

UNIVERSITY OF HAWAI‘I SYSTEM REPORT



REPORT TO THE 2013 LEGISLATURE

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

Act 18, SSLH 2009 (Section 5)

December 2012

Hawai'i Physician Workforce

In accordance with Act 18, SLH, 2009

A report to the 2013 Hawai'i State Legislature:

Findings from the Hawai'i Physician Workforce Assessment Project

Prepared by: Kelley

Withy, MD, PhD

John A. Burns School of Medicine

Area Health Education Center

December 2012

Executive Summary

In the two years since the physician workforce assessment was fully implemented in 2010, the physician workforce has grown from 2,858 to 2,995 full time equivalents of direct patient care and the shortage of physicians has shrunk from 662 to 635, indicating an 18% shortage of physicians statewide. Unfortunately, a viable reason for this improvement is a delay of retirements due to weak stock market performance. If this is the case, then we will have a significant contracting of the workforce when the economy fully recovers and we must also anticipate that physicians on the brink of retirement may be more likely to retire if they decline to convert to electronic health records and federal penalties are enforced.

The physician specialties with the greatest shortages are primary care, particularly on neighbor islands, as well as specialties such as Infectious Disease, Neurosurgery, Pathology, General Surgery and Anesthesiology. Shortages that have seen an improvement in supply include Cardiology, Rheumatology, Endocrinology and Neonatology. Geographically, the physician shortage remains most acute on Hawai‘i Island, Moloka‘i and Lāna‘i and is best on O‘ahu.

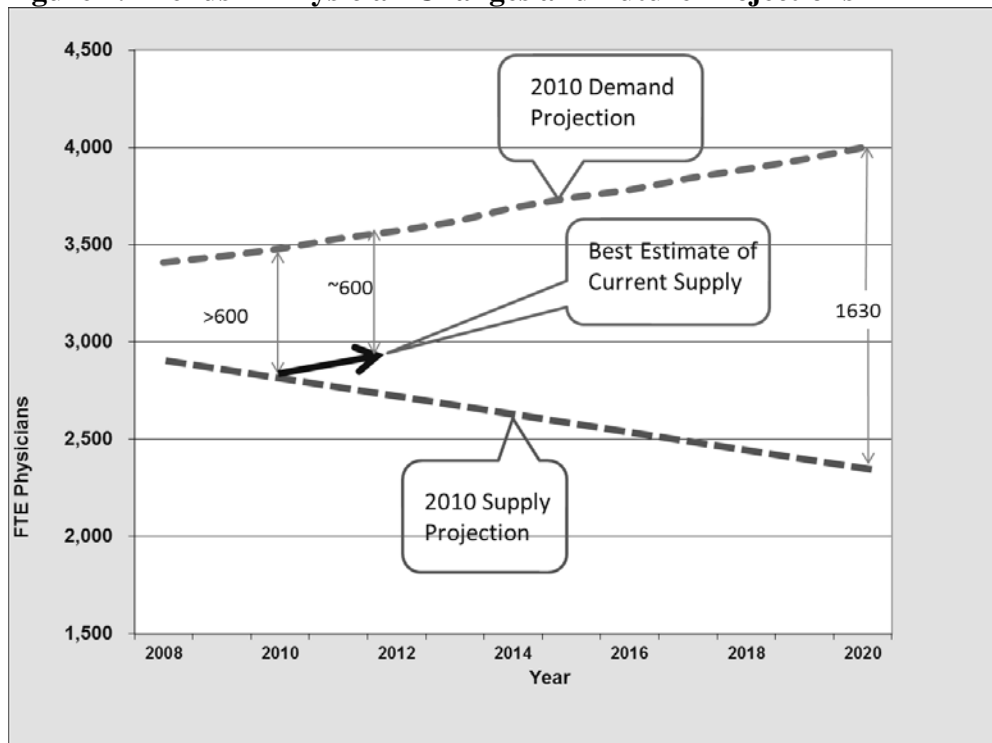
In order to mitigate the physician shortage, twelve interventions were identified by Hawai‘i healthcare experts and the Hawaii Medical Education Counsel, of which 10 solutions are being actively addressed by the Physician Workforce Research Team. They include: alerting over 3,000 local students a year to healthcare careers and promoting a statewide resource bank of opportunities, expanding rural primary care interprofessional healthcare training for 100 students a year, starting a state loan repayment program to provide incentives for physicians to practice in areas of greatest needs, contacting all Hawai‘i graduates who are practicing on the mainland for recruitment back to Hawai‘i, creating a more favorable physician practice environment through legislative reform of the Medical Claims and Conciliation Panel, encouraging ongoing dialog regarding administrative simplification and reimbursement changes and encouraging and educating providers, government and insurers on moving the model of care toward team-based and “patient centered medical home” delivery model through regular meetings and an annual continuing education conference.

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 time of relicensure, internet searches and direct calling of physician offices to confirm hours of active patient care. Physician demand is estimated using a model created by the Lewin Group in 2010 that utilizes pooled data on physician utilization in the US and adapting for Hawai'i's gender, age, general ethnic mix, insurance rates and obesity rates (as a marker of chronic disease). Additional information on methodology is available in the prior Physician Workforce report at http://www.ahec.hawaii.edu/workforce/Final_report_January_2011.pdf.

