Does Hawai‘i Have Enough Psychiatrists? Assessing Mental Health Workforce Versus Demand in the Aloha State

Alexandra Aaronson MD and Kelley Withy MD, PhD

Abstract
National data reports the number of adults with any diagnosable mental disorder within a given year is nearly 1 in 5. Hawai‘i, along with the rest of the nation, faces a serious shortage of mental health providers. This article describes the research undertaken to create a more accurate assessment of the current mental health provider workforce in Hawai‘i through developing an estimation strategy to appraise local mental health workforce needs. The results indicate the supply of psychiatrists for Hawai‘i’s 2010 census population was found to be 161.4 Full Time Equivalents (FTEs) psychiatrists, or 11.86 psychiatrists/100,000 population, with the greatest number of psychiatrists per capita on the island of O‘ahu. Of the 161.4 FTEs, 50.4 FTEs or 31.2% were accepting new Medicaid patients. The state’s results show that Hawai‘i is short of meeting current patient need by more than 100 psychiatrists though the state was only short by 6 FTE psychiatrists with regard to estimates of Medicaid patients’ need. While the first number is likely accurate, the second number is likely to be significantly underestimated for a number of reasons. One reason is that practitioners who reported accepting new Medicaid patients likely see comparatively few. Another reason is that it is likely that Medicaid patients make up more than the approximate 20% of the psychiatric patient population. It is reported nationally that a greater percentage of the mentally ill receive Medicaid than the population at large. Thus, there are probably many more patients on Medicaid than our estimations accounted for. It is clear more research and more changes need to be made in Hawai‘i’s publicly funded healthcare system to incentivize physician acceptance and make mental healthcare more accessible to this growing population.

Keywords
Physician Workforce; Psychiatry Workforce; Mental Health Workforce

Introduction
Mental illness is a significant issue that affects large numbers of the population the world over. The National Institute of Mental Health reports that the number of adults with any diagnosable mental disorder within the past year is nearly 1 in 5, which is approximately 43 million Americans.1 Additionally, 20 percent of children ages 13-18 currently have or at some point in their life have had a seriously debilitating mental disorder.2 Data has also suggested that mental illness is second only to heart disease in terms of United States (US) patients’ lost years of healthy life.3 Despite all the available information suggesting the grave outcomes of untreated mental illness, the nation still faces an overall lack of mental health providers. In one 2009 study, it was estimated that over 77% of US counties have a severe shortage of psychiatrists, with 55% of US counties not having a single psychiatrist in the area.4 For people struggling with mental illness in places such as these, there is little recourse in managing their symptoms.

Previous national mental health workforce analyses have found Hawai‘i is ranked ninth among states with the most psychiatrists per capita, averaging approximately 10-12 psychiatrists per 100,000 population, even though there are 22 designated mental health shortage areas in the state.5 This curious finding is due to the distribution of providers across the eight main islands in the archipelago. The vast majority of area doctors are located in and around the capital city of Honolulu on the island of O‘ahu while some other islands are without a single mental health provider. Despite Hawai‘i’s enviable overall number of psychiatrists per capita, many healthcare providers, even those in Honolulu, lament the lack of available psychiatrists, particularly those willing to see patients who receive Medicaid and Medicare benefits. Our study aims to deduce why this is the case. Though some research has been done prior to our study on the number of physicians in the current workforce, the local rates of physician acceptance of federally funded healthcare options has not been assessed. Moreover, attempts at benchmarking workforce to population need, a method explained in several papers by Faulkner and colleagues, have not been made locally to estimate local workforce demand.6,7

Our study aims to assess every psychiatrist throughout the state of Hawai‘i in order to determine practice location, whether new Medicaid patients are accepted, and the number of hours worked by each physician. By collecting this data we hope to create a more accurate assessment of the current mental health workforce. Then, by comparing this data to local census data and developing an estimation strategy using benchmarks, we hope to estimate local mental health workforce need.

