OVERCOMING LANGUAGE BARRIERS TO PUBLIC MENTAL HEALTH SERVICES IN CALIFORNIA

Joan R. Bloom, Mary Masland, Crystal Keeler,
Neal Wallace, and Lonnie R. Snowden, PhD

Joan R. Bloom, PhD and Principal Investigator, is a Professor at the School of Public Health,
Mary Masland, PhD, is an Assistant Researcher, and Crystal Keeler, MPH, is a Research
Assistant, University of California, Berkeley;
Neal Wallace, PhD, is an Assistant Professor at the Hatfield School of Government,
Portland State University;
Lonnie R. Snowden, PhD, is a Professor at the School of Social Welfare, UC Berkeley

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EXECUTIVE SUMMARY

In an attempt to make Medi-Cal mental health services linguistically and culturally competent, the California Department of Mental Health (CDMH) requires that the state's county-operated mental health agencies provide information and services to Medi-Cal beneficiaries in their primary language when the number of beneficiaries in the county reaches "threshold" levels. "Threshold" is defined as "3,000 beneficiaries or 5% of the Medi-Cal population, whichever is lower, whose primary language is other than English." (California DMH, 1997).

The purpose of this project was to assess the effect of the DMH's "threshold language" policy on access for adult Medi-Cal beneficiaries with limited English proficiency (LEP), and to evaluate the effects of other county-level activities on access for the same population. Using random effects multiple regression techniques, we modeled quarterly county-level, language-specific penetration rates (percent of Medi-Cal eligibles using specialty mental health services) as a function of the threshold language policy, cultural competency training, bilingual staff, and language-specific clinics/programs. The main data sources for the study were specialty mental health Medi-Cal claims data from the Department of Mental Health, Medi-Cal eligibility data from the Department of Health Services, County Department of Mental Health Cultural Competency Plans, and survey data from two prior surveys conducted by the study team.

Our findings indicate that, for Spanish and Cantonese speakers, penetration rates were below those of English speakers. Other Southeast Asian language groups examined (Vietnamese, Hmong, and Cambodian) tended to have penetration rates higher than English speakers, but the study did not take into account the need for services which may be greater among this population. The regression equations suggest that, overall, the threshold language designation increased penetration rates for Asian and Spanish speaking adult consumers. Rates of change appear to vary according to county program characteristics. It appears likely that language-specific programs and higher bilingual staff levels increase penetration. However, the potential for endogeneity hindered attempts to clearly identify these county program effects.

Policy implications are:

- The threshold language requirements appear to be effective in improving access, primarily in the counties with lowest access rates and fewest language-access activities prior to the initiation of the policy.

- Bilingual providers and language-specific clinics/programs have a positive effect on language access and, in some cases, have given a boost to the implementation of the threshold language policy.

- Efforts should be made to increase the number of bilingual providers. Opportunities include the passage of Proposition 63, as well as statewide implementation of innovative approaches to increase bilingual providers currently used in some county programs.

- Standardization of training programs, including requirements for the training of interpreters in mental health services, may improve the overall effectiveness of training activities.

INTRODUCTION

The purpose of the project is to assess the effect of the California Department of Mental Health's (DMH) existing "threshold language" policy on access, and to evaluate the effects of other county-level activities to improve access for Medi-Cal beneficiaries with limited English proficiency (LEP).

The number of Californians age five and over who speak a language other than English increased from 8.6 million in 1990 to 12.1 million in 2000. Approximately 40% of Californians speak a language other than English in the home (US Census, 2000) while one in three children live in a home where a language other than English is spoken (Chang and Tobiassen, 2000). Among Medi-Cal beneficiaries, approximately 54%—or 3,262,300 people—reported a primary language other than English in 2001.

The fastest growing non-English-speaking group is the Latino population (U.S. Census, 2000). Nearly 32% of Medi-Cal beneficiaries reported Spanish as their primary language. In some counties (Colusa, Imperial, and Monterey), over 50% of Medi-Cal beneficiaries reported Spanish as their primary language (California DMH, 2002).

The primary reason for these demographic changes is immigration; more immigrants come to California than to any other state. In 2002, California was home to 31% of the nation's foreign-born population (Current Population Survey, 2002).

For many immigrants, their English proficiency is limited. Approximately half of all Mexican immigrants in California have difficulty speaking English. With the exception of those from Philippines and India, between 25% and 40% of Asian immigrants also struggle to communicate clearly in English (Johnson, 2001).

Many persons with limited English proficiency (LEP) are unable to access health and mental health services due to language barriers that persist despite state and federal laws that grant them rights to equal access. The California Language Access Coalition and other organizations have documented instances in which residents did not benefit from public services because linguistically proficient staff and services were not available (California Little Hoover Commission, 2002). The health care field, in particular, has been criticized for failing to provide linguistically proficient care (California Little Hoover Commission, 2002).

In order for health and mental health services to be effective, providers must be able to communicate with patients and clients in ways that they can understand. Professionals who cannot communicate, or fail to consider a family's culture, run the risk of having their advice ignored, incorrectly diagnosing the cause of a problem or failing to develop an appropriate solution. Thus, providers need to be equipped with the knowledge and skills to interpret, appreciate, and negotiate linguistic differences (Chang and Tobiassen, 2000).

In an attempt to make Medi-Cal mental health services linguistically and culturally competent, the California Department of Mental Health (DMH) requires that the state's 57 county-operated mental health agencies provide information and services to Medi-Cal beneficiaries in their primary language when the number of beneficiaries in the county reaches "threshold" levels. "Threshold" is defined as "3,000 beneficiaries or 5% of the Medi-Cal population, whichever is lower, whose primary language is other than English." (California DMH, 1997).

A number of California's counties are moving beyond the state's requirements with innovative ways to help their non-English-speaking populations access mental health and other public services. Two prior county surveys conducted by the study team, which were funded by California Program on Access to Care, indicate that a number of counties are using innovative strategies to increase the number of bilingual staff, engaging in extensive cultural competency training to increase staff knowledge and understanding of health and mental health beliefs other cultures, and collaborating extensively with community-based non-profit organizations, including faith-based organizations, in the provision of services through contractual arrangements (Snowden and Masland, 2001; Snowden, Masland, and Guerrero, 2003).