As of June 30, 2012, approximately 3,700 physicians of the 8,650 licensed were providing some patient care in Hawai'i. The time worked totaled 2,955 full time equivalents (FTE) of nonmilitary direct patient care services in Hawai'i, compared to 2,858 in 2010. Demand was estimated at 3,590 FTE compared to 3,527 in 2010. The good news is that we are not losing physicians as was anticipated due to retirement, so the gap between supply and demand has not increased. The bad news is that we have not significantly narrowed the gap between supply and demand.

Figure 1. Trends in Physician Changes and Future Projections



Geographic Distribution of Physicians

The physician shortages are still greatest in the most rural areas of our state. Based on the ratio of physician supply to physician demand, the islands of Lāna‘i, Moloka‘i, Big Island and Kaua‘i have the greatest unmet needs. Specialty estimates by individual islands are included in Appendix 1.

Table 1. Physician Shortage by Island, 2012

2012 Island	Supply	Demand	Shortage 2012	% Shortage
Hawai‘i	341	516	175	34%
Kaua‘i	132	196	64	33%
Lāna‘i	2	12	10	83%
Maui	292	376	84	22%
Moloka‘i	11	22	11	50%
O‘ahu	2177	2468	291	12%
Total	2955	3590	635	18%

These findings were compared with public survey information, and in fact Big Island, Moloka‘i and Lāna‘i were also the islands with the highest report of patients not receiving care when they thought they should have. In 2009, the Hawaii Health Survey introduced the question “Was there a time in the last year that someone in your household did not go to a doctor/specialist when that person thought he/she should have gone?” Ten percent of respondents answered this question in the affirmative statewide in 2011, but the findings were highest on Moloka‘i, Big Island and Lāna‘i (see far right column in Table 2 for most recent survey results). When trends are examined, it appears there is mild general improvement, with the exception of the smallest islands that are impacted most significantly by small changes in supply.

Table 2: Percentage of survey respondents who were unable to see a physician

Island	2009 %	2010 %	2011 %
Hawai‘i	15%	13%	13%
Kaua‘i	11%	9%	8%
Lāna‘i	10%	14%	12%
Maui	14%	11%	11%
Moloka‘i	17%	10%	14%
O‘ahu	11%	7%	7%
Statewide	13%	10%	10%

Among those statewide who were unable to access care in 2011, 8% reported physician shortage related reasons (3% could not find a doctor and 5% could not schedule appointments as their doctor was too busy). On Hawai‘i Island 12% reported physician shortage related reasons; 5% could not find a doctor and 7% could not schedule appointments as their doctor was too busy. In addition, 23% of all 2011 survey respondents had a household member go to the emergency room because he/she could not see their doctor/specialist (63% on Moloka‘i and 27% on Hawai‘i Island).

Specialty Shortage Changes

When individual specialties with the greatest shortages are examined, the picture is similar to the 2010 findings, with the most notable differences being the decrease in shortage for Cardiology, a specialty for which a new fellowship program has been created at Queen’s Hospital, and in the specialties of Endocrinology, Neonatology and Rheumatology. The specialties that are more than 20% short of demand are listed below, with the comparison of 2010 numbers in the far right column.

Table 3: Hawai‘i Statewide Physician Deficit: Specialties in Greatest Need

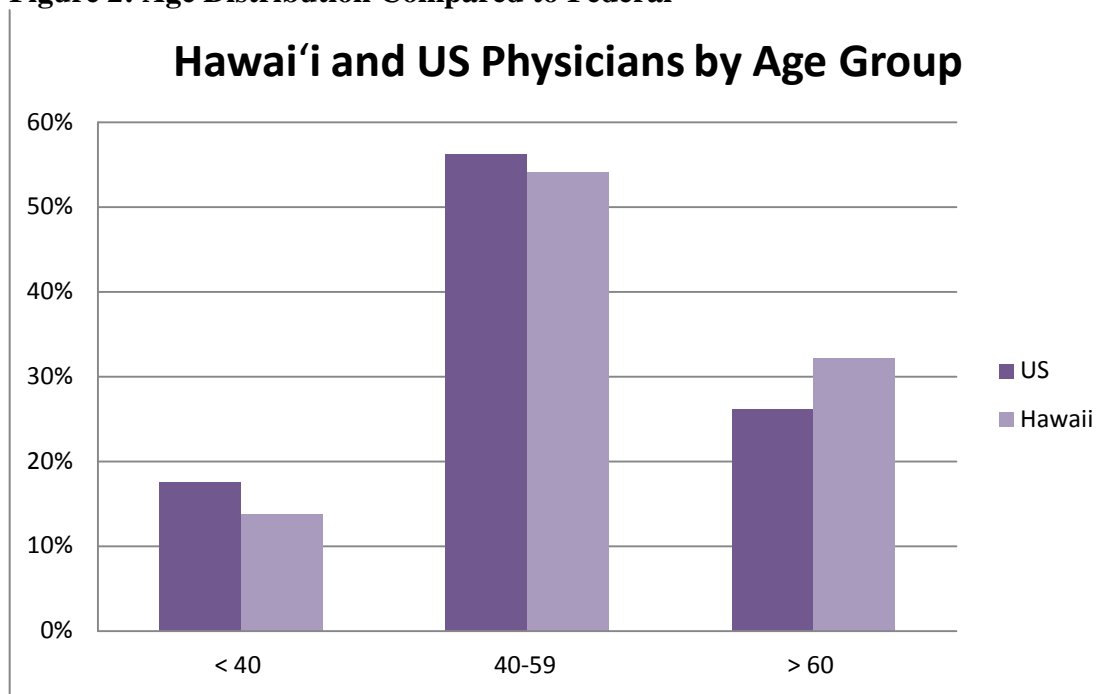
Specialty	Supply	Demand	Difference	% short	% of Shortage from 2010 assessment
Infectious Disease	12.59	30	17.41	58%	43%
Neurological Surgery	10.7	24	13.3	55%	57%
Pathology, General	43.39	90	46.61	52%	More research needed
General Surgery	65.32	127	61.68	49%	41%
Anesthesiology	124.62	233	108.38	47%	35%
Pulmonary	25.67	47	21.33	45%	36%
Thoracic Surgery	15.65	28	12.35	44%	33%
Gastroenterology	45.15	78	32.85	42%	35%
Neurology	32.58	56	23.42	42%	39%
Radiation Oncology	16.1	27	10.9	40%	More research needed
Diagnostic Radiology	113.85	188	74.15	39%	28%
Cardiology	73.04	119	45.96	39%	46%
Medicine/Med Peds	369.31	585	215.69	37%	31%
Oncology/Hematology	32.6	49	16.4	33%	33%
Otolaryngology	30.74	45	14.26	32%	27%
Endocrinology	17.85	26	8.15	31%	38%
Urology	36.26	51	14.74	29%	29%
Family/General Practice	316.14	408	91.86	23%	20%
Geriatrics	35.28	45	9.72	22%	17%

