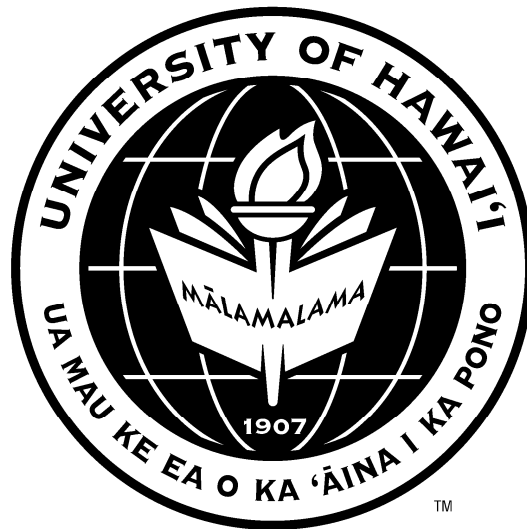


UNIVERSITY OF HAWAI‘I SYSTEM ANNUAL REPORT



REPORT TO THE 2016 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

DECEMBER 2015

Hawai'i Physician Workforce

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

A report to the 2015 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

October 2015

2015 Hawaii Physician Workforce Assessment Executive Summary

The physician workforce in Hawaii has changed from 2,894 Full Time Equivalents (FTEs) of physicians providing patient care in 2013, to 2802 FTEs in 2014, to **2806 FTEs** in 2015. The stabilization of the physician workforce is a positive sign, however every year the demand for physicians in the State of Hawaii increases by 50 FTEs due to population growth and aging, therefore this actually represents an expanding shortage of physician supply versus demand. Utilizing a new projection model purchased from IHS Global, the minimum current demand, not taking into account shortages of Non-physician Clinicians in Hawaii or the oversupply of some specialties artificially decreasing demand, is **3,310 FTEs**. When specialty-specific shortages are considered individually and the excess of physicians in areas of surplus are excluded from the calculation, the shortage of physicians is estimated at **685** full time equivalents. This indicates a continuing shortage of 20% of physician FTEs statewide.

A best case scenario for future workforce numbers is that by 2020, Hawaii will have a shortage of 800 physician FTEs. A worst case scenario is a shortage of 1,500 physician FTEs. The physician specialties with the greatest shortages are primary care, particularly disproportionately on neighbor islands, as well as the following specialties which have shortages of over 25% statewide: Infectious Disease, Colorectal Surgery, Pathology, General Surgery, Pulmonology, Neurology, Neurosurgery, Orthopedic Surgery, Family Medicine, Cardiothoracic Surgery, Rheumatology, Cardiology, Hematology/Oncology, and the Pediatric subspecialties of Endocrinology, Cardiology, Neurology, Hematology/Oncology and Gastroenterology.

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 95% of the providers who report working in Hawaii. Of the over 9,100 physicians licensed to practice in Hawaii, only 3,596 physicians are actively practicing in non-military settings. The total FTEs of direct patient care provided by these

physicians (including those providing telehealth to Hawaii patients from outside the state) is 2,806 FTEs.

Workforce statistics:

- >9,100 physicians licensed in Hawaii
- 3,596 practicing non-military physicians in Hawaii
- 2,806 total Full Time Equivalents (FTEs) of physicians practicing in Hawaii or caring for Hawaii patients
- Demand grows by 50 FTE/yr, and we lose 50 physicians/yr, so we need 100/yr to maintain the current staffing levels
- 711 of our physicians are 65 years or over in 2015
- 31% female, 69% male
- 58% of physicians work in practices of five physicians or less
- Only 60 physicians report participating in telehealth (2%)
- Percent of physicians who report taking new patients on 2014 survey: 85%
- Percent of physicians who report taking new Medicare patients: 70%
- Percent of physicians who report taking new Medicaid/Quest patients: 67%

