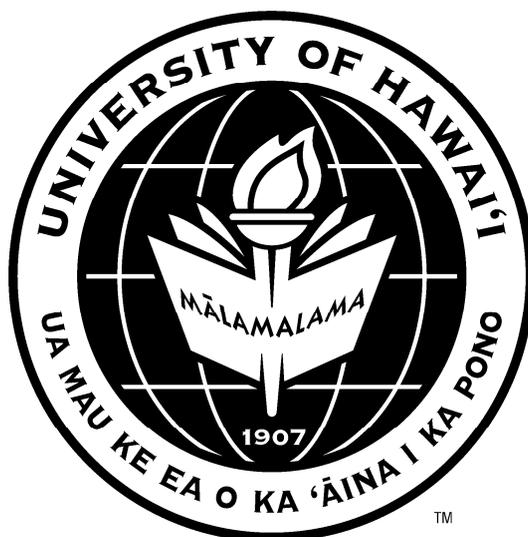


UNIVERSITY OF HAWAI‘I SYSTEM ANNUAL REPORT



REPORT TO THE 2017 LEGISLATURE

Annual Report on Findings from the
Hawai'i Physician Workforce Assessment Project

Act 18, SSLH 2009 (Section 5)
As amended by
Act 186, SLH 2012

November 2016

Hawai'i Physician Workforce

In accordance with Act 18, SSLH 2009 and Act 186, SLH 2012

A report to the 2017 Hawai'i State Legislature:

Findings from the Hawai'i Physician Workforce Assessment Project

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October 2016

2016 Hawai'i Physician Workforce Assessment Executive Summary

There are currently 3,693 physicians providing patient care to Hawai'i patients in Hawai'i for a total of 2,903 Full Time Equivalents (FTEs) of direct care to patients. The national demand model applied to the State of Hawai'i indicates a need for 3,358 total FTEs or a shortage of 455, but when island geography is considered, demand is 487, and when unmet specialty specific needs by island are examined, the unmet need for physicians totals 707 FTEs. Of this shortage, the largest single factor is primary care with a shortage of 228 FTEs across islands.

The changes in the physician supply in Hawai'i over the past six years follow no evident trend, however we do know that average loss to retirement remains about 50 physicians a year. Estimated projections are for a shortage of between 300 and 700 physician FTEs by 2020. The improvement in the size of the physician workforce in the past year is a very positive sign, however it must be kept in mind that Medicare will be enacting penalties in 2019 for not utilizing electronic health resources and not reporting quality metrics, so we may see a significant number of retirements at that time. Furthermore, we must be very cognizant of the status of our active physicians. For the first time the researchers are aware of, there have been two physician suicides in one year in Hawai'i. Therefore, both maintaining the career satisfaction of our current physicians, and the training and recruitment of new physicians are essential to building the health workforce needed by the people of Hawai'i.

To help meet these needs, the Hawai'i Physician Workforce Special Fund activities have focused on eight activities:

1. Maintain the workforce database and provide de-identified data as requested throughout the state.
2. Provide presentations on workforce statistics (over 20 in 2016) and data requests of de-identified data (12).
3. Provide continuing education in a collaborative and ongoing manner to keep providers connected and informed: The Hawai'i Health Workforce Summit provided continuing education to a group of 485 healthcare workers in 2015 and 484 healthcare workers in 2016. In addition, in 2016, the ECHO program provided 1,120 people hours of case-based education.
4. Provide Loan repayment: the Hawai'i State Loan Repayment Program currently supports 12

repayers, and has supported 25 during the 4 years of existence.

5. Online job posting and promotion through collaboration with Hawai'i Physician Recruiters Group includes all known physician job openings, connecting inquiring physicians to jobs and alerting recruiters to potential interested physicians who advertise in 3RNet.
6. Support the health career pipeline by promoting health careers to students across Hawai'i through publication of the 138-page Health Career Navigator resource (2,000 printed and distributed across the State) and the Pre-Health Career Corps mentoring program for 360 youth to date.
7. Collaboration with the Health Workforce Advisory Committee to increase loan repayment, expand conversation about health workforce needs and methods for monitoring.
8. Assist with potentially increasing Health Professions Shortage Area designations in Hawai'i.

Ideas for future additional activities include:

1. Creating a Bridge to Practice by matching medical students and residents with practicing physicians who may want to have a partner join them in the near future. This can be supported through clinical rotations as a medical student and resident and can emphasize rural and underserved areas with the greatest needs.
2. Creating a 'Happy Doctor' web portal for providers in Hawai'i to share ideas on how to increase career satisfaction.
3. Work with Hawai'i Medical Association and other local physician groups to maximize career satisfaction and minimize career stress.

Hawai'i Physician Shortage: Supply and Demand

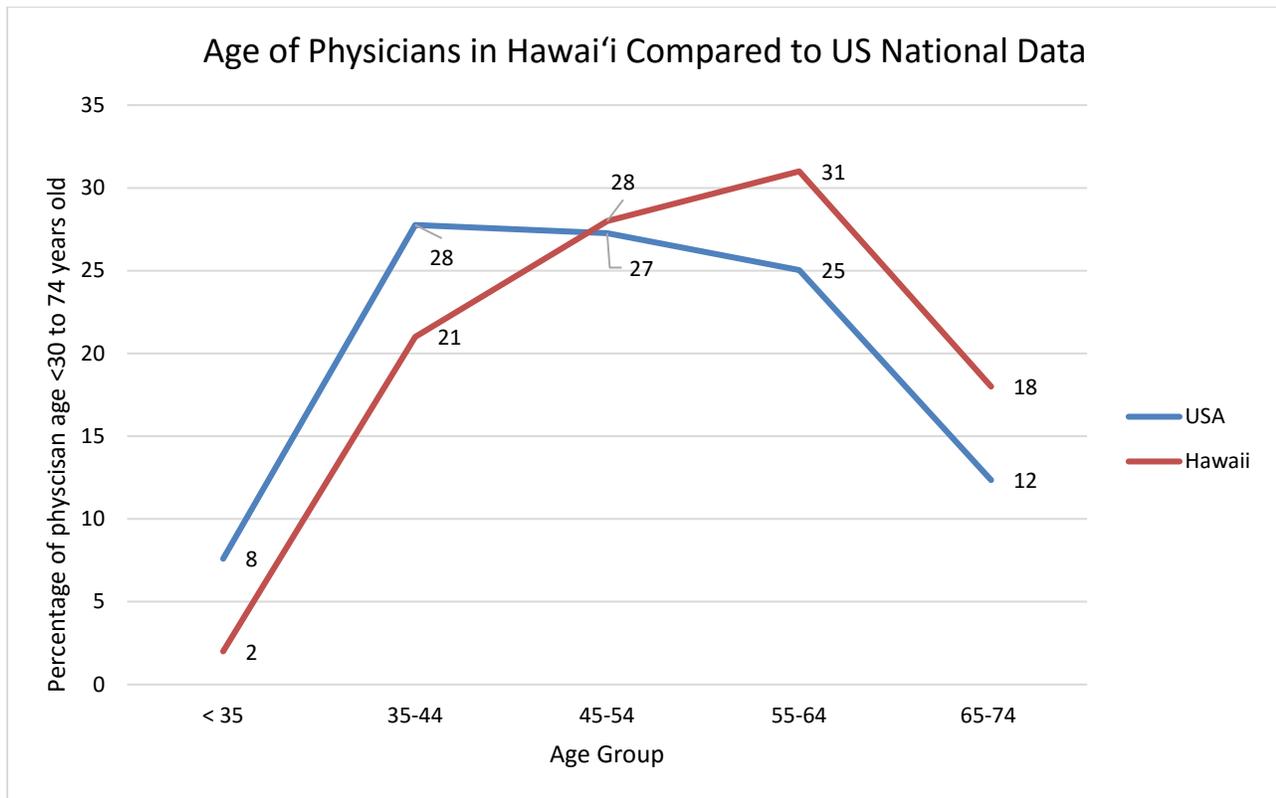
The **supply** of physicians in Hawai'i is estimated based on responses to a voluntary survey of physicians administered at the time of state medical license renewal, queries of local community contacts, internet searches and direct calling of physician offices to confirm hours of active patient care. Data were obtained for an estimated 98% of the providers who report working in Hawai'i. Of the over 8,900 physicians licensed to practice in Hawaii, only 3,693 physicians are 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 2,903 FTEs.