Physician Age Distribution

The average age of physicians in Hawai‘i is 54 in 2012, compared to 52.5 in 2010. Of the 3,700 individuals practicing any patient care in Hawai‘i, ages are known for all but 124. Although age 65 no longer predicts retirement, in the next 10 years, 1,698, or 45% of our physician population will reach age 65, as compared to 41% in the 2010 study. According to the Association of American Medical Colleges (AAMC), 2011 State Physician Workforce Data Book, Hawai‘i has the 9th largest percentage of practicing physicians over age 60.¹ Compared to AAMC data, the distribution of physician ages in Hawai‘i is outlined in Figure 2 below.

¹ Average US numbers from Association of American Medical Colleges, 2011 State Physician Workforce Data Book, available at <https://www.aamc.org/download/263512/data/statedata2011.pdf>, accessed 12/3/2012. Hawaii specific numbers from the Hawaii Physician Workforce Database.

Figure 2: Age Distribution Compared to Federal¹



The most likely explanation for the increased age of our physicians is a decreased rate of retirements due to the downturn in the US economy making retirement difficult for physicians. If this is the primary cause for the larger senior workforce, when the economy recovers we should expect a large exodus of these physicians from the workforce in a short period of time. Other pressures on our senior physicians include penalties for not implementing ePrescribing and electronic health records (EHRs). These required innovations may discourage physicians who are near retirement from continuing to practice if they choose not to convert to these electronic formats.

Additional Research Findings

The Physician Licensure Survey revealed that of those physicians answering the survey, 39% are in solo practice, 26% are in a 25 person group and 35% are in groups of six or more. In addition, 80% of respondents reported accepting new patients and 71% are taking new Medicare patients. Finally, 68% of local respondents say more physicians are needed in their geographic area. Additional research is ongoing and data on island specific findings are posted on the AHEC webpage www.ahec.hawaii.edu.

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, ten solutions were identified as the most important interventions in Hawai‘i to improve the physician workforce. 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 Hawaii 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. Below are the solutions being addressed by the physician workforce team and the progress made to date.

For clarification purposes, the Hawaii Physician Workforce Research Team is housed in and works hand in hand with the Hawaii Area Health Education Center (AHEC) Program, which is a federal grant funded program to improve the distribution, diversity and quality of the health professions workforce in the region. Dr. Withy, the principal researcher for the Physician Workforce Research Team, is the Director of the Hawaii AHEC, as well as president of the Hawaii State Rural Health Association and a member of the Governor’s Healthcare Reform Task Force. She works to expand collaborations across multiple groups and organizations to maximize benefits to the present and future health workforce in Hawai‘i and to leverage available resources with the simplified goal of “plenty of happy doctors practicing in Hawaii”. All the activities are collaborative in nature as outlined below.

Hawai‘i Physician Workforce Assessment Research Team Activities:

1. *Expanding the pipeline to health careers:* Between the one year period 7/1/2011 and 6/20/1012, the Area Health Education Center (AHEC) worked with 3,952 students to promote health careers through classroom visits, career fairs, Teen Health Camps, after-school mentoring, summer intervention programs and other training. Dr. Withy is working with communities across the state to organize local meetings to discuss health

career resources and needs. These meetings are designed to create a resource bank for each region of student activities and opportunities as well as alert each community to potential partnerships to expand resources. It is anticipated that the meetings will culminate in a statewide meeting in spring 2014 where all resource information will be shared, solutions to unmet needs brainstormed and a resource bank created that will include a webpage and a booklet of statewide health career pipeline resources and training opportunities.

