

# **The Economic Impact of Health Care Providers in Del Norte County, California**

Erick Eschker

and

Julia R. West

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Erick Eschker is a research associate of the California Center for Rural Policy and an Associate Professor and Chair of the Economics Department at Humboldt State University. He is also the Director of the Humboldt Economic Index and was formerly a research economist at the American Medical Association.

Julia R. West is a student research associate of the California Center for Rural Policy and an Economics major at Humboldt State University.

## **Introduction**

The primary purpose of this Economic Impact Report is to calculate the contribution of the health sector to the Del Norte economy. In addition to the 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 to Del Norte County in order to keep health care dollars spent locally will have rather large economic benefits in addition to increased 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 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 of the population and advances in medical technology. In Del Norte County, the elderly are a slightly greater percent 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 County 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, a total of 945 jobs are created, and total income of \$36,926,276 is generated in the county.

The Economic Impact of Health Care Providers in Del Norte County, 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 County 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 County 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 15.0 percent from 2002 through 2012. Over the same period, their 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 2002-2012 will be 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 is 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 County.

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 of the not only the amount of health care providers in the area, but also 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 County will grow faster than the overall population. According to population projections by the California Department of Finance, the total population in Del Norte County will grow by 11 percent from 2000 to 2020, while the population age 65 and older will grow by 60 percent. But the quality of health care services is not only important to attract elderly populations, but also to retain elderly populations. If Del Norte County is to attract and retain elderly households, and the spending that those households provide, it will need to insure that quality health care services are readily available.

### **Demographic, Economic, and Health Characteristics of Del Norte County**

Table 1 provides an economic snapshot of Del Norte County and comparative data for California. In general, Del Norte County has a lower per capita income and a greater reliance on transfer payments as a percent of total personal income as compared to the state. Del Norte County's per capita income is just \$20,534 in 2004 compared to \$35,219 for the state. Transfer payments account for 31.4 % of total personal income for the county, compared to only 12.9% of California. Median household incomes are also much lower in Del Norte County than across California: \$29,901 in Del Norte compared to \$48,440 for the state.

**Table 1-Selected Demographic and Economic Indicators for Del Norte County & California**

<b>Economic Indicator</b>	<b>Del Norte County</b>	<b>California</b>
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 Income, 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%

\* Thousand dollars

Source: Compiled from CA Dept of Finance, BEA, CA EDD, BLS and DHS data, November 2006.

The unemployment rate in Del Norte County is much higher than California overall. In 2005, Del Norte County's unemployment rate was 7.4% compared to 5.4% 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% use MediCal, compared to 6% of California in 2003. In Del Norte, 56.1% of those eligible are enrolled in MediCal, compared to only 33.5% of California. SSI/SSP recipients were 7.1% of Del Norte's population, compared to 3.2% of California and CALworks recipients were 8.4% of the county's population compared to 3.4% 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 2 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.

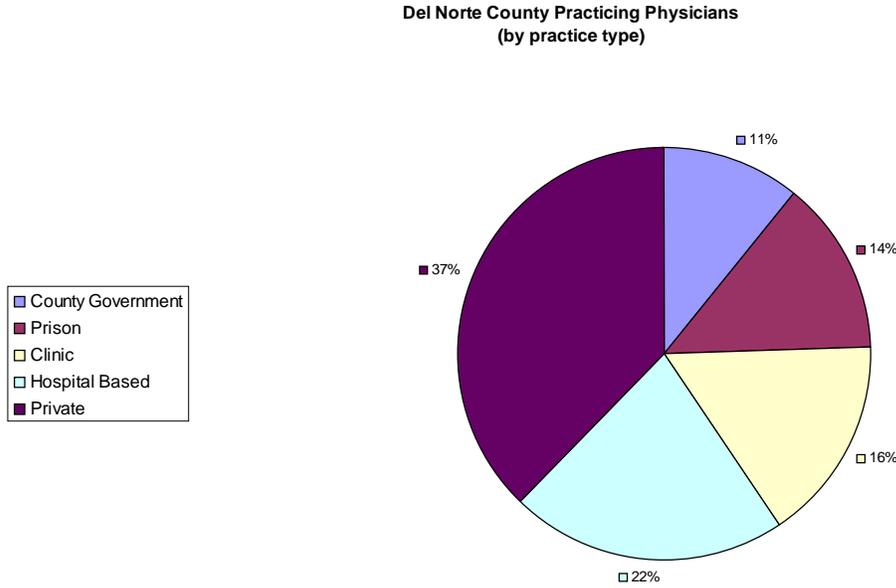
**Table 2-Selected Health Indicators for Del Norte County & California**

<b>Health Indicator</b>	<b>Del Norte County</b>	<b>California</b>
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.

