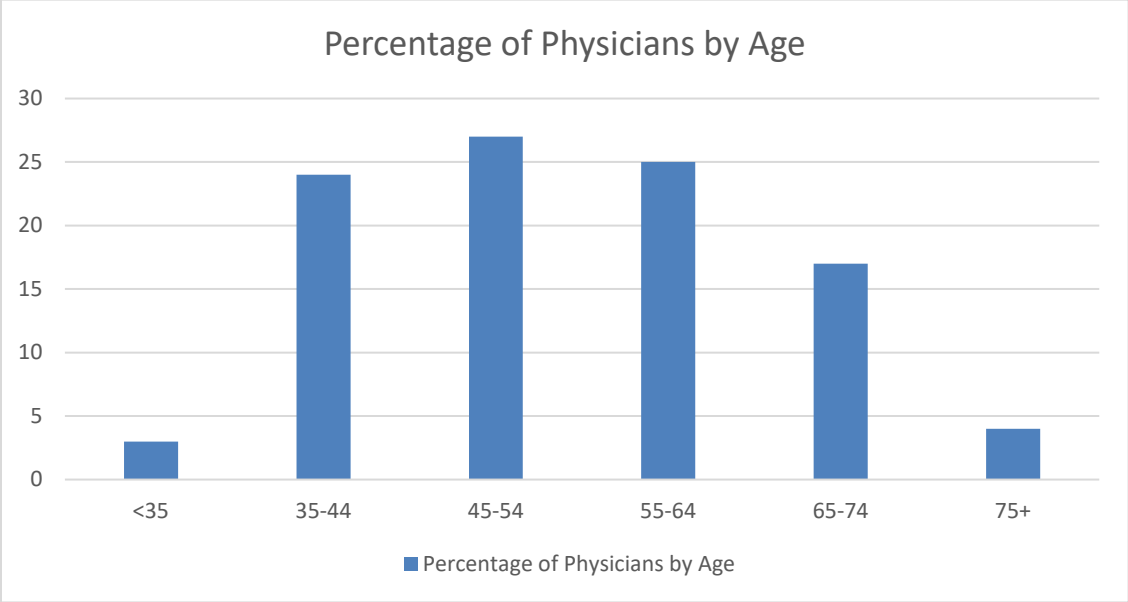
Race Alone	Total	Percent
White	756	23%
Black or African American	19	1%
American Indian and Alaska Native	1	<1%
Asian	954	29%
Hispanic/Latinx	30	1%
Native Hawaiian	65	2%
Other Pacific Islander	20	1%
Other	78	2%
Two or more races	225	7%
Unknown	1142	35%
Total	3290	100%
Race Alone or In Combination		
White	894	27%
Black or African American	42	1%
American Indian and Alaska Native	1	<1%
Asian	1062	32%
Hispanic/Latinx	65	2%
Native Hawaiian	148	4.5%
Other Pacific Islander	68	2%
Other	112	3%
Unknown	1142	35%

Age Distribution

- 21% of active physicians are at least 65 years of age, and 46% are at least 55 years of age as outlined in Figure 2 below

- Our oldest practicing physician is 90 years of age

Figure 2: Age Distribution of Physician Workforce



- Women make up 37% of the workforce

- Of the physicians for whom data has been obtained, 29% are Asian, 22% are Caucasian, 4.5% are Native Hawaiian and 2% are Pacific Islander as outlined in Table 3

Practice Information for Hawai‘i Physicians

- 58% of active physicians are employed rather than in private practice, which has increased since 2014 when first measured

- 47% of physicians work in groups of five or less, which has decreased annually since first measured in 2014

Table 4: Practice Characteristics of Hawai‘i Physicians

Year	2014	2016	2018	2020
Employed	54%	56%	55%	58%
Group <6	54%	52%	50%	47%

- Telehealth adoption increased significantly in 2020 based on physician survey responses.

Physicians with a Medical Doctor (MD) degree relicense by January of every other year, those with a Doctor of Osteopathy (DO) degree relicense in June. Usually, their responses are similar with regards to use of Telehealth, but in 2020, the uptake of telehealth utilization was marked between the two relicensure cycles, likely due to the COVID pandemic:

- 2014: 2% of combined MD and DO survey responders performed telehealth
- 2016: 15% of combined MD and DO survey responders performed telehealth
- 2018: 21% of combined MD and DO survey responders performed telehealth
- January 2020: 24% of MD survey responders performed Telehealth
- June 2020: 52% of DO survey responders performed Telehealth

Finally, when contacting physician offices, the question was added regarding how COVID had impacted the practice. Of the 989 physician offices questioned, 44% answered that the COVID-19 pandemic caused practice disruption in the form of temporary and permanent clinic closures, early retirement, increased telehealth practice, altered operating hours and locations, and reduced patient volume, among other practice changes.

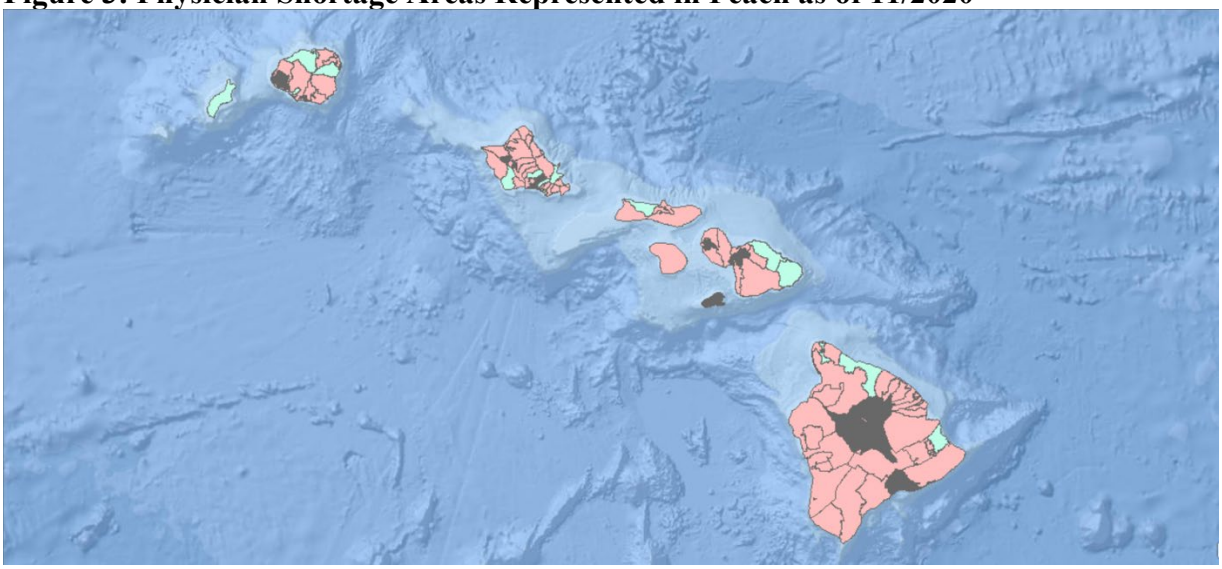
County Specific Results

The O‘ahu shortage increased from 377 (in 2019) to 475 (in 2020); Big Island shortage increased from 230 to 287; Maui shortage increased from 153 to 191; and Kaua‘i shortage increased slightly from 60 to 61. The shortage of providers in each county is represented in Table 5.