RESEARCH OBJECTIVES

While these efforts are innovative and plausible ways to increase access for LEP persons, there has been no formal evaluation of their empirical effect on mental health access for the LEP Medi-Cal population. Measuring the effects of these different approaches for increasing access to care would help policy-makers understand which approaches are most effective and for which populations.

Our proposed study's research questions are as follows:

1) What are the mental health penetration rates for Medi-Cal beneficiaries by primary language? How do they compare?

2) What effect does the designation of a language as "threshold" have on access to mental health services for Medi-Cal beneficiaries who primarily speak that language?

3) What is the effect of other county-level activities – cultural competency training, hiring of bilingual staff, and providing language-specific clinics and programs – on access for non-English speaking Medi-Cal beneficiaries? How do these activities moderate the effect of the threshold language policy on access?

POLICY BACKGROUND

The Language Barrier to Mental Health Access

Surgeon General David Satcher (US Department of Health and Human Services, 2001) concluded that members of ethnic minority populations made less use than whites of specialty mental health treatment. His report *Race, Culture, Ethnicity and Mental Health: A Supplement to Mental Health* documented that disparities are especially pronounced among populations with limited English proficiency.

Research focusing directly on the language barrier has documented limited access for LEP Latinos and Asians. A recent investigation found that Spanish-speaking Hispanic patients were significantly less likely than English-speaking Latinos and whites to have had a mental health visit, as well as a physician visit, or to have received an influenza vaccine (Fiscella et al., 2002). Studying Asian Canadians, Li and Browne (2000) found that poor English language ability was a major barrier to accessing mental health services. Jang, Lee and Woo (1998) examined

income, language, and citizenship status and their effect on the use of health care services among 1,808 Chinese residents of San Francisco. Findings indicated that the vast majority were foreign born, monolingual Chinese speakers with no health insurance. Another study of a Chinese community found that language barriers were the second most frequently identified in accessing mental health care; 62% of the sample could not speak English, 7.7% had difficulty obtaining an interpreter (if they could obtain one at all), and 3.8% did not want to use an interpreter, fearing confidentiality problems. Seventy-three percent who sought help saw a psychiatrist, but 56.1% found the experience negative due to language difficulties. Only 39% had a positive experience (Li, Logan, et al., 1999). Another study of access to health care, conducted in a mid-western Medicaid managed care plan, also found that language was a major barrier. Study findings indicated a lack of understanding of Medicaid managed care services by the non-English-speaking population and poor communication of health needs to providers (Kaiser et al., 2002).

Limited English Proficiency (LEP) and California State Policy

Acknowledging the potential of LEP to block access to health and mental health care, federal law stipulates that all persons eligible for Medicaid and Medicare must have equal access to services of equal quality, regardless of their primary language. Accordingly, Title VI of the Federal Civil Rights Act of 1964 prohibits recipients of federal funds from providing services to LEP persons that are limited in scope, or lower in quality, than those provided to other persons. Title VI commits all entities that receive funds from the federal Department of Health and Human Services—including state Medicaid agencies, managed care plans, and hospitals—to take adequate steps to ensure that individuals receive, free of charge, the language assistance necessary to afford them equal access to services.

Because LEP persons tend to be recent immigrants who generally lack economic opportunities, they are over-represented among the poor and among persons eligible for Medi-Cal. Among Medi-Cal beneficiaries in 2001, approximately 54%—or 3,262,300 people—reported a primary language other than English (CDMH, 2001). Therefore, California state officials adopted the concept of "threshold language" in order to establish minimum requirements for assuring language access.

In California, threshold language definitions have a 30-year history set by state legislation and administrative decision-making beginning with the 1973 Dymally-Alatorre Bilingual Services Act which specified that state and local agencies serving a "substantial number of non-English-speaking people" must employ a "sufficient number of qualified bilingual staff in public contact positions" and translate documents explaining their services into the languages of their constituents. However, even at the state level, few agencies meet these requirements (California State Auditor, 1999; California Little Hoover Commission, 2002).

The California DMH went further than most state agencies in specifying and monitoring its language access policies as it transitioned into a managed care system for specialty mental health care in 1997 and 1998. Because of California's burgeoning non-English-speaking immigrant population, a main focus of contractual provisions between the state and county-managed care plans was ensuring equal access for LEP persons.

To draft linguistic access requirements between the state and county-managed care plans, the state DMH convened The Cultural Competence Task Force (CCTF) comprised of traditional providers, county administrators, families and consumers. The task force, borrowing from the

Department of Health Services (DHS), defined a threshold language as "the annual numeric identification on a countywide basis, of 3,000 beneficiaries or 5% of the Medi-Cal population, whichever is lower, whose primary language is other than English, for whom information and services shall be provided in their primary language." They defined primary language as "that language, including sign language, which must be used by the beneficiary to communicate effectively and which is so identified by the beneficiary." For each threshold language identified in the county, the county mental health plan is required to provide: 1) a 24-hour, toll-free phone line with linguistic capability; 2) translation of written materials; 3) linguistically capable staff or interpreters at key points of contact; and 4) information for ethnic consumers and communities about the availability of these linguistic services (CDMH, 1997). The DMH monitors each county's compliance with these requirements.

California county mental health plans' efforts to address the specialty mental health needs of LEP persons and other ethnic minority populations are not limited to the threshold language requirements. A number of innovative counties have implemented other activities to reduce language barriers for their LEP Medi-Cal populations. They include collaboration with community-based programs to provide targeted language- or culture-specific clinics and programs, hiring of bilingual providers and staff, and training of staff in the cultures of their ethnic communities. The literature supports these approaches.