Methods
The researchers obtained the 2012 licensure list of all Doctors of Medicine (MD) and Doctors of Osteopathic Medicine (DO) licensees from the Hawai‘i State Department of Commerce and Consumer Affairs (DCCA). Information obtained included name and mailing address. Physician surveys, Internet searches and phone calls were conducted prior to this study to identify physician specialty, address of practice, date of birth and phone number of practice.8 In February of 2013, the research team extracted the psychiatrist data and repeated searches of public sources (Hawaii Medical Service Association database, Google, phonebook) to verify each physician’s current practice address and phone number. Each physician’s office was then contacted to confirm practice location, whether the provider had other local practices, hours each provider worked per week at each practice, types of insurance accepted at each practice and whether the physician was accepting new patients. All physicians found to no longer be practicing outpatient psychiatry within the state of Hawai‘i were excluded from the study. If a provider’s office could not be reached after three attempts, but
two other members of the medical community could confirm the provider was still practicing, his or her work hours were estimated using the averages of the data set (30 hours/week or 0.75 Full-Time Employees) and it was assumed the address of their practice was correct. One-third of these doctors were assumed to accept new Medicaid patients as was seen with the rest of the workforce contacted. Full-Time Employees (FTEs) were determined by assuming a full-time psychiatrist works 40 hours per week. FTEs were grouped based on the zip code of the practice location and whether or not the practice is accepting new Medicaid patients.

For the purposes of this study, since there is no official statewide data on prevalence of mental illness in Hawai‘i, the estimate used is based on national figures. Multiple previous studies, including the Surgeon General’s 1999 report on mental illness and the NCS-R report from 2005, have suggested that approximately 20% to 26% of the population have a mental illness diagnosable by the DSM IV-TR within a 12-month period. Approximately 33%–50% of these people seek psychiatric treatment from a physician. These studies have also estimated that at any given time 5% of the population has a “serious mental illness” (SMI), defined as mental illness causing significant social or occupational impairment. Using the 2010 census report and the 2010 Quest report to determine the Hawai‘i resident population at that time and the percentage of the population enrolled in Medicaid, this study estimates 5% of the Hawai‘i resident population as having serious mental illness (SMI). Not all of these patients receive psychiatric care but, ideally, they should all have access to it, so this entire population is included in the estimate for the optimal number of psychiatrists throughout the state. The team then estimated the number of Hawai‘i residents with a non-serious mental illness as 15% of the population (5%-20% SMI population), and assumed 33% of them sought psychiatric help to obtain the most conservative possible estimate of mentally ill population seeking treatment based on previous data.

Larry Faulkner demonstrates that the simplest and most accurate way to estimate physician workforce need is to determine the number of patients who require treatment by a psychiatrist, how much time each patient needs with a doctor, and how much direct patient treatment time a single doctor can provide. The team determined that this methodology, a hybrid of both population-based and benchmarking-based need estimation, was most adequate for structuring an equation to develop a needs-based estimate of workforce demand.

Multiple studies have shown approximately 60% of a psychiatrist’s working hours are spent in direct patient care. This figure was used to determine that each full time equivalent (FTE) psychiatrist spends approximately 1,104 hours/year in direct patient contact (assuming each FTE works 40 hours per week, 46 weeks per year). Konrad et al, in their 2009 study, also suggest that each seriously mentally ill patient (SMI) spent 4.38 hours per year on average with a mental health providers (MHP) while adults with mild to moderate mental illness spend 12.6 minutes per year on average with an MHP. The research team then multiplied the estimates of mentally ill population by 4.4 for SMI and .2 for mild to moderate mental illness, respectively, to estimate the number of hours of provider services these groups of patients require. This figure was then divided by 1104 (the number of hours a psychiatrist is in direct patient contact per year) to ascertain how many providers are needed to care for all Hawaiian patients.

**Results**

The supply of psychiatrists for Hawai‘i’s 2010 census population of 1,360,301 was found to be 161.4 FTE psychiatrists, or 11.86 psychiatrists/100,000 population, with the greatest number of psychiatrists per capita on the island of O‘ahu. Of the 161.4 FTEs, 50.4 FTEs or 31.2% were accepting new Medicaid patients.

The estimated total number of hours of psychiatric treatment required by Hawai‘i’s population was calculated to be 312,733. This would require 283 psychiatrist FTEs throughout the state, or 20.5 psychiatrists per 100,000 people. The number of psychiatrist FTEs needed to accept new Medicaid/Quest patients was found to be 56 if the percent of the Hawai‘i population who receives Medicaid/Quest stays constant. The average age of psychiatrists in Hawai‘i was found to be 60, significantly higher than the national average age of 55. The average number of hours worked per week in Hawai‘i was found to be 30, which is significantly lower than the national average of 40 hours worked per week.

