

The Contribution of North Dakota's Community Pharmacies to the State's Economy

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Abstract

A pharmacist shortage, mail and internet competition, thinning margins, and third-party payer issues are some of the issues challenging community pharmacies. Those challenges have raised concerns about the long-term viability of independent community pharmacies, especially those in rural areas. In addition to a pharmacy's role in the delivery of prescription drugs, community pharmacies also play an important role in the state and local economies, again, especially in rural communities. Community pharmacies consistently have been classified as a business that provides essential services. Because of the issues and challenges facing community pharmacies and their role as an essential service, this study was undertaken to quantify the economic contribution North Dakota's community pharmacies make to the state's economy and to examine community pharmacies' business characteristics, services provided, and other issues. This study estimates all relevant expenditures and returns associated with North Dakota's community pharmacies.

Key Words: Economic impact, pharmacy, pharmacists, drug stores

The Contribution of North Dakota's Community Pharmacies to the State's Economy

Nancy M. Hodur and F. Larry Leistritz*

Introduction

While the use of pharmaceutical drugs has been rapidly increasing in recent years, the businesses that dispense those prescriptions to consumers have not necessarily reaped the benefits of increased consumption and face numerous challenges (Wirtz 2006). A pharmacist shortage, mail and internet competition, thinning margins, and third-party payer issues are just some of the issues challenging pharmacies (Wirtz 2006). Those challenges have raised concerns about the long-term viability of independent community pharmacies, especially those in rural areas (Wirtz 2006).

The pharmacy's role in the delivery of prescription drugs is fairly straight forward. However, the community pharmacy does more than just put pills in bottles. Community pharmacies provide patient care not only at their community pharmacy, but also at local hospitals and long-term care facilities. Community pharmacies also play an important role in the state and local economies, especially in rural areas. Community pharmacies (drug stores) consistently have been classified as a business that provides "essential services." Businesses that provide essential services are critical for communities that desire to maintain a viable business and service sector (Coon and Leistritz 2002). Because of the issues and challenges facing community pharmacies and their role as an essential service, this study was undertaken to quantify the economic contribution North Dakota's community pharmacies make to the state's economy and to examine community pharmacies' business characteristics, services provided, and other issues.

Study Methods

An economic contribution study estimates all relevant expenditures and returns associated with an industry. In the case of North Dakota's community pharmacies, relevant expenditures include cost of goods sold, payroll, and other business expenses. Total economic contributions are derived from two types of spending, direct and secondary. Direct impacts represent the initial or direct expenditures of, in this case, independent community pharmacies, to entities within the state. Expenditures made to entities outside North Dakota represent leakages and are not included in the estimate. Secondary impacts are the result of the multiplier effect from initial expenditures being spent and re-spent in the regional economy. Input-output analysis was used to estimate secondary (indirect and induced) economic impacts and secondary employment. Estimated total expenditures were allocated to the appropriate economic sector (e.g., cost of supplies to Wholesale and Manufacturing Sector and salaries to Households Sector) of the North Dakota Input-Output Model (Coon and Leistritz 2005). This approach has been used to estimate the economic activity of various industries and is similar to those used by Bangsund and Leistritz (1999) in their analysis of the economic contribution of hospitals. This model has also been used extensively in estimating the contribution of a variety of industries,

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facilities, special events, and resource development projects (Leistriz 1997; Bangsund and Leistriz 2004; Hodur et al. 2006).

A written questionnaire was developed to collect expenditure data and was mailed to North Dakota's 128 community pharmacies (Appendix A). A mailing list of Community Pharmacies was provided by the North Dakota Pharmacist Association. Expenditure categories were modeled after those present on typical income statements and balance sheets used by community pharmacies and a similar survey conducted by the National Community Pharmacist Association-Pfizer Digest (NCPA 2005). The questionnaire also addressed some of the same issues as the NCPA survey to allow for comparisons. Respondents were asked to estimate their total expenditures for each expenditure category in 2005 or their most recently completed fiscal year. Respondents were also asked to estimate what percentage of those expenditures were made in-state and what percentage were made to out-of state firms. Because expenditures made to out-of-state firms represent leakages, only in-state expenditures were used to estimate the overall contribution of community pharmacies to the state's economy. Because of variation in average expenditures between urban and rural pharmacies, average expenditures per sector were estimated for both rural and urban pharmacies. Average expenditures were multiplied by the total number of each type of pharmacy and then summed to estimate total direct expenditures.

In addition to expenditure data, respondents were queried about issues related to work force, business characteristics, and perceptions on selected issues pertinent to community pharmacies. Sixty-eight pharmacies returned the questionnaire for a response rate of 53 percent. A similar study conducted in Oklahoma was based on a much smaller sample, a sample of 300 of 1,095 community pharmacies resulted in 79 completed questionnaires (May 2005). The few corporate pharmacies that operate in North Dakota were excluded from the survey.

Where appropriate, results were reported by the categories urban and rural. Urban community pharmacies were defined as those located in Bismarck, Fargo, West Fargo, Grand Forks (including the Grand Forks Airbase), Minot (including the Minot Airbase), and Mandan. Sixty-three percent of North Dakota's independent community pharmacies are in rural communities compared to 37 percent located in urban areas. T-tests at alpha .05 were used to determine if the differences between rural and urban pharmacies were statistically significant or within the margin of error which signifies no difference in the responses.

Results

Demographics

Respondents generally had very similar demographic characteristics. Ninety-eight percent have a B.S. in Pharmacy; 13 percent have a Doctorate in Pharmacy (Pharm. D.). Ninety-seven percent received their degree from North Dakota State University, and 92 percent were North Dakota natives. Respondents were predominately male (82 percent) with an average age of 50 years and have owned and operated a community pharmacy for many years, on average 17 years (Table 1). Only 27 percent had operated their pharmacy for 10 or fewer years, while 36 percent had operated their pharmacy for 20 years or more. While most respondents plan to sell their pharmacy in the next 10 years (58 percent), most have not yet identified a buyer (69

percent). Of those that have not yet identified a buyer, 42 percent indicated they planned to begin looking for a buyer in the next 1 to 2 years (Table 1).

Table 1. Respondent Demographics, North Dakota Community Pharmacy Survey, 2006	
	---percent---
Age	
Less than 35 years	7.5
35 to 45 years	13.2
46 to 55 years	51.5
56 to 65 years	27.9
(n)	(68)
Average age	50.5
(SE) ¹	(1.1)
Number of Years of Operating Pharmacy	
5 or fewer	12.1
6 to 10 years	15.2
11 to 15 years	22.7
16 to 20 years	13.6
21 to 25 years	21.2
More than 25 years	15.2
(n)	(66)
Average Number of Years	16.8
(SE) ¹	(1.1)
Plan to Sell Pharmacy in Next 10 Years	
Yes	58.2
No	41.8
(n)	(67)
Have Identified a Buyer	
Yes	32.4
No	69.2
(n)	(37)
If not identified a buyer, when do you plan to begin looking for a buyer?	
1 to 2 years from now	41.7
3 to 4 years from now	8.3
5 to 6 years from now	25.0
7 to 8 years from now	16.7
9 to 10 years from now	8.3
(n)	(45)

¹Standard error.