Workforce statistics:

- >8,900 physicians licensed in Hawai'i
- 3,693 practicing non-military physicians in Hawai'i
- 2,903 total Full Time Equivalents (FTEs) of physicians practicing in Hawai'i or caring for Hawai'i patients
- Demand grows by 50 FTE/yr, and we lose 50 physicians/yr, so we need 100/yr to maintain the current staffing levels
- 608 of our physicians are 65 years or over in 2016
- 31% female, 69% male
- 54% of physicians work in practices of five physicians or less (down from 58% in 2014)
- 56% of physicians are employed
- Number of physicians report participating in telehealth increase to 15% (up from 2% in 2014)

Currently, 31% of Hawai'i's physician workforce is between the ages 55 and 65, 15% is between 66 and 75, and 3% are over 75. The average age of Hawai'i's physicians is 55, compared to the US average of 51, and the age distribution compared to the US physician age distribution is displayed in Figure 1.¹ Within 10 years, 52% of Hawai'i's physicians will be 65 or over, a common retirement age.

Figure 1. Age of Hawai'i Physicians Compared to Average US Physicians¹



There are slight improvements in supply numbers for physicians between 2015 and 2016, but no large jumps in supply numbers over the past 6 years. Supply numbers are given in full time equivalents of physician service based on a maximum 40-hour patient care week (so even if someone works 80 hours, we only count her as 1.0 FTE).

Table 1. Hawaii Physician Supply Trends (in Full Time Equivalents)

Year	2010	2012	2013	2014	2015	2016
FTEs	2860	2995	2894	2802	2806	2903

Of the supply of physicians in Hawai'i, 36% work in large practices (over 10 physicians within one practice), and 39% of physicians work in small practices (1-2 physicians per practice). A total of 54% work in practices of 5 or less, which is 4% fewer than on the 2014 physician relicensure survey.

Table 2. Distribution of Group Size of Hawai‘i Physicians

Group Size	1-2	3-5	6-10	Over 10
Percent of Physicians	39%	15%	10%	36%

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 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 in 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, therefore, 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, but 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 is 3,358 FTEs before taking into account island geography and oversupply in some areas and in some specialties. After adjusting for these factors, the current estimated shortage is 707 physician FTEs.

Projections of future supply are difficult to assess, as there are no clear indications of trends based on the six years of data available. Therefore three projections are offered: 1. No Gain of Physicians Annually; 2. Current Growth of 100/year; and 3. Best Guess, which is growth of 50 a year, a drop of 50 in 2019 when Medicare payment changes will be felt most acutely, then continuing with a growth of 50

a year.

Figure 2: Hawai'i Physician Supply and Demand Estimates with No Gain of Physicians Annually ¹

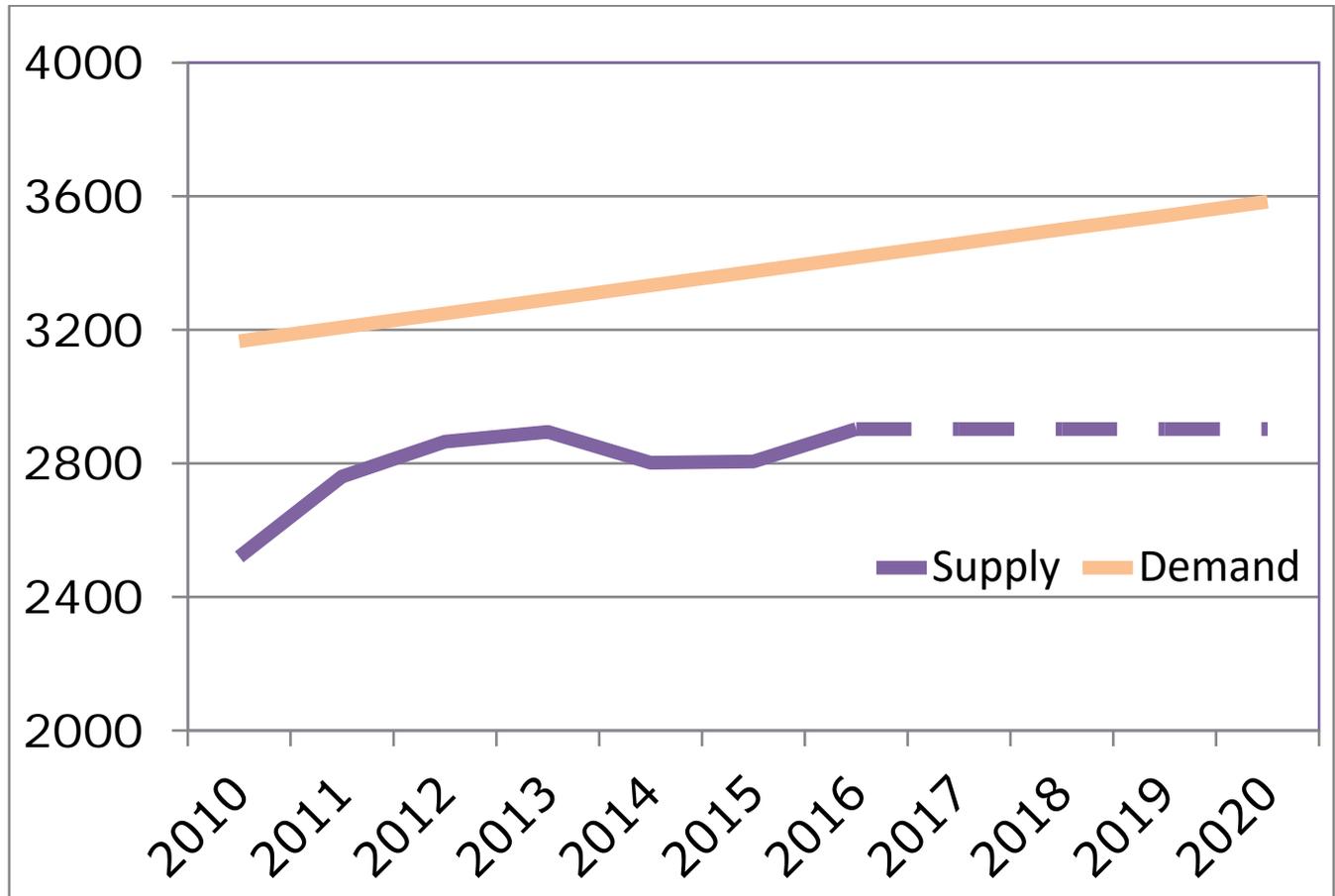


Figure 3. Hawai'i Physician Supply and Demand Estimates with Gain of 100 Physicians a Year

