



the *economic*
Pulse
of North Dakota
a HEALTH CARE impact study



Study Sponsored By:

NDHA
North Dakota Hospital Association

	Page(s)
Acknowledgements	4
List of Tables and Figures	5
Conduct of Study	6-10
Executive Summary	11-15
Introduction	16
Objectives	17
Findings	17-30
Financial Impacts	17
Total Employment Impacts	26
Patient Care Impacts	31
Conclusion	30
Appendix AModel and Data Used to Estimate Multipliers	32-35
Appendix BHospital “Impact” Invitation Letter to Administrators/CEOs	36-37
Appendix CHospital “Impact” Survey Questionnaire	38-40
Appendix DParticipating Facilities	41-42

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Respectfully submitted,



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List of Tables & Figures

Description	Page
Figure 1: State Economic System	8
Figure 2: Gross Revenue: Medicare, Medicaid & All Other Payers	18
Figure 3: Deductions from Revenue	18
Figure 4: Hospitals Generate Over \$3 Billion Annually in Net Revenue	19
Figure 5: Hospital Net Revenues Have Tripled Since 1997.	19
Figure 6: Six Largest Account for 86% of Total Net Revenues	20
Figure 7: Majority of Community Hospitals Lose Money	21
Figure 8: Charity Care & Bad Debt Exceeds \$274 Million Annually.	22
Figure 9: The Vast Majority of Dollars Spent by Community Hospitals Remain in ND	23
Figure 10: Oil Development Affects Hospital Profitability Both Positively and Negatively	24
Figure 11: Oil Development Negatively Affects Hospital Recruitment Efforts.	24
Figure 12: Community Hospitals Invest \$900 Million in Facility & Capital Improvements.	25
Figure 13: Direct and Secondary Impact Exceeds \$4.8 Billion Annually	26
Figure 14: Hospital Employment Nears 22,000 FTEs	26
Figure 15: Direct & Secondary Employment Impacts.	27
Figure 16: Direct & Secondary Income Impacts Exceed \$1.6 Billion Annually.	28
Figure 17: Majority of State’s Largest Employers Are Healthcare Providers.	28
Figure 18: Health Care and Social Assistance - State’s Largest Employing Industry	29
Figure 19: Key Service Statistics	30

Background Information

In July 2014, Marketing & Advertising Business Unlimited, Inc. (dba Agency MABU), was commissioned by the North Dakota Hospital Association (NDHA) to conduct a research study to determine the contribution of hospitals and health systems to North Dakota's economy.

NDHA conducted similar studies in 1997, 2002, 2006, 2008, 2010 and 2012. The survey instruments used as part of the prior studies (2002, 2006, 2008, 2010 and 2012) were all similar to the survey instrument used for the 2014 study.

Only slight variations in the survey instruments exist from one study to the next. For example, the 2002 study requested detailed information from hospitals relating to the amount of dollars spent in North Dakota as compared to the amount of dollars spent out-of-state. The 2006, 2008, 2010, 2012 and 2014 versions of the survey simply asked respondents to estimate the overall percentage of total dollars spent within the state as compared to the overall total dollars spent out-of-state.

Detailed breakouts of expenses were not requested in the most recent surveys. Both the 2012 and 2014 research studies quantified the economic contribution of the state's 40+ community hospitals. The results from the 2012 and 2014 surveys will be compared throughout this report in sections where the data sources are similar.

Research Methodology

In early August 2014, the North Dakota Hospital Association distributed survey questionnaires to administrators of community hospitals in North Dakota [excluding the tribal hospitals, specialty hospitals and state-run (1) facility.]

Since many clinics and outpatient facilities are owned and operated by North Dakota hospitals, the data gathered through the NDHA survey captures employment and economic information relating to doctors and other allied health professionals. Therefore, a separate survey was not distributed to non-hospital owned clinics in North Dakota. Such a survey may be developed for future studies that are designed to quantify the total economic impact of the health care industry in North Dakota.

An initial email invitation (Appendix B – NDHA email) was sent from NDHA to each hospital administrator on August 5, 2014, requesting that they complete the 2014 Pulse Impact questionnaire (Appendix C – Survey Questionnaire). The e-mail invitation explained the history and purpose of the Pulse survey, and also included a full copy of the 2012 Pulse Report in a PDF file format. The hospital administrators were provided with survey instructions, and asked to complete and return the questionnaire by Friday, August 29, 2014. Several follow-up emails and phone calls were completed during the month of August and September as reminders to those who had yet to complete the survey.

Of the forty-two (42) community hospitals represented in the survey results, thirty four (34) facilities (Appendix D: Fully-Participating Facilities) provided all requested information. This represents a 81% response rate. The majority of hospitals responded to the initial e-mail request for information. The follow-up e-mails and phone calls generated several additional responses. The data provided by the participating hospitals as part of the Pulse Survey represented financial, employment and utilization statistics from 2013-2014.

The eight (8) facilities that did not fully participate in the 2014 survey (Appendix D: Partially-Participating Facilities) were factored into the findings by extrapolating their facilities' most recent financial and operational data from the following sources:

- Facility-specific IRS Tax Returns (Form 990)
- Facility-specific statistics provided as part of the 2012 NDHA Pulse Survey
- Aggregate data from the American Hospital Association (AHA) annual survey (2014)

Data sources were cross-referenced to confirm consistency of the findings from one source to the next.

In cases where no data was provided by the facility, the data they submitted for the 2012 Pulse survey was used for the 2014 report. This conservative approach may cause the findings to be somewhat under-reported. Nevertheless, all forty two facilities are represented in the 2014 findings.

Concepts Utilized to Determine the State’s Economics and Impact Multipliers

For any economy, a cornerstone involves businesses that sell some or all of their goods and services to buyers outside of the state. Figure 1 illustrates the major flows of goods, services, and dollars of any economy. The flow of products out of, and dollars into, a state are represented by the two arrows in the upper right portion of Figure 1.

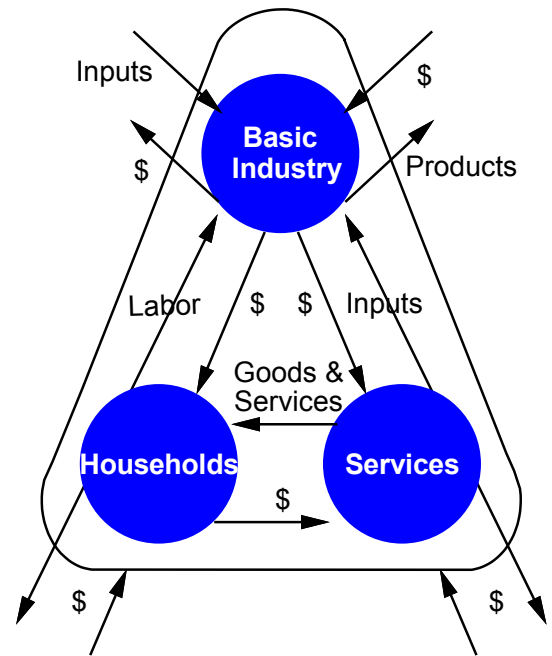
To produce these goods and services for “export” outside the state, the basic industry purchases inputs from outside of the state (upper left portion of Figure 1), labor from the residents or “households” of the state (left side of Figure 1), and inputs from service industries located within the state (right side of Figure 1). The flow of labor, goods, and services in the state is completed by households using their earnings to purchase goods and services from the state’s service industries (bottom of Figure 1). Figure 1 illustrates the interrelationship between a change in any one segment of a state’s economy, resulting in reverberations throughout the entire economic system of the state.

Consider, for instance, the closing of a hospital.