Table 5: Physician Shortage in Each County 2020

	O‘ahu	Hawai‘i	Maui County	Kaua‘i	Statewide
Shortage	475	287	185	61	1015
Percentage	20%	53%	42%	33%	29%

Figure 3: Physician Shortage Areas Represented in Peach as of 11/2020



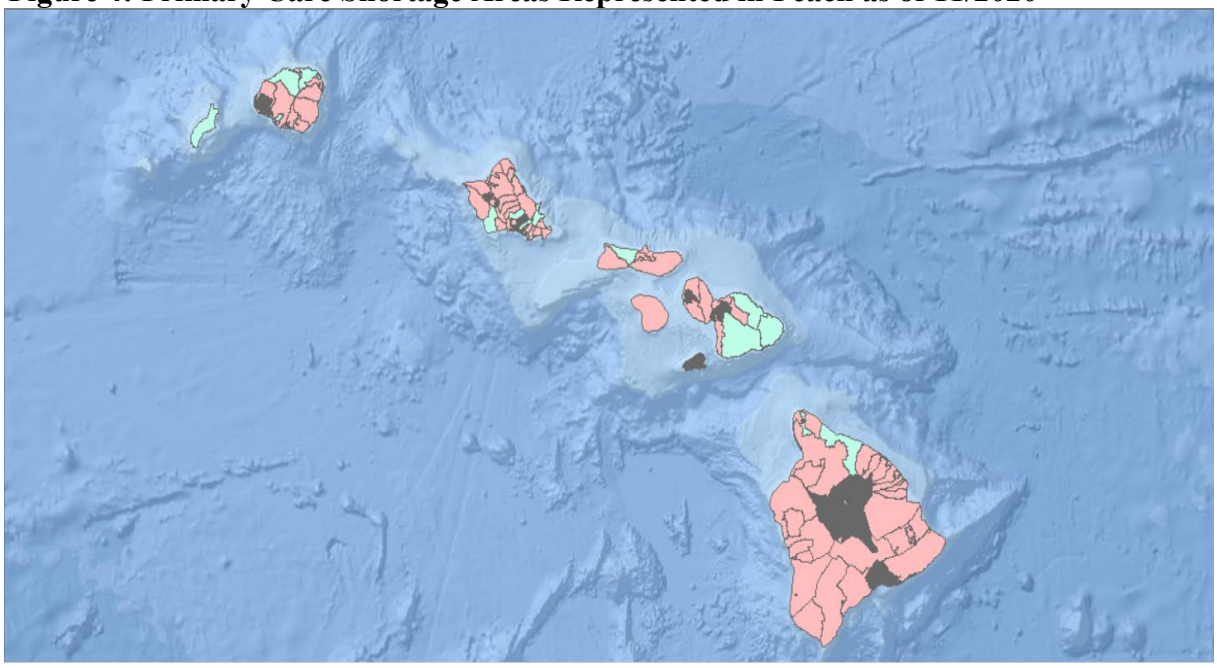
Of this shortage, the largest single factor is primary care with a shortage of 412 FTEs across all

islands. When geographic overages are eliminated, the shortage of primary care is 32% statewide shortage. In the past this geographic overage was not considered, therefore this number should not be directly compared to prior reports.

Table 6: Primary Care Physician Shortage by County 2020

	O‘ahu	Big Island	Maui County	Kaua‘i	Statewide
Shortage	258	73	64	17	412
Percentage	29%	37%	40%	25%	32%

Figure 4: Primary Care Shortage Areas Represented in Peach as of 11/2020



Specialty Specific Shortages by County

Shortages of specialty physicians have changed slightly from past years but remain similar as outlined below.

Table 7: Top 2020 Six Individual Specialty Shortages by County in Rank Order of Percent Shortage Estimate

O‘ahu	**Hawai‘i Island**
Pathology (55% shortage)	Colorectal Surgery (100% shortage)
Colorectal Surgery (54% shortage)	Endocrinology (100% shortage)
Pulmonology (52% shortage)	Neonatal-Perinatal (100% shortage)
Infectious Disease (51% shortage)	Thoracic Surgery (100% shortage)
General & Family Practice (44% short)	Pulmonology (97% shortage)
Allergy & Immunology (40% short)	Hematology/Oncology (95% shortage)
Maui County	**Kaua‘i**
Allergy & Immunology (100% shortage)	Allergy & Immunology (100% shortage)
Neonatal-Perinatal (100% shortage)	Critical Care (100% shortage)
Thoracic Surgery (100% shortage)	Endocrinology (100%)
Rheumatology (92% shortage)	Neonatal-Perinatal (100% shortage)
Pathology (91% shortage)	Nephrology (100% shortage)
Pulmonology (86% shortage)	Neurological Surgery (100% shortage)

Kaua‘i also sees 100% shortages in Physical Medicine & Rehabilitation, Plastic Surgery, Rheumatology, and Thoracic Surgery specialties.

Both Neonatology/Perinatology and Thoracic Surgery are shortages in all counties except O‘ahu and Pathology is a shortage on both O‘ahu and Maui.

The following five pages outline the county specific shortages by specialty and can be compared to prior year reports available at AHEC.hawaii.edu/workforce/.

Table 8: Statewide Supply and Demand Numbers as of 11/2020

	Demand	Supply	Shortage	Without Coverage	Percentage
Family Medicine & General Practice	536.0	342.2	193.8	193.8	36%
General Internal Medicine	499.0	319.9	179.1	179.1	36%
Pediatrics	252.5	216.1	36.4	36.4	14%
Geriatric Medicine	18.9	42.2	-23.3	2.7	14%
Allergy and Immunology	21.4	9.7	11.7	11.7	55%
Anesthesiology	172.3	139.8	32.5	33.4	19%
Cardiology	118.3	78.3	40.0	40.0	34%
Colorectal Surgery	7.2	2.6	4.7	4.7	65%
Critical Care	27.9	38.5	-10.6	5.4	19%
Dermatology	48.2	51.2	-3.0	4.8	10%
Emergency Medicine	181.7	185.6	-3.9	31.6	17%
Endocrinology	30.7	18.2	12.5	12.5	41%
Gastroenterology	64.8	48.8	16.0	16.0	25%
General Surgery	121.8	93.6	28.2	28.2	23%
Hematology and Oncology	63.8	35.9	27.9	27.9	44%
Infectious Disease	41.1	17.1	24.0	24.0	58%
Neonatal-perinatal	23.0	22.5	0.5	7.6	33%
Nephrology	36.0	31.8	4.2	6.5	18%
Neurological Surgery	22.1	16.5	5.6	5.6	26%
Neurology	78.4	47.0	31.4	31.4	40%
Obstetrics and Gynecology	189.1	166.9	22.2	22.2	12%
Ophthalmology	86.4	98.5	-12.1	8.1	9%
Orthopedic Surgery	110.9	75.6	35.3	35.3	32%
Otolaryngology	44.2	28.7	15.5	15.5	35%
Pathology	90.3	32.9	57.4	57.4	64%
Physical Medicine and Rehabilitation	35.6	24.7	10.9	10.9	34%
Plastic Surgery	33.2	25.4	7.8	7.8	24%
Psychiatry	196.7	153.4	43.3	43.3	22%
Pulmonology	57.3	21.0	36.3	36.3	63%
Radiology	142.8	109.2	33.6	33.6	24%
Rheumatology	20.2	13.1	7.1	7.1	35%
Thoracic Surgery	20.5	12.5	8.0	8.0	39%
Urology	47.0	30.2	16.8	16.8	36%
Vascular Surgery	13.9	13.0	1.0	2.3	16%
Other Medical Specialties	69.0	250.0	-181.0	0.0	0%
Total	3522.2	2812.3	709.9	1008.0	29%

