

The Impact of Hospitals on the Nevada Economy

Report prepared by:

**John Packham, PhD and Tabor Griswold, MS
Nevada Office of Rural Health
University of Nevada School of Medicine**

**Shannon Price, MS and Tom Harris, PhD
Center for Economic Development
University of Nevada, Reno**

January 2008

The Impact of Hospitals on the Nevada Economy

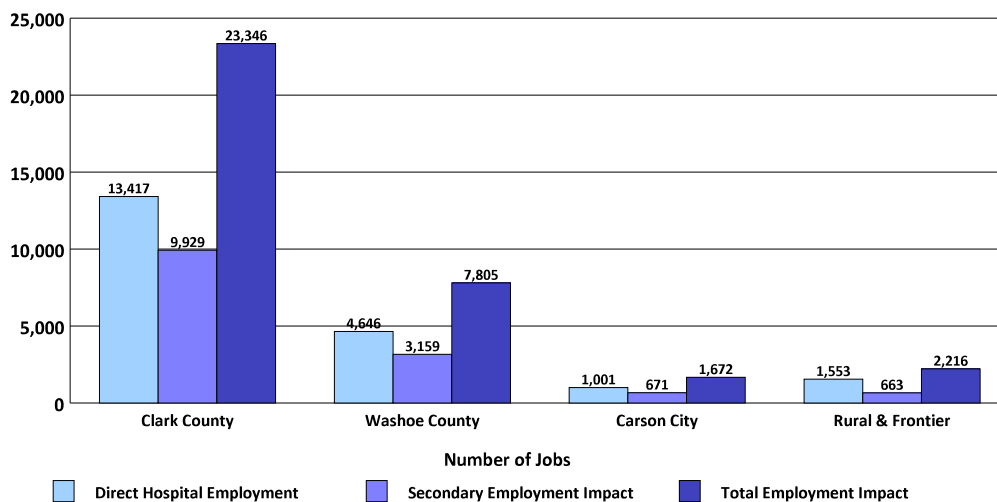
Executive Summary

In 2006, Nevada hospitals treated 390 thousand people in their emergency departments, performed nearly 400 thousand inpatient and outpatient surgeries, and delivered over 18 thousand babies. Every year community and specialty hospitals provide vital health care services to thousands of people across Nevada. The importance of hospitals to their communities, however, extends far beyond health care.

The Impact of Hospitals on the Nevada Economy documents the economic contribution of hospitals to the state's economy. The report provides estimates of the direct and indirect impact of hospital operating activities and hospital construction on payroll and employment in Nevada. Impacts are estimated at the county, regional, and state level in Nevada utilizing hospital employment and payroll data for the year 2006. The analysis presented in this report reveals that Nevada's hospitals have a substantial impact on the state's economy – a contribution typically overlooked in public policy discussions of health care cost containment, access to care, and community benefits.

Hospitals are not only a major employer and source of income in their own right, they play a critical role in local and regional economic development by generating employment and income in a wide range of other businesses and contributing to the tax base at the state and local levels. The combination of an overall increasing population base and a rapidly growing elderly population in Nevada suggest that there will be steady growth in demand for hospital services and thus growth in employment in the hospital sector in Nevada over the next decade. Figure 1 highlights the employment impact of community hospitals in Nevada.

Figure 1: Employment Impact of Nevada Community Hospitals – 2006



In 2006, 20,617 people were employed by the state’s 32 community hospitals. Nevada community hospitals generated an additional 14,421 jobs in other Nevada businesses through normal operating activities during 2006. The total number of jobs (direct and secondary) created by Nevada community hospitals was 35,038.

Figure 1 also points to the regional distribution of employment impacts. Community hospitals in the three urban counties of Nevada provided 19,064 jobs that generated a secondary employment impact of 13,759 jobs for a total employment impact of 32,823 jobs. Clark County community hospitals generated an employment impact of 23,346 jobs, including 9,929 jobs created as a result of secondary spending by hospitals and hospital employees. Community hospitals in rural and frontier counties provided 1,553 jobs that generated an additional secondary employment impact of 663 for a total employment impact of 2,216 jobs. In rural areas of the state, hospitals are typically the largest or second largest employer behind the county school district and hospital employees represent 10 to 15% of the local workforce.

Figure 2 summarizes the payroll impact of community hospitals in Nevada. In 2006, the state’s 32 community hospitals generated \$1.33 billion in payroll. Nevada community hospitals generated an additional \$573 million in payroll in other Nevada businesses through normal operating activities during 2006. The total amount of payroll (direct and secondary) created by Nevada community hospitals was \$1.91 billion.

Figure 2: Payroll Impact of Nevada Community Hospitals – 2006

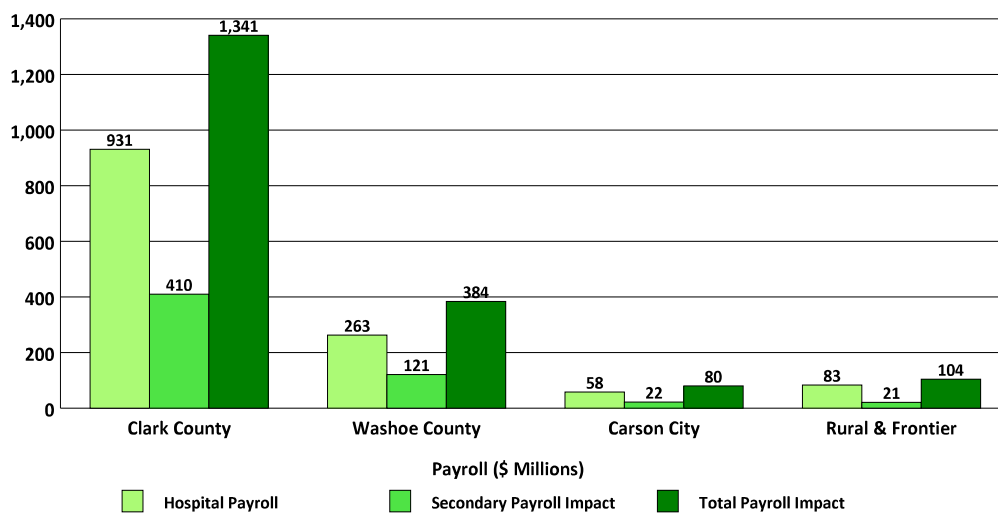
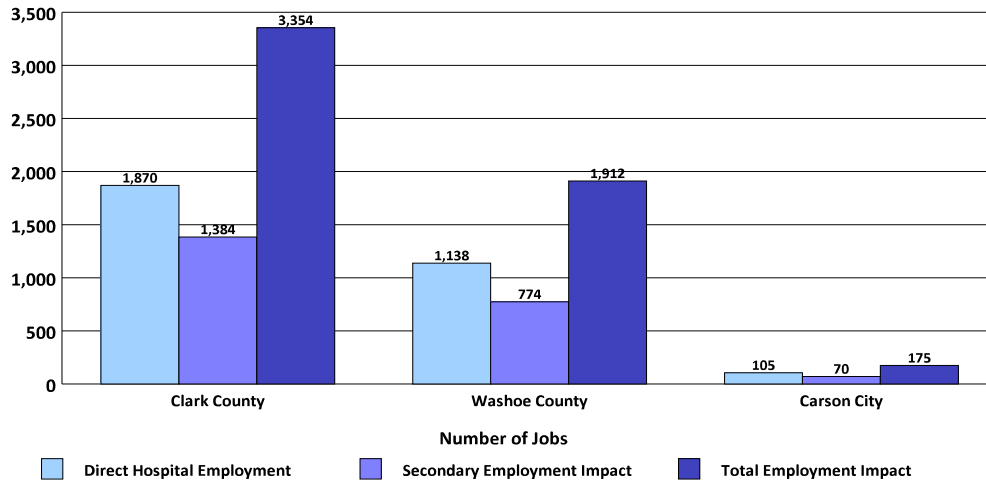


Figure 2 also highlights the regional distribution of employment impacts. Community hospitals in the three urban counties of Nevada provided \$1.25 billion in payroll that generated a secondary income impact of \$552.3 million for a total payroll impact of \$1.8 billion. Clark County community hospitals alone had a total payroll impact of \$1.34 billion, including \$409.6 million in payroll created as a result of secondary spending by hospitals and hospital employees. Community hospitals in rural and frontier counties had a combined payroll of \$83

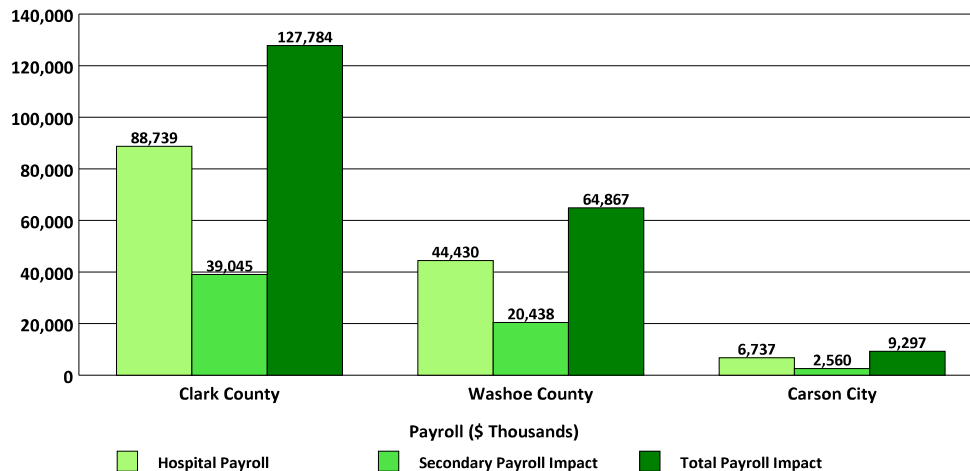
million that generated an additional secondary payroll impact of \$20.7 for a total payroll impact of \$103.7 million for workers in rural and frontier communities of Nevada.

