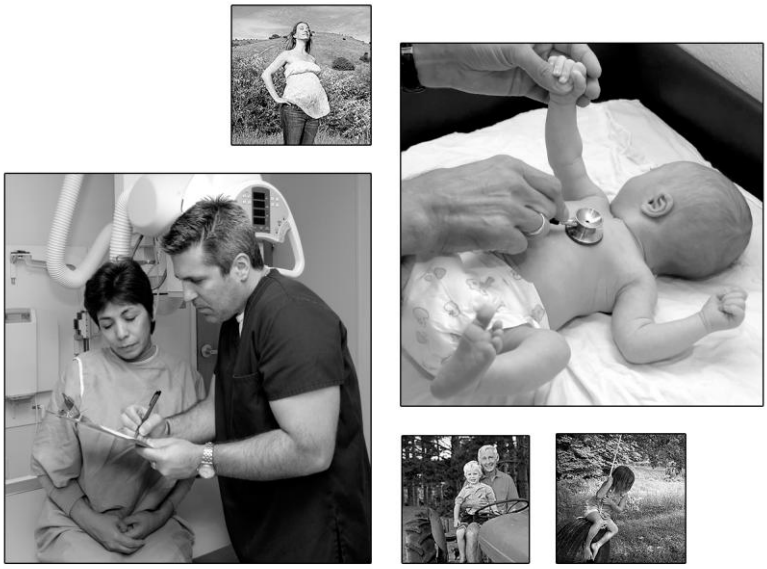
Del Norte County Health Care Provider Recruiting and Retention Plan



Prepared for the County of Del Norte
Funded by the Department of Housing and Community Development, Community Development Block Grant

By: California Center for Rural Policy
at Humboldt State University

CCRP
California Center for Rural Policy

Authors: Martin Love, MBA
Erick Eschker, PhD
Jessica VanArsdale, MD, MPH
Julia R. West
Mike Porter
Jennifer Pollom

Why did you choose Del Norte?

I could see that an individual could make a difference in Del Norte.

- Thomas Martinelli, MD

…the decision to locate in a rural practice setting occurs largely from outside that setting…the decision to remain takes place from within the practice setting and arises from the stream of experience there.

- M. P. Cutchin

Acknowledgements

We would like to recognize the Del Norte Board of Supervisors for taking the initiative and focusing the community on the importance of health care and recruiting and retaining providers.

Many members of the Del Norte community offered their time and counsel; this report could not have been prepared without their cooperation and support. Particularly important have been the efforts of the Physician Recruiting and Retention Committee members, who have spent many evenings working on this issue over the last year including:

Bob Sanko, Retired Physician
Charlaine Mazzei, Community Health Center
Cheryle Vlachopoulos, Administrative Secretary
Cheyenne Spetzler, Open Door Clinic
Christa Norton, Norton Consulting
Clarke Moore, Del Norte Healthcare District
Connie Stewart, Assemblywoman Berg's Office
Dave Finigan, Board of Supervisors
Don Micheletti, M.D., Crescent City Internal Medicine
Donna Eddings, Open Door Clinic
Dwayne Reichlin, Del Norte Healthcare District
Earl Hansen, Chamber of Commerce
Ellie Popadic, Director, Sutter Coast Community Clinic
Gary Blatnick, Department of Health and Human Services
Grant Scholes, Sutter Coast Hospital Administration
Heather Bonser-Bishop, North Coast Clinics Network
Jan Moorehouse, Unified School District Superintendent
Janie Clark, Downtown Business
Jay Freeman, Chamber of Commerce
Jeannine Galatioto, County Administrative Officer
John Menaugh, CEO, Sutter Coast Hospital
Kim Schmidt, Del Norte Economic Development Authority
Larry Lakes, Director, Rural Human Services
Lisa Perry, Administrative Secretary
Mark Davis, MD, Humboldt-Del Norte County Medical Society
Martha McClure, Board of Supervisors
Mikey McNally, Administrative Secretary
Penny Figas, Humboldt-Del Norte County Medical Society
Robert Soper, MD, Health and Human Services-Mental Health Branch
Sharon Gillespie, United Indian Health Services
Sherri Provolt, United Indian Health Services
Steve Shamblin, Health Services Program Manager
Tom Martinelli, M.D., Public Health Officer
Warren Rehwaldt, M.D., Del Norte Community Health Center

We also appreciate those who took the time to participate in the interviews, contributing their knowledge of the history of the health care workforce in the County and their suggestions for improvement.

Penny Figas, the Executive Director of the Humboldt Del Norte Medical Society, spent many hours helping with the project and shared historical information on the physician workforce in Del Norte County. We are very thankful for her help.

We are especially grateful to Gary Blatnick, Director of Health and Human Services, for his assistance in collecting and providing the information produced by the Physician Recruiting and Retention Committee and for his knowledge of the scope of the community's ongoing efforts. His guidance and help was critical to the creation of this report.

Suggested Citation: Love, M., Eschker, E., Van Arsdale, J., West, J., Porter, M., Pollom, J. *Del Norte County Health Care Provider Recruiting and Retention Plan*. Humboldt State University: California Center for Rural Policy, 2007.

Table of Contents

About This Plan

Health professionals include a number of job categories: physicians, nurses, nurse practitioners, physician assistants, dentists, mental health professionals, and many others. The Del Norte County Health Provider Recruiting and Retention Plan (the Plan) emphasizes physician recruiting and retention with the understanding that many of the principles apply to the other categories of health professionals.

The research that underlies the Plan is both academic and practical. There is a large amount of literature available about rural recruiting and retention since maldistribution of health professionals in the United States has persisted for the last 100 years (Slack 2002). The Plan also reflects the experience of the authors and members of the communities of Del Norte and Humboldt. Much can be learned from studying the recruitment and retention literature, but a successful plan must take into account the local environment, addressing Del Norte's history, culture and resources. The Plan draws upon both primary and secondary data sources. Primary data were collected through interviews, surveys and community meetings. The authors conducted 19 interviews with individuals from the health care and civic community concerning recruitment, retention, and other ways in which the community can participate in maintaining sufficient health care professionals to meet the community's needs (see Appendix A for a list of interviewees). Additional information was obtained from a random written survey of Del Norte residents.

Much of the demographic and economic data in the report were drawn from public resources at the local and state levels and covered the period 2000-2005. The Pelican Bay State Prison population and their health care providers present a demographic quandary. At the primary care level, both are separate from the community health care systems; however, the inmates do receive inpatient and specialty services from community providers. Whenever possible, this report will attempt to distinguish these effects.

To illustrate the demographics and health care facilities in Del Norte County, a Geographic Information System (GIS) was created. These maps are displayed in Appendix B.

Executive Summary

Background

In 2005, Del Norte County lost nearly 25 percent of its physician workforce including a much larger percentage of the community's primary care providers. As a result, the community responded by forming the Physician Recruiting and Retention Committee (PRRC) and initiated a series of projects (including this report) which continues to this day. Following the 2005 loss of physicians, Open Door Community Health Centers, Sutter Coast Hospital, Crescent City Internal Medicine and United Indian Health Services have been successful in recruiting primary care providers. The most important adjunct to recruiting is the Health Profession Scarcity Area designation which has brought National Health Scholars to the County.

Comparing Del Norte County demographics to other rural northern counties reveals that its residents are less educated, poorer and more likely to have government health coverage. Both the Pelican Bay State Prison inmates and the population of Southern Curry County must be explicitly considered in order to interpret area statistics and the need for health professionals.

Findings

Physician workforce guidelines applied to Del Norte illustrate that overall the community has an adequate number of primary care practitioners; however, internist and pediatrician numbers are significantly less than standard levels. Family physicians, nurse practitioners and physician assistants provide the majority of primary care. Psychiatrists are the only medical (non-surgical) specialists in the community, surgical specialists are nearly at standard levels, and Sutter Coast has a full complement of hospital-based physicians. The number of nurses, dentists, mental health and allied health professionals is described in this report.

The community meetings planned as part of this project were sparsely attended; however, the California Center for Rural Policy (CCRP) conducted a household survey in Del Norte which yielded over 400 responses. The survey shows a distribution comparable to the overall demographics of the County. In the last 12 months:

- 24% reported they were not able to get needed health care
- 10% reported no insurance coverage
- 44% needed to leave the county for health services

It should be noted that health care is the second largest industry sector in the Del Norte economy after government. Projections for the North Coast show

a growth rate for health care greater than for other industries and job categories. Quality health care is a core requirement for recruiting employees to private and government enterprises.

The economic analysis in this report utilized IMPLAN, which is widely used to calculate the impact of industry changes. Based on multipliers comparing different sectors of the economy, the analysis examines health care service outputs, employment income and induced county jobs in order to develop an overall effect of the health care sector. The total economic impact of this sector on the economy of Del Norte is:

- $76,613,000
- 945 jobs created
- Total income generated: $37,000,000

Recommendations

Recruitment and retention are inextricably linked and the success depends on community participation. Del Norte's physician losses should not detract from the fact that the community has good clinicians and facilities. With a clear plan and broad support, provider recruitment and retention can be successful. A detailed guide to recruiting is described in the following pages.

Recruitment is supported by a number of public programs to repay loans or offer other incentives. The community should ensure access to those programs and consider what it can contribute to the process including incentives, loan repayment, scholarships or participation in site development for rural track programs.

Grow Your Own programs promote training for careers in health care by creating an understanding of available occupations and by providing local workforce training necessary to build the needed infrastructure in the community.

Retention provides the best value for the effort. Success in retention is based on successful clinical practice, office relationships, and social relationships for the clinician and the clinician's family. The community that is committed to these goals has an important role to play.

The Physician Recruiting and Retention Committee should become a permanent organization complete with bylaws. It should hold regular meetings and be staffed by a coordinator with assistance from the Health Care District. It could organize and maintain the community network, coordinate community support for recruiting and retention, coordinate conferences and provider recognition events, as well as develop the Grow Your Own infrastructure.

Economic development in health care can have a significant financial impact on the County. Del Norte can become a regional health care destination by leveraging the population of Southern Curry County to increase the range of supported medical specialties thus reducing the number of residents leaving the area for medical services.

Introduction and Background

Recent Events

A little less than two years ago, Del Norte lost a significant fraction of its physician workforce. While the largest losses were in primary care (ten clinicians), they also included general surgery, orthopedics, and obstetrics. These events produced serious access difficulties for patients, and caused the community to consider the impact and conservation of its health professional resources.

While the losses were generally unrelated, they shared common elements. Given the historic difficulties in recruiting and retaining physicians, the community felt that it was time to consider the impact of health professionals on the "livability" and economic base of the County. The County Board of Supervisors created a community organization called the Physician Recruiting and Retention Committee (PRRC), which included high-level community and health care leaders. The group has met frequently for a year and a half.

The PRRC, chaired by Gary Blatnick, Director, Health and Human Services, has been successful in engaging the appropriate leadership in recruitment and retention concerns and also in highlighting the importance of the economic development potential (and risk) of health care services for the County.

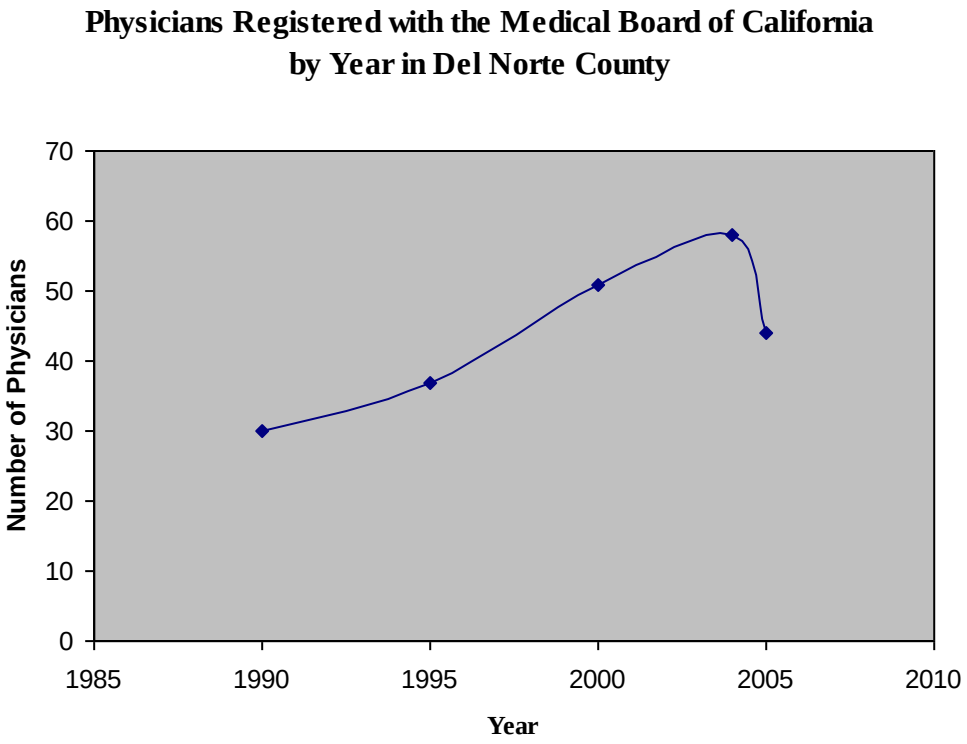
Starting in June 2005 the PRRC and its members:

- Developed an understanding of the practitioner shortage and its impact on patient care
- Developed a consensus on the need for community wide support for recruitment and retention
- Engaged the Del Norte Health Care District
- Applied for a Geographic Health Professional Shortage Area (HPSA) which would result in a 10 percent bonus in the Medicare fee schedule
- Advocated for update to the Center for Medicare and Medicaid Services (CMS) list of Physician Scarcity Areas (PSAs)
- Surveyed departing clinicians
- Chartered a recruiting and retention plan funded by a community development block grant
- Placed advertisements in medical journals supported by the Health Care District
- Drafted a new physician protocol

The long-term view of physician recruiting for Del Norte has been positive since 1990. In that year the Medical Board of California reported 30 physicians registered in the County. The number increased to 37 in 1995, 51 in 2000, and

the Board listed 58 physicians in 2004 shortly before the losses mentioned above were incurred. The Medical Board does not report "Full Time Equivalents" (FTEs). Physicians working less than full time, not seeing patients at all, or no longer in the County, will be counted. Therefore, the FTE physician workforce will be considerably less than the number reported by the Board. The 2005-2006 annual report of the Medical Board lists 44 physicians in Del Norte, a loss of 14 from the year before (see figure 1).

Figure 1.



Hospital Recruiting

Hospitals are the single most important connection to physician recruiting in most communities. They have a vital interest in maintaining enough providers to admit and treat patients needing hospital care. This mission is aided by the hospital's capacity to develop expertise and infrastructure for recruiting as well as providing necessary resources. Hospital recruiting can also cause tension and even dissention as the hospital's efforts may be seen to benefit one provider over another or to place it in competition with local providers.

Recruiting assistance includes advertising positions, identifying candidates, background investigations, travel costs, recruiter costs, subsidizing office expense for additional practitioners, and salary guarantees. Hospital support for recruiting is highly regulated by federal statute, and not-for-profit institutions must avoid inurement.

Sutter Coast Hospital has had the largest local recruiting impact: recruiting 14 physicians over the past 21 years. Their success can be attributed to their providing income guarantees during the practice start-up period. The hospital also has assisted about 15 physicians from existing practices with recruiting new physicians by paying some or all of the recruitment costs (but not income guarantees) during the same 21 year period. Presently, the hospital is recruiting an obstetrician, a family practice physician and a pediatrician for a hospital-based practice. When the hospital is successful with these placements, the community will be close to the generally accepted workforce standards in primary care and obstetrics.

The hospital also arranges for professional staffing for inpatient and outpatient hospital services including the emergency department, imaging services, hospitalist services, and pathology services through a variety of mechanisms. While the number of individuals providing these services changes with time, these services are generally provided 24/7, and more than meet workforce standards.

Community and Clinic Recruiting

The Open Door Community Health Centers (ODCHC) and the United Indian Health Services (UIHS) each operate two clinics in Del Norte and are vital resources for the County. ODCHC serves a high percentage of MediCal, low income, underserved and uninsured residents; UIHS cares for Native American patients and their family members. Both organizations lost clinicians during 2005; however, ODCHC has added six new clinicians and is at capacity in its present location. UIHS has added a nurse practitioner, and two physicians are scheduled to start in September 2007.

The community clinics have the organizational depth and therefore have dedicated and experienced recruiting staff. The high HPSA score attracts National Health Scholars and not-for-profits can advertise their positions on the Rural Recruitment and Retention Network (3R Net, http://www.3rnet.org/).

Crescent City Internal Medicine recently has added two physicians and has a track record of successful recruiting.

Shortage/Scarcity Designations

These federal designations offer increased access to providers (physicians, dentists, and other health professionals) through scholarships and loan repayment programs. Two programs – the Geographic Health Professional Shortage Area (HPSA) and Physician Scarcity Area (PSA) – enable private primary care providers to receive Medicare bonus payments; 10 percent and 5 percent, respectively.

Presently, there is a Facility HPSA available to Del Norte clinics. The community has applied for a Geographic HPSA and has petitioned CMS for a listing as a PSA, both are currently pending.

Del Norte County

A comparison of the County with other northern rural counties and with the state points out some of the opportunities and challenges of recruiting and retaining health professionals (see Table 1) (Blash 2005). Del Norte has less racial and ethnic diversity than the state but shares a similar distribution to the other rural northern counties. Del Norte has significantly more American Indians and Alaska Natives compared to other rural northern counties and to California as a whole. The percentage of the population reporting as Hispanic is less than half the state average; however, the 2000 census data may not reflect more recent changes in the racial and ethnic makeup of the County. On a sub-county level there is significant variability in the geographic locations of various racial and ethnic populations in Del Norte. Geographic information system (GIS) is a useful tool for displaying this type of variability (see Appendix B for GIS maps showing the distribution of racial & ethnic populations in Del Norte). The local age distribution is almost identical to the state profile, but the “over 65” category is 2 percent higher in Del Norte. Rural northern counties include the rural portions of Butte, Del Norte (the whole county), Colusa, El Dorado, Glenn, Humboldt, Lake, Lassen, Marin, Mendocino, Modoc, Napa, Nevada, Placer, Plumas, Sacramento, Shasta, Sierra, Siskiyou, Solano, Sonoma, Sutter, Tehama, Trinity, Yolo and Yuba.

Table 1: Del Norte County Demographics (2000)

Demographic	Del Norte	Rural North	California
Total population	27507	1,556,094	33,871,648
Area (square miles)	1230	53,659	163,695
Population Density	22	29	207
Race:			
White	78.9	82.7	59.5
Black or African American	4.3	1.5	6.7
Asian	2.3	2.9	10.9
American Indian and Alaska Native	6.4	2.4	1
Other Race	3.9	6.6	16.8
Multi-Race	4.1	3.8	4.7
Ethnicity:			
Hispanic	13.9	14	32.4
Age:			
Under 18 years	25.1	25.3	27.2
18 to 24 years	7.8	8	9.9
25 to 39 years	24.3	18.4	23.8
40 to 64 years	30.2	34	28.5
65 and Older	12.6	14.3	10.6
Working Age Population	62.3	60.4	62.2

Source: Medical Service Study Area (MSSA) data for 2000. Obtained from The Rural Kaleidoscope: A Guide on Promising Practices to Diversify California's Rural Health Care Workforce (2) Appendix C, Page 85-86.

Measures that relate to labor, education and economics clearly show Del Norte's challenges (see Table 2) (Blash 2005). The County has a high unemployment rate. Poverty levels are significantly higher than rural northern counties and California as a whole. Del Norte also has a high child poverty rate with 26 percent of children under the age of 17 and 34 percent of children under the age of 5 living in poverty. This is significantly higher than the child poverty rate for California, which is 19 percent. There is significant variability in the geographic distribution of those living in poverty in Del Norte with the highest poverty rates occurring in Crescent City (see Appendix B for GIS maps showing the distribution of poverty in Del Norte). The high poverty and high unemployment in the County are reflected in the per capita income and median household income which are both about 40 percent below the state average. Residents with a bachelor's or graduate college degree are half the average of the rural northern counties and less than half of the statewide average.

Table 2: Del Norte County Demographics (2000)
Error!

Demographic	Del Norte	Rural North	California
Labor (Age 16+):			
Unemployment Rate	10.7	7.5	7.0
Not in Labor force	53.4	40.6	37.6
Employed in Agriculture Industry	6.2	5.3	1.8
Employed in Education Health and Human Services	23.4	20.8	18.5
Education (Age 25+):			
Less than High School Graduate	28.4	18.1	23.2
High School Graduate Only	27.5	25.3	20.1
Some College or Associate Degree	33.2	35.9	30.0
Bachelor's Degree	8.0	13.8	17.1
Graduate/Professional Degree	3.0	6.9	9.5
Ability to Speak English (Age 5+):			
Not Well or Not at All	2.8	4.0	10.7
Poverty:			
Below Poverty level	17.3	13.1	13.9
Below 200% of Poverty	38.5	32.1	32.3
Income:			
Per Capita Income (adjusted for inflation)	$19,389		$33,000
Median Household Income	$29,901		$48,440

Source: Medical Service Study Area (MSSA) data for 2000. Obtained from The Rural Kaleidoscope: A Guide on Promising Practices to Diversify California's Rural Health Care.

Pelican Bay State Prison

All of the data above include prison inmates (about 12 percent of the population) but not migrant and undocumented persons. These limitations and distortions suggest the opportunity for a project to recompile census data to correct for the prison population. This will provide a more accurate view of the County's citizens.

Southern Curry County and Adjacent Areas

Southern Curry County residents are a significant part of the catchment area for Sutter Coast Hospital and potentially for a number of health care services that could be provided in Del Norte. The population of the city and surrounding area (Zip Code 97415) was 13,300 in 2000, while Southern Curry County alone was

5,500. The population is likely to be more significant now; Southern Curry County had a 23 percent growth rate in the 1990s. The median household income in the city was $31,656 compared to the Del Norte median of $29,901. Southern Curry County also attracts Del Norte residents, probably for specialty and shortage services.

Del Norte Health Measures

There are a number of generally accepted indicators of the health status of community members, although health status is also linked to social and economic factors.

Teen births, low birth weight infants, and infant mortality are commonly used measures of social and community health (and health care). Teen births in Del Norte (2003) are double the state average and since 1990 have gone from 16.5 percent to 19.1 percent, while the California rates have decreased from 11.4 percent to 9.1 percent. It is more difficult to compare the data concerning low birth weight due to their low absolute number. The four-year average (2000-2003) for Del Norte is 4.5 percent of total live births, while the state percentage (2003) is 6.6 percent. Infant mortality is harder to compare since it is a rare occurrence; the rate is similar to the California rate (Center for Economic Development 2006).

The birth rate (births/1000) for Del Norte residents was 10 in 2004 compared to 17.6 in 1990, while the California rate has declined from 20.7 to 15.0 over the same period. The number of births (residents or not) has been fairly stable: 333 in 1990 and 313 in 2004, illustrating that Del Norte has become increasingly important as a regional provider of labor and delivery services. Oregon residents probably account for the excess births (Center for Economic Development 2006).

