

FALL 2012
HOSPITAL HEALTH SYSTEMS

the *economic*
Pulse
of North Dakota
a HEALTHCARE impact study



Study Sponsored By:

NDHA
North Dakota Hospital Association

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The research team also acknowledges the healthcare administrators, financial officers and other executives who completed and returned survey questionnaires and other requested documents.

Funding for this study was provided by the North Dakota Hospital Foundation.

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Respectfully submitted,



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Background Information

In July of 2012, 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 and 2010. The survey instruments used as part of the prior studies (2002, 2006, 2008 and 2010) were all similar to the survey instrument used for the 2012 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 and 2012 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 2010 and 2012 research studies quantified the economic contribution of the state's 42 community hospitals. The results from the 2010 and 2012 surveys will be compared throughout this report in sections where the data sources are similar.

Research Methodology

In July 2012, the North Dakota Hospital Association distributed survey questionnaires to administrators of community hospitals in North Dakota [excluding the tribal hospitals (2), specialty hospitals (4) 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 (Appendix B - NDHA email) was sent from NDHA to each hospital administrator on July 16, 2012, requesting that they complete the 2012 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 2010 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 24, 2012. Several follow-up emails and phone calls were completed during the month of August as reminders to those that had yet to complete the survey.

Of the forty-two (42) community hospitals surveyed, thirty-two (32) facilities (Appendix D: Fully-Participating Facilities) provided all requested information. This represents a 76% 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 2011-2012.

The ten (10) facilities that did not fully participate in the 2012 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:

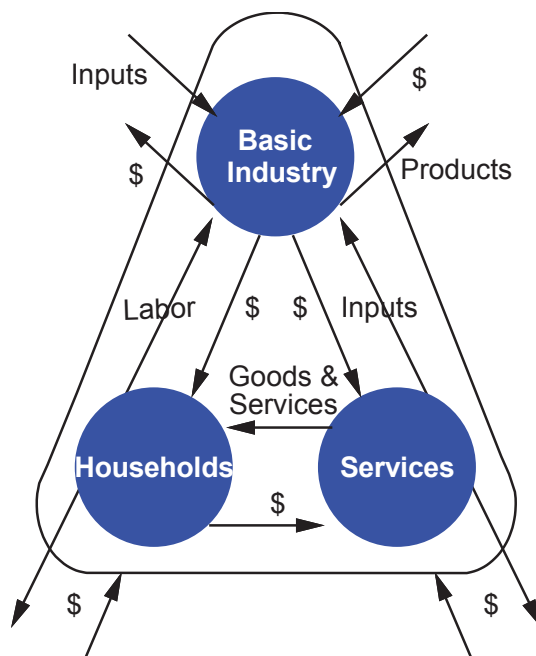
- Facility-specific IRS Tax Returns (Form 990)
- Facility-specific statistics provided as part of the 2010 NDHA Pulse Survey
- Aggregate data from the American Hospital Association (AHA) annual survey (2012)

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 2010 Pulse survey was used for the 2012 report. This conservative approach may cause the findings to be somewhat under-reported. Nevertheless, all forty-two facilities are represented in the 2012 findings.

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

For any economy, the foundation is businesses which 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.

Figure 1:
State Economic System



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.

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, 2012 Edition
- Job Service of North Dakota website (<https://www.ndworkforceintelligence.com>)
- North Dakota Tax Commissioner website (<http://www.nd.gov/tax>)
- US Department of Commerce website (<http://www.commerce.nd.gov>)
- US Census Bureau website (<http://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 2012 to assess the contributions made by community hospitals to the economy of North Dakota. Key research findings include:

Gross Revenues Exceed \$5.6 Billion, With Net Revenues Exceeding \$3.0 Billion

North Dakota hospitals and health systems provided healthcare services totaling over \$5.6 billion in gross revenue in 2012.

- Of this amount, roughly \$2.6 billion was deducted from revenue primarily due to fixed reimbursement from the government and third-party payers.
- These deductions from revenue were 46% less than the actual amount of billed charges, meaning hospitals in North Dakota were paid 54 cents on every dollar billed to deliver patient care.
- This resulted in net revenues of \$3.0 billion, which is a 22.5% increase over net revenues of \$2.55 billion in 2010.