Figure 3: Employment Impact of Specialty Hospitals in Nevada – 2006



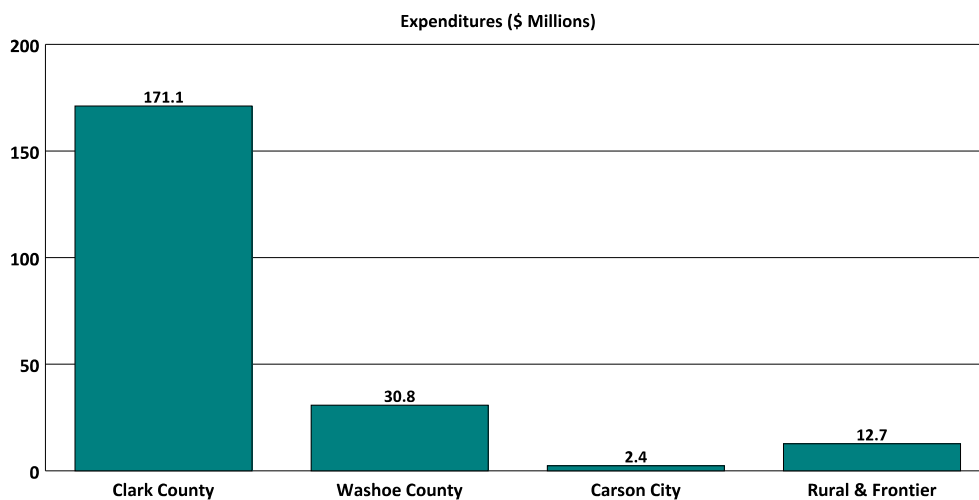
Figures 3 and 4 summarize, respectively, the employment and payroll impact of psychiatric, rehabilitation, and other specialty hospitals in Nevada in 2006. Specialty hospitals are exclusively confined to the state’s three urban counties. While the economic impact of specialty hospitals is comparatively modest to that of community hospitals, the state’s specialty hospitals nonetheless generated a total employment impact of over five thousand jobs and nearly \$200 million in payroll to employees of those facilities and other businesses in Nevada.

Figure 4: Payroll Impact of Specialty Hospitals in Nevada – 2006



The contribution of Nevada community and specialty hospitals to the state’s economy are not simply limited to the employment and income impacts of hospital operating and business activity. The hospital sector has made a substantial economic impact on the state’s economy through the direct and secondary impact of hospital construction and capital improvements. In 2006, 19 community hospitals in Nevada spent \$217 million on construction and major facility expansions. Again, Clark County led the way with over \$170 million in new spending. However, Washoe County’s three principal hospitals spent \$30.8 million and five rural facilities spent nearly \$13 million on new major facility expansions in 2006.

Figure 5: Hospital Construction and Major Facility Expansions in Nevada – 2006



The \$217 million in total output in the Nevada economy represented by the combined construction spending of Nevada hospitals resulted in an estimated \$98.3 million in employee compensation and \$10.5 million in other income to self-employed individuals. There were a total of 1,874 jobs directly associated with producing that output.

Hospital construction employee spending contributed an estimated \$92.6 million in total industry output, \$26.4 million in employee compensation, and \$3.5 million in other income. The induced effects of hospital employee spending were responsible for an additional 777 jobs to the Nevada economy.

Nevada hospital construction expenditures in 2006 resulted in \$364.3 million in total industry output in the state. Construction expenditures also generated \$143.4 million in employee compensation and \$3.5 million in other income to Nevada residents. Finally, the same hospital expenditures resulted in the net creation of 3,118 jobs in Nevada during 2006.

The most important economic impact of community and specialty hospitals is in the direct jobs, salaries, and wages of hospital employees. However, the purchasing power of hospitals and hospital employees ripples through the state's economy. In addition to providing medical care for thousands of Nevadans each day, Nevada hospitals purchase several million dollars worth of goods and services each year. Moreover, hospital workers earn wages and salaries above the norm for Nevada – when those employees purchase housing, food and clothing, cars and appliances, and services, they spur local and regional economic development in numerous ways. Finally, the taxes paid by direct and secondary employment in Nevada supports schools, community colleges and universities, local police and fire departments, cultural and arts programs, and a wide range of public services and amenities, such as community centers, parks, and recreational facilities.

In conclusion, a strong hospital industry provides essential health care services, improves quality of life in a myriad of direct and indirect ways, and helps Nevada attract and retain businesses and jobs. Major employers from other economic sectors will never locate nor stay in Nevada communities that lack strong hospital and health care systems. Policymakers must recognize that hospitals and strong health care systems play a key role in making Nevada an attractive place to settle, locate a business, or retire. Economic planning and development agencies frequently seek high-tech, manufacturing, and service industries that will create new, well-paying jobs. Across the state, Nevada hospitals are doing just that and should not be overlooked as economic engines in their own right. Hospitals in Nevada have created a steady source of jobs and job growth, even during economic downturns. Hospital jobs in Nevada are characterized by high pay relative to other jobs and are not easily outsourced.

This report – *The Impact of Hospitals on the Nevada Economy* – was undertaken by John Packham and Tabor Griswold at the University of Nevada School of Medicine and Tom Harris and Shannon Price of the University of Nevada, Reno. Utilizing an economic impact model developed specifically for the health care industry, the report examines the direct economic contribution of hospitals operations and construction, as well as the indirect or secondary income and employment impacts created as a secondary effect of hospital operating activity and construction. Utilizing data sources prepared by the federal government, input-output tables have been developed that enable researchers to examine and model the economic impact of employment and expenditures on a region's economy. The estimated impact of the hospital sector on jobs and income in other businesses utilize employment and income multipliers specifically derived for Nevada.

The Nevada Hospital Industry

The health services industry continues to be one of the fastest growing sectors in the Nevada economy and hospital care is the largest component of that sector. Between 1970 and 2000, employment in the hospital sector in Nevada grew at an annual rate of 8.2%. Hospital employment increased from 2,041 in 1970 to 21,737 in 2000. During the same period, hospital payroll rose from \$11.2 million to \$772.9 million – the inflation-adjusted average salary in the Nevada hospital sector grew from \$20,029 in 1970 to \$33,677 in 2000 (Bureau of Economic Analysis 2005). Table 1 highlights recent changes in hospital employment and payroll in Nevada. Across each region of the state, employment, nominal payroll, and real wages per job grew between 2001 and 2005. In general, recent employment and payroll growth in the hospital sector has been robust, even during the economic downturn that followed the events of 9/11. The data also suggest that employment growth in the hospital sector has been accompanied by the growth of disproportionately better paying jobs.

Table 1: Employment and Payroll in Nevada Hospitals – 2001 to 2005

REGION/CATEGORY	2001	2003	2005	CHANGE – 2001 to 2005	
				Number	Percent
CLARK COUNTY					
Employment	15,669	16,607	18,008	2,339	14.9
Nominal Payroll (Millions \$)	\$646.0	\$794.1	\$972.4	\$326.4	50.5
Real Wage per Job (Thousands \$)	\$41.2	\$47.8	\$54.0	\$12.8	31.0
WASHOE COUNTY					
Employment	5,880	6,017	5,959	79	1.3
Nominal Payroll (Millions \$)	\$243.6	\$289.3	\$315.7	\$72.0	29.6
Real Wage per Job (Thousands \$)	\$41.4	\$48.1	\$53.0	\$11.5	27.8
BALANCE OF STATE					
Employment	972	934	1,100	128	13.2
Nominal Payroll (Millions \$)	\$38.3	\$38.1	\$49.4	\$11.1	28.9
Real Wage per Job (Thousands \$)	\$39.4	\$40.7	\$45.0	\$5.5	13.9
NEVADA TOTAL					
Employment	22,521	23,558	25,067	2,546	11.3
Nominal Payroll (Millions \$)	\$927.9	\$1,121.4	\$1,337.5	\$409.5	44.1
Real Wage per Job (Thousands \$)	\$41.2	\$47.6	\$53.4	\$12.2	29.5

Source: Bureau of Labor Statistics (2007).