The services sector will no longer pay employees and dollars going to households will stop. Likewise, the hospital will not purchase goods from other businesses and dollar flow to other businesses will stop. This decreases income in the “households” segment of the economy. Since earnings would decrease, households decrease their purchases of goods and services from businesses within the “services” segment of the economy. This, in turn, decreases these businesses’ purchases of labor and inputs. Thus, the change in the economic base works its way throughout the entire state economy.

The total impact of a change in the economy consists of direct, indirect, and induced impacts. Direct impacts are the changes in the activities of the impacting industry, such as the closing of a hospital. The impacting business, such as the hospital, changes its purchases of inputs as a result of the direct impact. This produces an indirect impact in the business sectors. Both the direct and indirect impacts change the flow of dollars to the state’s households. The households alter their consumption accordingly. The effect of this change in household consumption upon businesses in a state is referred to as an induced impact.

Figure 1:
State Economic System



A measure is needed that yields the effects created by an increase or decrease in economic activity. In economics, this measure is called the multiplier effect. Multipliers are used in this report. An employment multiplier is defined as:

“...the ratio between direct employment, or that employment used by the industry initially experiencing a change in final demand and the direct, indirect, and induced employment.”

An employment multiplier of 3.0 indicates that if one job is created by a new industry, 2.0 jobs are created in other sectors (businesses and industries) due to business (indirect) and household (induced) spending.

Additional Data Sources

In order to generate a full report on the contributions of hospitals and health systems to North Dakota’s economy, the research team secured additional financial and utilization data from the following sources:

- The American Hospital Association (AHA) Hospital Guide, 2014 Edition
- Job Service of North Dakota website (www.ndworkforceintelligence.com)
- North Dakota Tax Commissioner website (www.nd.gov/tax)
- US Department of Commerce website (www.commerce.nd.gov)
- US Census Bureau website (www.census.gov)

These websites were referenced to provide statistics relating to employment and economic impacts of community hospitals and health systems serving North Dakota.

Research Gaps and Limitations

The research findings contained within this report represent a reasonable and realistic estimate of the financial, employment and patient service impacts of the health care industry on North Dakota's economy. The findings are by no means a definitive or complete representation of the total impact of the healthcare industry for the following reasons:

- The total population surveyed was incomplete. Not all health care facilities were included as part of the research study. Although hospitals represent a large portion of the health care industry in North Dakota, other organizations such as independent physician offices, rural community health centers, private ambulatory surgery centers, tribal-based hospitals, and rehabilitation facilities were not included as part of the research study.
- There exists a potential for response errors. Although the survey instrument was pre-tested for clarity and understanding, as well as used for prior Pulse surveys, there exists the potential for differing interpretations by the various respondents.
- There exists a potential for data analysis error. Although one survey instrument was utilized to gather the majority of information for the research study, additional data sources were also used to create projections and estimates for the partially-participating facilities. These data sources contained information from several different time periods.

In spite of these research gaps and limitations, the findings represent a sound and true estimate of the significant, impact that hospitals and health systems offer to the state of North Dakota and its residents.

Executive Summary

A total of forty two (42) community hospitals provide North Dakota residents with a comprehensive array of health services. These healthcare providers contribute significantly to the overall stability and vitality of the State. Community hospitals provide positive impacts relating to financial, employment and patient care indicators.

The research study which follows is titled “The Economic Pulse of North Dakota.” It was conducted in 2014 to assess the contributions made by community hospitals to the economy of North Dakota.

The major findings reveal that health care ranks among the top industries in the State relative to several key economic indicators.

1. According to Job Service North Dakota, **health care and social assistance represent the State’s largest non-government employer** with an estimated 55,000+ employees (12.9% of the State’s total employment base). Additionally, five (5) of the State’s top eight (8) employers are hospitals and health systems.
2. With direct economic impacts of nearly \$3 billion annually and secondary business impacts of an additional \$1.8 billion, **health care ranks among the top industries in the state** along with energy, agriculture, manufacturing and tourism. Furthermore, over **75% of all dollars spent by community hospitals each year remain in North Dakota.**
3. **Community hospitals receive 51 cents in reimbursement for every dollar they bill** to Medicare, Medicaid, Blue Cross Blue Shield and other payers. Thus, it’s not surprising that **over half (55%) of North Dakota hospitals report losing money** on their operations each year. This is compounded by the fact that community hospitals in North Dakota provided over \$274 million in bad debt and charity care in 2014 for people who were unable to pay for services rendered.
4. Every resident of the state is directly impacted by community hospitals on average eight (8) times each year through inpatient, outpatient, emergency room and clinic visits. In other words, **community hospitals provide over 6.2 million patient encounters annually** to positively impact the health and well being of our State’s residents.

Other key research findings include:

Gross Revenues Exceed \$6 Billion, With Net Revenues Exceeding \$3 Billion

North Dakota hospitals and health systems provided healthcare services totaling over \$6.1 billion in gross revenue in 2014, as compared to \$5.6 billion in 2012 (8.9% increase).

- Of this amount, just over \$3 billion was deducted from revenue primarily due to fixed reimbursement and contractual agreements with government and third-party payers.
- These deductions from revenue were 49% less than the actual amount of billed charges, meaning hospitals in North Dakota were paid 51 cents for every dollar billed to deliver patient care.
- This resulted in total net operating revenues of \$3.1 billion in 2014.

Six Largest Hospitals Account for 86% of Total Net Revenue

The vast majority of net revenues (86%) were generated by the six (6) largest hospitals in the State (e.g., Altru, Essentia, Sanford Health, Sanford West, Trinity Health and CHI St. Alexius Health).

- These organizations operate health care facilities which are primarily located in the State's four major cities (Fargo, Grand Forks, Minot and Bismarck).
- The remaining hospitals and health systems, which are primarily located in rural communities throughout the state, accounted for the remaining 14% of total annual revenues.

Over Half of ND Hospitals Have a Negative Bottom Line (Net Return)

Community hospitals in North Dakota posted a positive operating margin (net return) on an aggregate basis. Although North Dakota hospitals as a collective group reported an overall positive bottom line, many individual hospitals are struggling financially. For example, of the 42 facilities surveyed, twenty-three (23) reported a negative net return.

In other words, over one out of every two hospitals in North Dakota (55%) spent more money than they generated in annual net revenue.

Charity Care and Bad Debt Exceeds \$274 Million Annually

As socially-responsible organizations, community hospitals provide needed services to patients, such as emergency and trauma care, regardless of an individual's financial standing or ability to pay.

In 2014, North Dakota community hospitals provided a combined total of over \$274 million in charity care and bad debt to people who were unable to pay for services rendered. Bad debt is defined as a bill that is deemed to be uncollectible. This is a 22% increase over the \$224 million reported in this same category in the 2012 Pulse Report.

Majority of Dollars Spent by Hospitals Remain in North Dakota

The vast majority of all expenses incurred by community hospitals are spent in North Dakota. On average, 74% of the dollars remain in the state, while 26% of dollars go to out-of-state sources for supplies, equipment and other items needed to operate community hospitals.

Medicaid Expansion & Oil Development Impact Community Hospitals

Expansion of the Medicaid Program had a positive impact on patients and healthcare providers alike by providing eligible North Dakota residents with enhanced access to health insurance through the Sanford Health Plan. The financial impact on hospitals was conservatively estimated at \$12-\$15 million. Another factor that substantially impacted community hospitals since the 2012 Pulse Report was oil development in western North Dakota. While community hospitals experienced increased utilization due to population growth, they also experienced negative outcomes due to increased numbers of uninsured patients, as well as difficulties recruiting and retaining workers due to high salaries in the energy industry.

Hospitals Invest Heavily in Facilities and Capital Improvements

Community hospitals all across North Dakota are investing over \$200 million in upgrading their facilities and equipment in the current year (2014). Additionally, they plan to invest another \$700 million in the year ahead (2015). Major building and expansion projects are planned in communities throughout the state, both large and small, including Fargo, Grand Forks, Bismarck, Watford City, Bowman, Hazen, Dickinson and Grafton.

