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HEALTH NEEDS ASSESSMENT IN INNER CITIES: DOES ZIP CODE ANALYSIS REVEAL BETTER RESULTS?

Tony Sinay, PhD
Professor and Chair
Department of Health Care Administration
California State University, Long Beach

Veronica Acosta-Deprez, PhD
Professor
Department of Health Science
California State University, Long Beach

Erlyana Erlyana, MD, PhD
Assistant Professor
Department of Health Care Administration
California State University, Long Beach

Introduction

Health needs assessments can utilize information regarding perceived needs of the community in order to effectively disseminate resources to address these needs (Beverly, McAtee, Costello, Chernoff, & Casteel, 2005; Rohrer, 2009), and to provide a snapshot of families in a service area and their economic well-being, educational status, health, and welfare (Moore, 2009). A community health needs assessment is a dynamic process that involve the community to identify health problems and goals so that implementation of health priorities and systematic action planning can improve the quality and quantity of services needed for that community (Holt, 2008; Lee, Ackerson, Flodin, & Slatin, 2010). As a result, a community needs assessment can establish a basis for change wherein agencies can develop comprehensive strategic planning for health initiatives based on community needs. Proenca, Rosko & Zinn (2000) reported that community health assessments that are conducted by over 60 percent of hospitals were able to understand the health needs within their service areas and to identify gaps in service offerings and/or to improve current service offerings. The use of a community based approach allows for understanding the needs of the people that are served by the hospital, and the community from which the patients are drawn by focusing on the community as a whole (Proenca, Rosko, & Zinn, 2000). By taking this view, a community becomes a recognized stakeholder and the health needs can be addressed in a strategic fashion.

Despite evident progress in assessing the area's unmet health care needs, it is important to point out one important caveat. Health needs assessment efforts in local communities often use methodologies such as surveys, focus groups, population based studies, or statewide data in which descriptive statistics are computed and confidence intervals are revealed. Results often represent the central tendency (average) of the population studied, and when there are significant economic and demographic differences amongst communities which may result in health disparities, descriptive statistics tend to be insignificant due to high variance. Generally, results showing insignificant confidence intervals may actually be a sign of health disparities, but it does not pinpoint specific concerns and needs of communities, and most importantly, where the most communities are in the boundaries of the studied population. This particular problem could be eliminated by analyzing health and health needs of local communities at a smaller geographic area such as zip codes; rather than overall community or average community. Therefore, this study is to examine differences and/or variances in results of the 2007 Long Beach Health Needs Assessment Survey by conducting an analysis of the data using various zip codes. Zip code analysis was undertaken to determine specific areas where there are gaps in health services, as perceived by the participants, and community organizations and hospitals.

The next section offers a brief literature review. The third section explains the methodology of the study followed by the results section. The final section draws a conclusion and offers ideas for future research.

Literature Review

The purpose of a community health needs assessment (HNA) or survey is to determine the health issues, the accessibility to services, strengths and weaknesses of services, and the gaps that exist. Many community health assessments not only identify the issues expressed by the population but a plan to address the issues and close the gaps noted in the data. Realizing that access to care within a community is not the only aspect of good health, attention needs to focus on "determinants of health for both individuals and communities" (Harrison & Dean, 2011). A well-written HNA recognizes that economic, environmental and social situations contribute to

overall health status and quality of life within the population. Those communities who completed an assessment found that 100% of the time health problems were prioritized. Additionally, communication was improved between community groups, and problems were better understood within the community. "Motivating communities to take responsibility for their own health problems is very much the point of community assessment and may represent a more important outcome than the community benefit derived from an assessment process alone" (Curtis, 2002).

In order to collect "community intelligence" the entire community of health providers needs to be engaged in the collection process and recipients of the information dissemination. Hospitals are expected to meet the health needs of the community, be accessible and cost-effective to all community members equally. By conducting a community health needs assessment, hospitals are viewed by their respective service area constituents, as being concerned, focused and responsive to the community's health (Proenca, et al., 2000).

The main reason that hospitals are putting resources into community engagement is the value on "health is our mission". Only 10% of health production is contributed by medical care, the other 90% has to do with genetics, behavior and the environment in which a person lives. In order to improve health, hospitals must focus on the community, which is made up of the social networks, environment and behaviors of its constituents. Designing an environment through active engagement and fostering healthy lifestyles, is imperative to the creation of health (HRET, n.d.)

When accessing basic medical care for their children, many low-income parents face barriers of lack of insurance coverage, poor access to services, and unaffordable costs. According to DeVoe, Baez, Angier, Krois, Edlund, & Carney (2007), a high percentage of uninsured parents (87%) reported experiencing difficulties obtaining insurance coverage. Access concerns were the most common among publicly insured families, and costs were more often mentioned by families with private insurance. Moreover, families made a clear distinction between insurance and access, and having one or both elements did not assure care (Devoe, et al., 2007).

The issue of access to health care includes immigrants and un-documented foreigners who face geographic, socio-cultural, and economic barriers when attempting to access health care services in their community (Asanin & Wilson, 2008). Racial/ethnic and linguistic minorities tended to report worse care than did whites. Linguistic minorities reported worse care than did racial and ethnic minorities. Immigrants have a 12% lower all-cause unmet needs risk than non-immigrants. The unmet needs risk among long-term immigrants (15 years of residence and more) is similar to non-immigrants after considering these characteristics. Health care system delivers sufficient health care to immigrants, even though the poverty rate and proportion of visible minorities are comparatively higher within this subpopulation. Some immigrant-specific health care access barriers may exist (Wu, Penning, & Schimmele, 2005).

Patients' race or ethnic background may affect their ability to access health care due to their socioeconomic status, hereditary predispositions to illnesses, or discrimination either perceived or actual by those providing health care. For patients with mental health disorders, additional barriers are created due to poor experiences with the health care system (Roman, Griswold, Smith, & Servoss, 2008). Only about 49 percent of Hispanics who are not comfortable speaking English have a regular source of medical care, such as a family doctor or community health clinic. About 6 of every 10 Hispanics with limited English proficiency are also uninsured. Hispanics with limited English proficiency were less likely to visit a doctor or clinic, go to an emergency room, have their prescriptions filled, or visit a dentist (Livingston, 2009).