Table 9: Supply and Demand Numbers Honolulu County of 11/2020

	Demand	Supply	Shortage	Without Coverage	Percentage
Family Medicine & General Practice	362.7	201.3	161.4	161.4	44%
General Internal Medicine	339.8	251.4	88.4	88.4	26%
Pediatrics	168.8	160.4	8.4	8.4	5%
Geriatric Medicine	13.0	37.9	-24.9	0.0	0%
Allergy and Immunology	14.5	8.6	5.9	5.9	40%
Anesthesiology	115.9	112.1	3.9	3.9	3%
Cardiology	80.1	60.8	19.3	19.3	24%
Colorectal Surgery	4.8	2.2	2.6	2.6	54%
Critical Care	18.9	34.9	-16.0	0.0	0%
Dermatology	32.5	40.3	-7.8	0.0	0%
Emergency Medicine	107.2	135.3	-28.1	0.0	0%
Endocrinology	21.1	17.0	4.1	4.1	19%
Gastroenterology	43.7	42.7	1.0	1.0	2%
General Surgery	82.1	63.8	18.3	18.3	22%
Hematology and Oncology	41.4	29.4	12.0	12.0	29%
Infectious Disease	27.8	13.7	14.1	14.1	51%
Neonatal-perinatal	15.4	22.5	-7.1	0.0	0%
Nephrology	24.8	27.2	-2.4	0.0	0%
Neurological Surgery	14.9	14.2	0.7	0.7	5%
Neurology	53.0	42.3	10.7	10.7	20%
Obstetrics and Gynecology	128.9	128.6	0.3	0.3	0%
Ophthalmology	58.8	78.7	-19.9	0.0	0%
Orthopedic Surgery	74.9	56.0	18.9	18.9	25%
Otolaryngology	29.9	21.3	8.6	8.6	29%
Pathology	61.1	27.4	33.7	33.7	55%
Physical Medicine and Rehabilitation	24.3	20.5	3.8	3.8	16%
Plastic Surgery	22.0	21.2	0.8	0.8	4%
Psychiatry	132.4	114.6	17.9	17.9	13%
Pulmonology	38.6	18.7	19.9	19.9	52%
Radiology	94.4	83.9	10.5	10.5	11%
Rheumatology	13.6	11.9	1.7	1.7	13%
Thoracic Surgery	13.8	12.5	1.3	1.3	9%
Urology	31.5	24.4	7.1	7.1	23%

Vascular Surgery	9.6	10.9	-1.3	0.0	0%
Other Medical Specialties	46.3	186.6	-140.3	0.0	0%
Total	**2362.5**	**2135.0**	**227.5**	**475.2**	**20%**

Table 10: Supply and Demand Numbers Hawai‘i County of 11/2020

	Demand	Supply	Shortage	Without Coverage	Percentage
Family Medicine & General Practice	80.3	69.3	11.0	11.0	14%
General Internal Medicine	74.0	28.5	45.5	45.5	62%
Pediatrics	38.9	24.0	14.9	14.9	38%
Geriatric Medicine	2.8	1.3	1.5	1.5	55%
Allergy and Immunology	3.2	1.1	2.1	2.1	67%
Anesthesiology	26.1	5.0	21.1	21.1	81%
Cardiology	17.9	6.7	11.2	11.2	63%
Colorectal Surgery	1.1	0	1.1	1.1	100%
Critical Care	4.2	0.4	3.8	3.8	91%
Dermatology	7.3	3.6	3.7	3.7	51%
Emergency Medicine	34.6	19.0	15.6	15.6	45%
Endocrinology	4.4	0.0	4.4	4.4	100%
Gastroenterology	9.8	2.2	7.6	7.6	78%
General Surgery	18.5	15.4	3.1	3.1	17%
Hematology and Oncology	10.5	0.5	10.0	10.0	95%
Infectious Disease	6.2	0.4	5.8	5.8	94%
Neonatal-perinatal	3.6	0	3.6	3.6	100%
Nephrology	5.2	2.1	3.1	3.1	59%
Neurological Surgery	3.4	1.3	2.1	2.1	63%
Neurology	11.8	1.2	10.6	10.6	90%
Obstetrics and Gynecology	28.1	13.9	14.2	14.2	51%
Ophthalmology	12.8	6.6	6.2	6.2	48%
Orthopedic Surgery	16.7	7.2	9.5	9.5	57%
Otolaryngology	6.6	1.0	5.6	5.6	85%
Pathology	13.7	3.5	10.2	10.2	74%
Physical Medicine and Rehabilitation	5.3	1.2	4.1	4.1	77%
Plastic Surgery	5.2	0.8	4.4	4.4	86%
Psychiatry	29.8	13.9	15.9	15.9	53%
Pulmonology	8.7	0.3	8.4	8.4	96%

Radiology	22.7	9	13.7	13.7	61%
Rheumatology	3.0	1.0	2.0	2.0	67%
Thoracic Surgery	3.1	0	3.1	3.1	100%
Urology	7.2	1.3	5.9	5.9	82%
Vascular Surgery	2.0	0.7	1.3	1.3	68%
Other Medical Specialties	10.6	28.4	-17.8	0.0	0%
Total	**539.3**	**270.4**	**268.9**	**286.7**	**53%**

Table 11: Supply and Demand Numbers Maui County of 11/2020

	Demand	Supply	Shortage	Without Coverage	Percentage
Family Medicine & General Practice	65.4	44.0	21.4	21.4	33%
General Internal Medicine	59.6	26.3	33.3	33.3	56%
Pediatrics	31.6	23.7	7.9	7.9	25%
Geriatric Medicine	2.1	1.0	1.1	1.1	52%
Allergy and Immunology	2.6	0	2.6	2.6	100%
Anesthesiology	21.2	12.8	8.4	8.4	40%
Cardiology	14.1	8.8	5.3	5.3	38%
Colorectal Surgery	0.9	0.3	0.6	0.6	67%
Critical Care	3.3	3.3	0	0	0%
Dermatology	5.9	5.5	0.4	0.4	7%
Emergency Medicine	28.1	12.1	16.0	16.0	57%
Endocrinology	3.6	1.2	2.4	2.4	67%
Gastroenterology	7.9	1.9	6.0	6.0	76%
General Surgery	14.8	8.4	6.4	6.4	43%
Hematology and Oncology	8.3	3.0	5.3	5.3	64%
Infectious Disease	5.0	2.0	3.0	3.0	60%
Neonatal-perinatal	2.8	0	2.8	2.8	100%
Nephrology	4.2	2.6	1.6	1.6	38%
Neurological Surgery	2.7	1.0	1.7	1.7	63%
Neurology	9.6	3.1	6.5	6.5	68%
Obstetrics and Gynecology	22.8	17.9	4.9	4.9	21%
Ophthalmology	10.4	8.5	1.9	1.9	18%
Orthopedic Surgery	13.5	9.2	4.3	4.3	32%
Otolaryngology	5.4	4.5	0.9	0.9	17%
Pathology	10.8	1.0	9.8	9.8	91%

Physical Medicine and Rehabilitation	4.2	3.0	1.2	1.2	29%
Plastic Surgery	4.2	3.4	0.8	0.8	19%
Psychiatry	24.3	17.7	6.6	6.6	27%
Pulmonology	7.0	1.0	6.0	6.0	86%
Radiology	18.0	11.3	6.7	6.7	37%
Rheumatology	2.5	0.2	2.3	2.3	92%
Thoracic Surgery	2.5	0	2.5	2.5	100%
Urology	5.8	2.5	3.3	3.3	57%
Vascular Surgery	1.6	1.1	0.5	0.5	31%
Other Medical Specialties	8.5	20.3	-11.8	0.0	0%
Total	435.2	262.3	172.9	184.7	42%