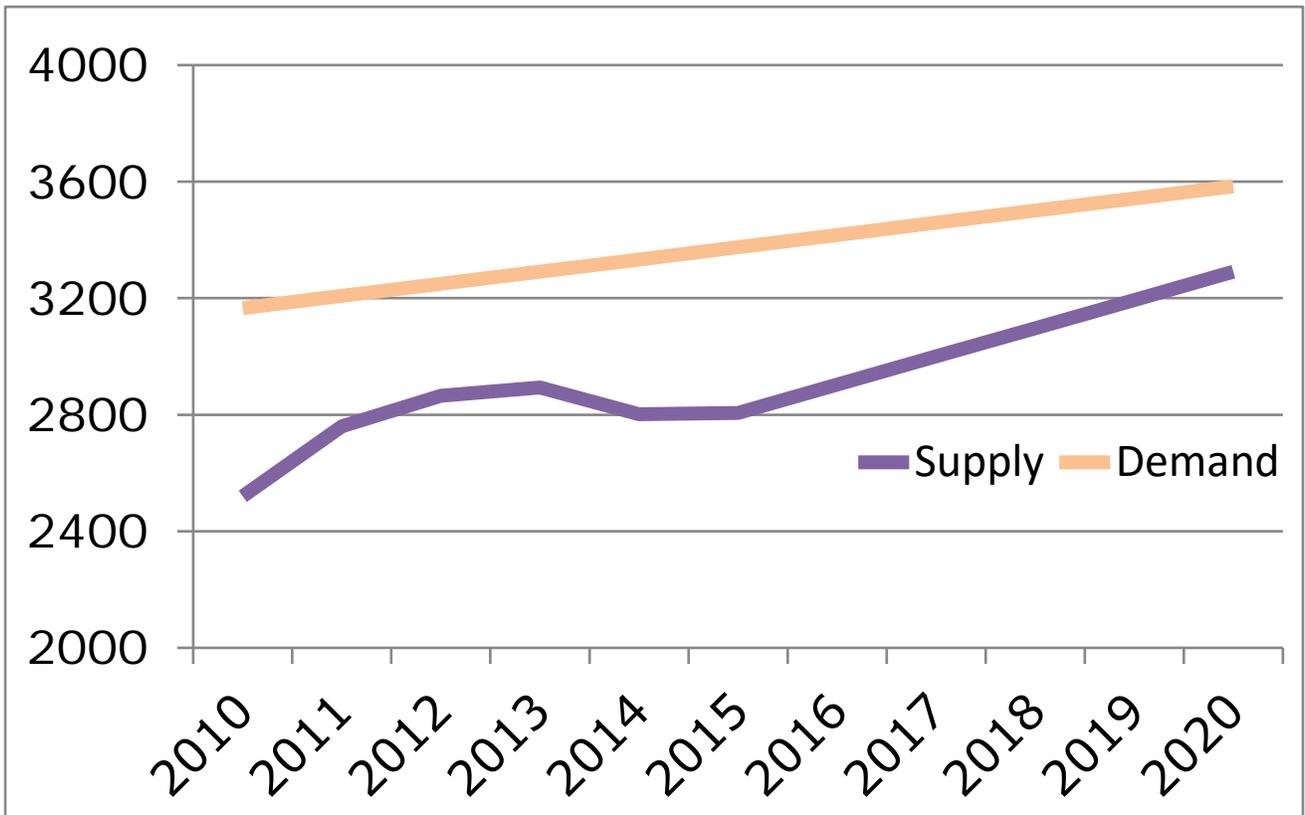


Figure 4. Hawai'i Physician Supply and Demand Estimates-Best Guess

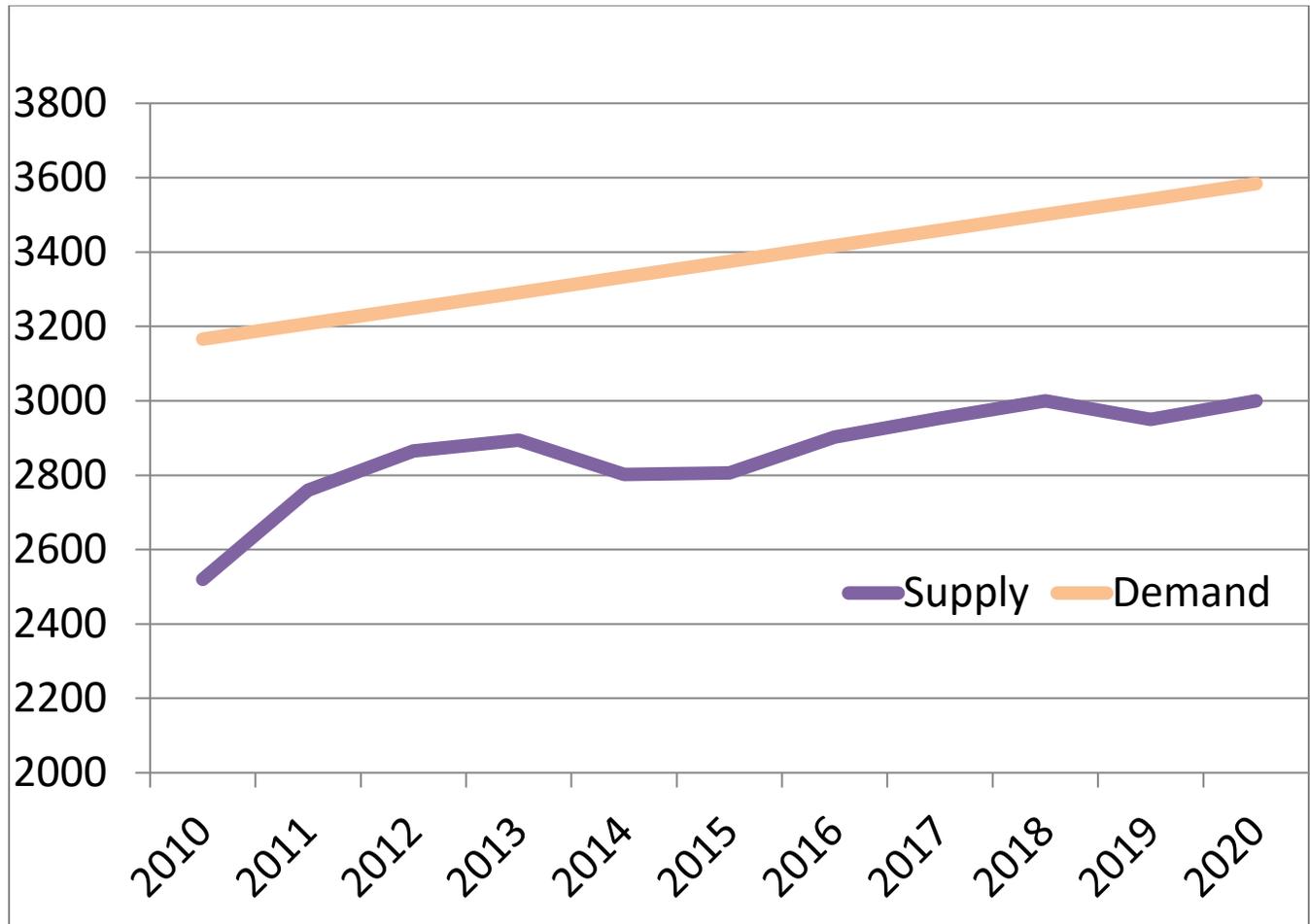


Table 3: Largest Shortages of Physicians by Percentage and by Numbers of Providers by County

County	O‘ahu	Maui	Kaua‘i	Hawai‘i
Greatest Shortage by percent	Infectious Disease, Pathology, General Surgery	Allergy, Colorectal, Neurosurgery	Endocrinology, Rheumatology, Infectious Disease, Critical Care, Neonatal, Neurology, Colorectal Surgery	Infectious Disease, Neonatology, Colorectal Surgery
Greatest Shortage by Full Time Equivalents	Primary care, General Surgery, Pathology	Primary Care, Emergency Medicine, Psychiatry	Primary Care, Obstetrics, Cardiology, Neurology	Primary Care, Anesthesiology, Cardiology, Orthopedic, Pathology

The greatest shortages by county are estimated based on supply and demand comparisons and are included in Tables 4-7. This is based on number of provider FTEs needed compared to the average number of providers a similar population would have on the US Mainland. Of note, the “Other” category is excluded from the tables until improved demand estimates are obtained. The “Other” category includes hospitalist, pediatric hospitalist, occupational medicine, sleep medicine, complementary and alternative medicine, pain medicine, preventive medicine and radiation oncology.

Table 4: Supply and Demand by Specialty for Hawai'i County

2016 County Statistics	Hawai'i Demand	Hawai'i Supply	Hawai'i Shortage	Percent Shortage
Primary Care	180	143	36	20%
Allergy & Immunology	3	1	2	72%
Anesthesiology	24	13	12	48%
Cardiology	16	6	11	66%
Colorectal Surgery	1	0	1	100%
Critical Care	10*	1	3	87%
Dermatology	7	4	3	42%
Emergency Medicine	32	29	3	10%
Endocrinology	4	1	3	79%
Gastroenterology	9	6	4	39%
General Surgery	17	8	9	54%
Hematology & Oncology	10	3	6	65%
Infectious Disease	6	0	6	100%
Neonatal-perinatal	3	0	3	100%
Nephrology	5	4	1	14%
Neurological Surgery	3	0	3	93%
Neurology	11	2	8	78%
OBGYN	26	18	8	31%
Ophthalmology	12	7	5	43%
Orthopedic Surgery	15	6	10	62%
Otolaryngology	6	3	3	48%
Pathology	12	3	10	80%
Physical Medicine and Rehabilitation	5	2	3	63%
Plastic Surgery	5	2	3	65%
Psychiatry	28	24	4	14%
Pulmonology	8	1	7	87%
Radiology	21	14	7	32%
Rheumatology	3	2	1	46%
Thoracic Surgery	3	0	3	91%