When Latino immigrants do access health care services, it is inconsistent and fragmented. According to Coffman et al. (2007) the health care system has had difficulty responding to the needs of Latino immigrant population settling in Charlotte, North Carolina. Many elements caused this difficulty of access to health care such as health insurance coverage, health status, legal status, educational level, and health literacy. The majority of the participants reported undocumented legal status (69.7%) and lacked health insurance (85.9%). Newly immigrated Latinos face many barriers to health care access and limited access to preventive health services results in overutilization of emergency departments (Coffman, Shobe, Dmochowski, & Fox, 2007).

Over the past twenty years, community needs assessments have been conducted in Long Beach communities in order to identify the health needs of these diverse populations. Studying the population needs of the city of Long Beach is useful, since according to the US Census Bureau (2010), the city of Long Beach is the most ethnically diverse large city in the country with 46% Hispanic or Latino, 29% White, and 12.9% Asian, less than 1% American Indian or Alaska Native, and 3% reporting belonging to two or more races. Compared to the state of California, Long Beach has a higher population of Hispanic or Latino (11% more) and Black or African American (7% more). In the United States, Hispanic or those of Hispanic origin is the largest minority community and the fastest growing population ("United States Census," 2010)

Community health assessments (CHA) and self-rated health (SRH) studies have been used to survey health issues and challenges of Long Beach that serves to identify any gaps in resources that impede goals of ensuring a healthy community (Sinay, Acosta-Deprez, & Gotz, 2009). Health assessment trends in Long Beach include community surveys, focus groups, personal interviews, and community health worker/ *promotores* methodologies. For example, to examine prevalence of cigarette smoking among Cambodia Americans in Long Beach, researchers conducted a Cambodian Household Interview survey and in-person interviews at participant homes (Friis, et al., 2012). Similarly, community-based needs assessments have been conducted through "*promotores*," who are community health workers that determine health needs of Latino populations by identifying cases, translation, and case management (Rios-Ellis, 2006). To better understand HIV risk behaviors, *promotores* in Long Beach facilitated focus groups with community members to distinguish issues and concerns about HIV/AIDS. This culturally-competent, in-person needs assessment strategy focuses on positive aspects and achievements, while addressing gaps and issues in the community.

More often, mixed-methodologies are used to develop a framework and plan of action to address community needs. The Long Beach Department of health and Human Services HIV/AIDS needs assessment utilized a multi-modal strategy that include secondary data collection, an audio-computer assisted survey interview (A-CASI) instrument, focus groups, and a provider survey, to identify populations at highest risk for HIV infections and high prevalence rates ("Long Beach Department of Health and Human Services HIV/AIDS Needs Assessment ", 2007).

Methodology

To ensure the health of the Long Beach population, three local hospitals in Long Beach – Long Beach Community Hospital, St. Mary Medical Center, and Long Beach Memorial Medical Center – have partnered to conduct an assessment of the health and health care needs of its residents. Health needs assessments are also important, particularly since the IRS will now require tax-exempt hospitals to conduct assessments in order to maintain their tax exempt status. (See Internal Revenue Code Section 501 ® (3) (B) and IRS Notice 2011-52)

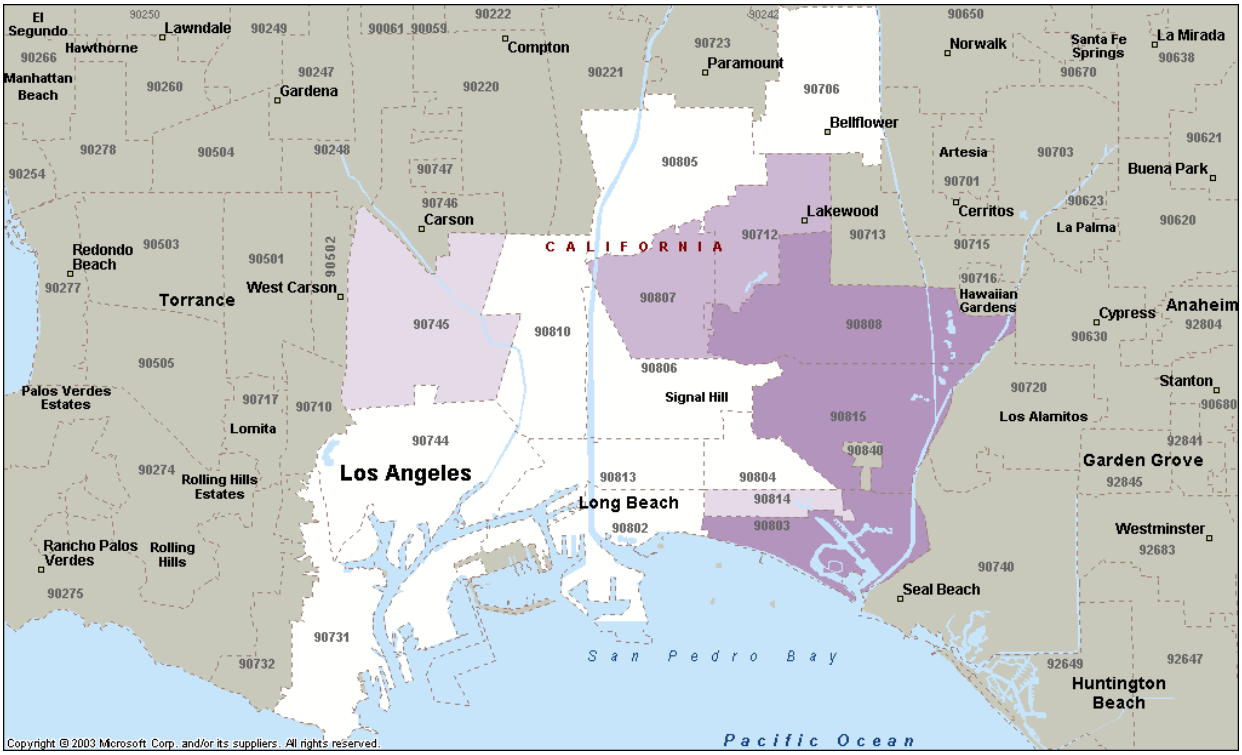
The Long Beach Health Needs Assessment for 2007 is the fifth survey of its kind in the city by local hospitals with the same common goal of improving the quality and quantity of services available to the city of Long Beach residents. The Long Beach Community Health Survey 2007 was designed to collect data related to the health care needs of Long Beach communities. The 2007 survey instrument was developed through an iterative process involving an extensive literature review, as well as a collaboration among the authors/ researchers, representatives from community based organizations, representatives from three hospitals, community health providers, experts, and community residents. Previous surveys were also examined for consistency in data collection in order to incorporate new items into the survey and to shorten the length of the survey used in 2005 Health Needs Assessment survey. The final survey instrument consisted of twenty-eight questions covering a range of topics such as population demographics, health concerns affecting adults, teens and children, and access to services and providers. The survey instrument was provided in both English and Spanish languages.