Table 12: Supply and Demand Numbers Kaua‘i County of 11/2020

	Demand	Supply	Shortage	Without Coverage	Percentage
Family Medicine & General Practice	27.6	27.6	0	0	0%
General Internal Medicine	25.6	13.7	11.9	11.9	47%
Pediatrics	13.2	8.0	5.2	5.2	39%
Geriatric Medicine	1.0	2.0	-1.0	0	0%
Allergy and Immunology	1.1	0	1.1	1.1	100%
Anesthesiology	9.1	10.0	-0.9	0	0%
Cardiology	6.2	2.0	4.2	4.2	68%
Colorectal Surgery	0.4	0.1	0.3	0.3	75%
Critical Care	1.5	0	1.5	1.5	100%
Dermatology	2.5	1.8	0.7	0.7	28%
Emergency Medicine	11.8	19.3	-7.5	0	0%
Endocrinology	1.6	0	1.6	1.6	100%
Gastroenterology	3.4	2.0	1.4	1.4	41%
General Surgery	6.4	6.0	0.4	0.4	6%
Hematology and Oncology	3.6	3.0	0.6	0.6	17%
Infectious Disease	2.1	1.0	1.1	1.1	52%
Neonatal-perinatal	1.2	0	1.2	1.2	100%
Nephrology	1.8	0	1.8	1.8	100%
Neurological Surgery	1.1	0	1.1	1.1	100%
Neurology	4.0	0.5	3.5	3.5	88%
Obstetrics and Gynecology	9.3	6.5	2.8	2.8	30%

Ophthalmology	4.4	4.8	-0.4	0	0%
Orthopedic Surgery	5.8	3.2	2.6	2.6	45%
Otolaryngology	2.3	2.0	0.3	0.3	13%
Pathology	4.7	1.0	3.7	3.7	79%
Physical Medicine and Rehabilitation	1.8	0	1.8	1.8	100%
Plastic Surgery	1.8	0	1.8	1.8	100%
Psychiatry	10.2	7.3	2.9	2.9	28%
Pulmonology	3.0	1.0	2.0	2.0	67%
Radiology	7.7	5.0	2.7	2.7	35%
Rheumatology	1.1	0	1.1	1.1	100%
Thoracic Surgery	1.1	0	1.1	1.1	100%
Urology	2.5	2.0	0.5	0.5	20%
Vascular Surgery	0.7	0.3	0.4	0.4	57%
Other Medical Specialties	3.6	14.6	-11.0	0	0%
Total	185.2	144.5	40.7	61.4	33%

Solutions Being Implemented

The year 2020 was devastating to the physician population of Hawai‘i. There were eight deaths of practicing physicians, some due to COVID. Although COVID-19 did not impact Hawai‘i as hard as the continental United States (at least as of the writing of this document), the nature of the disease caused many physicians to retire or decrease their practice of medicine. This may rebound when the pandemic is contained, however the shortage of 1,000 physicians will be difficult to mitigate even if all the physicians return to full time practice. In addition, efforts such as loan repayment have been thwarted by legislative disruptions and state funding challenges. The loan repayment program may have to end, despite great need and proven value to the state.

Efforts to assist physicians through the COVID-19 Pandemic:

- At the start of the COVID pandemic, the Physician Workforce Team initiated a program to incentivize providers participating in telehealth called Hawai‘i Telehealth through funding from Hawai‘i Department of Health. As there was an anticipated need for COVID telecare as well as mental health, two networks were established and can be accessed through the following web pages: mentalhealthhawaii.info and covidhawaii.info. These sites provide online screening that refers patients to available services including free telehealth visits during specific hours. To date, these services have provided over 650 screenings and 500 video consultations. This is being adapted to provide free mental

health services to rural patients through a collaboration with Hawai‘i State Rural Health Association and Hawai‘i Department of Health.

- Dr. Withy was invited to be a member of the Hawai‘i Emergency Management Agency (HIEMA) Emergency Support Function 8 (ESF8) team in February of 2020. Through this collaboration, Dr. Withy supported three specific tasks: 1) Communicate with physicians regarding safe practices, available resources and a request to sign up for Hawai‘i Medical Reserve Corps; 2) Facilitate personal protective equipment distribution to all physicians, dentists, healthcare practices, small hospitals and schools, senior care institutions, small businesses, child care organizations and non-profit institutions in collaboration with the HI-EMA Emergency Support Function 7 (ESF7) team. Supplies are being distributed to over 5,000 locations to protect the people of Hawai‘i; and 3) In March, Dr. Withy, in collaboration with the Center for Nursing and Dr. Gohil launched a “Hawai‘i Healthcare Workforce Provider Surge Capacity” Workgroup with members of the HIEMA ESF-8 committee and the Healthcare Association of Hawai‘i (HAH). Workgroup members included personnel from the Hawai‘i Department of Health, University of Hawai‘i, and healthcare provider organizations. Dr. Withy facilitates these meetings twice monthly; items discussed include expanded training opportunities for health science students, access to testing needed for licensure, and identifying providers available to meet future surge needs. This group has surveyed all physicians, physician assistants and advanced practice nurses for whom emails were available and created a list of 162 providers who are available to work in case of COVID surge needs. Regular communication is maintained with these individuals to assess availability resulting in 70 being identified as available to work locally at short notice. Other efforts of this group include linking healthcare educational programs to healthcare organizations to connect new graduates, alumni and students to the organizations to support recruitment efforts for these roles.

Ongoing Physician Workforce activities continue to grow the physician workforce

- The Physician Workforce Assessment/AHEC team activities: The team has made contact with over 4,000 health professions students in the intervening year. Activities are being expanded for neighbor island students as well as O‘ahu students. Through federal grant funding, AHEC provides the skills needed for eighth grade through undergraduate students from economically and/or educationally disadvantaged backgrounds to successfully pursue careers in health professions. Participating AHEC students receive certification and training in Health Information Portability and Accountability Act (HIPPA) procedures, Cardio Pulmonary Resuscitation (CPR), First Aid, Youth Mental Health First Aid and Occupational Safety Administration procedures, as well as training in science, technology, engineering, and mathematics through real life data acquisition, public speaking, leadership, research literacy, teamwork abilities, interview skills, professionalism, time management, and financial planning methods. In addition, AHEC has hired a student trainer for Maui Island who has worked closely with 147 students,

and for the Big Island where activities have been organized for over 500 students interested in health careers. Physician Workforce funding also supports the health career pipeline by promoting health career training for students of all ages across Hawai‘i through publication and distribution of the 140-page Health Career Navigator resource (4,500 copies have been printed and distributed across the State with another 4,039 copies downloaded), a 94-page interactive Student Companion booklet (3,000 copies printed and distributed across the State with another 1,970 copies downloaded) and growing the Pre-Health Career Corps program which provides mentoring, training, career orientation and preparation, test preparation training, CPR and other workshops, research and shadowing experiences, interview practice, and essay writing assistance for 4,780 youth.

- Expand rural training opportunities: AHEC has hired a Rural Coordinator to work with neighbor island communities to recruit additional preceptors to teach health professions students, recruit and support students interested in health careers, work with community members to host students, and document the impact of rural activities on rural health professions training.

- Support for recruitment of physicians to Hawai‘i: AHEC posts all physician job openings online through collaboration with the Hawai‘i Physician Recruiters Group: The AHEC.hawaii.edu website advertises job opportunities in Hawai‘i to providers interested in practice and disseminates information. This endeavor includes personnel searching the web for all available postings and working with recruiters to post their jobs. Physician practices wishing to hire or transition their practice are offered assistance creating an advertisement. Direct assistance has been provided for nine practices during the current year to connect to a new provider.