Coverage

Commercial insurance coverage rates are difficult to find; public programs are well described. MediCal covered 5,004 residents (18 percent) in 2004; Healthy Families covered another 425 residents. This compares to a California MediCal rate of 6 percent. (MediCal fees for service payments were $27,984,000 in 2004.) Medicare covered another 4,500 individuals in 2003 for a publicly funded County total of almost 9,500 or 34 percent of the population, which compares to 18 percent for California as a whole (Center for Economic Development 2006).

Del Norte Health Care Workforce

Physicians, Nurse Practitioners, and Physician Assistants

The starting point for health care recruiting is an understanding of the existing workforce and as much as possible, the “ideal” number of practitioners for the

population and environment. Appendix C lists the most current information on Del Norte physicians, nurse practitioners, and physician assistants along with their specialty and practice association. This information is based on the Humboldt Del Norte Medical Society data, current as of January 2007, and on interviews with practices, clinics and agencies. This list provides the starting point for input data for the benchmark comparisons. There are 32 physicians (excluding five physicians associated with the prison), 18 nurse practitioners or physician assistants and one nurse midwife working in the community and included in the workforce comparisons. These clinicians are not necessarily working full time. Nurse practitioners and physician assistants from out of the area doing shift work in the ER or Urgent Care in Del Norte also were not counted.

The number of physicians needed for a given population has been the subject of a number of studies and debates. Since 1981 there have been 12 noteworthy methodologies proposed (three by the Council on Graduate Medical Education, COGME) with the most recent in 2004. Three concepts dominate the research: (1) calculations based on the present physician supply and expert opinion; (2) estimating the product of population-based demand and the expected productivity by specialty; and (3) deriving the number of physicians needed based on the experience of prepaid physician groups (Kaiser Permanente and others) (Simmons 2004).

Comparisons of some of the supply benchmarks based on these methodologies show significant variation (per 100,000):

Family Practice	12.7 to 22.5	(National supply: 30.2)
Internal Medicine	19.0 to 27.6	(National supply: 43.5)
Pediatrics	13.1 to 15.3	(National supply: 18.5)
General Surgery	5.7 to 10.6	(National supply: 16.7)
Orthopedics	4.1 to 6.6	(National supply: 8.1)

The benchmarks used in the following analysis were proposed by DGA Partners, a health care consultancy, based on their experience and the studies mentioned above. The DGA standards have been used extensively by hospitals and their boards to compare physician workforce with communities' needs. This determination is sensitive due to the exposure to federal statute for recruiting physicians without a defensible showing of need. The DGA guidelines were reported in 2004 and have a high and low range (per 100,000) as follows:

Family Practice	15.8 to 19.4
Internal Medicine	19.0 to 23.2
Pediatrics	12.5 to 15.3
General Surgery	5.3 to 6.5
Orthopedics	5.2 to 6.4

These rates are at the low end of the reported benchmarks with an aggregate primary care standard of 57 per 100,000. Other studies show the primary care aggregate guideline at 75.6. Using this value, the standard would be a third higher (Healthcare Price, Cost & Utilization Benchmarks 2004).

Accurate comparisons to the benchmarks depend on a number of factors. The most error prone factor is the number of actual hours worked (actual FTE) for each practitioner. Error can occur because physicians have administrative and supervisory responsibilities, they may work in other communities, or have a practice "style" that is more or less than the number of work hours that underlie the standards. Patients may on the average be older or younger than the reference population and older populations require more care.

Advanced practice clinicians (APCs) - nurse practitioners (NPs) and physician assistants (PAs) - are an important component of the primary care workforce. Benchmarks comparing APC productivity to physician productivity are lacking so a ratio (75 percent) based on local observation of patients seen per day, has been used. This ignores a number of issues including patient acuity and consultation time with supervising physicians. Data on APCs as a percentage of PCPs are available from the large prepaid group practices (Kaiser Permanente and others) and the percent varies from 10 to 25 percent – nationwide it is 14 percent.

Table 3 shows the DGA standards, the number of physicians required by Del Norte (population of 28,000), the actual number of physicians and APCs practicing, and an extrapolation of the DGA standards to a population of 39,000, which approximates the sum of the Del Norte and Southern Curry County area population.

Primary care benchmarks are based on a population of 24,000 to account for the nearly 4,000 inmates at Pelican Bay. Their primary care is provided by prison staff; however, they do receive some specialty care from community practitioners and care at the local hospital from its medical staff. Prison physicians are not counted in the workforce numbers above.

In many small communities the absence of some specialties causes physicians practicing in the community to expand their scope and treat a wider number of conditions and patients. For example, by standard, Del Norte is deficient in pediatricians so family physicians see more and younger children than they might in other communities. Also, the benchmarks work best for large populations since they do not address call and coverage issues, which are important. A community may only need one surgeon or one obstetrician by productivity standards but having call responsibilities 365 nights a year is not a reasonable expectation.

Overall, the guidelines indicate that Del Norte has a sufficient number of primary care clinicians; however, it is deficient in pediatrics and internal medicine practitioners and APCs provide over half of the workforce by productivity. As

expected, the medical specialties are almost completely lacking with only psychiatry available. Many of the missing specialty services are in part provided by the primary care base.

Table 3: Del Norte Workforce Comparisons

	DGA Low Std. per 100,000	DGA High Std. per 100,000	Standard per 28,000		Del Norte	39,000
			Low	High	Actual	Plus Southern Curry County
Primary Care (24,000 - Omitting Inmates)						
Family Practice	15.8	19.4	3.8	4.7	8.0	
Pediatrics	12.5	15.3	3.0	3.7	1.0	
Internal medicine	19.0	23.2	4.6	5.6	3.0	
Subtotal			11.4	13.9	12.0	
APC's (@75%)					13.5	
				Subtotal	25.5	
Medical Specialties (28,000 - Including Inmates)						
Allergy	1.2	1.4	0.3	0.4	0.0	0.5
Cardiology	3.7	4.5	1.0	1.3	0.0	1.6
Dermatology	2.3	2.9	0.6	0.8	0.0	1.0
Endocrinology	1.1	1.3	0.3	0.4	0.0	0.5
Gastroenterology	2.5	3.1	0.7	0.9	0.0	1.1
Oncology	1.5	1.9	0.4	0.5	0.0	0.6
Infectious Disease	0.9	1.1	0.3	0.3	0.0	0.4
Nephrology	0.9	1.1	0.3	0.3	0.0	0.4
Neurology	2.1	2.5	0.6	0.7	0.0	0.9
Physical Medicine	1.0	1.2	0.3	0.3	0.0	0.4
Psychiatry	5.1	6.3	1.4	1.8	1.5	2.2
Pulmonary Disease	1.2	1.4	0.3	0.4	0.0	0.5
Rheumatology	0.8	1.0	0.2	0.3	0.0	0.3
Subtotal			6.8	8.3	1.0	10.4
Surgical Specialties						
Cardiothoracic Surgery	1.2	1.4	0.3	0.4	0.0	0.5
General Surgery	5.3	6.5	1.5	1.8	2.0	2.3
Neurosurgery	0.7	0.9	0.2	0.3	0.0	0.3
Obstetrics/Gynecology	9.3	11.3	2.6	3.2	1.5	4.0
Ophthalmology	4.1	5.0	1.1	1.4	2.0	1.8
Orthopedics	5.2	6.4	1.5	1.8	1.0	2.2
Otolaryngology	2.5	3.1	0.7	0.9	1.0	1.1
Plastic Surgery	1.1	1.3	0.3	0.4	0.0	0.5
Urology	2.3	2.9	0.6	0.8	1.0	1.0
Subtotal			8.9	10.9	8.5	13.6
Hospital-Based						
Anesthesiology/(CNA)	6.1	7.5	1.7	2.1	1.5	2.6
Emergency Medicine	6.4	7.8	1.8	2.2	3.0	2.7
Hospitalist	2.4	3.0	0.7	0.8	2.0	1.0
Intensivist	0.9	1.1	0.3	0.3	0.0	0.4
Pathology	2.3	2.8	0.6	0.8	0.4	1.0
Radiology	4.8	5.8	1.3	1.6	2.0	2.1
Subtotal			6.4	7.8	8.9	9.8
Grand Total (including APCs)			**33.4**	**40.9**	**43.9**	

The surgical specialties in Del Norte are more robust than medical specialties with sufficient general surgeons, ophthalmologists, and urologists. Obstetrics/gynecology (OB) is at half the benchmark (including the services of a nurse midwife). Orthopedics is also at half the suggested level. The workforce does not support reasonable call rotation for OB and orthopedics.

Hospital-based physician FTEs are close to the benchmarks. Some of these data were imputed from hospital staffing rather than counting individuals since these positions are often staffed by "shift" with a number of clinicians covering the service.

In summary, the physician workforce overall is near the DGA benchmarks. More of the primary care load is taken by family physicians and APCs while the surgical specialty standard indicates the need for another obstetrician/ gynecologist and orthopedic surgeon. The hospital is very well staffed for a rural facility.

Nurses

The nursing labor force has not experienced the dramatic variation suffered by the physician workforce; however, there is often a shortage and vacant positions take a long time to fill. Statewide projections show constant and growing shortages in the nursing profession. The Center of California Health Workforce Studies at the UCSF projects a gap of 12 percent or 400 nurses for rural northern California with a small absolute decrease in nurses, while the demand continues to increase due to inadequate numbers of nursing school graduates and out migration. There is no shortage of applicants for nursing programs; in fact, they do not have the necessary capacity to fill the state nursing shortage (Spetz 2006).

The mainstay of the nursing workforce is training programs at College of the Redwoods and Humboldt State University, and while some instruction is available in Del Norte, students must travel to complete their programs. These are successful programs and show the power of investing in education to provide the health care workforce.

Oral Health Care Providers

Dentists and Registered Dental Hygienists are in short supply in rural areas, especially for underserved populations. Del Norte has seven private dentists, an orthodontist and a part-time oral surgeon. UIHS has two dentists and one part-time orthodontist. Open Door CHC has two full time dentists with a third to start in May 2007. The national population ratio for dentists is 58 per 100,000 (Mertz 2004), which would indicate that the County needs 14 dentists for the non-inmate population. With 12 dentists by May the County is near the national rate (rare for

a rural community) and has adequate coverage for low income and underserved individuals. Southern Curry County lists five dentists and an oral surgeon.

Mental Health Professionals

Non-psychiatric mental health professionals include licensed clinical social workers (LCSWs), licensed marriage and family therapists (LMFTs), and psychologists. Del Norte's private providers include three LCSWs, three LMFTs and one psychologist. There are four part-time psychiatrists working for County Mental Health, and together they provide 1.5 FTEs of coverage. County Mental Health non-psychiatric providers include RNs, LVNs, LCSWs, MFTs, and an MSW (~13 FTE). Psychiatrists are hard to recruit although some of the programs that support loan repayments for primary care include psychiatry.

As with physicians and dentists, there is a federal Health Professional Shortage Area (HPSA) for mental health providers that offers incentives for recruiting such providers to the community.

Allied Health Professionals

The following services were noted in Del Norte County:

Podiatry – two offices
Physical Therapy – five offices
Occupational Therapy – one office
Optometrists – two offices
Pharmacists (Pharmacies) – four

The community has a number of acupuncturists and chiropractors, and most of these services also are available in Southern Curry County.

The Community View

Community Meetings

The project included four community meetings held in Gasquet, Klamath, Smith River and Crescent City. The meetings were sparsely attended and did not provide adequate information on residents' access to care. The Rural Health Information Survey (described below) provides detailed information on these issues.

Rural Health Information Survey: Del Norte County

The California Center for Rural Policy (CCRP) conducted a survey in the summer of 2006 for the purpose of assessing individual health, the access and utilization of health care, and other determinants of health among residents in four northwestern California counties including Trinity, Del Norte, Mendocino and Humboldt. The four page written survey contained questions about general health, mental health, preventive health, access and utilization of health care, transportation, food security, sources of health information and access to basic amenities such as a vehicle, phone, electricity, and the Internet. This report contains the preliminary results for selected variables for Del Norte County. A full report with all four counties is expected to be completed in the summer of 2007.

Methods

Survey Design

The survey instrument was based on existing surveys (Behavioral Risk Factor Surveillance Survey, California Health Interview Survey, Canadian Community Health Survey and Mendocino Community Health Survey), and new questions were developed as needed to inquire about areas of rural health not previously explored (see appendix D for a copy of the survey instrument).

Study Design and Sample

A total of 23,319 surveys was mailed to a random sample of residents within the four county study site. The sampling strategy employed the use of a Geographic Information System (GIS) to map the population density for Zip Code Tabulation Areas (ZCTA) with an overlay of the locations of post offices. All of the post offices in low population density areas (<11 people per square mile) were selected (total post offices = 24; total post office boxes = 8165). Post offices located in higher population density areas (>11 people per square mile) were randomly selected (total post offices = 19; total post office boxes = 15,154). A total of 3,549 surveys were sent to residents of Del Norte County in the communities of Crescent City (2153), Klamath (742), Gasquet (354), & Fort Dick (300). Surveys were addressed to the box holder and the cover letter instructed

someone in the household over the age of 18 to complete the survey and return it in the self-addressed stamped envelope.

Analysis

Data were received between August and October of 2006. A team of student research assistants coded the data on all of the survey items. Data were then rechecked for accuracy by a subgroup of the student research assistants. In the interest of having a product ready to be included in the Del Norte County Health Provider Recruiting and Retention Plan in January 2007, a limited number of variables were selected for initial analysis. Three graduate research assistants entered the data into an SPSS version 14.0 data file. Data were analyzed by a graduate research assistant with this version of SPSS. Frequency analyses were run for all variables; analysis of variance or regression procedures was used for all analyses with predictor/outcome variables.

Results

Response Rate and Demographics

The total number of surveys completed and returned for all four counties was 3,000 (12.9 percent overall response rate). Of those, 416 were returned from residents of Del Norte County (11.7 percent response rate for Del Norte). Table 4 provides a breakdown of the location of respondents from Del Norte County. All respondents who indicated Del Norte as their primary county of residence were included in this analysis even though a few respondents received the survey at a different location (indicating that they receive mail through a post office box in a different county, but primarily reside in Del Norte).

Table 4: Rural Health Information Survey, 2006
Respondents Who Reported Del Norte as Their Primary County of Residence

City/Town	Zip Code	Frequency	Percent
Crescent City	95531	229	55.0
Klamath	95548	77	18.5
Gasquet	95543	63	15.1
Fort Dick	95538	38	9.1
Fields Landing	95537*	3	0.7
Orick	95555*	1	0.2
Samoa	95564*	1	0.2
Willow Creek	95573*	1	0.2
Whitethorn	95589*	1	0.2
Missing Zip Code	NA	2	0.5
Total		**416**	**99.7**

*Note: these are the zip codes to which the surveys were *sent*. They were returned by individuals who indicated that Del Norte County is their primary county of residence. Total percent does not equal 100 due to rounding.

The descriptive characteristics of the respondents are presented in Table 5. The sample is very homogeneous in regards to ethnicity. By far, the vast majority of the sample includes individuals who describe their ethnicity as white (85.7 percent), followed by multiracial (5.3 percent) and Native American (4.6 percent). Less than 2 percent of the sample describe their ethnicity as African-American, Latino/a, or Asian.

A greater number of females (63.9 percent) than males (35.8 percent) completed the survey. The age of respondents ranged from 18 to 88 years (median = 56) with the highest number of respondents in the age range of 50 to 59 years (34 percent), followed by the age range of 60 to 69 years (24.3 percent). The highest level of education reported by respondents shows that 71.8 percent of the sample have at least some college experience (with 35.9 percent reporting some college, 15.2 percent reporting graduating from college and 20.7 percent reporting graduate or professional training). About 5 percent of the respondents did not complete high school, 12.8 percent completed high school and 4.6 percent obtained their GED or high school certificate. Vocational training was reported by 4.3 percent of the respondents. In regard to employment, 35.7 percent of respondents reported employment by a company or business or being self employed (9.4 percent). Retired individuals comprised 28.8 percent of the sample and disability was reported by 11.1 percent of the respondents. Unemployment was reported by 5 percent of the respondents.

Table 5: Rural Health Information Survey, 2006:
Demographic Characteristics of Del Norte Respondents

Characteristics	Frequency	Percent
Ethnicity		
White	354	85.7
African American	3	0.7
Latino/Latina	6	1.5
Asian	2	0.5
Native American	19	4.6
Multiracial	22	5.3
Other	7	1.7
Total	**413**	**100.0**
Gender		
Female	266	63.9
Male	149	35.8
Other	1	0.2
Total	**416**	**100.0**
Age		
< 30	16	3.9
30-39	30	7.3
40-49	71	17.2
50-59	140	34.0
60-69	100	24.3
70-79	39	9.5
≥ 80	16	3.9
Total	**412**	**100.0**
Highest Level of Education		
No High School	21	5.1
GED/HS Certificate	19	4.6
High School Graduate	53	12.8
Vocational Training	18	4.3
Some College	149	35.9
College Graduate	63	15.2
Graduate/Professional Training	86	20.7
Other	6	1.4
Total	**415**	**100.0**
Employment Status		
Company/Business/Agency	148	35.7
Homemaker	20	4.8
Self-Employed	39	9.4
Unemployed	19	4.6
Laid off but looking	5	1.2
Retired	117	28.2
Disabled	46	11.1
Multiple Statuses/Other	12	5.1
Total	**406**	**100.0**

Totals for each characteristic may not equal 416, as some respondents did not answer all questions.

The median income for the sample is $35,000 per year with a reported range of $300- $400,000 per year. To determine the financial status for the sample, the 2006 U.S. Census Bureau poverty thresholds were used. These federal thresholds account for total household income, total number of persons in the household, and, if applicable, total number of individuals over 65 and/or under18. For example, if a family of four with two children under 18 makes less than or equal to $20,444 annually, that family is considered to be at or below 100 percent of the federal poverty level (FPL). In addition to those living in poverty, we were also interested in the number of respondents who are considered low-income but not living in poverty (between 100 percent and 200 percent of the FPL) as well as those who are not considered low income (greater than 200 percent of the FPL). In our example of a family of four with two children under 18, low income non-poverty would be between $20,445 and $40,888 annually; greater than $40,888 annually would make the family not low income. We used this method to determine the status of Del Norte residents who responded to the survey. Approximately 12 percent of the sample (*n* = 49) did not indicate an income value, and as such we were unable to determine their financial status. Of the remainder, 19.6 percent are living in poverty according to these guidelines. An additional 22.9 percent live between 100 percent and 200 percent of the FPL. Taken together, this means that of the Del Norte respondents, 42.5 percent are considered to be low-income. The remaining 57.5 percent are not considered to be low income.

Table 6: Rural Health Information Survey, 2006:
Financial Status of Del Norte Respondents

Financial Status	Frequency	Percent
Poverty	72	19.6
Low Income	84	22.9
Not Low Income	211	57.5
Total	**367**	**100**

Source: Rural Health Information Survey, 2006, California Center for Rural Policy
Poverty Thresholds obtained from U.S. Census Bureau, "Poverty Thresholds 2006"
http://www.census.gov/hhes/www/poverty/threshld/thresh06.html accessed May 2007.

Following are preliminary results for selected variables:

Ability to Get Needed Health Care

Sixty-five percent of the respondents reported that they were able to get the necessary health care (including mental health) for themselves within the past 12 months and 24 percent reported they were not able to get needed health care. Of the respondents who reported having children, 70.3 percent were able to get needed health care and 14.2 percent were not able to get needed health care for their children within the past 12 months. Respondents were asked to explain why they were not able to get needed health care for themselves or their children. This was an open-ended question, which has not yet been analyzed.

Health Insurance
Just over 10 percent of respondents reported having no insurance coverage whatsoever. Conversely, nearly 90 percent of the respondents are covered in some way [44.2 percent receive insurance through work, 11 percent have other private insurance, 29.3 percent receive Medicare, 19 percent receive MediCal, 4 percent receive other government plans and 14 percent report other sources of coverage (many receive more than one type of insurance)].

Regularly Leaving Del Norte for Health Services
Nearly half the respondents (44.2 percent) reported regularly leaving the county for health services. When asked why, the most commonly reported reason was that needed services were not available in Del Norte County (24 percent), followed by better quality elsewhere (20 percent). When respondents reported leaving the county because needed health services were not available in Del Norte they were asked to describe the needed services. This was asked in an open-ended question, which has not yet been analyzed. Of those who regularly leave the county for health services, approximately half report going north (Oregon) and approximately half report going south (Eureka, Arcata, McKinleyville, Fortuna). Other cities were reported with very low frequencies. Even though a high percentage reported regularly leaving the county for health services, 56 percent of these people receive health care in Crescent City at least some of the time, so they are not exclusively receiving health care in other counties.

Transportation Issues
Eighteen percent of respondents reported transportation as a problem in meeting their health needs or the health needs of their family. Higher percentages of African-Americans (33.3 percent), Native Americans (36.8 percent), and multiracial (47.7 percent) respondents indicated that transportation is a problem in meeting their health needs compared to white (15.8 percent), Latino/a (16.7 percent) and “other” (14.3 percent) ethnicities.

Access to Basic Amenities
Nearly all respondents report access to a phone in their home (95 percent) and a vehicle (93 percent). A smaller percentage of respondents reported having home access to a computer (72 percent) or home Internet access (65 percent).

Discussion

The preliminary results suggest some interesting trends particularly with respect to where Del Norte residents are receiving their health care. The finding of nearly half the respondents regularly leaving the county for health services could indicate a significant economic loss for Del Norte County (see discussion in this report page 39). Analysis of the health services regularly received in other counties will help determine a more accurate estimate of the economic loss to

Del Norte. Further analysis will allow us to determine the characteristics of those who regularly leave the county for health services.

This survey has generated a vast amount of data, which will contribute to our understanding of the health issues of residents in the four counties of Del Norte, Trinity, Humboldt and Mendocino. CCRP looks forward to sharing the final results with community members, policy makers and planners and discussing ways in which identified problems can be addressed and improved.

The Economic Impact of Health Care on the County

Introduction

The primary purpose of this section describing the economic impact is to calculate the contribution of the health sector to the Del Norte economy. In addition to the Board of Supervisors, other policy makers, business and community leaders, health care providers, and all citizens of Del Norte County will find this report valuable for policy making. A key finding of this economic impact report is that the health care sector makes a substantial contribution to income and employment in Del Norte County, both due to the direct effects of health care spending and the indirect effects caused by health care spending. This finding is consistent with what others who have studied rural economies have found: health care providers make important contributions to the county beyond access to health care. A second key finding is that recruiting and retaining additional physicians and other health care workers in Del Norte County will have a large economic benefit in addition to increasing access to health care services.