2. ***Expanding rural training opportunities:*** AHEC directly supports the newly developing Hilo Family Medicine Residency Program through the AHEC Center on the Big Island. In addition, AHEC has expanded support for travel to rural training experiences to reach over 100 health professions students a year through a partnership with the Department of Veterans Affairs (VA). The Hawaii VA, with assistance from AHEC, successfully applied for a three year federal grant to create a year-round interprofessional training program in Hilo and two one-month interprofessional trainings for medical, nursing, psychology, social work and public health students in Guam and American Samoa. AHEC also partners with communities across the state to find lodging and preceptors for students to work in areas of need.
3. ***Practice Reform, Patient Centered Medical Home (PCMH):*** The Physician Workforce Research team and AHEC held the 2012 Physician Workforce Summit: Patient Centered Medical Home. This was an eight hour continuing education conference addressing multiple facets of PCMH that provided assistance to 280 health professionals who attended. This conference was free to participants and travel was supported from neighbor islands. We are currently planning the 2013 Health Workforce Summit with the theme of Sustaining Medical Practice. An emphasis will be maximizing how physicians can maximize personal and professional satisfaction and well as financial stability by understanding the current healthcare system and new opportunities offered through healthcare reform. The conference is scheduled for April 20, 2013. In addition, education on the physician workforce situation in Hawai‘i and the benefits of reforms such as Patient Centered

Medical Home have been incorporated into the JABSOM first year medical curriculum lecture series.

4. ***Interprofessional Teamwork in Practice:*** AHEC is working with the Hawaii Center for Nursing to create a collaborative teamwork track at the 2013 Health Workforce Summit and to increase interprofessional training. JABSOM and UH School of Nursing have implemented multiple interprofessional training opportunities, including the joint didactic activities and the VA rural interprofessional initiative mentioned previously.
5. ***Payment Reform:*** The 2013 Health Workforce Summit will emphasize payment changes, Affordable Care Act and Accountable Care Organization information. Two national speakers and a panel of local providers will present on the topics.
6. ***Rural Payment Incentives:*** Research team members have met with insurers, but only one pays a rural differential and the others decline.
7. ***Community Involvement:*** The Research Team is working with Hawaii State Rural Health Association and other groups to implement welcome wagons, alert providers to job opportunities and host 2014 Pipeline conference described under intervention #1 above. In addition, the Research Team helped to organize the 2011 Hawaii State Rural Health Conference emphasizing local educational resources: Communities Taking Action to Build Their Workforce. In addition, Dr. Withy worked closely with Hawaii Department of Labor when they held Healthcare Skill Panel meetings and in development of a plan to increase the health professions workforce by 20% by 2020.
8. ***Medical Malpractice Reform:*** As a result of efforts of the Hawai'i Physician Workforce Assessment, Hawai'i legislature passed Act 296, HSL 2012 changing the Medical Claims and Conciliation Panel to the Medical Inquiry and Conciliation Panel. As of 1/1/2013, this will decrease the panel size to one doctor and one lawyer, increase payment to \$450 each,

eliminate the need for a written judgment/decision, allow an option for both sides to agree to go directly to court or mediation and give the panel more leeway in how they conduct the panel. A training took place at JABSOM on 12/5/12 for more than 40 lawyers and doctors and it will be repeated at the Health Workforce Summit in April 2013. In addition, AHEC will assist with physician recruitment and training for the panel such that the wait to hold panels is minimized, and Dr. Withy is available to meet with physician groups to provide additional MICP training.

9. *Administrative Simplification:* The 2012 survey of providers at the Physician Workforce Summit demonstrated the most concerning administrative burdens were: preauthorization issues, drug formulary issues, and claims issues such as submissions, denials, and coding (see Appendix 3 for results). Meetings are ongoing with Hawai'i insurers to work toward improving these issues.

10. *Electronic Health Records (EHR):* The Research Team has met with Hawaii Health Information Exchange leadership to offer assistance with widespread implementation of EHR and encourage systems that will assist with administrative simplification and safe information sharing. EHR educational booths are offered at the 2012 and 2013 Physician Workforce Summit.

In addition, two important interventions that were identified by the Hawaii Medical Education Council and accomplished by the Physician Workforce Research Team are:

1. ***Hawaii State Loan Repayment Program:*** In June 2012, the Hawaii AHEC applied for federal funding to match contributions offered by HMSA and Queens to establish the first ever State Loan Repayment Program in Hawai'i. The two year grant was awarded to UH in September and four individuals (two family nurse practitioners, one internist and one family physician) will receive up to \$40,000 a year of loan repayment from 9/1/2012 to 8/31/2013 and the same amount from 9/1/2013 to 8/31/2014. The application cycle will reopen in April 2013 and UH is expected to award an additional nine to twelve one-year awards for the 9/1/2013 to 8/31/2014 year. After this, it is hoped that Hawaii Health Corps

funding will be available so that we can reapply for additional federal matching funds and continue the program.

2. ***Practice in Paradise Campaign:*** In collaboration with the JABSOM Alumni Association, post cards were mailed and emailed to all Hawai‘i medical school and residency graduates in October, 2012, alerting them to a brief survey on what would make practice in Hawai‘i desirable and the opportunity to receive regular information on job opportunities in Hawai‘i. Job opportunities for physicians in Hawai‘i are posted on the internet at www.ahec.hawaii.edu and will be emailed to physicians as requested through the survey. Over 50 physicians have expressed interest in receiving job information to date.

Finally, the 2013 Physician Workforce Summit, sponsored by the physician workforce special fund will be held on April 20, 2013 and the title will be changed to Hawaii Health Workforce Summit. The theme for 2013 is “Maintaining Practice Sustainability” and will be emphasizing both financial sustainability of practice in Hawai‘i, as well as maximizing personal satisfaction of practicing in Hawai‘i. Mainland speakers will address the health economics of healthcare reform, and what an ideal healthcare system could look like in Hawai‘i. All providers may register without a charge, eight hours of continuing education is provided and same day travel for neighbor island providers is supported if requested in advance. This conference is expected to be held annually under the guidance of a diverse planning committee representing the many facets of healthcare in Hawai‘i.

