

Minnesota Health Workforce Demand Assessment 2003

Since 1994 the Rural Health Resource Center's Minnesota Center for Rural Health has completed an annual survey of the demand for physicians, advanced practice nurses, mental health providers and physician assistants in greater and urban underserved areas of Minnesota under contract with the Minnesota Department of Health, Office of Rural Health and Primary Care. In 2002, the survey was expanded to include hospitals and clinics in the seven-county metropolitan area.

Demand, as defined in this assessment, indicates the number of providers that clinics, hospitals and community health centers are actively recruiting. Under this definition, demand is not intended to reflect appropriate, minimum or optimal levels of provider supply based on population needs.

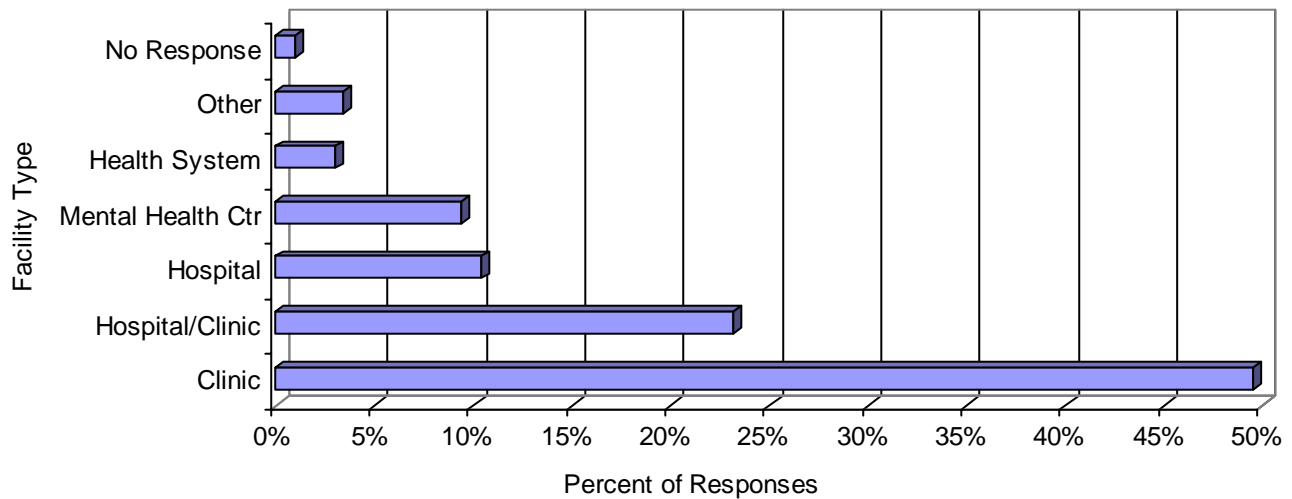
For the purposes of this assessment, rural Minnesota (**Rural MN**) includes everything outside of the seven-county metropolitan area and does not include the cities of Duluth or Rochester, Minnesota. Greater Minnesota (**Greater MN**) includes everything outside of the seven-county metropolitan area. Metropolitan Minnesota (**Metro MN**) includes the seven-county metropolitan area (Anoka, Carver, Dakota, Hennepin, Ramsey, Scott and Washington counties.) Urban underserved also includes federally funded community health centers located in the metropolitan area.

METHODOLOGY

The 2003 survey assessed the fourth quarter demand by specialty and region, as well as the reasons for recruiting. The survey has not been substantially modified since 1994. A total of 448 surveys were distributed to healthcare employers in Minnesota, with 199 mailed to **Greater MN** clinics, hospitals and mental health centers. In the seven-county metropolitan area surveys were distributed to 23 hospitals, 19 community mental health centers, 10 federally qualified health centers and 226 randomly selected clinics. The statewide response rate was 45% (n = 202), after 3 facilities were deleted from the sample group because the recruiting information was reported by an affiliated facility, 5 were deleted due to duplication, 6 were deleted due to not employing these types of healthcare providers, 1 clinic is no longer in business, 1 clinic is no longer independent and 1 survey was returned due to an insufficient address, resulting in a sample of 431. See Appendix A.

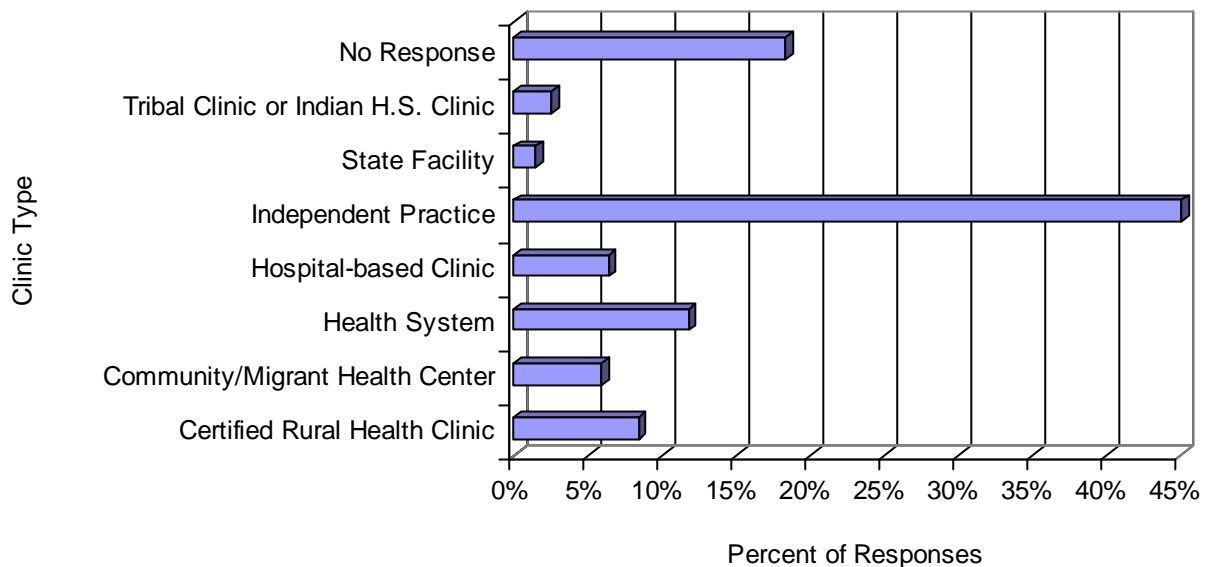
In **Greater MN** the response rate was 63% (n = 127) and in **Metro MN** the response rate was 30% (n = 75) in. Clinics and hospitals responded at a similar rate in **Greater MN** and **Metro MN**. The most frequent type of facility reporting was clinics (Figure 1).