Five Largest Health Systems Account for 90% of Total Net Revenue

The majority of net revenues (90%) were generated by the five (5) largest health systems in the State (e.g., Altru, Essentia, Sanford, St. Alexius, Trinity).

- 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 10% of total annual revenues.

Majority of North Dakota Hospitals Have a Negative Bottom Line (Net Return)

Although North Dakota hospitals reported an overall positive bottom line on an aggregate basis, many individual hospitals are still struggling financially. For example, of the 42 facilities surveyed, nearly two-thirds of the hospitals located in rural areas (Critical Access Hospitals) reported a negative net return. In other words, the majority of North Dakota hospitals spent more money than they generated in annual net revenue.

Charity Care and Bad Debt Exceed \$224 Million

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 2012, North Dakota community hospitals provided over \$74 million in charity care to people who were unable to pay for services rendered.
- Additionally, North Dakota community hospitals had an estimated \$150 million dollars in bad debt during 2012. Bad debt is defined as a bill that is deemed to be uncollectible.

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, 77% of the dollars remain in the state, while the remaining 23% of dollars go to out-of-state sources for supplies, equipment and other items needed to operate community hospitals.

Total Economic Output of Community Hospitals Exceeds \$4.7 Billion

The direct economic impact of North Dakota community hospitals is \$2.85 billion, which represents the total annual expenditures of all hospitals combined. Using the IMPLAN model, a multiplier of 0.68 was used to determine secondary impacts totaling \$1.93 billion. Thus, the direct and secondary impacts total \$4.78 billion.

Total Employment Impact of Community Hospitals Exceeds 36,000 Full-Time Employees

The direct employment impact of North Dakota community hospitals is 21,514 full-time equivalent employees (FTEs). Using the IMPLAN model, a multiplier of 0.69 was used to determine secondary impacts totaling an additional 14,845 FTEs. 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. By combining the direct and secondary impacts, the total employment generated by community hospitals is 36,359 FTEs.



Hospital Salaries are 22.2% Higher than the Statewide Average

Job Service North Dakota reports the average annual wage for hospital workers to be \$54,444 as of the first quarter of 2012. This average wage is considerably higher (22.2%) than the statewide worker average of \$44,564/year.

An Estimated 4.9% of All Workers in North Dakota are Employed by Hospitals

An estimated 4.9% 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 13.5% of all workers in North Dakota are employed by a health care organization.

Majority of the State's Largest Employers are Community Hospitals

According to Job Service of North Dakota, five (5) of the top six (6) largest employers in the State are health care providers.

List of top employers in North Dakota

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

North Dakota Hospitals Provide Over 5.8 Million Patient Encounters Annually

One out of every seven 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 5.4 clinic visits and 2.8 outpatient visits in 2012. The total volume of healthcare services delivered by community hospitals exceeded 5.8 million patient encounters.

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 24/7, and provide assistance during some of the most challenging times in life, North Dakota community hospitals and health systems are the pulse of the state. 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. It is important, however, to show the positive influence our health care facilities and organizations 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, 32 facilities responded to the survey by providing complete data (76% response rate).

The ten (10) facilities that did not fully participate in the 2012 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 data submitted by each of these facilities as part of the 2010 Pulse Survey.

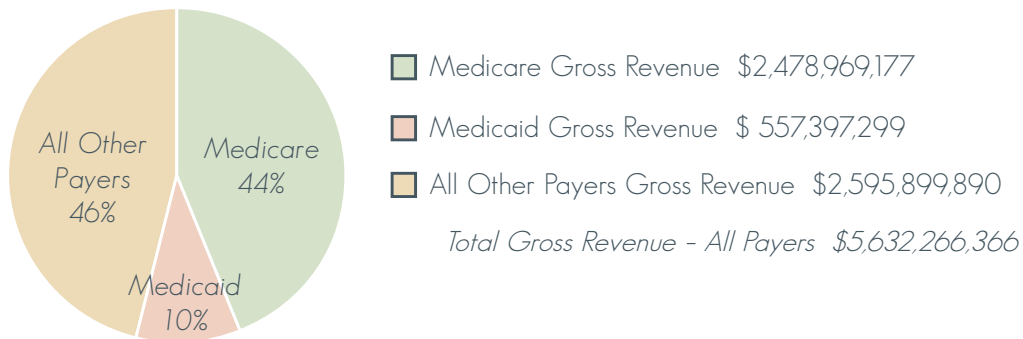
Gross Revenue

According to the 2012 Pulse Survey, community hospitals in North Dakota provided healthcare services accounting for over \$5.6 billion in gross revenue. This is the combined amount of all revenue that hospitals billed to patients, insurance companies and other payers for services rendered in 2012.