Particularly in rural counties, health care providers, including physicians, hospitals, clinics, nurses, and other office and home-based providers, are a significant part of the local economy. This is true for a number of reasons. First, health care in general is a high value added industry -- meaning that the services provided are embodied in the skills of the health care workers and those skills are valuable. A health care worker generates a high level of income in relation to the equipment and other inputs used to produce health care. Second, many rural communities are dealing with declining employment and income in traditional sectors of the economy. Health care represents a growth sector of the economy. The relative importance of the health sector in rural communities will likely continue to grow, given the aging population and advances in medical technology. In Del Norte County, the elderly are a slightly greater percentage of the population compared to the rest of California.

Using the IMPLAN economic modeling software from Minnesota IMPLAN Group (MIG), we find that the health sector in Del Norte produced $55,369,000 worth of services, directly employed 673 individuals and directly generated income of $30,114,000 in 2002. When the total effect of health care spending on other industries through multipliers is taken into account, total economic impact on the Del Norte economy is $76,513,596, with 945 jobs created, and a total revenue of $36,926,276 generated in the County.

For the economic impact of health care providers in Del Norte, California is divided into five sections. The first summarizes recent findings on the benefits of health care to rural economic development. The second section describes the demographic and economic characteristics of the county in comparison to the

state of California, with emphasis on health care related statistics. The third section lays out the methodology and data sources for the economic impact analysis. The fourth describes the direct and indirect effects on the county in terms of output, income, and employment. The last section calculates the potential economic losses from Del Norte residents who leave the county to receive health care services elsewhere.

Importance of Health Care to Rural Economic Development

An important finding of this report is that community leaders in Del Norte need to understand the importance of the health sector to their local economy and to understand the importance of recruiting and retaining health care workers. When considering the health care sector, often overlooked are the contributions to economic development, which is an ongoing concern of government, tribal, and business leaders. In a later section, we calculate the direct and indirect impact of the health care sector on incomes and jobs in Del Norte County. But in this section, we highlight the facts that the employment in the health care industry will grow, nationwide, faster than average, that a quality health care sector improves conditions for other local businesses, and that the growing number of retirees demand increasing health care services.

According to the California Employment Development Department (EDD) "Occupational Employment Projections," overall employment on the north coast (Del Norte, Humboldt, Lake, and Mendocino counties) is expected to grow by 15 percent from 2002-2012. Over the same period, the counties' two health care occupation categories are expected to grow faster. Health care practitioners and technical occupations are expected to grow by 16.8 percent and health care support occupations are expected to grow by 18.3 percent. The EDD also calculates that 4 of the top 25 individual jobs with the greatest projected employment growth during 2002-2012 will be in the health care industry.

As far as future demand is concerned at the national level, the Bureau of Labor Statistics forecasts job demand in all sectors of the economy. According to the Occupational Outlook Handbook 2006-2007, at the national level health care was the largest industry in 2004, with about 13.1 million jobs for wage and salary workers and about 411,000 jobs for the self-employed. Employment in health care is projected to increase 27 percent through 2014 as compared to only 14 percent for all industries combined. About 19 percent of jobs created between 2004 and 2014 will be in the health care industry, and workers in most health care sectors earn higher than the average for all private industry.

It has been documented that quality-of-life factors play an important role in business location decisions. This is particularly true of remote rural counties, such as Del Norte. In order to attract and retain private and government enterprises, businesses must be confident that they can attract productive workers. In addition to low crime rates, good schools, inexpensive transportation to urban areas, and natural amenities, access to quality health care is an often-

stated concern of potential employees. Thus, communities with perceived low-quality health care services will not be able to recruit top talent. At the same time, access to quality health care will improve the average health of the workforce, which will raise worker productivity and lower cost to firms, which will make it more likely that businesses will find it profitable to locate in Del Norte.

Lastly, the U.S. population is aging, and the elderly spend more on health care than other age groups. Their health care needs are also quite different from other age groups, with more emphasis on nursing home care, in-home health care delivery, and unique physician specialties. In order to attract this growing segment of the population, rural communities in particular must be aware that not only is the amount of health care providers in the area important, but so is the mix of services offered. Retirees can be a substantial source of spending in the local economy, as poverty rates among elderly are lower than the general population. Many elderly also have substantial wealth. Del Norte County already has a slightly larger elderly population than the state of California as a whole, and the number of elderly in Del Norte will grow faster than the overall population. According to population projections by the California Department of Finance, the total population in Del Norte will grow by 11 percent from 2000-2020, while the population age 65 and older will grow by 60 percent. The quality of health care services is not only important to attract elderly populations, but also to retain elderly populations. If Del Norte is to attract and retain elderly households, and the spending that those households provide, it will need to ensure that quality health care services are readily available.

Demographic, Economic, and Health Characteristics of Del Norte County

Table 7 provides an economic snapshot of Del Norte and comparative data for California. In general, Del Norte has a lower per capita income and a greater reliance on transfer payments as a percentage of total personal income as compared to the state. Del Norte per capita income was just $20,534 in 2004 compared to $35,219 for the state. Transfer payments account for 31.4 percent of total personal income for the county, compared to only 12.9 percent of California. Median household incomes are also much lower in Del Norte than across California: $29,901 in Del Norte compared to $48,440 for the state.

Table 7: Selected Demographic and Economic Indicators for Del Norte County & California

Economic Indicator	Del Norte County	California
Total Personal Income (2004)*	$581,657	$1,262,306,032
Per Capita Income (2004)	$20,534	$35,219
Total Earnings (2004)	$359,249	$1,2066,194,317
Employment (2005)	10,040	16,747,000
Unemployment (2005)	800	948,700
Unemployment Rate (2005)	7.4%	5.4%
Median Household Income (2004)	$29,901	$48,440
Transfer Payments (2004)*	$182,640	$162,837,478
Transfer Payments (% of Total Personal Inc., 2004)	31.4%	12.9%
Medicare Enrollment (2003)	16%	11.3%
MediCal Users (as % of population, 2003)	15.2%	6%
Enrollees, as percent of MediCal eligibles (2003)	56.1%	33.5%
SSI/SSP recipients (2003)	7.1%	3.2%
CALworks recipients (2003)	8.4%	3.4%

*Multiplied by a thousand dollars
Source: Compiled from CA Dept of Finance, BEA, CA EDD, BLS and DHS data, November 2006.

Overall, the unemployment rate in Del Norte is much higher than California. In 2005, Del Norte County's unemployment rate was 7.4 percent compared to 5.4 percent for the state. Del Norte County has a much higher percentage of MediCal users as well as SSI/SSP and CALworks recipients as compared to California. Of Del Norte County's population, 15.2 percent use MediCal, compared to 6 percent of California in 2003. In Del Norte, 56.1 percent of those eligible are enrolled in MediCal, compared to only 33.5 percent of California. SSI/SSP recipients were 7.1 percent of Del Norte's population, compared to 3.2 percent of California, and CALworks recipients were 8.4 percent of the county's population compared to 3.4 percent of California. Del Norte also has a higher percent of Medicare enrollment than the state of California, perhaps reflecting the larger portion of elderly in its population.

Table 8 provides a summary of selected health indicators for Del Norte County and California. Del Norte has slightly more beds per 1,000 population than the state of California.

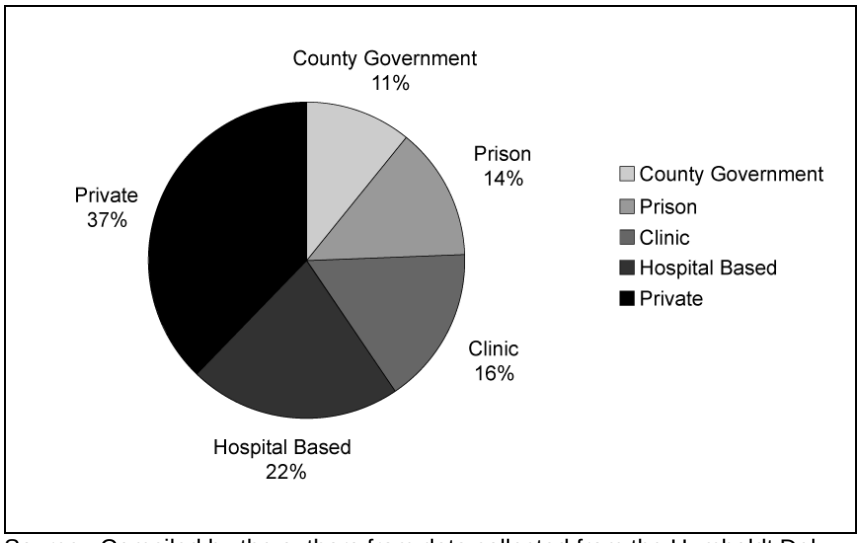
Table 8: Selected Health Indicators for Del Norte County & California

Health Indicator	Del Norte County	California
Long Term Care (LTC) Facilities	1	1,164
Total licensed LTC beds	99	111,732
Beds per 1,000 population	3.5	3.1

Source: "Health Data Summaries for California Counties," California Dept of Health Services Web Site, http://www.dhs.ca.gov/hisp/chs/OHIR/reports/others/datasummaries2006.pdf accessed November 2006.

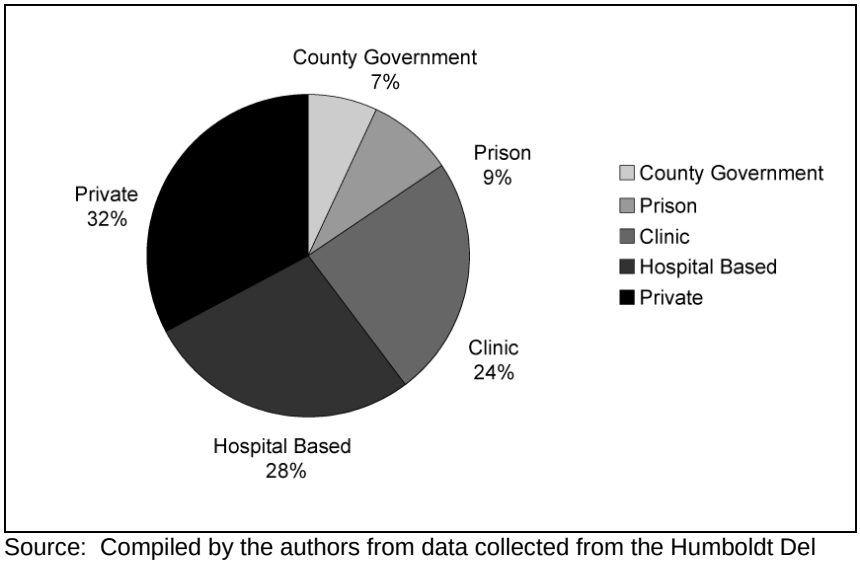
Figure 2 shows full-time and part-time Del Norte physicians by practice type. Over one-third of the physicians report that they work in private practice. Almost one in five report that they work for the hospital and 14 percent work in a clinic setting. Pelican Bay State Prison employs 12 percent of physicians. Figure 2 adds APCs to the physician total to get another view of where health care practitioners work. The percents are very similar, with slightly more workers employed in the hospital and clinics.

Figure 2: Del Norte County Practicing Physicians



Source: Compiled by the authors from data collected from the Humboldt Del Norte Medical Society data, and interviews with practices, clinics, and agencies (see Appendix C).

Figure 3: Del Norte County Practicing Physicians and Advanced Practice Clinicians (by practice type)



Source: Compiled by the authors from data collected from the Humboldt Del Norte Medical Society data, and interviews with practices, clinics, and agencies (see Appendix C).

To summarize the demographic, economic, and health characteristics, Del Norte is poorer as a whole, with a median household income being 62 percent of the state average. The unemployment rate is higher than the state average and Medicare and MediCal usage is higher. The higher reliance on welfare and transfer programs and unique demographics, as well as the distance to a major urban area, may present challenges in recruiting and retaining health care professionals.

Impact of the Health Care Sector on the Del Norte County Economy

Methodology and Data

This analysis uses the Impact Analysis for Planning (IMPLAN) software program created by the United States Department of Agriculture Forest Service with input from the Federal Emergency Management Agency and the United States Bureau of Land Management. IMPLAN is a tool that is widely used by academic economists and professional consultants to calculate the impact that industry changes have on the greater economy. IMPLAN is used by the Forest Service for land and resource management planning, but it can be used to guide policy makers on a very wide variety of industries. IMPLAN creates a model of the local economy that allows one to introduce different scenarios and to forecast the likely economic impacts on employment and income in the local area. IMPLAN is an Input-Output (IO) model that details the flow of resources from producers to intermediate users to final users of products within the economy. IMPLAN uses county- and industry-specific data derived from various government sources. For Del Norte, production functions and commodity trade patterns are based on national and regional averages and characteristics. We used these national and regional amounts to calculate indirect and induced effects for 2002. We are not aware of any substantial change to the relevant data since 2002 that would materially change any of the findings of this report.

Input-Output models make use of multipliers that indicate the specific interactions between sectors of the economy. These multipliers can be used to calculate the direct, indirect, and induced effects of initial changes in one industry on other industries within the economy. The direct effects are the immediate effects of dollar or employment changes in the industry under consideration, in this case the health care industry. The indirect effects sum the eventual changes in other industries, such as garbage disposal, due to spending and employment changes in health care. Finally, the induced effects are the changes in other sectors due to spending changes by households as a result of the direct and indirect effects. For example, real estate spending may increase because households earned more income in health care and in garbage disposal. The total effect in the economy of an industry change is the sum of the direct, indirect, and induced effects. An industry multiplier is simply the ratio of the total effect to the direct effect. Some industries have larger multipliers than others. Health care is one such industry, which is why additional spending in health care has a relatively

larger effect on the overall economy than an additional dollar of spending in other industries. It should also be noted that leakages, which is spending by county residents on products and services produced outside of the county, will lower the multiplier and thus lower the indirect and induced effects. IMPLAN takes these likely leakages into account in its analysis.

This economic impact report presents three unique ways that the overall economy can be impacted by changes in health care. The first is a change in total output produced. At the national level, output is Gross Domestic Product (GDP). For Del Norte, output in health care is the total annual production of health care services. The second presentation is a change in income, where income is the sum of employee compensation and proprietors' income. Employee compensation includes wages and salaries, health and retirement benefits, and non-cash compensation, among other items. Proprietary income includes income from self-employed persons, such as doctors and other health care professionals and owners of qualifying health care businesses. The third presentation is a change in employment, measured in annual average jobs. Employment includes employed and self-employed workers, full-time workers and part-time workers. These definitions are listed in Table 9.

Table 9: Definition of Health Care Economic Impact Multipliers

Multiplier Type	Direct	Indirect	Induced	Total
Output Multiplier	Value of health care services output	Value of supplier services output	County output resulting from health care and supplier output	Sum of health care, supplier, and resulting county output
Income Multiplier	Health care employee and proprietor income	Health care supplier income	County income resulting from health care and supplier spending	Sum of health care, supplier, and resulting county income
Employment Multiplier	Health care jobs	Health care supplier jobs	County jobs resulting from health care and supplier spending	Sum of health care, supplier, and resulting county jobs

Source: IMPLAN Professional Version 2.0 User's Guide.

The health care sector in IMPLAN is represented by five industry categories. The first category is *Hospitals*, which provides inpatient and outpatient diagnostic and treatment services by physicians, nurses, and other health care practitioners. *Physicians and Dentists* include not only these professionals, but also their office staff and other professionals, all of whom may operate their own practices or work in clinics or other medical centers, such as hospitals. *Nursing Care and Facilities* provides residential care along with nursing or supervisory services. *Other Ambulatory Health Care* providers include ambulatory health services, outpatient care, mental and substance abuse centers, and diagnostic labs. Finally, *Other Health Service* includes home health care services, pharmacies,

direct health and medical insurance carriers, and medical and dental technology and equipment industries.

Direct Effects

Table 10 shows the direct effects of the five health care sectors on the Del Norte economy. The two largest sectors, by far, are *Hospitals* and *Physicians and Dentists*. For example, *Hospitals* contributes almost $31 million to production in Del Norte County, provides income to wage earners and self-employed workers of almost $15 million, and employs over 300 workers. Taken together, *Hospitals* and *Physicians and Dentists* account for 90 percent or more of the output, income, and employment in the overall health care sector. It should be noted that *Nursing Care and Facilities* and *Other Ambulatory Health Care* sectors also make notable contributions.

Table 10: Direct Impact of Health Care in Del Norte County

Category	Output	Income	Employment
Hospitals	$30,920,000	$14,676,000	314
Physicians and Dentists	$19,833,000	$13,383,000	289
Nursing Care and Facilities	$1,988,000	$1,104,000	47
Other Ambulatory Health Care	$2,589,000	$933,000	22
Other Health Service	$39,000	$18,000	1

Source: Authors' calculations using IMPLAN.

How important is health care to the overall Del Norte economy? We can compare the total health care industry with other leading industries. If we create an overall health care Industry by summing the five individual health sectors, we find that it is the second largest industry in terms of production and income, while it is the fourth leading industry in terms of total employment. Table 11 presents this overall health care industry as well as the other ten largest industries ranked by output. In addition to health care, other leading industries are *State & Local Non-Education, Cheese Manufacturing, State and Local Education*, and *Food Services and Drinking Places*.

Table 11: Top Ten Leading Industries by Output in Del Norte County

Industry	Output	Income	Employment
State & Local Non-Education	$107,195,000	$107,195,000	1891
Health Care Industry*	**$55,369,000**	**$30,114,000**	**673**
Cheese Manufacturing**	$45,999,000	$4,337,000	77
State & Local Education	$29,307,000	$29,307,000	761
Food Services And Drinking Places	$24,809,000	$8,499,000	689
Other State And Local Government Enterprises	$23,927,000	$4,044,000	73
Real Estate	$17,614,000	$2,691,000	205
Truck Transportation	$16,366,000	$4,455,000	195
Food And Beverage Stores	$14,934,000	$6,947,000	293
Fishing	$14,907,000	$8,777,000	447
Gasoline Stations	$13,402,000	$5,758,000	74

Source: Authors' calculations using IMPLAN. Excludes the value of owner-occupied dwellings.
*Health Care Industry is calculated as the sum of the five individual health care sectors.
**The table shows that "Cheese manufacturing" has a high ratio of output to income. As is often found in standard economic impact analyses, "income" is the sum of employee compensation and proprietor income. But in addition to these two sources of income, production also generates income that goes to indirect "business taxes" and to "other property type income." This "other property type income" includes corporate income, rental income, interest, and corporate transfer payments. Cheese manufacturing is an industry with a particularly high degree of "other property type income," so cheese manufacturing has a high ratio of output to "income." This is also true for "Cattle ranching and farming," a similar industry (not shown).

Indirect and Total Effects

Tables 12, 13, and 14 show the direct, indirect, and total impacts of the five health sector categories on the Del Norte economy in terms of output, income, and employment. Table 12 considers output in each sector. For example, *Hospitals* produced over $30 million in output in 2002. Through their production, they purchased goods and services from other businesses, which totaled $4.7 million in indirect dollars. Of course, employees of hospitals and supporting businesses had more income, and they spent it in the community. This induced impact (not shown) is added to the direct and indirect impacts to give the total impact, $42,576,840, of hospital production on the Del Norte County economy.

Table 12: Total Impact on Output from Health Care in Del Norte County

Category	Direct	Indirect	Total
Hospitals	$30,920,000	$4,706,024	$42,576,840
Physicians and Dentists	$19,833,000	$1,408,143	$27,567,870
Nursing Care and Facilities	$1,988,000	$299,790	$2,803,080
Other Ambulatory Health Care	$2,589,000	$436,764	$3,513,273
Other Health Service	$39,000	$4,719	$52,533

Source: Authors' calculations using IMPLAN.

On the income side, Table 13 reveals a similar pattern, although the pattern is uneven. For instance, *Nursing Care and Facilities* generates more income (over $1 million) directly into the county, but *Other Ambulatory Health Care* has a larger effect on supporting businesses ($143 million). Once induced effects are

included, the total impact on income is still larger for *Nursing Care and Facilities* ($1,354,608).

Table 13: Total Impact on Income from Health Care in Del Norte County

Category	Direct	Indirect	Total
Hospitals	$14,676,000	$1,437,780	$18,345,000
Physicians and Dentists	$13,383,000	$565,241	$15,979,302
Nursing Care and Facilities	$1,104,000	$85,683	$1,354,608
Other Ambulatory Health Care	$933,000	$143,172	$1,231,560
Other Health Service	$18,000	$1,517	$22,320

Source: Authors' calculations using IMPLAN.

Table 14 shows that *Hospitals* and *Physicians and Dentists* have sizeable indirect and induced effects on Del Norte County employment. Between 33 percent and 50 percent more employment is generated by these two sectors beyond direct staffing of their respective offices.

Table 14: Total Impact on Employment from Health Care in Del Norte County

Category	Direct	Indirect	Total
Hospitals	314	58	463
Physicians and Dentists	289	17	389
Nursing Care and Facilities	47	4	58
Other Ambulatory Health Care	22	5	34
Other Health Service	1	0	2

Source: Authors' calculations using IMPLAN. Numbers are full-time and part-time jobs.

Which industries benefit the most from the indirect and induced impacts of the health care sectors? According to a similar report by the Institute for Pubic Policy and Economic Analysis for the state of Washington, indirect effects benefit income and employment the most in securities and investment, wholesale trade, postal services, employment services, legal services, real estate, and food and drinking. Induced effects benefit income and employment the most in wholesale trade, food and drinking, real estate, and even hospitals and physicians and dentists themselves.

Economic Impact of Residents Seeking Health Care Elsewhere

We have demonstrated that health care spending in Del Norte provides substantial direct and indirect benefits to employment and incomes in the county. Not only does health care spending benefit the health care industry, but it also benefits businesses that directly supply the health care sector, as well as numerous other industries where health care workers spend their income. However, if people leave the county for health care services elsewhere, then those economic benefits accrue to other counties. Given the multiplier spending effects, a dollar spent in another county translates into more than a dollar lost in total income in the County. Thus, health care "leakages" out of Del Norte adversely affect a broad group of businesses and employees.

The two closest areas to Del Norte County with upgraded medical facilities are Eureka, California and Grants Pass, Oregon. Crescent City, the largest town in Del Norte County, is about 85 miles and an hour and a half drive from both locations, according to www.mapquest.com (see Appendix B for GIS map of Del Norte County area hospitals). Medicare patients should have the most choice in deciding between the two, since Medicare is a national program. But MediCal patients are more closely tied to California, as are some privately insured people. It therefore seems reasonable that Del Norte may lose more health care service business to Eureka than to Grants Pass.

The survey conducted by CCRP asked respondents questions about health care choices. One preliminary finding is that 44.2 percent of the Del Norte sample (total sample size for Del Norte = 416 people) report that they regularly leave the county for health care. The main reason reported is "Needed services not available in Del Norte" (24 percent). Presumably, services not available in Crescent City tend to be more specialized services, which likely come with a higher cost. This suggests that leakages out of Del Norte County may be severe. At the same time, however, specialized services are likely required far less frequently than other more common procedures. Without more information about the specific types of procedures performed out of county, it is difficult to estimate the amount of spending that is “lost” to other regions when Del Norte County residents seek health care elsewhere.