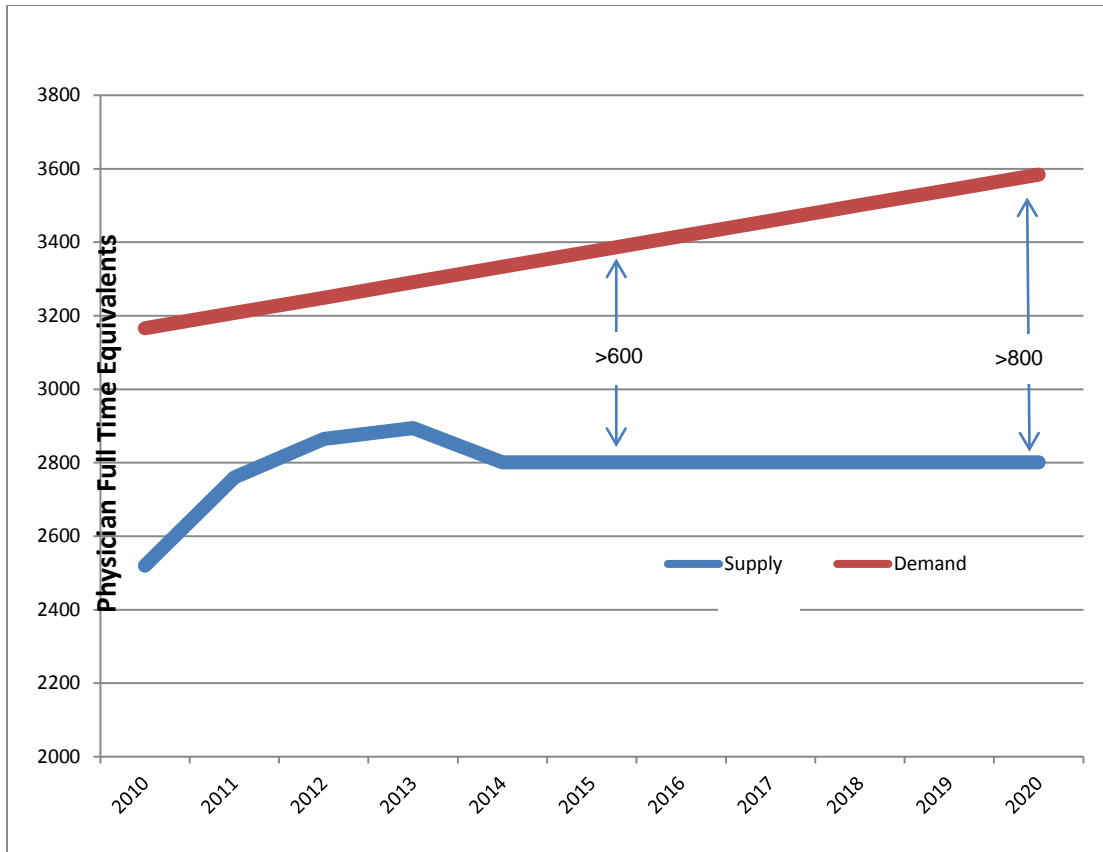
The **demand** for physician services is estimated using a model purchased from IHS Global in 2014. The major components of the demand model include: 1) a population database that contains characteristics and health risk factors for a representative sample of the population in each Hawaii county, 2) 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 Hawaii that was representative of the population in each county in Hawaii. 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 Hawaii, 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 is 3,310 FTEs before taking into account oversupply in some areas and in some specialties. After adjusting for these factors, the current estimated shortage is 685 physician FTEs.