The self-administered survey questionnaires were distributed to a convenience sample at health fairs and community events at location where many hard-to-reach populations live, and would therefore be present at those events. Respondents were residents of the greater Long Beach area, which includes: Long Beach, Lakewood, Compton, Carson, Lynwood, Torrance, Wilmington, Signal Hill, Huntington Beach, and Garden Grove. The total number of survey participants was 438; however, out-of-area respondents and incomplete surveys were eliminated from the data sample which resulted in a smaller data sample of 297.

Zip code analysis was undertaken to determine specific areas where there are gaps in health services, as perceived by the participants, and community organizations and hospitals. The zip codes were recorded to be consistent with the Community Need Index (CNI) developed by St. Mary's Medical Center (see Figure 1) to identify areas that are Most Vulnerable, Moderately Vulnerable, Not Vulnerable, and Outside of the Service Area. The CNI identifies the severity of health disparity for every zip code in the United States and demonstrated the link between community need, access to care, and preventable hospitalizations. Vulnerability scores in any given community were determined by gathering data about the community socio-economy. For example, what percentage of the population was elderly and living in poverty, uninsured, unemployed, etc. Using this data, scores were assigned to each barrier condition (with 1 representing less community need and 5 representing more community need). The scores were then aggregated and averaged for a final CNI score (each barrier receives equal weight in the average). A score of 1.0 indicates a zip code with the lowest socio-economic barriers, while a score of 5 represents a zip code with the most socio-economic barriers ("Community Needs Index ", 2005).

The darker shaded areas (zip codes) were those with the least need for services whereas the lighter color areas were those with the greatest need for health services. The zip codes labeled "Most Vulnerable" consisted of 90813, 90810, 90805, 90806, 90804, 90802, and 90744. The areas where the need is less included 90815, 90814, 90808, 90807, 90803, 90745, 90740, 90715, 90713 and 90712 zip codes.

Figure 1. Community Needs Index of Long Beach developed by St. Mary Medical Center



Legend: White: Most vulnerable; Light, Medium and Dark purple: Less vulnerable

The Chi-square test was used to determine whether or not frequency distribution of each question for Most Vulnerable and Less Vulnerable areas is significantly different. Descriptive statistics were reported for each question along with chi-square tests where survey participants' responses were categorized into contingency tables. In addition, the Mann – Whitney (M-W) tests were used to determine whether two independent samples that are defined by a grouping variable are from the same population. The test statistic uses the rank of each case to test whether the groups were drawn from the same population. M-W statistics (z values) are reported in Tables 5, 6, 8, and 9.

Results

The majority of survey respondents were Hispanics (31%), Non-Hispanic Whites (29%), Asian and Pacific Islanders (20%) and African-Americans (14%). According to the US Census American Fact Finder (2010), our sample over represented the Hispanic and Asian population. In the Fact Finder, the Hispanic/Latino population made up 14.0% of the Long Beach residents and Asian and Pacific islanders made up only 13.4% of the population ("U.S. Census American Fact Finder," 2010). This is, in fact, a welcome development in the study since the Hispanic population is as high as 46% in "Most Vulnerable" areas in the City of Long Beach according to our sample. Therefore, our results mostly should be attributed to a large Hispanic population living in these zip codes.

In terms of age distribution, the majority of the respondents were in the 40 to 65 category (43%), followed by 25 to 39 (25%), and 18 to 24 categories (21%). About 57% of the data sample was female, 37% of the respondents were married and another 31% never married.

About 32% of the respondents had some college education (1 to 3 years) and another 29% finished a four year college. About 15% of the individuals finished high school but a large number of individuals had not finished high school (14%). The 2006 Census data shows that 84% of Long Beach population was high school graduate and 27% had a bachelor's degree. Approximately 60% of the respondents indicated that they were employed for wages.

The first survey question was related to health status of the respondents which ranged from excellent to poor health. Table 1 summarizes responses to this question. People who live in most vulnerable areas seem to have more health problems and poor health than those living in Less Vulnerable areas. The proportion of excellent health in less vulnerable areas is approximately 11% higher than vulnerable areas whereas the proportion of poor and fair health combined is approximately 13% higher in most vulnerable areas. The chi-square test shows that there is a significant difference in the health of these two populations (χ^2=18.69, p< .01).

Table 1. In general, would you say your health is:

Health Status	Less Vulnerable		Most Vulnerable		Total	
	#	%	#	%	#	%
Excellent	30	30.6	28	14.1	58	19.5
Good	55	56.1	108	54.3	163	54.9
Fair	12	12.2	50	25.1	62	20.9
Poor	1	1.0	13	6.5	14	4.7
Total	98		199		297	

χ^2 = 18.69, p<.01**

The next question targeted the health care coverage of Long Beach residents which raises significant concerns. Results are shown in Table 2. The "Less Vulnerable" population had higher percentage of job based employer paid and employee shared insurance coverage (39.4% and 15.2%) in comparison to "Most Vulnerable" population (24.5% and 10.4%). The Most Vulnerable group had significantly larger population in Medicaid and Medicare programs (9.7% and 11.4%, respectively). Most importantly, the uninsured population is about 10% in less vulnerable zip codes, but it goes up to 18.8% in Most Vulnerable areas. Overall, the distribution of insurance coverage is significantly different between these two samples suggesting insurance coverage as a significant issue for the Long Beach community where one out of every five people is uninsured (shown by the high chi-square statistics of 47.46).

Table 2. What kind of health care coverage do you have?

Health Coverage	Less Vulnerable		Most Vulnerable		Total	
	#	%	#	%	#	%
Private Pay	14	14.1	15	7.5	29	9.7
Job Based Self Pay	7	7.1	11	5.5	18	6.0
Job Based Employer Paid	39	39.4	34	17.1	73	24.5
Job Based Shared Expense	15	15.2	16	8.0	31	10.4
Medicare	5	5.1	24	12.1	29	9.7
Medicaid	2	2.0	32	16.1	34	11.4
Healthy Family	0	0.0	4	2.0	4	1.3
No Insurance	10	10.1	46	23.1	56	18.8
Other^{+}	5	5.0	14	7.0	19	6.4
No Answer	2	2.0	3	1.5	5	1.7
Total	99		199		298	

χ^2 = 47.46, *p*<.01; + a few respondents with multiple coverage included in "other" category.**

In addition to health care coverage, the participants were asked if they had a dental coverage (Table 3). A significant number of respondents (167/294, 56%) carried a dental coverage whereas 81 (27%) individuals lacked dental coverage. When the "no response" category was included in this analysis, the proportion of respondents with no dental coverage increased to 44%. Approximately two out of every three respondents who lived in "Less Vulnerable" and "Most Vulnerable" areas carried dental coverage. There is no statistical difference in dental coverage between these two samples.