We present two possible scenarios that may serve to “bound” the leakages out of Del Norte from residents seeking services elsewhere. It must be stated that to a great extent these amounts are guesswork. Nevertheless, it is important to get a sense for the magnitude of the impact of leakages. We consider a “low leakage” scenario where Del Norte residents spend 5 percent of existing *Hospitals* and *Physician and Dentist* expenditures outside of the area. We then chose a less conservative approach where a full 24 percent of existing *Hospitals* and *Physician and Dentist* expenditures is made outside of the area. The results are presented in Table 15. We use IMPLAN multipliers to calculate the total impact on income and employment. This total impact is the sum of the direct, indirect, and induced effects.

Table 15: Total Impact on Income and Employment from Del Norte County Residents Seeking Health Care Elsewhere

Category	Amount Spent Outside of Del Norte	Loss of Income	Loss of Employment (jobs)
5% leakage			
Hospitals	$1,546,000	$917,087	23
Physicians and Dentists	$991,650	$798,774	19
24% leakage			
Hospitals	$7,420,800	$4,402,018	111
Physicians and Dentists	$4,759,920	$3,834,115	93

Source: Authors' calculations using IMPLAN based on authors' assumptions about leaked health care spending outside of Del Norte County. See text for details.

According to Table 15, if only 5 percent of the current value of production by *Hospitals* is spent outside of Del Norte County, this means a loss of $1,546,000 in total production by *Hospitals* and $991,650 by *Physicians and Dentists*. Using IMPLAN multipliers, this translates into a loss of $917,087 and $798,774 to income in Del Norte County for *Hospitals* and *Physicians and Dentists*, respectively. At the same time, a total of 23 and 19 jobs is lost. If the leakage from spending outside of the area is 24 percent, then the loss to income is over $8 million and the job loss is over 200. We caution again that without more data, the magnitude of these losses is largely speculative, but we hope that these numbers highlight the potential importance of keeping health care spending within the County.

Conclusion

The health care sector is one of the largest in Del Norte. The total economic impact of health care spending in the Del Norte economy is $76,513,596 in production, 945 jobs created, and a total income of $36,926,276. Still, Del Norte is underserved compared to the rest of the state when one looks at persons per physician. Del Norte faces special challenges. It has a slightly greater elderly population, it is poorer, and it is more remote. But jobs in the health care sector in the U.S., California, and Del Norte County are expected to grow faster than the rest of the economy. This is due partly to a population that is expected to age over the next few decades. But the health care sector also provides important quality of life benefit to employer and employees seeking to relocate to a rural setting or seeking to stay in a rural setting. Healthy employees are happy employees. And if there is adequate health care in the county, residents do not feel the need to leave and take their health care dollars with them. Local economic development efforts cannot ignore the health care sector.

Recruiting and Retention Plan

It is a rare community that makes the effort to develop and then carry out a plan to recruit and retain health professionals. It is a challenging task. Most providers are private businesses, and many are in competition with one another. Public and private providers often find it difficult to coordinate, and important organizations may not have senior leadership based in the community. There can be clinician views, hospital views, patient views, and government views concerning mission. When consensus occurs, there is still a series of tasks that must be carried out with skill and an understanding of the competing interests. American health care is defined by a lack of public planning. Any community that is able to formulate a plan and carry it through to fruition will have a clear advantage.

The following plan addresses recruiting and retention separately; however, they are firmly linked and both are aspects of the overall wellbeing of the health care community. Recruitment depends on introducing the candidate to the practice, potential colleagues, the hospital and the community. Retention is based on the candidate's success with patients, with the practice, with colleagues, with the hospital, and in the community.

The loss of so many clinicians over a short period should not prevent the community from understanding its strengths and recognizing that Del Norte is competitive with many rural communities. Recent events demonstrate its ability to recruit and replace those who left. Many of the examples and research subjects in the recruiting and retention literature are from communities of less than 5,000 members without a hospital or any ancillary services. The efforts of Sutter Coast Hospital, ODCHC, UIHS and Crescent City Internal Medicine demonstrate that application of recruiting skills, experience, and effort brings qualified clinicians to the County. Del Norte has a modern hospital, many successful practices, community clinics, and with the population of the Southern Curry County area, has a sufficient population to support additional specialists.

Recruiting: Best Practices

Practice Assessment

The start of any recruiting effort is a determination of need and feasibility. The described benchmarks included in this report can serve as a guide to assessing community need; however, each practice and organization must make a clear decision based on an assessment of potential patient load, recruiting costs, capital costs, and space. It often takes a year or more of part-time effort to recruit a physician, and can easily cost up to $30,000 with an additional requirement of ~$35,000 in operating capital. The human and financial costs also

explain the difficulty surrounding recruiting decisions made at the community level.

A practice assessment is useful for both making the decision to recruit and serving as the basis for describing the practice opportunity to potential candidates (Barlow et al. 2004). It should include:

- Patient and procedure volume
- Expected increases in volume with an additional clinician
- Practice financials and expected additional income and expense
- Community outlook: referral sources, competition, health care infrastructure
- Cost of additional clinician including salary, insurance, malpractice, signing bonus and increased support staff
- Practice capacity to support operating costs
- Possible work schedules and call schedules
- Possible changes in organization and reporting responsibilities
- Space needs for new staff

Constructing an Offer

Before starting the search, the practice or organization should detail its proposal. While there may be some flexibility in the financial provisions, the offer should set out as many elements as possible. The salary proposed should be competitive and based on recent information; candidates will understand the market for their services and respond to offers within a narrow range. At the same time, offering a salary that the practice cannot support is a risky strategy and often results in the practitioners leaving after the contract period. Following salary, candidates want to understand their future within the practice or organization. For instance, if the starting position is salaried, is there a path to partnership? How long will it take? What will be the financial risks and benefits of partnership, and how do the practice partners make decisions?

Next, the offer should describe clearly the health insurance, malpractice coverage and any other benefits offered. Work schedules and particularly call schedules should be explained. Finally, the practice should be prepared to discuss and share details of the topics listed above that followed from the practice assessment.

Promoting the Practice Opportunity

Historically, positions were listed in specific medical journals generally known as good places to advertise opportunities for a particular specialty. These are still used, but due to their expense and the availability of the Internet, they are used less often or not at all. Some of the mainline journals now offer a hybrid listing service on a web site associated with the journal in addition to the printed ad, or on the web site only. An example is the Career Center at *New England Journal*

of Medicine, www.nejmjobs.org*.* Still these are expensive and alternatives are available.

The best local web site for listing positions is the Humboldt Del Norte Medical Society because it links to state and national sites. The AMA "Practice Opportunities" web site links through California Medical Society (CMA) to the HDN Medical Society, as do a number of Medical Specialty Societies. A good web site for not-for-profit institutions is the National Rural Recruitment and Retention Network (3R Net) which lists positions for physicians, dentists, nurse practitioners, physician assistants, registered nurses, mental health professionals and other health professionals (http://www.3rnet.org).

Position listings are useful and required, but do not provide a competitive advantage. The richest sources for candidates are residency programs, especially programs in California, Oregon and the Pacific Northwest. Most programs will accept and post available positions; however, more compelling is direct contact with someone on staff, a personal visit and/or personal contact from a program graduate. Research suggests that residents begin to search for a position during the last six months of the second year and the first six months of their third year of residency (Riley et al.1991). Given a 5-point scale with 5 being the most important, the four most important sources of information on job opportunities were:

Referrals from faculty or other physicians	3.8
Contacts the resident initiated through calls or visits	3.8
Contacts during medical school or residency program	3.7
In-person recruitment from prospective employer/colleague	3.1

The least important source was:

Ads in national journals	2.0

One of the most important resources the community has is the potential for Del Norte clinicians to work with their own graduate training programs to source and meet candidates. The HDN Medical Society is working with a CMA administrative director to improve access to residency programs, especially those with rural tracks, for Del Norte and Humboldt counties.

Interviewing Candidates: Phone Interview

The cost of travel makes phone interviews a necessity and may save time for both the practice and the candidate. The initial contact should result promptly in information about the opportunity being sent to the candidate with links to community web sites. If there is follow up interest, an interview should be scheduled, ideally within a week or so. If possible, at least two practice principals should participate, and notes should be made of issues that require follow-up. Books have been written about how to interview: the most common advice is to

listen. Listen to the candidates describe their background, training, what they are looking for in a practice and community and respond to their questions. Many studies indicate that the most successful candidates for rural practices have a rural background or experience in a rural area such as a rural track in their residency program. The costs associated with the visit are often negotiated between the practice and the candidate. Commonly the candidate pays the cost of travel to the community and the rental car while the practice may pay for lodging, food and entertainment. There is wide variation and either may bear the full costs; however, covering more costs locally will likely increase the number of candidates traveling to Del Norte.

There is little benefit in an idealized description of the opportunity and it is a rare practice that does not have some weaknesses. Discuss them during the interview and explain how the practice plans to improve the situation. Also avoid the overstatement as an expression of honesty: “It rains here most of the time and I haven’t seen the sun for two months….”

At the end of the interview, set a time to talk again and agree to the next step, either a site visit or disengagement. If the practice and candidate decide to proceed to a site visit, it should be scheduled and an effort made to understand the candidate’s family situation: children, spouse/partner’s employment needs, interests, experience with the area and Del Norte’s proximity to important extended family members. This is also the time to begin to verify the candidate’s credentials. For residents in a program, a narrative describing work, education and training since graduation from college can be easily verified by asking for letters of recommendation from education and training sites and checking dates.

Clinicians who are not in a training program require more effort, which is well worth the time. Besides the narrative described above, the practice should require a month-by-month account of all employment, unemployment and further training since the candidate’s final graduation. This should be rigorously verified and any “gaps” must be explained by the candidate. A query should be made to the National Practitioner Data Bank (NPDB), and any entries should provoke an intensive review with the candidate providing a release so the information leading to the list in the NPDB can be obtained from the reporting institution.

Interviewing Candidates: Site Visit

Planning is the best way to assure a productive visit. The practice should designate an individual who will meet and spend time with the candidate. Include a tour of the facility and an introduction to all the staff, a tour of the hospital and the community, meetings with potential clinical colleagues, hospital administrators and social time with practice colleagues and their families. Meetings with potential colleagues are particularly important and should be planned rather than relying on chance meetings at the hospital. Planned meetings give the local physician the chance to express an interest in the candidate and discuss the medical community without having to leave quickly to meet some responsibility and make a less than friendly impression. Most candidates will avoid locating in a disinterested or contentious health care community.

If a spouse or partner travels with the candidate, the day should include an introduction and tour of the community, including if appropriate, schools, potential employers, and community members who share interests (Felix et al. 2003). Del Norte is located near a number of attractive recreational and scenic areas and if possible, a visit to these areas for candidates and their family should be planned. Choose a nice hotel or B&B; a welcoming basket and a couple of disposable cameras will be appreciated. Arrangements should be made for a realtor to show the spouse or partner available homes. The goal of the visit is to leave the candidate and his/her family with an understanding of what it would be like to live and practice in Del Norte. The practice should understand the skills and “fit” of the candidate. The candidate and practice should schedule a phone call to discuss the opportunity and answer questions within a week or two of the visit.

According to Riley et al., the reasons that site visits are not satisfactory to candidates are not surprising; a checklist may be helpful for evaluation of the visit.

Poor personality match with prospective colleagues	3.4
Got a better offer later	3.4
Didn’t like what they saw on site visit	3.1
Recruitment committee did not answer questions acceptably	2.9
Couldn’t negotiate an acceptable compensation package	2.7
Spouse/partner wouldn’t agree to move	2.6
Practice arrangements (call, etc.) not thought through	2.6
Didn’t feel welcomed by other physicians in town	2.5
Recruitment lead was too pushy and overly aggressive	2.5
Community failed to follow up on details	2.0

As soon as practical after the visit, the practice should meet to discuss the candidate and come to a consensus about continuing and advancing to a second visit which is when an offer is usually made. (A practice or a candidate may find

the second visit difficult and make an offer by letter followed by a phone call.) During that visit the practice should come to a decision about making an offer, so time should be scheduled for that purpose. If the decision is to go ahead, the recruitment lead should describe the offer, give the candidate a draft of the contract and share summary practice financials including future projections for the practice. It is important to allow time for the candidate to review and ask questions about the proposal and practice information and then to take time with family members to consider the offer.

Social norms (reticence to set deadlines) and inexperience with recruiting can cause problems during this process. The practice should clearly and affirmatively make the offer and communicate an expectation for an answer within a specific period. Candidates generally will consider several positions; however, they rarely make more than a one or two second visits so the expectation of a prompt reply or at least a reply by a specific date is reasonable. Allowing an open-ended acceptance period decreases the chance for a successful recruitment.

The site visit is the best opportunity for the community to have a positive impact. When the candidate and his/her spouse or partner look back at the visit, the more people they met and the more sites they visited, the better able they will be to imagine living and working in Del Norte. An organized network of community members available to meet with candidates and their families, chosen not only for their potential relationship to the candidate's interests, but also for their social skills and community knowledge is a significant competitive advantage. Since candidates and their families often will have concerns about living in a rural community, developing resource material for the network addressing such concerns and pointing out the benefits of rural life will be helpful.

More than half of medical school entrants are women and a focus on practice issues that affect them will increase the chance of recruitment, such as a clear maternity leave policy and introductions to female physicians in the community.

Recruiting Support

Health Professional Shortage Areas (HPSA) and Similar Designations

The federal government has established a series of programs based on shortages of health care personnel, sometimes in conjunction with low income or underserved populations. They include Facility, Population Based, and Geographic HPSA; Physician Scarcity Area (PSA); and Medically Underserved Populations (MUP) or Areas (MUA). The rules and benefits for these programs are complex and occasionally they interact with each other. A detailed review of federal programs may be found in Appendix E; this grid is a vital adjunct to recruiting by providing access to National Health Service Corps scholarship and loan repayment programs to designated Del Norte clinics and increased payments from CMS (Medicare).

The community should view these programs as a vital resource and diligently pursue their designations, understanding the interactions among various interests and plan for their eventual discontinuation as the ratio of primary care physicians to population improves, or the regulations change and APCs are included as primary care providers.

Conrad Program (J-1 Visa)

The majority of foreign medical graduates entering the U.S. for graduate medical training enter the U.S. on a J-1 Visa. They must return to their home country for at least two years after graduation unless they obtain a wavier. The Conrad 30 program allows states to sponsor up to 30 J-1 Visas annually to remain in the U.S. if they work in medically underserved communities for three years. The program was reauthorized in December 2006 and expanded by Congress to include specialty physicians (Siskind 2006).

While obtaining a wavier requires effort from the practice, recent changes in regulations have simplified the process, and the good quality of the physicians graduating from U.S. residency programs has created a significant opportunity for Del Norte. Crescent City Internal Medicine has successfully recruited two J-1 Visa physicians and other practices in the community should consider this option.

Steven M. Thompson Physician Corps Loan Repayment Program

This program is administered by the Health Professions Education Foundation with the goal of increasing the number of culturally and linguistically competent primary care physicians employed (or with an offer of employment) in medically underserved areas of California. The programs can provide up to $105,000 over a three-year period for a service obligation of three years to repay government or commercial loans. Placements must be in a community clinic, or in a medical practice in an underserved area with at least 50 percent of practice patients from a medically underserved population.

Criteria for selection include one or more of the following: proficiency in a medical threshold language (including Spanish), economically disadvantaged background, having received significant training in cultural and linguistically appropriate service delivery, three years of experience in medically underserved areas or populations, and a recent medical license.

Oral Health Care Providers Loan Repayment Programs

A similar set of incentives (and eligibility requirements) to those offered to physicians are available for dentists. Dental Health Professional Shortage Areas (DHPSAs) designate regions or facilities for programs such as the National Health Service Corps. Table 16 is modified from *Evaluation of Strategies to Recruit Oral Health Care Providers to Underserved Areas of California* by

Elizabeth Mertz et al. from the Center for California Health Workforce Studies at UCSF. It shows loan repayment and scholarship programs with their requirements.

Table 16: Loan Repayment & Scholarship Programs for Dental Graduates in California with Service Requirements

	Current Status	Funding Source	Selection Process	Provider Criteria	Award amount	Site Criteria
National Health Service Corps (NHSC) Loan Repayment and Scholarship Program	Continuing	Federal	Practitioners working at sites of highest need are prioritized	Dentist/hygienist must commit to 2 years of full-time service	Y1=$25,000 Y2=$25,000 Y3=$35,000 Y4=$35,000	DHPSA
Indian Health Services (IHS) Loan Repayment Program	Continuing	Federal	First-come, first-served	Dentist/hygienist must commit to 2 years of full-time service	Y1=$20,000 Y2=$20,000 Y3=$20,000 Y4=$20,000	Designated IHS clinic or tribal health care site
California State Loan Repayment Program (CSLRP)	Continuing	Federal, with matching funds from sites	In past, first come, first-served. In future, will be competitive, criteria TBA.	Dentist/hygienist must commit to 2 years of full-time service	Y1=$25,000 Y2=$25,000 Y3=$35,000 Y4=$35,000	DHPSA, also other sites including community clinics
Health Professions Education Foundation (HPEF) Loan Repayment and Scholarship Program	Continuing	Private	Competitive application process	Dentist/hygienist must commit to 2 years of full-time service	Y1+Y2 =$10,000	MUA
California Dental Association Foundation (CDAF) Loan Reduction Program	Continuing	Private	Competitive application process	Dentist must commit to 1 year of full-time service	Y1=$35,000 Y2=$35,000 Y3=$35,000	Community clinic or other dental practice with at least 50% dentally underserved

Indian Health Services Loan Repayment Program

This program requires a service contract of two years and covers physicians, nurse practitioners, nurses, and mental health professionals and can reimburse

up to $20,000 a year (plus up to 20 percent more to offset tax liability). Detailed information can be found on the Indian Health Service Loan Repayment Program on the IHS web site.

The State Loan Repayment Program

This program covers a long list of health professionals including all primary care providers (physicians and APCs) and most mental health professionals. Practice sites must be a public or private not-for-profit entity, and the amount of the repayment award must be matched by the practice site. Information is available on the web site of the OSHPD, Health Care Workforce and Community Development Division, which also describes a number of programs and resources (http://www.oshpd.state.ca.us/HWCDD).

Local Support Programs, Loan Repayment, Area Incentives and Working Capital Support

Considering the economic impact on the County (described previously) of recruiting sufficient health professionals, strategies for providing funds to preserve and increase the economic base provided by health care should be considered (Pathman et al. 1992). Communities around the County have created funds to develop activities that range from supporting the advertising of practice opportunities to paying for candidate travel to the area, to paying all the costs of setting up new practices and income guarantees. Two strategies favored by the literature are loan repayment and incentives to locate in the area. Providing support for working capital is a less costly method of encouraging practices to recruit.

Research on retention programs supported at the state level indicates that the most successful retention strategy is loan repayment. Both programs target physicians at the end of their professional training: when they likely have the best understanding of their future career and family needs. These programs have the highest completion (staying to the end of the term) rates (~93 percent).

Recruits from scholarship programs had completion rates of 67 percent, and they had twice the rate of feeling restricted (37 percent compared to 19 percent) by available practice sites. Scholarship and resident support programs had the lowest retention: approximately 50 percent at seven years, and 19 percent at five years respectively (Pathman et al. 2004). This study did not distinguish between scholarships for community members and scholarships for other reasons. A local graduate may or may not find a practice with an appropriate opening; a loan repayment or incentive only occurs when there is an opening.

These data argue against scholarship programs compared to loan repayment and incentives. Scholarships are as costly (or more); they have lower satisfaction and retention rates; and there is a long delay before the candidate becomes a member of the health care community (at least seven years for

medical school and residency). They are also harder to administer. Most loan repayment takes place over two or three years. Loan repayments and incentives to locate pose a complex problem for the community because of the allocation of community funds to benefit an existing practice and potentially compete with other practices.

The community may still find the idea of providing support for local candidates attractive. Training, which requires a shorter time away from the community and which is targeted to older, more integrated community members, may meet this need.

The cost of placing a clinician into practice is not generally known and it is a significant barrier. For example, a PCP receiving $100,000 a year in salary would require a collectable amount of $250,000 from billings in a practice with an overhead of 60 percent. Considering the (optimistic) delay of 90 days before the practice began to receive significant revenue for the new clinician's billings, the cost for the practice in working capital would be least $25,000 if there were no increase in overhead, and over $60,000 if the overhead percentage did not decline significantly (a new clinician often requires support staff and other costly overhead). The situation would be worse in smaller practices because of the delay in demand as the community becomes aware of the new clinician's availability.

Except for building and equipment, physicians seldom accumulate capital assets, so the working capital costs are a barrier to adding new physicians. This problem should be addressed. A fund providing no interest or low interest loans could have a real impact on Del Norte recruiting.

Graduate Medical Education Rural Track Programs

The Song-Brown Act (1973) established a program to increase the number of family practice physicians, physician assistants, nurse practitioners and nurses in California. One focus of the program (administered by OSHPD) is support for Family Practice Residency programs offering rural tracks or residency programs in underserved areas. These programs have the goal of graduating physicians who are prepared and want to practice in underserved (rural) areas. Unfortunately, only a few are located in the northern portion of the state. They include Mercy Medical Center, Redding; Sutter Medical Center, Santa Rosa; UCSF and San Francisco General Hospital, San Francisco; Contra Costa County Health Services, Martinez and University of California, Davis.

Establishing a relationship with several of these programs could give the County a better chance of recruiting family physicians. Personal contact is important. A representative from Del Norte (ideally a physician who graduated from one of the residency programs) could visit and attempt to build a relationship. Occasionally programs are looking for office practices that would accept a resident for a short period or a special project.

UC Davis is creating a medical degree program with a rural focus. This new program hopes to place medical students in rural communities for part of their training. Since students would be residing too far from campus to travel to classes, distant learning and rural academic facilities would be necessary before a community can host these students.

The Davis program has potential but also has high start-up costs. Del Norte is one of the most distant communities within UC Davis's catchment area and the County may not have the necessary facilities. Also, since students have years of training after leaving medical school, it is more likely that their more recent experiences as a resident may be more compelling in terms of where to establish their practice.

Professional Recruiting Firms

Practices infrequently use professional recruiters because of the cost; however, hospitals experience a cost benefit and develop experience in choosing and working with recruiters. Professional firms offer both retained searches (pay a fee to recruiter to find candidates) and contingency searches (pay a fee if a candidate is hired). Contingency searches are the better choice. However, they are costly at $20,000 to $35,000 per search and will still require time and money from the practice. A recruiter close to realizing a fee of $25,000 can be extraordinarily demanding and decisions may be made in pursuit of relief from the recruiter.

Grow Your Own: Developing Local Health Careers

A number of studies show that it is easier to recruit physicians to rural areas if they have had experience in similar areas. Their experience may be as a resident, a participant in a rural experience from medical school or a rural track in a residency program. Taking these principles a step further, a number of communities and regions around the country are establishing programs to promote health care careers for local residents. Residents understand the benefits and problems of rural life and have made a decision or have a connection favoring the community. These programs should target beginning, career-ladder occupations, professional transitions (for example CNA to LVN to RN), and occupations that can be supported by local educational resources. Generally, physicians and dentists are recruited from outside the area (Blash 2005).