**Discussion**

This study produces a number of interesting findings. For one, based on our equation created by using both population and benchmarking estimation methods, results show that the state of Hawai‘i is short of meeting current patient need by more than 100 psychiatrists, though the state was only short by 6 FTE psychiatrists with regard to estimates of Medicaid patients’ need. While the first number is likely accurate, we feel the second number is likely to be significantly underestimated for a number of reasons. First, there was definite response bias inherent in the study – we were asking known practitioners directly whether they accepted Medicaid patients, which is seen as providing a sort of charitable service to the community. It is highly probable that practitioners said they were accepting new Medicaid patients but it may only be a few a year. Second, it is likely that Medicaid patients make up more than the approximate 20% of the psychiatric patient population. To be conservative with estimates, since 20% of the total population of Hawai‘i received Medicaid, this study assumed that number to hold true for those with mental illness. In reality, it is believed a greater percentage of the mentally ill receive Medicaid than the population at large.

Thus, there are probably many more patients on Medicaid than we accounted for. Third, for physicians who see Medicaid patients, we assumed they spent the entirety of their time caring for the Medicaid community. Though that is true for some physi-
physicians, particularly those working in state-funded or grant-funded clinics or those who work within the department of Health, it is likely not the case for physicians in private practice or those who work in hospital clinics. One early study suggests that approximately 8% of a private psychiatrist’s practice is made up of government-funded patients, however, given its timing and exclusion of other types of practices this finding did not alter our approach to the data. 

The results also show that the average age of practicing psychiatrists in Hawai’i is 60, five years higher than the national average of 55, and that the average number of hours worked per week by psychiatrists in Hawai’i (30 hours/week) is ten hours lower than the national average (40 hours/week). This second number may be somewhat overestimated, also due to response bias, making the number of active Hawaiian psychiatry FTEs even lower.

Unsurprisingly, the data demonstrate that large areas of the Hawaiian islands had no psychiatrists or very few per capita in 2010, including all of Lanai and Molokai and large deficits on Maui, areas of Kauai, Hawai’i and the northern coast of O’ahu. The area with the most psychiatrists per capita was Honolulu and nearby towns. Many things could be done to get more psychiatrists to the Hawaiian islands as well as into the field as a whole. Notably, residency class sizes could be increased, as there are currently many more applicants to psychiatry residencies than there are slots. Despite the growing population size, residency classes have stayed largely the same size for the past several decades. Another promising line of MHP access expansion is the University of Hawai’i’s attempt to help patients in rural Hawaiian communities through a telepsychiatry division that aims to provide care to those in areas without any local MHPs. Finally, the University’s AHEC center is trying to bring more providers to more rural areas throughout the state by offering loan repayment programs to doctors who agree to work in low-service areas and are willing to see patients with publicly funded insurance. If we could increase the size of all of these programs, we could potentially solve, or at least significantly lessen, these problems.

Another problem facing Hawai’i is how few practitioners are willing to see new Medicaid patients. The Medicaid population in Hawaii is growing, while the number of providers willing to see Medicaid patients is shrinking. Many providers explained on the phone that though they used to see some Medicaid patients, they are unwilling to see new ones due to low reimbursement rates, burdensome restrictions on care, and the ongoing effort required to attain reimbursement. Hawai’i is in an interesting position as nearly all Medicaid options are hybrid HMO plans with private companies. Oftentimes the private companies oversee reimbursement and treatment care plans. In practice since the mid-1990s, area doctors surmise that since this came into being, many stopped, or largely cut down, seeing Medicaid-receiving patients. Obviously, more changes need to be made in Hawai’i’s publically funded healthcare system to incentivize physician acceptance and make mental healthcare more accessible. By bringing these problems to light, this study hopes we can better address them.

**Conflict of Interest**

The authors identify no conflict of interest.

**Author Affiliations:**

Department of Psychiatry and Behavioral Sciences, Northwestern University, Feinberg School of Medicine, Chicago, IL (AA)

John A. Burns School of Medicine, University of Hawai’i, Honolulu, HI (KW)

**Correspondence to:**

Alexandra Aaronson MD; Email: Alexandra.aaronson@northwestern.edu

**References**