Urology	7	1	5	82%
Vascular Surgery	2	3	0	0%
Other category excluded				

*Adjusted for island geography (five providers minimum per hospital providing services).

Table 5: Supply and Demand by Specialty for Maui County

2016 County Statistics	Maui Demand	Maui Supply	Maui Shortage	Percent Shortage
Primary Care	147	112	34	23%
Allergy & Immunology	2	0	2	100%
Anesthesiology	20	17	3	13%
Cardiology	13	11	2	12%
Colorectal Surgery	1	0	1	100%
Critical Care	5*	3	0	13%
Dermatology	5	8	0	0%
Emergency Medicine	26	15	11	43%
Endocrinology	3	1	2	63%
Gastroenterology	7	5	2	33%
General Surgery	14	5	9	63%
Hematology & Oncology	8	5	3	36%
Infectious Disease	5	1	4	87%
Neonatal-perinatal	3	0	2	92%
Nephrology	4	4	0	1%
Neurological Surgery	2	0	2	94%
Neurology	9	6	3	38%
OBGYN	21	16	5	25%
Ophthalmology	10	7	3	28%
Orthopedic Surgery	13	8	5	38%
Otolaryngology	5	5	1	10%
Pathology	10	2	8	79%
Physical Medicine and Rehabilitation	4	3	1	28%
Plastic Surgery	4	2	2	54%
Psychiatry	23	13	10	45%
Pulmonology	6	2	4	68%
Radiology	16	17	0	0%
Rheumatology	2	0	2	88%
Thoracic Surgery	2	1	1	53%
Urology	5	3	2	43%
Vascular Surgery	1	1	1	46%
Other category excluded				

*Adjusted for island geography (five providers minimum per hospital providing services).

Table 6: Supply and Demand by Specialty for Kaua‘i County

2016 County Statistics	Kaua‘i Demand	Kaua‘i Supply	Kaua‘i Shortage	Percent Shortage
Primary Care	63	48	16	25%
Allergy & Immunology	1	0	1	80%
Anesthesiology	9	9	0	0%
Cardiology	6	2	4	71%
Colorectal Surgery	4	0	0	100%
Critical Care	5*	0	1	100%
Dermatology	2	1	1	57%
Emergency Medicine	15*	13	2	12%
Endocrinology	1	0	1	100%
Gastroenterology	3	1	2	69%
General Surgery	6	5	1	23%
Hematology & Oncology	3	2	1	39%
Infectious Disease	2	0	2	100%
Neonatal-perinatal	1	0	1	100%
Nephrology	2	1	1	35%
Neurological Surgery	1	0	1	91%
Neurology	4	0	4	100%
OBGYN	9	4	5	61%
Ophthalmology	4	5	0	0%
Orthopedic Surgery	5	3	3	52%
Otolaryngology	2	2	0	0%
Pathology	4	1	3	77%
Physical Medicine and Rehabilitation	2	1	1	41%
Plastic Surgery	2	0	2	94%
Psychiatry	10	7	3	26%
Pulmonology	3	1	2	82%
Radiology	7	8	0	0%
Rheumatology	1	0	1	100%
Thoracic Surgery	1	1	1	50%
Urology	2	1	1	48%
Vascular Surgery	1	0	1	93%
Other category excluded				

*Adjusted for island geography (five providers minimum per hospital providing services).