Effect of Bilingual Providers on Access to Care

With respect to linguistically matching providers, the literature indicates that matching improves access to care. Flaskerud (1986) found three cultural components that increased utilization of services: ethnicity-match, language-match, and location of the clinic in the ethnic community. Clients that were matched with a bilingual provider had a greater frequency of contact with their providers and fewer interactions with the crisis team (Zigarus et al, 2003). Among Asian-American and Mexican-American clients, matching ethnicity and language of case managers led to increased length of treatment and improved outcomes (Sue, Fujino et al, 1991). Flaskerud and Liu (1991) found that matching on language or ethnicity (their study was not able to distinguish which match was more effective), increased access via number of sessions. They did find, however, that only an ethnicity match had a significant impact on early termination of treatment (drop-out rate) (Flaskerud and Liu, 1991 and Flaskerud and Liu, 1990).

Quality of care is also affected by linguistically matching providers. Oquendo (1996) discusses the importance of conducting therapy in a client's primary language; cultural nuances can be missed if utilizing the client's second language or an interpreter. Conducting an interview in English, when it is the client's second language, may result in a more disorganized, withdrawn, or disturbed interview.

Linguistic matching also indirectly affects access. For example, matching was found to increase client trust and rapport with the provider, and to improve the ability of the client to understand and follow the proposed treatment regiment (Ramirez, 2003). A client, interviewed in Temple's (2002) qualitative study, explained it best:

> "Yes, definitely it has made a difference as the support worker comes to my house, she can understand me as she speaks the same language as me and understands the culture. I feel lighter. . .she also assists me to outpatients. . .The main thing was she explained depression to me. . .I did

not know what it was as nobody had explained it to me" (35-year-old Muslim woman, translated by an Asian support worker), p.850.

Although linguistic or ethnic matching might be ideal (as the vast amount of literature indicates), in many cases it is not feasible. Rural areas, and even some urban areas, struggle with recruiting and hiring bilingual and bicultural professional staff. Some groups, like a newly relocated refugee group, may take a long time to settle into the culture and become mainstream enough to embrace Western definitions of mental health, and take it one step further to become providers themselves. One provider commented that her family saw her as a failure for her chosen profession (Musser-Granski and Carrillo, 1997). Family attitudes against mental health as a profession may contribute to the scarcity of bilingual and bicultural professionals.

Another problem faced is the accessibility of provider and client schedules. Administratively, matching bilingual and bicultural relationships may be extremely difficult. Schedules may not coincide. Some regions have bilingual providers going to certain areas only some days of the week, and some California counties have to rely exclusively on tele-interpretation (as they have no bilingual staff in some of the more rural and isolated communities).

With the various difficulties involved with the administration and availability to achieve successful matching, other techniques become important. Training existing personnel to be culturally competent with different groups may act as a substitute for improving access to mental health care.

Effect of Cultural Competency Training on Access to Care
Cultural competence training may lead to changes in clinician and patient behavior and, in turn, improved communication, trust, treatment regimens, and appropriateness of services. These improvements can then lead to improved services and outcomes for the target population (Brach and Fraser, 2002).

Several researchers have reported positive outcomes resulting from cultural competency training. Evaluation of a 3-day New York State Mental Health Training Program found that the program significantly improved communication levels, respect for cultural differences, and cultural competence levels (Way, Stone et al., 2002). Majumdar found that cultural sensitivity training resulted in open attitudes among providers, improved knowledge and communication, and positive health outcomes (2004).

Training of interpreters has also been found to be critical. Rueda-Lara et al. (2003) found that inaccurate interpretation resulted in an inaccurate assessment of the client's mental condition and presenting conditions, resulting in a delay in treatment. Inaccurate interpretation can also lead to premature termination of treatment. These findings have important ramifications for training of interpreters and staff in order to improve access to care.

Effect of Ethnic- and Language-Specific Treatment Programs on Access to Care
Many counties in California contract with clinics that provide ethnic-specific care. For example, some clinics serve the Asian population only. Although more research is needed in this area, preliminary studies have found a positive association with ethnic-specific clinics on access to mental health care for minorities.

Interviews with California county Ethnic Services Coordinators (persons responsible for managing the county's response to culturally diverse populations) revealed that mental health clinics operated by community-based organizations were an effective vehicle for increasing minority access and improving the quality of care (Snowden, Masland and Guerrero, 2003).

Evidence from other studies is consistent with these findings, demonstrating that community-based organizations' ethnic-focused mental health programs can overcome problems in access and quality affecting minority populations (Snowden, 1998; Takeuchi, Sue and Yeh, 1998; Akutsu, Snowden and Organista, 1997). Advantages claimed for ethnic-focused mental health programs include representation of community leaders on boards of directors, ongoing relationships with indigenous healers, cooperative relationships with faith-based, health, and social service organizations, family-oriented programming, a welcoming atmosphere reflecting local norms of acceptance and intimacy, non-English practitioner language capacity, practitioner understanding of local beliefs about mental health and mental illness, and awareness of cultural differences in styles of expressing mental health problems and engaging in helping relationships (Snowden, 1998). Other research indicates that program and organizational factors, rather than clinical factors, accounted for beneficial effects of ethnic-focused programs (Snowden, Hu and Jerrell, 1995).

METHODS AND RESULTS

Overview

We examined, at the county level, the effect on access of county mental health plans' implementation of the state's threshold language requirement using panel data multivariate regression methods. We also assessed the impact of other access-related activities carried out by the county mental health plans including: 1) presence of bilingual staff; 2) staff training in cultural competency; and 3) presence of language-specific clinics or programs.

Adults, aged 19-64, were the focus of the study. The decision was made to limit the focus to adults in this age range because relatively few children enrolling in Medi-Cal report a primary language other than English. However, children are dramatically affected by their parents' LEP when language barriers prevent parents from understanding and engaging in their children's treatment.