Table 3. Do you have a dental coverage?

Choices	Less Vulnerable		Most Vulnerable		Total	
	#	%	#	%	#	%
Yes	64	64.6	103	52.8	167	56.8
No	20	20.2	61	31.3	81	27.6
No answer	15	15.2	31	15.9	46	15.6
Total	99		195		294	

χ^2 = 4.57, *p*<.01

Table 4 reveals the results of respondents' medical need, utilization and the availability of care. A significant number of respondents (53.8%) in "Most Vulnerable" areas needed medical care and received it compared to 64.6% in less vulnerable areas. A total of 31 respondents in Most Vulnerable areas compared to 28 in less vulnerable areas needed medical care but were not able to receive it. A total of 64 (64.6%) in Less Vulnerable areas compared to 107 (53.8%) in Less

Vulnerable areas needed medical care and received it. This is a significant difference at approximately 1 percent level.

Table 4. Did respondents need medical care, use it or were not able to receive it?

Choices	Less Vulnerable		Most Vulnerable		Total	
	#	%	#	%	#	%
You needed medical care but were NOT able to receive it	3	3.0	28	14.1	31	10.4
You needed medical care and received it	64	64.6	107	53.8	171	57.4
You did NOT need medical care	26	26.3	42	21.1	68	22.8
No Answer	6	6.1	22	11.1	28	9.4
Total	99		199		298	

χ^2 = 11.64, *p*<.01**

Various reasons could be speculated as to why individuals who needed medical care but did not receive it. These reasons may range from lack of insurance and the high cost of premiums to transportation problems and the limited hours at clinics and doctors' offices. The complete results are revealed in Table 5 where χ^2 and M-W column the first statistic is Chi-Square value and the second statistic is M-W value. Chi-square and Mann Whitney z-tests provide strong evidence that the most important access barriers for vulnerable populations were related to lack of insurance and the cost of health care coverage. Although somewhat weaker than insurance-related reasons (level of significance at .10), three other reasons appeared to limit access to care in Most Vulnerable areas. These were: not knowing where to get health care (7.2% in most vulnerable areas, 0% in less vulnerable areas; taking care of their problem at home (10.3 in most vulnerable areas and 2.3% in less vulnerable areas); and transportation issues (6.2% in most vulnerable areas and 0% in less vulnerable areas). Both χ^2 and M-W are consistent throughout the Table 5.

Table 5. What were the reasons that you did not receive proper medical care?

Reasons	Less Vulnerable		Most Vulnerable		Total	%	X^2 and M-W
	#	%	#	%	#	%	
Lack of insurance Yes	4	9.1	30	30.9	34	24.1	
No	40	90.9	67	69.1	107	75.9	7.9** -2.8**
Co-payment Yes	0	0.0	3	3.1	3	2.1	
No	44	100.0	94	96.9	138	97.9	1.4 -1.2
Cost, no money Yes	2	4.5	27	27.8	29	20.6	
No	42	95.5	70	72.2	112	79.4	10.1** -3.2**
Language barrier Yes	1	2.3	3	3.1	4	2.8	
No	43	97.7	94	96.9	137	97.2	0.1 -0.3
Don't know where to get care Yes	0	0.0	7	7.2	7	5.0	
No	44	100.0	90	92.8	134	95.0	3.3+ -1.8+
Providers don't take my insurance Yes	0	0.0	2	2.1	2	1.4	
No	44	100.0	95	97.9	139	98.6	0.9 -1.0
Took care of it at home Yes	1	2.3	10	10.3	11	7.8	
No	43	97.7	87	89.7	130	92.2	2.7+ -1.6+
Fear of deportation Yes	0	0.0	4	4.1	4	2.8	
No	44	100.0	93	95.9	137	97.2	1.9 -1.4
Fear of doctor, med. procedures Yes	0	0.0	2	2.1	2	1.4	
No	44	100.0	95	97.9	139	98.6	0.9 -1.0
Transportation Yes	0	0.0	6	6.2%	6	4.3%	
No	44	100.0	91	93.8%	135	95.7%	2.8+ -1.7+
Hours that doctor / clinic open Yes	1	2.3	2	2.1%	3	2.1%	
No	43	97.7	95	97.9%	138	97.9%	0.0 -0.1

**** $p<0.01$ and +$p<0.10$**

Following the reasons for access barriers, the next survey question explored the type (s) of health care participants in relation to whether they (1) couldn't afford, and/or (2) the service was not available. The survey deliberately sought information related to these two access barriers because both reasons could be improved by government and community resources. The questionnaire included the choices of health care providers and health services such as hospital care, family doctor, specialty doctor, nursing home care, hospice care, dentist, eye doctor, emergency room care, medical supplies, medicine, therapist, counselor and other type of care (see Table 6). Although survey respondents had concerns over several access barriers related to the cost and health insurance (shown in an earlier question), they have identified no particular type of provider or health service lacking in the city of Long Beach. This may be attributed to the wide range of community resources available by free clinics and community health centers, and most importantly by the not-for-profit hospitals such as Memorial Medical Center, St. Mary's and Long Beach Community Hospital. There was no significant difference in terms of accessing health services between most vulnerable and less vulnerable areas.