Data presented in Table 2 indicate that steady employment growth in the hospital sector will continue through the next decade. According to the Nevada Department of Employment, Training, and Rehabilitation, Nevada hospitals will add an estimated 12,720 jobs between 2004 and 2014. Most of that growth will take place in the Las Vegas region, which is expected to add over 9,000 jobs during the same period.

Table 2: Projected Employment in Nevada Hospitals – 2004 to 2014

REGION/CATEGORY	2004	2014	CHANGE – 2004 to 2014		
			Number	Percent	Annual Growth Rate (Percent)
LAS VEGAS MSA	16,834	26,151	9,317	55.3	4.5
BALANCE OF STATE	9,241	12,644	3,403	36.8	N/A
NEVADA TOTAL	26,075	38,795	12,720	48.8	4.1

Source: Nevada Department of Employment, Training, and Rehabilitation (2007).

The next set of tables and figures documents the principal factors responsible for the recent and projected growth in demand for health services in hospital care in Nevada: (1) population growth, (2) population aging, (3) economic growth, and (4) personal income growth.

Tables 3 and 4 document population trends and projections for Nevada prepared by the Nevada State Demographer’s Office. The state’s population is projected to increase by 1.1 million or 40.4% between 2006 and 2016. Most of this growth is taking place in the Las Vegas metropolitan area, where the population is projected to increase from an estimated 1.9 million in 2006 to 2.8 million in 2016. While the amount and rate of population growth is greatest in southern Nevada (Clark County topped the 2 million mark in 2007), rural regions of the state and urban areas of northwestern Nevada will continue to experience substantial population increases over the next decade.

Population aging represents the second major demographic influence on the demand for hospital services in Nevada. Table 4 indicates that the number of Nevadans aged 65 and over is projected to increase by an estimated 196,423 or 54.9% from 2006 to 2016. Southern Nevada alone will add nearly 125,000 residents aged 65 and over through 2016. In general, the principal demographic determinants driving increased demand for hospital and other health care services – population growth and population aging – will continue to increase dramatically for the next decade.

Table 3: Projected Population in Nevada by County and Region – 2006 to 2016

COUNTY/REGION	ESTIMATED POPULATION			POPULATION CHANGE – 2006 to 2016	
	2006	2011	2016	Number	Percent
RURAL AND FRONTIER					
Churchill County	27,037	29,015	31,306	4,270	15.8
Douglas County	50,752	54,415	58,430	7,682	15.1
Elko County	47,137	45,981	43,659	- 3,481	- 7.4
Esmeralda County	1,243	1,131	1,057	- 186	- 14.9
Eureka County	1,505	1,634	1,592	88	5.8
Humboldt County	17,396	17,456	16,748	- 648	- 3.7
Lander County	5,419	5,471	5,537	118	2.2
Lincoln County	4,070	4,897	5,087	1,347	33.1
Lyon County	51,373	63,222	73,749	22,377	43.6
Mineral County	4,619	4,685	4,765	146	3.2
Nye County	43,570	53,908	62,323	18,753	43.0
Pershing County	6,763	6,801	5,325	- 35	- 0.5
Storey County	4,106	4,589	5,069	963	23.4
White Pine County	9,209	9,296	9,352	143	1.6
<i>Rural and Frontier Subtotal</i>	<i>274,198</i>	<i>302,502</i>	<i>325,734</i>	<i>51,536</i>	<i>18.8</i>
URBAN					
Carson City	58,245	64,184	70,071	11,826	20.3
Clark County	1,892,391	2,379,242	2,791,542	899,151	47.5
Washoe County	406,223	455,878	505,614	99,391	24.5
<i>Urban Subtotal</i>	<i>2,356,859</i>	<i>2,899,304</i>	<i>3,367,228</i>	<i>1,010,097</i>	<i>42.9</i>
NEVADA – TOTAL	2,631,057	3,201,806	3,692,962	1,061,904	40.4

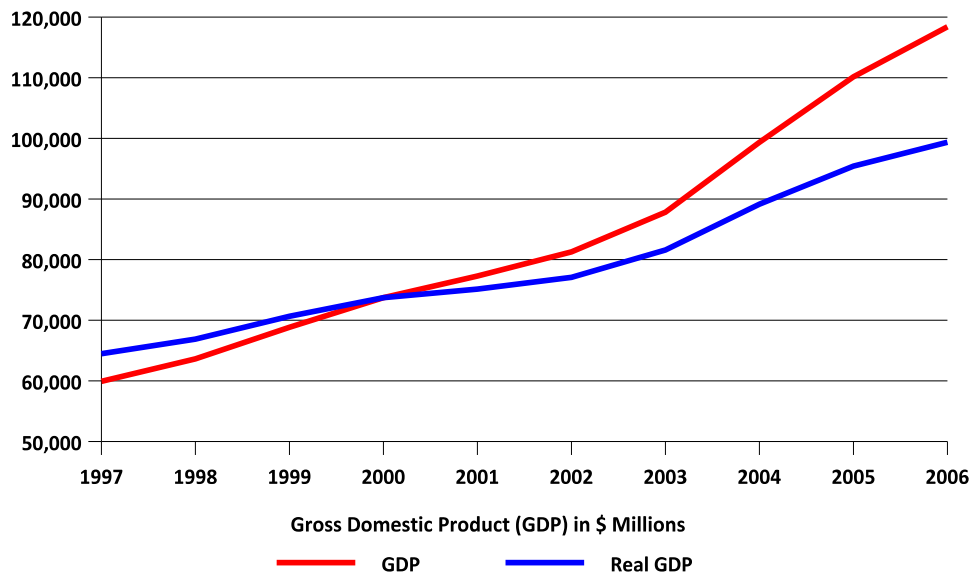
Source: Nevada State Demographer's Office (2006).

**Table 4: Projected Population Aged 65 and Over in Nevada
by County and Region – 2006 to 2016**

COUNTY/REGION	ESTIMATED POPULATION 65 and OVER			POPULATION CHANGE – 2006 to 2016	
	2006	2011	2016	Number	Percent
RURAL AND FRONTIER					
Churchill County	3,165	3,513	4,111	947	29.9
Douglas County	8,586	10,304	12,629	4,043	47.1
Elko County	3,600	4,587	5,722	2,122	58.9
Esmeralda County	210	215	237	27	12.7
Eureka County	187	203	198	11	5.8
Humboldt County	1,734	2,183	2,714	980	56.5
Lander County	531	741	962	431	81.1
Lincoln County	660	884	1,135	475	72.0
Lyon County	7,371	9,361	11,660	4,288	58.2
Mineral County	984	936	945	- 39	- 4.0
Nye County	9,281	12,194	14,737	5,455	58.8
Pershing County	685	756	838	153	22.3
Storey County	683	921	1,163	480	70.2
White Pine County	1,417	1,427	1,523	106	7.5
<i>Rural and Frontier Subtotal</i>	<i>39,095</i>	<i>48,224</i>	<i>58,572</i>	<i>19,477</i>	<i>49.8</i>
URBAN					
Carson City	8,372	9,535	11,294	2,922	34.6
Clark County	205,755	264,019	329,600	123,844	60.2
Washoe County	42,260	49,503	60,635	18,374	43.5
<i>Urban Subtotal</i>	<i>318,830</i>	<i>400,684</i>	<i>495,776</i>	<i>176,946</i>	<i>55.5</i>
NEVADA – TOTAL	357,924	448,908	554,347	196,423	54.9

Source: Nevada State Demographer's Office (2006).

Figure 6: Nevada Gross Domestic Product– 1997 to 2006



In addition to population growth and aging, economic growth and personal income growth are both closely related to increased spending on health care and the demand for health care professionals (Cooper 2004). Figure 6 documents the steady growth over the past decade in Nevada's gross domestic product (GDP), i.e., the dollar value of all goods and services produced by businesses in the state. State GDP nearly doubled from \$59.9 billion in 1997 to \$118.4 billion in 2006. Moreover, real or inflation-adjusted state GDP (the blue line in Figure 1) grew by 54.1% or nearly \$35 billion despite the national recession and local dip in tourism following the 9/11 tragedy.

Table 5 documents growth in personal income from 2000 to 2005 by county and region. Personal income refers to income from all sources, including wages and salaries (the largest component of aggregate personal income), rental income, government subsidy payments, and interest and dividend income. As such, personal income is a fairly reliable indicator of future consumer demand, including expenditures on health care and hospital services. Data contained in Table 5 indicates widespread growth in personal income across all counties and regions of the state, including rural and frontier counties. Personal income growth during the five year period exceeded ten percent in 16 of 17 Nevada counties during the five year period. In summary, recent and projected demographic and economic trends indicate that demand for health care and hospital services will be robust for the next decade.

