

Rural Housing and Health Among Latinos in Eastern North Carolina

A report by the
North Carolina Rural Communities
Assistance Project, Inc.
(NRCRAP)

NRCRAP • PO Box 941 • Pittsboro, North Carolina 27312 • (919)542-7227 • FAX (919)542-2329 • www.ncrcap.org

Table of Contents

- Introduction
- Survey Population & Methods
- Results & Discussion
 - General Demographics
 - Housing Characteristics
 - Relationship between Health and Housing Conditions
- Conclusion & Recommendations
- Acknowledgements
- Work Cited

Index of Tables

- Table 1. Percent Increase in Hispanic Population from 1990 to 2000; Hispanic Population as a Percent of the Total County Population in 11 Eastern NC Counties
- Table 2. General Demographics of Rural Latino Residents of Eastern NC Participating in Survey
- Table 3. Housing Characteristics for Rural Latino Residents in Eastern NC Participating in Survey
- Table 4. Health and Healthcare Utilization for Rural Latino Residents in Eastern NC Participating in Survey

Index of Figures

- Figure 1. Survey Participants by Country of Origin
- Figure 2. Percentage of Undocumented and Documented Participants within Each Occupation
- Figure 3. Percentage of Survey Population Living in Crowded and Very Crowded Housing Compared to North Carolina Households
- Figure 4. Percentage of Documented and Undocumented Survey Participants that reported They or a Housemate Visited a Doctor due to a Previous Health Problem

¹ The terms "Hispanic" and "Latino" are used interchangeably throughout this publication, and refer collectively to Mexicans, Hondurans, Guatemalans, Salvadorans, and others of Spanish and Latin American descent.

Executive Summary

In North Carolina, the Hispanic¹ community has quadrupled in size between 1990 and 2000 (US Bureau of the Census, 1990 and 2000). To address the housing and health needs of this growing minority population, the North Carolina Rural Communities Assistance Project surveyed 126 Latino individuals in two community health centers in eastern North Carolina during the summer of 2002. Survey participants were interviewed about their housing conditions, drinking water quality, and completed a self-assessment of health. Results from the 2002 survey are unique, capturing data on the living conditions of undocumented, as well as documented, Latino residents. Similar studies have rarely recorded information on the undocumented segment of this population.

Most survey respondents were

from Mexico and described themselves as having little to no English language comprehension. The survey indicated that Latino residents in North Carolina represent a marginalized group within the housing market. Data revealed that a majority of the community lives in undesirable structures, rents rather than owns their housing, and lives in crowded or very crowded housing. Survey participants expressed concern over sewage problems and/or drinking water quality, and these reports largely corresponded with respondents' health complaints. The study also revealed that Latino residents, especially those who are undocumented and/or farmworkers, lack sufficient access to healthcare. This report describes the results of the survey and recommends

strategies that service providers can develop to address the housing and health needs of the rural, Hispanic population in North Carolina.

Suggestions include: implementing minimum housing codes; offering pre-purchase counseling for homebuyers; increasing the availability of affordable housing in rural areas; screening for inadequate housing conditions during health care visits; improving health providers' understanding of the rural Latino community; and strengthening environmental health outreach and education efforts.

Introduction

Hispanics are the fastest growing minority group within the United States, comprising 13.5% of the population and totaling 38.8 million people (Bernstein and Bergman, 2003). Similarly, the percent of Hispanics making up North Carolina's total population increased four fold, from 1.2% to 4.7%, between 1990 and 2000 (U.S. Bureau of the Census, 1990 and 2000). In fact, during this time, North

Carolina experienced the highest percent increase both in its foreign-born and Hispanic populations in the nation, 274% and 394%, respectively (Deardorff, 2003 and Bowdler, 2004). Recent immigrants to the United States usually have reduced access to clean working and housing environments, and fall into lower socioeconomic positions than their native counterparts (Flaskerud and Kim 1999).

Therefore, members of this population commonly have difficulty accessing services such as health care. Similarly, United States residents from Mexico and Latin America account for more than one third of immigrant households with critical housing needs, as defined by homes that have inadequate plumbing, heating, electricity, roofing, or kitchen facilities (Bowdler, 2004).