Table 6. Types of services that patients couldn't afford or services were not available

Type of care	Reasons	Choices	Less Vulnerable		Most Vulnerable		Total		X^2 and M-W
			#	%	#	%	#	%	
Hospital	not afford	Yes	0	0.0	4	4.6	4	3.1	
		No	42	100.0	83	95.4	125	96.9	2.0
									-1.4
	not available	Yes	0	0.0	0	0.0	0	0.0	
		No	42	100.0	87	100.0	129	100.0	-
									-0.0
Family doctor	not afford	Yes	1	2.4	2	2.3	3	2.3	
		No	41	97.6	85	97.7	129	97.7	0.0
									-0.0
	not available	Yes	0	0.0	0	0.0	0	0.0	
		No	42	100.0	87	100.0	129	100.0	-
									0.0
Specialty doctor	not afford	Yes	1	2.4	5	5.7	6	4.6	
		No	41	97.6	82	94.3	123	95.4	-
	not available	Yes	0	0.0	1	1.2	1	0.8	-
		No	42	100.0	86	98.9	128	99.2	0.5
									-0.7
Nursing home	not afford	Yes	0	0.0	3	3.5	3	2.3	
		No	42	100.0	84	96.6	126	97.7	1.5
									-1.2
	not available	Yes	0	0.0	1	1.2	1	0.8	
		No	42	100.0	86	98.9	128	99.2	0.5

									-0.7
Hospice	not afford	Yes	0	0.0	3	3.5	3	2.3	
		No	42	100.0	84	96.6	126	97.7	1.5
									-1.2
	not available	Yes	0	0.0	2	2.3	2	1.6	
		No	42	100.0	85	97.7	127	98.5	1.0
									-1.0
Dentist	not afford	Yes	1	2.4	4	4.6	5	3.9	
		No	41	97.6	83	95.4	124	96.1	0.4
									-0.6
	not available	Yes	0	0.0	1	1.2	1	0.8	
		No	42	100.0	86	98.9	128	99.2	0.5
									-0.7
Eye doctor	not afford	Yes	1	2.4	6	6.90	7	5.4	
		No	41	97.6	81	93.1	122	94.6	1.1
									-1.1
	not available	Yes	0	0.0	1	1.2	1	0.8	
		No	42	100.0	86	98.9	128	99.2	0.5
									-0.7
Emergency room	not afford	Yes	0	0.0	3	3.5	3	2.3	
		No	42	100.0	84	96.6	126	97.7	1.5
									-1.2
	not available	Yes	0	0.0	2	2.3	2	1.6	
		No	42	100.0	85	97.7	127	98.5	1.0
									-1.0
Medical supplies	not afford	Yes	0	0.0	4	4.6	4	3.1	
		No	42	100.0	83	95.4	125	96.9	2.0
									-1.4
	not available	Yes	0	0.0	1	1.2	1	0.8	
		No	42	100.0	86	98.9	128	99.2	0.5
									-0.7
Medicine	not afford	Yes	1	2.4	5	5.8	6	4.7	
		No	41	97.6	82	94.3	123	95.4	0.7
									-0.8
	not available	Yes	0	0.0	0	0.0	0	0.0	
		No	42	100.0	87	100.0	129	100.0	-
									0.0
Therapist	not afford	Yes	0	0.0	3	3.5	3	2.3	
		No	42	100.0	84	96.6	126	97.7	1.5
									-1.2
	not available	Yes	0	0.0	0	0.0	0	0.0	

		No	42	100.0	87	100.0	129	100.0	-
									0.0
Other	not afford	Yes	0	0.0	3	3.5	3	2.3	
		No	42	100.0	84	96.6	126	97.7	1.5
									-1.2
	not available	Yes	0	0.0	0	0.0	0	0.0	
		No	42	100.0	87	100.0	129	100.0	-
									0.0
Counselor /mental health	not afford	Yes	0	0.0	3	3.6	3	2.4	
		No	40	100.0	81	96.4	121	97.6	1.5
									-1.2
	not available	Yes	0	0.0	0	0.0	0	0.0	
		No	40	100.0	84	100.0	124	100.0	-
									0.0

The city of Long Beach is geographically spread out over a very large area, and it has its own Department of Public Health. If one service provider was not available in one zip code area, an adjacent zip code area within driving distance may have providers and services that could easily be available to city residents. Patients could get around some of the access barriers in their neighborhoods but there are still inherent access problems like high cost of insurance and lack of insurance presents challenges for the city and its efforts to eliminate some of these disparities.

Enabling services are an important part of access limitations and past research showed that these services should be included in community health needs assessments. The major enabling services included in the study are counselor availability, family planning, services for elderly such as Meals on Wheels and homemaker services, recreation for families and children, before and after school programs, and transportation. Chi square and M-W tests showed that four areas of enabling services appear to be significantly different in these two geographic areas, but relationships are somewhat weak. These are: (1) Meals on Wheels, (2) recreation for seniors, (3) WIC services, and (4) recreation for families (see Table 7). The first two deficiencies are related to the elderly population and the other two are possibly related to low income families. Although the study lists these services under enabling services, these services are also considered health promotion and disease prevention programs which can be improved by local hospitals. Results are only significant at the $p \leq .05$ and $p \leq .10$level.

Table 7: The Availability of Enabling Services in the City of Long Beach

Types of Services	Choices	Less Vulnerable		Most Vulnerable		Total		X^2
		#	%	#	%	#	%	
Counselor	Yes	4	96.0	18	9.0	22	7.4	
	No	95	4.0	181	91.0	276	92.6	2.42
Family planning clinic	Yes	5	5.1	6	3.0	11	3.7	
	No	94	94.9	193	97.0	287	96.3	0.77
Homemaker services	Yes	0	0.0	2	1.0	2	0.7	

	No	99	100	197	99.0	296	99.3	1.00
Home nursing	Yes	0	0.0	4	2.0	4	1.3	
	No	99	100.0	195	98.0	294	98.7	2.01
Assisted living	Yes	0	0.0	4	2.0	4	1.3	
	No	99	100.0	195	98.0	294	98.7	2.10
Adult daycare	Yes	1	1.0	1	0.5	2	0.7	
	No	98	99.0	198	99.5	296	99.3	0.26
Meals on wheals	Yes	0	0.0	6	3.0	6	2.0	
	No	99	100.0	193	97.0	292	98.0	3.04+
WIC services	Yes	0	0.0	7	3.5	7	2.3	
	No	99	100.0	192	96.5	291	97.7	3.57*
Recreation for seniors	Yes	0	0.0	7	3.5	7	2.3	
	No	99	100.0	192	96.5	291	97.7	3.57*
Recreation for families	Yes	0	0.0	8	4.0	8	2.7	
	No	99	100.0	191	96.0	290	97.3	4.09*
Recreation for children	Yes	1	1.0	9	4.5	10	3.4	
	No	98	99.0	190	95.5	288	96.6	2.51
Transportation	Yes	3	3.0	14	7.0	17	5.7	
	No	96	97.0	185	93.0	281	94.3	1.98
In-home extended care	Yes	1	1.0	4	2.0	5	1.7	
	No	98	99.0	195	98.0	293	98.3	0.40
Before/ after school prog.	Yes	3	3.0	12	6.0	15	5.0	
	No	96	97.0	187	94.0	283	95.0	1.25
Other specify	Yes	0	0.0	2	1.0	2	0.7	
	No	99	100.0	197	99.0	296	99.3	1.00

*** *p*<0.05 and + *p*<0.10**

When respondents were asked for alternative health methods used, over 50% reported using prayer. Over 30% of respondent utilized massage and over 20% utilized meditation and herbal medicines as a complement or alternative to traditional "western" medicine. Five areas were significantly different between Most and Less Vulnerable populations: (1) acupuncture, (2) homeopathy, (3) message, (4) cupping, and (5) coining. Acupuncture was used by more respondents in Most Vulnerable zip codes (10%) compared to only 2% in Less Vulnerable zip codes. Homeopathy was more common in Less Vulnerable areas than Most Vulnerable areas. Another interesting result was that massage was used as a treatment method by almost one out of every two people in Less Vulnerable areas whereas this proportion is one out of four in the Most Vulnerable zones (see Table 8 for more information).