Workforce Characteristics

Respondents were asked how many individuals in each of several workforce categories were employed by their community pharmacy (Table 2). On average, pharmacies reported employing 7.8 individuals. The average number of employees was slightly higher in urban pharmacies (8.7 employees) and slightly lower in rural pharmacies (7.4); however, the difference was not statistically significant. Average employment for each category of employee was very similar between urban and rural pharmacies. For only two categories, 'staff pharmacists' and 'store clerks' were the average number of employees significantly different between urban and rural pharmacies. Urban pharmacies on average had a slightly greater number of staff pharmacists, 2.0 compared to 1.1 for rural pharmacies, and rural pharmacies had slightly more store clerks, 2.7 compared to 1.4 for urban pharmacies. Total employment for all community pharmacies was estimated to be 1,057 employees with a total of 623 employees in rural pharmacies and 433 employees in urban pharmacies. Because there are more rural pharmacies (84) than urban (49), the total number of employees is greater for rural pharmacies than for urban even though on average urban pharmacies had more employees than rural pharmacies.

Respondents were also asked to report the average number of hours each type of employee worked. Owner pharmacists on average worked the most hours--42.8 hours for urban pharmacies and 46.5 hours in rural pharmacies. Pharmacy technicians worked the next greatest number of hours per week with 37.3 hours per week for urban pharmacies and 35.1 for rural pharmacies. Store clerks worked on average the fewest hours per week in rural pharmacies (15.0) and business managers/bookkeepers the fewest hours per week in urban pharmacies (29.7). The average number of hours worked by type of employee was statistically different between rural and urban pharmacies in only two categories; staff pharmacist and store clerks. In both cases, employees in urban pharmacies worked on average more hours than their counterparts in rural pharmacies; staff pharmacists in urban pharmacies worked 36.4 hours per week compared to 27.8 hours per week in rural pharmacies. Similarly, store clerks in urban pharmacies worked on average nearly 36 hours per week, while store clerks in rural areas worked 28.5 hours per week (Table 2).

The average number of employees and the average hours worked per employee type were used to estimate the number of full-time equivalent (FTEs) jobs for rural and urban pharmacies. The average number of employees was multiplied by the average number of hours worked per week by each type of employee and divided by 40 (hours per week). Overall, community pharmacies reported on average 6.4 FTE jobs. Rural pharmacies had slightly fewer FTEs, with 5.9 and urban pharmacies slightly more with 7.8 (Table 2). North Dakota community pharmacies reported fewer FTEs than those reported by a national survey of community pharmacies, the National Community Pharmacists Association-Pfizer Digest (NCPA 2005). The NCPA-Pfizer Digest reported an average of 10.6 FTEs (NCPA 2005).

The total number of FTEs for urban, rural, and all community pharmacies was also estimated. Overall, statewide community pharmacies employ the equivalent of 878 full-time employees. Rural community pharmacies support 496 full-time equivalent jobs compared to urban pharmacies with 382 full-time equivalent jobs.

Table 2. Average and Total Number of Employees, by Employee Type, Rural and Urban, North Dakota Community Pharmacy Survey, 2006

	Rural	Urban	Both Urban and Rural
Average Number of Employees	-----number-----		
Owner Pharmacist	1.1	1.2	1.1
Staff Pharmacists ¹	1.1	2.0	1.4
Pharmacy Technicians	1.5	1.8	1.6
Business Manager, Bookkeeping	0.6	0.8	0.7
Store Clerks ²	2.7	1.4	2.2
Other ³	0.4	1.5	0.8
Total	7.4	8.7	7.8
(n)	(44)	(22)	(66)
Estimated Total Number of Employees, All Community Pharmacies			
Owner Pharmacists	92	60	152
Staff Pharmacists	96	101	197
Pharmacy Technicians	126	89	215
Business Manager, Bookkeeping	52	40	92
Store Clerks	224	69	293
Other ⁴	33	74	108
Total	623	433	1,057
(n)	(84)	(49)	(133)
Average Number of Hours Worked per Week			
Owner Pharmacists	46.5	42.8	45.4
Staff Pharmacists ⁵	27.8	36.4	31.0
Pharmacy Technicians	35.1	37.3	35.8
Business Manager, Bookkeeping	30.6	29.7	30.3
Store Clerks ⁶	28.5	35.8	30.6
Other ⁷	15.0	27.1	22.1
(n)	(36)	(18)	(54)
Estimated Average Number of Full-time Equivalent Jobs	5.9	7.8	6.4
(n)	(44)	(22)	(66)
Estimated Total Number of Full-time Equivalent Jobs, All Community Pharmacies	496	382	878
(n)	(49)	(84)	(133)
Average Hourly Salary/Earnings	-----dollars-----		
Owner Pharmacists	37.47	41.75	38.74
Staff Pharmacists	37.52	38.16	37.75
Pharmacy Technicians ⁸	12.08	13.49	12.52
Business Manager, Bookkeeping	12.60	15.82	13.78
Store Clerks ⁹	8.41	9.97	8.82
Other ¹⁰	15.00	27.11	22.16
(n)	(36)	(17)	(54)

^{1, 2, 5, 6, 8, 9} T-test, significant at $\alpha \pm .05$.

^{3, 4, 7, 10} Other: Student intern, part-time sales clerk, photo lab, cleaning, books, relief intern, store manager, maintenance/plant administration, candymaker.

Average hourly salaries for all employee types are also reported in Table 2. For all job categories, average salaries were slightly less for rural pharmacies than for urban; however, only the difference in wages for store clerks and pharmacy technicians was statistically significant. The differences in wages for other employee categories were within the statistical margin of error. Salaries for store clerks in rural pharmacies averaged \$8.41 per hour while salaries in urban pharmacies averaged \$9.97 per hour. Salaries for pharmacy technicians were \$12.08 in rural pharmacies compared to \$13.49 in urban pharmacies. Average salaries for owner pharmacists were \$38.74 per hour and staff pharmacists' salaries were only slightly lower at \$37.75 per hour (Table 2).

Respondents were also asked to estimate the average number of man hours per week pharmacists and pharmacy technicians dedicated to various activities (Table 3). As would be expected, pharmacists and pharmacy technicians spend the most hours filling prescriptions. Urban pharmacies spend on average 114 man hours (63 percent of total hours) filling prescriptions compared to 82 man-hours (61 percent of total hours) for rural pharmacies. The average number of total man hours (pharmacists and pharmacy technicians) spent filling prescriptions was not significant overall for urban and rural pharmacies, but was significant for the average number of hours pharmacists spend filling prescriptions. Pharmacists in urban pharmacies spend on average 67 man hours per week filling prescriptions compared to 45 man hours per week for rural pharmacies. That urban pharmacies would spend more man hours filling prescriptions than their rural counterparts would not be unexpected. Urban pharmacies fill more prescriptions and have more employees. Pharmacists and pharmacy technicians also spent a substantial number of man-hours on 'administration and third party payer issues' and 'patient care at community pharmacies,' 34 and 28 man hours, respectively, roughly one-third of total man hours for pharmacists and pharmacy technicians. Again, the average number of man hours spent by pharmacists on third party payer issues was significantly different for urban and rural pharmacies. Man hours for other activities dropped substantially, 5.6 hours at rural and 2.8 hours at urban pharmacies for patient care at long-term health care facilities (Table 3). For only one activity was the total hours spent by pharmacists and pharmacy technicians significantly different for rural and urban pharmacies, patient care at the local hospital. While rural pharmacies only spent on average 1.6 man hours per week on patient care at hospitals, no urban pharmacies spent any man hours on patient care at hospitals. Total man hours for pharmacists on all activities was also significantly different between urban (120 man hours per week) and rural pharmacies (80 man hours per week) (Table 3).