Data Collection

Specialty Mental Health Medi-Cal Claims Data. The main data source for the analyses was the California DMH's Medi-Cal Specialty Mental Health Claims for the months July, 1998 to June, 2001. DMH staff prepared these files for the study team including the variables date of birth, gender, race/ethnicity, primary language, type of eligibility, county of responsibility, type of service, service dates, amount approved, service provider, and an encrypted client identifier. The unique client identifier contained in the Medi-Cal Claims data, a variable called "undupkey," allowed unique clients to be identified in all quarters of the data set. No personal identifiers—such as name, address, Medi-Cal number, or social security number—that would reveal the identity of an individual client to the researchers were included. This data set was used to calculate the number of adult Medi-Cal clients by primary language, county, and quarter.

Medi-Cal Eligibility Data System (MEDS). A summarized MEDS file—provided to the research team by the California Department of Health Services—contains beneficiary characteristics including aid group (identifying the program under which the person qualified for Medi-Cal), gender, age, primary language, race/ethnicity and county of responsibility in the first month of each quarter included in the study period. This data source was used to estimate the unduplicated number of adult Medi-Cal beneficiaries by primary language, county and quarter. Quarterly penetration rates by county and primary language were calculated by dividing the unduplicated number of mental health clients by county and language by the unduplicated number of Medi-Cal eligibles by county and language.

Threshold Languages by County and Year. The DMH annually produces tables showing the number of Medi-Cal eligibles in each county by primary language. When the number is greater than 3,000 beneficiaries or 5% of the Medi-Cal population (whichever is lower) then the county mental health plan must consider this population to be a threshold language population and provide the required language access services.

The number of eligibles in each county by primary language is based on the count in the month of October and distributed to the counties in January of the following year. County mental health plans are expected to have all language access services for the given language in place three months later, in March of the same year.

These tables, documenting the threshold languages by language and county, were used to create the key independent variable, implementation of the threshold language requirement by language, county and quarter.

County Cultural Competency Plans. The intent of the county mental health cultural competency plans is to establish a statewide process for achieving cultural competence (CDMH, 2002). Counties were first required to write cultural competency plans in 1997/98 when "consolidation" of the fee-for-service and county Short-Doyle systems was begun. The DMH has required bi-annual updates to the plans since then.

The plans include: 1) demographic description of the general and Medi-Cal populations in the county, and Medi-Cal beneficiaries' utilization of specialty mental health services; 2) the current composition and location of human resources by ethnicity and lingual capability; and 3) the date and number of attendees of cultural competency training sessions.

The study team acquired cultural competency plans for nearly all counties from 1998, and 2003. The first set of plans were written in 1998 but most had to be re-written at the request of the DMH and were not approved by the DMH until 1999. The 2003 plans were first written in 2003 but most had to be re-written and were not approved until 2004. The personnel data reported in the plans (the number of FTEs and lingual capabilities of county and contracted staff) were collected through a variety of methods (usually management information systems and surveys) and, in many plans, the dates of the data collection activities were not identified. Therefore, it was not possible to pinpoint the exact time at which each county program had a given number of bilingual speakers.

Plans for several counties were either not required, due to small county size, or not available from the DMH office. For 1998, cultural competency plans were not required or unavailable for Alpine, Santa Clara, Sierra, and Solano counties. For 2003, plans were not required or un-

available for Alpine, Contra Costa, Napa, San Benito, San Francisco, Sierra, Solano, and Ventura counties. Therefore, these counties were not included in the analyses.

DMH County Compliance Reviews. The state DMH conducts annual reviews of each county mental health plan to determine if and how they are complying with the state's requirements for mental health service provision to Medi-Cal beneficiaries, including threshold language requirements. The study team used these county compliance reviews as secondary documents to supplement the cultural competency plans which contained more detailed information.

Existing Survey Data. Primary data were collected through structured surveys in two prior studies: *Outpatient Consolidation of Public Mental Health Services in California*, and *Ethnic Access to Public Mental Health Services in California.* Both studies were funded by the California Program on Access to Care. Data from these surveys were used as secondary documents to support data abstracted from the cultural competency plans.

In the *Outpatient Consolidation* survey, conducted in 2000, 49 county managed care coordinators and mental health directors were surveyed on the telephone for approximately one hour each. They were asked about steps the county had taken to increase access for ethnic minority Medi-Cal eligibles, in addition to state requirements. Results indicated that 10% of the plans interviewed had implemented only state required activities such as translating brochures into threshold languages and providing access to the AT&T language line. The remaining counties reported they had taken additional steps such as hiring bilingual staff and providers, translating more printed materials, training staff on cultural competency issues, developing and recruiting minority providers, working with community-based organizations, and targeting public information campaigns (Snowden and Masland, 2001).

In the *Ethnic Access* survey, conducted in 2002, 53 ethnic service coordinators or managers were surveyed on the telephone for approximately 30 minutes each. They were asked about the types of activities counties engaged in during the past three years (1999–2002) to improve access for ethnic communities, and the factors that helped or hindered the success of these activities. Survey data revealed a common set of strategies perceived as effective in bringing ethnic persons into mental health treatment. These included hiring bilingual/bicultural staff, various efforts to connect with the ethnic communities, cultural competency training, and collaborative relationships with community-based organizations, leaders, medical and social services agencies (Snowden, Masland and Guerrero, 2003).

Combining all of these data sources, we constructed variables measuring each county's language-specific penetration rates, level of cultural competency training, availability of bilingual staff (county staff and contract staff), and presence of a dedicated bilingual clinic or treatment program.

Data Analysis and Findings
1) Dependent Variable: Penetration Rates by Primary Language
Penetration rates are equal to the number of clients who use specialty mental health care in a given county and quarter, divided by the number of Medi-Cal beneficiaries who are eligible to use services in the same county and quarter. Beginning in July 1998, and ending in June 2001, we calculated specialty mental health care penetration rates for Medi-Cal beneficiaries by their reported primary language for Spanish, Vietnamese, Cantonese, Hmong, Cambodian and

English speakers. Due to the small number of observations among the Asian language groups, the Asian languages listed above were grouped together to form one Asian penetration rate.