Table 5: Personal Income in Nevada by County and Region – 2000 to 2005

COUNTY/REGION	PERSONAL INCOME (Thousands of Dollars)		CHANGE – 2000 to 2005	
	2000	2005	Number	Percent
RURAL AND FRONTIER				
Churchill County	\$601,860	\$831,247	\$229,387	38.1
Douglas County	1,638,752	2,178,123	539,371	32.9
Elko County	1,114,625	1,373,054	258,429	23.2
Esmeralda County	23,703	28,453	4,750	20.0
Eureka County	38,070	42,433	4,363	11.5
Humboldt County	393,227	474,650	81,423	20.7
Lander County	145,782	162,813	17,031	11.7
Lincoln County	77,548	100,053	22,505	29.0
Lyon County	801,308	1,155,212	353,904	44.2
Mineral County	121,749	129,072	7,323	6.0
Nye County	796,770	1,161,801	365,031	45.8
Pershing County	112,587	126,292	13,705	12.2
Storey County	95,879	129,099	33,220	34.6
White Pine County	219,655	291,403	71,748	32.7
<i>Rural and Frontier Subtotal</i>	<i>\$6,181,515</i>	<i>\$8,183,705</i>	<i>\$2,002,190</i>	<i>32.4</i>
URBAN				
Carson City	\$1,683,799	\$2,117,628	\$433,829	25.8
Clark County	41,239,251	59,793,250	18,553,999	45.0
Washoe County	12,322,546	16,129,509	3,806,963	30.9
<i>Urban Subtotal</i>	<i>\$55,245,596</i>	<i>\$78,040,387</i>	<i>\$22,794,791</i>	<i>41.2</i>
NEVADA – TOTAL	\$61,427,864	\$86,224,092	\$24,796,228	40.4

Source: Bureau of Economic Analysis (2007).

Tables 6 through 9 provide a profile of community and specialty hospitals in Nevada. In this report, community hospitals refer to general, acute-care medical-surgical hospitals, while specialty hospitals refer to psychiatric, rehabilitation, and other non-acute care hospitals.

Table 6 includes data on selected utilization and economic data for community hospitals in Nevada for the period 2000 to 2006 utilizing (a) data published by the Nevada Division of Health Care Financing and Policy in their annual three-volume summary of Nevada Hospital Quarterly Reports and (b) unpublished data collected by the Nevada Hospital Association and Nevada Rural Hospital Partners. Over the past six years, community hospitals in Nevada have steadily added licensed beds, employees, and payroll. Since 2000, new and existing community hospitals have added 1,582 licensed beds. Moreover, the growth of hospital beds has kept pace with the state's explosive population growth. The number of licensed beds per capita increased from 1.85 beds per 1000 residents in 2000 to 2.03 beds per 1000 residents in 2006.

During the same time frame, statewide net operating revenue for community hospitals has increased by 101.6% to nearly \$3.6 billion. However, operating expenses grew at a faster pace (103.8%). Consequently, over the past six years hospital profit margins, profit per admission, and profit per inpatient day have remained relatively stable. Hospital profit margins have ranged from 2.2% to 3.3%, profit per admission have oscillated from \$195 to \$314 per admission, and profit per inpatient day has ranged from \$41 to \$69 per inpatient day. Table 9 also documents the wide range of charity or free care provided by Nevada's community hospitals, as well as the considerable amount of dollars invested in new hospital construction and other capital improvements. In summary, these data document the considerable and varied economic impact and contribution of Nevada hospitals to the state's economy.

Table 7 provides a snapshot of community hospitals in rural and frontier counties of Nevada (and community hospitals located in rural regions of urban counties). Collectively, these fifteen facilities provide hospital services to the estimated 250,000 Nevada residents residing in rural and frontier regions of the state. In 2006, rural and frontier hospitals in Nevada employed nearly 1,900 individuals and had a combined payroll of over \$100 million. Table 8 profiles community hospitals in the state's three urban counties. In 2006, the state's seventeen community hospitals in urban counties employed a reported 18,734 individuals and had a combined payroll of nearly \$1.2 billion. Finally, Table 9 provides a snapshot of psychiatric, rehabilitation, and other specialty hospitals in Nevada – facilities that are exclusively located in the state's three urban counties. In 2006, these facilities had 2,815 employees with a combined payroll of nearly \$140 billion.

In summary, the state's 56 community and specialty hospitals employed 23,430 individuals with a combined payroll of \$1.41 billion in 2006. The employment and payroll data contained in Tables 7 through 9 provide the basis for estimated employment and payroll impacts presented in the rest of this report.

Table 6: Selected Statistics on Community Hospitals in Nevada – 2000 to 2006

COMMUNITY HOSPITALS IN NEVADA	2000	2002	2004	2006
Number of Hospitals	24	25	29	32
Licensed Beds	3,733	4,124	4,655	5,330
Licensed Beds per 1000 Population	1.85	1.87	1.93	2.03
Nevada Population	2,023,378	2,206,022	2,410,768	2,623,050
Occupancy Rate	64%	66%	64%	69%
Total Admissions	258,095	289,319	309,782	345,110
Total Inpatient Days (adjusted)	1,167,796	1,328,176	1,457,974	1,624,822
Employment	N/A	21,417	22,555	23,976
Annual Employment Growth	N/A	2.1%	3.5%	3.8%
Salary, Wages, and Benefits	\$823,151,829	\$1,063,488,746	\$1,310,676,455	\$1,627,064,725
Net Operating Revenue	\$1,763,569,993	\$2,301,132,472	\$2,796,732,638	\$3,556,849,227
Operating Expenses	\$1,705,992,266	\$2,210,362,808	\$2,736,466,459	\$3,477,399,277
Profit (Revenue – Expenses)	\$57,577,727	\$90,769,664	\$60,266,179	\$79,449,950
Profit Margin (Profit / Revenue)	3.3%	3.9%	2.2%	2.2%
Revenue per Admission	\$6,833	\$7,954	\$9,028	\$10,306
Expenses per Admission	\$6,610	\$7,640	\$8,834	\$10,076
Profit per Admission	\$223	\$314	\$195	\$230
Revenue per Inpatient Day	\$1,510	\$1,733	\$1,918	\$2,189
Expenses per Inpatient Day	\$1,461	\$1,664	\$1,877	\$2,140
Profit per Inpatient Day	\$49	\$68	\$41	\$49
Charge Write-Off	\$316,994,235	\$484,686,066	\$733,198,482	\$866,107,731
Percent of Cost to Charges	33.8%	32.2%	28.2%	24.4%
Total Value of Free Care	\$107,144,051	\$156,553,599	\$206,761,972	\$339,301,936
Construction and Facility Expansions	\$222,799,827	\$190,419,692	\$378,720,959	\$216,965,121

Sources: The data contained in this table are derived from a variety of sources and may thus be at odds with employment, financial, and licensure data presented elsewhere in this report. Hospital utilization and financial data: Center for Health Information and Analysis (2007), Nevada Hospital Association (2007), and Nevada Rural Hospital Partners (2007). Employment data: Bureau of Labor Statistics (2007). Population estimates: Nevada State Demographer's Office (2006).

Table 7: Community Hospitals in Rural and Frontier Nevada

COMMUNITY HOSPITALS	LICENSED BEDS	ADMISSIONS	EMPLOYEES (FTE)	ANNUAL PAYROLL (Dollars)
Banner Churchill Community Hospital – Fallon	40	2,407	342	\$21,457,463
Battle Mountain General Hospital*	25	55	73	2,844,692
Boulder City General Hospital (Clark County)*	67	486	173	8,380,014
Carson Valley Medical Center – Gardnerville	25	723	129	8,276,292
Desert View Regional Medical Center – Pahrump	24	886	80	3,490,518
Grover C. Dils Medical Center – Caliente*	20	166	62	2,432,917
Humboldt General Hospital – Winnemucca*	52	557	110	4,486,024
Incline Village Community Hospital (Washoe County)	4	34	29	2,215,225
Mesa View Regional Hospital – Mesquite (Clark County)	25	1,023	128	7,281,104
Mount Grant General Hospital – Hawthorne*	35	265	105	4,095,130
Northeastern Nevada Regional Hospital – Elko	75	2,564	207	11,245,536
Nye Regional Medical Center – Tonopah*	44	267	46	1,766,758
Pershing General Hospital – Lovelock*	37	263	83	4,024,056
South Lyon Medical Center – Yerington*	63	397	192	7,326,327
William Bee Ririe Hospital – Ely	25	779	124	11,574,216
RURAL AND FRONTIER TOTAL	561	9,500	1,881	\$100,896,888

Source: Center for Health Information and Analysis (2007). Notes: Utilization and financial data is for the Calendar Year 2006, except for Boulder City Hospital (Calendar Year 2005). The number of licensed bed in some facilities (*) include acute and long-term care beds.