These programs include a number of strategies: promoting an interest in health care professions for students in the K-12 education system; developing the educational infrastructure to train local candidates; providing funding to support local candidates for in-area or out-of-area training; and establishing relationships with training programs to place students in the rural area. A number of these

initiatives can be organized and facilitated by an Area Health Education Center (AHEC), which usually operates on a regional basis.

Jobs for local candidates reduce unemployment, and many starting health care positions can lead to advancement, especially if training can be supported either locally or financially. The Grow Your Own initiative is, however, a long-term investment and requires planning and resources. Del Norte has a significant advantage over many rural areas because of its hospital, which employs a number of different health care professionals and can assist with clinical training, and the programs offered by College of the Redwoods and Humboldt State University.

K-12 Programs

Programs range from visiting lecturers in elementary school classes, to handbooks for high school counselors, to summer camp programs, to health professions clubs in high school, and to survey courses of health careers in community colleges. The orientation to heath care careers is important because many people think physicians and nurses constitute the majority of health workers, though in combination they are the minority. Instructional aids and tools have been developed and several sources can be found in: *the Rural Kaleidoscope: A Guide on Promising Practices to Diversify California's Rural Healthcare Workforce,* which is included in the resource materials. Other examples of the scope of health career programs can be seen at the Area Health Education Center (AHEC) of Southwest Oregon web site (http://www.healthyoregon.com).

The promise of this strategy can only be realized if the needed training is available locally or financial support can be provided.

Educational Infrastructure, Support, and Connecting to Statewide Programs

Grow Your Own programs focus on local training for entry-level positions, higher-level instruction for progress up the career ladder and connections to out-of-area institutions for education beyond the local capacity. Distance learning is a growing adjunct to local programs where didactic instruction can be provided by video or Internet from a distant site and practical and/or clinical skills taught locally. This will be a key strategy for the Del Norte community.

College of the Redwoods offers programs in Nursing (LVN Associate of Science and Certificate of Achievement), Medical Office Business Skills and through the Humboldt campus, Dental Assisting, LVN to RN (Associate of Science).

Del Norte has had a successful health career program for four years. The Health Careers Opportunities Program administered by Rural Human Services and funded by a grant from California Employment Development Department

provides residents of Del Norte County support for books, uniforms, travel expenses, childcare, exam fees and other expenses. The program also makes available career guidance, support services, and job placement with a case manager to oversee the student's progress. The individual grants range from $400 to $5,500, and to date, the program has graduated approximately 70 Certified Nursing Assistants, 20 RNs, 30 LVNs, and several paramedics and phlebotomists. Partners in the program include Del Norte County Health and Human Services, College of the Redwoods, Sutter Coast Hospital, and Crescent City Nursing and Rehabilitation Center.

There are a number of statewide resources including scholarship and loan repayment programs administered by the Health Professions Education Foundation in Sacramento. The programs include support for Pre-Nursing, Associate Degree in Nursing, Bachelor of Science in Nursing, and Health Professions Education targeting Dentistry, Nurse Practitioners, Physician Assistants, Dental Hygiene, and Certified Nurse Midwifery. The selection criteria for all the programs emphasize the likelihood of long-term employment in medically underserved areas (http://www.healthprofessions.ca.gov).

The Healthcare Workforce and Community Development Division in the Office of Statewide Health Planning and Development supports development of programs such as the one described above through its Health Careers Training Program (HCTP), which has information on funding sources and examples of collaboration among employers, schools, and workforce investment boards to develop programs. Their site (http://www.oshpd.ca.us/hwcdd/professions/hctp.htm) includes a link to the OSHPD publication *Health Care Pathways*, a newsletter for students pursuing health careers (http://www.oshpd.ca.gov/hwcdd/index/htm). The newsletter also lists a number of scholarships and grants.

Other important resources are:

The California Rural Health Policy Council (http://www.ruralhealth.ca.gov) which provides a job search database with links to the National Rural Recruitment and Retention network (3-Rnet) and a rural preceptorship program with the California Academy of Family Physicians;

The State Office of Rural Health (http://www.prh.dhs.ca.gov/programs/calsorh), which provides a framework for linking rural communities to state and federal resources, maintains a list-serve for rural health information including funding opportunities;

The California State Rural Health Association (http://csrha.org);

The Rural Assistance Center (RAC) which has extensive resources on funding, federal and state programs, shortage area designations, research on rural topics and other subjects (http://www.raconline.org).

Retention: Best Practices

As mentioned at the beginning of this section, recruiting and retention are connected in a number ways: recruiting the right candidates leads to retention and both recruiting and retention are dependent on the wellbeing of the health care community. Most agree that retention is the "leverage" point with respect to overall effort. Recruiting is costly in both time and money, but losing clinicians is difficult for patients and practices. The literature on retention in rural communities and a more robust literature on employee satisfaction in the work environment point to key issues:

- Ability to do successful work
- Workplace relations including workload
- Salary
- Community support for social and family needs

While the focus of this plan is on the clinician, the same set of issues applies to the spouse/partner and children of the new recruit.

Ability to Do Successful Work

People choose health care careers and undergo years of training in anticipation of improving the condition of patients. If they can't satisfy this aspiration, they will not stay in the community. Important factors for health care professionals staying in a community include a match between their skills and patient needs, access to specialists (for PCPs), good hospital care, enough time for each patient, patient access to needed treatments and services, and a breadth of clinical challenges. Family practitioners in rural environments report increased satisfaction with the wider range of clinical problems and treatments they deliver as compared to urban practice (California Healthcare Foundation 2006).

Practice personnel should orient new physicians to the practice, the health care community, the medical infrastructure and should assign patients wisely to the new recruit(s). Chronic problems with medical resources, social resources, or specialty referrals should be explained and solutions provided. Regular contact by the practice lead with the new clinician is the most important strategy. The practice has a big investment in the recruit and "sink or swim" is not a good way to manage that investment. A number of physicians report making the decision to leave the practice within the first year; some make the decision within the first three months.

Retention strategies reported include mentoring programs, structured orientation programs, increased physician involvement and regular feedback. Larger practices with a medical director have an advantage in having the capacity and culture to allocate MD time to work with new clinicians (having a medical director is described as a plus in surveys of residents looking for a position). Smaller practices need to consider the long-term payback of an orientation program and

personal time from the practice lead despite the difficulty of taking time from patient care.

Following the practice, the hospital is the most important setting for clinical work. Orientation to the hospital and its routines is very important to new clinicians. Interviews with hospital administration, tours by the nursing director and introduction to the managers of the hospital departments all facilitate the new relationship and increase the clinician's ability to give care in the hospital setting.

Workplace Relations Including Workload

A survey of the "top" reason for physicians resigning from practices across the country found (Scopelliti 2006):

Practice Issues	44%
Compensation	21%
Location	21%
Spouse Reasons	14%

The exit interview from the physicians leaving Del Norte (7 of 9 departing PCPs) described "Factors at your clinic" as the top reason. Similar rankings are found when employees leave their positions across the American workplace.

The details behind *Practice Issues* include "poor cultural fit" (19 percent), "work pressure incompatible with quality of life style" (18 percent), and collectively accounting for 40 percent of respondent replies were "pressure for high patient volume," "dissatisfaction with group practice," "conflict with leaders," and "unresolved administrative concerns."

Setting realistic expectations at the time of recruiting and maintaining communication with the recruit are good ways of avoiding workplace problems. Call duty is a common issue; giving the new clinician most of the call is a mistake. This responsibility should be fairly distributed with the realization that weekday call is less burdensome than weekend, and holiday duty is the most onerous (Woodcock 2006). Successful practices meet regularly to review financials and operations and to solve problems. Involving the new clinician in practice activities is more effective than hoping that the new recruit will be a "cultural match" (UNMC Rural Faculty, undated).

Salary

Interviews of Del Norte clinicians found general agreement that the community offered reasonable opportunities to earn and pay competitive salaries. The exit interviews of leaving physicians (leavers) put financial considerations at the bottom of the list with a rating of 2.4 out of 10. Industry data suggest that information concerning financial expectations learned during recruiting is very important. Practices should pay a competitive salary and promise candidates

only what is realistic. Overly optimistic projections during the recruiting will likely result in an unhappy employee and if partnership is a goal, it should not result in a decline in income.

Community Support for Social and Family Needs

The physician exit survey found community issues highly rated as factors influencing their departure. Interviews for this plan often mentioned similar views. The survey showed (1-10 with 10 being the most important reason for leaving) (Veitch et al. 1999):

Geographical area	5.6
Social aspects of County	5.4
Educational system of opportunities	5.3
Isolation from extended family	4.3

The County's location, weather, economic status and educational infrastructure are pretty much fixed, at least over the short run. However, other aspects of living and working in Del Norte can be influenced and they can be central in retaining health professionals. Two principles are important: early experiences are most significant and set the stage for later experiences; and social connections at work, in the community, and for the spouse/partner and family are key satisfiers. The community, acting through a plan, can play an important role (Romano 2006).

Strategies for welcoming physicians to the community have been discussed by the Recruiting and Retention Committee including practice orientation, community reception/mixer, tours and introductions to hospital staff, hospital leadership dinner, and a practice mentor program.

Spouses or partners would receive a letter welcoming them to the community and a questionnaire surveying their work, family and interests. A coordinator would follow up by meeting with the spouse, delivering a community packet and making the connections to the community. Effort should be made to invite the new clinicians to social events with diverse attendance and interests. While practice colleagues will take the lead, community members should take a role; they may be better acquainted with childcare, local schools and employment opportunities.

The connections to the medical and civic community should be ongoing. PCPs spend less time in the hospital than in the past and opportunities to meet with colleagues are scarce. Rural practitioners have difficulty obtaining continuing medical education. A twice-yearly clinical conference with general interest medical topics and time for meeting with colleagues supported by the community would be a worthwhile initiative. The business and manufacturing community appreciates that training and team building are important to success; the health

care community is much larger than any local firm and yet has little opportunity for either.

Most firms also recognize their employees for their contributions on behalf of the organization. The retention plan proposes an annual service recognition dinner annually supported by Sutter Coast Hospital and the community.

A Community Health Care Organization

While events two years ago placed a strain on the community and health care providers, the response has been impressive. The Physician Recruiting and Retention Committee has developed a presence and legitimacy by convening community leaders, identifying core issues, and formulating and executing plans. The scope has widened from replacing the leaving clinicians to understanding the impact of health care providers and health care on the community. The PRRC has begun to act across the community, bringing together a wide group of stakeholders as participants.

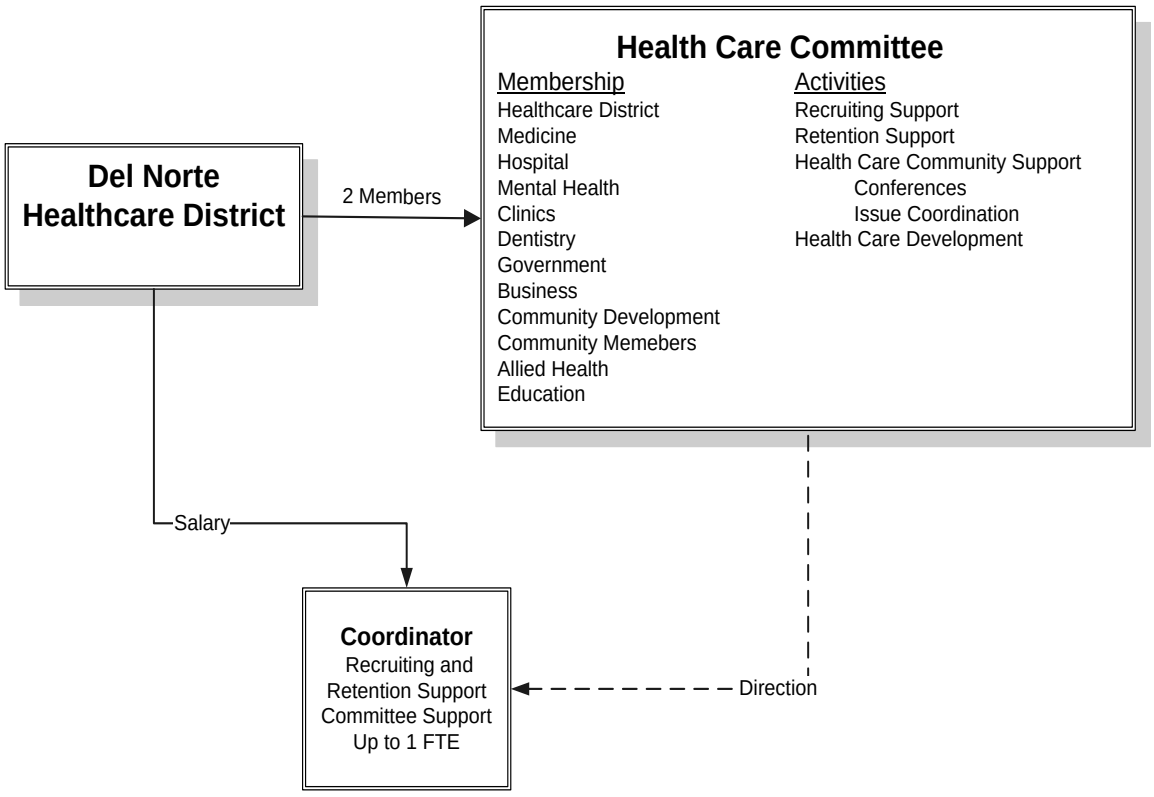
The following proposal for an organizational structure and a plan of action is based on the following findings:

- Recruiting and retention will be a chronic issue for Del Norte
- Maintaining adequate health care personnel is particularly vital to the County
- Providers can be recruited to the community; community support is important for retention
- Scarcity designations are very important for clinic recruiting and the provision of services to low income and underserved groups
- Community clinic and hospital clinic recruiting will produce most of the new providers because of the scarcity designations, their recruiting skill and resource, and the preference of graduating clinicians for employment in organizations
- A large and growing share of primary care is provided by APCs
- Retention is the leverage point: keeping recruited providers has many benefits; community support is essential
- A central organization is best able to raise funds and coordinate efforts among public providers, private providers, and community interests
- The Health Care District understands and will act on the community's need for both facilities and workforce development
- Existing educational infrastructure is doing a good job and can be expanded
- Del Norte's providers and hospital provide the base for health care economic development
- Organized communities have an advantage

Structure

The Recruiting and Retention Committee should continue to coordinate recruiting and retention and to serve as a forum for area wide health care issues and development. The committee should become a membership organization supported by a coordinator with funding from the Health Care District and continuing administrative support from the County. The organization would recruit members, establish an executive committee and develop bylaws.

Organizational Structure



The role of the coordinator is vital and should be filled by someone with an understanding of Del Norte, rural health care, and the needs of professionals and their families. The individual would have to be outgoing and comfortable providing a social context for new providers and their families. The job description would include:

- Organize and maintain the community network of contacts for new providers and their families
- Coordinate with offices, clinics, and the hospital during recruiting, providing community support

- Contact the spouse or partners of new providers supporting the new provider retention plan
- Plan and coordinate the annual recognition dinner
- Plan and coordinate two conferences yearly
- Coordinate the listing of practice opportunities
- Report monthly to the Health Care Working Group
- Maintain business records

The funds for this position are not immediately apparent, although the Health Care District has expressed interest in funding a position later in the year and may have space available for an office. If the District will provide office space immediately, bridge funding would provide a year of service making a good case to potential granters to fund future efforts.

Plan of Action

The community should focus on three goals or tasks:

Developing an organization to support recruiting, retention, and allied health care projects including hiring a coordinator;

Support recruiting and retention by using that organization to develop and use a community network, hold conferences and service recognition dinners, and build mechanisms for funding recruiting and retention efforts; and

Plan a long-term Grow Your Own strategy including K-12 educational programs, career and professional training, and statewide institutional relationships.

The momentum generated by the PRRC should be directed to create formal organization supported by staff with a defined membership, governance and mission. The members should be recruited generously across the civil and health care community and they would meet every other month or once a quarter. The organization would have an executive committee, which would meet on those months in which the full membership did not meet and be responsible for the day-to-day operation of the organization. The Community Health Alliance of Humboldt and Del Norte has a similar structure and would share its bylaws.

Work has begun already to develop a community network to support recruiting and retention. The coordinator working with the network members can plan the best way to present the community, answer candidate's questions and make contact with appropriate individuals based on the candidates and their family's requirements. The coordinator could also facilitate the Physician Retention Plan in community events. Once organized the Health Care Working Group should decide what recruiting assistance the community should provide and find the

necessary funding and ensure that candidates have access to outside loan repayment and incentive programs.

The only way to assure the long-term access to a health care workforce is a coordinated program of local (and nearby) training, distance learning, and access for residents to out-of-area programs from which they are likely to return. The Working Group should consider some of the programs listed above, building on the Health Careers Opportunities Program administered by Rural Human Services and their partners.

For illustration, the following is a task list for the first two years of the Health Care Working Group:

Short Term – 6 Months

1. Form the Health Care Working Group, establish the Executive Committee, meet (membership based on the existing PRRC)
2. Come to consensus with the Health Care District about support
3. Find bridge funding
4. Hire Coordinator
5. Coordinator training, contact with hospital, clinics, offices
6. Coordinator develops a visit plan
7. Coordinator starts supporting recruitment and retention, focuses on new providers in the community over the last year
8. Working Group finds a sponsor or becomes the facilitator connecting applicants to the loan repayment programs listed under “Recruiting Support”
9. Coordinator plans Conference

Medium Term – 7 to 12 Months

1. Working Group begins to develop a consensus on community based loan repayment, incentives and scholarships
2. Coordinator plans annual service recognition dinner with hospital
3. Working Group comes to consensus on loan repayment, incentives, and scholarships and implements the plan
4. Coordinator plans second Conference
5. Working Group begins to develop consensus on Grow Your Own strategies and gets input from Health Careers Opportunities Program, school system, CR and other stakeholders
6. Working Group develops and distributes satisfaction survey for clinicians in County
7. Working Group develops a plan to establish relationships with residency programs, starting with rural track programs

Long Term – 13 to 24 Months

1. Working Group continues the recruiting and retention support
2. Working Group maintains the community network
3. Working Group implements community based financial support for recruiting
4. Working Group implements the first stage of Grow Your Own strategy
5. Working Group distributes second satisfaction survey, celebrates improved score

Health Care and Economic Development

While this report has focused on recovering from the recent physician losses and developing the systems to avoid future losses, it is clear that health care also can be an important driver for improving the County's economic future.

There are two straightforward strategies: increasing in-migration for health care services and decreasing out-migration. Both are captured in the concept of Del Norte as a health care destination, a concentration of clinicians and facilities distinguished by reputation, patient convenience, and scope of services. This is undoubtedly a leap for a community recovering from losing a quarter of its physician workforce but worth consideration.

As an economic sector, health care is one of the largest and fastest growing sectors. Del Norte has one of the newer hospitals in the state, an adequate supply of clinicians and is adjacent to the growing population in Southern Curry County. The combination of the populations of these two areas increases the support for clinicians not available now.

Increasing In-Migration

The most obvious way to increase patients coming into Del Norte is to increase the range of medical specialties available. Looking back at Table 3, the workforce comparisons, several medical specialties show enough demand if you include the Southern Curry County population: Cardiology (1.6), Dermatology (1.0), Gastroenterology (1.1), Neurology (.9), and Psychiatry (2.2). As mentioned in earlier sections, Obstetricians/Gynecologists are well below the standard; the community could support four with the Southern Curry County population. OB provides a number of benefits. Women often make the health care choices for their family. Successful provision of obstetrical services can "imprint" the family on a hospital and medical community. Similarly, young families need the services of pediatricians and they may continue to use the same medical community after their children "graduate" from pediatric care.

Most of the pediatric practices and several family medicine practices in Humboldt County are P.L. 95-210 Rural Health Clinics (RHCs). This designation provides cost based reimbursement that makes practices viable despite the very high MediCal insurance percentages. The requirements for RHC are: be located in an HPSA that is not an Urbanized Area (Del Norte is not urbanized) and the clinic must employ an APC for 50 percent of its open hours. The application for RHC is difficult and a consultant is almost a necessity; however, the community could develop some expertise and make it available to interested practices. Becoming an RHC is about the only way private primary care practices can survive providing services to the low income and underserved population.

Presently cardiology, dermatology and gastroenterology are known as three of the most difficult specialties to recruit (Romano 2006), and specialists in such areas would be unlikely to start an individual practice in Del Norte with such concerns as overhead and call. The more likely strategy would be to recruit a cardiologist and/or gastroenterologist to an existing practice where they could share overhead and call. Dermatologists do set up individual practices and would be most likely to settle in Del Norte if recruited by the community. To bring any of these specialties into the County would likely require a community investment.

Decreasing Out-Migration

Referring to the Rural Health Information Survey reported above, the top three replies to a question asking if respondents regularly left the County (44 percent) for health care were: "services not available in Del Norte," (24 percent), "quality better elsewhere," (20 percent), and "too hard to get an appointment with local doctor," (9 percent). "Other reasons" and insurance coverage problems amounted to another 16 percent.

Perceptions about quality, office access, and insurance problems can often be improved or solved. If the percentage of respondents regularly leaving the County were to be cut in half, the economic impact with be very significant. This would be a good focus for economic development.

Self-insured employers have the ability to designate in-network and out-of-network providers, and County providers want to supply services up to their capacity. This circumstance should provide the basis for discussions between employers and providers of mutual benefit. Providers could benefit by increased volume (less out-migration), employers could win by more competitive pricing and the whole County could win by the multiplier effect of the retained business. Also, employers would benefit by decreasing the time spent (sick leave) when employees travel out of Del Norte for medical services.

Telemedicine is an obvious solution to traveling out of the area for specialty care. The clinic community has been using telemedicine for several years and has a good understanding of its benefits and inefficiencies. Telemedicine and distance learning could share an infrastructure platform and obviate need to travel out of the area.

Humboldt has had a number of traveling specialists providing care in the County for many years. They include pediatric gastroenterology and cardiology, endocrinology, and hepatic specialists. Most of these practitioners are associated with tertiary hospitals in the San Francisco bay area that subsidize some of the costs associated with their practice in Humboldt, probably in anticipation of providing services to local patients at some time. Both patients and clinicians see benefit in this practice, and Del Norte should investigate the potential of similar arrangements.

Previous attempts to host out-of-area clinicians have not been successful; however, the positive nature of Humboldt's experience could provide a stimulus for a new initiative. This is another example of services which could benefit from the population of Southern Curry County and also would be a further inducement for those residents to see Del Norte as their health care destination.

Public Policy Implications

The following are comments on existing state and federal programs:

- Successful rural recruiting for primary care (especially for underserved populations) is based on loan repayments and incentives, and to a much lesser extent, candidate background. Support for these programs produces results.

- Federally Qualified Health Centers are successful in caring for the low income, underserved populations found in rural areas. It would be hard to imagine that local health care systems could survive without them.