Statewide average penetration rates are shown by language and quarter in Table 1. These descriptive data show that penetration rates for Spanish speakers are consistently the lowest of all language groups, followed by Cantonese speakers. Both groups had penetration rates below those English speakers. Rates for Cantonese speakers fluctuated greatly, probably due to the relatively small number of speakers in mental health services and on Medi-Cal. Penetration rates for Vietnamese, Hmong and Cambodian speakers were above those of English speakers. Rates for Vietnamese and Hmong speakers appeared to increase significantly after the full implementation of the threshold language policy in fiscal year 1999/00.

Penetration rates shown here are slightly different than those provided by the Department of Mental Health due to differences in the way they are calculated. Rates shown here were calculated by dividing the number of unduplicated mental health clients per quarter by the number of unduplicated Medi-Cal eligibles in the same quarter. The DMH's rates are calculated by dividing the number of annual unduplicated clients by the average monthly number of Medi-Cal eligibles. Both methods provide the same information, however, with respect to the relative ranking of each groups' access to mental health services.

Table 1. California Medi-Cal Adults (19–64 Yrs.) Mental Health Penetration Rates by Language: Quarterly Unduplicated Clients/Quarterly Unduplicated Eligibles, FY 1998–2001

Year/ Month	English	Spanish	Vietnamese	Cantonese	Hmong	Cambodian
98-07	6.13%	2.77%	4.78%	3.84%	5.04%	12.62%
98-10	6.30%	2.50%	5.49%	3.42%	6.07%	14.39%
99-01	6.31%	2.08%	5.10%	3.10%	7.50%	14.61%
99-04	6.44%	2.12%	5.29%	3.54%	9.65%	14.70%
99-07	6.66%	2.40%	8.29%	1.01%	14.74%	11.26%
99-10	6.96%	2.56%	8.28%	3.00%	17.43%	9.72%
00-01	6.80%	2.76%	8.61%	3.26%	17.63%	17.58%
00-04	6.94%	2.56%	9.05%	1.28%	13.50%	11.72%
00-07	6.97%	2.63%	8.08%	1.26%	10.02%	9.60%
00-10	7.42%	2.76%	8.35%	3.25%	12.82%	11.63%
01-01	7.48%	2.45%	8.48%	6.14%	10.40%	14.81%
01-04	7.29%	2.18%	7.98%	5.20%	12.05%	15.51%
01-07	7.11%	2.00%	8.27%	4.50%	11.06%	11.86%

2) Independent Variables: Threshold Language and
Other County Language Access Activities
Implementation of Threshold Language Policy. This variable measures the quarter when each county mental health plan implemented the DMH's threshold language requirements

for a given language group. We created a categorical (0,1) variable indicating in which county and quarter a language reached "threshold" level. For the Asian language model, a grouped threshold language variable was created equal to 1 in any county and quarter that an Asian language was above threshold level. All counties were set to 0 in the four quarters prior to July, 1999 as this was considered to be a policy implementation period.

This variable was calculated using data from the state DMH's reports to the counties indicating the number of Medi-Cal beneficiaries in their county by language and year, and which language groups were officially declared "threshold languages" for each county, thus triggering the implementation of access requirements for that language group.

Cultural Competency Training of Staff. This variable measures the extent of cultural competency training that county mental health plans provided for their staff. Using the data on cultural competency training contained in the county cultural competency plans, we created a categorical variable measuring the level of training.

The 1998 county cultural competency plans included a descriptive narrative of the county's training program. From this narrative, each county was rated 0, 1, or 2 with 0 equal to no or little training, 1 equal to some training, and 2 equal to extensive training.

The 2003 county cultural competency plans contained more detailed data on the number of hours and attendees for each training session provided during the years 2002 and 2003. Using this data, the annual number of person-hours of training was calculated. Then, this number was divided by the total number of FTE staff (county and contracted staff) in the same year to arrive at an estimate of the number of training hours per staff member. This figure was converted into a categorical variable with 0 below the median number of training hours per staff, 1 approximately equal to the median number of training hours, and 2 above the median number of training hours.

Several of the counties' reports did not include the number of hours for some or all training sessions. In these cases, we assigned each training session a period of four hours unless there was information indicating otherwise (i.e.,it was a longer multi-day conference or a shorter grand rounds presentation).

The two observations for each county – one obtained from the 1998 plan and one from the 2003 plan – were averaged to obtain a final training score for each county. This final score was used throughout all time periods in the regression models. A differenced training score – measuring the difference between the 1998 score and the 2003 score – was also created and entered into the models. However, this variable did not behave any differently than the training variable specification in which the two years were averaged together. The final regression models included this averaged value.

The training data collected from the cultural competency plans had two major limitations: 1) quantitative training data was available only from the 2003 plans and even in these plans, many counties did not report the number of hours of each training session; and 2) the 2003 plans reported on training activities taking place in 2002 and 2003 which was outside the time frame of our study as our penetration rate data ended in June 2001. We believe, however, that by creating a categorical variable grouping counties into low, median, and high training levels, that we have minimized the potential for mis-measurement. By averaging the 1998 and 2003 values, we attempted to create a best estimate of what the level of training would have been in a given county during the study period, July 1998 to June 2001.

Number of Bilingual Mental Health Providers. This variable measures the number of bilingual staff – county and contracted – that speak a given language divided by the number of Medi-Cal eligibles speaking the same language. The 1998 and 2003 county cultural competency plans both reported the number of bilingual staff (county employees and contractors) by language. We divided this number by the total number of Medi-Cal eligibles in the county with the same language during the same time period. In this manner, we obtained, for example, a ratio of the number of Spanish speaking mental health staff to the number of Spanish-speaking Medi-Cal eligibles in the same county and time period. This yielded a 0, 1, 2 categorical variable with 0 being below the median number of staff per eligible, 1 approximately equal to the median number of staff per eligible, and 2 above the median number of staff per eligible. The two observations for each county – one obtained from the 1998 plan and one from the 2003 plan – were averaged to obtain a final bilingual staff score for each county. This final score was used in the regression models throughout all time periods.