Medicare and Medicaid accounted for just over \$3.0 billion, which represents over half of the total gross revenue (54%). All other payers (e.g., Blue Cross/Blue Shield, Workforce Safety, etc.) accounted for the remaining 46% of gross revenue.

Figure 2:

Gross Revenue: Medicare, Medicaid & All Other Payers



Deductions from Revenue

Like many other industries, not all of the bills that are submitted by community hospitals to their various customers (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 2012 Pulse Survey totaled over \$2.6 billion, an astounding 46% less than actual billed charges. In other words, community hospitals in North Dakota were paid fifty four cents on every dollar billed for serviced rendered.

Figure 3:

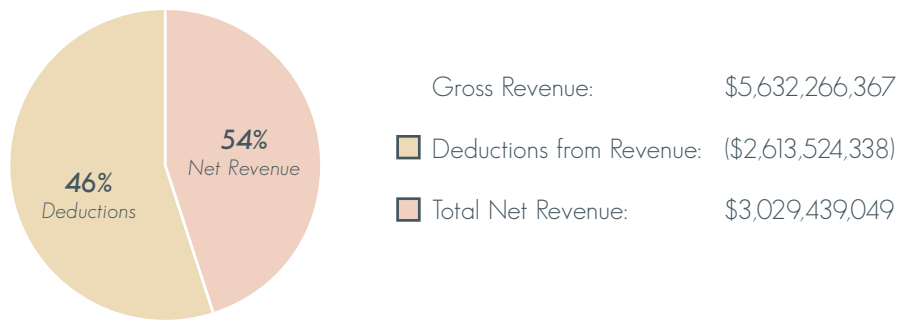
Deductions from Revenue



Net Revenue

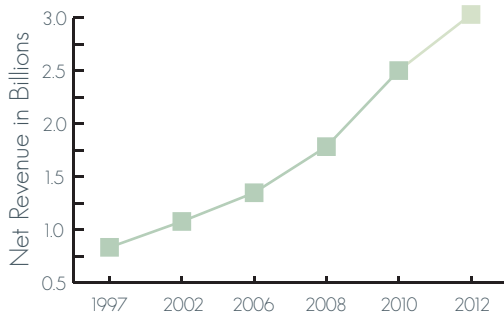
With gross revenues totaling over \$5.6 billion and deductions from revenue totaling over \$2.6 billion, the (actual) net revenue generated by community hospitals in North Dakota as reported in the 2012 Pulse Survey totaled just over \$3.0 billion. This represents the actual amount of revenue received by community hospitals for services rendered in 2012.

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



Over the past 15 years, total net revenues for community hospitals in North Dakota have grown steadily and substantially. Since 1997, the net revenue generated by community hospitals in North Dakota has grown by 264%. As for the most recent survey results, total net revenues have increased by over \$474 million (\$474,283,292) since the 2010 survey - which represents a growth in revenue from one survey to the next of over eighteen percent (18.6%).

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%

* Overall growth from 1997 to 2012 = 264%

The overwhelming majority of net revenues (90%) were generated by the five (5) largest health systems in the state (e.g., Altru, Essentia, Sanford, St. Alexius, Trinity). 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 10% of total annual revenues.

Figure 6:

Five Largest Health Systems Account for 90% of Total Net Revenues



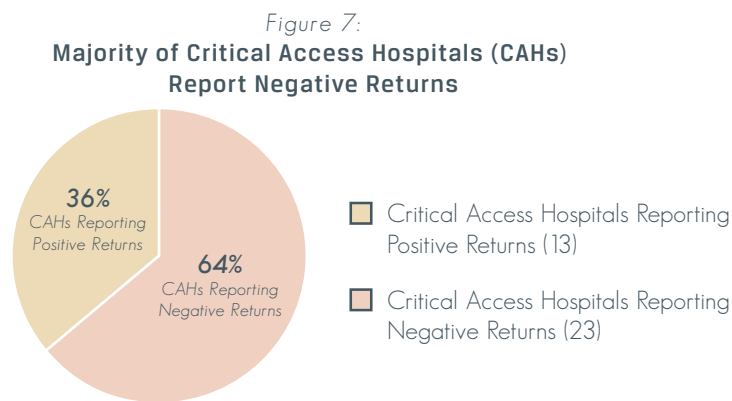
Source: NDHA Survey, 2012.