Table 7: Supply and Demand by Specialty for Honolulu County

2016 County Statistics	Honolulu Demand	Honolulu Supply	Honolulu Shortage	Percent Shortage
Primary Care	858	716	142	17%
Allergy & Immunology	14	12	2	16%
Anesthesiology	112	86	25	23%
Cardiology	76	62	15	19%
Colorectal Surgery	5	4	1	19%
Critical Care	18	32	0	0%
Dermatology	31	37	0	0%
Emergency Medicine	105	130	0	0%
Endocrinology	20	18	2	9%
Gastroenterology	42	44	0	0%
General Surgery	79	44	34	44%
Hematology & Oncology	40	33	7	18%
Infectious Disease	27	11	16	59%
Neonatal-perinatal	15	29	0	0%
Nephrology	24	21	3	11%
Neurological Surgery	14	9	6	39%
Neurology	51	37	14	27%
OBGYN	127	128	0	0%
Ophthalmology	57	74	0	0%
Orthopedic Surgery	72	59	14	19%
Otolaryngology	29	27	2	6%
Pathology	58	26	32	56%
Physical Medicine and Rehabilitation	23	26	0	0%
Plastic Surgery	21	24	0	0%
Psychiatry	147**	147	0	0%
Pulmonology	37	22	15	40%
Radiology	90	90	0	0%
Rheumatology	13	13	0	0%
Thoracic Surgery	14	9	5	34%
Urology	31	26	4	14%
Vascular Surgery	9	9	0	0%
Other category excluded				

**Adjusted from 131 calculated demand to equal supply as demand is anecdotally not met.

Solutions Being Implemented

Efforts to grow the population of satisfied physicians working in patient care in Hawai‘i are many. The Physician Workforce Research Team held the first Physician Workforce Summit in 2010 in order to prioritize the interventions to initiate first. At the first Summit, 10 solutions were identified as the most important interventions in Hawaii to improve the physician workforce. These are: Expand the pathway to health careers; Expand rural training opportunities; Support practice reform such as Patient Centered Medical Home; Inter-professional teamwork in practice; Payment reform; Rural payment differential; Community Involvement; Medical malpractice reform; Administrative simplification; and Assistance with Electronic Health Records. In 2012, with the reauthorization of the Physician Workforce Assessment activities and the emphasis on solutions created in Act 186, SLH 2012, the Physician Workforce Research team began closer collaboration with the Hawai‘i Medical Education Counsel which identified two additional activities: a state loan repayment program and an initiative to recruit Hawai‘i medical training graduates back to practice in Hawai‘i.

Activities have been accomplished in all areas except for Rural Payment Differential, which has met with resistance in the changing medical insurance marketplace. The most notable successes of the Physician Workforce Assessment activities are listed below by category:

- 1) Expand the pathway to health careers: The Physician Workforce Assessment team has made contact with over 3,000 health professions students in the intervening year. Even more exciting, is the development of the Hawai‘i Health Careers Navigator, a 138-page health careers resource book with information on all the health professions in Hawaii and local resources for pursuit of health careers, which was printed and distributed to 2,000 students, counselors and parents with Hawai‘i federal grant funding and can be viewed at www.ahec.hawaii.edu. It is now in its second printing and a Student Companion booklet to the Navigator is in its final draft to be posted on www.ahec.hawaii.edu soon. Federal grant funding has also been obtained to begin the Hawai‘i Pre-Health Career Corps for students interested in health careers to receive shadowing, research and mentoring experiences with 360 students currently enrolled;
- 2) Expand rural training opportunities: AHEC is working with the health professions schools in Hawai‘i to expand rural training opportunities and currently provides these to dozens of Hawai‘i medical, nurse practitioner, social work and pharmacy students. Efforts are being made to expand inter-professional education in collaboration with the UH Mānoa College of Health

Sciences and Social Welfare.

- 3) Support Practice Reform was addressed at the 2016 Hawai'i Health Workforce Summit that offered eight hours of Continuing Education to the 484 participants. The Summit addressed new models of care, new payment methodologies, practice planning, retirement planning, oral health topics, geriatric topics, rural health and distance education.
- 4) Payment reform and interprofessional practice are always highlights of the Hawai'i Health Workforce Summit.
- 5) Administrative simplification is proving challenging in the changing healthcare environment, but the Physician Workforce team is collaborating with medical organizations to highlight ideas for simplification when possible.
- 6) Community Involvement - the Physician Workforce Assessment team is working with the Hawai'i State Rural Health Association and the Hawai'i Physician Recruiter Group to expand community welcoming of providers and increase ability for spouses to find jobs.
- 7) Medical Malpractice Reform was introduced in 2013 and the impact is being studied, but is initially disappointing. Dr. Withy regularly recruits additional physicians to participate in the Medical Inquiry and Conciliation Panels.
- 8) Electronic Health Records was a topic of the 2015 and 2016 Health Workforce Summits.
- 9) The Hawai'i State Loan Repayment Program received an additional three years of funding at \$225,000 a year for the period of 9/1/2014 through 8/30/2018. This has supported 25 loan repayers to date with 11 active loan repayers at this time.
- 10) Finally, the AHEC.hawaii.edu website advertises job opportunities in Hawai'i to providers interested in practice and disseminates information. AHEC is partnering with the Hawai'i Medical Association to create a Pipeline to Practice for medical students to receive mentoring from established practices; and AHEC is partnering with the Hawai'i Recruiters Group to reach out to all residency programs in Hawai'i with information on how to find practices, jobs and resources in Hawai'i and creation of a pop-up display booth for presenting at mainland conferences.
- 11) In addition to these activities, Dr. Withy serves on the Hawai'i Health Workforce Advisory Committee, is assisting with Health Professions Shortage Area designations for additional areas of Hawai'i and has provided over 20 informational sessions on workforce shortage, as well as provided de-identified data to 12 inquirers.

Next Steps

The Physician Workforce Research Team will continue to conduct the research and implement the solutions described above. Additional research will be conducted to identify who is entering and leaving the workforce, and assess both the Physician Assistant and Advanced Practice Nurse Practitioner workforce to enhance the accuracy of the demand for healthcare services. In addition, annual Health Workforce Summits are planned, emphasizing systems and payment reforms and other factors that will improve provider recruitment and career satisfaction. Additional resources are being sought to strengthen the Bridge to Practice initiative to include primary care residents to work in neighbor island practices, in hopes of their practicing there upon graduation. In addition, AHEC is hoping to start a web portal for Hawai'i physicians to share ideas on improving career satisfaction, possibly finding a way for patients to send electronic appreciation emojis to physicians, and collaborating with organizations across the state to improve physician satisfaction and decrease burn out.