Table 3. Average Man Hours per Week Dedicated to Various Activities, Pharmacists and Pharmacy Technicians, Rural and Urban, North Dakota Community Pharmacy Survey, 2006

Activity	Pharmacist(s)		Pharmacy Technician(s)		Total Hours	
	Rural	Urban	Rural	Urban	Rural	Urban
	-----man hours-----					
Fill prescriptions	45.4 ¹	66.7 ¹	36.3	46.9	81.7	113.7
Administration and/or third party payer issues	14.9 ²	25.0 ²	10.0	8.6	25.0	33.7
Patient care at community pharmacy	11.6	24.5	3.9	4.0	15.5	28.5
Patient care at long-term health care facility	3.4	1.8	2.2	1.0	5.6	2.8
Patient care at hospital	1.5 ³	0.0 ³	0.2	0.0	1.6 ⁴	0.0 ⁴
Community service/volunteer work	1.9	1.0	0.8	0.4	2.7	1.4
Other	2.0	9.0	0.0	0.0	2.5	9.0
Total Man Hours	80.1 ⁵	119.7 ⁵	54.0	60.4	134.1	180.1
	(n)	(46)	(21)		(67)	

^{1,2,3,4,5} Statistically different at $\alpha \pm .05$ between rural and urban pharmacies.

Services Provided

Community pharmacies in North Dakota dispensed over 107,000 prescriptions per week; 57 percent were refills, the remainder were new prescriptions (Table 4). The total number of prescriptions filled was fairly evenly divided between urban and rural pharmacies, 53 percent (roughly 56,000 prescriptions) of total prescriptions were filled by rural pharmacies and 47 percent (roughly 51,000 prescriptions) by urban pharmacies. On average, each community pharmacy filled 794 prescriptions per week. As would be expected, the average number of new prescriptions and refills was higher for urban pharmacies than for rural pharmacies, 1,038 per week on average for urban pharmacies and 674 for rural pharmacies, a significant difference. The NCPA-Pfizer Digest (NCPA 2005) also reported the number of prescriptions dispensed per pharmacy. The Pfizer Digest reported nationally that community pharmacies filled 190 prescriptions per day. To compare to the number of prescriptions North Dakota community pharmacies fill, the per day number was converted to a per week figure. However, comparisons should be made with caution. Assuming a seven-day week equates to 1,330 prescriptions per week, which is substantially more than reported by North Dakota pharmacies. However, assuming a six-day week equates to 1,140 prescriptions per week, a figure more in line with that reported by North Dakota pharmacies. Respondents were asked to estimate the number of prescriptions filled per week rather than per day, as it was hypothesized that there would be a great deal of variation in the average number of prescriptions filled per day. The hypothesis seems to have merit considering most pharmacies are closed or open only a few hours on Sunday. (Data on hours of operation will be discussed in greater detail in the next section of this report.)

Table 4. Average and Total Number of Prescriptions Dispensed Weekly, Rural and Urban, North Dakota Community Pharmacy Survey, 2006

	Rural	Urban	Both Urban and Rural
Average per pharmacy			
	-----number-----		
New prescriptions ¹	280	462	340
Refills ²	394	576	454
Total ³	674	1,038	794
(n)	(46)	(23)	(69)
Estimated Total All Pharmacies			
New prescriptions	23,502	22,633	46,136
Refills	33,059	28,207	61,266
Total	56,561	50,840	107,401
(n)	(84)	(49)	(143)
Average Percentage of Sales			
	-----percent-----		
Rx ⁴	87.7	94.4	90.0
Non-Rx (front end merchandise, ITC, other goods and services) ⁵	12.3	5.6	10.0
(n)	(46)	(23)	(69)
Distribution of Rx Sales			
Less than 75 percent	15.2	0.0	10.1
76 to 85 percent	17.4	13.0	15.9
86 to 95 percent	50.0	34.8	44.9
More than 95 percent	17.4	52.2	30.0
(n)	(46)	(23)	(69)
Distribution of Non-Rx Sales			
Less than 5 percent	30.4	78.3	46.4
6 to 15 percent	45.6	13.0	34.8
16 to 25 percent	13.1	8.7	11.6
More than 25 percent	10.9	0.0	7.2
(n)	(46)	(23)	(69)
Average Gross Sales			
	-----dollars-----		
Prescription sales ⁶	1,698,872	2,963,675	2,126,673
Merchandise, non-Rx sales	217,983	146,407	193,773
Other	4,624	9,770	6,365
Total ⁷	1,921,479	3,119,852	2,326,811
(n)	(45)	(23)	(68)
Total Gross Sales			
Prescription sales	142,705,254	145,220,080	287,925,334
Merchandise, non-Rx sales	18,310,583	7,173,931	25,484,515
Other	388,455	478,712	867,168
Total	161,404,292	152,872,723	314,277,017
(n)	(84)	(49)	(133)

^{1,2,3,4,5,6,7} Statistically different at $\alpha \pm .05$ between rural and urban pharmacies.

Prescription sales made up the majority of total sales, 90 percent overall. Percent of total sales from prescriptions was similar for urban and rural pharmacies, 88 percent for rural pharmacies compared to 94 percent for urban pharmacies (Table 4). However, the percentage of total sales from non-Rx goods for rural pharmacies was twice that for urban pharmacies, 12 percent for rural pharmacies compared to 6 percent for urban pharmacies. The difference in both Rx and non-Rx sales between rural and urban pharmacies was statistically significant. One possible rationale for a greater proportion of non-Rx sales in rural pharmacies may be because there are generally fewer retail outlets in rural communities (Coon and Leistriz 2002). Community pharmacies may provide a wider range of non-Rx goods than urban pharmacies in order to meet the needs and demands of their customers. The distribution of Rx sales also illustrates the difference in the make up of total sales for North Dakota community pharmacies. Fifty-two percent of urban pharmacies reported more than 95 percent of total sales were from Rx sales compared to 17 percent for rural pharmacies. The reverse was true for non-Rx sales. Nearly 25 percent of rural pharmacies reported non-Rx sales of more than 15 percent compared to less than 10 percent of urban pharmacies that reported non-Rx sales of more than 15 percent (Table 4).

Average total annual gross sales for all community pharmacies was \$2.3 million with rural pharmacies averaging \$1.9 million and urban pharmacies averaging \$3.1 million, a significant difference (Table 4). Average prescription sales for all community pharmacies was \$2.1 million with rural pharmacies averaging \$1.7 million in sales and urban pharmacies averaging \$3.0 million, a significant difference. Non-Rx merchandise sales were much less averaging \$194,000 overall (Table 4).

Total gross sales for all community pharmacies were estimated to be \$314 million and were roughly evenly distributed between rural and urban pharmacies, \$161 million for rural pharmacies and \$153 million for urban pharmacies (Table 4). Prescription sales totaled \$288 million overall with non-Rx sales totaling \$25.5 million. While total prescription sales between rural and urban pharmacies were fairly evenly divided, \$143 million for rural pharmacies and \$145 million for urban pharmacies, non-Rx-sales were not so evenly divided. Total non-Rx sales for rural pharmacies were more than twice those of urban pharmacies, \$18 million compared to \$7 million. The discrepancy between non-Rx sales is a function of total non-Rx sales figures and the number of each type of pharmacy. Not only are there more rural pharmacies than urban, on average, non-Rx sales make up a larger portion of rural pharmacies' average gross revenues.