Total Expenses and Net Returns

According to the 2012 Pulse Survey, community hospitals in North Dakota posted a positive bottom line (net return), meaning they generated more revenue than they spent on an annual basis. Having a positive bottom line enables hospitals to improve their facilities, purchase new equipment, expand services and keep pace with inflationary factors (e.g. raises for employees and increased costs for technology and supplies).



Although North Dakota hospitals reported an overall positive bottom line on an aggregate basis, many individual hospitals are still struggling financially. For example, of the 42 facilities surveyed, nearly two-thirds of the hospitals located in rural areas (Critical Access Hospitals) reported a negative net return. In other words, the majority of North Dakota hospitals spent more money than they generated in annual net revenue. There are currently thirty-six (36) Critical Access Hospitals (CAHs) in North Dakota. According to the 2012 Pulse Report Survey, 23 of these facilities posted negative net returns (64%). When net returns are inadequate, hospitals are forced to tap into their retained earnings (savings) and/or seek additional financing to sustain their operations and facilities.



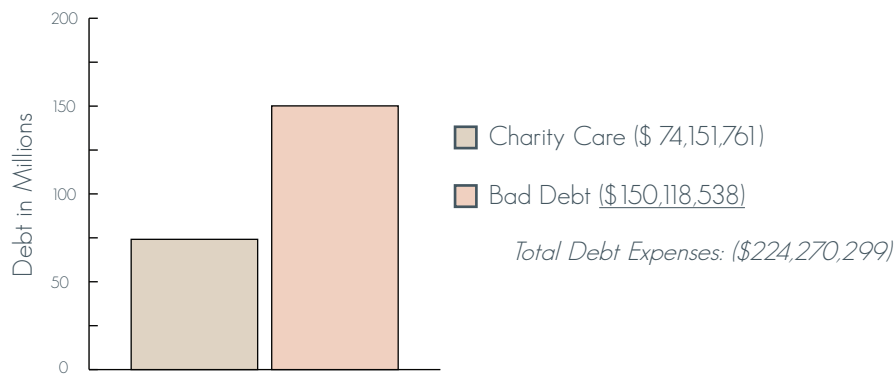
The difference in financial performance between the various hospitals can be attributed to many factors including, but not limited to, reimbursement from Medicare and other third party payers, scope of services offered, market share, capital improvements and operational costs. Negative net returns affected all types of hospitals regardless of size; however, rural hospitals have historically tended to be at greater risk of financial challenges.

Charity Care and Bad Debt

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. With this in mind, according to the 2012 Pulse Survey, North Dakota community hospitals provided over \$74 million in charity care to people who were unable to pay for services rendered. This figure is considerably above the level of charity care reported in the 2010 Pulse Survey which totaled \$51.5 million.

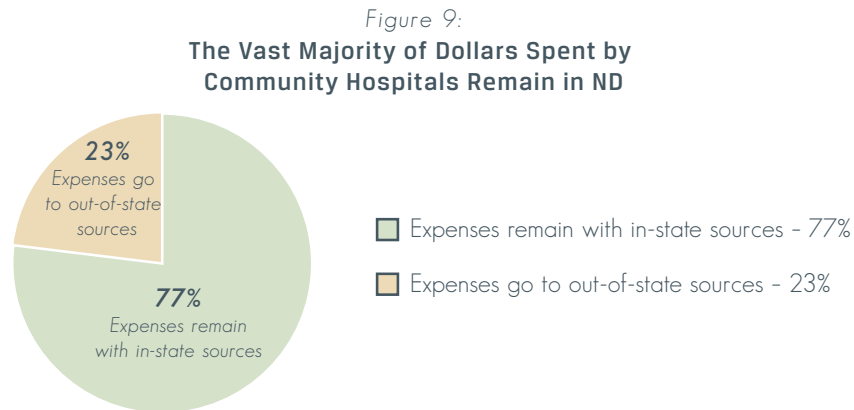
In addition, community hospitals had an estimated \$150 million dollars in bad debt during 2012. Bad debt is defined as a bill that is deemed to be uncollectible. This determination is made after all attempts have been pursued to collect on the debt. The debt, once considered to be bad, is written off by the hospital as an expense. The bad debt reported in the 2010 Pulse Survey totaled \$121.8 million.