Table 8: Community Hospitals in Urban Nevada

COMMUNITY HOSPITALS	LICENSED BEDS	ADMISSIONS	EMPLOYEES (FTE)	ANNUAL PAYROLL (Dollars)
CARSON CITY				
Carson Tahoe Regional Medical Center	172	10,327	1,001	\$57,562,127
CLARK COUNTY				
Desert Springs Hospital Medical Center – Las Vegas	286	13,244	885	\$58,256,423
MountainView Hospital – Las Vegas	235	17,641	847	68,679,724
North Vista Hospital and Medical Center – North Las Vegas	185	8,489	557	29,380,937
St. Rose Dominican Hospital, Rose de Lima – Henderson	138	8,363	671	36,846,995
St. Rose Dominican Hospital, San Martin – Las Vegas	141	427	281	3,280,717
St. Rose Dominican Hospital, Siena – Henderson	214	17,490	1,233	68,387,596
Southern Hills Hospital – Las Vegas	139	5,804	367	26,762,728
Spring Valley Hospital Medical Center – Las Vegas	210	11,767	471	39,056,294
Summerlin Hospital Medical Center – Las Vegas	281	18,882	870	72,865,905
Sunrise Hospital and Medical Center – Las Vegas	701	35,518	2,663	175,514,513
University Medical Center – Las Vegas	554	30,029	2,868	196,752,440
Valley Hospital Medical Center – Las Vegas	404	19,921	1,404	79,628,774
WASHOE COUNTY				
Northern Nevada Medical Center – Sparks	100	3,260	331	18,942,427
Renown Regional Medical Center – Reno	538	25,520	2,358	135,756,187
Renown South Meadows Regional Medical Center – Reno	76	2,551	351	20,064,455
Saint Mary’s Regional Medical Center – Reno	380	14,207	1,577	85,896,374
URBAN TOTAL	4,754	243,440	18,734	1,173,634,616

Source: Center for Health Information Analysis (2007). Notes: Utilization and financial data is for the Calendar Year 2006.

Table 9: Psychiatric, Rehabilitation, and Other Specialty Hospitals in Nevada

SPECIALTY HOSPITALS	LICENSED BEDS	ADMISSIONS	EMPLOYEES (FTE)	ANNUAL PAYROLL (Dollars)
CARSON CITY				
Sierra Surgery Hospital	15	882	105	\$6,737,126
CLARK COUNTY				
Desert Canyon Rehabilitation Hospital	50	N/A	N/A	N/A
Desert Willow Treatment Center	58	258	107	N/A
Harmon Medical and Rehabilitation Hospital	116	21,155	264	5,806,637
Healthsouth Rehabilitation Hospital – Henderson	70	1,308	163	11,417,851
Healthsouth Rehabilitation Hospital – Las Vegas	70	1,940	212	8,396,151
Healthsouth Rehabilitation Hospital – Tenaya	79	727	197	10,619,511
Horizon Specialty Hospital	199	362	71	3,708,212
Kindred Hospital – Flamingo Campus	40	433	226	4,522,507
Kindred Hospital – Sahara Campus	92	819	133	12,817,142
Kindred Las Vegas at Desert Springs	52	471	73	7,587,591
Montevista Hospital	80	3,369	145	7,578,070
Progressive Hospital – Stonecreek Hospital East	24	360	60	3,857,590
Red Rock Behavioral Health Hospital	21	414	23	1,221,373
Southern Nevada Adult Mental Health Services	293	1,463	N/A	N/A
Spring Mountain Sahara	30	13	21	317,191
Spring Mountain Treatment Center	82	877	133	6,810,298
University Medical Center – Rancho Rehabilitation Ctr	34	351	43	4,079,059
West Care Mental Health	50	N/A	N/A	N/A
WASHOE COUNTY				
BHC West Hills Hospital	95	2,066	318	\$534,580
Northern Nevada Adult Mental Health Services	70	658	240	19,190,348
Renown Rehabilitation Hospital	62	807	158	9,392,607
Tahoe Pacific Hospital	60	554	125	8,640,027
Willow Springs Treatment Center	76	194	298	4,192,021
NEVADA – TOTAL	1,768	39,481	2,815	\$139,905,836

Source: Center for Health Information Analysis (2007).

The Impact of Hospitals on the Nevada Economy

The foregoing discussion highlights the significant economic contributions of Nevada hospitals to the state's economy. The hospital sector is a major source of employment and income for Nevadans. However, the preceding analysis does not tell the entire story since secondary economic impacts are created when hospitals and hospital employees spend money on goods and services. Secondary economic benefits are measured by multipliers using an input-output model and IMPLAN data, a model that is widely used by economists and other academics in the United States (see Appendix A for more information on IMPLAN and economic impact methodology). Additionally, secondary economic benefits are generated by hospital construction and other capital improvement projects pursued by Nevada hospitals and communities. As Nevada hospitals spend dollars for operating and capital expenditures, they create jobs and payroll in other businesses in the economy, not to mention tax revenue for municipal governments providing services for the same residents and local businesses. To the extent that dollars earned by hospital and construction employees are spent in Nevada, the health sector contributes to the creation of jobs and payroll in other Nevada businesses.

The jobs and payroll generated in other business establishments can be measured with employment and income multipliers derived for Nevada. Appendix A contains a description of economic impact analysis methodology, including an explanation of multiplier effects, and the model and data used to derive multipliers used in this report. The remainder of the report provides an analysis of the following three sets of economic impacts: (1) employment and income impact of community hospitals in Nevada by county and region; (2) employment and income impact of specialty hospitals in Nevada by region; and (3) employment and income impact of spending on construction and major facility expansions by hospitals in Nevada. All estimates utilize data collected for the calendar year 2006.

Economic Impact of Community Hospitals in Nevada

Table 10 provides estimates of the employment impact of community hospitals in Nevada by county and region. In 2006, 20,617 people were employed by the state's 32 community hospitals. Applying IMPLAN employment multipliers for the hospital sector, Nevada community hospitals generated an additional 14,421 jobs in other Nevada businesses through normal operating activities during 2006. The total number of jobs (direct and secondary) created by Nevada community hospitals was 35,038.

Table 10 also provides a county-level and regional breakdown of employment impacts. Community hospitals in rural and frontier counties provided 1,553 jobs that generated an additional secondary employment impact of 663 for a total employment impact of 2,216 jobs. Community hospitals in urban counties of Nevada provided 19,064 jobs that generated a secondary employment impact of 13,759 jobs for a total employment impact of 32,823 jobs.

Table 10: Employment Impact of Community Hospitals in Nevada by County – 2006

COUNTY	EMPLOYMENT IMPACT OF COMMUNITY HOSPITALS (Number of Jobs)			
	Hospital Employment	Type II Employment Multiplier	Secondary Employment Impact	Total Employment Impact
RURAL AND FRONTIER COUNTIES				
Churchill County	342	1.67	229	571
Douglas County	129	1.50	65	194
Elko County	207	1.40	83	290
Esmeralda County	0	—	—	—
Eureka County	0	—	—	—
Humboldt County	110	1.42	46	156
Lander County	73	1.23	17	90
Lincoln County	62	1.25	16	78
Lyon County	192	1.34	65	257
Mineral County	105	1.22	23	128
Nye County	126	1.45	57	183
Pershing County	83	1.26	22	105
Storey County	0	—	—	—
White Pine County	124	1.33	41	165
<i>Rural and Frontier Subtotal</i>	<i>1,553</i>	<i>1.43</i>	<i>663</i>	<i>2,216</i>
URBAN COUNTIES				
Carson City	1,001	1.67	671	1,672
Clark County	13,417	1.74	9,929	23,346
Washoe County	4,646	1.68	3,159	7,805
<i>Urban Subtotal</i>	<i>19,064</i>	<i>1.72</i>	<i>13,759</i>	<i>32,823</i>
NEVADA – TOTAL	20,617	1.70	14,421	35,038

Sources: Center for Health Information Analysis (2007) and Minnesota IMPLAN Group (2007). Clark County estimates include hospitals in rural areas of the county (Boulder City Hospital, Mesa View Regional Hospital) and Washoe County estimates include one hospital in a rural area of the county (Incline Village Community Hospital). There are no acute-care or community hospitals in Esmeralda, Eureka, and Storey Counties.