Other Services

In addition to filling prescriptions and providing other retail-based services, community pharmacies provide services to other health care facilities (Table 5). This is especially prevalent in rural areas. Ninety percent of rural pharmacies reported providing services for long-term care facilities, nearly two-thirds (61 percent) provided services for assisted daily living facilities, and approximately one-fourth (27 percent) provided services for the local hospital. Alternately, just over one-third (36 percent) of urban pharmacies provide services to a long-term care facility or an assisted daily living facility, while none provided services for a local hospital. Roughly half of both rural and urban pharmacies offer sales and service of durable medical equipment. The differences between rural and urban pharmacies were significant only for services to long-term care facilities and hospitals (Table 5).

Table 5. Hours of Operation and Other Facilities Served by ND Community Pharmacies, Urban and Rural, North Dakota Community Pharmacy Survey, 2006

	Rural	Urban
Provide Services:	-----percent-----	
Long-term care facility ¹	90.1	35.7
Assisted daily living facility	61.4	35.7
Durable medical equipment	54.5	50.0
Hospital ²	27.3	0.0
Other ³	11.4	28.6
(n)	(44)	(14)
Provide Emergency “on-call services”	95.4	66.7
Type of Emergency “on-call services”:		
Community pharmacy	92.9	71.4
Long-term care facility ⁴	76.2	42.9
Hospital ⁵	50.0	0.0
Assisted daily living facility	38.1	35.7
Other ⁶	7.1	7.1
(n)	(42)	(14)
	-----hours-----	
Average Hours of Business		
Monday - Friday	9.3	10.2
Saturday	6.1	6.3
Sunday	2.0	5.7
(n)	(45)	(23)

^{1,2,4,5} Statistically different at $\alpha \pm .05$ between rural and urban pharmacies.

³ Other: Compounding, group home, hospice, ostomy supplies, diabetic mail service.

⁶ Other: Calls for advice, out of town physicians.

Pharmacies also provide emergency on-call services. Ninety-five percent of rural pharmacies and 67 percent of urban pharmacies provide some type of on-call services. The most prevalent was on-call services for their own retail customers (rural 93 percent, urban 71 percent). In addition to on-call service for their own retail customers, 76 percent of rural and 43 percent of urban pharmacies provide emergency on-call services for long-term care facilities, and roughly one-third of both urban and rural pharmacies provide emergency on-call services to assisted daily living facilities (38 and 36 percent, respectively). Half of the rural pharmacies and none of the urban pharmacies indicated providing emergency on-call services to hospitals. The differences between rural and urban pharmacies’ on call services were significant for long-term care facilities and hospitals (Table 5).

Average hours of business were similar for urban and rural pharmacies except on Sundays. Rural pharmacies were open on average for 9 hours daily Monday through Friday and 6 hours on Saturday compared to 10 hours daily Monday through Friday and 6 hours on Saturday for urban pharmacies. Rural pharmacies were open on average for 2 hours on Sunday while urban pharmacies were open for nearly 6 hours. The hours of operation for North Dakota Community Pharmacies is comparable to data reported by the NCPA-Pfizer Digest (2005) which reported community pharmacies open for 57 hours per week compared to 53 hours per week for

North Dakota rural pharmacies and 62 hours per week for North Dakota urban pharmacies. The NCPA-Pfizer Digest figure did not report hours of operations based on the size of the community where the pharmacy was located.

Most pharmacies open and close at approximately the same time of day. Ninety-eight percent of rural pharmacies and 83 percent of urban pharmacies open between 8 and 9 a.m. Ninety-one percent of rural pharmacies closed between 5 and 6 p.m. compared to 61 percent of urban pharmacies. Urban pharmacies were more likely to be open later in the day. Forty percent of urban pharmacies closed between 7 and 11 p.m. compared to only 9 percent of rural pharmacies. Very few pharmacies were closed on Saturday, only 5 percent for both urban and rural pharmacies while most were closed on Sunday. Ninety-eight percent of rural pharmacies and 89 percent of urban pharmacies were closed on Sunday (data not shown).

Clientele and Prescription Payers

Respondents were asked to indicate what percentage of the prescriptions filled at their community pharmacy were paid for by a variety of payer types. Prescription costs were fairly evenly distributed across several payer types, with payments from Blue Cross and Blue Shield of North Dakota (BCBS-ND) received most frequently. Thirty percent of payments overall were from BCBS-ND with the proportion of payments from BCBS-ND slightly higher in urban areas (38 percent) and slightly lower in rural areas (27 percent). Other pharmaceutical benefits managers (PBMs) were the next most frequent payment type with 25 percent overall. The percentage of payments from other PBMs was also slightly higher for urban pharmacies (31 percent) and slightly lower in rural pharmacies (22 percent). Both cash and ND State Medicaid accounted for 19 percent of prescription payments overall; however, the percentages were slightly higher for rural pharmacies (21 percent and 22 percent, respectively) and slightly lower for urban pharmacies (15 percent and 12 percent, respectively). The differences between rural and urban pharmacies were statistically significant for payments made by BCBS-ND, other PMBs, cash, and ND State Medicaid. BCBS -ND and other PMBs accounted for payment of 69 percent of prescriptions filled in urban pharmacies compared to 49 percent in rural pharmacies. Alternately, cash and ND State Medicaid accounted for payment of 44 percent of prescriptions in rural pharmacies and 27 percent in urban pharmacies (Table 6).

Respondents were also asked to estimate what percentage of their prescription drug *clientele* came from the same list of categories. This differentiation was made to determine if a particular clientele was purchasing a disproportionate percentage of prescriptions. For example, perhaps a majority of a pharmacy's customers pay cash, but account for a smaller percentage of total prescription cost. Alternately, perhaps a small percentage of customers have insurance coverage, but make up a larger percentage of total prescription costs. The distribution of clientele was similar to the distribution for prescription costs. Twenty-eight percent of *clientele* were supported by BCBS-ND, 25 percent were covered by other PBMs, 22 percent were cash customers, and 19 percent were covered by ND State Medicaid (Table 6). Alternately, 30 percent of *prescription costs* were covered by BCBS-ND, 25 percent were covered by other PBMs, and 19 percent (each) were cash payments (no insurance) and payments from ND State Medicaid (Table 6). Like the distribution for prescription cost, the distribution of pharmacy clientele differed between urban and rural pharmacies. A slightly larger percentage of pharmacy clientele were covered by BCBS-ND and other PBMs in urban areas, 36 and 33 percent compared to rural

pharmacies where 25 and 21 percent were covered by BCBS-ND and other PBMs. Similarly, a slightly greater percentage of pharmacy clientele were cash and ND State Medicaid customers in rural pharmacies than in urban pharmacies. Twenty-five and 22 percent of rural customers were cash customers and ND State Medicaid customers compared to 15 and 12 percent in urban pharmacies. All four categories were significantly different between urban and rural pharmacies (Table 6).

Table 6. Percentage of Prescriptions Paid for in 2005 by Various Payers, by Prescription Cost and by Prescription Drug Clientele, North Dakota Community Pharmacy Survey, 2006

	Rural	Urban	Both Urban and Rural
	-----percent-----		
Prescription Costs			
Blue Cross and Blue Shield of ND ¹	26.9	37.6	30.4
All Other PBMs (Caremark, Rx, Eckerd, Express Scripts, Medco, etc.) ²	22.3	31.3	25.2
Cash (no insurance) ³	21.5	15.0	19.4
ND State Medicaid ⁴	22.1	12.0	18.7
Workers Safety and Insurance (Workmen's Compensation)	1.6	2.3	1.8
Medicare Part B (2005)	4.9	1.7	3.8
Other	0.8	0.1	0.5
(n)	(45)	(22)	(67)
Drug Clientele			
Blue Cross and Blue Shield of ND ⁵	25.0	35.7	28.5
All Other PBMs (Caremark, Rx, Eckerd, Express Scripts, Medco, etc.) ⁶	20.7	32.8	24.7
Cash (no insurance) ⁷	25.1	15.5	21.9
ND State Medicaid ⁸	21.9	12.1	18.7
Medicare Part B (2005)	5.0	1.5	3.8
Workers Safety and Insurance (Workmen's Compensation)	1.6	2.4	1.8
Other	0.9	0.1	0.6
(n)	(45)	(22)	(67)

^{1, 2, 3, 4, 5, 6, 7, 8} T-test statistically different at $\alpha \pm .05$ between rural and urban pharmacies.