Figure 1. Facility Type of Demand Assessment Respondents Statewide



The most prevalent clinic type statewide was independent clinics (45% of the respondents) (Figure 2). In **Greater MN** and **Rural MN**, 30% of the respondents reported their clinic type as independent and in **Metro MN** 69% were independent.

Figure 2. Clinic Type of Demand Assessment Respondents Statewide



PHYSICIAN DEMAND

Recruitment

As shown in Table 1, in 2003, 336 full-time equivalent (FTE) physicians were being recruited by **Greater MN** respondents. Over 42% (143) of the demand was for primary care specialists and over 57% of the demand was for medical, surgical and other specialists. **Rural MN** respondents reported recruiting 213.2 FTE physicians, with 53% of the demand for primary care specialists. An additional 100.2 (47%) medical, surgical, and other specialists were being recruited in **Rural MN**. In **Metro MN**, 75 respondents were recruiting 59 FTE physicians with 35.8% of the demand reported for primary care specialties and 64% for medical, surgical and other specialties. In **Greater MN** the highest number being recruited was family medicine with 77 FTE Family Medicine physicians and in **Metro MN** 9 Family Medicine physicians were in demand. This is a significant increase compared to 2002 when 45.6 Family Medicine physicians were being recruited in **Greater MN**. Additionally, the number of Family Medicine physicians reported practicing increased in **Greater MN** from 854.4 in 2002 to 863.3 in 2003. See Appendices B, C and D for further detail.

Table 1. 2003 Statewide Physician Demand

Specialty	Greater MN	Rural MN	Metro* MN
Primary Care	143.0 (42.5%)	113.0 (53%)	21.0 (35.8%)
Medical Specialties	51.5 (15.3%)	25.5 (12%)	8.0 (13.6%)
Surgical Specialties	83.0 (24.7%)	53.2 (25%)	10.0 (17.0%)
Other Specialties	58.5 (17.4%)	21.5 (10%)	19.7 (33.5%)
Total	336.0	213.2	58.7

*Survey sample included 226 randomly selected clinics and all 23 hospitals, 19 CHC's, and 10 MHC's in the seven-county metropolitan area.

The estimated total demand for physicians in **Greater MN**, if all 199 organizations responded, totaled 340.82 FTE's. The estimated total demand in **Rural MN** was 219.2 FTE. For **Metro MN** the estimated total demand for physicians, if all 1,254 **Metro MN** clinics were surveyed and all clinics and hospitals responded, was 719.6 FTE.

Survey respondents were asked to report the number of physicians recruited in the past year. Although 283.4 FTE primary care physicians were recruited in **Greater MN** and 90.8 FTE were recruited in **Metro MN**, each region lost a number of physicians due to retirement, relocation or death. Considering the total number practicing, a net gain of 15% in **Greater MN** and 9% in **Metro MN** was realized (Table 2).

Table 2. Number of Primary Care Physicians Recruited vs. Number Lost in 2003

Region	Number of Respondents	Number Practicing	Number Recruited	Number Lost	Net Gain (%)
Greater MN	127	1397.3	283.4	69.1	214.3 (15%)
Rural MN	114	1024.2	234.2	57.1	177.1 (17%)
Metro* MN	75	598.1	90.8	34.3	56.5 (9%)

*Survey sample included 226 randomly selected clinics and all 23 hospitals, 19 CHC's, and 10 MHC's in the seven-county metropolitan area.

Vacancies

Primary care physicians represented the greatest proportion of physicians practicing statewide (Table 3). Fifty-three percent of the practicing physicians reported were primary care in **Rural MN** and approximately 36% of the practicing physicians were primary care in **Greater MN** and **Metro MN**. The number of vacancies reported was lower than the number being recruited statewide.