- Educational Loan Repayment: the Hawai‘i State Loan Repayment Program currently supports 19 loan repayment recipients and has supported 52 during the eight years of existence. There are now more qualified applicants than can be funded with nine going unfunded in the past year, and five additional applicants subsequently received. Of the 28 who completed service, 16 are still working at the site where they served their commitment (57%). Seven moved to the continental US (25%) and 21 are still working in Hawai‘i (75%). The loan repayers who left their original service positions still work in areas of need, including Maui, Haleiwa, for the Queens Health System, Castle Medical Center and Hawai‘i Pacific Health in Honolulu. One loan repayer is on deferment while helping with the regional COVID efforts. Another loan repayer had his obligation forgiven so that he could return to the Public Health Service. **Unfortunately, we will**

most likely have to close the program as the needed legislative match required for release of the federal grant funding was not continued this year.

- In addition, the AHEC Office has agreed to oversee the repayment responsibilities for new JABSOM scholarships which require scholarship recipient graduates to practice in Hawai‘i.

Ongoing Physician Workforce activities to retain the physician workforce

- Continuing Education:
  The 2020 Hawai‘i Health Workforce Summit offered seven hours of Continuing Education Credit to 535 participants in a virtual format for the first time. The Summit addressed avoiding practice burnout, teamwork, inter-professional practice, geriatric expertise, rural health and telehealth. The participant evaluation demonstrated a high level of satisfaction with the event and improvement in knowledge.

  In addition, the ECHO Hawai‘i project provided over 4,000 person-hours of continuing education between January 1 and November 21, 2020, covering the topics of Behavioral Health, Geriatrics and Pediatrics. The three options for case-based distance education through the supported Project ECHO in Hawai‘i with information summarized at www.hawaiiecho.info

  - Behavioral Health ECHO Every Tuesday noon to 1PM
  - Geriatrics ECHO Every second Wednesday noon to 1PM
  - Pediatrics ECHO Every first and third Wednesday’s noon to 1PM

- Assistance with the Medical Inquiry and Conciliation Panel (MICP) is offered for finding medical specialists and other physicians to serve on this required element of the State malpractice system. The MICP provides a kinder, gentler system for physicians working in Hawai‘i.

- AHEC is instrumental in implementing the Hawai‘i Health Preceptor Tax Credit for preceptors offering professional instruction, training, and supervision to students and residents in medicine, nursing and pharmacy. In 2019, the first year of implementation, $371,000 of tax credit was provided to 263 providers. Of the recipients, 79% were physicians volunteering clinical supervision, many in rural and neighbor island locations.

- AHEC continues to support Local Area Consortia to promote careers locally and to generate support for providers and future health professionals. Two Local Area Consortia continue for mental health providers on Maui and East Hawai‘i. These Mental

Health huis will also advance networking and educational interchange.

- A new program with the Hawai‘i State Rural Health Association combats opioid overdoses by paying any provider who completes buprenorphine waiver training and monitors opioid addictive patients an incentive of $1,000.

- AHEC is currently working with the Healthcare Association of Hawai‘i to bolster non-physician health professions in order to lighten the load on the physicians by maximizing teamwork and collaboration and assisting with O‘ahu and Maui Health Sector Partnership activities which increase students pursuing health careers.

- The Physician Workforce Assessment team is working with the Hawai‘i State Rural Health Association and the Hawai‘i Physician Recruiter’s Group to expand community welcoming of providers and increase ability for spouses to find jobs.

General Physician Workforce Activities

- In addition to these activities, Dr. Withy serves on the Hawai‘i Health Workforce Advisory Board, is assisting with Health Professional Shortage Area designations for additional areas of Hawai‘i and has provided informational sessions on workforce shortage, as well as provided de-identified data to nine institutions during 2020.

Next Steps

The Physician Workforce Research Team will continue to conduct the research and implement the solutions described above. In addition, further annual Health Workforce Summits are planned, emphasizing systems of care delivery, payment reforms and other factors that will improve provider recruitment and career satisfaction. These are anticipated to be held on the Saturday after Labor Day every year.

Dr. Withy is working closely with the Hawai‘i Physician Shortage Crisis Task Force, a group of 30 physicians and community members who along with local and federal lawmakers seek to improve conditions for physicians. Efforts include working toward an improved Medicare fee schedule and lifting of general excise tax requirements that are charged on Medicare and Medicaid patient visits, which physicians have to pay out of the insurance payments received, as they are not allowed to pass these required charges on to patients.

AHEC has struggled to create a mentoring pipeline to provide knowledge of and connection to practice opportunities across the State. The Bridge to Practice initiative encourages residents in primary care graduate medical education programs to be mentored by and explore work opportunities in independent practices across Hawai‘i. It is hoped that this program will encourage physician residents and fellows to practice in health care need areas upon graduation. A new program is planned as well, a “Young Doctor’s Hui” with regular social and professional activities on a quarterly basis, for collegial contact and potential educational opportunities associated with career networking for young physicians when the pandemic is controlled.

AHEC is currently in the process of hiring a Hawai‘i Physician Recruiter who will work closely with the Hawai‘i Physician Recruiter Group to match program graduates and interested physicians with open positions, assist with finding young doctors to take over practices of retiring physicians, and set up unique physician connection groups including Young Doctors groups and Mental Health Huis on all islands. This person will monitor job openings and update the Doc Jobs website weekly, as well as be available to address new ideas such as reaching out to Hawai‘i high school graduates who are at mainland colleges. Although one person was hired for this position, the position is being readvertised.

More information on ongoing and upcoming activities is available at the AHEC website: www.ahec.hawaii.edu. The AHEC office number is 808-692-1060 and Dr. Withy’s direct office line at JABSOM is 808-692-1070 and email is withy@hawaii.edu.

Appendix 1: Licensure Survey

The following questions ask for essential information needed by the University of Hawaii John A. Burns School of Medicine to help Hawaii better understand and address the need for physicians. Answering these questions is not required for license renewal but your assistance and cooperation is greatly appreciated. Your individual responses will be strictly confidential. For inquiries, please contact Dr. Kelley Withy, at the John A. Burns School of Medicine: 808-692-1070 or withy@hawaii.edu.

1. Do you provide direct healthcare services to individual patients in Hawaii?
   (if you are completely administrative or non-clinical please answer "No")
   Yes ☐ No ☐
   If "NO", SKIP remaining questions 2 through 11 and
   Go to bottom of page and click "NEXT"

2. Do you primarily serve an active duty military or military dependent population
   (VA physicians please answer "No")?
   Yes ☐ No ☐

3. Are you currently in training (internship, residency or fellowship)?
   Yes ☐ No ☐

4. What specialty/specialties do you practice and how many hours a week on average for each?

Specialty	Average Hours/Week

5. Please tell us about your primary practice environment:

   Primary Address (Office or Hospital):

   City: State:

   Zip Code: Phone:

   Email(s):

How many hours per week do you see patients at this address?

6. Is a majority of your income a result of being employed by a medical group, hospital, school (faculty) or other entity?
   Yes ☐ No ☐ Name of entity:

7. What is the size of your practice group (how many partners do you have including yourself)?
   1-2 ☐ 3-5 ☐ 6-10 ☐ 11 or more ☐

8. If you have more than one practice, please provide information for your second address:

   Second Address (Office or Hospital):

City: State:

Zip Code: Phone:

How many hours per week do you see patients at this address?