Table 8. Use of Alternative Medicine in the City of Long Beach

	Choices	Less Vulnerable		Most Vulnerable		Total		X^2 and M-W
		#	%	#	%	#	%	
Prayer	Yes	50	50.5	100	50.3	150	50.3	
	No	48	48.5	99	49.8	147	49.3	
	Other	1	1.1	0	0.0	1	0.3	2.0
								-0.3
Meditation	Yes	23	23.2	52	26.1	75	25.2	
	No	76	76.8	147	73.9	223	74.8	0.3
								-0.5
Chiropractor	Yes	19	19.2	25	12.6	44	14.8	
	No	80	80.8	174	87.4	254	85.2	2.3
								-1.5
Acupuncture	Yes	2	2.0	21	10.6	23	7.7	
	No	97	98.0	178	89.5	275	92.3	6.8**
								-2.6**
Acupressure	Yes	4	4.0	8	4.0	12	4.0	
	No	95	96.0	191	96.0	286	96.0	0.0
								-0.0
Nutritionist	Yes	15	15.2	28	14.1	43	14.4	
	No	84	84.9	171	85.9	255	85.6	0.1
								-0.3
Herbal medicines	Yes	21	21.2	49	24.6	70	23.5	
	No	78	78.8	150	75.4	228	76.5	0.4
								-0.7
Homeopathy	Yes	14	14.1	11	5.5	25	8.4	
	No	85	85.9	188	94.5	273	91.6	6.4**
								-2.5*
Faith healer	Yes	2	2.0	9	4.5	11	3.7	
	No	97	98.0	190	95.5	287	96.3	1.2
								-1.1
Reiki	Yes	3	3.0	4	2.0	7	2.4	
	No	96	97.0	195	98.0	291	97.7	0.3
								-0.5
Reflexology	Yes	3	3.0	3	1.51	6	2.0	
	No	96	97.0	196	98.5	292	98.0	0.8
								-0.9
Massage	Yes	41	41.4	49	24.6	90	30.2	
	No	58	58.6	150	75.4	208	69.8	8.8**
								-3.0**

Biofeedback	Yes	1	1.0	3	1.5	4	1.3	
	No	98	99.0	196	98.5	294	98.7	0.1
								-0.4
Curanderos	Yes	1	1.0	6	3.0	7	2.4	
	No	98	99.0	193	97.0	291	97.7	1.2
								-1.1
Coining	Yes	1	1.0	16	8.0	17	5.7	
	No	97	99.0	183	92.0	280	94.0	6.0**
								-2.4*
Cupping	Yes	1	1.0	13	6.5	14	4.8	
	No	97	98.0	186	93.5	283	95.0	4.4*
								-2.1*
Other	yes+	1	1.0	3	1.5	4	1.3	
	No	98	99.0	196	98.5	294	98.7	3.5

**** *p*<0.01 and **p*<0.05**

An important question in the survey specifically targeted two types of information: 1) perceptions of the top five health problems in the City of Long Beach, and 2) the respondents' experience (or households) with the top five health issues within the last year. As it is well known, perceptions and experience data sometimes do not reveal similar results. When respondents were asked about their perceptions regarding the top five health issues or problems for adults living in the greater Long Beach area, results revealed that drug abuse (49%), gang activities (44%), alcohol abuse (35.9%), accidents (25.5%), and unplanned pregnancies (24.5%) were the top five health issues for the entire city of Long Beach. However, when respondents were asked for the top five health issues they experienced, results revealed that high blood pressure (11.1%), depression (10.4%), diabetes (8.4%), dental (8.1%), and arthritis (8.1%) were tied at 4th place, and asthma (7.7%) and obesity (7.7%) were tied at 5th place.

When data were analyzed for respondents' perceptions in Less (LV) and Most Vulnerable (MV) areas, significant differences were found for HIV/AIDS (4% for LV and 11% for MV, $\chi^2 = 4.1$), lack of health insurance (12.1.% for LV, 5.5% for MV, $\chi^2 = 4.0$), rape (0% for LV and 4.7% for MV, $\chi^2 = 2.9$), and domestic violence (5.1% for LV and 11.6% for MV, $\chi^2 = 3.3$).

When the data were analyzed for the experience of individuals and households, arthritis (4% for LV and 10.1% for MV, $\chi^2 = 3.2$), child abuse (0% for LV and 6% for MV, $\chi^2 = 3.0$), depression (5.1% for LV and 13.1% for MV, $\chi^2 = 4.6$), dental care (3% for LV, 10.6% for MV, $\chi^2 = 5.1$), high blood pressure (2% for LV, 15.6% for MV, $\chi^2 = 12.3$), lack of affordable health care (1% for LV, 8% for MV, $\chi^2 = 6.1$), lack of insurance (2% for LV, 8% for MV, $\chi^2 = 4.2$), lack of exercise (1% for LV, 10.1% for MV, $\chi^2 = 8.2$), and STD (0% for LV, 4% for MV, $\chi^2 = 4.1$) are found to be more of a problem in Most Vulnerable areas than Less Vulnerable areas. ADHD, on the other hand, is a bigger problem in Less Vulnerable areas (2% for LV, 0% for MV, $\chi^2 = 4.0$). Three of the results are statistically stronger than the rest and these are; high blood pressure, lack of affordable health care and lack of exercise; significant at one percent. In the Most Vulnerable areas, about 16 percent of the people or someone in their families has a high blood pressure; eight percent complained about lack of affordable health care and about 10 percent have indicated exercise problems.