Table 3. Number of Physicians Practicing vs. Number of Vacancies by Region in 2003

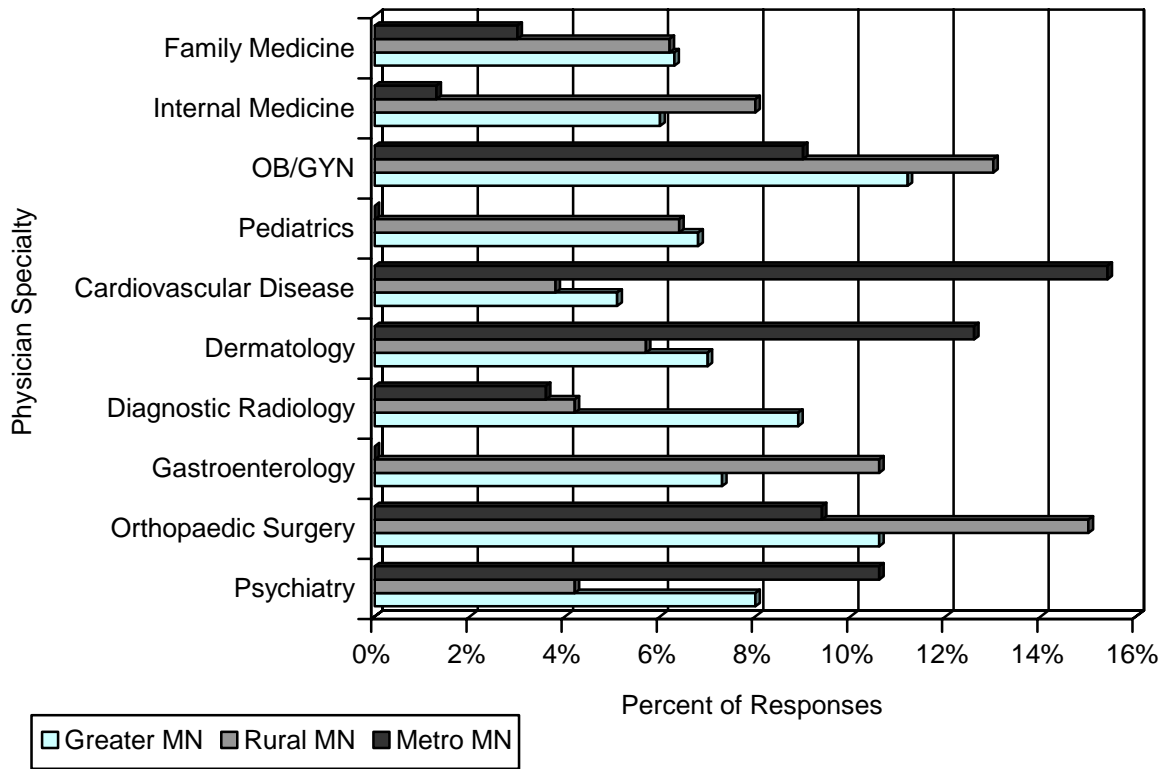
Specialty	Number Practicing Greater MN	Number of Vacancies Greater MN	Number Practicing Rural MN	Number of Vacancies Rural MN	Number Practicing Metro* MN	Number of Vacancies Metro* MN
Primary Care	1397.3	102.8	1024.2	78.8	598.1	17.0
Medical Specialties	382.8	23.0	100.8	8.0	138.1	8.0
Surgical Specialties	448.9	42.4	243.2	25.4	165.7	6.5
Other Specialties	985.1	49.5	286.7	13.5	279.8	21.6
Total	3214.1	217.7	1654.9	125.7	1181.7	53.1

* Survey sample included 226 randomly selected clinics and all 23 hospitals, 19 CHC's, and 10 MHC's in the seven-county metropolitan area.

Physician recruitment differs from other healthcare employee recruitment in that physician recruiting may take several months and it may be conducted without an open vacancy in preparation for retirement or a physician leaving. Respondents in **Greater MN** and **Rural MN** reported more vacancies due to newly created positions, especially among the "other specialties". In **Metro MN**, respondents indicated a higher number of vacancies were due to a physician leaving compared to vacancies from new positions.

The vacancy rates were determined with the number of vacancies as a portion of the number practicing added to the number of open positions (vacancies) (Figure 3). In **Greater MN** the highest vacancy rate was in Obstetrics/Gynecology (11%) and Orthopaedic Surgery (10%). The lowest rate, 5%, was in Cardiovascular Disease. **Rural MN** facilities had the highest vacancy rate in Orthopaedic Surgery (15%). Obstetrics/Gynecology (13%) and Gastroenterology (10%) also had high vacancy rates in **Rural MN**. Cardiovascular Disease (4%) had the lowest rate in **Rural MN**. In **Metro MN**, Cardiovascular Disease, Dermatology and Psychiatry all had high vacancy rates, over 10%, while Pediatrics and Gastroenterology had vacancy rates of 0. See Appendices E, F and G for further detail.

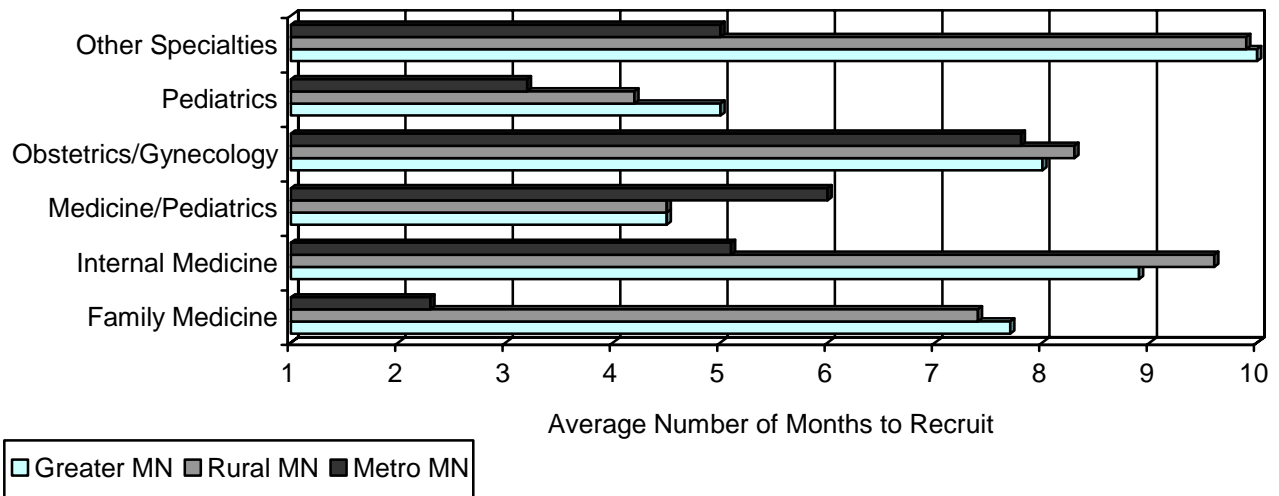
Figure 3. Top 10 Physician Vacancy Rates by Region