Economic Contribution

As previously described in the “Methods” section of this report, the economic contribution of an industry is an estimate of all relevant expenditures and returns associated with industry operations and is derived from two types of spending, direct and secondary. Average direct impacts (in-state expenditures) per pharmacy were estimated to be roughly \$2.3 million annually (Table 7). The expenditure categories of ‘wholesale and manufacturing’ and ‘households’ had the highest average expenditures with \$1.8 million and \$291,000, respectively, which was not unexpected. The ‘wholesale and manufacturing sector’ includes the cost of goods sold and the ‘households’ sector includes salaries and wages. ‘Communications and utilities’ and ‘construction’ had the fewest average expenditures with less than \$10,000 each. Total direct expenditures for all North Dakota community pharmacies were estimated to be \$224 million (Table 7). Again, the two largest components of total direct expenditures for all community pharmacies were in the ‘wholesale and manufacturing’ and ‘households’ sectors, \$162 million and \$41 million, respectively. Total direct expenditures in ‘retail trade,’ ‘professional and social services,’ ‘government,’ ‘business and personal services,’ and ‘finance, insurance, and real estate’ ranged from \$2 million to \$9 million (Table 7).

Total direct expenditures were applied to the coefficients in the North Dakota Input-Output model to estimate direct and secondary impacts. Direct plus secondary impacts totaled \$907 million annually, again with the two largest components the ‘wholesale and manufacturing’ and ‘households’ sectors with total direct and secondary impacts of \$285 million and \$207 million, respectively (Table 7). The next largest component was ‘retail trade’ with \$141 million in direct and secondary impacts. The levels of economic activity generated by community pharmacies would be expected to support about 10,158 full-time equivalent jobs in various sectors of the state economy (Table 7).

Average direct expenditures and total direct expenditures were also estimated for rural and urban pharmacies. Average total direct expenditures per urban pharmacy was \$3.3 million compared to \$1.8 million for rural pharmacies (Table 8). That average direct expenditures for urban pharmacies is greater than for rural pharmacies is consistent with other findings throughout the report. However, total direct expenditures for rural pharmacies are greater than total direct expenditures for urban pharmacies, \$118 million compared to \$106 million (Table 9).

Issues and Attitudes

Respondents were asked to rate their level of agreement with various statements to gauge their perceptions on industry issues using a 5 point Likert scale where 1 is strongly disagree and 5 strongly agree. The distribution of respondents that agree or disagree with the statements, as well as an average score that represents level of agreement or disagreement for each statement, is reported in Table 8.

Table 7. Average, Total, and Direct and Secondary Expenditures by Business Sector, North Dakota Community Pharmacy Survey, 2006

Expenditure Category	Average Expenditures	Total Direct Expenditure	Direct and Secondary Expenditures
	-----dollars-----		
Wholesale and Manufacturing (cost of goods sold, supplies)	1,826,434	162,534,830	285,381,000
Households (wages and salaries)	291,103	40,792,236	207,377,000
Finance, Insurance, and Real Estate (employee benefits, business insurance, facility rent interest, bank charges)	71,551	8,145,986	38,583,000
Business and Personal Services (advertising, computer expense, equipment rental, non-professional services)	35,303	3,573,600	15,380,000
Government (payroll tax, workmen's compensation, property, sales, and use tax)	27,961	3,392,041	22,259,000
Professional and Social Services (attorney/accountant fees, continuing education, security, licenses, professional dues, subscriptions)	18,694	2,077,674	15,874,000
Retail Trade (postage, delivery expense, travel, lodging, etc.)	18,941	2,005,851	141,377,000
Communications and Utilities (phone, long distance, internet access, gas, electric, water, sewer, etc.)	7,599	878,504	19,574,000
Construction (construction, repairs, maintenance, remodeling)	3,589	476,683	15,313,000
Other Sectors (agriculture, mining, transportation, and energy conversion)	0	0	145,821,000
Total	2,301,175 (n=54)	223,877,405 (n=133)	906,942,000¹
			-- FTE jobs--
Secondary Employment			10,158

¹ Because expenditure category totals are truncated, total is greater than the sum of the reported category totals.

Table 8. Average Direct Expenditures by Business Sector, Rural and Urban Pharmacies, North Dakota Community Pharmacy Survey, 2006

Expenditure Category	Average Direct Expenditures	
	Rural	Urban
	-----dollars-----	
Wholesale and Manufacturing (cost of goods sold, supplies)	1,488,373	2,587,266
Households (wages and salaries)	220,648	458,435
Finance, Insurance, and Real Estate (employee benefits, business insurance, facility rent interest, bank charges)	43,893	137,239
Business and Personal Services (advertising, computer expense, equipment rental, non-professional services)	31,599	44,025
Government (payroll tax, workmen's compensation, property, sales, and use tax)	25,607	33,889
Professional and Social Services (attorney/accountant fees, continuing education, security, licenses, professional dues, subscriptions)	14,759	28,418
Retail Trade (postage, delivery expense, travel, lodging, etc.)	17,285	22,844
Communications and Utilities (phone, long distance, internet access, gas, electric, water, sewer, etc.)	7,628	7,529
Construction (construction, repairs, maintenance, remodeling)	3,540	3,706
Total	1,853,332	3,323,350
(n)	(46)	(23)

Table 9. Total Direct Expenditures by Business Sector, Rural and Urban Pharmacies, North Dakota Community Pharmacy Survey, 2006

Expenditure Category	Total Direct Expenditures	
	Rural	Urban
	-----dollars-----	
Wholesale and Manufacturing (cost of goods sold, supplies)	89,029,382	73,505,448
Households (wages and salaries)	18,534,438	22,257,798
Finance, Insurance, and Real Estate (employee benefits, business insurance, facility rent interest, bank charges)	3,153,808	4,992,179
Business and Personal Services (advertising, computer expense, equipment rental, non-professional services)	2,239,177	1,334,423
Government (payroll tax, workmen's compensation, property, sales, and use tax)	1,961,171	1,430,870
Professional and Social Services (attorney/accountant fees, continuing education, security, licenses, professional dues, subscriptions)	1,057,502	1,020,172
Retail Trade (postage, delivery expense, travel, lodging, etc.)	1,257,868	747,983
Communications and Utilities (phone, long distance, internet access, gas, electric, water, sewer, etc.)	598,745	279,759
Construction (construction, repairs, maintenance, remodeling)	295,074	181,608
	118,127,165	105,750,240
Total		
	(n)	
	(84)	(49)