**Table 11: Impact of the Hospital Sector on Employment in Other
Economic Sectors in Nevada – 2006**

SECTOR	EMPLOYMENT IMPACTS (Number of Jobs)		
	Direct	Indirect and Induced	Total
Agriculture, Forestry, Fishing, & Hunting	0	37	37
Mining	0	19	19
Utilities	0	87	87
Construction	0	141	141
Manufacturing	0	369	369
Wholesale Trade	0	464	464
Transportation & Warehousing	0	682	682
Retail Trade	0	2,317	2,317
Information	0	195	195
Finance & Insurance	0	921	921
Real Estate & Rental	0	1,563	1,563
Professional – Scientific & Technical Services	0	1,207	1,207
Management of Companies	0	129	129
Administrative & Waste Services	0	1,703	1,703
Educational Services	0	161	161
<i>Hospital Sector</i>	<i>20,617</i>	<i>1,282</i>	<i>21,899</i>
Arts – Entertainment & Recreation	0	307	307
Accommodation & Food Services	0	1,805	1,805
Other Services	0	943	943
Government & Non-NAICS	0	88	88
NEVADA – TOTAL	20,617	14,421	35,038

Table 11 highlights the widespread distribution of secondary employment impacts of community hospitals across other sectors of the state's economy. The community hospital sector generated secondary employment impacts in every sector of the state's economy. Aside from the hospital sector itself, estimated secondary employment impacts were greatest in retail trade (2,317 jobs), accommodation and food services (1,805 jobs), and administrative and waste services (1,703 jobs).

Table 12 provides estimates of the income and payroll impact of community hospitals in Nevada by county and region. In 2006, the state's 32 community hospitals generated \$1.33 billion in payroll. Applying IMPLAN income multipliers for the hospital sector, Nevada community hospitals generated an additional \$573 million in payroll in other Nevada businesses through normal operating activities during 2006. The total amount of income (direct and secondary) created by Nevada community hospitals was \$1.9 billion. Table 12 also provides a county-level and regional breakdown of income impacts. Community hospitals in rural and frontier counties had a total payroll of \$83 million that generated a secondary income impact of \$20.6 million for a total payroll impact of \$103.7 million. Community hospitals in urban counties of Nevada had a total payroll of \$1.25 billion that generated a secondary income impact of \$552.4 million for a total payroll impact of \$1.8 billion.

Table 13 highlights the widespread distribution of secondary payroll impacts of community hospitals across other sectors of the state's economy. The community hospital sector generated secondary income impacts in every sector of the state's economy. Aside from the hospital sector, estimated secondary income impacts were greatest in retail trade (\$72.1 million), professional, scientific and technical services (\$63.3 million), and accommodation and food services (\$45.4 million).

Economic Impacts per Licensed Bed

In 2006, there were 5,330 licensed beds and 20,615 jobs in community hospitals in Nevada. In other words, the direct employment impact of community hospitals was 3.9 jobs per licensed bed. When secondary employment impacts are taken into account, Nevada community hospitals produced an additional 14,421 jobs or 2.7 jobs per licensed bed, resulting in a total employment impact of 6.6 jobs per licensed bed. In rural and frontier hospitals, the total employment impact was 3.9 jobs per licensed bed, as compared to 6.9 jobs per licensed in urban community hospitals in Nevada.

During the same year, community hospitals in Nevada generated \$1.33 billion in payroll or a direct payroll impact of \$250,339 per licensed bed. When secondary income impacts are taken into account, the state's 33 community hospitals generated \$573 million in payroll in other Nevada businesses or an additional \$107,508 in payroll per licensed bed. In 2006, the total payroll impact of community hospitals was \$357,847 per licensed bed. In rural and frontier hospitals, the total payroll impact was \$179,980 per licensed bed, as compared to \$379,398 per licensed in urban community hospitals in Nevada. In summary, the addition of each licensed bed in Nevada generates approximately \$350,000 in payroll for state residents.

Table 12: Payroll Impact of Community Hospitals in Nevada by County and Region – 2006

COUNTY	PAYROLL IMPACT OF COMMUNITY HOSPITALS (Dollars)			
	Hospital Payroll	Type II Income Multiplier	Secondary Payroll Impact	Total Payroll Impact
RURAL AND FRONTIER				
Churchill County	\$21,457,463	1.34	\$7,295,537	\$28,753,000
Douglas County	8,276,292	1.24	1,986,310	10,262,602
Elko County	11,245,536	1.31	3,486,116	14,731,652
Esmeralda County	0	—	—	—
Eureka County	0	—	—	—
Humboldt County	4,486,024	1.31	1,390,667	5,876,691
Lander County	2,844,692	1.18	512,045	3,356,737
Lincoln County	2,432,917	1.17	413,596	2,846,513
Lyon County	7,326,327	1.26	1,904,845	9,231,172
Mineral County	4,095,130	1.17	696,172	4,791,302
Nye County	5,257,276	1.20	1,051,455	6,308,731
Pershing County	4,024,056	1.13	523,127	4,547,183
Storey County	0	—	—	—
White Pine County	11,574,216	1.12	1,388,906	12,963,122
<i>Rural and Frontier Subtotal</i>	<i>\$83,019,929</i>	<i>1.25</i>	<i>\$20,648,777</i>	<i>\$103,668,706</i>
URBAN				
Carson City	\$57,562,127	1.38	\$21,873,608	\$79,435,735
Clark County	930,851,516	1.44	409,574,667	1,340,426,183
Washoe County	262,874,668	1.46	120,922,347	383,797,015
<i>Urban Subtotal</i>	<i>\$1,251,288,311</i>	<i>1.44</i>	<i>\$552,370,623</i>	<i>\$1,803,658,934</i>
NEVADA – TOTAL	\$1,334,308,240	1.43	\$573,019,400	\$1,907,327,640

Sources: Center for Health Information Analysis (2007) and Minnesota IMPLAN Group (2007). Clark County estimates include hospitals in rural areas of the county (Boulder City Hospital, Mesa View Regional Hospital) and Washoe County estimates include a hospital in a rural area of the county (Incline Village Community Hospital). There are no acute-care or community hospitals in Esmeralda, Eureka, and Storey Counties.

**Table 13: Impact of the Hospital Sector on Income and Payroll in Other
Economic Sectors in Nevada – 2006**

SECTOR	INCOME AND PAYROLL IMPACTS (Dollars)		
	Direct	Indirect and Induced	Total
Agriculture, Forestry, Fishing, & Hunting	\$0	\$562,499	\$562,499
Mining	0	345,391	345,391
Utilities	0	9,796,774	9,796,774
Construction	0	7,904,324	7,904,324
Manufacturing	0	18,707,029	18,707,029
Wholesale Trade	0	29,906,739	29,906,739
Transportation & Warehousing	0	31,673,273	31,673,273
Retail Trade	0	72,101,962	72,101,962
Information	0	10,438,966	10,438,966
Finance & Insurance	0	30,341,535	30,341,535
Real Estate & Rental	0	21,520,216	21,520,216
Professional – Scientific & Technical Services	0	63,344,402	63,344,402
Management of Companies	0	17,417,120	17,417,120
Administrative & Waste Services	0	42,560,992	42,560,992
Educational Services	0	4,522,591	4,522,591
<i>Hospital Sector</i>	<i>1,334,308,240</i>	<i>132,775,252</i>	<i>1,467,083,492</i>
Arts – Entertainment & Recreation	0	6,772,996	6,772,996
Accommodation & Food Services	0	45,423,046	45,423,046
Other Services	0	21,850,442	21,850,442
Government & Non-NAICS	0	5,053,852	5,053,852
NEVADA – TOTAL	\$1,334,308,240	\$573,019,400	\$1,907,327,640

Economic Impact of Specialty Hospitals in Nevada

Tables 14 and 15 provide estimates of the economic impact of Nevada’s 24 psychiatric, rehabilitation, and other specialty hospitals in Nevada. In 2006, specialty hospitals generated \$139.9 million in payroll or 6.8% of total hospital payroll in Nevada (community hospitals plus specialty hospitals). Specialty hospitals reported 3,113 jobs or 13.0% of all hospital jobs in Nevada.

Table 14 provides estimates of the employment impact of specialty hospitals. Direct employment in specialty hospitals was 3,113 jobs. Applying IMPLAN employment multipliers for the hospital sector, specialty hospitals generated an additional 2,228 jobs in other Nevada businesses through normal business operations. During 2006, the total employment impact of specialty hospitals in Nevada was 5,341 jobs.

Table 14: Employment Impact of Psychiatric, Rehabilitation, and Other Specialty Hospitals in Nevada by County – 2006

COUNTY	EMPLOYMENT IMPACT OF SPECIALTY HOSPITALS (Number of Jobs)			
	Hospital Employment	Type II Employment Multiplier	Secondary Employment Impact	Total Employment Impact
Carson City	105	1.67	70	175
Clark County	1,870	1.74	1,384	3,254
Washoe County	1,138	1.68	774	1,912
NEVADA – TOTAL	3,113	1.72	2,228	5,341

Sources: Center for Health Information Analysis (2007) and Minnesota IMPLAN Group (2007).

Table 15 provides estimates of the payroll impact of specialty hospitals in Nevada. Specialty hospitals provided \$139.9 million in direct payroll or income to hospital employees. Applying IMPLAN income multipliers for the hospital sector, Nevada specialty hospitals generated an additional \$62 million in payroll in other Nevada businesses through normal business activities. During 2006, the total amount of income (direct and secondary) created by Nevada specialty hospitals was approximately \$202 million.