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: 2015-2016 Physician Workforce Relicensure Survey Questions

2015 Physician Workforce Survey Questions

1. Do you provide healthcare to patients in Hawai'i? Yes No If no, please skip to next page
2. Do you primarily serve a military or military dependent population? Yes No
3. Are you still in training (internship, residency or fellowship)? Yes No
4. Are you primarily a hospital-based physician? (Anesthesia, Emergency, Hospitalist, etc)?
Yes No
5. What specialty/specialties do you practice?
6. Please tell us about your primary practice environment:
 - a. Address 1 (Office or Hospital):
 - b. City
 - c. State
 - d. Zip code
 - e. Phone number
 - f. Email
 - g. Hours per week you see patients at this addressIf you have more than one practice, please provide information for your second address:
 - a. Address 1 (Office or Hospital):
 - b. City
 - c. State
 - d. Zip code
 - e. Phone number
 - f. Hours per week you see patients at this address
7. Do you have more than 2 practice sites in Hawai'i?
8. 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: _____
9. 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
10. Do you provide care to Hawai'i patients via telemedicine? Yes No

Appendix 2: Evaluation of 2016 Hawai‘i Health Workforce and IT Summit

Of the 484 participants, the evaluation was completed by 91 physicians (including resident and retired), 27 Nurse Practitioners/Registered Nurses, 35 Full-/Part-time Faculty, 3 Administrators, 1 Medical Assistant, 30 Dentists, 7 Dental Hygienists, and 10 others (including social work, health education and students).

Do you currently work in an inter-professional practice?	Yes	91	No	99
Do you use telehealth/telemedicine in your practice?	Yes	28	No	163
If no, are you interested in using telehealth/telemedicine?	Yes	68	No	93
Are you employed in a Medically Underserved Community (MUC)?	Yes	42	No	145
Are you employed in a rural, urban, and/or primary care setting?	Rural	28		
	Urban	85		
	Primary Care	64		

Session ratings	Excellent	Above Average	Average	Below Average	Poor
Opening session: Payment changes	86	76	33	3	1
Break out 1: Geriatrics	31	25	18		
Break out 1: HIT	3	9	6		
Break out 1: Physician Happiness	42	9	4		
Break out: Rural Health	15	16	1	1	
Break out 1: Oral Health	16	18	3		
Lunch session: Health Workforce Update	81	59	34	1	
Lunch session: Dr. Stephen Beeson	122	43	17	2	
Break out 2: Geriatrics End of Life	29	16	11		
Break out 2: Dementia Simulation	17	9	2		
Break out 2: Oral Health	17	11	7	1	
Break out 2: Rural Health Telehealth	22	16	4		
Break out 2: Early Career Planning		2	1		
Break out 3: Oral Health	15	15	2		
Break out 3: Geriatrics	25	21	10		1
Break out 3: Inter-professional Practice	17	13	3		
Break out 3: Rural Health Caucus	10	4	1		
Break out 3: Retirement Planning	3		1		

Comments on breakout sessions:

- A bit limited.
- All breakout sessions were interesting and engaging.
- All were excellent.
- Appreciate inclusion of dental in your summit.
- Community health worker session excellent.
- Dementia was useful exercise.
- Dr. Chodosh - good big picture. Would like more specifics - tools, validated questions, workflows, etc.
- Dr. Chodosh presented very important information.

- Dr. Grover was excellent!
- Dr. Suzuka is so fantastic; excellent speaker, enthusiastic, connected with audience, humorous (3).
- Dynamic, stimulating, inspiring.
- Enjoyed the session on inter-professional practice.
- Excellent (4).
- Excellent rural health sessions! (3)
- Excellent sessions, very educational, speakers were very knowledgeable.
- Excellent! Especially lunch session!
- Fantastic, valuable information.
- Found one of the breakout sessions interesting.
- Generally on good level, well prepared speakers.
- Geriatric presentation was terrific in integrating it into primary care.
- Good arrangement. Have freedom to flow.
- Good choices.
- Good.
- Great ... coordination with other providers and representatives.
- Great job! Great speakers.
- Great topic headers (oral health, rural, inter-professional, geriatrics and non-CME)
- Great topics.
- Great!
- Hard to hear last lunch session.
- High quality, but not so applicable to my needs.
- I love the Q&A time at the end of the each session.
- I really valued dementia SIM session.
- Interactive and informative.
- Interesting topics and information. Updates and current practice - good.
- Interesting, and participatory.
- Issues with IT may have affected some of the presentations.
- More issues that impact private practice.
- Not as good as 2015.
- Okay, as any conference - interested in more than one session at a time (2).
- Oral health #1 and 2 sessions - GREAT! How this is important to physical health.
- Practical information.
- Really liked the simulation.
- Room too big.
- Should start on time simultaneously.
- Slides were a little too dark to see for Dr. Suzuka's talk, but excellent/relevant 100%.
- Some of the technical difficulties were surprising. Transition from PPT to a video should be smooth.
- Surprised to see someone against fluoridation in the oral health break out session.
- Very good.
- Very impressive and excellent.
- Very informative (3).
- Well done.
- Would like more in depth on the IT sector.
- Would like something on workflow in the office.

What was the most beneficial part of this conference?

- Addressing challenges.
- Advance care planning.
- Always enjoy the big picture, nationwide presentations on the changes to the delivery of and payments for primary care.
- Amy Mullins MD - very helpful information.
- Break outs.
- CDC presentation was the best because it is not presented at the dental conventions.
- CMS requirements.
- Coding and happiness lunch session. Great venue and food.
- Collaboration to move forward as a team for Hawai'i Health System.
- College interaction.
- Community-building.
- Content of the presentations and networking with other providers.
- Current effects of innovation.
- Dementia info.
- Dialogue.
- Dr. Dolan's pilot program/practical application (2).
- Dr. Randall Suzuka - excellent. Thank you to Dr. Beeson for helping me regain my purpose.
- Dr. Suzuka (2).
- Everything (4).
- Excellent dental case management and the CDHC Program presentation.
- Facilitated familiarization with evolving terminology.
- Focus on team approach.
- Friendly, casual atmosphere.
- Future planning.
- Good lunch motivation session; Stephen Beeson's whole was talk was excellent, we need more like him (14).
- Great information found in the exhibit booths, different. Enjoyable, informative, no commercial bias.
- Great to get an idea of what our healthcare partners are involved with and what they're dealing with.
- Happiness, inter-professional education.
- Health Net.
- HIT update.
- I enjoyed majority of the guest speakers.
- I really liked Dr. Beeson's topic. I'll definitely apply his recommendations with my staff. Overall great summit.
- I really liked Stephen Beeson's presentation on the positive outlooks of changing team based care. Also the inter-professional practice's presentation is a great concept for primary care.
- Ideas for innovative care delivery.
- I'm a first time participant, and it was interesting to see all the complex systems that health care is facing.