Introduction (continued)

Furthermore, in rural areas, Latino households are twice more likely than the general population to live in physically inadequate structures (Mikesell, 2000).

In rural, eastern North Carolina, the Hispanic immigrant population faces similar housing and health care challenges. During the summer of 2002, the North Carolina Rural Communities Assistance Project surveyed rural Latino residents living in a multi-county area of eastern North Carolina to better define the housing and health care concerns and needs of this unique group.

Information gathered on housing, occupation, and health conditions reveals a clearer picture of the daily situation within the rural, Latino population. In particular, the data demonstrate how living conditions, perceptions of drinking water quality, and adequacy of sewage disposal influence the participants' assessment of their current health problems. Housing conditions help to determine residents' risks for illness and infection. A recent national study of farmworker housing described 33% as severely or

moderately substandard, and reported that 8% lacked a working bath, and 9% a functioning toilet (Holden, George and Smith, 2001). While such a survey documents the conditions under which the farmworking population lives, few studies have examined the housing and health perceptions of the comprehensive, rural Latino population. The 2002 survey, conducted by NCRCAP, seeks to fill the information gap by providing new insight into a broader segment of the rural Latino population. The survey captures residents who have lived in North Carolina continuously over a period of years rather than for seasonal or temporary stays, as is prevalent in the farmworker population. Therefore, the findings offer a novel understanding of the needs within the rural Hispanic community allowing service organizations to better address housing and health problems of this particular population. Based on the findings of the study, recommendations to address the identified needs are outlined as a resource for organizations that serve the rural Latino community.

Survey Population & Methods

During August and September of 2002, 126 Latino individuals were interviewed in two community health centers, Harvest Family Health Center located in Nashville, North Carolina and the Tri-County Community Health Center in Newton Grove, North Carolina. Together, the two health centers serve an increasing percentage of the rural Latino population, including migrant and seasonal farmworkers. Both centers receive funding to extend primary and preventative health care services to farmworkers on a sliding fee scale. Survey participants were interviewed about housing conditions and drinking water quality, and also completed a self-assessment of health. Conducted during the agricultural season, the survey captured data on migrant and seasonal farmworkers, as well as permanent community residents. Especially distinctive and valuable, the survey contains information on the undocumented sector of the rural Latino population, which does not appear in

census data and has rarely been described by other, previously conducted studies in other areas of the country.

The survey drew people from an 11 county area. Seventy percent of the participants came from Nash, Sampson, Johnston, and Wilson counties. The remaining 30% resided in Wake, Edgecombe, Greene, Harnett, Duplin, Wayne, and Cumberland counties. United States census data indicate that during the 1990s, these particular counties experienced exceptionally dramatic percent increases in the Latino population, ranging from 313% in Wayne to over 700% in Greene, Sampson, and Wilson counties (see Table 1). In nine of the eleven surveyed regions, the percentage of Hispanics and Latinos comprising the counties' population surpassed the state average of 4.7% (see Table 1).

Table 1: Percent Increase in Hispanic Population from 1990 to 2000; Hispanic Population as a Percent of the Total County Population in Eleven Eastern NC Counties (US Bureau of the Census)

County	% Increase from 1990 to 2000	% of Total County Population
Cumberland	573%	6.9%
Duplin	632%	15.1%
Edgecombe	509%	2.8%
Greene	794%	8.0%
Harnett	360%	5.9%
Johnston	648%	7.7%
Nash	385%	3.4%
Sampson	791%	10.8%
Wake	530%	5.4%
Wayne	313%	4.9%
Wilson	730%	6.0%