- APCs have been included in most underserved/shortage area based programs and they are having an impact. By number of clinicians, more than half of the primary care practitioners in Del Norte are APCs. The community would not have recovered as it has without them.

- Programs, which support residents of rural counties in APC training, could be very effective because the training can be completed in two to three years and candidates are often mid-career with local attachments. Students entering family practice or internal medicine programs won't be eligible to return to the community for seven or eight years, and may find spouses/partners incompatible to rural life.

- Rural, coastal, northern California is rarely mentioned in the California rural health community literature or as the location of pilot projects, grants, or government programs.

- The U.S. Department of Health and Human Services, Health Resources and Services Administration (HRSA) support a program to establish Area Health Education Centers (AHEC). The financing is the combination of initial and continuing federal grants with matching state and local funds. The centers are usually associated with colleges or universities and "Carry out recruitment and health career awareness programs to recruit individuals from underserved and areas and under-represented populations. Provide field placements, preceptorships, health professions education and training activities for students and practitioners."

- The AHEC of Southwest Oregon, located in Winston, is a good example of what can be provided. The web site (http://www.healthyoregon.com) describes the center and its programs. State support for a regional AHEC (Del Norte, Humboldt, and Mendocino) would bring resources to fund an effective model that addresses important and chronic problems (Coffman et al. 2002).

Practice Management Resources

Starting a clinical practice is similar to starting any business; it is complicated and time consuming. Just the "business" tasks constitute a considerable list:

- Setting up a corporate structure
- Applying for financing
- Business license
- Insurance
- Professional advice: accountants, attorneys
- Buying or renting an office
- Supplies, furniture and equipment
- Hiring employees
- Billing Service
- Answering Service
- Business computers and support

Appendix F contains a list of business resources for practices in Del Norte County.

References, Cited Sources and Background Sources

Brooks, Robert, Walsh, Michael, Mardon, Russell E., Lewis, Marie, Clawson, Art (2002). "The Roles of Nature and Nurture in the Recruitment and Retention of Primary Care Physicians in Rural Areas: A Review of the Literature." *Academic Medicine,* August 2002, 77 (8): 790-798.

Barlow, Kriss, McCarthy, Allison (2004). "Recruiting Physicians Today: Due Diligence on the Internal Front Enhances Recruiting Success." *The New England Journal of Medicine, NEJM Career Center,* January/February 2004.

Blash, L., Schiorring, E., (2005). *the Rural Kaleidoscope: A Guide on Promising Practices to Diversify California's Rural Health Care Workforce.* California State Rural Health Association, December 2005.

California Department of Finance "Population Projections by Race / Ethnicity, Gender and Age for California and Its Counties 2000–2050," <http://www.dof.ca.gov/HTML/DEMOGRAP/ReportsPapers/Projections/P3/documents/DEL%20NORTE.XLS> accessed January 22, 2007.

California Dept of Health Services, "Health Data Summaries for California Counties," <http://www.dhs.ca.gov/hisp/chs/OHIR/reports/others/datasummaries2006.pdf> accessed November 2006.

California Health Care Foundation (2006). "MDs in Areas with More Resources Have Lower Satisfaction." *California Healthline,* May 31 2006.

Center for Economic Development, California State University, Chico (2006). Del Norte County 2006: Economic and Demographic Profile. http://www.csuchico.edu/cedp

Coffman, Janet, Rosenoff, Emily, Grumbach, Kevin (2002). *Improving Recruitment and Retention of Primary Care Practitioners in Rural California,* California Program on Access to Care, California Policy Research Center, University of California, 2002.

Del Norte County Department of Health and Social Services (2005). *A Brief History of Physician Recruitment, Del Norte County, August 2005*. Personal Communication.

Del Norte County Department of Health and Social Services (2005). *Exit Interviews*. Personal Communication.

Employment Development Department, State of California "Occupational Employment Projections, 2002-2012, North Coast Region," <http://www.calmis.ca.gov/FILE/OCCPROJ/NorCoastOccProj.xls> accessed January 22, 2007.

Employment Development Department, State of California, "Planning Information Packet: Northern Rural Training and Employment Consortium" <http://www.labormarketinfo.edd.ca.gov/cgi/databrowsing/?PAGEID=4&SUBID=135> accessed November 2006.

Felix, Holly, Shepherd, Joy, Stewart, Kathryn (2003). "Recruitment of Rural Health Care Providers: A regional Recruiter Strategy." *The Journal of Rural Health,* Supplemental 2003, 19 (5).

Health Care Price, Cost & Utilization Benchmarks: Capitated Groups Practice Efficiently with Fewer Docs (2004). Staff compilation, Vol. IV: 140-144.

http//www.unmc.edu/Community/ruralmeded/fedstloc/RecrRet/recrnat.htm

http//www.unmc.edu/Community/ruralmeded/fedstloc/RecrRet/recrnat.htm

IMPLAN Professional Version 2.0 User's Guide, 3rd Edition, Minnesota IMPLAN Group Inc. (MIG), 2004.

Jackson, Jodie, Shannon, C. Ken, Pathman, Donald E., Mason, Elaine, Menitz, James W. (2003). "A Comparative Assessment of West Virginia's Financial Incentive Programs for Rural Physicians." *The Journal of Rural Health,* Supplemental 2003, 19 (5):329-339.

May, Jessica H., Bazzoli, Gloria J., Gerland, Anneliese M. (2006). "Hospitals' Responses to Nursing Staff Shortages." *Health Affairs*, 26 June 2006, W316-W323.

Mertz, E., Anderson, G., Grumbach, K., O'Neil, E., (2004) *Evaluation of Strategies to Recruit Oral Health Care Providers to Underserved Areas of California*. Center for California Health Workforce Studies at University of California, San Francisco, July, 2004.

NEJM Career Center Staff (2005). "Recruiting Physicians Today: Early Focus on Physician Satisfaction is Key to Retention." *The New England Journal of Medicine, NEJM Career Center,* July-August 2005.

Pathman, Donald E., Konrad, Thomas R., King, Tonya S., Taylor Jr., Donald H., Koch, Gary G. (2004). "Outcomes of States' Scholarship, Loan Repayment, and Related Programs for Physicians." *Medical Care*, 6 June 2004, 42 (6): 560-568.

Pathman, Donald E., Konrad, Thomas R., Ricketts III, Thomas C. (1992). "The Comparative Retention of National Health Service Corps and Other Rural Physicians: Results of a 9-Year Follow-up Study." *Journal of American Medical Association,* September 23/30, 268 (12): 1552-8.

Pathman, Donald E., Steiner, Beat D., Williams, Eric, Riggins, Toija (1998). "The Four Community Dimensions of Primary Care Practice." *The Journal of Family Practice,* April 1998, 46 (4): 293-303.

Riley, Katherine, Myers, Wayne, Schneeweiss, Ronald (1991). "Recruiting Physicians to Rural Practice: Suggestions for Success." *The Western Journal of Medicine,* November 1991, 155 (5): 500-504.

Romano, Michael (2006). "Bigger Payday for Some Docs." *Modern Health Care,* July 17 2006, 26-30.

Scopelliti, Joseph, Westfall, Carol (2006). "Retaining the Best Physicians for Your Medical Group: Annual Survey Reveals Strategies for Successful Retention." *Group Practice Journal,* April 2006, 30-33.

Shannon, C. Ken (2003). "A Community Development Approach to Rural Recruitment." *The Journal of Rural Health,* Supplemental 2003, 19 (5).

Simmons III, H. J., Harris, John M. (2004). "Community-based Physician Need Planning Methodologies Evolve." *Health Care Strategic Management,* December 2004, 22 (12).

Siskind, Greg (2006). "Physician Immigration Takes Center Stage in Washington." *Recruiting Physicians Today,* July/August 2006. 14 (4).

Slack, Marion K., Cummings, Doyle M., Borrego, Mathew E., Fuller, Kathi, Cook, Sherrie (2002). "Strategies used by Interdisciplinary Rural Health Training Programs to Assure Community Responsiveness and Recruit Practitioners." *Journal of Interprofessional Care, 2002, 16 (2): 129-138.*

Spetz, Joanne (2006). *Regional Forecasts of the Registered Nurse Workforce in California.* Center for California Health Workforce Studies, University of California, San Francisco, August 2006.

Tepper, Joshua D., Rourke, James T.B. (1999). "Recruiting Rural Doctors: Ending a Sisphean Task." *Canadian Medical Association Journal,* April 20 1999, 160: 1173-4.

The Institute for Pubic Policy and Economic Analysis, "The Economic Impact of Health Care in Spokane," Washington, 2004.

U.S. Census Bureau, “California QuickFacts from the US Census Bureau” <http://quickfacts.census.gov/qfd/states/06000.html> accessed November 2006.

U.S. Census Bureau, “Del Norte County QuickFacts from the US Census Bureau” <http://quickfacts.census.gov/qfd/states/06/06015.html> accessed November 2006.

U.S. Census Bureau, “Poverty Thresholds 2006” <http://www.census.gov/hhes/www/poverty/threshld/thresh06.html> accessed May 2007.

U.S. Department of Labor, Bureau of Labor Statistics, “Occupational Outlook Handbook (OOH), 2006-07 Edition,” <http://www.bls.gov/oco/home.htm> accessed January 22, 2007.

U.S. Dept. of Commerce, Bureau of Economic Analysis “Regional Economic Accounts,” <http://bea.gov/bea/regional/bearfacts/action.cfm?fips=06015&areatype=06015&yearin=2004> accessed November 2006.

U.S. Dept. of Commerce, Bureau of Economic Analysis “Regional Economic Accounts,” <http://bea.gov/bea/regional/bearfacts/stateaction.cfm?fips=06000&yearin=2004> accessed November 2006.

UNMC Rural Faculty (undated). *Rural Practice, Keeping Physicians In.* Prepared for Rural Communities by University of Nebraska Medical Center Rural Faculty.

UNMC Rural Faculty: Bowman, Robert C., Abboud, Cheryl (undated). *Recruiting New Rural Practitioners*. Prepared for Rural Communities by University of Nebraska Medical Center Rural Faculty.

Veitch, Craig, Harte, Jans, Hays, Richard, Pashen, Dennis, Clark, Steve (1999). “Community Participation in the Recruitment and Retention of Rural Doctors: Methodological and Logistical Considerations.” *Australian Journal of Rural Health,* 1999, 7: 206-211.

Woodcock, Eiizabeth (2006). “Pearls: Making Call Duty Fair, How to Avoid Infighting.” *Physicians Practice,* July/August 2006.

Appendix A

List of Interviewees

County of Del Norte
Jeannine Galatioto
County Administrative Officer

Gary Blatnick
Director/Public Guardian
Health and Human Services

Thomas Martinelli, MD
Public Health Officer

Del Norte Physicians
Mark Davis, MD
Urology

Donald Micheletti, MD
Internal Medicine

Warren Rehwaldt, MD
Family Practice
Open Door Community Health Center

Jennifer Betts, MD
Family Practice
United Indian Health Services

Health Care District
Clark Moore
Board Member

Wayne Reichlin
Board Member

Sutter Coast Hospital
John E. Menaugh
Chief Executive Officer

Open Door Community Health Center
Donna Eddings
Director of Quality Improvement

William Hunter, MD
Medical Director

United Indian Health Services
Jerry Simone
Chief Executive Office

Jon Davis
Chief Financial Officer

Sherri Provolt, RN
Clinical Services Director

Teresa Bowie
Human Resources Technician

North Coast Clinics Network
Heather Bonser-Bishop
Director

State Assemblymember Patty Berg
Connie Stewart
Field Representative

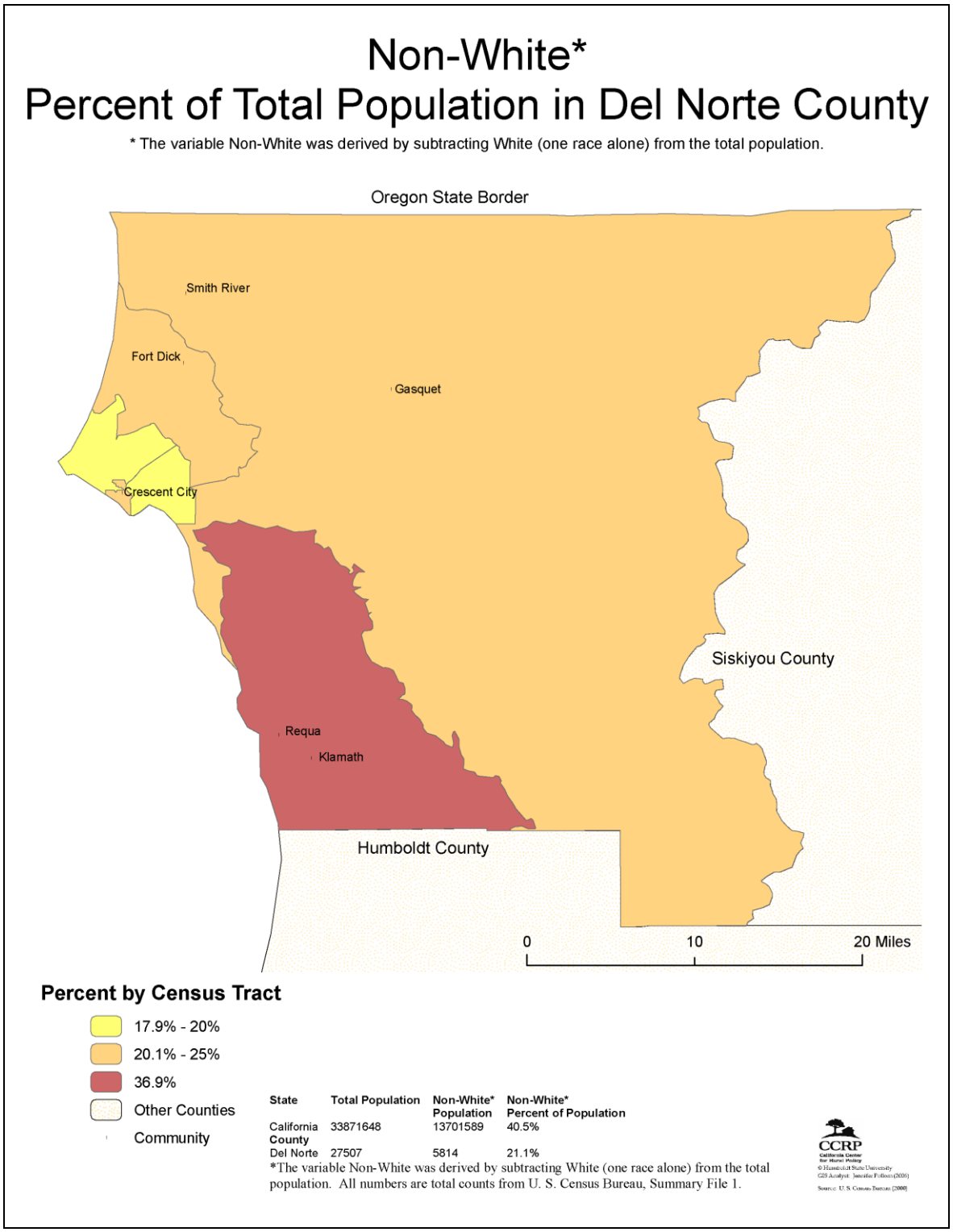
AHEC of Southwest Oregon
John Irwin
Board Member

Appendix B

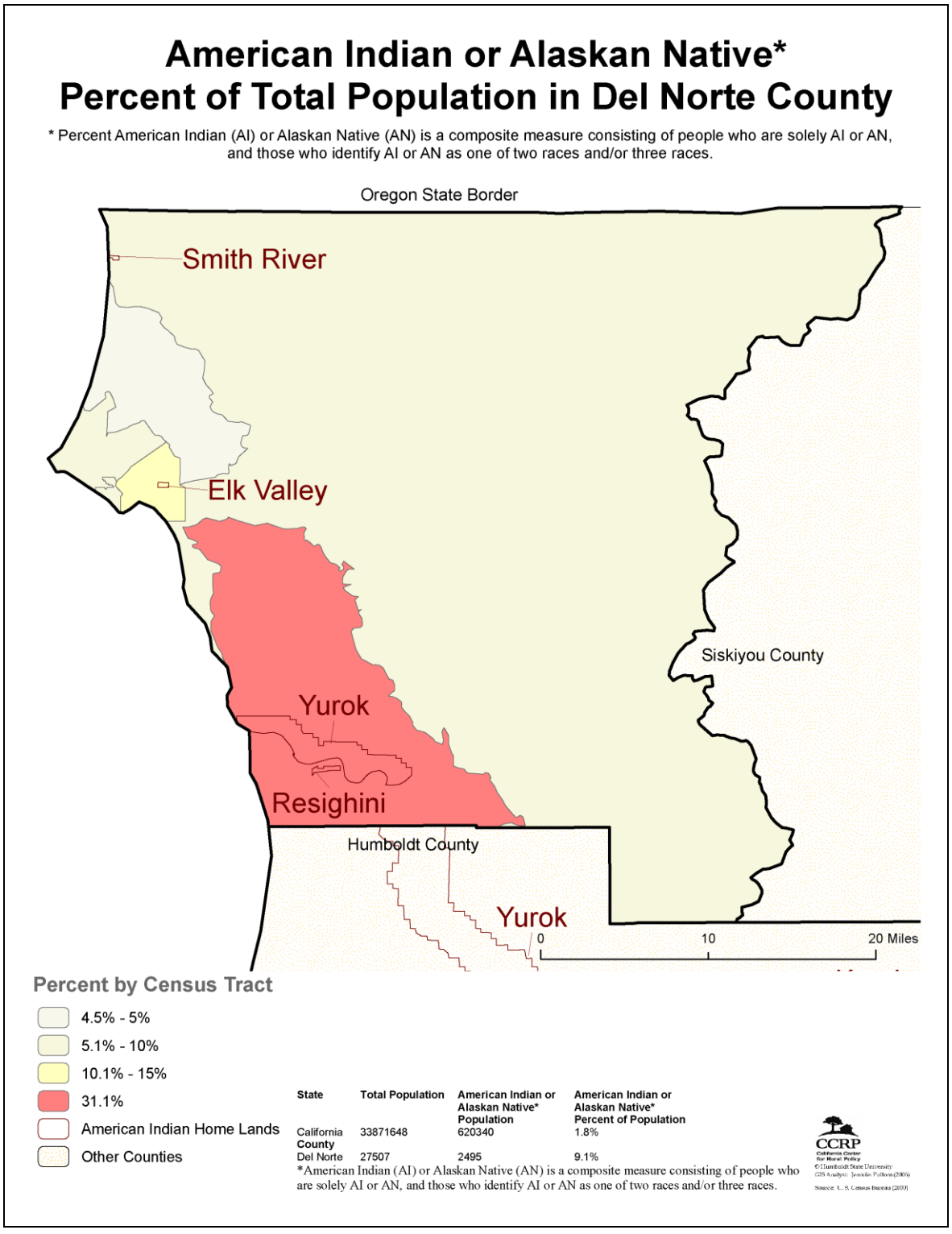
GIS Maps for Del Norte County

1. Non-White Percent of Total Population in Del Norte County
2. American Indian or Alaskan Native Percent of Total Population in Del Norte County
3. Hispanic or Latino Percent of Total Population in Del Norte County
4. Percent of Total Population Below Poverty in Del Norte County
5. Percent of Children Ages 17 and Under Below Poverty Level in Del Norte County
6. Percent of Children Under Age 5 Below Poverty Level in Del Norte County
7. Del Norte County Area Hospitals
8. Trauma Level Descriptions for Del Norte County Area Hospitals
9. GIS Layer Description for Del Norte County Area Hospital

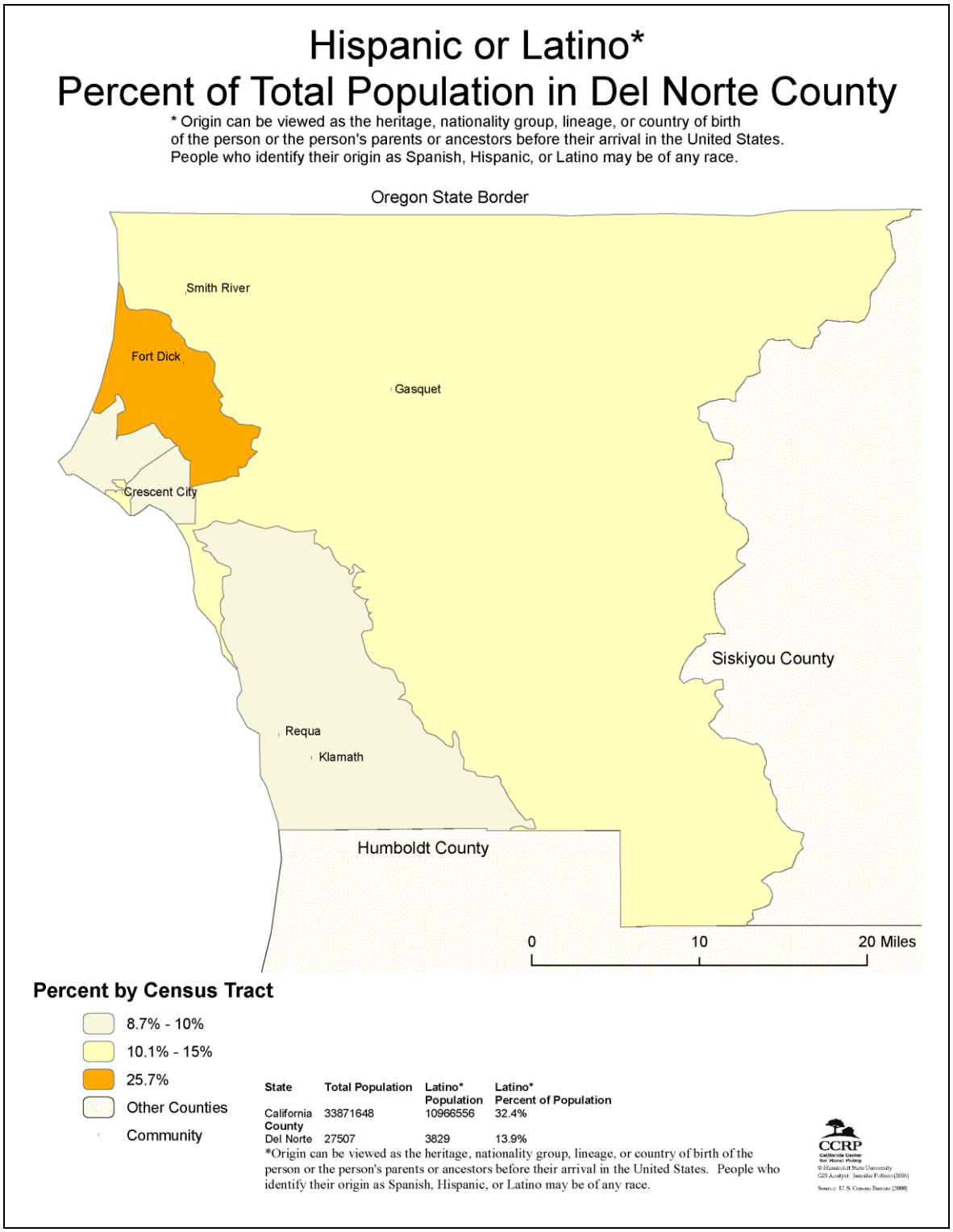
Map 1.