- Information from conference.
- Innovative models of geriatric primary care - Dr. J Chodosh, and lunch session: Practicing Excellence with Dr. Beeson.
- Interacting with other health professionals/Networking (23).
- Interactive sessions.
- Interesting topics applicable to private practice.
- Interesting.
- Interisland connections.
- Inter-professional communication.
- Inter-professional practice.
- It is nice to get flown to Oahu and meet providers on other island - thanks! Keep it up!
- Knowing the resources, learning trends in rural health primary care.
- Learning about available services.
- Learning about community health workers.
- Learning about different, innovative models to practice community medicine.
- Learning about new payment changes coming up in Medicare.
- Learning about new payment methods.
- Learning about resources for dementia patients/family.
- Learning community resources.
- Learning more about collaborative care for our geriatric patient, using different models from PCMH and TOC, hands-on from hospital and home.
- Looking at collaborative efforts with state.
- Loved the selected tracks - wide variety of topics and great speakers (3).
- Lunch session (3).
- MACRA (11).
- Making me realize that when I retire, what MD will take care of me if I'm on Medicare, many getting out!
- Making relationships.
- Many choices of sessions.
- Medical and dental integration.
- MIPS.
- Moderating the timing of sessions.
- Morning session with changes in Dr. Dolan's office.
- Motivational.
- National speakers, networking with fellow speakers.
- Networking and seeing other colleagues and knowing that I am NOT ALONE in this struggle.
- New info.
- Opening session: Payment changes (4).
- Physician happiness.
- Please continue excellent dental educational component.
- Policy updates.
- Practical billing info

- Practice management changes.
- Practicing excellence (2).
- Presentations. Cost.
- Really enjoyed Dr. Beeson's talk. Enjoyed learning about telehealth updates in Hawaii.
- Reinstating professionalism, teamwork to medical practice.
- Resources.
- Rural health (2).
- Rural health and payment changes.
- Rural health policy discussion.
- Sharing, creative ideas.
- Some exhibitors had good info.
- Suzuka.
- Talk about physician burnout, excellence and happiness.
- Telehealth (2).
- The lunch session on nurses/APRN was most beneficial for me.
- The resource exhibitors and the CHW/CPU panel.
- The session on IT; tech update (2).
- To hear about CMS new regulations.
- Topics were relevant.
- Understand what is occurring in other health fields.
- Understanding physicians' struggle in working in Hawaii.
- Updated on the State of Hawai'i's healthcare workforce.
- Varied topics and lunch session speakers.
- Vendors.
- Very informative and pertinent.
- What others are doing.
- Workforce update. Liked geriatric track (2).

Please suggest changes that could improve the conference and what topics you would like addressed next year:

- A little more talk/in between/social time.
- Add courses for case manager certification with CCMC.
- Address some clinical subjects.
- Better location - parking was an issue, ended up in valet.
- Better to have microphones and "runners" for questions than written questions.
- Bridge the gap between APRNs and MDs. Have activities to show how we can work together.
- Community resources.
- Dentist should have name tag colored that says Dentist.
- Direction to conference - breakout sessions -> early notification - what ballroom?
- Empowered communities.
- Excellent - the burnout talk is essential.
- Excellent summit! Very organized!
- Food and facility great!
- Great conference

- Great food and snacks.
- Great job, keep up the good work.
- Great Lunch. Breakfast was too heavy on added sugar laden pastries. Thanks for the fruit.
- Happiness workshop great! Dr. Beeson's talk was very good reminder of why I became a doctor! Great!
- Have conference on a Friday.
- Healthcare professionals can always benefit from current innovations on common chronic diseases (DM, HTN, Hyperlipidemia, kidney diseases, etc.)
- How MDs can improve their practice by teaming MD with NPs.
- How to engage hospitals in value transformation (successful ACOs).
- Improve room temperature - too cold (14).
- Improving reimbursement.
- Information on AMA step forward program vs. Suzuka's power 10 for medicine!
- Innovations in term of physician-extender positions and how community physicians can take advantage and engage the use of CHWs and other such extenders.
- Integrate growing APRN population as a real solution to physician shortage.
- Interface with public health - state (DOH) and federal (CDC)
- Legislation initiatives to support rural healthcare.
- Local initiatives.
- Medical decision making capacity evaluation.
- Medical/legal issues related to geriatric population i.e. driving, visual and cognitive testing, living will, POA/ACP.
- Mental health care in geriatric patients.
- Methods to increase compliance with therapy in non-compliant patients with medical disorders.
- More examples of how clinicians actually deal with these efforts and programs.
- More info and shared focus on APRN and inter-professional practices.
- More information on HIE, helps with referring small practices for help with meaningful use HIPAA training/compliance.
- More on mental health topics (2).
- More regarding recruitment of MD.
- More time to network, less packed schedule.
- Nametags should include Island and/or employer.
- Navigating HMSA payment transformation.
- Need more time between sessions to take a short break (ex. 5-15 mins), visit vendors (wealth of networking there), go to bathroom, etc. (3)
- No changes, appreciate the various tracks, dental, geriatrics, rural, inter-professional education, and other.
- No/hard to find parking (5).
- None (3).
- Overall very good.
- PCMH - evidence of success - what's working (or not).
- People (doctors, nurses participants) - share with colleagues why they went to medical school/chose to be a physician.
- Physician assistants were hardly mentioned the entire conference. This is a profession which should have an important role in the shortage we [are experiencing].

- Please give guidelines for PowerPoint. Many had too many with illegible wordings. Don't read the PowerPoint etc.
- Presentation about community and hospital-based resources on each of the islands.
- Really enjoyed the rural telehealth topics. Encourage more medical student involvement.
- Reminder to bring a jacket.
- Same.
- Sleep apnea - medical and dental.
- Slowing the rate of attrition (development of health care deserts in Hawaii)
- Small group sessions to share providers' experiences.
- Smaller rooms for breakout sessions.
- So far, happier with bus from airport.
- Successful aging.
- Suggest an overview talk about illness/morbidity/mortality in Hawaii, with comparisons between Oahu and all of the other islands.
- Telehealth need more live examples - too much theory.
- Thank you for including info on state of APRNs in Hawaii. The only thing I would like to see next year is more focus on interdisciplinary issues.
- Transition to value care (pay for value as opposed to pay for volume). National successes, pitfalls, then local experience.
- Update on oral health environmental scan, teledentistry, CDHC
- Use microphones for Q&A; the table paper was not useful.
- We need another lunch time "motivational speaker" - bring Dr. Beeson back!
- What is and isn't usually covered by Medicare?
- Would have been better if "inter-professional practice" was during an earlier session in the day. It's a great and important use of resources and education. Too bad there were not many attendees - I assume because due to late in the day. Many clinicians could have benefitted from this.
- Would suggest more information for specialists.

Appendix 3: Hawai'i State Loan Repayment Recipients

The Hawai'i State Loan Repayment Program began in 2012 and currently has 12 recipients who receive up to \$40,000 a year paid directly to their educational loan service company. JABSOM has received federal grant funding of \$225,000/year, but have to match that with local funds (dollar for dollar match) and have only raised \$65,000 so far this year. Loan repayers and status is included below.