Figure 1: Survey Participants by Country of Origin

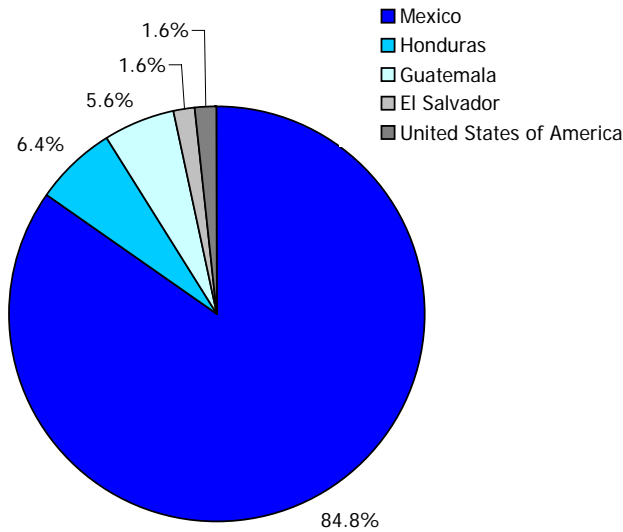
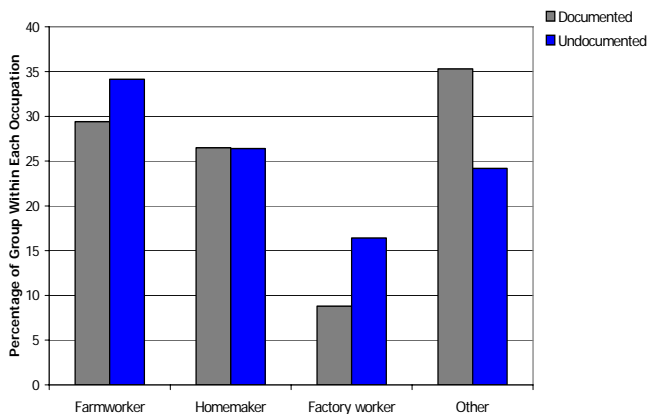


Figure 2: Percentage of Undocumented and Documented Participants within Each Occupation



Results & Discussion

General Demographics

Of the 126 survey participants, 27% were documented residents and had lived in NC for an average of 8.9 years, and the remaining 73% were undocumented and had resided in NC for an average of 3.9 years (see Table 2). The proportion of undocumented to documented survey respondents was much larger than proportions of participants in other, previously conducted studies (Chavez et al. 1997; Flores et al. 1998; Berk et al. 2000). Approximately eighty-five percent (84.8%) of the surveyed individuals were from Mexico, and the native countries of other participants included Honduras (6.4%), Guatemala (5.6%), and El Salvador (1.6%) (see Figure 1).

The largest number of survey participants reported being employed in farmwork (32.0% (see Table 2), and were largely male (62.5%). The next largest respondent group was homemakers (26.4%), all of whom were female. Factory workers comprised 14.4% of the survey respondents. A similar proportion of documented and undocumented individuals identified themselves as farmworkers and homemakers. However, a larger proportion of undocumented than documented individuals described themselves as factory

workers (see Figure 2). In addition, more undocumented participants (33.2%) had been at their current job between one and three years, than documented individuals (21.7%). Comparatively, a larger proportion of documented respondents (52.2%) reported holding their current job less than one year, in contrast to 41.0% of undocumented respondents.

Overall, survey participants self-reported low levels of English comprehension. Nearly seventy-five percent (74.6%) of respondents reported having little to no understanding of the language, and only 9.6% claimed to comprehend most to all of spoken English. Documented individuals reported higher levels of English comprehension than undocumented participants, which likely results from a greater length of residence in the United States. However, the overall low levels of English comprehension within the rural Latino community may signify poor acculturation, a potential challenge to service providers, health care workers and others needing to effectively communicate with this population.

Housing Characteristics

Survey results indicate that a number of housing trends and problems affect members of the rural Hispanic community more severely than the general population. Latino residents tend to endure undesirable living conditions, placing them within a

marginalized minority group in the housing market. The survey revealed that mobile homes are the most common form of housing (55.5%) for rural Latino residents; 12.7% of survey participants reported living in barrack-style housing or labor camps; and only one quarter

(27.0%) of the participants lived in a frame house (see Table 3). A minority of participants reported being homeowners (19.1%), although a greater percentage of documented individuals (44.1%) fell into this category. The majority of respondents

lived in either rental or employer-provided housing (52.3% and 28.6%, respectively). This trend leaves the population with very little control over making improvements or even basic repairs to their housing.