Projections of future supply are difficult to assess as there is no clear indications of trends based on the four years of data available. Therefore the projections in the model offered are based on Hawaii being able to maintain our current physician numbers by replacing those who retire or leave every year. If this is the case, then by 2020 we will be 800 physicians short, if the physicians retained practice in the specialties most needed. Since this is rarely the case, it is likely that our shortage will increase more steeply than this graph represents. In addition, there is an assessment of physician assistants and advanced practice nurse practitioners currently underway and if these important patient-care provider populations are also demonstrated to be at 50% or less of demand, as estimated by this researcher, then the demand for physicians will be even higher to make up for that shortage. Based on the calculations described above, the trends in physician supply and demand in Hawaii are graphed in Figure 1 below.

Figure 1. Trends in Physician Changes and Future Projections



The greatest shortages by county are estimated based on supply and demand comparisons and are included in Table 1. This is based on numbers of provider FTEs needed compared to the average number of providers a similar population would have on the US Mainland.

Table 1: Greatest Specialty Shortages by County

Big Island	Kauai	Maui	Oahu
Primary Care	Primary Care	Primary Care	Primary Care
Orthopedics	Orthopedics	Psychiatry	General Surg
Psychiatry	Cardiology	Gen Surgery	Cardiology
OB/Gyn	Pathology	Emergency	Orthopedics

Figures 2 and 3 provide maps of areas of greatest shortages of physicians in general and primary care by percentage of shortage.

Figure 2: Physician Shortages (All Specialties)