Figure 8:
Charity Care & Bad Debt Expenses



Dollars Spent in North Dakota

According to the 2012 Pulse survey, the vast majority of all expenses incurred by community hospitals are spent in North Dakota. On average, 77% of the dollars remain in the state, while the remaining 23% 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 Survey which have also reported 75 - 77% of all expenditures are made in North Dakota.



Source: NDHA Survey, 2012.

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.

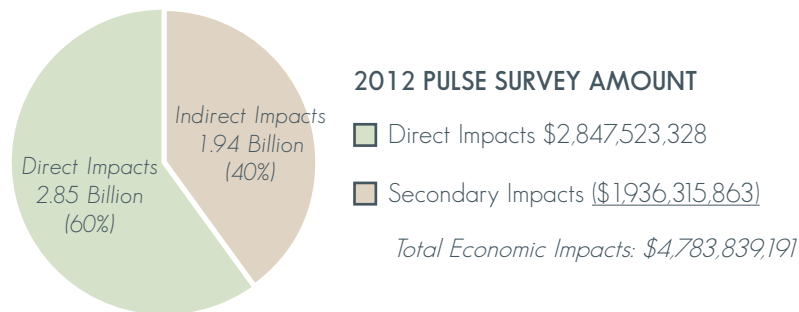
The impact in this report will be quantified as output, employment and income resulting from hospitals in the state. Output is defined as the total expenditures of hospitals. Employment is defined as full-time equivalent (FTE) employees. Income is defined as personal income from salaries and benefits.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

Total Economic Output

According to the IMPLAN model, the State output multiplier for the hospital sector is 1.68. This means that for each dollar of expenditures from the hospital sector, an additional \$0.68 in expenditures is generated in other businesses and industries throughout the State of North Dakota. The direct expenditures of the hospitals in North Dakota is \$2.85 billion. Applying the multiplier results in a secondary impact of \$1.94 billion and total economic impact of \$4.78 billion.

Figure 10:

Direct and Secondary Impact Total Nearly \$4.8 Billion Annually

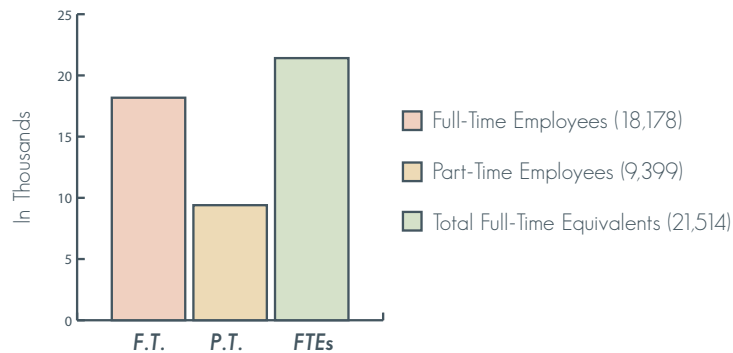


Total Employment Impacts

According to the 2012 Pulse Survey results, community hospitals in North Dakota directly employed 18,178 full-time employees and 9,399 part-time and help-out employees. This represents an estimated 21,514 full-time equivalent (FTE) positions. This figure includes 1,818 full-time doctors, nurse practitioners, and physician assistants.

Figure 11:

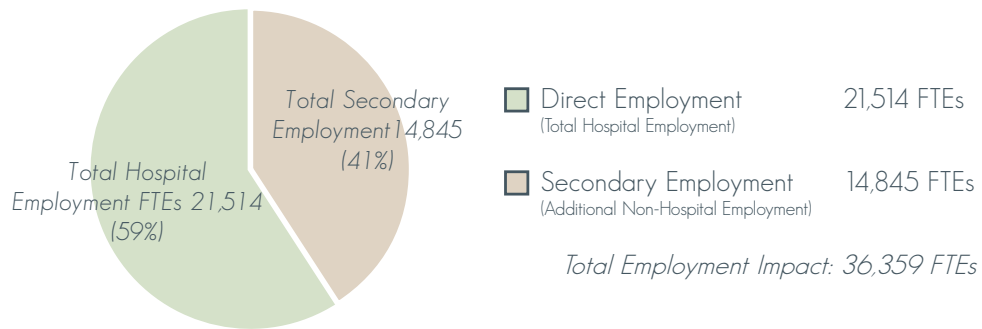
Hospital Employees (Full-time, Part-time & FTEs)