Table 2: General Demographics of Rural Latino Residents of Eastern NC Participating in Survey

Sociodemographic characteristics		Documented (n=34; 27%)	Undocumented (n=92; 73%)	All (n=126; 100%)	Farmworker (n=40; 32%)
Age	Mean (years)	35.7	29.2	30.9	30.7
Sex (%)	Male	50	39.2	42.1	62.5
	Female	50	60.8	57.9	37.5
Length of time in North Carolina	Mean (years)	8.9	3.9	5.4	4.4
Country of origin (%)	México	76.5	88.1	84.9	90.0
	Honduras	14.7	3.3	6.4	0
	Guatemala	0	7.6	5.6	10.0
	El Salvador	2.9	1.1	1.6	0
	United States	5.9	0	1.6	0
Highest level of Education (%)	None	5.9	8.6	7.9	7.5
	≤ 9 th grade	67.6	69.6	69.0	72.5
	10 th – 12 th grade	17.7	19.6	19.1	20.0
	High school graduate	8.8	2.2	4.0	0
Occupation (%)	Farmworker	29.4	33.0	32.0	-
	Homemaker	26.5	26.4	26.4	-
	Factory worker	8.8	16.4	14.4	-
	Other	35.3	24.2	27.2	-
Length of time at job	0 – 1 year	52.2	41.0	44.0	45.0
	1- 3 years	21.7	33.2	30.1	25.0
	4 years and up	26.1	25.8	25.9	30.0
English comprehension (%)	Very little to none	47.1	84.8	74.6	75.0
	Some	26.5	12.0	15.9	20.0
	Majority to all	26.5	3.3	9.6	5.0

Housing Characteristics (continued)

The survey data illustrate a contrast in migration patterns between documented and undocumented Latino residents. More than half, or 64.7%, of documented individuals reported living near a farm, whereas only 50.0% of the undocumented participants described themselves as residing in a similar location. A possible explanation for the trend may be greater prevalence of rental housing within city limits, and the overwhelming majority of undocumented participants (63.0%) occupying rental housing. In contrast, the survey results suggest that documented individuals tend to purchase homes outside of the city, perhaps due to the lower cost of purchasing homes outside of city limits. Also, undocumented individuals may be moving into small towns for occupational reasons, as suggested by the tendency for undocumented residents to work in factories more than their documented counterparts (see Figure 2).

Crowded housing is defined as the state where the number of people occupying a dwelling exceeds one person per room (U.S. Census Bureau, 2000). Based on this definition, crowding seems to be a persistent problem for the surveyed population (see Figure 3). Eighty-six percent (86.3%) of survey participants lived in crowded housing. More than half (61.8%) lived in very crowded conditions, which are classified as a person-to-room ratio greater than 1.51 (U.S. Bureau of the Census, 2000). These percentages

far exceed those found within the general population. North Carolina census data documents that 2.2% of the state's residents experience crowded housing, and 1.2% of the population lives in very crowded conditions (U.S. Bureau of the Census, 2000). The large percentage of respondents living in crowded and very crowded housing suggests a multitude of related living and health problems resulting from these conditions.

When evaluating rural housing conditions, sewage system problems must be considered, as they may cause water source contamination or other health related problems (Matte and Jacobs 2000; Evans and Kantrowitz 2002). Crowded living results in heavy use of onsite septic systems beyond their normal capacities. Such intense use, combined with a lack of necessary maintenance, can cause system failure and threaten residents' health. Untreated household wastewater from poorly functioning septic systems can contaminate the ground surface, surrounding waters, and drinking water wells. Roughly one third of the survey participants reported being served by municipal water and sewer, 32.5% and 39.5%, respectively, indicating that a much larger proportion is dependent on private drinking water wells and onsite wastewater systems. Thus the risks posed by overused septic systems could be widespread among this population.