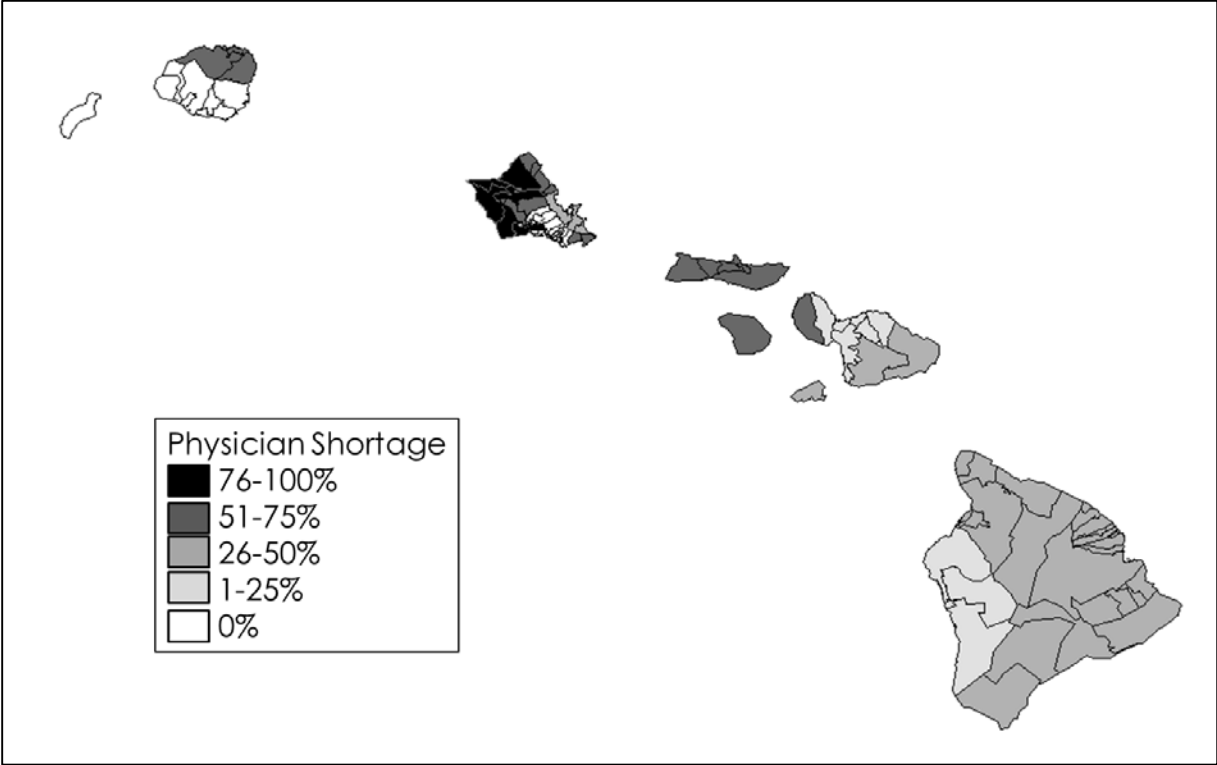
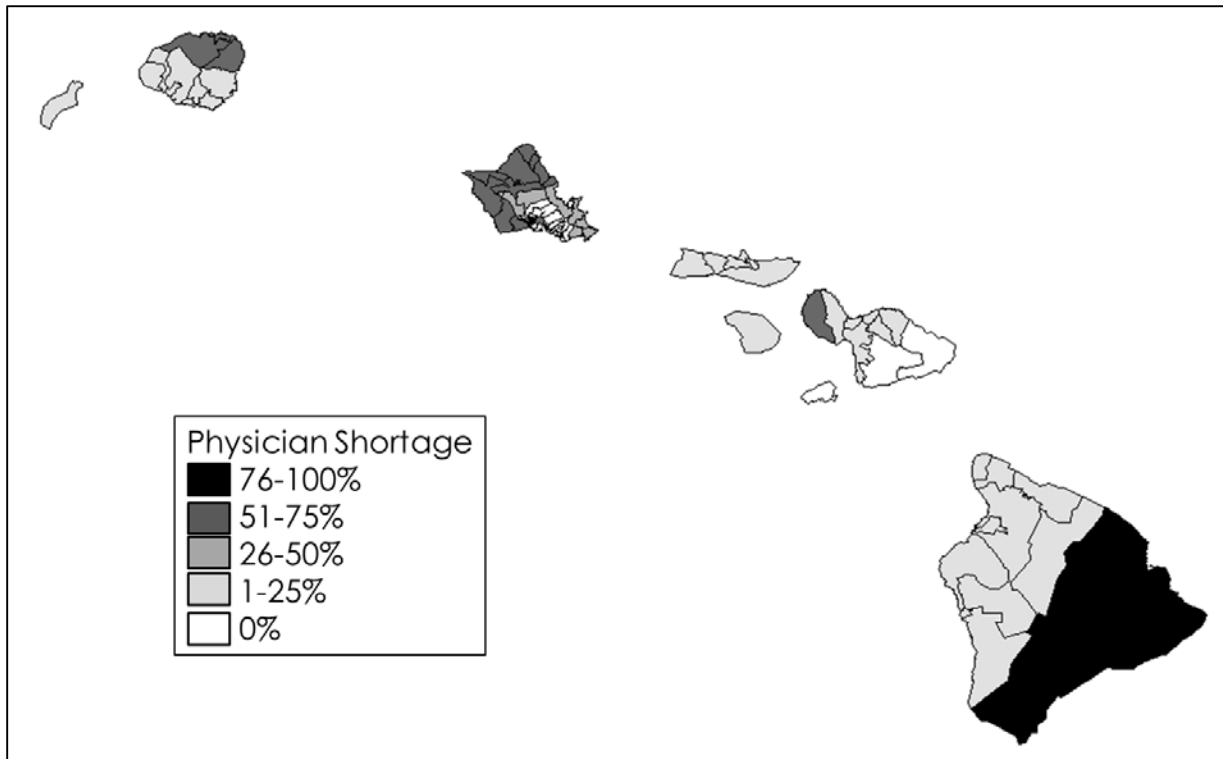


Figure 3: Primary Care Physician Shortages



Solutions Being Implemented

Efforts to grow the population of satisfied physicians working in patient care in Hawaii 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 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 Hawaii Medical Education Counsel which identified two additional activities: a state loan repayment program and an initiative to recruit Hawaii medical training graduates back to practice in Hawaii.