Non-White*
Percent of Total Population in Del Norte County
* The variable Non-White was derived by subtracting White (one race alone) from the total population.
Oregon State Border
Smith River
Fort Dick
Gasquet
Crescent City
Siskiyou County
Requa
Klamath
Humboldt County
0
10
20 Miles
Percent by Census Tract
17.9% - 20%
20.1% - 25%
36.9%
Other Counties
Community
State | Total Population | Non-White* Population | Non-White* Percent of Population
California | 33871648 | 13701589 | 40.5%
County
Del Norte | 27507 | 5814 | 21.1%
*The variable Non-White was derived by subtracting White (one race alone) from the total population. All numbers are total counts from U. S. Census Bureau, Summary File 1.
CCRP
California Center for Rural Policy
© Humboldt State University
GIS Analyst: Jennifer Folkom (2005)
Source: U.S. Census Bureau (2000)

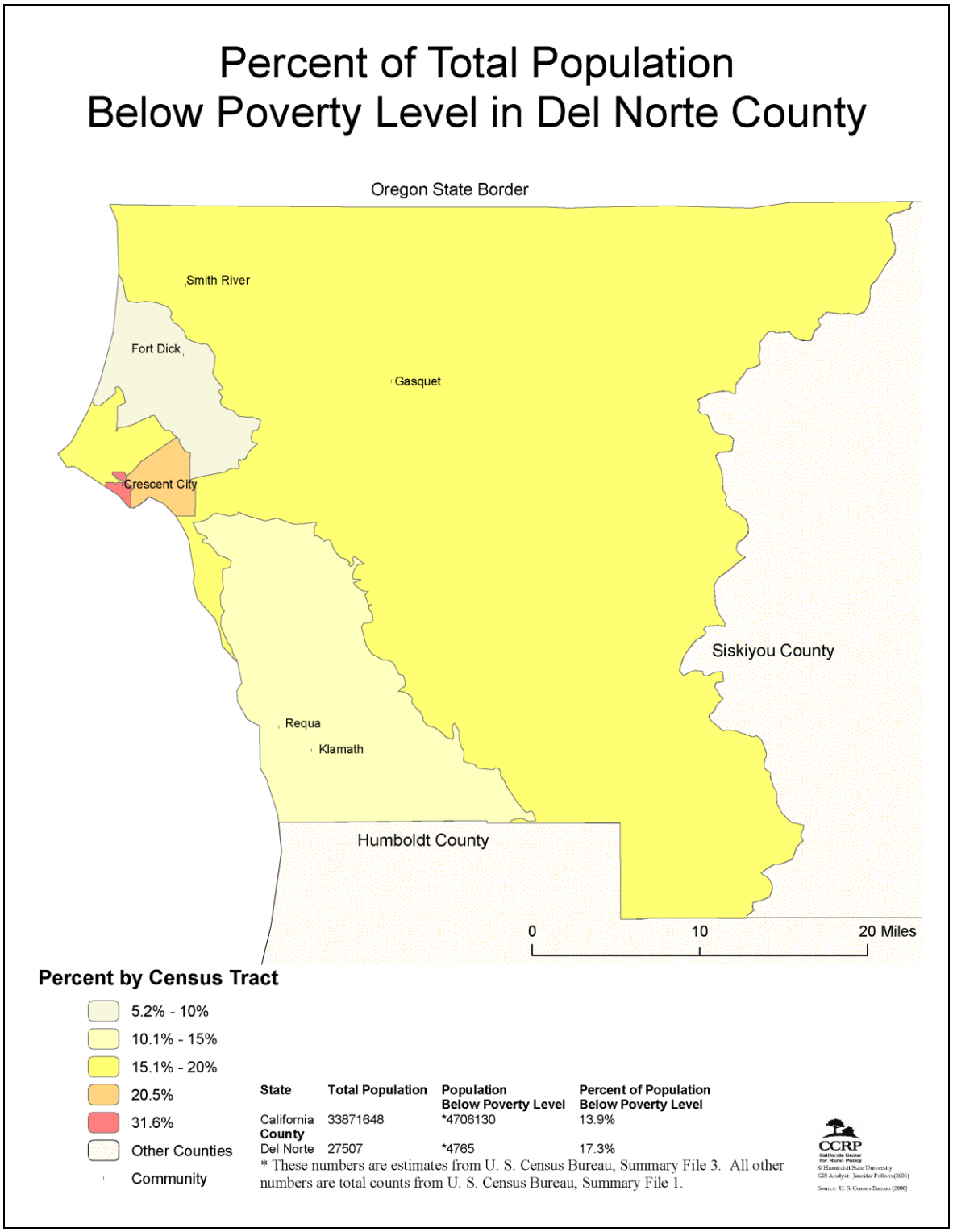
Map 2.


American Indian or Alaskan Native*
Percent of Total Population in Del Norte County
* Percent American Indian (AI) or Alaskan Native (AN) is a composite measure consisting of people who are solely AI or AN, and those who identify AI or AN as one of two races and/or three races.
Oregon State Border
Smith River
Elk Valley
Siskiyou County
Yurok
Resighini
Humboldt County
Yurok
0
10
20 Miles
Percent by Census Tract
4.5% - 5%
5.1% - 10%
10.1% - 15%
31.1%
American Indian Home Lands
Other Counties
State
Total Population
American Indian or Alaskan Native* Population
American Indian or Alaskan Native* Percent of Population
California
33871648
620340
1.8%
County
Del Norte
27507
2495
9.1%
*American Indian (AI) or Alaskan Native (AN) is a composite measure consisting of people who are solely AI or AN, and those who identify AI or AN as one of two races and/or three races.
CCRP
California Center for Rural Policy
© Humboldt State University
GIS Analyst: Jennifer Pellham (2006)
Source: U. S. Census Bureau (2000)

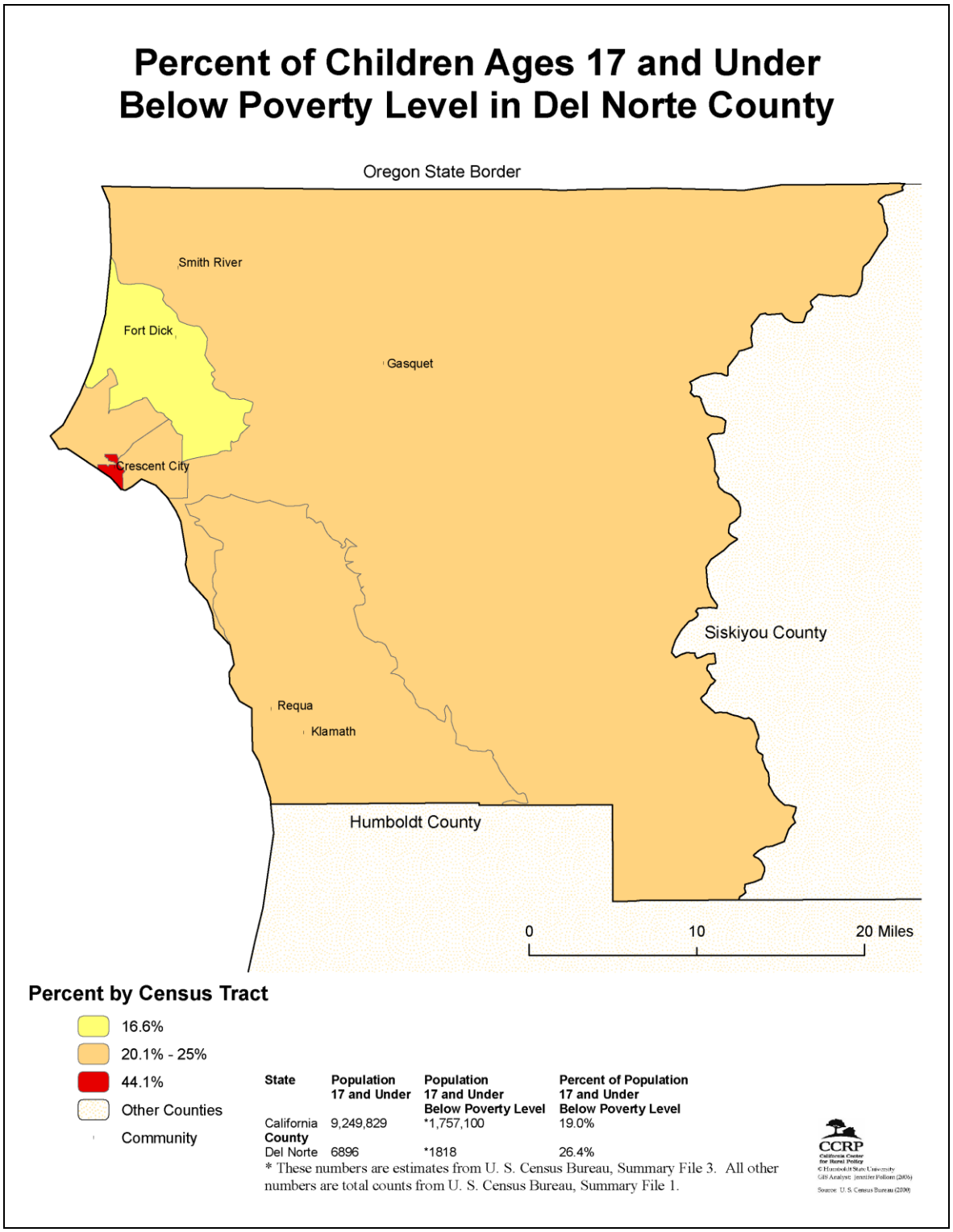
Map 3.


Hispanic or Latino*
Percent of Total Population in Del Norte County
* Origin can be viewed as the heritage, nationality group, lineage, or country of birth of the person or the person's parents or ancestors before their arrival in the United States. People who identify their origin as Spanish, Hispanic, or Latino may be of any race.
Oregon State Border
Smith River
Fort Dick
Gasquet
Crescent City
Siskiyou County
Requa
Klamath
Humboldt County
0
10
20 Miles
Percent by Census Tract
8.7% - 10%
10.1% - 15%
25.7%
Other Counties
Community
State Total Population Latino* Population Latino* Percent of Population
California 33871648 10966556 32.4%
County
Del Norte 27507 3829 13.9%
*Origin can be viewed as the heritage, nationality group, lineage, or country of birth of the person or the person's parents or ancestors before their arrival in the United States. People who identify their origin as Spanish, Hispanic, or Latino may be of any race.
CCRP
California Center for Rural Policy
© Humboldt State University
GIS Analyst: Jennifer Follett (2005)
Source: U.S. Census Bureau (2000)

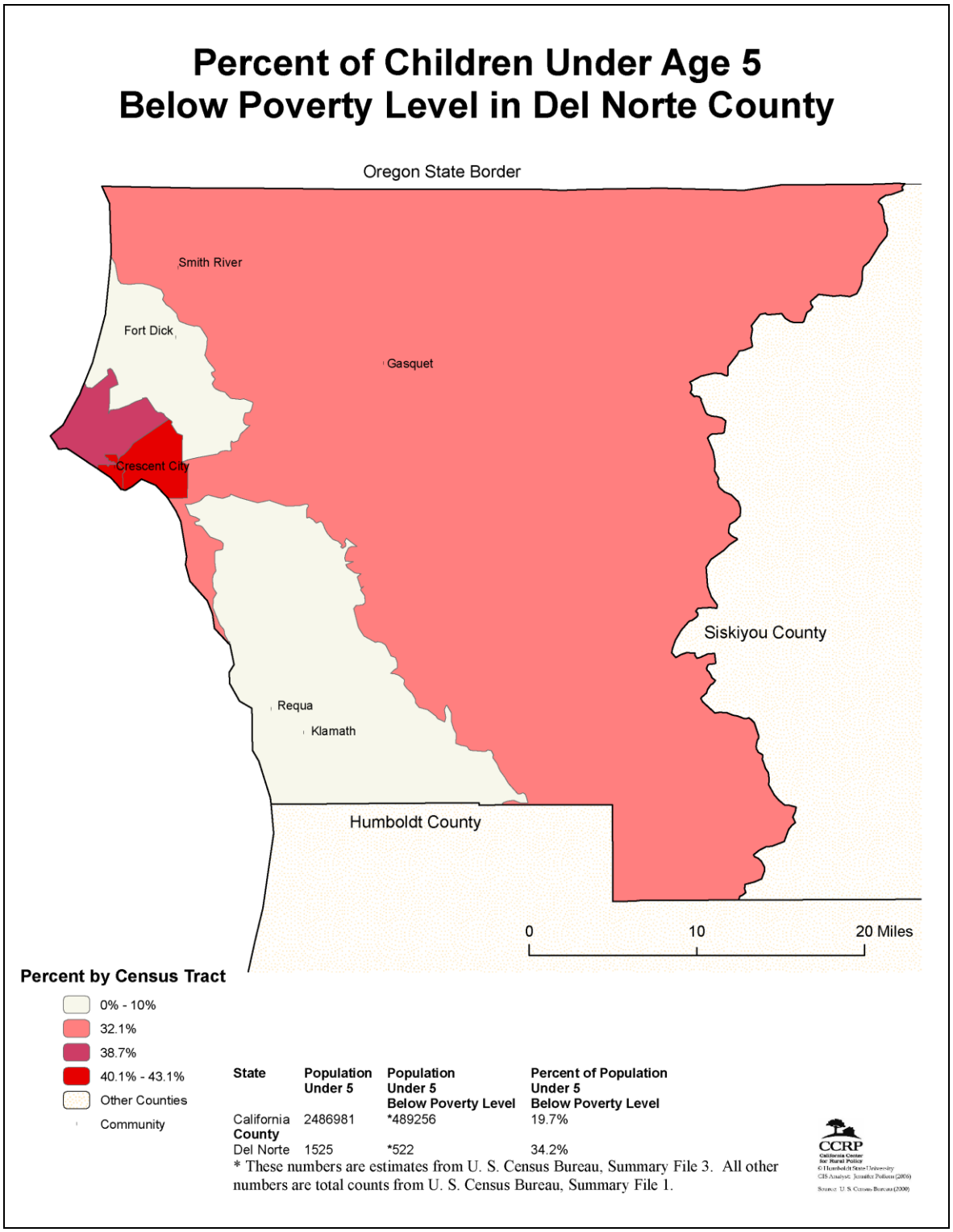
Map 4.


Percent of Total Population
Below Poverty Level in Del Norte County
Oregon State Border
Smith River
Fort Dick
Gasquet
Crescent City
Siskiyou County
Requa
Klamath
Humboldt County
0
10
20 Miles
Percent by Census Tract
5.2% - 10%
10.1% - 15%
15.1% - 20%
20.5%
31.6%
Other Counties
Community
State
Total Population
Population Below Poverty Level
Percent of Population Below Poverty Level
California
33871648
*4706130
13.9%
County
Del Norte
27507
*4765
17.3%
* These numbers are estimates from U. S. Census Bureau, Summary File 3. All other numbers are total counts from U. S. Census Bureau, Summary File 1.
CCRP

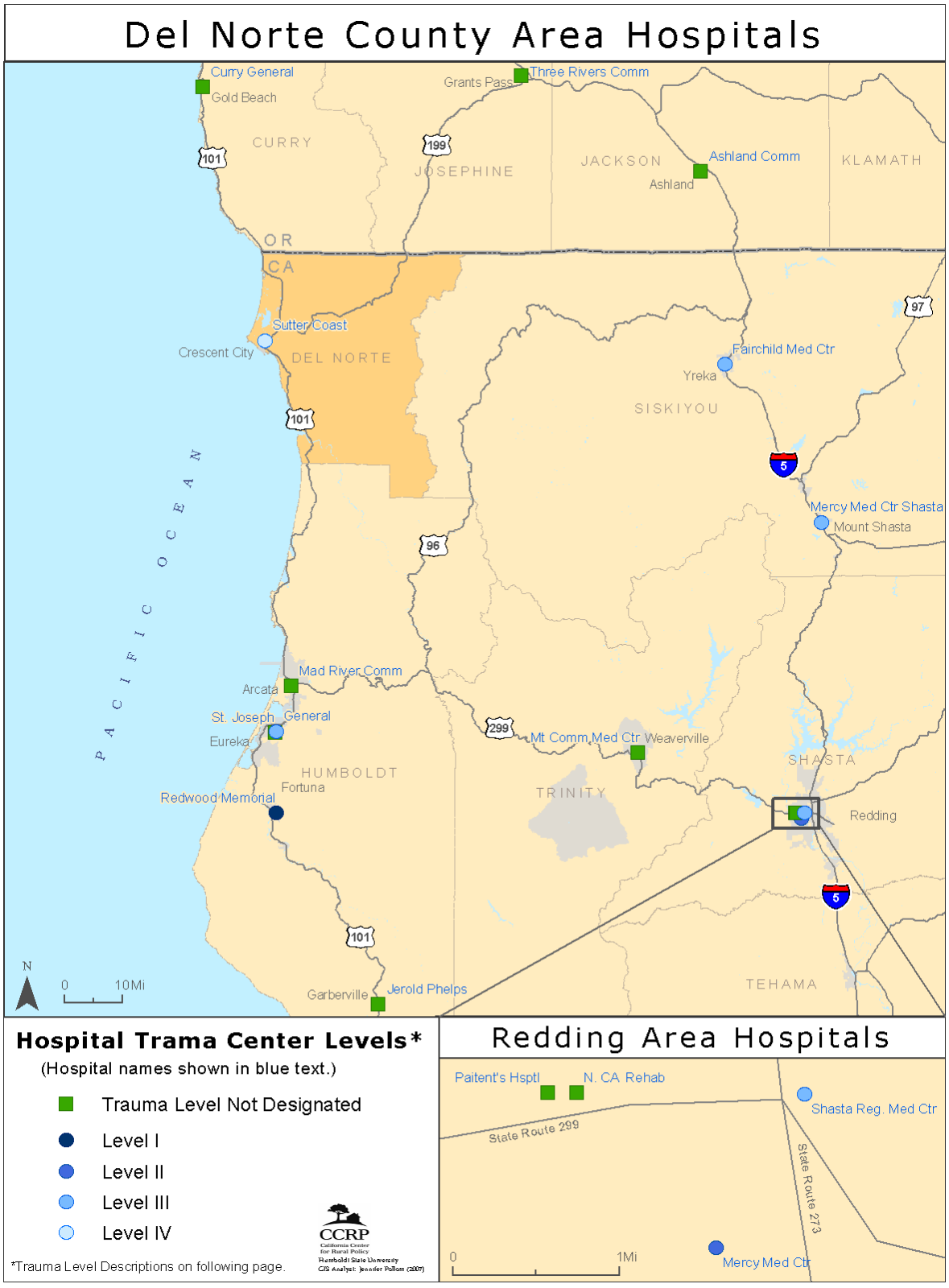
Map 5.


Percent of Children Ages 17 and Under
Below Poverty Level in Del Norte County
Oregon State Border
Smith River
Fort Dick
Gasquet
Crescent City
Siskiyou County
Requa
Klamath
Humboldt County
0
10
20 Miles
Percent by Census Tract
16.6%
20.1% - 25%
44.1%
Other Counties
Community
State Population 17 and Under Population 17 and Under Below Poverty Level Percent of Population 17 and Under Below Poverty Level
California 9,249,829 *1,757,100 19.0%
County
Del Norte 6896 *1818 26.4%
* These numbers are estimates from U. S. Census Bureau, Summary File 3. All other numbers are total counts from U. S. Census Bureau, Summary File 1.
CCRP
California Center for Rural Policy
© Humboldt State University
GIS Analyst: Jennifer Folliott (2006)
Source: U. S. Census Bureau (2000)

Map 6.


Percent of Children Under Age 5
Below Poverty Level in Del Norte County
Oregon State Border
Smith River
Fort Dick
Gasquet
Crescent City
Siskiyou County
Requa
Klamath
Humboldt County
0
10
20 Miles
Percent by Census Tract
0% - 10%
32.1%
38.7%
40.1% - 43.1%
Other Counties
Community
State Population Under 5 Population Under 5 Below Poverty Level Percent of Population Under 5 Below Poverty Level
California 2486981 *489256 19.7%
County
Del Norte 1525 *522 34.2%
* These numbers are estimates from U. S. Census Bureau, Summary File 3. All other numbers are total counts from U. S. Census Bureau, Summary File 1.
CCRP
California Center for Rural Policy
© Humboldt State University
GIS Analyst: Jennifer Pollom (2006)
Source: U.S. Census Bureau (2000)

Map 7.


Del Norte County Area Hospitals
Curry General
Gold Beach
Grants Pass
Three Rivers Comm
CURRY
JOSEPHINE
JACKSON
Ashland Comm
Ashland
KLAMATH
101
199
OR
CA
Sutter Coast
Crescent City
DEL NORTE
Fairchild Med Ctr
Yreka
SISKIYOU
97
5
Mercy Med Ctr Shasta
Mount Shasta
96
PACIFIC OCEAN
Mad River Comm
Arcata
St. Joseph General
Eureka
HUMBOLDT
Fortuna
Redwood Memorial
299
Mt Comm Med Ctr Weaverville
TRINITY
SHASTA
Redding
N
0
10Mi
Garberville
Jerold Phelps
TEHAMA
Hospital Trama Center Levels*
(Hospital names shown in blue text.)
Trauma Level Not Designated
Level I
Level II
Level III
Level IV
*Trauma Level Descriptions on following page.
CCRP
California Center for Rural Policy
Humboldt State University
GIS Analyst: Jennifer Pelton (2007)
Redding Area Hospitals
Paitent's Hsptl
N. CA Rehab
Shasta Reg. Med Ctr
State Route 299
State Route 273
0
1Mi
Mercy Med Ctr

Trauma Level Descriptions

The four levels below refer to the kinds of resources available in a trauma center and the number of patients admitted yearly. These are categories that define national standards for trauma care in hospitals, which were developed and recommended by the American College of Surgeons.

Level	Description
I	A Level I trauma center has a full range of specialists and equipment available 24-hours a day and admits a minimum required annual volume of severely injured patients. Additionally, a Level I center has a program of research, is a leader in trauma education and injury prevention, and is a referral resource for communities in neighboring regions.
II	A Level II trauma center works in collaboration with a Level I center. It provides comprehensive trauma care and supplements the clinical expertise of a Level I institution. It provides 24-hour availability of all essential specialties, personnel and equipment. Minimum volume requirements may depend on local conditions. These institutions are not required to have an ongoing program of research or a surgical residency program.
III	A Level III trauma center does not have the full availability of specialists, but does have resources for the emergency resuscitation, surgery and intensive care of most trauma patients. A Level III center has transfer agreements with Level I and/or Level II trauma centers that provide back-up resources for the care of exceptionally severe injuries.
IV	A Level IV trauma center provides the stabilization and treatment of severely injured patients in remote areas where no alternative care is available.