Community pharmacies were in general agreement about statements related to changes in Medicare and Medicaid that took effect in January of 2006, Blue Cross and Blue Shield and Medicare reimbursement rates, and a shortage of pharmacists. With an average score of 4.5, 93 percent of respondents agreed or strongly agreed with the statement ‘third party payer issues associated with changes in Medicare and Medicaid that took effect on January 1, 2006 have reduced the amount of time personnel at my community pharmacy can spend providing patient care.’ Further, 85 percent of respondents agreed or strongly agreed with the statement ‘In 2005, prior to adjustments to reimbursements, Blue Cross and Blue Shield and Medicaid reimbursement rates were adequate to maintain reasonable profit margins’ (average score of 4.0). Respondents were also in agreement regarding the pharmacist shortage and its impact on recruiting pharmacists to work at their community pharmacy. With an average score of 4.2, 84 percent of respondents agreed with the statement ‘the pharmacist shortage will likely make it difficult for me to recruit a pharmacist(s) to work at my pharmacy.’ This was the only issue where the difference in average scores was significant between urban and rural pharmacies. The average score for rural pharmacies was 4.2 while the average score for urban pharmacies was 3.3, suggesting rural pharmacies are more concerned about the impact of a pharmacist shortage than urban pharmacies. Respondents also agreed with the statement ‘the amount of time required to administer third party payer issues has become unmanageable under the new Medicare Part D program that took effect January 1, 2006.’ With an average score of 4.0, 74 percent either agreed or strongly agreed with the statement.

Respondents were consistent regarding their opinions on Blue Cross and Blue Shield and Medicare reimbursement rates as most respondents strongly disagreed with the statements ‘current Medicare Part D reimbursement rates are adequate to maintain profit margins’ (90 percent, average score of 1.6) and ‘current Blue Cross/Blue Shield and other PBMs reimbursement rates are adequate to maintain reasonable profit margins’ (64 percent, average score 1.5). Respondents generally agreed (average scores greater than 3.0 and less than 4.0) with the statements ‘the pharmacist shortage will likely make it difficult for me to recruit a pharmacist(s) to purchase my pharmacy,’ ‘third party payer issues...have reduced the quality of patient care that my community pharmacy can provide’ (see Appendix A or Table 10 for the complete statement), and ‘competition from mail order sales and the internet make it difficult to stay in business’(Table 10). Respondents were ambivalent (average scores between 2.6 and 3.2) about the statements ‘I will not be able to sell my pharmacy upon retirement...and will be forced to close because of the shortage of pharmacists,’ ‘I will not be able to sell my pharmacy upon retirement...because the business is not likely to be profitable enough to attract a buyer,’ ‘technical requirements.....make it difficult for me to stay in business,’ and ‘State and Federal pharmacy programs have a positive impact on the viability of this pharmacy’ (see Appendix A or Table 10 for the complete statement).

Table 10. Issues and Attitudes, North Dakota Community Pharmacy Survey, 2006

Item	Average	Strongly	Disagree	Neither	Agree	Strongly	Do Not
	Score (Std. Err.)	Disagree	Disagree	Disagree	Agree	Agree	Know
-----percent-----							
Third party payer issues associated with changes in Medicare and Medicaid that took effect on January 1, 2006 have reduced the amount of time personnel at my community pharmacy can spend providing patient care.	4.5 (.10)	2.9	1.5	2.9	30.9	61.8	0.0
The pharmacist shortage will likely make it difficult for me to recruit a pharmacist(s) to work at my pharmacy. ¹	4.2 (.10)	5.9	5.9	8.8	42.6	41.2	1.5
The amount of time required to administer third party payer issues has become unmanageable under the new Medicare Part D program that took effect January 1, 2006.	4.0 (.11)	0.0	4.4	22.1	38.2	35.3	0.0
In 2005, prior to adjustment to reimbursements, Blue Cross/Blue Shield and Medicaid reimbursement rates were adequate to maintain reasonable profit margins.	4.0 (.10)	1.5	5.9	7.3	66.2	19.1	0.0
The pharmacist shortage will likely make it difficult for me to recruit a pharmacist(s) to purchase my pharmacy.	3.8 (.12)	4.5	6.0	13.4	52.2	22.4	1.5
Third party payer issues associated with changes in medicare and Medicaid that took effect on January 1, 2006 have reduced the quality of patient care that my community pharmacy can provide.	3.8 (.12)	2.9	8.8	16.2	47.1	25.0	0.0
Competition from mail order sales and the internet make it difficult to stay in business.	3.6 (.13)	4.4	14.7	19.2	42.6	19.1	0.0
I likely will not be able to sell my pharmacy upon retirement and will be forced to close the business because of the shortage of pharmacists.	3.2 (.14)	6.1	15.2	34.8	21.2	13.6	9.1
I will not be able to sell my pharmacy upon retirement and will be forced to close the business because the business is not likely to be profitable enough to attract a buyer.	3.2 (.16)	7.5	20.9	26.9	19.4	16.4	9.0
Technical requirements (e.g., specific computer and software packages for processing claims) make it difficult for me to stay in business.	2.8 (.12)	10.3	23.5	42.6	20.6	2.9	0.0
State and Federal pharmacy programs have a positive impact on the viability of this pharmacy.	2.6 (.15)	22.1	26.5	25.0	14.7	7.3	4.4
Current Medicare Part D reimbursement rates are adequate to maintain profit margins.	1.6 (.10)	52.2	37.3	6.0	3.0	1.5	0.0
Current Blue Cross/Blue Shield and other PBMs reimbursement rates are adequate to maintain reasonable profit margins.	1.5 (.10)	0.0	63.6	28.8	4.6	3.1	0.0
	(n)	(65)					

¹Rural and urban respondents' average score was significantly different. Rural: 4.2 and Urban: 3.3 There was no significant difference between rural and urban respondents on any other issues and attitudes questions.

Key Findings

North Dakota community pharmacists are predominately male, North Dakota natives, with a B.S. in pharmacy from North Dakota State University. They are longtime operators (average years of operation were 17) with over half (58 percent) that plan to sell their pharmacy in the next 10 years. Community pharmacies employ over 900 full-time equivalent jobs with slightly more full-time equivalent jobs in rural community pharmacies than urban, even though on average urban pharmacies have more full-time equivalent jobs per pharmacy. This theme was repeated throughout the analysis. For nearly every category of information, urban pharmacies' average numbers were greater than for rural pharmacies. However, because there were more rural pharmacies than urban, total contributions were roughly equally divided and in some cases greater for rural pharmacies than for urban.

An average of 793 prescriptions were filled per week per pharmacy for a total of over 107,000 prescriptions filled per week. Again, averages were higher for urban pharmacies, but the totals were higher for rural pharmacies. Prescription sales make up the majority of gross sales for both rural and urban pharmacies (88 and 94 percent, respectively); however, a greater portion of gross sales was from non-Rx sales in rural pharmacies than urban. This is likely attributable to relatively few retail outlets in many rural communities and the rural community pharmacy expanding its services to meet customer demand.

Community pharmacies provide services in addition to filling prescriptions, especially in rural areas. Ninety percent of rural pharmacies provide services for long-term health care facilities and 27 percent provide service to the local hospital. Only 36 percent of urban pharmacies provide services to a long-term health care facility and none provide service to the local hospital. Both were significant differences. On-call services were also more prevalent in rural areas. More rural pharmacies provide emergency on-call services for a long-term health care facility or hospital than in urban areas. Again, the differences were significant.