Table 15: Payroll Impact of Psychiatric, Rehabilitation, and Other Specialty Hospitals in Nevada by County – 2006

COUNTY	PAYROLL IMPACT OF SPECIALTY HOSPITALS (Dollars)			
	Hospital Payroll	Type II Income Multiplier	Secondary Payroll Impact	Total Payroll Impact
Carson City	\$6,737,126	1.38	\$2,560,108	\$9,297,234
Clark County	88,739,183	1.44	39,045,241	127,784,424
Washoe County	44,429,527	1.46	20,437,582	64,867,109
NEVADA – TOTAL	\$139,905,836	1.44	\$62,042,931	\$201,949,767

Sources: Center for Health Information Analysis (2007) and Minnesota IMPLAN Group (2007).

Economic Impact of Spending on Hospital Construction and Major Facility Expansions

The previous sections detail the significant contribution of Nevada community and specialty hospitals to the state’s economy. Those contributions are not simply limited to the employment and income impacts of hospital operating and business activity. The hospital sector has made a substantial economic impact on the state’s economy through the direct and secondary impact of hospital construction and capital improvements. During the past decade, an estimated \$1.5 billion has been invested by Nevada hospitals and communities resulting in the construction of a dozen new hospitals and major facility expansions to nearly 30 existing facilities. Between 2000 and 2006, nearly 1,600 licensed beds were added to community hospitals in Nevada.

Utilizing unpublished data collected by the Nevada Hospital Association and Nevada Rural Hospital Partners, Table 16 presents the most current data on expenditures on construction and major facilities in Nevada. During 2006, 19 hospitals and communities in Nevada undertook new hospital construction and/or major facility expansions (construction or renovations to existing facilities in excess of \$100,000). The total dollar value of these capital improvements was an estimated \$217 million. The bulk of hospital construction activity has taken place in the Las Vegas area. However, new hospital construction and capital improvements have taken place in every region of the state, including nearly \$13 million spent on construction and facility improvements in five rural communities in 2006. Three new hospitals (all Critical Access Hospitals) have been built in rural Nevada since 2002.

**Table 16: Spending on Construction and Major Facility Expansions
by Hospitals in Nevada – 2006**

HOSPITALS / COUNTY	SPENDING ON CONSTRUCTION AND MAJOR FACILITY EXPANSIONS (Dollars)
CARSON CITY	
Carson Tahoe Regional Medical Center	\$2,389,882
CLARK COUNTY	
Desert Springs Medical Center Hospital – Las Vegas	\$638,484
MountainView Hospital – Las Vegas	1,284,314
St. Rose Dominican Hospital, Rose de Lima – Henderson	852,596
St. Rose Dominican Hospital, San Martin - Las Vegas	102,589,535
St. Rose Dominican Hospital, Siena – Henderson	118,788
Spring Valley Hospital Medical Center – Las Vegas	7,253,035
Summerlin Hospital Medical Center – Las Vegas	3,617,637
Sunrise Hospital and Medical Center – Las Vegas	8,315,999
University Medical Center – Las Vegas	959,074
Valley Hospital Medical Center – Las Vegas	45,432,020
RURAL and FRONTIER COUNTIES/AREAS	
Carson Valley Medical Center – Gardnerville, Douglas County	\$2,364,949
Humboldt General Hospital – Winnemucca, Humboldt County	118,451
Incline Village Community Hospital – Incline Village, rural Washoe County	275,987
Northeastern Nevada Regional Hospital – Elko, Elko County	8,082,686
William Bee Ririe Hospital – Ely, White Pine County	1,842,308
WASHOE COUNTY	
Northern Nevada Medical Center – Sparks	\$1,751,179
Renown Regional Medical Center – Reno	28,892,037
Saint Mary’s Regional Medical Center – Reno	186,160
NEVADA – TOTAL	\$216,965,121

Source: Nevada Hospital Association (2007) and Nevada Rural Hospital Partners (2007).

Hospital construction not only generates wages and salaries paid to construction workers, construction activity generates secondary employment and income in other local businesses, not to mention additional tax revenue for municipalities in Nevada as wages and salaries are spent on goods and services in establishments that collect sales taxes.

Utilizing the same logic and model used to estimate economic impacts in previous sections of this report, Table 17 provides estimates of the economic impact of the \$217 million spent by Nevada hospitals and communities on new hospital construction and facility improvements in 2006. The \$217 million in total output in the Nevada economy represented by that spending resulted in an estimated \$98.3 million in employee compensation and \$10.5 million in other income to self-employed individuals. There were a total of 1,874 jobs directly associated with producing that output.

Table 17: Economic Impacts of Spending on Construction and Major Facility Expansions by Hospitals in Nevada – 2006

SPENDING ON CONSTRUCTION AND MAJOR FACILITY EXPANSIONS	NEVADA ECONOMIC IMPACTS			
	Total Industry Output (Dollars)	Total Employee Compensation (Dollars)	Total Other or Proprietor Income (Dollars)	Total Employment (Number of Jobs)
Direct Effects of Hospital Spending	\$216,965,121	\$98,330,208	\$10,497,892	1,874
Multiplier	1.68	1.46	1.63	1.66
Indirect Effects of Hospital Spending	54,756,370	18,647,126	3,080,329	467
Induced Effects of Hospital Spending	92,607,906	26,384,926	3,526,150	777
Total Effects of Hospital Spending	\$364,329,396	\$143,362,260	\$17,104,370	3,118

Sources: Nevada Hospital Association (2007), Nevada Rural Hospital Partners (2007), and Minnesota IMPLAN Group (2007).

Table 17 also highlights the secondary impacts – indirect and induced – of hospital construction. The indirect effects of construction expenditures represent the impact of spending by construction firms on goods and services provided by other Nevada businesses. Indirectly, hospital construction activity contributed another \$54.8 million in total industry output, \$18.6 million in employee compensation, and \$3.1 million in other income in 2006. There were an estimated 467 jobs indirectly related to the same hospital construction activity.

The induced effects of construction expenditures represent the impact of construction worker spending on goods and services in Nevada. Information on the number of construction workers employed and their wages were not available. This report uses the average construction employment and wage information provided by IMPLAN to determine the impact of employee spending. Hospital construction employee spending contributed an estimated \$92.6 million in total industry output, \$26.4 million in employee compensation, and \$3.5 million in other income in 2006. The induced effects of hospital spending were responsible for an additional 777 jobs to the Nevada economy.

In summary, Nevada hospital construction expenditures in 2006 resulted in \$364.3 million in total industry output in the state. Construction expenditures also generated \$143.4 million in employee compensation and \$3.5 million in other income to Nevada residents. Finally, the same hospital expenditures resulted in the net creation of 3,118 jobs in Nevada during 2006.

Conclusions

This report has documented a number of major contributions of Nevada’s community and specialty hospitals to the state’s economy. Table 18 presents the major findings of the employment, payroll, and construction impacts presented in this report.

Table 18: Summary of the Impact of Hospitals on the Nevada Economy in 2006

TYPE OF HOSPITAL IMPACTS	AMOUNT OF ECONOMIC IMPACT		
	Direct Impact	Secondary Impact	Total Impact
EMPLOYMENT IMPACTS (Number of Jobs)			
Community Hospitals	20,617	14,421	35,038
Specialty Hospitals	3,113	2,228	5,341
Total – All Hospitals in Nevada	23,730	16,649	40,379
PAYROLL IMPACTS (Payroll in \$ Millions)			
Community Hospitals	\$1,334.3	\$573.0	\$1,907.3
Specialty Hospitals	\$139.9	\$62.0	\$201.9
Total – All Hospitals in Nevada	\$1,474.2	\$635.0	\$2,109.2
IMPACTS OF SPENDING ON HOSPITAL CONSTRUCTION			
Total Industry Output in Nevada (\$ Millions)	\$216.9	\$147.4	\$364.3
Total Employee Compensation in Nevada (\$ Millions)	\$98.3	\$44.9	\$143.3
Total Other Income in Nevada (\$ Millions)	\$10.5	\$6.6	\$17.1
Total Employment in Nevada (Number of Jobs)	1,874	1,244	3,118

Highlights of data and analysis presented in this report include:

- In 2006, 20,617 people were employed by the state’s 32 community hospitals. Applying IMPLAN employment multipliers for the hospital sector, Nevada community hospitals generated an additional 14,421 jobs in other Nevada businesses through normal operating activities during 2006. The total number of jobs (direct and secondary) created by Nevada community hospitals was 35,038.
- There were 5,330 licensed beds and 20,617 jobs in community hospitals in Nevada in 2006. In other words, the direct employment impact of community hospitals was 3.9 jobs per licensed bed. When secondary employment impacts are taken into account, Nevada community hospitals produced an additional 14,421 jobs or 2.7 jobs per licensed bed, resulting in a total employment impact of 6.6 jobs per licensed bed