Housing Characteristics (continued)

Exemplifying some of the problems that crowded housing and overtaxed septic systems can cause, 13.1% of survey participants reported sewage problems, such as sewage odor, sewage backup inside or outside the house, and/or insufficient drainage when it rains. Furthermore, 18.2% of respondents with septic tanks and 16.7% of respondents who did not know the type of sewage system in their home reported sewer problems. Comparatively, only 6.3% of individuals on municipal systems reported sewer problems. The problems reported by municipal sewer customers may relate to clogged plumbing. On the other hand, the sewage difficulties of households using onsite systems are likely to be related to overuse, and thus tend to be more serious problems, leading to greater public health threats and requiring more expensive repair. Additionally, 8.7% of the survey participants rated their water quality as bad or very bad, and 33% stated that their water had one or more of the following indicative characteristics of poor water quality: color, smell or taste. Five participants, all of whom were undocumented farmworkers, reported not having an indoor bathroom and/or shower facilities, accounting for 3.9% of the total surveyed population and 7.5% of the farmworkers participating in this survey (Table 3). This finding closely corresponds to the results in the 2001 Housing Assistance Council study which found that among farmworker housing, 8% lacked a working bath and 9% lacked a working toilet (Holden, George, and Smith, 2001).

Table 3: Housing Characteristics for Rural Latino Residents in Eastern NC Participating in Survey

Housing characteristics	Documented (n=34; 27%)	Undocumented (n=92; 73%)	All (n=126; 100%)	Farmworker (n=40; 32%)	
Type of housing	Trailer (%)	52.9	56.5	55.5	37.5
	House	32.4	25.0	27.0	27.5
	Apartment	2.9	5.4	4.7	2.5
	Barrack	11.8	13.1	12.7	32.5
Tenure	Rent (%)	23.5	63.0	52.3	27.5
	Own	44.1	9.8	19.1	5.0
	Employer-provided	32.4	27.2	28.6	67.5
Housing near a farm	Yes (%)	64.7	50.0	54.0	82.5
	No	35.3	50.0	46.0	17.5
Number of people per room	Crowded (>1) (%)	86.7	86.2	86.3	88.9
	Very crowded (>1.51)	63.3	61.3	61.8	66.7
Sewer System	City system (%)	38.2	40.0	39.5	40.5
	Septic tank	50	30.6	35.8	37.8
	Did not know	11.8	29.4	24.7	21.6
Lacked sewer system	No bathroom/toilet (%)	0	4.3	3.2	7.5
	No shower/bath	0	5.4	3.9	7.5
Sewer problem(s)	Yes (%)	20.6	9.8	13.1	2.5
	No	79.4	90.2	86.9	97.5
Water source	Well (%)	55.9	51.1	52.4	62.5
	City system	35.3	31.5	32.5	20.0
	Did not know	8.8	17.4	15.1	17.5
Reported water quality	Bad or Very bad	8.8	8.7	8.7	5.0
Reported color, smell, or taste in water	Yes (%)	38.2	31.5	33.3	25.0

Relationship between Health & Housing Conditions

Poor water quality or inadequate wastewater systems, along with respondent housing being in close proximity to a farm, corresponded to individuals reporting a previous health complaint. One third (34.1%) of respondents reported suffering previously from a health problem, while 19.9% reported a health problem of a housemate (see Table 4). These percentages were consistent for both documented and undocumented individuals. However, documented respondents reported a higher proportion of problems

Relationship between Health & Housing Conditions (continued)

that have been associated with the consumption of unsafe drinking water, such as nausea, vomiting, and/or diarrhea. Nearly twenty-one percent (20.6%) of documented individuals reported that they had previously suffered from symptoms associated with contaminated drinking water and 14.7% reported that housemates had previously suffered from similar symptoms. A greater percentage of documented respondents reported living in close proximity to farms. Agricultural inputs, including chemical pesticides, herbicides, and fertilizers may contaminate groundwater resources putting drinking water wells at risk. These threats to water sources may provide a potential explanation of the greater percentage of documented respondents reporting specific health problems.