Total Economic Output of Hospitals Exceeds \$4.8 Billion

According to the IMPLAN model, the State output multiplier for the hospital sector is 1.62. This means that for each dollar of expenditures from the hospital sector, an additional \$0.62 cents in expenditures is generated in other businesses and industries throughout the State of North Dakota. According to the 2014 Pulse Survey, the direct expenditures of all hospitals in North Dakota is estimated at \$2.98 billion. Applying the multiplier results in a secondary impact of \$1.84 billion and total economic impact of \$4.82 billion.

Total Employment Impact of Community Hospitals Approaches 36,000 FTEs

According to the IMPLAN model, the State employment multiplier for the hospital sector is 1.64. This indicates that for each job created in this sector, 0.64 additional jobs are created throughout the state due to business (indirect) and household (induced) spending. For example, the total direct employment of all hospitals in the State of North Dakota is 21,945 FTEs. Applying the employment multiplier of 1.64 to the total employment brings the total employment impact of the hospitals to 35,990 ($21,945 \times 1.64 = 35,990$). Thus the secondary impact of the hospitals is 14,045 FTE employees ($21,945 \times 0.64 = 14,045$). These are the jobs created in other industry sectors in the economy of the State of North Dakota as a result of the spending of the hospital, combined with the spending of the hospital employees.

Hospital Salaries are 11.75% Higher than the Statewide Average

Job Service North Dakota reports the average annual wage for hospital workers to be \$54,139 as of the end of 2013. This average wage is considerably higher (11.75%) than the statewide worker average of \$47,779/year.

Total Personal Income Exceeds \$1.6 Billion Annually

With a total employment base of 21,945 FTEs, community hospitals in North Dakota provide \$1.65 billion in personal income for employees. This includes \$1.19 billion in direct income and \$463 million in additional income attributed to non-hospital employment impacts.

An Estimated 4.2% of All Workers in North Dakota are Employed by Hospitals

An estimated 4.2% of all workers in North Dakota are directly employed by community hospitals.

Health Care Is North Dakota's Largest Non-Government Employer

Health care and social assistance represents the state's largest non-government employment sector. An estimated 12.9% of all workers in North Dakota are employed by a health care or social service organization.

Majority of the State's Largest Employers are Community Hospitals

According to Job Service of North Dakota, five (5) of the top eight (8) largest employers in the State are health care providers.

Top five healthcare employers in North Dakota among the eight (8) largest employers

Sanford Health	Fargo+
Altru Health Systems	Grand Forks
CHI St. Alexius Health	Bismarck
Sanford West (formerly Medcenter One)	Bismarck
Trinity Health	Minot

North Dakota Hospitals Provide Over 6.2 Million Patient Encounters Annually

In 2014, community hospitals directly touched the lives of each and every resident in the state by providing over 6.2 million inpatient, outpatient, clinic and emergency room visits. Roughly one out of every eight residents was admitted to a community hospital, one out of every two residents required a visit to a hospital emergency room, and every North Dakota resident had an average of approximately 2.5 outpatient visits and 5.5 clinic visits with community hospitals in 2014.

The Economic Pulse of North Dakota

Conducted On Behalf Of:

North Dakota Hospital Association
Bismarck, North Dakota

Researched and Reported By:

Agency MABU
Bismarck, North Dakota

Utilizing the IMPLAN Model From:

Dr. Gerald A. Doeksen, Director
National Center for Rural Health Works
Oklahoma State University

Introduction

Ready to serve and provide assistance 24/7 during some of the most challenging times in the life of our residents and communities, North Dakota hospitals and health systems represent the pulse of the state, both in terms of human impact and economic impact. These health care facilities offer quality care to all residents, regardless of their social or financial status. The influence of these organizations reaches far beyond the delivery of patient care. The very heart of a community is made more vital by the many benefits provided by community hospitals.

There is no way to truly quantify the contributions of a profession and set of organizations that do so much to enhance North Dakota's vitality. However, it is important to show the positive influence our health care facilities and caregivers have and the important role they play in the overall health and wellness of our great State.

Objectives

The purpose of this study is to estimate the contribution of community hospitals to the economy of North Dakota. Specific objectives include:

1. Estimate the economic impacts of community hospitals.
2. Estimate the employment impacts of community hospitals.
3. Estimate the patient care impacts of community hospitals.

Community hospitals and health systems not only provide care, but from an employment perspective (especially in smaller communities), hospitals are often the largest employers. Also, hospitals can easily become sources of new revenue (e.g., federal transfer payments from Medicare and Medicaid) for communities of all sizes. Therefore, the long-term viability of a community is often dependent upon the economic stability of the local hospital.

Findings

This research study documents the contribution of hospitals to North Dakota's economy from three (3) distinct perspectives: financial, employment and patient care impacts.

Financial Impacts

Financial impacts were determined using information provided through a survey questionnaire that was completed by hospital administrators and/or their designated representative. Of the 42 hospitals surveyed, 34 facilities responded to the survey by providing complete data (81% response rate).

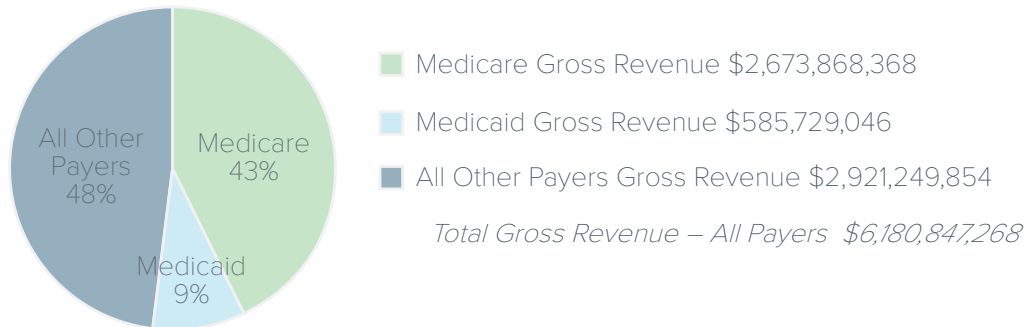
The eight (8) facilities that did not fully participate in the 2014 survey were factored into the findings for this report by extrapolating their most recent financial and operational data from various sources including IRS Tax reports, the American Hospital Association's annual hospital survey, and/or data submitted by each of these facilities as part of the 2012 Pulse Survey.

Gross Revenue Exceeds \$6 Billion

According to the 2014 Pulse Survey, community hospitals in North Dakota provided healthcare services accounting for over \$6.1 billion in gross revenue, as compared to \$5.6 billion in 2012 (8.9% increase). The gross revenue of \$6.1 billion represents the combined amount that North Dakota hospitals billed to all patients, insurance companies and other payers for services rendered in 2014.

Medicare and Medicaid accounted for over \$3.2 billion of this total, which represents over half of the total gross revenue (52%) in 2014. All other payers (e.g., Blue Cross/Blue Shield, Workforce Safety, etc.) accounted for the remaining 48% of gross revenue.

Figure 2:
Gross Revenue: Medicare, Medicaid & All Other Payers



Deductions from Revenue Top \$3 Billion

Like many other industries, not all of the bills that are submitted by community hospitals to their various customers and payers (e.g., patients, government, insurance companies) are paid in full. The health care industry is hit especially hard by this phenomenon. Third party payers, such as the federal government and insurance companies, typically pay hospitals based on pre-established, fixed rates of reimbursement.

These reimbursement rates are considerably lower than the actual amount billed by hospitals to these payers. As a matter of fact, the deductions from revenue reported in the 2014 Pulse Survey totaled just over \$3.02 billion, an astounding 49% less than actual billed charges. In other words, community hospitals in North Dakota were paid fifty one cents on every dollar billed for serviced rendered. This is even less than hospitals reported receiving in the 2012 Pulse Survey, which was fifty four cents on every dollar billed.