Length of Recruitment

Facilities in **Greater MN** reported spending an average of 7.7 months to recruit Family Medicine physicians, followed by 8.9 months for Internal Medicine, 4.5 months for Medicine/Pediatrics, 8 months for Obstetrics/Gynecology, 5 months for Pediatrics and an average of 10 months for all other specialties (Figure 4).

Figure 4. Length of Time to Recruit Physicians by Region

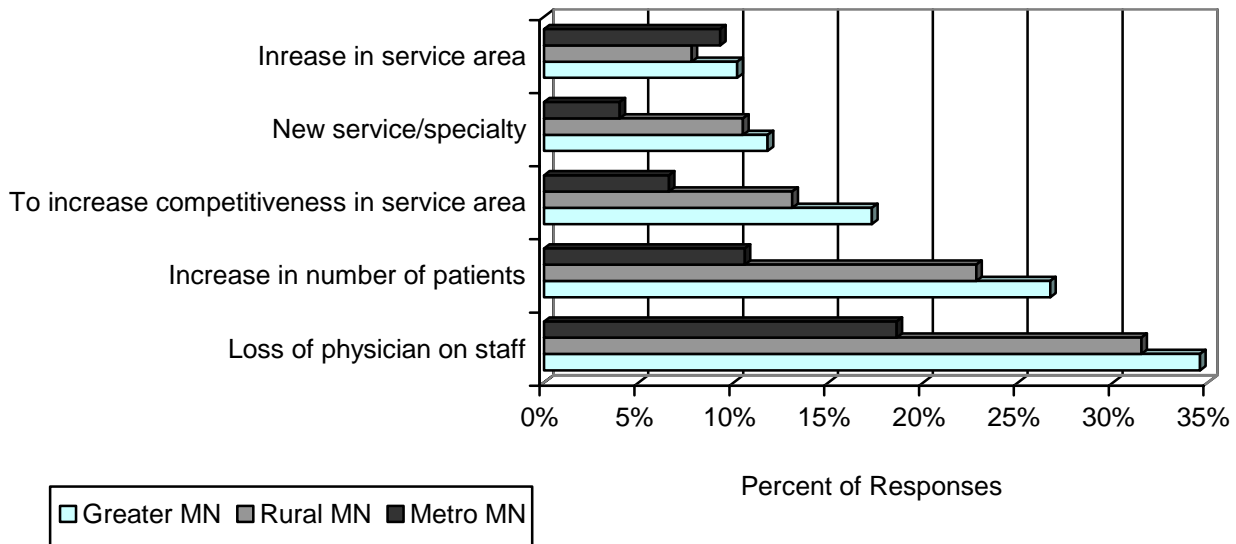


Rural MN facilities reported a similar pattern for Family Medicine recruitment. In **Metro MN**, the average length of time to recruit Family Medicine physicians was 2.3 months. Successful recruitment of Internal Medicine required an average of 8.9 months in **Greater MN**, 9.6 months in **Rural MN**, and an average of 5.1 months in **Metro MN**. Successful recruitment of non-primary care specialists required an average of 10 months for **Greater MN** respondents, 9.9 months for **Rural MN**, and 5 months for **Metro MN** facilities.

Reasons for Recruiting

Ninety-one facilities were recruiting physicians (n = 91). The number one reason reported for recruiting physicians statewide was due to a loss of physician on staff, followed by an increase in the number of patients (Figure 5).

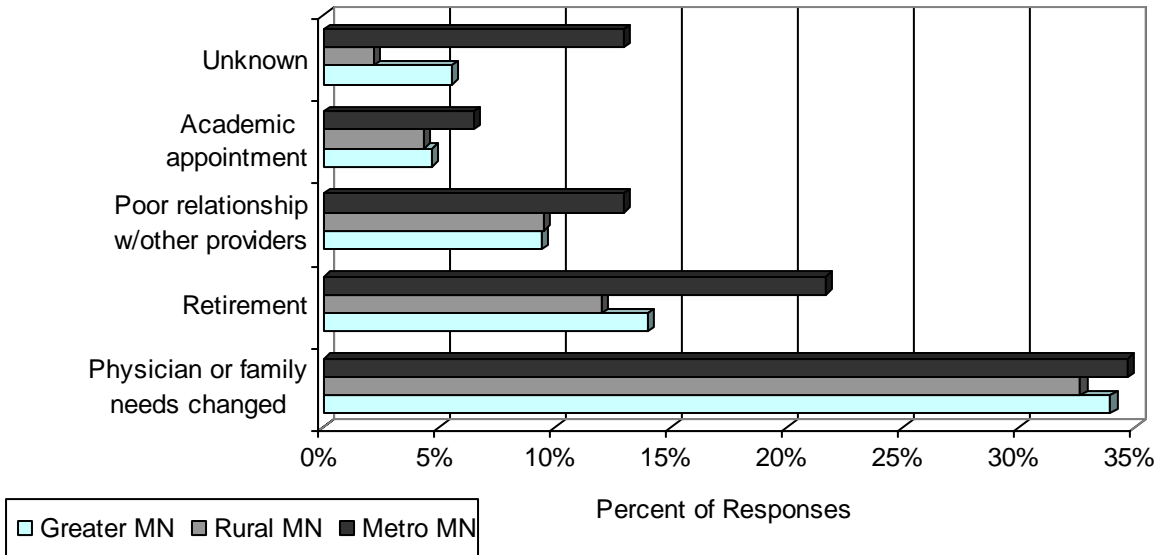
Figure 5. Top Five Reasons for Recruiting Physicians by Region