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 Hawaii Health Careers Navigator, a 180 page health careers resource book with information on all the health professions in Hawaii and local resources for pursuit of health careers which will be printed and distributed to all schools in Hawaii with federal grant funding and can be viewed at www.ahec.hawaii.edu. Federal grant funding has also been obtained to begin the Hawaii Pre-Health Career Corps for students interested in health careers to receive shadowing, research and mentoring experiences;
- 2) Expand rural training opportunities: AHEC is working with the health professions schools in Hawaii to expand rural training opportunities and currently provides these to 25% of the medical school class and 10% of the UH nurse practitioner students. Efforts are being made to expand inter-professional education in collaboration with the UH Manoa College of Health Sciences and Social Welfare.
- 3) Support Practice Reform was addressed at the 2015 Hawaii Health Workforce Summit that offered eight hours of Continuing Education to the 485 participants. The Summit addressed New Models of Care, Health Information Technology, Administrative simplification, Practice planning, Retirement planning, ICD-10, Meaningful use, Incorporation of Behavioral Health into Primary Care and an Innovative distance education program called Project ECHO for telementoring and tele-education of rural providers.
- 4) Payment reform was also addressed at the Summit, and Dr. Withy has been a member of the Governor's Healthcare Transformation Multipayer Committee.
- 5) Community Involvement - the Physician Workforce Assessment team is working with the Hawaii State Rural Health Association to provide the welcome wagon for rural providers and to date has supported the welcome of 11 local healthcare providers. The Hawaii State Rural Health Association is in discussion with Hawaii Island Healthcare

Alliance to create a welcome event for new providers on Big Island.

- 6) 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.
- 7) Electronic Health Records was a topic of the 2015 Health Workforce and IT Summit.
- 8) The Hawaii State Loan Repayment Program has received an additional three years of funding at \$250,000 a year for the period of 9/1/2014 through 8/30/2018. This has supported 18 loan repayers with nine continuing on and one in default. Efforts to raise matching funds from the State Legislature continue.
- 9) Finally, the AHEC.hawaii.edu website advertises job opportunities in Hawaii to providers interested in practice and disseminates information. AHEC is partnering with the Hawaii Medical Association to create a Pipeline to Practice for medical students to receive mentoring from established practices; and AHEC is partnering with the Hawaii Recruiters Group to reach out to all residency programs in Hawaii with information on how to find practices, jobs and resources in Hawaii and creation of a pop-up display for presenting at mainland conferences;
- 10) In addition to these activities, Dr. Withy is co-chair of the Governor's Healthcare Transformation Workforce Committee and is a member of the newly formed Hawaii Health Workforce Advisory Committee.

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. The annual summit is now being combined the Hawaii Health Information Exchange Annual HIT Summit and with a job fair for medical providers.

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 Physician Workforce Relicensure Survey Questions

2015 Physician Workforce Survey Questions

1. Do you provide healthcare to patients in Hawaii? 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 Hawaii?
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 Hawaii patients via telemedicine? Yes No

Appendix 2: Evaluation of 2015 Hawaii Health Workforce and IT Summit

Of the 485 participants, the evaluation was completed by 141 physicians, 12 Nurse Practitioners; 2 Physician Assistants; 13 Academic Faculty; 16 Administrators; 12 staff; 2 industry partners; 17 other healthcare providers; and 10 others.

Do you currently have an Electronic Health Record?	Yes	142	No	35
Do you currently work in an interprofessional practice?	Yes	77	No	87
Do you use telehealth/telemedicine in your practice?	Yes	26	No	151
Are you interested in using telehealth/telemedicine?	Yes	78	No	83

<i>How much do you know about the following:</i>	<i>Pre-post improvement of self-reported competency on 5 point scale</i>
How federal healthcare reform will impact me	0.5
How to increase net profit in my practice setting	0.62
How to increase personal satisfaction in my career	0.51
How to use Information Technology to improve care	0.42
How to use Information Technology to improve practice	0.52
How I can use telehealth in practice (i.e. Project ECHO)	0.96