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, as well as specific findings for specialties such as Psychiatry. In addition, Dr. Withy is always willing to present the findings of the study statewide and perform exit surveys of providers leaving the state to better understand barriers to retention.

Continuation of the Hawaii State Loan Repayment Program past the 8/31/2014 grant end date depends on future influx of funding, most likely from multiple sources including the Hawaii Health Corps legislation, private donors and matching federal funds, but most other solutions will be continued with funding from the Physician Workforce Assessment special fund until

no longer needed. Annual Health Workforce Summits will be held emphasizing systems reform and other factors that will improve provider recruitment and career satisfaction. Medical Inquiry and Conciliation Panel recruitment and training will be ongoing via electronic and face to face sessions, as well as offered to physician groups across the state. Health careers recruitment activities are ongoing, as is the planning for local and statewide meetings to pool resources and produce a resource guide. Collaborative work with communities to promote health professions training, recruitment and retention will continue, as will collaborative efforts with health insurers, the legislature and the Governor's Healthcare Taskforce to provide physician incentives, encourage administrative simplification and systems change that increase teamwork and patient centered medical homes and create meaningful payment reforms. 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: Specialty shortages by Island

The following tables include best estimates of physician supply and demand by island of most, but not all, of the specialties practicing in Hawai‘i. In particular, they do not include “other specialties” such as hospitalists or urgent care physicians. Some special considerations were made to accommodate the geographic nature of Hawai‘i. **Emergency Medicine** for example, is a specialty that must be available on a specific island, and cannot be provided from a remote location. Therefore, the demand is calculated at the number of providers it takes to staff all emergency departments, with five being the minimum number of doctors needed for the small volume hospitals to cover the emergency room around the clock (24/7).

Other special considerations to the demand model include that **Psychiatry** is a specialty for which the demand model is inadequate based on general consensus of there being a statewide shortage. Research to uncover the reason for this and create a more accurate estimate of demand is ongoing. For the purposes of this report, we have set demand at the level of supply until further investigation can be concluded.

Please keep in mind that there are limitations to this research. For example, physicians who live on the mainland but provide patient care services to Hawai‘i patients, such as **Radiologists** and **Pathologists**, who read images/slides remotely, are difficult to locate. In addition, **Anesthesiologists** are often hired by groups or hospitals and may not be listed in public directories, so if they did not fill out the online physician renewal survey, they may not be included in the data set. Furthermore, a specialty that needs further investigation is **Preventive Medicine** as there was an unexplained fluctuations in the number of the number of providers between 2009 and 2012 requiring additional research. Finally, there is no national estimate for demand in emerging specialties for which there is no residency training such as **Urgent Care** or **Hospitalist physicians**. Therefore providers in these specialties are listed in the “Other” category for supply. All adaptations made from the model are bolded and italicized.

O'ahu 2012				
Specialty	Supply	Demand	Shortage	% Short
Adult Psychiatry	102.75	102.75	0	0%
Allergy/Immunology	12.9	8	0	0%
Anesthesiology	91.77	164	72.23	44%
Cardiology	54.4	83	28.6	35%
Child Psychiatry	30.29	30.29	0	0%
Critical Care	19.76	10	0	0%
Dermatology	43.13	21	0	0%
Diagnostic Radiology	87.34	134	46.66	35%
Emergency Medicine	118.47	118.47	0	0%
Endocrinology	14.55	18	3.45	19%
Family/General Practice	176.03	278	101.97	37%
Gastroenterology	36.4	56	19.6	35%
Medicine/Med Peds	282.21	415	132.79	32%
General Surgery	43.54	88	44.46	51%
Geriatrics	33.76	33	0	0%
Infectious Disease	11.83	22	10.17	46%
Neonatology	19	14	0	0%
Nephrology	22.85	22	0	0%
Neurological Surgery	9.65	17	7.35	43%
Neurology	26.38	38	11.62	31%
OBGYN	114.56	130	15.44	12%
Oncology/Hematology	25.66	34	8.34	25%
Ophthalmology	84.13	68	0	0%
Orthopedic Surgery	55.05	63	7.95	13%
Otolaryngology	23.49	31	7.51	24%
Pathology, General	32.64	64	31.36	49%
Pediatrics, General	156.62	152	0	0%
PM&R	32.89	26	0	0%
Plastic Surgery	27.05	18	0	0%
Preventive Medicine	7.7	13	5.3	41%
Pulmonary	20.94	33	12.06	37%
Radiation Oncology	10.35	19	8.65	46%
Rheumatology	13.38	9	0	0%
Thoracic Surgery	14.65	20	5.35	27%
Urology	28.45	36	7.55	21%