Average direct expenditures per pharmacy were estimated to be roughly \$2.3 million annually. Average expenditures for rural pharmacies were \$1.8 million compared to \$3.3 million for urban pharmacies. The total contributions of the two groups were roughly equal. Total direct expenditures for rural pharmacies were \$118 million compared to \$107 million for urban pharmacies. Total direct expenditures for all community pharmacies was \$224 million. Total direct expenditures were applied to the coefficients of the North Dakota Input-Output Model to estimate annual gross business volume of nearly \$907 million annually. The levels of economic activity generated by community pharmacies would be expected to support about 10,158 full-time equivalent jobs in various sectors of the state economy.

Conclusions and Implications

North Dakota community pharmacies clearly have a critical role in the health care delivery system. Community pharmacies dispense thousands of prescriptions weekly and provide services not only to their clientele but to other health care providers, such as hospitals and long-term and assisted living facilities, especially in rural North Dakota. This report highlights community pharmacies' critical economic role. Community pharmacies directly

contribute nearly \$224 million annually to the state's economy. Direct and secondary impacts total \$907 million annually. Community pharmacies directly employ over 1,000 individuals, and the economic activity generated by pharmacies supports secondary employment of over 10,000 jobs. Clearly, if the challenges that community pharmacies face today lead to numerous business closures or substantive modifications in how prescription drugs are dispensed, not only would there be ramifications for the health care system, but also for the state and local economies. Rural communities would be especially susceptible to dislocations and/or suspension of services. To what degree the challenges faced by the industry today will affect North Dakota's community pharmacies and the health care system is beyond the scope of this study. This study does, however, highlight the economic contributions of community pharmacies. Those contributions and the potential impacts of the loss of those economic contributions are important considerations and should be part of any discussion related to current issues and challenges that face North Dakota's community pharmacies.

References

- Bangsund, Dean A., and F. Larry Leistritz. 1999. *Contribution of Hospitals to North Dakota's Economy*. AAE Rpt. No. 409. Fargo: NDSU, Dept. of Agribusiness and Applied Economics, 24 pp.
- Bangsund, Dean A., and F. Larry Leistritz. 2004. *Economic Contribution of the Sugarbeet Industry in Minnesota, North Dakota, and Eastern Montana*. AAE Rpt. No.532. Fargo: NDSU, Dept. of Agr. & Applied Economics.
- Coon, Randal C., and F. Larry Leistritz. 2002. *Threshold Population Levels for Rural Retail Businesses in North Dakota, 2000*. AAE Misc. Rpt. No. 191. Fargo: NDSU, Dept. of Agribusiness and Applied Economics, 10 pp.
- Coon, Randal C., and F. Larry Leistritz. 2005. *North Dakota Input-Output Model Data Base*. Fargo: NDSU, Dept. of Agribusiness and Applied Economics.
- Hodur, Nancy M., Dean A. Bangsund, F. Larry Leistritz, and John Kaatz. 2006. "Estimating the Contribution of a Multipurpose Event Facility to the Area Economy." *Tourism Economics* 12(2):303-316.
- Leistritz, F. Larry. 1997. "Assessing Local Socioeconomic Impacts of Rural Manufacturing Facilities: The Case of a Proposed Agricultural Processing Plant." *Journal of the Community Development Society* 28(1):43-64.
- May, David L. 2005. "The Economic Impact of Oklahoma's Community Pharmacies." A report prepared for the Oklahoma Pharmacists Association. Available at: <http://www.opha.com>. Accessed on January 18, 2007.
- NCPA-Pfizer Digest. 2005. Available from the National Association of Community Pharmacists, Alexandria, VA. Available at: <http://www.ncpanet.org/>. Accessed on January 18, 2007.
- Wirtz, Ronald A. 2006. "The other pharm crisis." *Fedgazette*, January 2006, 9pp. Federal Reserve Bank of Minneapolis.

Appendix A



Member Survey

May 16, 2006

Confidential

North Dakota Pharmacists Association Survey

May 2006

Confidential

Please answer the following questions about your independent community pharmacy.

1. What is the zip code for your pharmacy?

Workforce Information

2. For each of the following types of employees, please answer each of the following questions:			
<ul style="list-style-type: none"> • How many of each type of employee work at your pharmacy? • On average how many hours per week do each type of employee work? • What is the average wage per hour for each type of employee? <i>(If wages are not expressed per hour, please indicate the scale of measure, for example, per year, per month, etc.)</i> 			
	Number of employees	Avg number of hours worked per week	Avg hourly salary/earnings
Owner Pharmacist(s)	_____	_____ hrs	\$_____
Staff Pharmacist(s)	_____	_____ hrs	\$_____
Pharmacy Technician(s)	_____	_____ hrs	\$_____
Business Manager, Bookkeeper(s)	_____	_____ hrs	\$_____
Store Clerk(s)	_____	_____ hrs	\$_____
Other <i>(please specify)</i> _____	_____	_____ hrs	\$_____

3. How many man hours per week does a pharmacist or a pharmacy technician dedicate to each of the following activities?		
Two individuals that worked 8 hours on a given activity would equate to 16 man hours. (2 individuals x 8 hours = 16 man hours.)		
	Pharmacist(s)	Pharmacy technician(s)
Administration and/or third party payer issues	_____ hrs/wk	_____ hrs/wk
Fill prescriptions	_____ hrs/wk	_____ hrs/wk
Patient care at community pharmacy	_____ hrs/wk	_____ hrs/wk
Patient care at long-term health care facility	_____ hrs/wk	_____ hrs/wk
Patient care at hospital	_____ hrs/wk	_____ hrs/wk
Community service/volunteer work	_____ hrs/wk	_____ hrs/wk
Other (please specify) _____	_____ hrs/wk	_____ hrs/wk
Total hours per week	_____ hrs/wk	_____ hrs/wk

Business Characteristics

4. Does your community pharmacy open for emergencies or have an “on-call” system for non-business hours?	
YES	NO
If Yes , for which of the following does your on-call service respond? (Please check all that apply.) <input type="checkbox"/> Your community pharmacy <input type="checkbox"/> Local hospital <input type="checkbox"/> Long-term care facility <input type="checkbox"/> Assisted daily living facility <input type="checkbox"/> Other (please specify) _____	If No , Please go to Question 5

5. Do you provide service for any of the following? (Please check all that apply.)
<input type="checkbox"/> Long-term care (LTC) facility <input type="checkbox"/> An assisted daily living facility <input type="checkbox"/> A hospital <input type="checkbox"/> Durable medical equipment <input type="checkbox"/> Other (please specify) _____

6. What are the hours of business for your community pharmacy?

	Open	Close
Monday-Friday	_____	_____
Saturday	_____	_____
Sunday	_____	_____

7. Please estimate, on average how many of each of the following types of prescriptions are dispensed **weekly**?

New prescriptions	_____	per week
Refills	_____	per week
Total	_____	per week

8. What percentage of your business is prescription sales versus non-prescription sales?

_____	% Rx
_____	% Non-Rx (<i>front end merchandise, OTC, other goods & services</i>)
100 %	Total

9. In **2005**, based on **prescription costs**, what percentage of the prescriptions filled at your community pharmacy were paid for by each of the following?