<i>Please rate the sessions you attended:</i>	<i>1 to 5 (highest)</i>
Opening Session: Promise and Peril of HIT	4.2
Reducing Costs and Transforming Care	4.1
Health Workforce Statistics and Innovations	4.2
The Successful Job Search	4.5
Lunch Speaker: Transforming Healthcare in the US	4.5
Integrating Behavioral Health and Primary Care	4.2
Making Technology Work For You Not Against You	4.2
Meaningful Use Updates	4.5
IT Security and Your Practice	4.4
Exit Planning	4.4
Future of HIE and Community Based Initiatives	4.4
Project ECHO	4.4
ICD10, It's Here to Stay	4.4
QCPIN Referrals management and CHR On-Boarding	4.3
Entry Planning	4.4

Comments on Breakout Sessions:

Information technology understanding is crucial; Great! Enjoyed the BH teleconference discussion-hope the red-tape is lifted so that these inventions are easy to implement. Have this BH model integrated across all FPHCs; Excellent Health Career workshop. I look forward to more in the near future. Sheraton excellent hospitality, food and vendors and staff; great (3); good session; informative (5); Health Workforce Statistics-excellent presentation, love the permission certificates, motivating, like the huddle and cuddle concept; CHW outreach program-excellent and comprehensive info on work done, great passion, and great satisfaction; harm reduction model; Financial consult-too much waiting, only two people providing consults; Need CEUs for other health care professionals; Sheraton is not best quality food and drink-go back to HHV; good topics (2); Excellent experience and connection and learning, sharing; Interesting to compare integrated behavioral/primary care; the ones I attended were helpful; many desirable sessions were competing with each other (4); great variety of talks (4); great speakers; very educational; some of the speakers did not fulfill the objectives listed; eliminate sessions that have no CME hours; lots of time for Q&A; good idea on telehealth for psychiatric care; providing cheat-sheets for ICD10 to help transition in October; learned about CHR which is great; Integrating Behavioral Health and Primary Care: Rural Hawaii Case Studies Panel; Speakers not at podium were difficult to hear (2); we got to focus on areas of interest; ECHO-use telehealth to share best practices; excellent and relevant; highly applicable to real-time needs in our practice; timely material; Meaningful Use update provided excellent info; provided a different perspective, especially incorporating e-health records; ICD-10; IT security; meaningful use talk succinct, good quick updates; it would be ideal if all primary care doctors adopt an integrated BH model; room is too large for breakout; food was good; area too small for everyone on break at once; raffle was best; I like the CHW presentation, to do how they help the homeless and got to where they are; would be nice to have handouts for contacts for services to PCPs (like integrating Behavior Health & Primary Care); audience participation also good; ICD-10 speaker didn't state that no physicians were involved in developing ICD-10-CM, did not allow enough time for Q&A.

What was the most beneficial part of this conference?

ICD-10 session was informative and relevant, very interesting talk (11); Meaningful Use Updates (5); Carl Taylor JD (5); Networking (28); optimism over improving primary care access to specialty expertise; changed my views on where IT and EMR are going; great speaker (primary care topic); Project Echo (6); Breakout Sessions (3); IT issues; Being inspired by Josh Green and others; Learning more about HHIE; technology updates; opening and lunch keynotes; EHR security; application of EHR; larger perspective on trends; offering attendance to off-island medical professionals (2); Information about improving patient care; Learning about initiatives in Hawaii; learning about future directions of healthcare in HI; audience discussion (3); Dr. Withy's recommendations for increased satisfaction in practice; possibilities for a more integrated healthcare system; update on community health records; collaboration; free CME (2); learning that I'm not the only one struggling with making technology work; cutting edge info (2); Dr. Griffin's presentation (4); learning about the HI Harmonization Act; vendor information available (3); learning HIE will be used for more information than just immunizations; Christine Saduka's talk (2); All HHIE Sessions; available resources; awareness of changes; the talk on the