Do you have more than two practice locations in Hawaii? Yes No

9. How many hours a week do you provide telehealth care to Hawaii patients?

10. What year were you born?

11. What ethnicity/ethnicities do you identify with (check all that apply)?

12. Do you have any other comments/ideas/input on the physician workforce in Hawaii? Also feel free to contact Dr. Kelley Withy at withy@hawaii.edu if you have additional questions/ideas/suggestions:

Appendix 2: Physician Research Telephone Script

Please review each entry before calling. Physician offices may be busy, especially under current circumstances. You want to be prepared for any changes to data or sudden disruptions during the call. Among the various details we're confirming and updating, the most important are FTE, physician specialty, contact information, and address.

"Hi, I'm _____ with the UH Medical School Area Health Education Center doing physician workforce research."
(If they ask about our research: The purpose of this research is to identify where the largest shortages are so we can develop programs to recruit providers such as loan repayment programs).

"I'm calling to see if _____works here."

(If YES) "I have a few questions regarding this physician to update our database, would you or Dr._____ be able to assist us in our research?"

(If the receptionist doesn't feel comfortable, ask for an office manager. Otherwise, ask if you can leave a message or if there is a better time to call back)

It's in your best interest to ask questions by following the database, as inputting information that way will be easier. You may ask these questions in the following order:

"I wanted to confirm Dr._____'s specialty. Is it **[insert found specialty]**?"

"Is this the best **contact phone number** for the office/Dr._____?"

"I have the office/hospital **address** as _____. Is this correct?"

"Does Dr._____ work full time?" (If they ask, full time is 40+ hours per week) (If NO) "How many hours at this office?"

"Has the COVID pandemic changed his/her work hours in any way?"

"Does s/he work at any **other clinic locations**?" (If YES) "Would you happen to have the location and/or phone number?" *You'll call this second location to confirm FTE and other practice details. Some physicians may have more than two locations. Add any additional information to the 'Notes' column. Be sure to confirm FTE at every location you find.*

"How many **other physicians** work at this location?" *This is group size.*

If they seem friendly and have the time, ask: "Would you be able to answer a few more personal questions regarding demographics and education? All of the information we collect is confidential, and is used for research purposes only. (If YES) If you don't feel comfortable answering any of these questions, feel free to stop me at any time."

Continue asking in this manner to confirm the year of birth, medical school, and residency. A receptionist/office manager may not know this information.

"Thank you very much for your time and for supporting our work!"

ALWAYS BE POLITE AND THANK THEM FOR THEIR TIME. If they have any further questions that you don't know the answers to, you can direct them to me. My email is withy@hawaii.edu*, or they may call at 808-692-1070.*

"I'm not sure, but I can give you the contact of my supervisor! The Area Health Education Center's Director is Kelley Withy, and you can reach her at **[insert email or phone number or both, whichever they request]**"

----------If busy:

1. Would I be able to send an email or fax our survey?

2. Is there a better time to call back, or someone else available I can talk to?

3. Leave voicemail with name, reason for your call, best time to reach you, and contact number. Repeat this a second time in case they didn't hear the first time. You may want to create your own voicemail script to help with leaving messages.

If the health professional doesn't work there anymore:

Would you happen to know if they moved practice locations, moved out of state, or retired? (obtain new address if moved)

Appendix 3: Crosswalk of specialties included by category

Major Category	Category for Table	Subspecialties
PRIMARY CARE	**General & Family Practices**	General Practice Sports Medicine Family Medicine
	General IM	General IM
	Pediatrics	Pediatrics, General Med-Peds Adolescent Medicine Pediatrics, Other Peds Hospitalist
	Geriatrics	Geriatrics Geri Hospitalist
OBGYN	**OBGYN**	Gynecology (only) Gyn Onc OBGYN Perinatology (Maternal-Fetal Med) Reproductive Endo
SURGERY	**General Surgery**	General Surgery Surgical Critical Care Surgery, Other Surgery Oncology
	Colorectal Surgery	Colorectal Surgery
	Neurological Surgery	Neurological Surgery
	Ophthalmology	Ophthalmology
	Orthopedic Surgery	Orthopedic Surgery Hand Surgery
	Otolaryngology	Otolaryngology
	Plastic Surgery	Plastic Surgery
	Thoracic Surgery	Thoracic Surgery
	Urology	Urology Peds Urology
	Vascular Surgery	Vascular Surgery
ANESTHESIOLOGY	**Anesthesiology**	Anesthesiology
EMERGENCY MEDICINE	**Emergency Medicine**	Emergency Medicine
BEHAVIORAL HEALTH	**Psychiatry**	Adult Psych Addiction Psych Child & Adolescent Psych Geri Psych Psych Hospitalist
RADIOLOGY	**Radiology**	Diagnostic Radiology Interventional (Therapeutic) Radiology

		Neuroradiology Nuclear Medicine Radiation Oncology
MED SPEC	**Allergy & Immunology** **Cardiology** **Dermatology** **Critical Care** **Endocrinology** **Gastroenterology** **Hematology & Oncology** **Infectious Disease** **Neonatal-perinatal** **Nephrology** **Neurology** **Pathology** **Physical Medicine and Rehabilitation** **Pulmonology** **Rheumatology** ***Other Med Spec***	Allergy/Immunology Cardiology Peds Care Dermatology Critical Care Peds Crit Care Neuro Crit Care Endocrine and Metabolism Peds Endo Gastroenterology Peds GI Onc/Hem Peds Onc/Hem Infectious Diseases Neonatology Nephrology Peds Nephro Neurology Peds Neuro Pathology, General PM&R Pulmonary/Pulmonology Rheumatology Peds Rheum *Other* *Concierge* *Complimentary/Alternative Medicine* *Hospitalist* *Occupational* *Palliative* *Pain Medicine* *Preventive Medicine* *Sleep* *Urgent Care* *Medical Genetics* *Wound Care*