Hawai'i Island 2012				
Specialty	Supply	Demand	Shortage	% Short
Adult Psychiatry	18.62	19	0.38	2%
Allergy/Immunology	1	2	1	50%
Anesthesiology	12.33	33	20.67	63%
Cardiology	5.55	14	8.45	60%
Child Psychiatry	5.16	5.16	0	0%
Critical Care	1	2	1	50%
Dermatology	3.38	5	1.62	32%
Diagnostic Radiology	10.6	25	14.4	58%
Emergency Medicine	25.54	30	4.46	15%
Endocrinology	1.05	4	2.95	74%
Family/General Practice	79.59	61	0	0%
Gastroenterology	5.5	11	5.5	50%
Medicine/Med Peds	31.95	80	48.05	60%
General Surgery	11.68	18	6.32	35%
Geriatrics	2.2	5	2.8	56%
Infectious Disease	0	4	4	100%
Neonatology	0	3	3	100%
Nephrology	1.15	4	2.85	71%
Neurological Surgery	0.05	4	3.95	99%
Neurology	3	8	5	63%
OBGYN	17.63	28	10.37	37%
Oncology/Hematology	2	7	5	71%
Ophthalmology	7.15	13	5.85	45%
Orthopedic Surgery	9.05	14	4.95	35%
Otolaryngology	1.4	7	5.6	80%
Pathology, General	5	12	7	58%
Pediatrics, General	19.83	35	15.17	43%
PM&R	1.88	6	4.12	69%
Plastic Surgery	2.45	4	1.55	39%
Preventive Medicine	0.25	3	2.75	92%
Pulmonary	1.23	7	5.77	82%
Radiation Oncology	2.75	4	1.25	31%
Rheumatology	1.5	2	0.5	25%
Thoracic Surgery	1.5	4	2.5	63%
Urology	2.16	7	4.84	69%

Kaua'i 2012				
Specialty	Supply	Demand	Shortage	% Short
Adult Psychiatry	6.95	6.95	0	0%
Allergy/Immunology	0.1	1	0.9	90%
Anesthesiology	6	12	6	50%
Cardiology	2.5	6	3.5	58%
Child Psychiatry	3.5	3.5	0	0%
Critical Care	0.5	1	0.5	50%
Dermatology	0.75	2	1.25	63%
Diagnostic Radiology	5.1	9	3.9	43%
Emergency Medicine	14.5	15	0.5	3%
Endocrinology	0	1	1	100%
Family/General Practice	19.53	22	2.47	11%
Gastroenterology	0	4	4	100%
Medicine/Med Peds	13.65	29	15.35	53%
General Surgery	3.6	7	3.4	49%
Geriatrics	0.67	2	1.33	67%
Infectious Disease	1	1	0	0%
Neonatology	0	1	1	100%
Nephrology	1.03	2	0.97	49%
Neurological Surgery	0	1	1	100%
Neurology	1	3	2	67%
OBGYN	5.41	9	3.59	40%
Oncology/Hematology	1.95	3	1.05	35%
Ophthalmology	3.8	5	1.2	24%
Orthopedic Surgery	4.83	5	0.17	3%
Otolaryngology	1.45	2	0.55	28%
Pathology, General	2	4	2	50%
Pediatrics, General	11.75	12	0.25	2%
PM&R	1	2	1	50%
Plastic Surgery	0.4	1	0.6	60%
Preventive Medicine	1.8	1	0	0%
Pulmonary	0.5	2	1.5	75%
Radiation Oncology	0	1	1	100%
Rheumatology	0	1	1	100%
Thoracic Surgery	0	1	1	100%
Urology	2.4	3	0.6	20%

Maui 2012				
Specialty	Supply	Demand	Shortage	% Short
Adult Psychiatry	10.09	16.9	6.8	40%
Allergy/Immunology	1	1.4	0.4	29%
Anesthesiology	15.7	23.5	7.8	33%
Cardiology	12.4	11.8	0	0%
Child Psychiatry	5.82	5.82	0.0	0%
Critical Care	0	1.5	1.5	100%
Dermatology	6.56	3.9	0	0%
Diagnostic Radiology	9.96	18.1	8.2	45%
Emergency Medicine	17.52	17.52	0.0	0%
Endocrinology	1.75	2.8	1.0	38%
Family/General Practice	48.15	44.4	0	0%
Gastroenterology	2.75	7.7	4.9	64%
Medicine/Med Peds	30.4	57.5	27.1	47%
General Surgery	8.25	13.4	5.2	38%
Geriatrics	0	3.6	3.6	100%
Infectious Disease	0.35	2.9	2.6	88%
Neonatology	0	2.3	2.3	100%
Nephrology	4.6	3.1	0	0%
Neurological Surgery	1	2.5	1.5	60%
Neurology	3.75	6.0	2.3	38%
OBGYN	13.65	20.6	6.9	34%
Oncology/Hematology	3.99	5.2	1.2	23%
Ophthalmology	6.68	9.5	2.8	30%
Orthopedic Surgery	7.51	10.1	2.6	26%
Otolaryngology	5.47	4.7	0	0%
Pathology, General	3.25	8.6	5.4	62%
Pediatrics, General	20.91	26.6	5.7	21%
PM&R	3.88	3.9	0.0	1%
Plastic Surgery	2.57	3.0	0.4	14%
Preventive Medicine	1	2.2	1.2	55%
Pulmonary	3	4.7	1.7	36%
Radiation Oncology	3	2.5	0.5	0%
Rheumatology	0	1.6	1.6	100%
Thoracic Surgery	0	2.7	2.7	100%
Urology	3.75	5.2	1.4	28%

Although Lāna‘i and Moloka‘i cannot support full time providers for many sub-specialties, we provide the supply and demand to help identify need for visiting or telemedicine services.