2016 Hawai'i State Loan Repayment Recipients

<p>Megan Lewis ENROLLED</p>	<p>APRN, Hilo Bay Clinic</p>	<p>Megan has been on Hawai'i Island for twelve years and received all of her schooling in Hawai'i. She is currently enrolled in a DNP program with Frontier Nursing University expected to graduate next Fall.</p>
<p>Sarah Feenstra ENROLLED</p>	<p>Psychiatrist, Maui Correctional Facility</p>	<p>Sarah grew up in Michigan, went to school at Lake Erie College of Medicine and did her psychiatry residency at University of Wisconsin. She has been in Maui since August 2015 and currently works at the Maui County Correctional Center</p>
<p>Dave Ravi ENROLLED</p>	<p>Psychiatrist, Hālawā Correctional Facility</p>	<p>Dave grew up in India and went to college and medical school in Virginia Commonwealth University. He did his residency at Dartmouth and Geriatrics fellowship at UH. During residency, he lectured to medical students in cross-cultural psychopharmacology. Dave also taught at a VA fellowship and is currently clinical faculty for JABSOM and planning to teach medical students.</p>
<p>John Misailidis ENROLLED</p>	<p>Internist, Queen Emma Clinic</p>	<p>John grew up in California, went to New York Medical College for medical school, and came to Hawai'i for his Med-Peds residency. He's been working at QEC since 2006 and has a special interest in working with Native Hawaiian populations and improving community health.</p>

Patricia McKenzie ENROLLED	APRN Wai‘anae Coast Comprehensive Health Center	Patricia grew up in North Carolina and did all of her training at University of Hawai‘i. She has worked at WCCHC since 1990 and went back to school and became a FNP 4 years ago.
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2015 Hawai‘i State Loan Repayment Recipients

Name	Location	Info
Eduardo Cua ENROLLED	Clinical Psychology Federal Detention Center	Eduardo has been a Hawai‘i resident for 23 years. He received his undergraduate degree from the University of Hawai‘i, a master’s degree from Chaminade University and a doctoral degree in Clinical Psychology from Argosy University. He has been with the Federal Detention Center-Honolulu since 2013 and was selected as Chief Psychologist where he has proven to be an effective and reliable leader.
Jaimie Johnson ENROLLED	OB/GYN Mālama I Ke Ola Health Center in Wailuku	Jaimie grew up visiting family in Hawai‘i and always wanted to live here, so she was thrilled when she matched for OB/Gyn Residency at Kapi‘olani and Queens after attending medical school at the University of Florida College of Medicine. She performed a one-month rotation on Maui as a third year resident and now works at the CHC there.

2014 Hawaii State Loan Repayment Recipients

Andrew Martin COMPLETED	Child and Adolescent Psychiatrist Maui Memorial Medical Center	Grew up in Columbus Ohio and moved to Maui last year. He has a multitude of valuable training and experiences from small rural communities to large urban centers.
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Denise Young-Ajose ENROLLED	Family Physician, Kalihi-Pālama Health Center	Moved to HI in 2008, grew up in Bronx, NY where she also did her residency. Now she works at Kalihi-Palama Health Center as a Family Physician.
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2013 Hawaii State Loan Repayment Recipients

Aileen Duran PAID IN FULL	Family Nurse Practitioner, Lāna‘i CHC	Lived in HI since age 7. Grew up in HI. Went to UH SON, rotation in Lāna‘i while in training. Fluent in 2 Filipino dialects. Visits her High School every year to speak to Health Academy Students. Currently teaching APRN students.
Jasmine Waipa PAID IN FULL	Pediatrician, Wai‘anae Coast Comprehensive Health Center	Grew up in Hawai‘i. Left for school, returned to HI in 2011. While in CA, participated in media and legislative advocacy around healthcare issues. Formed a talk story group with an enclave of Native Hawaiians in East Palo Alto.
Erik Anderson COMPLETED	Geriatric Nurse Practitioner, Kalihi-Pālama Health Center	Grew up in Kailua. Has done rotation in current community and plans to stay at Kalihi-Palama for at least 3 years.
Duffy Casey ENROLLED	Obstetrician, Community Clinic of Maui	Moved to HI 4 years ago. Had clinical rotations on neighbor islands. Lots of international experience; Honduras, Haiti, Burma. Grew up in small town, so very comfortable where he is now.
Anjalie Graham PAID IN FULL	Family Nurse Practitioner, West Hawai‘i Community Health Center	Has lived in HI for 2 years. Has family from HI. Conducts homeless clinic 1x/week. Helping to start migrant worker health program.
Heather Porter PAID IN FULL	Family Nurse Practitioner, Wai‘anae Coast Comprehensive Health Center	Born and raised on O‘ahu. Is part Native Hawaiian. Grew up seeing many of the health issues that Native Hawaiians experience within her own family. This motivated her to enter nursing.
Lisa Garrett-Guadnola COMPLETED	Family Nurse Practitioner, Wai‘anae Coast Comprehensive Health Center	Has lived in HI for 10 years. Has raised her kids here. Became interested in underserved populations in Detroit. Was drawn to help the same population in HI.

Jennifer Morita ENROLLED	Family Nurse Practitioner, Womens Health, Wai‘anae Coast Comprehensive Health Center	Has lived here her whole life, went to UH, did training at IHS and Waikiki Care A Van. Committed to helping women currently in DV environments, particularly NH and Micronesians.
Christopher Lawlis COMPLETED	Psychiatrist, Hālawā Prison	Moved to HI 2 months ago. This is his first post-residency job. His wife is a Pharmacist who gave birth to daughter a few weeks ago and they want to raise their children in HI. Very interested in homeless and chemical dependency issues. He believes the incarcerated can be helped to get back on track.
Alicia Turlington ENROLLED	Pediatrician, Kōkua Kalihi Valley Health Center	Grew up in Kaua‘i, did rotation at KKV during school and has been there since 2008. Did clinical training at county hospital in Los Angeles.
Denise Houghtaling SEPARATED	Family Nurse Practitioner, Moloka‘i Community Health Center	Grew up in Washington State, but has lived in HI for 9 years. She has been on Moloka‘i in current position. She is currently in a doctorate program at Johns Hopkins doing a Capstone project that focuses on providing services to sex/child abuse assault victims on Moloka‘i.

2012 Hawaii State Loan Repayment Recipients

Ahoora Payam ENROLLED	Internist, Waikiki Health Center	Family in Vegas, loves music and plays in a band
Megan Wright PAID IN FULL	Family Medicine, Community Clinic of Maui	Moved here with her family last year, loves the community
Jennifer Krome PAID IN FULL	APRN with Native Hawaiian Healthcare System in Hilo	Sees patients from all over Hawai‘i Island, there is a van that brings them.
Anna Holt PAID IN FULL	APRN, Waimanalo Health Center	Interested in Diabetes and obesity research, dedicated to the underserved
Irene Hwang COMPLETED	Family Medicine, Ko‘olauloa Family Health Center	From New York, in Hawai‘i for a year and loves it. Has experience in substance abuse and home visits.

References

¹ 2016 Update: The Complexities of Physician Supply and Demand: Projections from 2014 to 2025. Prepared for Association of American Medical Colleges. IHS Inc. April 5, 2016.
https://www.aamc.org/download/458082/data/2016_complexities_of_supply_and_demand_projections.pdf
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