GIS Layer Description for Del Norte County Area Hospitals

The attributes and records in the Hospitals GIS layer used in the Del Norte County Health Provider Recruiting and Retention Plan, Del Norte County Area Hospitals map came from data mining. Since Del Norte County exists on the border of California and Oregon, data was obtained from two separate sources. Data for the California hospitals were obtained from the Office of Statewide Health Planning and Development (OSHPD).

Data for Oregon Hospitals were obtained from the Oregon Office of Rural Health's web site (www.ohsu.edu/oregonruralhealth/). Each hospital was called in January 2007 to confirm the designated trauma level.

Appendix C

Physician and Advanced Practice Clinicians (APC) Census, January 2007

		Physician	
Category	Specialty	APC	Location Name
County Gov	Psy	Butler, Raphaelle A.	County Mental Health
County Gov	Psy	Soper, Robert	County Mental Health
County Gov	Psy	Myer,Thomas	County Mental Health
County Gov	Psy	Voigt, Alfred	County Mental Health
Health Clinic	PCP	Groves-Rehwaldt, Katrina C.	Del Norte Comm. Health Center
Health Clinic	PCP	Rehwaldt, Warren	Del Norte Comm. Health Center
Health Clinic	PCP	Pearson, Clint T.	Del Norte Comm. Health Center
Health Clinic	PCP	Scott Rennie	Del Norte Comm. Health Center
Health Clinic	PCP	Alex Wade	Del Norte Comm. Health Center
Health Clinic	PCP	Bonnet, Michael	Del Norte Comm. Health Center
Health Clinic	PCP	Rotin, Chris	Del Norte Comm. Health Center
Health Clinic	PCP	Stein, Daniel	Del Norte Comm. Health Center
Health Clinic	PCP	Thomas, Laurie	Del Norte Comm. Health Center
Health Clinic	PCP	Kimble, Marty	Del Norte Comm. Health Center
UIHS Clinic	PCP	Betts, Jennifer L.	United Indian Health Services
UIHS Clinic	PCP	Gagnon, Chad	United Indian Health Services
UIHS Clinic	PCP	McCreary, Tim	United Indian Health Services
UIHS Clinic	PCP	Liebler, Katie	United Indian Health Services
Hospital Based	Rad	Vollger, Helmuth	Del Norte Medical Imaging
Hospital Based	Rad	Burton, David	Del Norte Medical Imaging
Hospital Based	EM	Holmes, James H. (Jim)	Sutter Coast Emergency Room
Hospital Based	EM	Mc Callum, Gerald S.	Sutter Coast Emergency Room
Hospital Based	EM	Saunders, Sandra K.	Sutter Coast Emergency Room
Hospital Based	EM	Butler, Joan	Sutter Coast Emergency Room
Hospital Based	EM	Gastelum, Gina	Sutter Coast Emergency Room
Hospital Based	IM	Sheikho, Hassan S. (Sam)	Sutter Coast Hospital Hospitalists
Hospital Based	IM	Rotating Physician	Sutter Coast Hospital Hospitalists
Hospital Based	CRNA	Bischoff, Thomas	Sutter Coast Anesthesia
Hospital Based	CRNA	Smith, William	Sutter Coast Anesthesia
Hospital Clinic	PCP	Baker, Kalani	Sutter Coast Urgent Care Clinic
Hospital Clinic	PCP	Croy, Howard	Sutter Coast Urgent Care Clinic
Hospital Clinic	PCP	Heitter, David	Sutter Coast Urgent Care Clinic
Hosp Practice	OB	Tynes, John W.	Sutter Coast Community Clinic
Hosp Practice	OB	Pfunder, Margot	Sutter Coast Community Clinic
Private	IM/PCP	Blundell, Matthew C.	Crescent City Internal Medicine
Private	IM/PCP	Dimitrova, Albena V.	Crescent City Internal Medicine
Private	IM/PCP	Micheletti, Donald W.	Crescent City Internal Medicine

Private	IM/PCP	Gurnov, Andrean	Crescent City Internal Medicine
Private	PCP	Wood, Kathryn	Crescent City Internal Medicine
Private	Ortho	Duncan, Gregory J. (Greg)	Gregory Duncan, M.D.
Private	Urol	Davis, Mark H.	North Coast Urology
Private	ENT	Hoffman, Douglas S.	Pacific Northwest E.N.T.
Private	Opth	Cink, David E.	Pacific Vision Medical Center
Private	Opth	Eninger, Larry A.	Pacific Vision Medical Center
Private	PCP	Caldwell, Kevin J.	Redwood Medical Offices
Private	PCP	Sund, Donna M.	Redwood Medical Offices
Private	Surg	Polidore, Thomas M.	Thomas M. Polidore, M.D.
Private	Surg	Nguyen, Tien H.	Tien Nguyen, M.D.
Private	PCP	Morrow, James A.	Crescent City Family Practice, Medical Clinic, Inc.
Private	PCP	Morrow, Karen	Crescent City Family Practice, Medical Clinic, Inc.
Private	PCP	Ramsey, Judith	Crescent City Family Practice, Medical Clinic, Inc.
Not Counted for Benchmarks			
Prison		Lange, Heino H.	Pelican Bay State Prison
Prison		Marino, Rick J.	Pelican Bay State Prison
Prison		Sayre, Michael C.	Pelican Bay State Prison
Prison		Van Osdel Iii, Lewis	Pelican Bay State Prison
Prison		Williams, Claire (Bud)	Pelican Bay State Prison
		Duncan, Anne M.	Gregory Duncan, M.D.
		Ruben, Samuel M.	Crescent City Family Practice Medical Clinic
		Mize, Richard J.	Del Norte Comm. Health Center
		Chang, Christopher C.	Pacific Coast Allergy
		Nickels, Russell	Russell Nickels, M.D.
		Vipond, H. Joann	Joann H. Vipond, M.D.

Appendix D

Rural Health Information Survey

HUMBOLDT STATE UNIVERSITY

Rural Health Information Survey

CCRP California Center for Rural Policy

Thank you for assisting in this important survey to help us understand and improve health and healthcare in your community. Participation in this survey is voluntary and confidential. Please have someone in your household complete the survey and return it in the postage paid envelope by **September 15th 2006**. If you are under the age of 18 do not complete this survey.

1. In general would you say your health is: ***Please check one.***

☐ Excellent ☐ Very Good ☐ Good ☐ Fair ☐ Poor

2. Do you have any health problems? ☐ No ☐ Yes, Please list the main ones here: _____

_____

3. During the past 6 months how often did you feel sad or depressed? ***Please check one.***

☐ All of the time ☐ Most of the time ☐ Some of the time ☐ A little of the time ☐ None of the time

4. Within the past 12 months, were you able to get the healthcare (including mental healthcare) you needed?

☐ Healthcare not needed ☐ Yes ☐ No If No, please explain why_____

_____

5. Within the past 12 months, were you able to get your child(ren) the healthcare (including mental healthcare) they needed?

☐ Healthcare not needed ☐ Yes ☐ No If No, please explain why_____

☐ Not applicable (no children) _____

6. What types of health insurance do you have? ***Please check all that apply.***

☐ None ☐ MediCare ☐ Other government plans such as: Healthy Families, Family Planning Access Care and Treatment (PACT), County Medical Service Program (CMSP).

☐ Private insurance through work ☐ MediCal

☐ Private insurance, not through work

☐ Other (please explain)_____

7. If you **DO NOT** have any type of health insurance, what is the **ONE MAIN** reason why? _____

_____

8. Where do you go for health care? ***Please fill in all that apply.***

	Please check all that apply What town?	How long does it usually take to get there from your home?	In the past year how many times did you go there?
Doctor's Office/Clinic	☐		
Emergency Room	☐		
Urgent Care Center	☐		
Tribal Health Clinic	☐		
Other: **explain**	☐		
Do not seek healthcare	☐		

9. If you **DO NOT** seek healthcare, what is the **ONE MAIN** reason why?_____

10. During the past 12 months, did you visit a hospital emergency room **for your own health**?

☐ No ☐ Yes If Yes, how many times_____ What was it for?_____

Did you visit a hospital emergency room for your **child (s) health**?

☐ No ☐ Yes If Yes, how many times_____ What was it for?_____

☐ Not applicable (no children)

11. How long has it been since you last visited a doctor or healthcare provider for a routine check-up? _____

A routine check-up is a general physical exam, not an exam for a specific injury, illness, or condition.

12. Do you regularly go outside your county for health services?

☐ No **If No skip to question #13**

☐ Yes **If Yes, *Please check all that apply below***

☐ Needed services not available in my county. What services? _____

☐ Quality better elsewhere ☐ Nearer to my place of work

☐ When I moved I kept my old doctor(s) ☐ Too hard to get appointment with local doctor

☐ My insurance plan does not cover the local doctors ☐ Local doctors don't speak my language

☐ Local doctors don't accept my insurance ☐ Other (please explain)_____

13. During the past 12 months have you seen any of the following types of practitioners for your health? ***Please check all that apply.***

☐ Medical Doctor or Osteopathic Doctor ☐ Curandero/Curandera ☐ Dentist

☐ Nurse Practitioner or Physician Assistant ☐ Massage Therapist ☐ Acupuncturist

☐ Naturopathic Doctor/ Herbalist ☐ Physical Therapist ☐ Midwife

☐ Traditional Indian Healer/Native Healer ☐ Occupational Therapist ☐ Other_____

☐ Medicine Man/Woman ☐ Chiropractor ☐ None

14. To the best of your knowledge when did you have the following? ***Please check one box for each item***

	1-12 months ago	1-2 years ago	2-5 years ago	5-10 years ago	10 or more years ago	Don't know	Never
Blood Pressure checked							
Blood Sugar checked (diabetes test)							
Blood Cholesterol checked							
Colonoscopy or Sigmoidoscopy (tube inserted through rectum to look for signs of cancer or other problems)							
Fecal blood test (feces/poop is put on cards and sent to lab to look for blood)							
Teeth cleaned at Dentist's office							
Tetanus vaccination							
Flu vaccination							
TB test (tuberculosis skin test)							
PSA (men only) (A blood test to screen for prostate cancer)							
Mammogram (women only)							
Thermography (women only)							
Pap Smear (women only)							

15. What is the greatest difficulty you encounter in meeting the health needs of you and your family?

_____

16. Do you currently have mold in your home on an area greater than the size of a dollar bill? ***Please check one.***

☐ No ☐ Yes ☐ Don't Know

17. Do you have a source of electricity/power in your home?

☐ No ☐ Yes Please list your sources of electricity/power _____

18. How long have you lived in the local area? _____Years

19. What county do you live in?

☐ Del Norte ☐ Humboldt ☐ Trinity ☐ Mendocino ☐ Other_____

20. How do you **usually** learn about health?
Please check the 3 main sources.

☐ Friends	☐ Native Healer	☐ Television	☐ Posters
☐ Family	☐ Health Department	☐ Radio	☐ None
☐ Doctor/Healthcare provider/Nurse	☐ School	☐ Internet	☐ Other _____
☐ Curandero/Curandera	☐ Church	☐ Newspaper	
☐ Alternative Health Care Provider	☐ Health Classes	☐ Books, magazines	

21. Are you satisfied with the ways you learn about health? ☐ Yes ☐ No Please list other ways you would like to learn about health _____

22. Do you live in a: ***Please check one.***

☐ House ☐ Duplex ☐ Mobile home/trailer ☐ Building with 3 or more units ☐ Other _____

23. In what year were you born?_____

24. What is your gender? ☐ Male ☐ Female ☐ Other _____

25. How would you describe your ethnicity? ***Please check one.*** If you are multi-racial, please describe your ethnic background.

☐ White	☐ Latino/Latina	☐ Native American	☐ Multi-racial_____
☐ African American	☐ Asian	☐ Other_____	

26. What languages do you speak at home? ***Please check all that apply.***

☐ English	☐ Korean	☐ Vietnamese	☐ Native American Languages
☐ Spanish	☐ Mandarin	☐ Hmong languages	☐ Other_____
☐ Cantonese	☐ Tagalog	☐ Asian Indian languages	

27. Which of the following best describes your current employment situation? ***Please check one.***

☐ Employed by a company/business	☐ Unemployed	☐ Disabled
☐ Homemaker	☐ Laid-off, but looking for work	☐ Other _____
☐ Self-employed	☐ Retired	

28. How many **total hours per week** do you usually work at **all jobs or businesses**? _____ hours per week

29. What is your best estimate of your household's total income per year before taxes in dollars? _____

30. Including yourself, how many people living in your household are supported by your total household income?
Number of people_____

31. In the last 12 months were you or people living in your household ever hungry because you couldn't afford enough food?

☐ Yes ☐ No ☐ Don't Know

32. How do you feel about your household's total income per year? ***Please check one***

☐ It is **not** enough to meet basic needs (housing, heat, food, clothing, transportation)
☐ It is barely enough to meet basic needs
☐ It is enough to meet basic needs
☐ It is enough to meet basic needs and have some extra
☐ It is more than enough to meet basic needs and afford luxuries

33. How many people total (including yourself) currently live in your household? _____*People*

34. In the past 6 months, how many children age 0-5 years have lived in your household? _____*Children*

35. In the past 6 months, how many children age 6-17 years have lived in your household?_____*Children*

36. What is the highest level of education that you have completed? ***Please check one.***
☐ Did not complete high school ☐ Vocational training ☐ College graduate
☐ GED/ High School certificate ☐ Some college ☐ Graduate or professional training beyond college degree.
☐ High school graduate ☐ Other _____

37. **In your home** do you have: A phone? ☐ Yes ☐ No
A computer? ☐ Yes ☐ No
Internet access? ☐ Yes ☐ No

38. How often do you smoke cigarettes? ***Please check one.***
☐ Daily ☐ A few times a week ☐ A few times a month ☐ A few times a year ☐ Never

39. How often do you drink four or more alcoholic beverages on one occasion? ***Please check one.***
☐ Daily ☐ A few times a week ☐ A few times a month ☐ A few times a year ☐ Never

40. In a usual week, how many days do you participate in **moderate** activity for **at least 30 minutes per day**? (Examples include but not limited to: brisk walking, bicycling, vacuuming, gardening or anything else that causes some increase in breathing or heart rate) ***Please circle one.***
Number of days per week: 0 1 2 3 4 5 6 7

41. In a usual week, how many days do you participate in **vigorous** activity for at **least 20 minutes per day**? (Examples include but not limited to: running, aerobics, heavy yard work, or anything else that causes large increases in breathing or heart rate) ***Please circle one.***
Number of days per week: 0 1 2 3 4 5 6 7

42. How far do you live from the post office where you get your mail? _____ Miles

43. How far away from your home is the store where you normally buy food? _____ Miles

44. Within 5 miles, what is the closest major road intersection to your home? _____ and _____

45. How far do you live from your nearest neighbor? ***Please check one.***
☐ Just next door ☐ Less than a 10 minute walk ☐ A 10-20 minute walk ☐ More than a 20 minute walk

46. What is your **primary** mode of transportation? ***Please check one.***
☐ Walk ☐ Bicycle ☐ Public transportation ☐ Car/Truck ☐ Other_____

47. Do you or someone in your household have a vehicle?
☐Yes ☐ No

48. In an **average day**, how much time do you spend driving or in a vehicle? _____Hours _____Minutes

49. Is transportation a problem in meeting the health needs of you or your family?
☐ No ☐ Yes If Yes, please explain why_____

50. Do you have training in any of the following? ***Please check all that apply.***
☐ First aid ☐ CPR ☐ First Responder ☐ EMT ☐ Other health related training_____
☐ None of the above

51. In your community, does anyone (aside from yourself) have training in any of the following? ***Please check all that apply.***
☐ First aid ☐ CPR ☐ First Responder ☐ EMT ☐ Other health related training_____
☐ None of the above ☐ Don't know

Thank you for your time.

This survey is sponsored by the California Center for Rural Policy (CCRP) at Humboldt State University.
Please contact Dr. Jessica Van Arsdale, (707) 826-3401, jva@humboldt.edu, if you have any questions or comments regarding this survey.

Appendix E

Health Professional Shortage Area (HPSA) Designation Grid

	Facility HPSA		Population Based HPSA		Geographic HPSA		Physician Scarcity Area
What is It?	A designation available to RHCs and clinics that pledge to serve all people regardless of their ability to pay. Can be concurrent with other HPSAs and the PSA.		A designation documenting the inadequate population to provider FTE in the area. Involves a survey and application process. This particular type of HPSA usually tracks MD time spent with the low income.		This HPSA designation is for a whole area (MSSA, which in Del Norte is the county) instead of a sub-group. Involves a survey and application process. Can be concurrent with Facility HPSA and PSA but not Population-based HPSA.		This is granted by CMS based on information reported by County Medical Societies to the AMA.
What are the benefits?	With a high enough score (14+ for MDs), the clinic can be more competitive recruiting National Health Service Corps providers.		With a high enough score (14+ for MDs), the clinic can be more competitive recruiting National Health Service Corps providers.		Primary care providers not receiving cost-based reimbursement are eligible to receive a 10% Medicare Bonus. With a high enough score (14+for MDs), the clinic can recruit National Health Service Corps providers. *In May 2005, when NCCN was last surveyed, Del Norte did not have a high enough score to receive this benefit, which is why we went with a population-based HPSA.*		A 5% Medicare Bonus Payment. May be in addition to the Low Income HPSA or the Geographic HPSA 10% bonus payment for a 15% bonus total.
How to get it?	Somebody (NCCN) requests a score reevaluation		Somebody (NCCN, with community approval?) requests a score reevaluation.				No application is necessary. Geographic areas eligible for incentive bonus are identified by zip code. CMS is currently making a determination with regard to DN County's omission from the eligible list.
Who is eligible to benefit?	Del Norte Community Health Center	Score was reevaluated 2006.	Del Norte Community Health Center	All are currently eligible for the benefits. More private practice assignment information is at: http://nhsc.bhpr.hrsa.gov/	Hospital and Private Providers	10% Medicare Bonus for FFS work.	Hospitals, Clinics (per Heather) and private physicians. Bonus payments are made automatically every quarter.
	United Indian Health Services	Not applied for.	Sutter Coast Hospital			Ability to recruit NHSC providers if the HPSA score is over 14.	
	Sutter Rural Health Clinics (all RHCs)	Sutter must pledge to see all clinic patients regardless of ability to pay	Private providers				

Appendix F

Local Business Resources

Starting a clinical practice is similar to starting any business; it is complicated and time consuming. Just the "business" tasks constitute a considerable list:

- Setting up a corporate structure
- Applying for financing
- Business license
- Insurance
- Professional advice: accountants, attorneys
- Buying or renting an office
- Supplies, furniture and equipment
- Hiring employees
- Billing service
- Answering service
- Business computers and support

The following list was compiled by the authors as a starting point to assist with locating business start-up resources and is not meant to be an endorsement of any one individual or firm. Services were chosen from Del Norte or if unavailable, Humboldt, and then the rest of the state. Del Norte does not offer many of the specialty services for supporting physician practices. (Verizon SuperPages, http://www.superpages.com/ for Crescent City CA 95531, January 2007)

Accountants

Cholwell Benz & Hartwick CPA's
1225 Marshall St Ste 2
Crescent City CA 95531
707-464-9591

Jeffery A Corning CPA
467 H St
Crescent City CA 95531
707-464-1040

Musser & Associates CPA's
Crescent City CA 95531
707-464-4188

Samuel Rutledge CPA
495 H St
Crescent City CA 95531
707-464-4444

Attorneys: Business, Corporation & Partnership Law

Chris Doehle
625 F St
Crescent City CA 95531
707-465-3894

Marilyn Mullen
625 F St
Crescent City CA 95531
707-464-9595

Billing Services: Medical

CHB Financial Services
1225 Marshall St Ste 2
Crescent City CA 95531
707-464-1989

Downtown Business & Professional Services
431 H St
Crescent City CA 95531
707-464-7840

Professional Claims Management
Crescent City CA 95531
707-464-2527

Bookkeeping Services

McPherren's Tax Service
1080 Mason Mall Ste 2
Crescent City CA 95531
707-464-2778

S & W Bookkeeping
539 H St
Crescent City CA 95531
707-464-9731

Employment Agencies

Del Norte Management Connections
1305 Northcrest Dr
Crescent City CA 95531
707-465-4620

Insurance: Business

Farmers Insurance Group
349 G St
Crescent City CA 95531
707-464-3185

Fraser-Yamor-Jacobs & Young Insurance Agency
990 East Front St
Crescent City CA 95531
707-464-3333

Niblack Insurance & Investment Services
1337 Northcrest Dr
Crescent City CA 95531
707-465-2075

Northwest Insurance Agency Inc.
1325 Northcrest Dr
Crescent City CA 95531
707-465-6508

Weir, John W. Insurance
584 G St
Crescent City CA 95531
707-464-9539

Medical Equipment & Supplies

Apria Health Care
630 G St
Crescent City CA 95531
707-464-4242

Lincare Inc.
Crescent City CA 95531
707-465-1893

Orthocare
1080 Mason Mall Ste 6C
Crescent City CA 95531
707-465-1111

Office Furniture, Equipment, & Supplies

Del Norte Office Supply
240 I St
Crescent City CA 95531
707-464-5680

Mory's
810 Chetco Ave
Brookings OR 97415
800-782-8578

Practice & Business Consultants

Keith Borglum
Professional Management & Marketing
3468 Piner Rd
Santa Rosa CA 95401
707-546-4433
E-mail kborglum@practicemgmt.com
www.PracticeMgmt.com

Debra Phairas
Practice & Liability Consultants
461 Second St #229
San Francisco CA 94107
415-764-4800
E-mail plcsanfran@aol.com
www.practiceconsultants.net

Ron Rosenberg
Practice Management Resource Group
4040 Civic Center Dr, Suite 200
San Rafael CA 94903
415-925-4334
E-mail ronr@medicalpmrg

Rural Human Services
Business Resource Center
286 M St
Crescent City CA 95531
707-464-7441
www.ruralhumanservices.org

Real Estate: Commercial

Advance Real Estate
185 Mason
Crescent City CA 95531
707-464-5829

Bayside Realty
695 101 S
Crescent City CA 95531
707-464-9585

Century 21 Hamilton Realtors
785 E Washington, Suite 2
Crescent City CA 95531
707-465-2121

Firstmark Properties
Crescent City CA 95531
707-464-8200

Jacqueline Cochran Realtor
587 J St
Crescent City CA 95531
707-464-5812

Ming Tree Real Estate
1000 Northcrest Dr
Crescent City CA 95531
707-464-8741

North Woods Realty
700 Northcrest Dr
Crescent City CA 95531
707-464-7355

Redwood Coast Realty
1228 2nd
Crescent City CA 95531
707-464-5393

Tab & Associates
1080 3rd St
Crescent City CA 95531
707-464-6000

Telephone Answering Service

Silva & Hartwick Your Exchange
625 2nd St
Crescent City CA 95531
707-464-0400