Reasons for Physicians Leaving a Practice

The most common reason physicians left a practice statewide was a change in the physician’s personal or family needs (Figure 6). **Metro MN** reported losing the highest percentage of physicians due to retirement (22%) or for unknown reasons (13%).

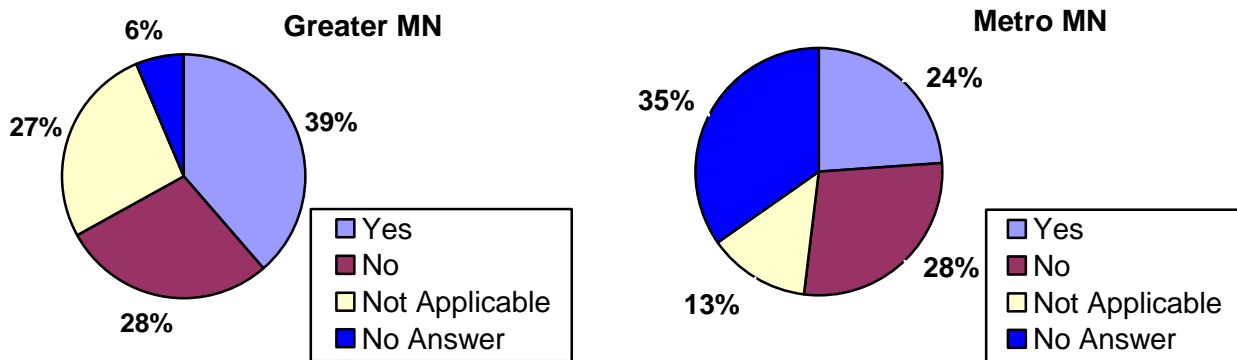
Figure 6. Top Five Reasons for Physicians to Leave a Practice by Region



J1 Visa Physicians

As shown in Figure 7, 39% of **Greater MN** respondents reported that they would be willing to consider an international physician applicant with a J1 Visa compared to 24% in **Metro MN**. Thirty-eight percent in both **Greater MN** and **Metro MN** reported that they would not be willing to consider an international physician applicant. In **Metro MN**, 48% of the respondents either did not answer the question or indicated that the recruitment of a J1 Visa applicant was not applicable to their facility.

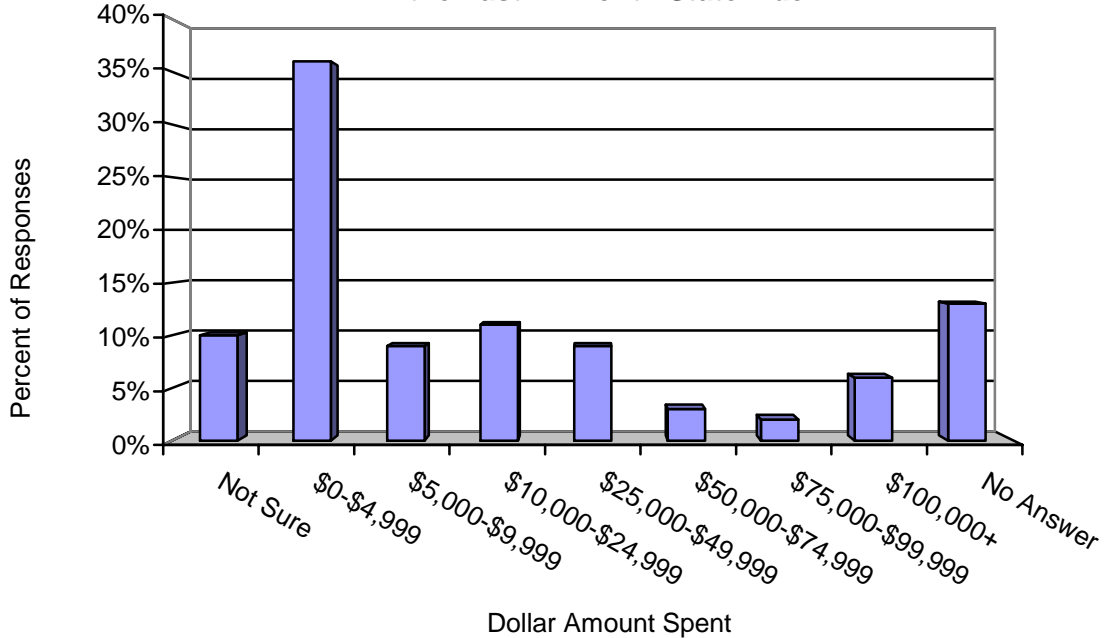
Figure 7. Organizations Willing to Hire a Physician with a J1 Visa



Recruitment Costs

Thirty-six percent of respondents statewide reported that their estimated cost to recruit physicians over the last 12 months ranged from \$0 to \$4,999 (Figure 8). Ten percent reported they were not sure how much their organization spent. Eleven percent reported spending \$10,000 - \$24,999 and 6% reported spending over \$100,000.