Participants who reported a previous health problem were subsequently asked if they sought medical care from a physician. Though the survey was conducted at two health clinics, participants were not necessarily at the clinic at the time of the survey to seek health care. Documented individuals reported higher rates of doctor visits for their personal (11.8%) and their housemate's (17.7%) health problems than did

undocumented individuals, with only 5.4% personally seeking care and 7.6% of their housemates (see Figure 4). Fear of disclosing their immigration status may have reduced undocumented individuals' willingness to seek medical care.

Individuals who reported a previous health problem were seven times more likely to report poor water quality and over four times more likely to report a sewer problem. This trend suggests that participants reporting health problems may realize a connection between water system failings and health ailments. For example, sewer problems can contaminate water sources with coliform bacteria and other disease-causing organisms, which in turn, may cause health problems for household members.

Factory workers were over eight times more likely and farmworkers were over nine times more likely to report nausea, diarrhea, and/or vomiting. With the strong correlation between specific occupations and these symptoms, occupational hazards in factories and farmwork may contribute to the cause of reported health problems.

Figure 3: Percentage of Survey Participants Living in Crowded and Very Crowded Housing Compared to North Carolina Households

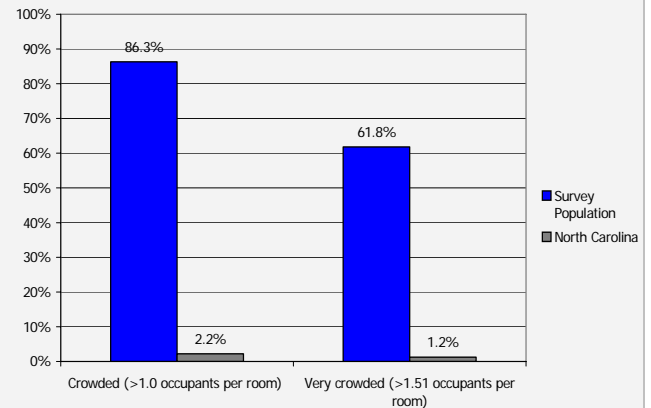


Figure 4: Percentage of Documented and Undocumented Survey Participants that reported They or a Housemate Visited a Doctor Due to a Previous Health Problem

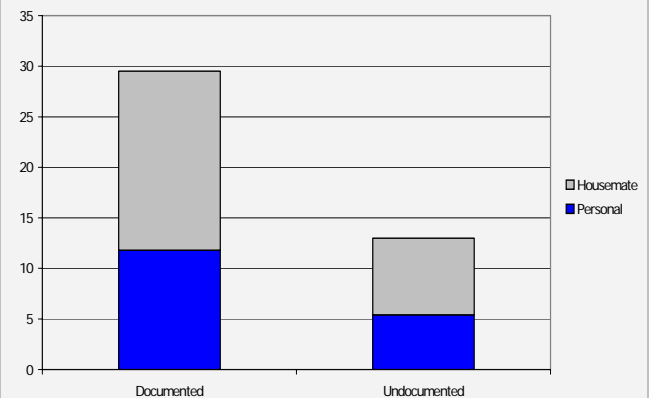


Table 4: Health and Healthcare Utilization for Rural Latino Residents in Eastern NC Participating in Survey

Health and Healthcare Utilization		Documented (n=34; 27%)	Undocumented (n=92; 73%)	All (n=126; 100%)	Farmworker (n=40; 32%)
Reported previous health problem(s)	Personal (%)	35.3	33.7	34.1	37.5
	Housemate(s)	17.7	20.7	19.9	22.5
Reported previous nausea, diarrhea, and/or vomiting	Personal (%)	20.6	10.9	13.5	20.0
	Housemate(s)	14.7	6.5	8.7	17.5
Visits doctor due to previous health problems	Personal (%)	11.8	5.4	7.1	5.0
	Housemate (s)	17.7	7.6	10.3	10.0

Conclusions & Recommendations

The 2002 survey of rural, Latino, North Carolina residents identified several key housing and health concerns, including low home ownership rates, crowded housing, inadequate plumbing, problems with water quality and wastewater disposal, and the inability to access health care. Undocumented and/or farmworker participants held these concerns more frequently than did other respondents, especially with regard to adequate plumbing and seeking health care for a health problem.