Lāna‘i 2012				
Specialty	Supply	Demand	Shortage	% Short
Adult Psychiatry	0	0.4	0.4	100%
Allergy/Immunology	0.5	0.0	0	0%
Anesthesiology	0	0.5	0.5	100%
Cardiology	0	0.3	0.3	100%
Child Psychiatry	0	0.1	0.1	100%
Dermatology	0	0.1	0.1	100%
Diagnostic Radiology	0	0.4	0.4	100%
Emergency Medicine	0.25	5	0.0	95%
Endocrinology	0	0.1	0.1	100%
Family/General Practice	1	1.0	0.0	0%
Gastroenterology	0	0.2	0.2	100%
Medicine/Med Peds	0	1.2	1.2	100%
General Surgery	0	0.3	0.3	100%
Geriatrics	0	0.1	0.1	100%
Infectious Disease	0	0.1	0.1	100%
Nephrology	0	0.1	0.1	100%
Neurological Surgery	0	0.1	0.1	100%
Neurology	0	0.1	0.1	100%
OBGYN	0	0.4	0.4	100%
Oncology/Hematology	0	0.1	0.1	100%
Ophthalmology	0	0.2	0.2	100%
Orthopedic Surgery	0	0.2	0.2	100%
Otolaryngology	0	0.1	0.1	100%
Pathology, General	0	0.2	0.2	100%
Pediatrics, General	0.5	0.6	0.1	17%
PM&R	0	0.1	0.1	100%
Plastic Surgery	0	0.1	0.1	100%
Pulmonary	0	0.1	0.1	100%
Radiation Oncology	0	0.1	0.1	100%
Thoracic Surgery	0	0.1	0.1	100%
Urology	0	0.1	0.1	100%

Moloka'i 2012				
Specialty	Supply	Demand	Shortage	% Short
Adult Psychiatry	0	0.9	0.9	100%
Allergy/Immunology	0	0.1	0.1	100%
Anesthesiology	0	1.2	1.2	100%
Cardiology	0	0.6	0.6	100%
Child Psychiatry	0	0.2	0.2	100%
Critical Care	0	0.1	0.1	100%
Dermatology	0	0.2	0.2	100%
Diagnostic Radiology	0	0.9	0.9	100%
Emergency Medicine	2.9	5	0.0	42%
Endocrinology	0	0.1	0.1	100%
Family/General Practice	2.6	2.2	0.3	0%
Gastroenterology	0.0	0.4	0.4	100%
Medicine/Med Peds	5.4	2.9	0	0%
General Surgery	0.0	0.7	0.7	100%
Geriatrics	0.0	0.2	0.2	100%
Infectious Disease	0.0	0.1	0.1	100%
Neonatology	0	0.1	0.1	100%
Nephrology	0.1	0.2	0.0	50%
Neurological Surgery	0.0	0.1	0.1	100%
Neurology	0.0	0.3	0.3	100%
OBGYN	0.0	1.0	1.0	100%
Oncology/Hematology	0.0	0.3	0.3	100%
Ophthalmology	0.1	0.5	0.4	80%
Orthopedic Surgery	0	0.5	0.5	100%
Otolaryngology	0	0.2	0.2	100%
Pathology, General	0	0.4	0.4	100%
Pediatrics, General	0	1.3	1.3	100%
PM&R	0	0.2	0.2	100%
Plastic Surgery	0	0.2	0.2	100%
Preventive Medicine	0	0.1	0.1	100%
Pulmonary	0	0.2	0.2	100%
Radiation Oncology	0	0.1	0.1	100%
Rheumatology	0	0.1	0.1	100%
Thoracic Surgery	0	0.1	0.1	100%
Urology	0	0.3	0.3	100%

Appendix 2: Evaluation of 2012 Physician Workforce Summit

OVERVIEW

# of participants who identified as a physician	151
# of participants who identified as a Administrator	4
# of participants who identified as a other	14 (Other= Nurse instructor, other healthcare provider, RNMPH student, RX acct manager, practice manager, med student, HPCA)
# of participants who identified as a physician assistants	2
# of participants who identified as a nurse practitioner	5
Did not identify themselves	5

Quality and helpfulness of breakout sessions	Poor = 1	Below Average =2	Average =3	Above Average= 4	Excellent =5	TOTAL	average
Care Coordination Option 1	3	4	15	15	5	42	3.4
Team Based Collaborative Care Option 2	0	0	3	15	8	26	4.2
Telehealth Option 3	0	0	4	8	4	16	4.0
Financial Implications Option 4	2	3	8	15	6	34	3.6
E.H.R Option 5	0	0	4	12	9	25	4.2