Figure 8. Estimated Amount Spend on Physician Recruitment in the Last 12 Month Statewide



ADVANCED PRACTICE PROVIDER DEMAND

Recruitment

Respondents in **Greater MN** reported active recruitment of 13.0 Nurse Practitioners, 11 Physician Assistants, 0.8 Certified Nurse Midwives, and 4 Certified Registered Nurse Anesthetists (Table 4). **Greater MN** facilities had the highest demand for Nurse Practitioners. Of the Nurse Practitioners being recruited in **Greater MN** and **Rural MN**, the majority of the demand was for Family Nurse Practitioners. In **Metro MN**, 5.5 Nurse Practitioners, 3 Physician Assistants and 7 Certified Registered Nurse Anesthetists were being recruited. No Certified Nurse Midwives were reported as being recruited in **Metro MN**.

Table 4. Regional Advanced Practice Nurses and Physician Assistants Being Recruited in 2003

Specialty	Greater MN	Rural MN	Metro* MN
Nurse Practitioners	13.0	9.0	5.5
Physician Assistants	11.0	8.0	3.0
Certified Nurse Midwives	0.8	0.8	0.0
Cert. Reg. Nurse Anes.	4.0	4.0	7.0
Total	28.8	21.8	15.5

*Survey sample included 226 randomly selected clinics and all 23 hospitals, 19 CHC's, and 10 MHC's in the seven-county metropolitan area.

Of the over 70 Nurse Practitioners recruited statewide in the past year, 25.4 were recruited in **Greater MN** and 23.6 were recruited in **Metro MN** (Table 5). **Greater MN** and **Rural MN** had net gains of 18.2% and 11.8% in the total number of Nurse Practitioners considering the number lost due to retirement, relocation or death and the number practicing. Approximately 52% of the Physician Assistants were recruited in **Greater MN**. Seventy-nine percent of Certified Nurse Midwife recruitment occurred in **Rural MN** and **Greater MN**. **Metro MN** experienced a net loss in the number of Certified Nurse Midwives. Certified Registered Nurse Anesthetists increased 24% in **Rural MN** and 15% in **Metro MN**.

Table 5. Number of Nurse Practitioners, Physician Assistants, Certified Nurse Midwives and Certified Registered Nurse Anesthetists Recruited vs. Number Lost in 2003

Providers	Region	# of Respondents	# Practicing	# Recruited	# Lost	Net Gain (%)
Nurse Practitioners	Greater	127	231.8	25.4	7.2	18.2 (8%)
	Rural	114	465.6	21.4	6.2	15.4 (3%)
	Metro*	75	147.6	23.6	11.8	11.8 (8%)
Total NP's		316	845.0	70.4	25.2	45.4
Physician Assistants	Greater	127	203.2	30.6	8.0	22.6 (11%)
	Rural	114	139.0	17.6	3.0	14.6 (11%)
	Metro*	75	70.0	11.0	5.0	6.0 (9%)
Total PA's		316	412.2	59.2	16.0	43.2
Cert. Nurse Midwives	Greater	127	13.6	3.8	1.0	2.8 (21%)
	Rural	114	9.6	3.8	1.0	2.8 (29%)
	Metro*	75	12.1	1.0	3.0	-2.0 (-16%)
Total CNM's		316	35.3	8.6	5.0	3.6
Cert. Reg. Nurse Anesthetists	Greater	127	240.3	15.0	1.0	14.0 (6%)
	Rural	114	46.3	12.0	1.0	11.0 (24%)
	Metro*	75	66.0	15.0	5.0	10.0 (15%)
Total CRNA's		316	352.6	42.0	7.0	35.0

*Survey sample included 226 randomly selected clinics and all 24 hospitals, 19 CHC's, and 10 MHC's in the seven-county metropolitan area.

Vacancies

The number of advanced practice providers varied greatly by region (Table 6). In **Greater MN**, Certified Registered Nurse Anesthetists were the largest group of advanced practice providers practicing, with a total of 240.3. In **Rural MN** and **Metro MN**, Nurse Practitioners were the largest group of advanced practice providers. A total of 465.5 Nurse Practitioners were reported practicing in **Metro MN** and 147.6 were reported practicing in **Rural MN**. Nurse Practitioners had the greatest number of vacancies reported in **Greater MN**. **Greater MN** also reported the highest number of Physician Assistant vacancies, with 8 vacancies reported.