Overwhelmingly, survey respondents were not home owners. The majority of respondents, and 90% of the undocumented participants, lived in rental or employer provided housing.

The survey results also suggest that inadequate housing conditions affect this population. In particular, farmworkers reported living in housing that lacks adequate plumbing at a higher rate than the statewide population, 7.5% and 0.6% respectively (U.S. Bureau of the Census, 2000). Additionally, crowded housing is a ubiquitous issue within the surveyed population and clearly has an impact on health status. Crowded conditions result in heavy use of onsite wastewater systems that can hinder its proper functioning, and create public health and environmental risks. Survey participants expressed concerns with sewage problems and/or a suspicious smell, taste, or color in their drinking water. Further analysis of the data on sewage and water quality concerns indicates that individuals reporting these problems were also significantly more likely to report a health problem.

Markedly, not all survey participants who indicated a health problem sought health care. While one third of those interviewed reported health problems, only 7.1% sought medical care. This trend was particularly noteworthy among undocumented respondents, who reported seeking health care at half the rate of documented residents. The lowest rate of health care access was reported by farmworkers: 5% stated seeking medical services, despite the overwhelming 37.5% of farmworkers reported having a health related problem.

Based on the survey results and observations, some recommendations for services and resources to address the needs of the rural, Latino population are outlined below.

- Improve access to adequate housing infrastructure through local housing codes and pre-purchase counseling

The survey data reveal concerns about the adequacy of wastewater, water, and plumbing systems in the housing available to rural Latino residents. Outdoor, observable problems such as sewage and/or odors appearing at the ground surface indicate in-home sewage backflow, and consequently failing septic systems. The sewage system conditions can result from a number of problems, including inadequate maintenance, age of system, and heavy use. The maintenance of onsite septic systems, as opposed to centralized sewer systems, is the responsibility of the property owner. A minimum housing code may help to alleviate problems for renters by ensuring that landlords perform the necessary periodic maintenance or repair.

Residents who purchase homes also need to be aware of the issues that accompany onsite septic systems. Organizations that provide pre-purchase counseling services to Latino residents can play an important role in outlining steps for inspection of pre-existing septic systems by ensuring that necessary maintenance or repair is performed on a system prior to the purchase of a home. Additionally, pre-purchase counseling services should disseminate information on ongoing maintenance needs and water conservation practices.

- Increase availability of low-income affordable housing in rural areas

The high level of crowded housing within the rural Latino community demonstrates a lack of affordable housing in rural areas. Because growth in rural communities occurs slowly and is more constrained than in more populated areas, housing availability is limited. Often, families must choose between living in either manufactured homes (trailers) or older homes. Even manufactured homes tend to be old and located in crowded trailer parks. The best, and ideal, way to address the lack of affordable housing in rural communities is to construct new affordable housing units. The need for affordable housing is greater in towns that have large factories, including factories for chicken processing, vegetable packing, furniture, and/or clothing. Many factory workers are members of the rural Latino community and bring their families to the factory town. Therefore, increasing affordable housing units in the targeted rural areas would alleviate some problems with a limited housing market, and ultimately help to address crowding levels within the community.

- Determine housing conditions, including water and wastewater systems, during health screenings

Health care providers should be aware of the possible correlation between gastrointestinal complaints and access to quality drinking water and proper functioning wastewater systems. Health care officials may obtain relevant information during screenings by including questions on the source of drinking water (at home and work), type of wastewater disposal system (onsite or centralized sewer), and any perceived, associated problems. Furthermore, if providers suspect a problem with a private drinking well, they can request county environmental health personnel to test the water for bacteriological contaminants. State regulations allow health care providers to request, in writing, free testing of private wells when the health of a patient is in question.