Table 9. Top Five Health Problems/Issues in the City of Long Beach by Vulnerable Areas

		Household Experience with Health Issues							Household Perception of Health Issues						
		Less Vulnerable		Most Vulnerable		Total		X^2 and M-W	Less Vulnerable		Most Vulnerable		Total		X^2 and M-W
		#	%	#	%	#	%		#	%	#	%	#	%	
Accidents	Yes	2	2.0	11	5.5	13	4.4		30	30.3	46	23.1	76	25.5	
	No	97	98.0	188	94.5	285	95.6	1.9 -1.4	69	69.7	153	76.9	222	74.5	1.8 -1.3
ADHD	Yes	2	2.0	0	0.0	2	0.7		6	6.1	10	5.0	16	5.4	
	No	97	98.0	199	100.0	296	99.3	4.0* -2.0*	93	93.9	189	95.0	282	94.6	0.1 0.4
Asthma	Yes	8	8.1	15	7.5	23	7.7		10	10.1	27	13.6	37	12.4	
	No	92	91.9	184	92.5	298	92.3	0.0 -0.2	89	89.9	172	86.4	261	87.6	0.7 -0.9
Air pollution	Yes	10	10.1	20	10.1	30	100.0		13	13.1	20	10.1	33	11.1	
	No	89	89.9	179	89.9	268	89.9	0.0 -0.0	86	86.9	179	89.9	265	88.9	0.6 -0.8
Alcohol abuse	Yes	6	6.1	10	5.0	16	5.4		38	38.4	69	34.7	107	35.9	
	No	93	93.9	189	95.0	282	94.6	0.1 -0.4	61	61.6	130	65.3	191	64.1	0.4 -0.6
Arthritis	Yes	4	4.0	20	10.1	24	8.1		1	1.0	4	2.0	5	1.7	
	No	95	96.0	179	89.9	274	91.9	3.2+ -1.8+	98	99.0	195	98.0	293	98.3	0.4 -0.6
Bone loss	Yes	2	2.0	12	6.0	14	4.7		0	0.0	2	1.0	2	0.7	
	No	97	98.0	187	94.0	284	95.3	2.4 -1.5	99	100.0	197	99.0	296	99.3	1.0 -1.0
Cancer	Yes	0	0.0	5	2.5	5	1.7		4	4.0	4	2.0	8	2.7	
	No	99	100.0	194	97.5	293	98.3	2.5 -1.6	95	96.0	195	98.0	290	97.3	1.0 -1.0
Child abuse	Yes	0	0.0	6	3.0	6	2.0		14	14.1	33	16.6	47	15.8	
	No	99	100.0	193	97.0	292	98.0	3.0+ -1.7+	85	85.9	166	83.4	251	84.2	0.3 -0.5
Depression	Yes	5	5.1	26	13.1	31	10.4		15	15.2	42	21.2	57	19.2	
	No	94	94.9	173	86.9	267	89.6	4.6* -2.1*	84	84.8	156	78.8	240	80.8	1.6 -1.2
Dental	Yes	3	3.0	21	10.6	24	8.1		5	5.1	9	4.5	14	4.7	
	No	96	97.0	178	89.4	274	91.9	5.1* -2.2*	94	94.9	190	95.5	284	95.3	0.0 -0.2
Diabetes	Yes	5	5.1	20	10.1	25	8.4		8	8.1	15	7.5	23	7.7	
	No	94	94.9	179	89.9	273	91.6	2.2 -1.5	91	91.9	184	92.5	275	92.3	0.0 -0.2
Domestic violence	Yes	3	3.0	8	4.0	11	3.7		5	5.1	23	11.6	28	9.4	
	No	96	97.0	191	96.0	287	96.3	0.1 -0.3	94	94.9	176	88.4	270	90.6	3.3+ -1.8+
Drug abuse	Yes	3	3.0	8	4.0	11	3.7		49	49.5	97	48.7	146	49.0	
	No	96	97.0	191	96.0	287	96.3	0.2 -0.4	50	50.5	102	51.3	152	51.0	0.0 -0.1
Gang activities	Yes	1	1.0	5	2.5	6	2.0		44	44.4	87	43.7	131	44.0	
	No	98	99.0	194	97.5	292	98.0	0.8 -0.9	55	55.6	112	56.3	167	56.0	0.0 -0.1
High blood pressure	Yes	2	2.0	31	15.6	33	11.1		1	1.0	6	3.0	7	2.3	
	No	97	98.0	168	84.4	265	88.9	12.3** -3.5**	98	99.0	193	97.0	291	97.7	1.2 -1.1
Heart disease	Yes	1	1.0	6	3.0	7	2.3		1	1.0	6	3.0	7	2.3	
	No	98	99.0	193	97.0	291	97.7	1.2 -1.1	98	99.0	193	97.0	291	97.7	1.2 -1.1
HIV/AIDS	Yes	3	3.0	11	5.5	14	4.7		4	4.	22	11.1	26	8.7	
	No	96	97.0	188	94.5	284	95.3	0.9 -1.0	95	96.0	177	88.9	272	91.3	4.1* -2.0*
Homelessness	Yes	2	2.0	5	2.5	7	2.3		5	5.1	13	6.5	18	6.0	
	No	97	98.0	194	97.5	291	97.7	0.1 -0.3	94	94.9	186	93.5	280	94.0	0.3 -0.5
incarceration	Yes	0	0.0	5	2.5	5	1.7		3	3.0	11	5.5	14	4.7	
	No	99	100.0	194	97.5	293	98.3	2.5 -1.6	96	97.0	188	94.5	284	95.3	0.9 -1.0
Lack of affordable health care	Yes	1	1.0	16	8.0	17	5.7		9	9.1	15	7.5	24	8.1	
	No	98	99.0	183	92.0	281	94.3	6.1** -2.4*	90	90.9	184	92.5	274	91.9	0.3 -0.5
Lack of health insurance	Yes	2	2.0	16	8.0	18	6.0		12	12.1	11	5.5	23	7.7	
	No	97	98.0	183	92.0	280	94.0	4.2* -2.1*	87	87.9	188	94.5	275	92.3	4.0* -2.0*
Lack of exercise	Yes	1	1.0	20	10.1	21	7.0		15	15.2	26	13.1	41	13.8	
	No	98	99.0	179	89.9	277	93.0	8.2** -2.9**	84	84.8	173	86.9	257	86.2	0.2 -0.5
Mental health	Yes	3	3.0	15	7.5	18	6.0		6	6.1	9	4.5	15	5.0	
	No	96	97.0	184	92.5	280	94.0	2.4	93	93.9	190	95.5	283	95.0	0.4