SUMMARY OF COMMENTS

<p>What was the most beneficial part of this conference?</p>	<p>Hearing from people with business perspective, networking(8), key note speakers were good, great thinkers, Dr. Suzuka was informative with good examples. Discussion by various physicians in practice regarding their experiences. Panelists from E.H.R. also helpful. Panel discussions. Listening to experts discuss lessons learned. Big picture, over view of problems. gained new knowledge about PCMH, EHR, Sepulveda's speech(5). Keeping up with what others do. Suggestions made on how to make changes & network with other Hawaii physicians. Learn about Hawaii health system. Open remark. Knowing that important members of the community also see the importance of this problem. Dr. Dobson (3). Learning MD's impressions of EHR. Provide support/encouragement to engage PCMH. Leadership training. North Carolina model presentation. Bringing together multiple stakeholders. A few new ideas. Telehealth (3). The lunch session(2). Speaker panel excellent explanations and discussion. Time off from the office.</p>
<p>Please suggest changes that could improve the conference and/or future topics to be covered</p>	<p>Make syllabus available for download to ipad, more time (8), more examples on local care coordination, resources, insurance, Hawaii Healthways and social network. Too cold in rooms. More small sessions. Less politics, more on actual study, practice, PCMH and why/how it benefits drs and groups. Decrease the length of time of panel speakers, better management of time(15). Be on time please(3). Sound system was very poor in primary session, poor time management(2). Less bias by health plans. How small private practices specifically can be PCMH, not just those run by IBM. Resources from private & state insurance. Include the experience of military physician workforce(2).Very disappointing that we were behind. Include specialists(2). Longer Q & A(5). CCHH model. Get pharmacists involved. Shorter morning sessions, longer afternoon sessions. Discuss what to do with non compliant patients(2).Needs to be 2 days(3). Need to know how to have my IPA negotiated with insurers. Provide more specifics to achieve PCMH goals/criteria. More practical info for small practice implementation. More discussion to how to (including payment) and less generalizations. Don't have lunch in the same room as the conference. Speakers were rushed(6). Discuss health care reform & supreme court and election 2012. Too many lectures. More clinical innovations, ie. "group visits". Spelling on Dr. Sepulveda's powerpoint "chiasm". Let participants talk & ask questions at break session #4. Map to parking, reminder email. Inclusion of NP's and DNP's in process. More multi + disciplinary. Comments: E.H.R. = Poor b/c moderator used sessions as a bully pulpit. Not enough time for audience interaction with panel. "Care coordination = poor, b/c no new info, it was a recap of what already exists.</p>
<p>Please list additional needs you have for information or resources</p>	<ul style="list-style-type: none"> • List serve for group, more specific suggestions for pt management/access care. • Update PCMH. More time for local speakers. Resources to finances my Medical Home. • Ongoing (daily) updates of community resources available to patients. • Shared databases via web. How to pay for care coordination series? Case management . • Cost compliance and non compliance issues. Access to prescriptions.

- Checklist for those who haven't started yet and feel overwhelmed.
- Care coordination resources list: healthways Hawaii, ex. Of insurance, associated care, utilization of hospital based seminars, home health if able?
- Palliative care, addiction medicine.
- Directory of PCMH learning resources
- "Isolated" and neglected by the state resources for our rural community.
- Success stories from different PCMH models.
- How to decrease burden for practice to have access
- Focus on engaging role of consumer in what their role is in PCMH

As a result of today's summit, how likely are you to do the following things in the next year?	Today didn't help at all	I already do this and won't do more	Already do this and will do more	I will make a few practice changes	I will make a lot of practice changes	Total	Average
	1 PT	2 PT	3 PT	4 PT	5 PT		
Implement PCMH aspects in your practice setting?	4		93	36	28	161	3.5
Transform your practice to a PCMH?	4	4	81	33	29	151	3.5
Adopt an electronic health record?	6	25	79	14	24	148	3.2
Meet meaningful use?	7	10	78	22	28	145	3.4
Provide new coordinated care resources to your patients?	4	2	78	39	25	148	3.55
Utilize patient engagement techniques	7	4	76	40	24	151	3.5
Expand the team aspect of care in your office	2	3	78	36	31	150	3.6
Incorporate telehealth in your practice	32	7	43	42	15	139	3.0

Change in Knowledge Questions

1=Never heard of it

2=Heard of it, don't know much

3=I know the concept

4=I can describe it very generally

5=I can explain in detail

PRE Survey of Knowledge	1	2	3	4	5	Total	Pre Average	Increase Pre to Post
1.What is Patient Centered Medical Home (PCMH)?		7	32	84	58	172	4.07	34%
2. The requirements for being a PCMH	7	15	48	77	32	179	3.63	60%
3. The benefits of PCMH	1	13	39	73	54	177	3.92	37%
4. Care coordination	2	13	51	74	39	167	3.75	43%
5. Where to find local care coordination resources	13	42	64	38	23	171	3.09	37%
6. Team based collaborative care	6	16	63	61	31	173	3.54	42%
7. Patient engagement	5	15	60	64	34	86	3.60	40%
POST							Post Average	
1. What is Patient Centered Medical Home (PCMH)?		1	14	71	89	155	4.41	
2. The requirements for being a PCMH	1		21	73	60	165	4.23	
3. The benefits of PCMH		2	15	77	71	164	4.29	
4. Care coordination		3	29	62	70	171	4.18	
5. Where to find local care coordination resources	3	18	47	68	35	172	3.46	
6. Team based collaborative care		8	34	71	59	175	3.96	
7. Patient engagement	1	6	32	77	59	175	4.00	

Appendix 3: 2012 Physician Workforce Summit Administrative Simplification Survey (163 responses)

Please rate which admin. Burdens are most bothersome to you (or your staff) in your practice setting.	Very problematic	Moderately problematic	Minimally problematic	Not a problem	N/A
1. Enrollment verification	29	60	55	15	4
2. Access other insurance information	31	59	50	9	4
3. Drug formulary issues	50	63	34	4	4
4. Preauthorization issues	75	46	25	2	4
5. Claims issues (submissions, denials, coding)	49	68	30	2	4
6. Credentialing issues	16	41	64	26	5
7. Contracts with payers	20	63	49	13	5