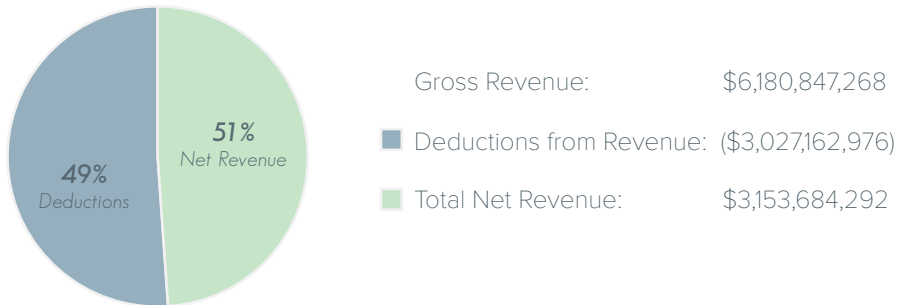
Figure 3:
Deductions from Revenue



Net Operating Revenue Totals \$3 Billion

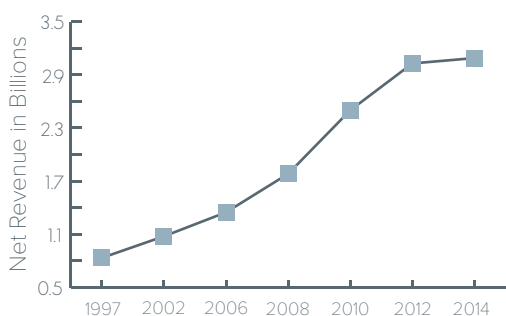
With gross revenues totaling over \$6.1 billion and deductions from revenue totaling over \$3.02 billion, the total net operating revenue generated by community hospitals in North Dakota as reported in the 2014 Pulse Survey totaled over \$3.15 billion. This represents the actual amount of revenue received by community hospitals for services rendered in 2014.

Figure 4:
Hospitals Generate Over \$3 Billion Annually in Net Revenue



Over the past 17 years, total net revenues for community hospitals in North Dakota have grown steadily. Since 1997, the net revenue generated by community hospitals in North Dakota has grown by 271% (average annual increase of 15.9%). However, as for the most recent survey results, total net revenues increased by \$122.9 million since the 2012 survey – which represents a growth in net revenue from one survey to the next of slightly under two percent (0.196%).

Figure 5:
Hospital Revenues Have Tripled Since 1997



Pulse Survey	Total Annual Net Revenues	% of Growth
1997 Survey	\$832,000,000	N/A
2002 Survey	\$1,076,000,000	29.3%
2006 Survey	\$1,347,000,000	25.2%
2008 Survey	\$1,782,000,000	32.3%
2010 Survey	\$2,555,155,757	43.9%
2012 Survey	\$3,029,439,049	18.6%
2014 Survey	\$3,153,684,292	2.0%

* Overall growth from 1997 to 2014 = 271%

The overwhelming majority of net revenues (86.6%) were generated by the six (6) largest hospitals in the state (e.g., Altru, Essentia, Sanford Health, Sanford West, CHI St. Alexius, and Trinity Health). These organizations operate health care facilities which are primarily located in the State’s four major cities (Fargo, Grand Forks, Minot and Bismarck). The remaining hospitals and health systems, which are primarily located in rural communities throughout the state, accounted for the remaining 13.4% of total annual revenues.

Figure 6:
Six Largest Hospitals Account for 86% of Total Net Revenues

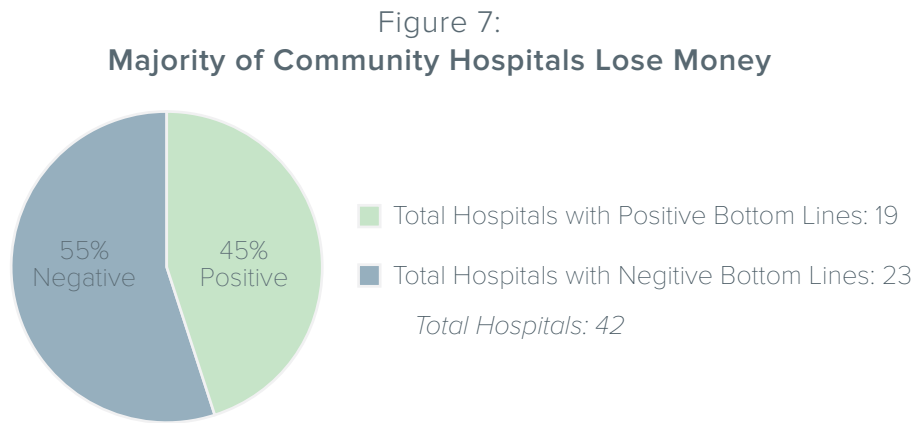


Source: NDHA Survey, 2014.

Majority of Community Hospitals Lose Money

Although North Dakota hospitals reported an overall positive bottom line on an aggregate basis, many individual hospitals are struggling financially. For example, of the 42 facilities surveyed, twenty-three (23) of the hospitals reported a negative operating margin (net return) in 2014. In other words, over one half of all hospitals in North Dakota (55%) spent more money than they generated in annual (net) operating revenue.

The difference in financial performance between the various hospitals throughout the State can be attributed to many factors including, but not limited to, reimbursement from Medicare, Medicaid and other third party payers, scope of services offered, market share, capital improvements, bad debt and operational costs.



These findings are consistent with an independent study conducted in 2013 on the financial viability of North Dakota Critical Access Hospitals (CAHs) by Darrold Bertsch, CEO of Sakakawea Medical Center. At that time, twenty-three (23) CAH's were operating at a loss. The average (median) operating loss was -2.3% statewide, with the negative margins averaging -6.5% among hospitals west of Highway 83 and -1.1% among hospitals east of Highway 83.

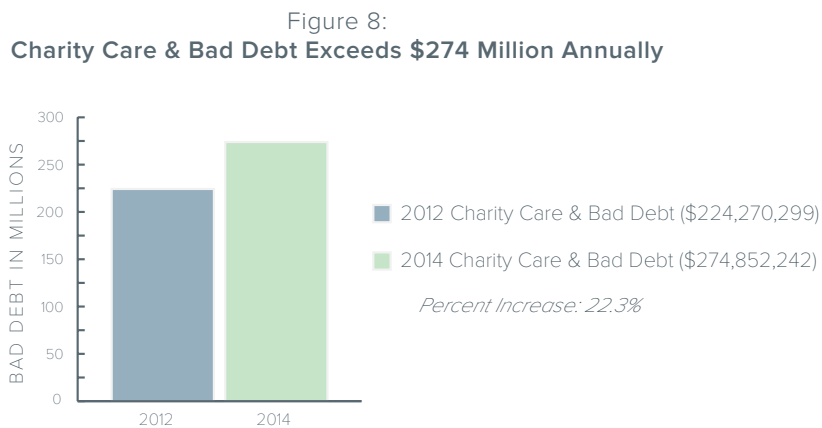
Negative net returns affected all types of hospitals regardless of size; however, rural hospitals have historically tended to be at greater risk of financial challenges. When net returns are inadequate, hospitals are forced to tap into their retained earnings (savings) and/or seek financial assistance to sustain their operations and facilities.

Non-Operating Revenue Contributes to Hospital Viability

Recognizing that operating margins are often slim, and in many cases non-existent, for community hospitals in North Dakota, there is a need for these organizations to generate additional income from non-operating sources (e.g., revenue not directly related to patient care services). Examples of such revenue includes donated services, investment income, property sales and rental of office space. This non-operating income can enhance a hospital’s overall financial viability.