- Facilitate continued and more comprehensive understanding of the rural Latino community among service providers

In order to provide the best and most effective services to the rural, Hispanic population, service providers must have a comprehensive understanding of the problems that the community faces. Discussion and continued education within the service provider community would assist in offering the most

Conclusions & Recommendations (continued)

needed and effective services to rural Latinos.

- Strengthen efforts for education and outreach on home environment and health topics

With the spatial isolation of the rural Latino population, more intensive outreach must be done to inform members of the community about topics related to their home and work environment, especially as it relates to health. Possible outreach topics include:

- Well and septic system maintenance
- Proper use, storage, and disposal of chemicals, especially around drinking water wells
- Accessible health care services

In designing the outreach effort, the following general considerations must be made in order to create effective educational tools and outreach curriculum: low educational levels, little to no English comprehension, and cultural beliefs and practices.

Works Cited

- Bernstein R and Bergman M. 2003. Hispanic population reaches all-time high of 38.8 million, new census bureau estimates show. United States Department of Commerce News, Economics and Statistics Administration, Bureau of the Census.
- Berk, M.L., C.L. Schur, L.R. Chavez, and M. Frankel. 2000. Health care use among undocumented Latino immigrants. *Health Affairs*. 19: 51-64.
- Bowdler, J., 2004. Hispanic Housing and Homeownership. National Council of La Raza Statistical Brief No. 5:1-12.
- Chavez, L.R., F.A. Hubbell, S.I. Mishra, and R.B. Valdez. 1997. *International Migration Review*. 31:88-108.
- Deardorff, K. 2003. A Profile of the U.S. Foreign-Born Population. U.S. Census Bureau, Population Research Center (PRC) Briefing.
- Evans, G.W. and E. Kantrowitz. 2002. Socioeconomic status and health: the potential role of environmental risk exposure. *Annual Review of Public Health*. 23:303-31.
- Flaskerud, J.H., S. Kim. 1999. "Health Problems of Asian and Latino Immigrants." *Nursing Clinics of North America*. 34:359-380.
- Flores, G., M. Abreu, M.A. Olivar, and B. Kastner. 1998. Access Barriers to Health Care for Latino Children. *Archives of Pediatrics & Adolescent Medicine*. 125:1119-1125.
- Holden, C., George, L., and Smith, A. of the Housing Assistance Council (HAC). 2001. No Refuge from the Fields: Findings From A Survey of Farmworker Housing Conditions in the United States. Housing Assistance Council Publications: 1-77.
- Matte, T.D. and D.E. Jacobs. 2000. Housing and health – current issues and implications for research and programs. *Journal of Urban Health: Bulletin of the New York Academy of Medicine*. 77:7-25.
- Miskesell, J. 2000. Housing Problems Differ Across Types of Rural Households. *Rural Conditions and Trends* 8(2): 97-101.
- U.S. Bureau of the Census. 1990 Census of Population and Housing Summary Tape File 1, Census 2000 Summary File 1, Census 2000 Summary File 3, and Census 2000 North Carolina Quick Facts for Counties.

Acknowledgements

This work was supported by the Student Action with Farmworkers, Z. Smith Reynolds Foundation, and the Southeast Rural Communities Assistance Program. NCRCAP would like to thank Stephanie Triantifillou with the NC Primary Health Care Agency, Melinda Wiggins with Student Action with Farmworkers, and Dr. Elizabeth Vigdor with the Sanford Institute of Public Policy at Duke University for their assistance. Dr. Vigdor provided invaluable direction in statistical analysis and interpretation of data. Ms. Triantifillou and Dr. Vigdor provided extensive guidance on the survey design. Ms. Triantifillou, along with Ms. Wiggins, provided input and comments on the preliminary drafts of this report.

North Carolina Rural Communities Assistance Project, Inc.
PO Box 941
Pittsboro, NC 27312



North Carolina Rural Communities Assistance Project, Inc. (NCRCAP)
PO Box 941
Pittsboro, NC 27312

Phone (919) 542-7227
Fax (919) 542-2329

ncrcap@ncrcap.org



We're on the Web!
See us at:
www.ncrcap.org