A differenced bilingual score – measuring the difference between the 1998 score and the 2003 score – was also created and entered into the models. However, this variable did not behave any differently than the specification in which the two years were averaged together. The final regression models included this averaged value.

Like the training data, the bilingual personnel data collected from the cultural competency plans had some limitations: 1) While quantitative personnel data was available from the 1998 and the 2003 plans, in many plans no date was provided for when the data were actually collected. Furthermore, counties used a variety of methods to collect the data, some being optional surveys that did not require all contract providers to identify their bilingual capabilities. 2) We assume that the 2003 plans reported on personnel in place during 2002 or 2003 which was outside the time frame of our study. We believe, however, that by creating a categorical variable grouping counties into low, median, and high bilingual staffing levels, that we have minimized the potential for mis-measurement. By averaging the 1998 and 2003 values, we attempted to create a best estimate of what the level of bilingual staffing would have been in a given county during the study period, July 1998 to June 2001.

Language Specific Clinic or Program. This variable measures whether or not the county had a dedicated clinic or program serving persons speaking a given language. Using the data obtained from our 2002 *Ethnic Access* survey, which included questions related to ethnic- and language-specific programs, we coded for the presence (1) or absence (0) of a language-specific program in the county. We were unable, however, to pinpoint the time period in which each program was implemented. Therefore, we assigned each county a constant value throughout all time periods.

Time. This linear time trend variable controls for any systematic changes in penetration rates unrelated to the threshold language policy implementation. It is specified as "0" in the quarter that the threshold language policy was implemented (3rd quarter, 1999) and as a whole integer in all other quarters counting backward to the beginning of the time series (3rd quarter, 1998) and forward to the end of the time series (2nd quarter, 2001).

3) Regression Models of Penetration Rates by Primary Language

To determine the relationship between language-specific penetration rates and county characteristics, we ran both fixed and random effects multiple regression models for each language group. The county observed quarterly was the unit of analysis. These models allow us to

understand the unique effect of the threshold language policy and other county-specific language access activities on language-specific penetration rates, holding constant all other factors measured in the model.

To eliminate large fluctuations in penetration rates that would affect our statistical analyses, we dropped observations in which the number of Medi-Cal eligibles speaking a particular language in a given county and quarter (the denominator of the penetration rate) was less than 50. We also dropped observations in which the mental health penetration rate was greater than 50% as such high rates were likely due to data errors. These data cleaning efforts reduced the number of observations in the Spanish model to 624 (49 counties over 13 quarters) and in the Asian model to 247 (19 counties over 13 quarters).

Hypothesis. We expected to find that access for each language group increased following implementation of the threshold language requirements for that language. We also expected to find that counties that had relatively high scores in cultural competency training, bilingual staff, and specialized programs would see an even greater effect of the threshold language requirements on access. Based on evidence in the literature, specialized programs were expected to contribute the most, and cultural training the least, towards increasing the effect of the threshold language requirements on access.

Study Model. The empirical model was specified as:

$$Y_{it} = \beta_0 + \beta_1 L_{it} + \beta_2 A_{it} + \beta_3 L_{it*} A_{it} + \beta_4 T_{it} + \beta_5 L_{it*} T_{it} + u_i + e_{it}$$

Where:

Y = Language specific access rate for county "i" at time "t";

L_{it} = Implementation of the threshold language requirement in county "i" at time "t";

A_{it} = A vector of additional language activities (cultural competency training, bilingual staff, language-specific program) implemented by county "i" at time "t";

$L_{it*} A_{it}$ = Interaction of implemented threshold language requirement with additional language activities in county "i" at time "t";

T_{it} = Time trend variable measured as 0 in the quarter of implementation (Q3, 1999) and as a whole integer in other quarters counting backward to Q3, 1998 and forward to Q2, 2001;

$L_{it*} T_i$ = Interaction of implemented threshold language requirement county "i" at time "t" with time trend variable;

u_i = Unobserved county level effects; and

e_{it} = General error term.

Model Estimation Method. Our first models were estimated using the fixed effects method. A fixed effects model is a covariance model created by introducing county dummy variables, as well as other explanatory variables, into the model. The county dummy variables eliminate any differences between counties that remain constant over time.

Another approach is the random effects method which models unobserved, constant county differences as a county-level error component. This approach is more efficient (smaller standard error of the coefficient) and can allow estimation of the effects of county characteristics even when they are constant over time. The random effects method can lead to inconsistent esti-

mates and must be checked using the Hausman's test (1981). The Hausman's test was run with results indicating that random effects was an appropriate estimation method to use.

For each language group, three different models were run using the random effects estimation method. First, we estimated a "basic" model including only the threshold language variable, the time trend variable, and an interaction of threshold language and time trend. Then, we added variables measuring county cultural competency training and bilingual staff, along with their interactions with the threshold language indicator. We observed their effects alone and on the coefficient of the threshold language indicator. Last, we added the language specific program variable, and its interaction with the threshold language indicator, and observed their effects alone and on the coefficient of the threshold language indicator and other variables (cultural competency training and bilingual staff). The language specific program variable was entered separately due to concerns that it was highly correlated with the bilingual staff variable. The results did not indicate that this was a problem.

Based on these results, we present in Table 3 a "basic" model with just the threshold language variable, time trend, and their interactions; an "extended" model including the threshold language, time trend, cultural competency training and bilingual staffing variables, and their interactions; and a "full" model including the threshold language variable, time trend, cultural competency training, bilingual staffing, presence of language-specific programs and their interactions.

In the first "basic" model, the coefficient of the threshold indicator represents the average, time-constant effect of threshold language designation on penetration rates. Its interaction with time indicates any trend in this effect over time. In the second "extended" model, the coefficients of the threshold indicator and its interaction with time indicate average threshold language effects for counties with low training and low bilingual staff (i.e., when equal to 0). Interactions of the threshold language indicator with the training and bilingual variables suggest additional threshold language effects for counties with higher training and bilingual staff (i.e., when equal to 1 or 2). The third, or "full," model can be interpreted similarly with the base threshold language effect reflecting counties with low training, low bilingual staff and no language specific program. In all cases, the coefficients of variables, independent of the threshold language indicator, reflect average differences in penetration rates for counties that did not have the threshold language and in time periods before the threshold language policy was implemented.