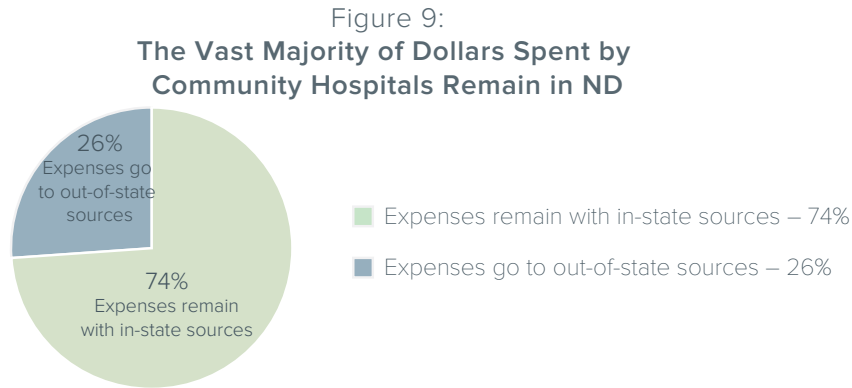
Charity Care and Bad Debt

As socially-responsible organizations, community hospitals provide much needed services to patients, such as emergency and trauma care, regardless of an individual’s financial standing or ability to pay. With this in mind, according to the 2014 Pulse Survey, North Dakota community hospitals provided over \$274 million in bad debt and charity care on behalf of people who were unable to pay for services rendered. This figure is considerably above the level of charity care and bad debt reported in the 2012 Pulse Survey which totaled \$224 million, representing a 22.3% increase.



Dollars Spent in North Dakota

According to the 2014 Pulse survey, the vast majority of all expenses incurred by community hospitals are spent in North Dakota. On average, 74% of the dollars remain in the state, while the remaining 26% of dollars go to out-of-state sources for supplies, equipment and other items needed to operate community hospitals. This percentage is consistent with prior Pulse Surveys which have also reported roughly 75% of all expenditures are made in North Dakota.



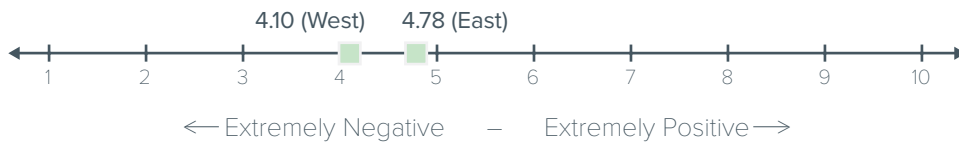
Medicaid Expansion Positively Impacts Community Hospitals

Expansion of the Medicaid program had a positive impact on patients and health care providers alike by providing eligible North Dakota residents with enhanced access to health insurance through the Sanford Health Plan. The financial impact on hospitals was conservatively estimated at \$12-16 million in additional revenue according to the 2014 Pulse Survey. The impact was spread to residents throughout the State among nearly all 42 community hospitals.

Oil Impact on Hospital Profitability

When asked to rate the impact on oil development in North Dakota on their bottom line, survey respondents used a rating scale of 1 to 10, with 1 being defined as extremely negative and 10 being extremely positive. The overall average rating was 4.54, meaning the impact has been both positive and negative. Community hospitals in western North Dakota tended to rate the impact of oil development slightly less favorable than hospitals in the eastern part of the State (4.10 vs. 4.78). Although the energy boom has brought additional residents to the State, many have been uninsured or underinsured, thus increasing the level of bad debt and charity care provided by affected hospitals.

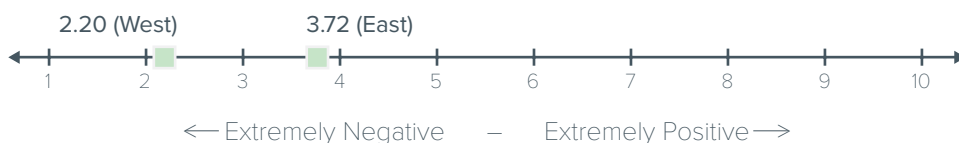
Figure 10:
Oil Development Affects Hospital Profitability both Positively and Negatively



Oil Impact on Hospital Recruitment Efforts

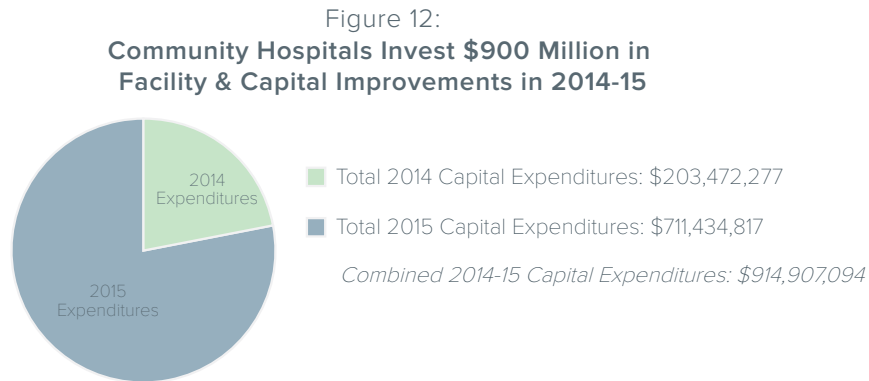
When asked to rate the impact on oil development in North Dakota on their recruitment efforts, survey respondents used a rating scale of 1 to 10, with 1 being defined as extremely negative and 10 being extremely positive. The overall average rating was 3.36. Once again, hospitals in the western part of the State rated the impact of oil development on recruitment efforts more negatively than hospitals in eastern North Dakota (2.20 vs. 3.72). This finding was primarily due to the challenges faced by hospitals competing for workers who are often drawn to the oil fields for higher wages. Additionally, hospitals have reported a dramatic decline in the quality of applicants, thus forcing them to often fill open positions with unqualified personnel.

Figure 11:
Oil Development Negatively Affects Hospital Recruitment Efforts



Hospitals Invest Heavily in Facilities & Capital Improvements

Community hospitals all across North Dakota are investing over \$200 million in upgrading their facilities and equipment in the current year (2014). Additionally, they plan to invest another \$700 million in the year ahead (2015). Major building and expansion projects are planned in communities throughout the state, both large and small, including Fargo, Grand Forks, Bismarck, Watford City, Bowman, Hazen, Dickinson and Grafton.



Direct and Secondary Impacts

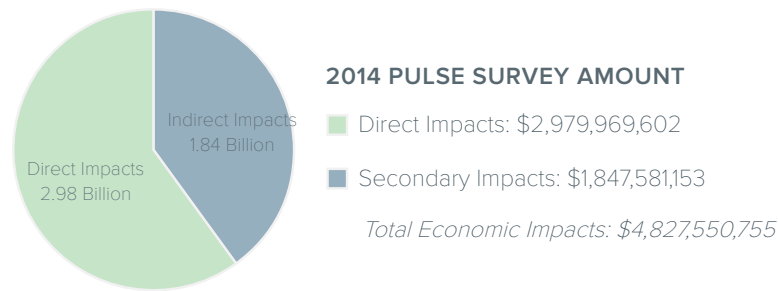
In order to calculate the economic and employment impacts, a widely-accepted input-output model known as IMPLAN was utilized to estimate the direct, secondary, and total impacts of hospitals on North Dakota’s economy. Dr. Gerald A. Doeksen, Director of the National Center for Rural Health Works and Regents Professor and Health Economic at Oklahoma State University, was commissioned to derive multipliers from IMPLAN for the State of North Dakota for employment, income, and output.

The impact in this report will be quantified as output, employment and income resulting from hospitals in the state. Output is defined as the total expenditures of hospitals. Employment is defined as full-time equivalent (FTE) employees. Income is defined as personal income from salaries and benefits. Information on the model and data used in this report can be found in Appendix A.