- During the same year, these hospitals generated \$1.33 billion in payroll. Applying IMPLAN income multipliers for the hospital sector, Nevada community hospitals created an additional \$573 million in payroll in other Nevada businesses through normal operating activities during 2006. The total amount of income (direct and secondary) created by Nevada community hospitals was \$1.9 billion.
- Community hospitals in Nevada generated \$1.33 billion in payroll or a direct payroll impact of \$250,339 per licensed bed in 2006. When secondary income impacts are taken into account, the state's 33 community hospitals generated \$573 million in payroll in other Nevada businesses or an additional \$107,508 in payroll per licensed bed. The total payroll impact of community hospitals was \$357,847 per licensed bed.
- In 2006, direct employment in psychiatric, rehabilitation, and other specialty hospitals was 3,113 jobs. Applying IMPLAN employment multipliers for the hospital sector, specialty hospitals generated an additional 2,228 jobs in other Nevada businesses through normal business operations. The total employment impact of specialty hospitals in Nevada was 5,341 jobs.
- During the same year, specialty hospitals provided \$139.9 million in direct payroll or income to hospital employees. Applying IMPLAN income multipliers for the hospital sector, Nevada specialty hospitals generated an additional \$62 million in payroll in other Nevada businesses through normal business activities. The total amount of income (direct and secondary) created by Nevada specialty hospitals was approximately \$202 million.
- In 2006, Nevada hospital construction expenditures of \$217 million in 2006 resulted in \$364.3 million in total industry output in the state. Construction expenditures also generated \$143.4 million in employee compensation and \$3.5 million in other income to Nevada residents. Finally, the same hospital expenditures resulted in the net creation of 3,118 jobs in Nevada during 2006.

In conclusion, hospitals represent a major economic engine, generating a large and growing amount of employment and payroll in Nevada. Hospitals play a critical role in local and regional economic development by creating jobs and payroll in other businesses through normal business operations, as well as new spending on hospital construction and capital improvements.

Appendix A: Economic Impact Analysis Methodology

The Multiplier Effect

An important method of assessing the impact of businesses and industry sectors on local economies is through the estimation of multiplier effects. Multiplier effects are a simplified and compact way of representing the effects of business and employee expenditures on the local economy. The multiplier is interpreted as the impact of a one-unit change in sales, employment, or income that results in a corresponding total impact on sales, employment, or income in the larger economy. In essence, the multiplier represents the recycling of dollars and income in a specified geographic unit, such as Clark County or the State of Nevada. This recycling creates new job opportunities and additional wages for residents and business establishments.

There are three types of multiplier effects based on the type of economic impact analysis undertaken: direct, indirect, and induced. These types are illustrated in Table 19 with examples from the hospital industry. The *direct multiplier effect* is based on an industry's initial economic impact on the region's economy. For example, if a hospital has annual expenditures of \$5 million on goods and services to support hospital operating activities, then this figure becomes the direct economic impact on the community. The *indirect multiplier effect* is based on industry-to-industry transactions only. For example, indirect effects would include hospital purchases of medical supplies, local laundry services, food, and other contracted services. Finally, the *induced multiplier effect* includes both the industry-to-industry transactions and household purchases, including employee spending. The total economic impact is thus defined as the direct plus indirect and induced economic impacts.

Table 19: Illustration of Economic Impact Multipliers

TYPE OF MULTIPLIER	DIRECT	INDIRECT	INDUCED
Output Multiplier	Hospital Expenditures	Hospital Supplier Expenditures	Local retail and service expenditures related to hospital spending
Employment Multiplier	Hospital jobs	Hospital supplier jobs	Local retail and service jobs related to hospital employee spending
Income Multiplier	Hospital employee income	Hospital supplier employee income	Local retail and service income related employee spending

The direct, indirect, and induced multiplier effects can be classified as output, employment and income multipliers. An output multiplier of 2.0 indicates that if one dollar is spent by the hospital, an additional dollar is spent in other sectors due to business and household spending. An employment multiplier of 2.0 indicates that if one job is created in the health care sector, 1.0 additional jobs are created in other sectors due to business and household spending. Likewise, an income multiplier of 2.0 indicates that for every dollar of income created in the health sector, an additional dollar of income is created in other sectors due inter-industry spending by health businesses and employees.

Model and Data Used to Estimate Multipliers

The economic impacts presented in this report are measured by multipliers using an input-output model and data from IMPLAN, a model that is widely used by economists and other academics in the United States. A computer spreadsheet that uses state IMPLAN multipliers was originally developed to enable community development specialists to measure the secondary benefits of the health sector on state, regional, or county economies. The complete methodology is presented in *Measuring the Economic Importance of the Health Sector on a Local Economy: A Brief Literature Review and Procedures to Measure Local Impacts* (Doeksen, et al. 1997).

Input-output (I/O) analysis is designed to analyze the transactions among industries in an economy (Miernyk 1965). These models are largely based on the work of Wassily Leontief during the 1930s. Detailed I/O analysis captures the indirect and induced interrelated circular behavior of the economy. For example, an increase in the demand for health services requires more equipment, more labor, and more supplies, which, in turn, requires more labor to produce the supplies, and so on. By simultaneously accounting for structural interaction between sectors and industries, I/O analysis gives expression to the general economic equilibrium systems. The analysis utilizes assumptions based on linear and fixed coefficients and limited substitutions among inputs and outputs. The analysis assumes that average and marginal I/O coefficients are equal. Nonetheless, the framework has been widely accepted and used by economists and policymakers. I/O analysis is useful when carefully executed and interpreted in defining the structure of a region, the interdependencies among industries, and forecasting economic outcomes. The I/O model coefficients describe the structural interdependencies of an economy. From the coefficients, various predictive devices can be computed, which can be useful in analyzing economic changes in a state, region, or county. Multipliers indicate the relationship between some observed change in the economy and the total change in economic activity created through the economy.

Typically, the complexity of I/O modeling has hindered practitioners from constructing models specific to a community requesting an analysis. Too often, inappropriate multipliers have been used to estimate local economic impacts. In contrast, IMPLAN can construct a model for any state, region, county, or zip code area in the United States by using available state, region, county, or zip code data. Impact analysis can be performed once a regional I/O model is constructed.

Five different sets of multipliers are estimated by IMPLAN, corresponding to five measures of regional economic activity: (1) total industry output, (2) personal income, (3) total income, (4) value added, and (5) employment. Three types of multipliers are generated. Type I multipliers measure the impact in terms of direct and indirect effects. Direct impacts are the changes in the activities of the focus industry or firm, such as the construction of a hospital or the closing of a hospital. The focus business changes its purchases and inputs as a result of the direct impacts. This produces indirect impacts in other business sectors. However, the total impact of a change in the economy consists of direct, indirect, and induced changes. Both the direct and indirect impacts change the flow of dollars to the state, region, or county's households. Subsequently, the households alter their consumption. The effect of the changes in household consumption on businesses in a community is referred to as an induced effect. To measure the total impact, a Type II multiplier is used. The Type II multiplier compares direct, indirect, and induced effects with the direct effects generated by a change in final demand (the sum of direct, indirect, and induced effects divided by direct effects). IMPLAN also estimates a modified Type II multiplier that also includes the direct, indirect, and induced effects. The Type III multiplier further modifies the induced effect to include spending patterns of households based on a breakdown of households by nine different income groups.

Additional information on the data, methodology, and software requirements of I/O modeling and IMPLAN analysis can be found in guides developed by Doeksen, et al. (1997), Alward, et al., (1989), and the Minnesota IMPLAN Group (MIG) (2000).

Appendix B: References and Data Sources

Alward, G., et al. 1989. *Micro IMPLAN Software Manual*. Stillwater MN: University of Minnesota Press.

Bureau of Economic Analysis. 2005. Regional Accounts Data. www.bea.gov/bea/regional/reis/.

Bureau of Labor Statistics. 2007. Current Employment Statistics. www.bls.gov/sae.htm.

Center for Health Information Analysis (CHIA). 2007. Nevada Hospital Quarterly Report (NHQR) Data Base. www.unlv.edu/Research_Centers/chia/.

Cooper, Richard. 2004. "Weighing the Evidence for Expanding Physician Supply." *Annals of Internal Medicine* 141:9:705-714.

Doeksen, GA, et al. 1997. *Measuring the Importance of the Health Sector on the Local Economy: A Brief Literature Review and Procedures to Measure Local Impacts*. Mississippi State MS: Southern Rural Development Center. SRDC Publication Number 202.

Miernyk, W.H. 1965. *The Element of Input-Output Analysis*. New York: Random House.

Minnesota IMPLAN Group, Inc. (MIG). 2000. *User's Guide, Analysis Guide, Data Guide: IMPLAN Professional Version 2.0 Social Accounting and Impact Analysis Software*, Second Edition. Stillwater MN: MIG. www.implan.com.

Nevada Department of Employment, Training, and Rehabilitation (DETR). 2007. Nevada Workforce Informer Interactive Data Bases. www.nevadaworkforce.com.