Hawai`i Physician Workforce Assessment 2020

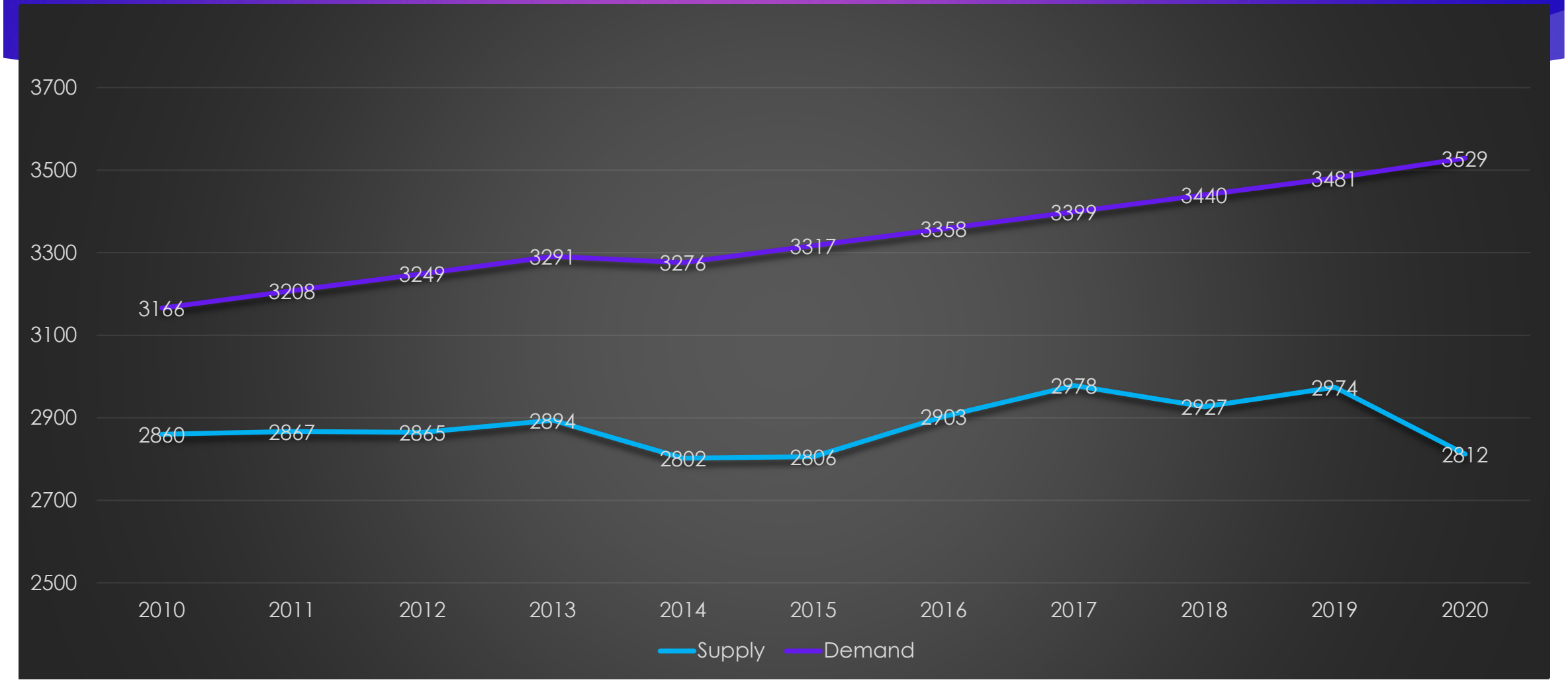
KELLEY WITHY

WITHY@HAWAII.EDU

Hawaii Physician Workforce 2020

- There are 985 DO, 9242 MD (10,227) licensed physicians in Hawaii
- Current supply of physicians is 3,290 for 2,812 Full Time Equivalents of practicing physicians
- A decrease of 162 FTEs from 2019
- At least 110 retired, 8 previously active passed away, 139 moved, 120 decreased work time

Physician Workforce Trends



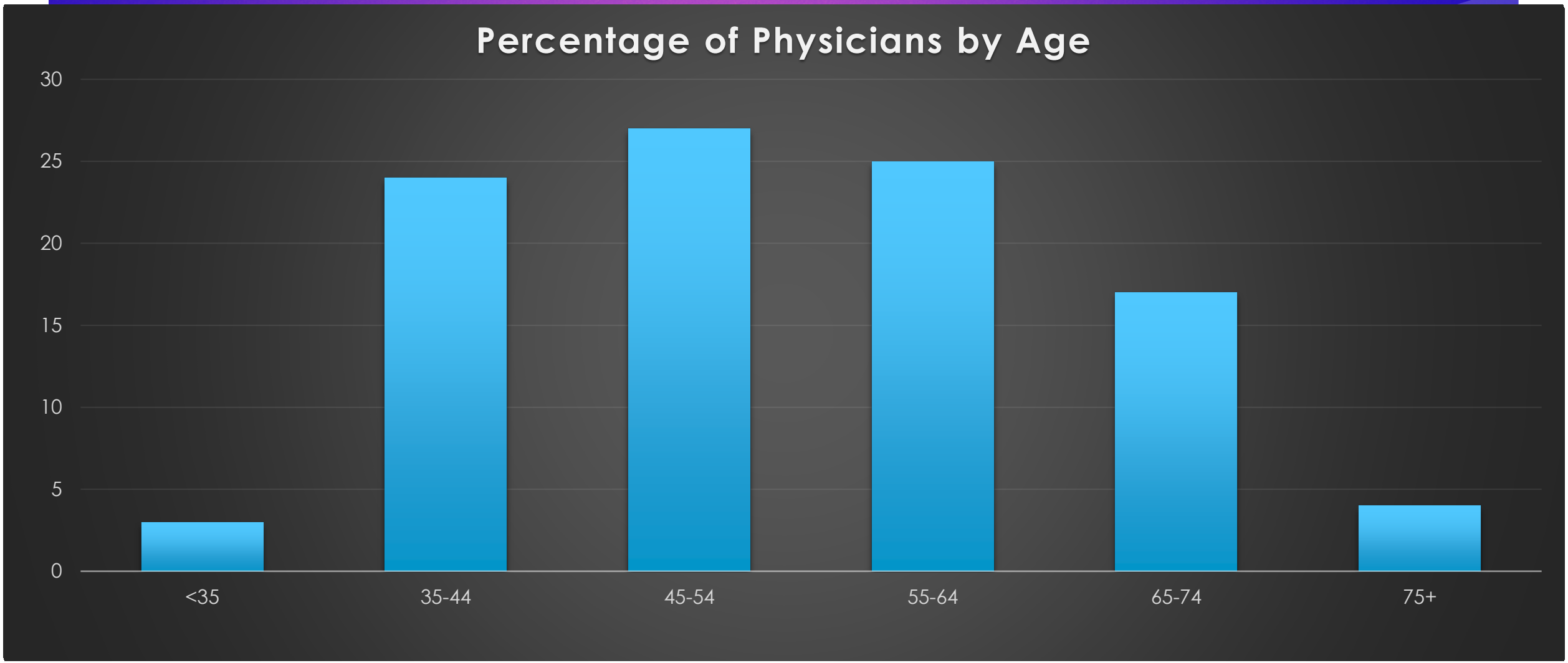
Physician Shortage

- Shortage of about 717 with basic calculations, but 1,015 when you examine island and specialty specific needs
- *Challenge with the numbers: hospitalists included in other-currently obtaining demand statistics for hospitalists*

Workforce Demographics

- 46% of our physicians are 55 or over
- 21% of our docs are already 65!
- One of us is 90.
- Women make up 37% of the workforce

2020 Physician Distribution by Age



Ethnic Mix of Hawaii Physicians

Ethnicity	Total	Percent of Total	Percent of Ethnic group who are Female
Asian	948	29%	38%
Black/African American	19	1%	37%
Hispanic/Latinx	30	1%	50%
Caucasian/White	730	22%	32%
Native Hawaiian/ Pacific Islander	86	3%	42%
Other	79	2%	35%
More than one race	223	7%	52%
Unknown	1,153	35%	33%

Telehealth Adoption in Hawaii

- Percent of physicians who report using Teleheatlh:
  - 2014 MD/DO surveys: 2%
  - 2016 MD/DO surveys: 15%
  - 2018 MD/DO surveys: 21%
  - January 2020, MD Survey: 24%
  - June 2020, DO Survey: 52%