Total Economic Output of Hospitals Exceeds \$4.8 Billion

According to the IMPLAN model, the State output multiplier for the hospital sector is 1.62. This means that for each dollar of expenditures from the hospital sector, an additional \$0.62 cents in expenditures is generated in other businesses and industries throughout the State of North Dakota. According to the 2014 Pulse Survey, the direct expenditures of all hospitals in North Dakota is estimated at \$2.98 billion. Applying the multiplier results in a secondary impact of \$1.84 billion and total economic impact of \$4.82 billion.

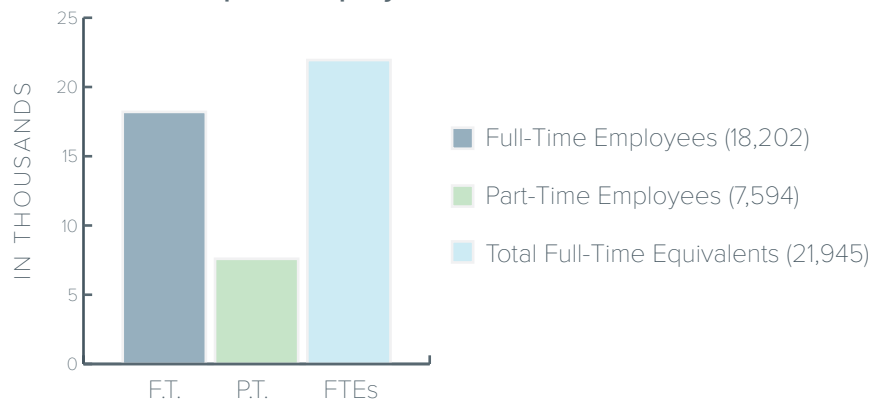
Figure 13:
Direct and Secondary Impact Total Exceeds \$4.8 Billion Annually



Total Employment Impacts

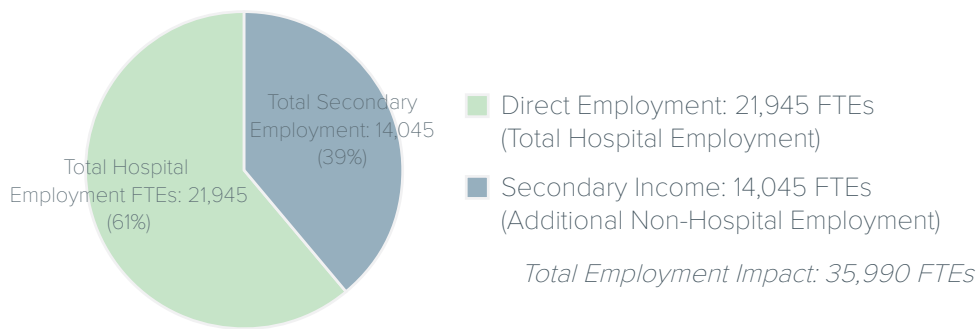
According to the 2014 Pulse Survey results, community hospitals in North Dakota provide direct employment for 18,202 full-time staff and 7,594 part-time and help-out staff. These figures include 1,938 doctors, nurse practitioners, and physician assistants. By combining all full-time and part-time/help out staff, community hospitals employ 25,796 individuals, which equates to 21,945 full-time equivalent (FTE) positions.

Figure 14:
Hospital Employment Nears 22,000 FTEs



The state employment multiplier for the hospital sector is 1.64. This indicates that for each job created in this sector, 0.64 additional jobs are created throughout the state due to business (indirect) and household (induced) spending. For example, the total employment of all hospitals in the State of North Dakota is 21,945 FTEs. Applying the employment multiplier of 1.64 to the total employment brings the total employment impact of the hospitals to 35,990 (21,945 x 1.64 = 35,990). Thus the secondary impact of the hospitals is 14,045 FTE employees (21,945 x 0.64 = 14,045). These are the jobs created in other industry sectors in the economy of the State of North Dakota as a result of the spending of the hospital, combined with the spending of the hospital employees.

Figure 15:
Direct & Secondary Employment Impacts

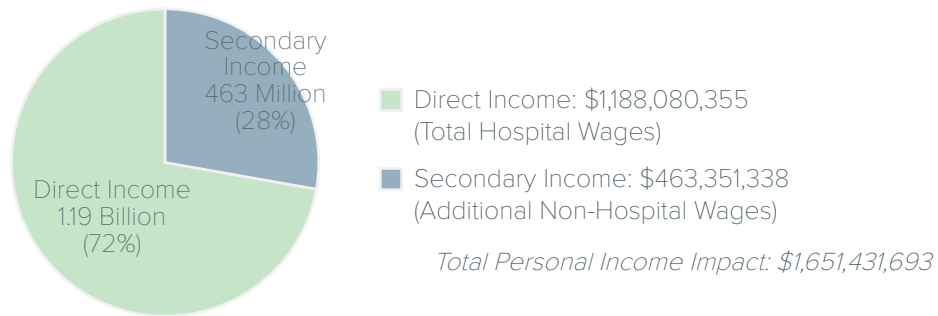


Total Personal Income Exceeds \$1.6 Billion Annually

The state income multiplier for the hospital sector is 1.39. This means for each employment dollar created in the hospital sector, an additional \$0.39 cents in personal income is created throughout the state due to business (indirect) and household (induced) spending.

According to Job Service North Dakota, at the end of 2013, the average annual wage for hospital sector employees was \$54,139. When multiplied by the total employment in the hospital sector during this same time period (21,945 FTEs), the total personal income for the hospital sector equals \$1.19 billion. Applying the multiplier results in a secondary income impact of \$463 million in additional salaries and benefits to non-hospital employees. This equates to a total income impact for the hospital sector of \$1.6 billion annually.

Figure 16:
Direct & Secondary Income Impacts Exceed \$1.6 Billion Annually



Furthermore, Job Service of North Dakota reports that 5 of the top 8 largest employers in the State are health care providers.

Figure 17:
Majority of North Dakota’s Largest Employers Are Healthcare Providers

List of top health care employers in North Dakota

Firm/Organization	Location	Industry
Sanford Health	Fargo	Health Care
Altru Health Systems	Grand Forks	Health Care
St Alexius Medical Center	Bismarck	Health Care
Sanford West (formerly Medcenter One)	Bismarck	Health Care
Trinity Hospital	Minot	Health Care

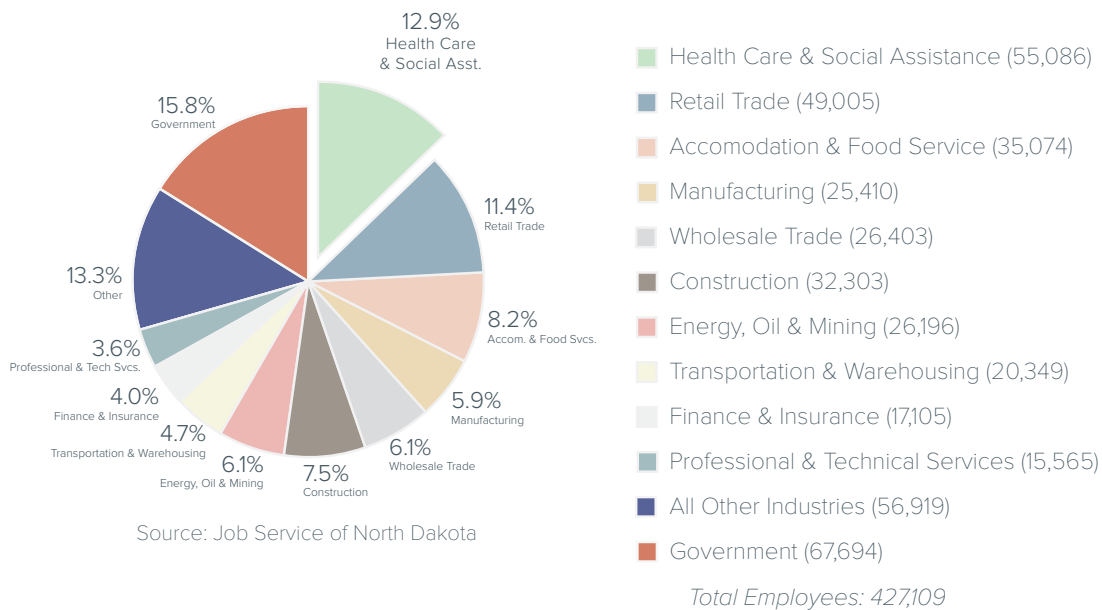
Source: Job Service of North Dakota website, 2014. ND’s largest employers based on Annual 2013 numbers reported to the annual Employment and Wages by Occupation

Additional Employment Impacts

Job Service North Dakota reports the average annual wage for hospital workers to be \$54,139 as of the end of 2013. This average wage is considerably higher than the statewide worker average of \$47,779/year.