								-1.5							-0.6
Obesity	Yes	6	6.1	17	8.5	23	7.7		27	27.3	57	28.6	84	28.2	
	No	93	93.9	182	91.5	275	92.3	0.6 -0.8	72	72.7	142	71.4	214	71.8	0.1 -0.2
Physical injuries	Yes	1	1.0	6	3.0	7	2.3		6	6.1	9	4.5	15	5.0	
	No	98	99.0	193	97.0	291	97.7	1.2 -1.1	93	93.9	190	95.5	283	95.0	0.3 -0.6
Poor nutrition	Yes	3	3.0	11	5.5	14	4.7		25	25.3	46	23.1	71	23.8	
	No	96	97.0	188	94.5	284	95.3	0.9 -1.0	74	74.7	153	76.9	227	76.2	0.2 -0.4
Rape	Yes	0	0.0	1	0.8	1	0.5		0	0.0	6	4.7	6	3.2	
	No	60	100.0	128	99.2	188	99.5	0.5 -0.7	60	100.0	123	95.3	183	96.8	2.9+ -1.7+
Smoking	Yes	4	4.0	14	7.0	18	6.0		23	23.2	44	22.1	67	22.5	
	No	95	96.0	185	93.0	280	94.0	1.0 -1.0	76	76.8	155	77.9	231	77.5	0.0 -0.2
Sexual abuse	Yes	0	0.0	2	1.0	2	0.7		3	3.0	11	5.5	14	4.7	
	No	99	100.0	197	99.0	296	99.3	1.0 -1.0	96	97.0	188	94.5	284	95.3	0.9 -1.0
STD	Yes	0	0.0	8	4.0	8	2.7		19	19.2	27	13.6	46	15.4	
	No	99	100.0	191	96.0	290	97.3	4.1* -2.0+	80	80.8	172	86.4	252	84.6	1.6 -1.3
Stroke	Yes	0	0.0	3	1.5	3	1.0		3	3.0	3	1.5	6	2.0	
	No	99	100.0	196	98.5	295	99.0	1.5 -1.2	96	97.0	196	98.5	292	98.0	0.8 -0.9
Tobacco use	Yes	3	3.0	4	2.0	7	2.3		10	10.1	26	13.2	36	12.1	
	No	96	97.0	195	98.0	291	97.7	0.3 -0.5	89	89.9	173	86.9	262	87.9	0.5 -0.7
Unplanned pregnancy	Yes	1	1.0	2	1.0	3	1.0		26	26.3	47	23.6	73	24.5	
	No	98	99.0	197	99.0	295	99.0	0.0 -0.0	73	73.7	152	76.4	225	75.5	0.3 -0.5
Violence	Yes	1	1.0	7	3.5	8	2.7		17	17.2	36	18.1	53	17.8	
	No	98	99.0	192	96.5	290	97.3	1.6 -1.3	82	82.8	163	81.9	245	82.2	0.0 -0.2
Other	Yes	1	1.0	1	0.5	2	0.3		0	0.0	3	1.5	3	1.0	
	no	98	99.0	198	99.5	296	99.3	2.5 -0.0	99	100.0	196	98.5	295	99.0	1.5 -0.0

Conclusion

The Health Needs Assessment 2007 conducted in the city of Long Beach involved a convenience sample of the population and garnered information related to the health needs of the residents for adults. Zip code analysis was undertaken for 'less vulnerable' and 'most vulnerable' areas to further determine specific needs of these smaller-scale communities. When descriptive statistics were reported for the entire city or county, results reflected the central tendency of the general population living in the city and did not address the problems of less vulnerable neighborhoods due to offsetting effect of data from more prominent and less vulnerable neighborhoods. This study identifies the most and less vulnerable neighborhoods by zip code, and analyzes the data sample by these two categories. Results are consistent with the expectations that significant differences in these areas exist. Vulnerable neighborhoods have more health problems, uninsured people, and lack of insurance coupled with affordability. "Don't know where to get care" and transportation problems were also identified as major and significant issues for Most vulnerable neighborhoods. Several survey questions which focused on the type of providers needed, affordability and availability for both general and 'most vulnerable' neighborhoods; however no particular type of provider or health service is found to be lacking in the city of Long Beach.

In terms of the top adult health and health related problems in the entire city, obesity, alcohol abuse, drug abuse, high blood pressure, diabetes, and arthritis received most responses. However, when the data was analyzed comparing the most and less Vulnerable zip codes, a number of health and health-related issues surfaced such as depression, dental care, high blood pressure, lack of affordable health care, lack of insurance, lack of exercise and STDs. These are statistically significant at the one and five percent level. The authors recommend emphasizing the above areas in most vulnerable zip codes above other health problems because the data

reflect respondents' experience, not their perception. The only overlapping outcome in analyzing the perception and experience data is "the lack of insurance" which questions the validity of the perception data.

When enabling services were analyzed extensively by 'less vulnerable' and 'most vulnerable' zip codes, family planning services, adult day care, meal on wheels, WIC, recreation for seniors and families, and before and after school programs were found to be lacking in 'most vulnerable' areas. Counselor and home nursing were significant at 10 percent level whereas the last two were significant at 5% level. Transportation, which was the only service, found to be unaffordable was significant at the 5% level.

It is strongly recommended that local hospitals make an organized effort to establish educational programs in most vulnerable areas to reduce high blood pressure, STD and lack of exercising. Also, there is a desperate need to provide mental and dental care and this could be achieved jointly through collaboration with community health centers and local hospitals. Clearly, this study shows that health needs assessments should be conducted at smaller geographic areas to capture the real needs of vulnerable communities. Results of city or county health needs assessment may not provide the whole picture and, in some cases, may be misleading. In addition, the perception of individuals in health needs surveys may not reliable in identifying the needs of communities. Survey respondents may be reporting what they think or they hear is accurate but our data show that there are significant differences in the results obtained from perception and experience data when identifying the needs of Most Vulnerable communities.

Community needs assessments should be conducted at regular intervals. Utilization of health data can provide the foundation for health program planning in relation to target populations and their specific needs. However, the assessment process is not outcome in and of itself, but a process of meeting health needs through clinical and health promotion or education interventions needed for action (Clegg & Doherty, 2001). For Long Beach, health assessments can identify new health problems or changes in the community's needs (Holt, 2008). Community assessments can provide understanding of characteristics required to sustain a healthy living environment so that planned services are delivered to the community that reflect the needs of Long Beach residents. Therefore, multiple needs assessment methodologies, especially those that are community-based, should be implemented in order to create action plans for health-related factors of these diverse and vulnerable groups.

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