community medical record; community health worker outreach for homeless (3); having the option to choose talks; great location; the message of fun and optimism-why I went into medicine in the first place; workforce statistics and needs in HI (4); hearing from other healthcare providers' concerns and triumphs (2); learning more about Behavioral Health and primary care integration in rural settings (2); meeting old friends; very informative talks, great speakers; Meaningful use more challenging than I thought; knowledge of speakers; emails of others; update on current statuses of HHIE and HIT; Hawaii HIE and community health record; QCPIN referral; Exit planning; current health information exchange status and future; sharing ideas in practice management with colleagues; pertinent and current topics; knowing ways to improve and sustain healthcare providers; updates on HIE; learning about resources in community; hearing industry and MD comments on HIE and community health records; combining multiple interesting topics under one roof; Dr. Kelley Withy and lunch speaker regarding realities in medicine and increasing mentoring opportunities for students; loved speaking with vendors; "open mike" discussions between professionals.

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

Burnout among contract hospital physicians; better IT; the LCD projected pictures were difficult to see-low light; computer malfunction during cost transformation session shows how difficult having EMP is; A/V support; Timing of session/speaker/time for Q&A; discussing the benefits of team practice; Impact of social determinants of health and primary health care delivery; the APRN-physician relationship; funding and education; mental health/behavioral health and chronic management disease projects; adolescent health and obesity resources; solution-based health care approach (not problem based); contemporary alternative healthcare; Integrative healthcare; single payer- pros and cons for Hawaii; cloud-based HI platforms; include an element (presentation, table/booth, etc.) on HSRHA membership and group's functions; Provide opportunity for physicians to connect/network; Speakers should stand when speaking (2); Innovative ideas re: getting paid for phone consults; please post PowerPoint presentations online; provide a copy of the program online in order for the person planning to attend to determine whether topics are relevant to them (2); QCPN&HAP how are things working in healthcare reform?; actually show examples of how HIE is used (demonstrate usefulness and functionality); slides were hard to see from the back of the room, additional screens may help; aging and geriatrics; hoping for more depth on IT; this year's topics seem to rehash the already known; CMS reimbursement; community health workers; wanted to attend more of the breakout sessions (2); speakers on telemedicine; update the transportation instructions for pickup at HNL (3); invite HS, college, and post bac students interested in healthcare careers-match with established docs; handouts of some meetings; mental health in HI; improving access to healthcare/increasing healthcare on neighbor islands; integrating geriatrics into primary care; Echo Hawaii; PowerPoint presentations available ahead of time; mainland speakers need to adjust their talk to address local needs and be more tolerant; fewer questions, more answers; printed notes of lectures; Practice transformation; direct patient care; team based care; creating an efficient team; how to collaborate with psychologists to care more for patients; Gets better every year-great investment into our healthcare community; physicians health; What is the growth outcome?; What questions about quality of care can be asked of HHIE?; How do we put people before profit? How do we correct the underlying causes of disease when our system

rewards the destruction of health for profit? start on time and stick to posted schedule; have some info for specialists-at least breakout sessions; ICD-10 impact and changes; more dynamic speakers (like Carl Taylor) topics are very dry; should have more ICD-10 educational sessions and perhaps give us a free app for that; keynote speaker #1-couldn't understand where we were going with the info; topics of interest to pediatric sub-specialists; more interactive lectures to involve attendees; put small boards in front of each room indicating the sessions that will be held; covers very important concerns about providing health care; time allotted for topics too long-scheduling to allow more time for attending other breakouts; update on changes of year; make the sessions available on the web to audience in other islands who cannot come to Oahu; not so cold-conference room; great-perhaps detail; high-pitched hum in Maui room; very practical info; PCMH; no change (2); current research in the medical professions.