The state employment multiplier for the hospital sector is 1.69. This indicates that for each job created in this sector, 0.69 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 21,514 FTEs. Applying the employment multiplier of 1.69 to the total employment of 21,514 brings the total employment impact of the hospitals to 36,359 (21,514 x 1.69 = 36,359). Thus the secondary impact of the hospitals is 14,845 FTE employees (21,514 x 0.69 = 14,845). 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 12:

Direct & Secondary Employment Impacts

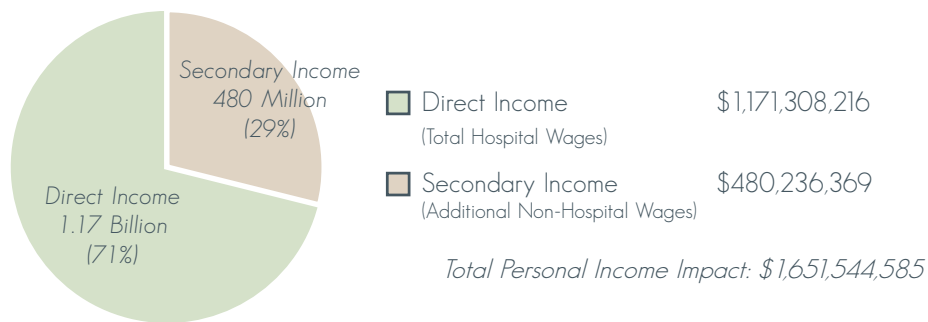


Total Personal Income Impacts

The state income multiplier for the hospital sector is 1.41. This means for each employment dollar created in the hospital sector, an additional \$0.41 in personal income is created throughout the state due to business (indirect) and household (induced) spending.

According to Job Service North Dakota, during the first quarter of 2012, the average annual wage for hospital sector employees was \$54,444. When multiplied by the total employment in the hospital sector during this same time period (21,514 FTEs), the total personal income for the hospital sector equals \$1.2 billion. Applying the multiplier results in a secondary income impact of \$480 million in additional salaries and benefits to non-hospital employees. This equates to a total income impact for the hospital sector of \$1.65 billion annually.