Description of the Independent Variables Included in the Models. As can be seen in Table 2, the Spanish language models and Asian language models had different numbers of observations. The Spanish model included 48 counties over 13 quarters (N=624) while the Asian model included 19 counties over 13 quarters (N=247). This was due to differences in the number of counties meeting our criteria for the dependent variable (at least 50 Medi-Cal eligibles reporting Spanish, or one of the Asian languages, as their primary language over the entire study period; and no penetration rate greater than 50%), and differences in the number of counties reporting on the independent variables. If a county did not have observations of the dependent or independent variable over the entire study period, it had to be dropped from the model per the requirements of the random effects estimation method.

In the Spanish language models, nearly all (90%) counties reported Spanish as a threshold language. (It is possible for a county to have at least 50 Medi-Cal eligibles speaking Spanish

Table 2. Description of Independent Variables Included in Regression Models

Variable Name	Value	Frequency	Percent
Spanish Language Models			
Spanish Threshold Language	0	5	10%
	1	43	90%
Spanish Model: Cultural Competency Training	0 – 0.9	20	42%
	1 – 1.9	21	44%
	2 – 2.9	7	14%
Spanish Bilingual Staff	0 – 0.9	31	65%
	1 – 1.9	13	28%
	2 – 2.9	4	7%
Spanish Programs	0	17	35%
	1	31	65%
Asian Language Models			
Asian Threshold Language	0	8	42%
	1	11	58%
Asian Model: Cultural Competency Training	0 – 0.9	9	47%
	1 – 1.9	7	37%
	2 – 2.9	3	16%
Asian Bilingual Staff	0 – 0.9	6	32%
	1 – 1.9	11	58%
	2 – 2.9	2	10%
Asian Programs	0	8	42%
	1	11	58%

but not the 3,000 or 5% required for threshold language status). About 40% ranked low in the extent of cultural competency training provided, and most (65%) ranked low in the ratio of bilingual staff to Medi-Cal eligibles. The majority (65%) reported having some sort of dedicated Spanish-speaking clinic or outpatient program.

In the Asian language models, a little more than half (58%) of the counties had an Asian threshold language. About half (47%) ranked low in the level of cultural competency training provided, and about one-third (32%) ranked low in the ratio of bilingual staff to Medi-Cal eligibles. A little more than half (58%) reported having some sort of dedicated Asian-language clinic or outpatient program.

Multiple Regression Results – Spanish Models. Results of the multiple regression analyses are shown in Table 3. The "basic" model suggests that, in the average county included in the model, going "threshold" had a positive but statistically insignificant effect on penetration rates for Spanish speakers. In the "extended" model where the effects of bilingual staffing and cultural competency training were added in, going "threshold" had a *positive* and *significant* effect on

Spanish penetration rates. Counties with high levels of bilingual staffing had higher Spanish penetration rates to begin with, but counties with lower bilingual staffing levels saw greater effects of the threshold language requirements on Spanish penetration rates. After implementation of the threshold language requirements, the differences between the high and low bilingual counties gradually decreased over time. Results suggest that, for Spanish penetration rates, cultural competency training had no effect either by itself or in conjunction with implementation of the threshold language requirements.

Table 3. Multiple Regression Results for Penetration Rates

Regression Models	1) Spanish Basic Model (N=624)[1] Parameter estimate (standard error)	2) Spanish Extended Model (N=624)[2] Parameter estimate (standard error)	3) Spanish Full Model (N=624)[2] Parameter estimate (standard error)	4) Asian Basic Model: (N=247)[2] Parameter estimate (standard error)	5) Asian Extended Model (N=247)[2] Parameter estimate (standard error)	6) Asian Full Model (N=247)[2] Parameter estimate (standard error)
Independent Variables						
Intercept	**2.539*** (0.331)**	**1.375** (0.709)**	**1.816* (0.919)**	**13.600*** (2.254)**	**16.602*** (5.313)**	**19.165*** (5.629)**
Time	0.013 (0.055)	-0.017 (0.054)	-0.027 (0.054)	**0.705*** (0.188)**	**0.707*** (0.187)**	**0.706*** (0.182)**
Threshold Language Requirement	0.216 (0.290)	**0.794* (0.433)**	-0.249 (0.530)	**4.493*** (1.753)**	**10.437*** (3.724)**	**14.633*** (3.906)**
Time Threshold Lang. Requirement*	-0.084 (0.069)	-0.053 (0.068)	-0.041 (0.068)	**-0.789** (0.339)**	**-0.804** (0.335)**	**-0.829*** (0.328)**
Cultural Competency Training	NA	-0.193 (0.537)	-0.221 (0.548)	NA	-2.046 (3.117)	-3.270 (3.228)
*Cultural Competency Training * Threshold Lang. Requirement*	NA	0.107 (0.286)	0.221 (0.286)	NA	**-3.852** (1.811)**	**-3.665** (1.774)**
Bilingual staff	NA	**2.034*** (0.516)**	**1.948*** (0.537)**	NA	-1.348 (4.075)	0.847 (4.389)
*Bilingual Staff * Threshold Lang. Requirement*	NA	**-1.089*** (0.321)**	**-1.058*** (0.319)**	NA	-2.762 (2.933)	-0.974 (2.947)
Language-Specific Program	NA	NA	-0.607 (0.738)	NA	NA	-6.230 (4.999)
*Language-Specific Program * Threshold Lang. Requirement*	NA	NA	**1.369*** (0.410)**	NA	NA	**-8.327*** (2.902)**

* = p<.10;** = p<.05; *** = p<.01.