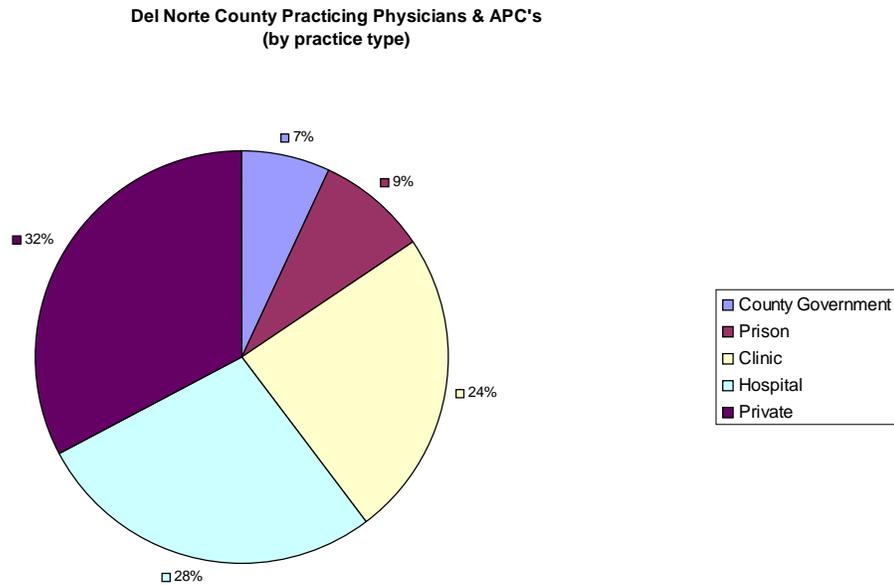
Figure 1 shows full-time and part-time Del Norte County physicians by practice type. Over one third of physicians report that they work in private practice. Almost one in five report that they work for the hospital and fourteen percent work in a clinic setting. Pelican Bay Prison employs twelve percent of physicians, and almost one in ten physicians is not practicing. 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 1.



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

Figure 2.



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

To summarize the demographic, economic, and health characteristics, Del Norte County is poorer as a whole, with a median household income only 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 industry changes 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 flows 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 County, 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 the year 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.

IO models make use of *multipliers* which 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 account these likely leakages 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 County, 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 and full-time and part-time workers. These definitions are listed in Table 3.

**Table 3-Definition of Health Care Economic Impact Multipliers**

<b>Multiplier Type</b>	<b>Direct</b>	<b>Indirect</b>	<b>Induced</b>	<b>Total</b>
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 is *Hospitals*, which provide 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 which may operate their own practices or work in clinics or other medical centers, such as hospitals. *Nursing Care and Facilities* provide residential care along with nursing or supervisory services. *Other Ambulatory Health Care* providers include ambulatory health services, outpatient care and mental and substance abuse centers, and diagnostic labs. Finally, *Other Health Services* include home health care services, pharmacies, direct health and medical insurance carriers, and medical and dental technology and equipment industries.

***Direct Effects***

Table 4 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 contribute almost \$31 million to production in Del Norte County, provide income to wage earners and self-employed workers of almost \$15 million, and employ 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 4-Direct Impact of Health Care in Del Norte County**

<b>Category</b>	<b>Output</b>	<b>Income</b>	<b>Employment</b>
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 County 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 5 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 5-Top Ten Leading Industries by Output in Del Norte County**

<b>Industry</b>	<b>Output</b>	<b>Income</b>	<b>Employment</b>
State & Local Non-Education	\$107,195,000	\$107,195,000	1891
<b>Health Care Industry*</b>	<b>\$55,369,000</b>	<b>\$30,114,000</b>	<b>673</b>
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.

### ***Indirect and Total Effects***

Tables 6, 7, and 8 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 6 considers output in each sector. For example, hospitals produced over thirty million dollars 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 6-Total Impact on Output from Health Care in Del Norte County**

<b>Category</b>	<b>Direct</b>	<b>Indirect</b>	<b>Total</b>
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 7 reveals a similar pattern, though the pattern is uneven. For instance, *Nursing Care Facilities* generates more income directly (over \$1 million) in the county, but *Other Ambulatory Health Care* has a larger effect on supporting businesses (\$143 million). One induced effects are included, the total impact on income is still larger for *Nursing Care Facilities* (\$1,354,608).

**Table 7-Total Impact on Income from Health Care in Del Norte County**

<b>Category</b>	<b>Direct</b>	<b>Indirect</b>	<b>Total</b>
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 8 shows that *Hospitals* and *Physicians and Dentists* have sizeable indirect and induced effects on Del Norte County employment. Between 50 percent and 33 percent more employment is generated by these two sectors beyond direct staffing of their respective offices.

**Table 8-Total Impact on Employment from Health Care in Del Norte County**

<b>Category</b>	<b>Direct</b>	<b>Indirect</b>	<b>Total</b>
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 Public 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 County 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 Del Norte County. Thus, health care "leakages" out of Del Norte County adversely affect a broad group of businesses and employees.

The two closest areas with upgraded medical facilities are Eureka, California and Grants Pass, Oregon. Crescent City, the capital and 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](http://www.mapquest.com). 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 California Center for Rural Policy conducted a Rural Health Information Survey which 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 healthcare. The main reason reported is "Needed services not available in Del Norte" (24%). 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 County from residences seeking services elsewhere. It must be stated that these amounts are to a great extent 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 Hospital and Physician and Dentist expenditures outside of the area. We then chose a less conservative approach where a full 24 percent of existing Hospital and Physician and Dentist expenditures are made outside of the area. The results are presented in Table 9. 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 9-Total Impact on Income and Employment from Del Norte County Residents Seeking Health Care Elsewhere**

<b>Category</b>	<b>Amount Spent Outside of Del Norte</b>	<b>Loss of Income</b>	<b>Loss of Employment (jobs)</b>
<i>5% leakage</i>			
Hospitals	\$1,546,000	\$917,087	23
Physicians and Dentists	\$991,650	\$798,774	19
<i>24% leakage</i>			
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 9, 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 are 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 are largely speculation, but we hope that these numbers highlight the potential importance of keeping health care spending within Del Norte County.

## **Conclusion**

The health care sector is one of the largest in Del Norte County. The total economic impact of health care spending in the Del Norte economy is \$76,513,596 in production, 945 jobs created, and total income of \$36,926,276. Still, Del Norte County 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.

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