Figure 13:
Direct & Secondary Income Impacts



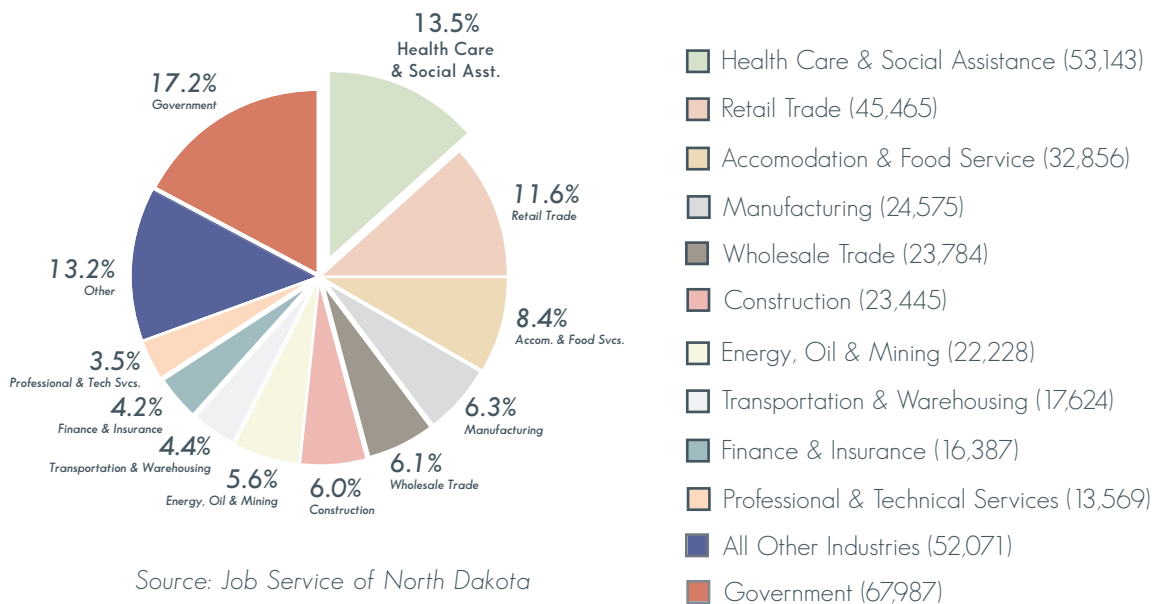
Additional Employment Impacts

Job Service North Dakota reports the average annual wage for hospital workers to be \$54,444 as of the first quarter of 2012. This average wage is considerably higher (22.2%) than the statewide worker average of \$44,564/year.

Job Service of North Dakota reports the total average level of employment in North Dakota to be 393,134 workers as of the first quarter of 2012. Using statistics from the same Job Service report during this time frame, an estimated 4.9% of all workers in North Dakota are directly employed by community hospitals (19,285). According to Job Service of North Dakota, the annual average employment for all business sectors in North Dakota as of first quarter 2012 was 393,134 workers. Health care and social assistance represents the state's largest non-government employment sector. An estimated 13.5% of all workers in North Dakota are employed by a health care organization.

Figure 14:

Health Care and Social Assistance – State's Largest Employing Industry



Source: Job Service of North Dakota

Total Employees: 393,134

Furthermore, Job Service of North Dakota reports that 5 of the top 6 largest employers in the State are health care providers.

Figure 15:

Majority of North Dakota's Largest Employers Are Healthcare Providers

List of top employers in North Dakota

Firm/Organization	Location	Industry
North Dakota State University	Fargo	Education
Altru Health Systems	Grand Forks	Health Care
Sanford Health	Fargo	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, 2012. ND's largest employers based on Annual 2012 numbers reported to the Quarterly Census of Employment and Wages program.



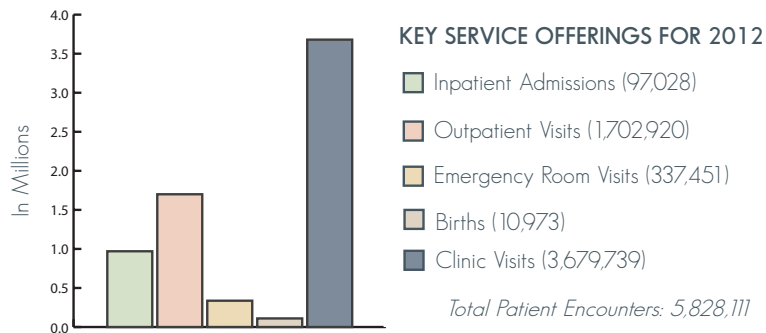
Hospitals Especially Critical in Rural Areas

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 2012 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 2012.

Figure 16:
Key Service Statistics



Inpatient Admissions

According to the 2012 Pulse Survey, a total of 97,028 inpatients were admitted to community hospitals in North Dakota, a 3.2% increase over the 94,024 inpatient admissions reported in the 2010 Pulse Survey.

Outpatient Visits & Clinic Visits

According to the 2012 Pulse Survey, a total of 1,702,920 outpatient visits were received at community hospitals in North Dakota. A total 3,679,739 clinic visits were conducted at community hospitals in North Dakota, which includes an equal split between primary care (1,837,864) and specialty care visits (1,841,875).

Emergency Room Visits

According to the 2012 Pulse Survey, a total of 337,451 emergency room visits were received at community hospitals in North Dakota, a 14% increase over the 296,035 emergency room visits reported in the 2010 Pulse Survey.

Births

According to the 2012 Pulse Survey, a total of 10,973 births were delivered at community hospitals in North Dakota, a 8.2% increase over the 10,144 births reported in the 2010 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 2012 alone, community hospitals directly infused over \$3.0 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 13.5% 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 2012, community hospitals directly touched the lives of each and every resident in the state by providing over 5.8 million inpatient, outpatient, clinic and emergency room visits. Roughly one out of every seven 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 2.8 outpatient visits and 5.4 clinic visits with community hospitals in 2012.

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 2012 survey, North Dakota hospitals provided over \$74 million in 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.