In the "full" model, with the addition of the language-specific program variable, the positive and significant effect of the threshold language policy was transferred to the language-specific program variable suggesting that presence of a language-specific program was, on average, more important in increasing penetration rates. Even in counties with few bilingual staff, the

[1] Counties not included in this regression model were any counties where the number of eligibles was less than 50 and that did not have observations of the independent variables.

presence of a language-specific program was associated with increased penetration rates following implementation of the threshold requirements.

Multiple Regression Results – Asian Models. The "basic" model suggests that, for the average county included in the model, going "threshold" had a positive and statistically effect on penetration rates for Asian language speakers. However, that effect diminished each quarter after implementation of the threshold language policy requirements.

In the "extended" model, where the effects of bilingual staffing and cultural competency training are added in, we see that going "threshold" still had a positive and significant effect on Asian penetration rates for the average county included in the model. The policy's positive effect was greater in counties that had *lower levels* of cultural competency training and bilingual staffing. Therefore, the policy's greatest impact was in counties that were apparently the least active in providing cultural competency training and bilingual providers (although this variable was not statistically significant in the Asian models as it was in the Spanish models).

In the "full" model, with the addition of the language-specific program variable, the significant and positive effect of the threshold language policy on Asian penetration rates was even greater. The significantly negative coefficients for the language specific program and cultural competency variables suggest that implementation of the threshold language requirements had the greatest effect in counties that *did not have* any language-specific program and very little cultural competency training.

DISCUSSION

Our findings indicate that, for Spanish and Cantonese speakers, penetration rates are below those of English speakers. Other Southeast Asian language groups examined (Vietnamese, Hmong, and Cambodian) tended to have penetration rates higher than English speakers, but the study did not take into account the need for services which may be greater among this population given that many were war refugees.

The regression results suggest that, for Medi-Cal eligibles speaking Spanish and Asian languages, the threshold language requirements had a significant positive effect on penetration rates. Among Spanish speakers, however, the presence of language specific programs may have an even greater effect on penetration rates. A relatively high number of bilingual Spanish-speaking staff per eligible was also significantly related to higher penetration rates. In counties high levels of bilingual staff, implementation of the Spanish threshold language requirements had little additional effect on penetration rates while in counties with low levels of bilingual staff, there was a significantly greater effect of the threshold language requirements on penetration rates.

In the Asian model, the results suggest that threshold language requirements did increase access initially, but over time, those increases in penetration rates diminished. In counties with relatively low levels of cultural competency training, and no language-specific program, the implementation of the threshold language requirements for Asian languages had a greater effect on penetration rates than in counties that had high levels of cultural competency training or language-specific programs.

While these effects may seem perplexing, they are likely the results of endogeneity, or circular causal effects between penetration rates and counties' choices regarding language access programming. Counties with lower penetration rates (and potentially needing more effort to enact changes in access) may have been more likely to respond to the threshold language designation with higher training levels, more bilingual staff, and establishing language-specific programs resulting in a seemingly negative relationship between penetration rates and programming. Similarly, the bilingual staff results from the Spanish analysis indicate that counties with more Spanish bilingual staff appeared to have greater penetration rates before threshold designation and thus did not show an additional increase.

Overall, the effect of threshold language designation appeared to increase penetration rates for Asian and Spanish speaking adult consumers with rates of change varying according to county program characteristics. It appears likely that language-specific programs and higher bilingual staff levels increase penetration. However, the potential for endogeneity hindered attempts to clearly identify these county program effects.

The lack of consistent findings for the effectiveness of cultural competency training may be due to the lack of consistency in training. As Stork and colleagues discussed, training can "range from seminars to newsletters encouraging awareness of diversity" (2001, p. 375). The California County Cultural Competency Plans exhibited this finding, with many reporting a wide variety of training methods, frequency, duration, attendance, and impact. Standardization of training efforts, including requirements for the training of interpreters in mental health services, may improve the overall effectiveness of training.

Policy Implications

In an attempt to make Medi-Cal mental health services linguistically and culturally competent, the California DMH requires that the state's county-operated mental health agencies provide information and services to Medi-Cal beneficiaries in their primary language when the number of beneficiaries in the county reaches "threshold" levels. This policy appears to be effective in improving access, primarily in the counties that had the lowest access rates and fewest language-access activities prior to the initiation of the policy. This study did not include a cost analysis of the policy so we cannot speak to its cost-effectiveness, but we can say, that overall, the policy appears to be accomplishing its goals by improving access in the counties where language access was previously the lowest.

The study also suggests that bilingual providers and language-specific clinics/programs have a positive effect on language access and, in some cases, have given a boost to the implementation of the threshold language policy. A number of California counties are engaging in innovative ways to increase the number of bilingual providers. These methods should be further examined with the most effective approaches implemented throughout the state.

In addition, the passage of Proposition 63 provides resources for expansion of the mental health workforce. Bilingual providers should be high on the priority list to improve access for California citizens with limited English proficiency.

Standardization of training efforts, including requirements for the training of interpreters in mental health services, may improve the overall effectiveness of training activities.

Future Research

More research is needed to clarify these findings. First, more detailed data is required for measurement of the language access activities. We need to better define and measure the activities implemented by the counties and at exactly what times. This will allow us to untangle the causal relationships between changes in language-access activities and changes in penetration rates, as well as to identify which components of these activities are most effective. We must also identify data sources for the counties that were unavailable for the present analysis so that they may be included in future analyses.

Secondly, Medi-Cal data used to create language-specific penetration rates appeared to understate the number of eligibles with limited English proficiency who would require linguistically accessible services. Further research efforts would benefit by improving the measurement of language proficiency among the Medi-Cal eligible population.

Thirdly, improved model specification could help untangle the causal relationships between penetration rates and county language-related activities. The estimation models should be specified in such a way that takes into account the problem of endogeneity, i.e., that low penetration rates are causing changes in county language-access activities rather than the other way around.

Further research into the creative approaches counties are adopting to increase and retain their bilingual staff would also be useful. Given the shortage of bilingual staff, research into the effectiveness of differential pay scales, training programs for existing nonprofessional bilingual staff, recruitment efforts, and use of ethnic matching may also be helpful.

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