Job Service of North Dakota reports the total average level of employment in North Dakota to be 427,109 workers at the end of 2013. Using statistics from the same Job Service report during this time frame, an estimated 4.2% of all workers in North Dakota are directly employed by community hospitals (17,931). According to Job Service of North Dakota, the annual average employment for all business sectors in North Dakota at the end of 2013 was 427,109 workers. Health care and social assistance represents the state’s largest nongovernment employment sector. An estimated 12.9% of all workers in North Dakota are employed by a health care organization.

Figure 18:
Health Care and Social Assistance – State’s Largest Employing Industry



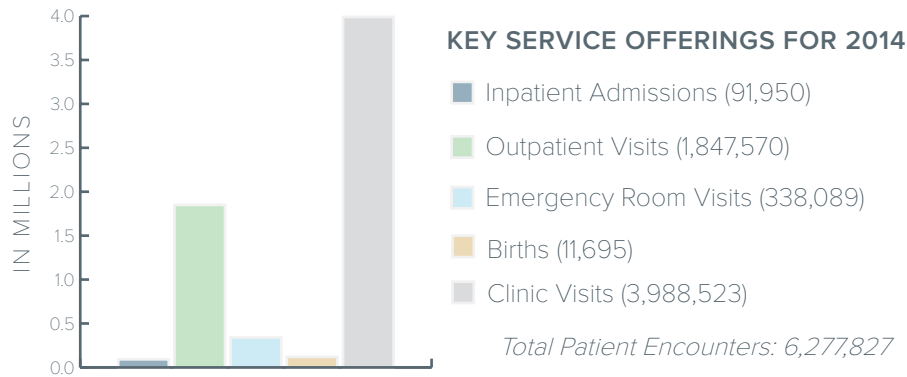
Hospitals Especially Critical in Rural Areas

In rural areas, hospitals are often either the largest or second largest employer, behind the school system. Rural hospitals provide a source of high-tech jobs for young people who might otherwise leave communities heavily dependent upon agriculture. Rural hospitals also provide an anchor for other health care jobs, such as physicians and pharmacists, which, in the absence of the hospital, may not be available.

Patient Care Impacts

As part of the 2014 Pulse Survey, hospital administrators were asked to provide utilization statistics pertaining to key service offerings. They estimated the number of total inpatient admissions, outpatient visits, emergency room visits, clinic visits and births for 2014.

Figure 19:
Key Service Statistics



Inpatient Admissions

According to the 2014 Pulse Survey, a total of 91,950 inpatients were admitted to community hospitals in North Dakota, a 5.2% decrease over the 97,028 inpatient admissions reported in the 2012 Pulse Survey.

Outpatient Visits & Clinic Visits

According to the 2014 Pulse Survey, a total of 1,847,570 outpatient visits were received at community hospitals in North Dakota. A total 3,988,523 clinic visits were conducted at community hospitals in North Dakota, which includes a nearly equal split between primary care (1,825,606) and specialty care visits (2,162,917).

Emergency Room Visits

According to the 2014 Pulse Survey, a total of 338,089 emergency room visits were received at community hospitals in North Dakota, a 2 % increase over the 337,451 emergency room visits reported in the 2012 Pulse Survey.

Births

According to the 2014 Pulse Survey, a total of 11,695 births were delivered at community hospitals in North Dakota, a 6.6% increase over the 10,973 births reported in the 2012 Pulse Survey.

Conclusion

The significance of an industry that saves lives and cares for the well-being of each and every person is immeasurable. But, as you can see, the economic and employment impact that community hospitals have on North Dakota is significant. In 2014 alone, community hospitals directly infused \$3 billion into the state's economy.

With that, community hospitals in North Dakota also contributed to the economy as one of the state's largest employers. When combined with the total health care sector in North Dakota, community hospitals and other health care providers make up 12.9% of the total workforce. In other words, about one out of every seven workers in North Dakota is employed in the health care and social assistance sector.

Lastly, community hospitals have a positive impact on the state by providing quality health care services to people in need. In 2014, community hospitals directly touched the lives of each and every resident in the state by providing over 6.2 million inpatient, outpatient, clinic and emergency room visits. Roughly one out of every eight residents was admitted to a community hospital, one out of every two residents required a visit to a hospital emergency room, and every North Dakota resident had an average of approximately 2.5 outpatient visits and 5.5 clinic visits with community hospitals in 2014.

The AHA cites other ways hospitals support their communities--offering community services such as health screenings and outreach education, providing charity care and other care for which no payment is received, and subsidizing the care of Medicaid patients. According to the 2014 survey, North Dakota hospitals provided over \$274 million in bad debt and charity care. As nonprofit organizations, this mission of service is evidenced by providing citizens with required hospital care. Hospitals serve as foundations for the stability and viability of local communities. They are often the region's largest employer, bringing new wealth to the community while providing life-saving and health-enriching services.

Appendix A

Model and Data Used to Estimate Employment and Income Multipliers

Appendix A

Model and Data Used to Estimate Employment and Income Multipliers

A computer spreadsheet that uses state IMPLAN multipliers was developed to enable community development specialists to easily measure the secondary benefits of the health sector on a state, regional or county economy. The complete methodology, which includes an aggregate version, a disaggregate version, and a dynamic version, 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). A brief review of input-output analysis and IMPLAN are presented here.

A Review of Input-Output Analysis

Input-output (I/O) (Miernyk, 1965) was designed to analyze the transactions among the industries in an economy. These models are largely based on the work of Wassily Leontief (1936). 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, etc. By simultaneously accounting for structural interaction between sectors and industries, I/O analysis gives expression to the general economic equilibrium system. The analysis utilizes assumptions based on linear and fixed coefficients and limited substitutions among inputs and outputs. The analysis also assumes that average and marginal I/O coefficients are equal.

Nonetheless, the framework has been widely accepted and used. 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 interdependence of an economy. From the coefficients, various predictive devices can be computed, which can be useful in analyzing economic changes in a state, a region or a county. Multipliers indicate the relationship between some observed change in the economy and the total change in economic activity created throughout the economy.

MicroIMPLAN

MicroIMPLAN is a computer program developed by the United States Forest Service (Alward, et al., 1989) to construct I/O accounts and models. Typically, the complexity of I/O modeling has hindered practitioners from constructing models specific to a state requesting an analysis. Too often, inappropriate U.S. multipliers have been used to estimate local economic impacts. In contrast, IMPLAN can construct a model for any county, region, state, or zip code area in the United States by using available state, county, and zip code level 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. These are: total industry output, personal income, total income, value added, and employment. Two 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 closing of a hospital. The focus business changes its purchases of 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 accordingly. The effect of the changes in household consumption on businesses in a state is referred to as an induced effect. To measure the total impact, a multiplier is used. The 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 divided by direct).