References

Alward, G., Sivertz, E., Olson, D., Wagnor, J., Serf, D., and Lindall, S. Micro IMPLAN Software Manual. Stillwater, MN, University of Minnesota Press. 1989.

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Minnesota IMPLAN Group, Inc. User's Guide, Analysis Guide, Data Guide: IMPLAN Professional Version 2.0 Social Accounting & Impact Analysis Software, 2nd Edition. June 2000.

Siverts, Eric, Charles Palmer, Ken Walters, and Greg Alward. IMPLAN USER'S GUIDE. U.S. Department of Agriculture, Forest Service, Systems Application Unit, Land Management Planning, Fort Collins, Colorado. 1983.

Appendix B

Hospital “Impact” Invitation Letter to Administrators/CEOs



Appendix B

Hospital “Impact” Invitation to Participate in the 2012 Survey

FROM: Tim Blasl
SENT: Monday, July 16, 2012 3:50 PM
TO: North Dakota Hospital Administrators/CEOs
CC: Jerry Jurena; Lori Schmautz
SUBJECT: NDHA Economic Pulse Questionnaire
IMPORTANCE: High

Greetings from NDHA. I'm writing to request that your facility complete the attached survey to document the significant impact that North Dakota hospitals 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 2-3 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 Word document and return to NHDA by Friday, August 24th, 2012. Please utilize the latest fiscal year end information. For example, the hospitals that have a June 30th year end should use 6/30/2012 information.

The information you provide should be related to hospital and employed physicians 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.

Once “The Economic Pulse” report is completed, all providers will receive a copy. I've attached a pdf copy of the 2010 Economic Pulse for your review. Lastly, this tool will be used for our next legislative session. It helps us tell our story on how healthcare impacts the economic infrastructure of North Dakota. If you have questions about the survey please contact me. Thank you.

P.S. The information requested is similar to data included as part of your organization's IRS 990 report; therefore, the person who typically completes this report would be the most appropriate person to complete the attached Pulse survey.

Tim Blasl

Vice President
North Dakota Hospital Association
701-224-9732
tblasl@ndha.org

Appendix C

Hospital “Impact” Survey Questionnaire





NORTH DAKOTA HOSPITALS & HEALTH SYSTEMS

2012 IMPACT SURVEY

Using your most recent year-end figures, please complete the following questionnaire 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 revenue:

Medicare: _____

Medicaid: _____

BCBSND: _____

Workforce Safety: _____

Others: _____

Total Gross Revenue (all payers): _____

Deductions from revenue:

(Not including charity care or bad debt)

Medicare: _____

Medicaid: _____

BCBSND: _____

Workforce Safety: _____

Others: _____

Total Deductions from revenue: _____

Total net revenue: _____

Total charity care: _____

Total bad debt: _____

Total expenses: _____

Estimated percent of total expenditures retained in ND: _____

Total inpatient admissions: _____

Total outpatient visits: _____

Total emergency room visits: _____

Total Clinic Visits (Employed Physicians)

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): _____

(Facility name): _____

(Name/title of individual completing survey): _____

Please complete this survey and **return to NDHA by Friday, August 24, 2012**, 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 - (32)

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
Cavalier: Pembina County Memorial Hospital
Crosby: St. Luke's Hospital
Dickinson: St. Joseph's Hospital & Health Center
Elgin: Jacobson Memorial Hospital
Fargo: Essentia Health
Fargo: Sanford Health
Garrison: Garrison Memorial Hospital
Grand Forks: Altru
Harvey: St. Aloisius Medical Center
Hazen: Sakakawea Medical Center
Hettinger: West River Regional Medical Center
Jamestown: Jamestown Hospital
Langdon: Cavalier County Memorial Hospital
Linton: Linton Hospital
Lisbon: Lisbon Medical Center
Mayville: Sanford Health
Northwood: Northwood Deaconess Health Center

Oakes: Oakes Community Hospital
Park River: First Care Health Center
Rolla: Presentation Medical Center
Rugby: Heart of America 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 - (10)

Cando: Towner County Medical Center
Carrington: Carrington Health Center
Cooperstown: Cooperstown Medical Center
Devils Lake: Devils Lake Mercy Hospital
Grafton: Unity Medical Center
Hillsboro: Hillsboro Medical Center
Kenmare: Kenmare Medical Center
McVie: Nelson County Health System
Minot: Trinity Medical Center
Stanley: Mountrail County Medical Center





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