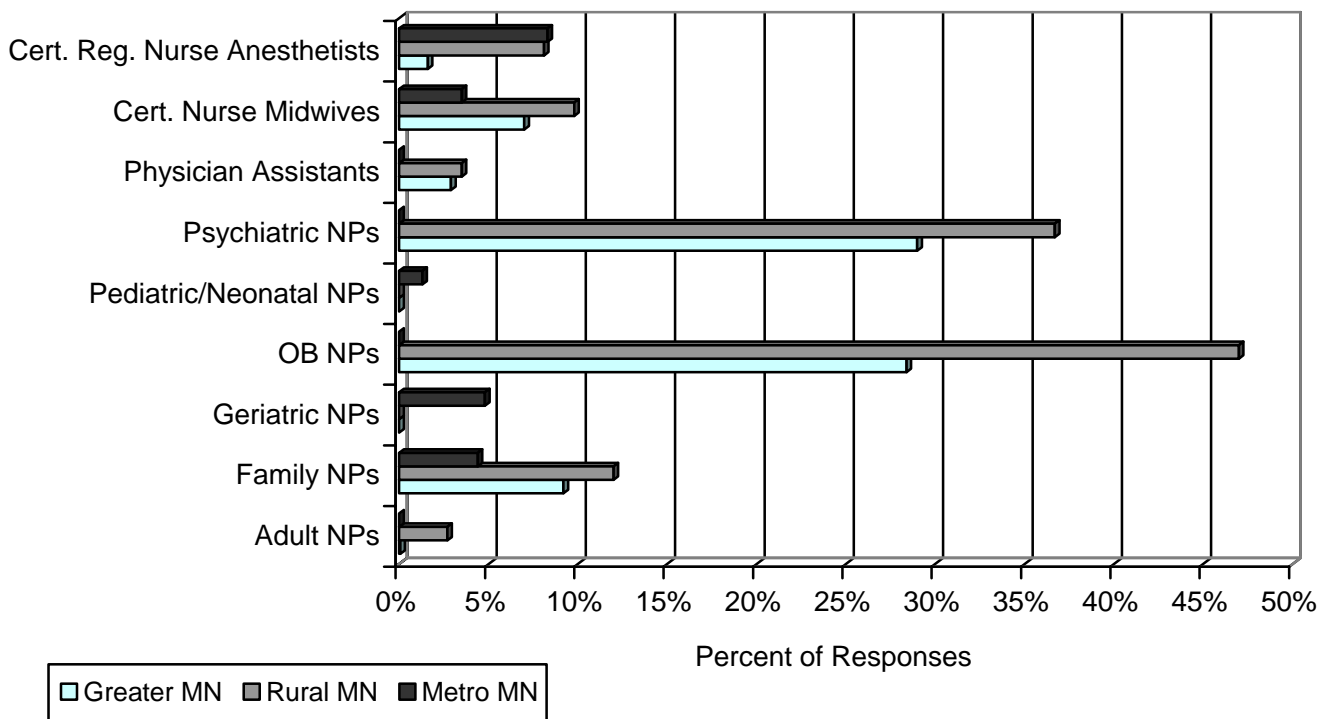
Table 6. Number of Advanced Practice Providers Practicing and Number of Vacancies by Region in 2003

Provider Type	# Practicing Greater MN	# of Vacancies Greater MN	# Practicing Rural MN	# of Vacancies Rural MN	# Practicing Metro* MN	# of Vacancies Metro* MN
Nurse Practitioners	231.8	12.0	465.6	11.0	147.6	6.5
Physician Assistants	203.2	8.0	139.0	6.0	70.0	4.0
Cert. Nurse Midwives	13.6	0.8	9.6	0.8	12.1	0.0
Cert. Reg. Nurse Anes.	240.3	4.1	46.3	4.1	66.0	6.0
Total	688.9	24.9	660.5	21.9	295.7	16.5

* Survey sample included 226 randomly selected clinics and all 23 hospitals, 19 CHC's, and 10 MHC's in the seven-county metropolitan area.

In **Greater MN**, the highest vacancy rates were found for Obstetric Nurse Practitioners and Psychiatric Nurse Practitioners while Adult, Geriatric and Pediatric Nurse Practitioners had vacancy rates of zero (Figure 9).

Figure 9. Advanced Practice Provider Vacancy Rates by Region

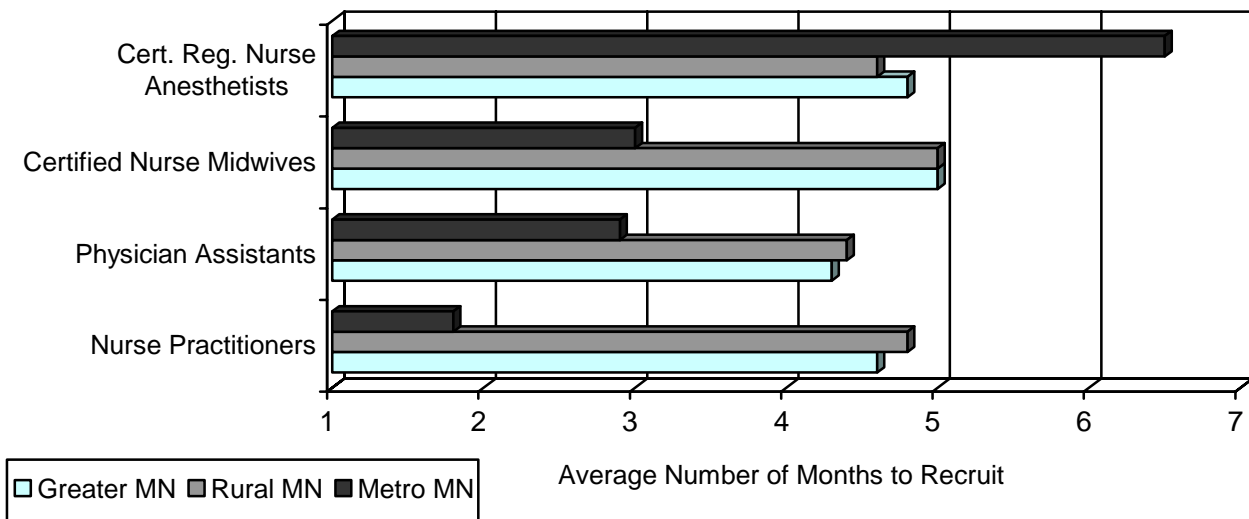


Rural MN facilities had the highest vacancy rates for Obstetric Nurse Practitioners and Psychiatric Nurse Practitioners. All Nurse Practitioner specialties, Physician Assistants and Certified Nurse Midwives had vacancy rates less than 5%. Certified Registered Nurse Anesthetists had a vacancy rate of 0 statewide.