Minnesota IMPLAN Group, Inc. (MIG)

Dr. Wilbur Maki at the University of Minnesota utilized the input/output model and database work from the U. S. Forest Service's Land Management Planning Unit in Fort Collins to further develop the methodology and to expand the data sources. Scott Lindall and Doug Olson joined the University of Minnesota in 1984 and worked with Maki and the model.

As an outgrowth of their work with the University of Minnesota, Lindall and Olson entered into a technology transfer agreement with the University of Minnesota that allowed them to form MIG. At first, MIG focused on database development and provided data that could be used in the Forest Service version of the software. In 1995, MIG took on the task of writing a new version of the IMPLAN software from scratch. This new version extended the previous Forest Service version by creating an entirely new modeling system that included creating Social Accounting Matrices (SAMs) – an extension of input-output accounts, and resulting SAM multipliers. Version 2 of the new IMPLAN software became available in May of 1999. For more information about Minnesota IMPLAN Group, Inc., please contact Scott Lindall or Doug Olson by phone at 651-439-4421 or by email at info@implan.com or review their website at www.implan.com.

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Appendix B

Hospital “Impact” Invitation Letter to Administrators/CEOs

Appendix B

Hospital “Impact” Invitation to Participate in the 2012 Survey

DATE: Tuesday, August 5, 2014
TO: North Dakota Hospital Administrators and CEOs
FROM: Tim Blasl
SUBJECT: NDHA Economic Pulse Questionnaire
IMPORTANCE: High

Good Afternoon:

I'm writing to request assistance from your hospital in completing the attached survey to document the significant impact that North Dakota hospitals and health systems have on the State's economy. In the past, this study has been referred to as “The Economic Pulse of North Dakota.” The study was originally completed in 1997, and has been updated every 2 years since that time.

The information you submit on behalf of your facility will be gathered and analyzed in a similar fashion as previous studies. Please complete the attached document (use either the Word or PDF file format) and return to NHDA by Friday, August 29th. Please utilize the latest fiscal year-end information. For example, the hospitals that have a June 30th year end should use 6/30/2014 information.

The information you provide should be related to hospital and hospital-owned clinic operations only. The study is focused solely on the impact of hospitals and hospital integrated systems; therefore, please refrain from reporting any information relating to long term care.

Please forward to your key finance employees to complete. All individual hospital submitted data will be kept confidential.

Once “The Economic Pulse” report is completed, all providers will receive a copy. Lastly, this tool will be used for our upcoming legislative session. If you have questions about the survey please contact me.

I encourage you complete the survey so we can tell our story.

Tim Blasl, Vice President
North Dakota Hospital Association
1622 E Interstate Ave | Bismarck, ND 58503
(701) 224-9732

Appendix C

Hospital “Impact” Survey Questionnaire

Appendix C:

Hospital "Impact" Survey Questionnaire


**NORTH DAKOTA HOSPITALS & HEALTH SYSTEMS
2014 IMPACT SURVEY (PULSE REPORT)**

Using your most recent year-end figures, please complete the following questionnaire to the fullest extent possible for your combined operations (inpatient, outpatient and physician services). However, do not include statistics relating to long term care services. Thank you.

The following statistics are for the fiscal year ending: _____

Gross Operating Revenue:

Medicare: _____

Medicaid: _____

BCBSND: _____

Workforce Safety: _____

Others: _____

Total Gross Operating Revenue: _____

Contractual Deductions from Revenue (Not including charity care or bad debt):

Medicare: _____

Medicaid: _____

BCBSND: _____

Workforce Safety: _____

Others: _____

Total Contractual Deductions from Revenue: _____

Total Net Operating Revenue: _____**Total Operating Expenses:** _____**Operating Margin (Net Revenue – Operating Expenses):** _____**Non-Operating Revenue:** _____**Net Income/Loss (Operating Margin + Non-Operating Revenue):** _____**Other Financial Data:**

Total Bad Debt/Charity Care: _____

Estimated % of Total Expenditures Retained in ND: _____

Estimated financial impact of the Medicaid Expansion Program

from January 1 – June 30, 2014 - Sanford Health Plan): _____

Capital Expenditure Data:

Total capital expenditure for the most recent fiscal year: _____

Total anticipated dollar amount of any building or expansion project you have undertaken this past year or anticipate initiating within the next 12 months: _____

Inpatient, Outpatient and ER Utilization:

Total Inpatient Admissions: _____

Total Outpatient Visits: _____

Total Emergency Room Visits: _____

Total Clinic Visits (Hospital Owned):

Primary Care Visits: _____

Specialty/Other Visits: _____

Total Clinic Visits: _____

Total Births: _____

Total Full-Time Employees: _____

How many of these individuals are primary care physicians? _____

How many of these individuals are mid-level practitioners? _____

How many of these individuals are Specialty/Other physicians? _____

Total Physicians and Mid-levels? _____

Total Part-Time Employees: _____

Total Full-Time Equivalents (FTEs): _____

On a “negative vs. positive” rating scale of 1 to 10, with “1 being extremely negative” and “10 being extremely positive,” how do you rate the impact of oil development in North Dakota on your bottom line?

(Circle one): 1 2 3 4 5 6 7 8 9 10

On a “negative vs. positive” rating scale of 1 to 10, with “1 being extremely negative” and “10 being extremely positive,” how do you rate the impact of oil development in North Dakota on your ability to recruit and retain staff at all levels of the organization?

(Circle one): 1 2 3 4 5 6 7 8 9 10

Facility Name: _____

Name/Title of Individual Completing the Survey: _____

Please complete this survey and return to NDHA by Friday, August 29, 2014, via email to Tim Blasl at tblasl@ndha.org or via FAX at 701-224-9529. Thank you.

Appendix D

Participating Facilities

Appendix D

Participating Facilities

Fully-Participating Facilities – (34)

Ashley: Ashley Medical Center

Bismarck: St. Alexius Medical Center

Bismarck: Sanford Health (formerly Medcenter One)

Bottineau: St. Andrew's Health Center

Bowman: Southwest Healthcare Services

Cando: Towner County Medical Center

Carrington: Carrington Health Center

Cooperstown: Cooperstown Medical Center

Crosby: St. Luke's Hospital

Devils Lake: Devils Lake Mercy Hospital

Dickinson: St. Joseph's Hospital & Health Center

Elgin: Jacobson Memorial Hospital

Fargo: Essentia (formerly Innovis)

Fargo: Sanford Health (formerly MeritCare)

Garrison: Garrison Memorial Hospital

Grand Forks: Altru

Harvey: St. Aloisius Medical Center

Hazen: Sakakawea Medical Center

Hettinger: West River Regional Medical Center

Hillsboro: Sanford Health (Formerly Hillsboro Medical Center)

Jamestown: Jamestown Hospital

Linton: Linton Hospital

Lisbon: Lisbon Medical Center

Mayville: Sanford Health (formerly Union Hospital)

Northwood: Northwood Deaconess Health Center

Oakes: Oakes Community Hospital

Park River: First Care Health Center

Rolla: Presentation Medical Center

Tioga: Tioga Medical Center

Turtle Lake: Turtle Lake Community Memorial Hospital

Valley City: Mercy Hospital

Watford City: McKenzie County Memorial Hospital

Williston: Mercy Hospital

Wishek: Wishek Community Hospital

Partially-Participating Facilities – (8)

Cavalier: Pembina County Memorial Hospital

Grafton: Unity Medical Center

Kenmare: Trinity Kenmare Medical Center

Langdon: Cavalier County Memorial Hospital

McVie: Nelson County Health System

Minot: Trinity Medical Center

Rugby: Heart of America Medical Center

Stanley: Mountrail County Medical Center



NDHA
North Dakota Hospital Association

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Phone (701) 224-9732 | Fax (701) 224-9529