Cash (<i>no insurance</i>)	_____	%
Blue Cross Blue Shield of ND	_____	%
North Dakota State Medicaid	_____	%
Workers Safety and Insurance (<i>Workmen's Comp.</i>)	_____	%
All Other PBMs (<i>Caremark, Rx, Eckerd, Express Scripts, Medco, etc</i>)	_____	%
Medicare Part B (2005)	_____	%
Other (<i>Please specify</i>) _____	_____	%
Total		100 %

10. In **2005**, what percentage of **your prescription drug clientele** came from each of the following categories?

Cash (<i>no insurance</i>)	_____ %
Blue Cross Blue Shield of ND	_____ %
North Dakota State Medicaid (2005)	_____ %
Workers Safety and Insurance (Workman's Comp.)	_____ %
All Other PBMs (<i>Caremark, Rx, Eckerd, Express Scripts, Medco, etc.</i>)	_____ %
Medicare Part B (2005)	_____ %
Other (<i>Please specify</i>) _____	_____ %
Total	100 %

11. In **2005**, did your community pharmacy serve all Medicaid participants that came to your pharmacy?

YES	NO
If Yes, please go to Question 12.	If No, what percentage were you able to serve? _____ %

Economic Impact Assessment Data

Please provide the following financial information for fiscal year ending **December 31, 2005** or your most recently completed fiscal year. (**Your responses will be held strictly confidential.**)

12. **Total Gross Sales:** *Ending calendar year 2005 or most recently completed fiscal year.*

\$ _____	Prescription sales
\$ _____	Merchandise, nonRx sales
\$ _____	Other (<i>Please specify</i>) _____
\$ _____	Total gross sales

13. What were your total expenditures for each of the following expenditure categories? What percentage of total expenditures were to firms or individuals from North Dakota or with a North Dakota presence such as a warehouse or distribution center and what percentage was made to companies outside the state. This should sum to 100%.

For example, if you purchase supplies from a company located in Minneapolis, MN that would be an out-of-state expenditure. If you purchase supplies from a company located in North Dakota or with a distribution center in North Dakota, that would be a North Dakota expenditure.

	\$ Total Expenditures	% North Dakota	% Out-of- state
Cost of Goods Sold			
Cost of prescriptions			
Cost of non-Rx (OTC, other merchandise)			
Operating Expenses			
Owner compensation			
All other wages and salaries			
Employee payroll taxes/Workmen's Comp.			
Employee benefits (health insurance, pensions, retirement, and other benefits)			
Property, Sales and Use, and Federal Taxes (exclude payroll taxes and personal income tax)			
Advertising			
Business insurance (exclude health and life insurance)			
Store & pharmacy supplies, vials, containers, labels, LTC supplies, fixtures			
Office postage			
Delivery expense and auto expense			
Pharmacy computer expense			
Facilities rental			
Other rent (equipment rental, POS equipment, med cart leases)			
Utilities and communications (phone, long distance, internet access, gas, electric, water & sewer)			
Professional services (attorney/accountant fees, other professional services, continuing education, security, POS equipment maintenance, data processing)			
Business and personal services (tax preparation, janitorial services, other non-professional services)			
Construction, repairs and maintenance (including remodeling/repair costs)			
Interest payments			
Bank charges, MasterCard/Visa/ Discover fees, collection fees			
Licenses, fees, permits, professional dues, subscriptions, misc. fees			
Other (please specify) _____			

Issues and Attitudes

14. Please rate your level of agreement with each of the following statements based on a scale of 1 to 5 where 1 is <i>strongly disagree</i> and 5 is <i>strongly agree</i> .						
Item	Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree	Do not know
The pharmacist shortage will likely make it difficult for me to recruit a pharmacist(s) to work at my pharmacy.	1	2	3	4	5	?
Third party payer issues associated with changes in Medicare and Medicaid that took effect on January 1, 2006 have reduced the amount of time personnel at my community pharmacy can spend providing patient care.	1	2	3	4	5	?
I am planning to sell my pharmacy and retire in the next five years.	1	2	3	4	5	?
I likely will not be able to sell my pharmacy upon retirement and will be forced to close the business because of the shortage of pharmacists.	1	2	3	4	5	?
The pharmacist shortage will likely make it difficult for me to recruit a pharmacist(s) to purchase my pharmacy.	1	2	3	4	5	?
I will not be able to sell my pharmacy upon retirement and will be forced to close the business because the business is not likely to be profitable enough to attract a buyer.	1	2	3	4	5	?
The amount of time required to administer third party payer issues has become unmanageable under the new Medicare Part D program that took effect January 1, 2006.	1	2	3	4	5	?
Current Blue Cross/Blue Shield and other PBM's reimbursement rates are adequate to maintain reasonable profit margins.	1	2	3	4	5	?
Third party payer issues associated with changes in Medicare and Medicaid that took effect on January 1, 2006 have reduced the quality of patient care that my community pharmacy can provide.	1	2	3	4	5	?
In 2005, prior to adjustment to reimbursements, Blue Cross/Blue Shield and Medicaid reimbursement rates were adequate to maintain reasonable profit margins.	1	2	3	4	5	?
Technological requirements (<i>e.g. specific computer and software packages for processing claims</i>) make it difficult for me to stay in business.	1	2	3	4	5	?
Competition from mail order sales and the internet make it difficult to stay in business.	1	2	3	4	5	?
State and Federal pharmacy programs have a positive impact on the viability of this pharmacy.	1	2	3	4	5	?
Current Medicare Part D reimbursement rates are adequate to maintain reasonable profit margins.	1	2	3	4	5	?

Demographics

15. Which of the following degrees do you hold and from where and in what year did you receive your degree(s)? <i>(Please check all that apply).</i>		
Degree	University	Year
_____ B.S. of Pharmacy		
_____ Pharm. D.		
_____ MBA		
_____ Additional graduate degree (<i>MS, PhD.</i>)		

16. Are you a native of North Dakota?	
Yes	No
	If No, what is your home state? <div style="text-align: center; margin-top: 10px;">_____</div>

17. For how many years have you operated your community pharmacy?
_____ years

18. What is your gender?	
Male <input type="checkbox"/>	Female <input type="checkbox"/>

19. What is your age?

20. Do you plan to sell your community pharmacy in the next 10 years?	
YES	NO
<p>If Yes, have you identified a pharmacist that is considering or intends to purchase your pharmacy?</p>	
<p>If No, why not. <i>(Please select all that apply.)</i></p>	
<p>YES</p>	<p>_____ I plan to close the business when I retire.</p>
<p>NO</p>	<p>_____ The pharmacist shortage will likely make selling difficult.</p>
<p>If No, when do you plan to begin looking for an associate to purchase the pharmacy?</p>	<p>_____ The business will not likely be profitable enough to sell.</p>
<p>_____ 1 to 2 years from now</p>	<p>_____ I do not plan to retire or sell in the next 10 years.</p>
<p>_____ 3 to 4 years from now</p>	<p>_____ Other <i>(please specify)</i> _____</p>
<p>_____ 5 to 6 years from now</p>	<p>_____</p>
<p>_____ 7 to 8 years from now</p>	
<p>_____ 9 to 10 years from now</p>	

Additional Comments

Please feel free to offer any additional thoughts or comments concerning issues relevant to your independent community pharmacy or the industry overall. This is your opportunity to address any issues not covered in this questionnaire. Your response is important and will be kept strictly confidential.

Additional comments:

Please return the questionnaire in the enclosed postpaid envelope. If you have any questions you may contact Larry Leistritz at 701-231-7455 or Nancy Hodur at 701-231-7357.

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For a copy of the study results, please provide your name and mailing address below or you may contact the Department of Agribusiness and Applied Economics at North Dakota State University in Fargo, ND. Phone 701-231--7442, FAX 701-231-7400 or email: nancy.hodur@ndsu.edu or visit our departmental listing of research reports on the world wide web at <http://agecon.lib.umn.edu/ndsu.html>.

Name: _____

Address: _____

City,State,Zip _____

Thank you for for taking the time to fill out the questionnaire. Your cooperation is sincerely appreciated.