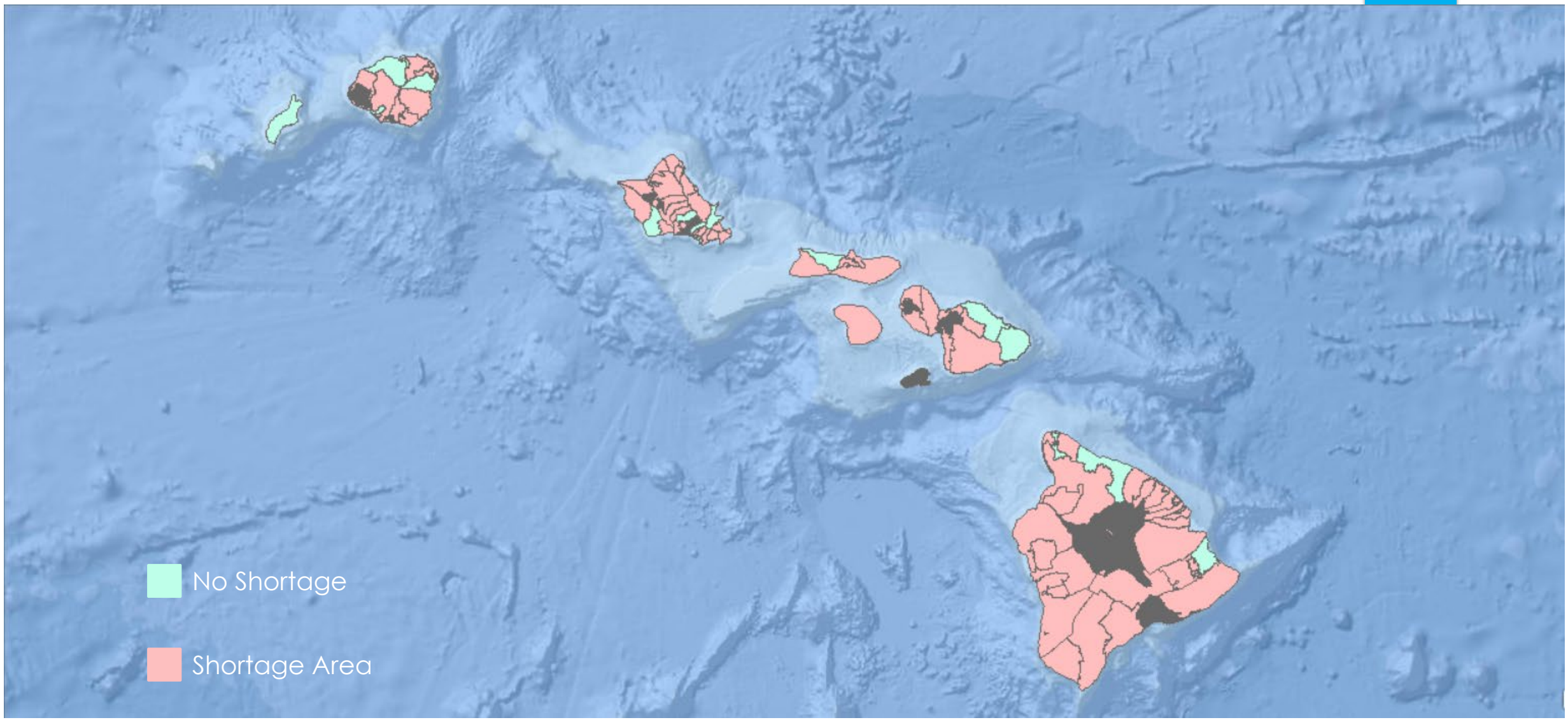
About Physician Practices

Year	2014	2016	2018	2020
Employed	54%	56%	55%	58%
Group <6	54%	52%	50%	47%

County Comparisons
Physician Shortages By County

	Oahu	Big Island	Maui County	Kauai	State-wide
Shortage	475	287	191	61	1,015
Percent	20%	53%	43%	33%	29%

Physician Shortages by County 2020



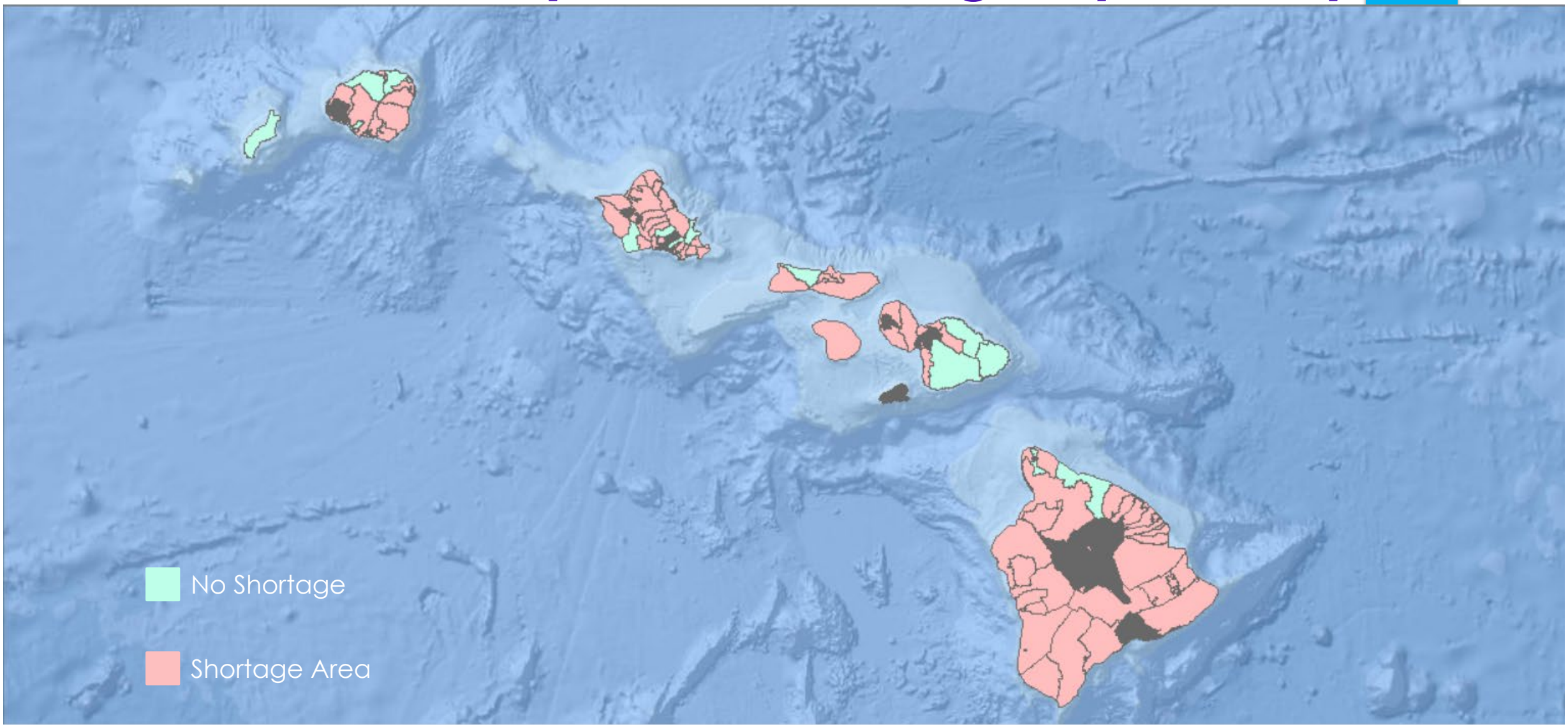
Greatest Shortages

- Primary Care (Family Medicine, Internal Medicine, Pediatrics, Geriatrics) (32%)
- Colorectal Surgery (64%)
- Pathology (64%)
- Pulmonology (63%)
- Infectious Disease (58%)
- Allergy & Immunology (55%)

Primary Care Shortage by County

	Oahu	Big Island	Maui County	Kauai	State-wide
Shortage	258	73	64	17	412
Percent	29%	37%	40%	26%	32%

PRIMARY CARE Physician Shortage by County



How Has COVID-19 Impacted Hawaii's Workforce?

- Total 415 physicians (as of August 2020) report having been impacted by COVID pandemic out of 989 respondents (42%).
- reduced hours
- do telehealth
- closed practice temporarily or indefinitely
- reduced patient volume
- retired
- increased hours
- various other reasons (practice protocol changes, more time with patients, travel restrictions, etc)