Length of Time to Recruit

Of the **Greater MN** facilities that had successfully recruited Nurse Practitioners in the past year, 4.6 months was the average length of time required for successful recruitment (Figure 10). **Rural MN** facilities reported a similar length of time to successfully recruit Nurse Practitioners. **Metro MN** facilities required an average of 1.8 months to successfully recruit Nurse Practitioners. Successful recruitment of Physician Assistants required an average of 4.3 months in **Greater MN** and 4.4 months for **Rural MN** facilities. In **Metro MN**, 6.5 months was the average length of time required to successfully recruit a Certified Registered Nurse Anesthetists, and Nurse Practitioners were recruited in less than 2 months. For the facilities that recruited a Certified Nurse Midwife in the past year in **Greater MN** and **Rural MN**, 5 months was the average length of time reported.

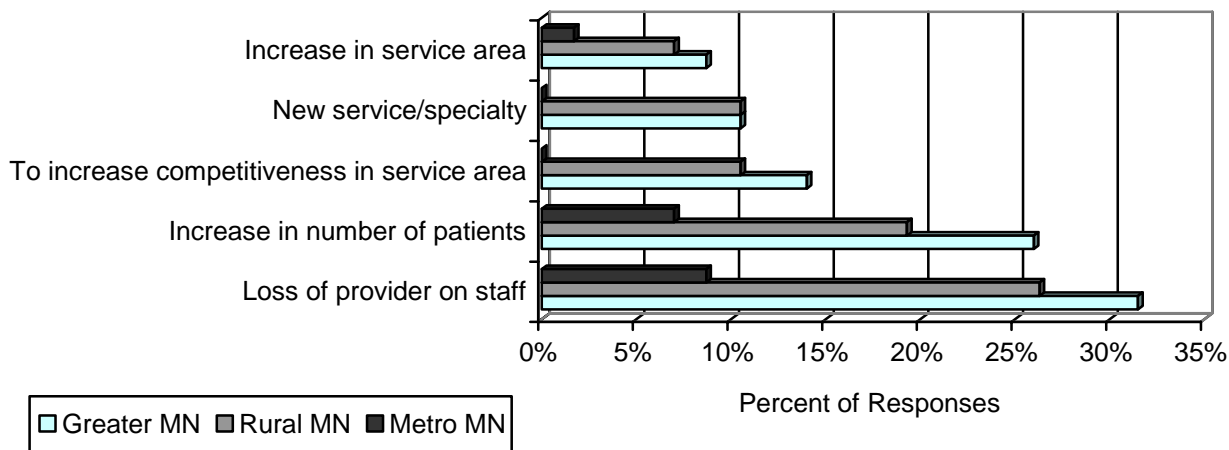
Figure 10. Length of Time to Recruit Advanced Practice Providers by Region



Reasons for Recruiting

Of the 57 facilities recruiting Nurse Practitioners, Physician Assistants, Certified Nurse Midwives and Certified Registered Nurse Anesthetists statewide, the top reasons for recruiting were the loss of a provider on staff and an increase in the number of patients (Figure 11).

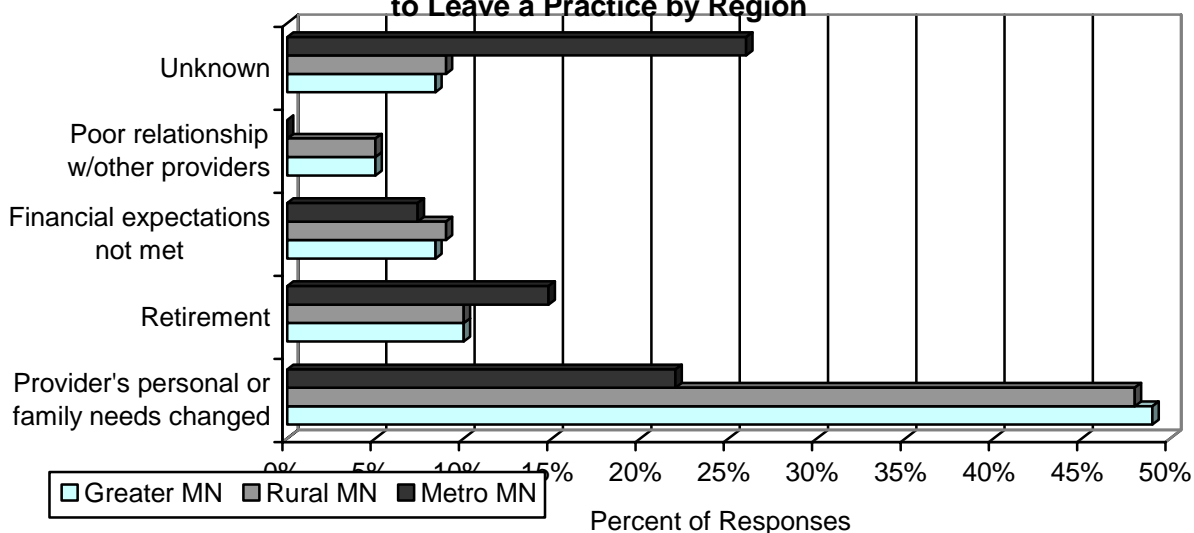
Figure 11. Top Five Reasons for Recruiting Advanced Practice Providers by Region



Reasons for Leaving

The most common reasons Nurse Practitioners, Physician Assistants, Certified Nurse Midwives, and Certified Registered Nurse Anesthetists left a practice in **Greater MN** and **Rural MN** were the provider’s personal or family needs changed (Figure 12). Less than 15% of respondents reported that providers left due to retirement, financial expectations not met or poor relationship with other provider in **Greater MN**, **Rural MN**, and **Metro MN**. In **Metro MN** the top response was “unknown” followed by the provider’s personal or family needs changed.

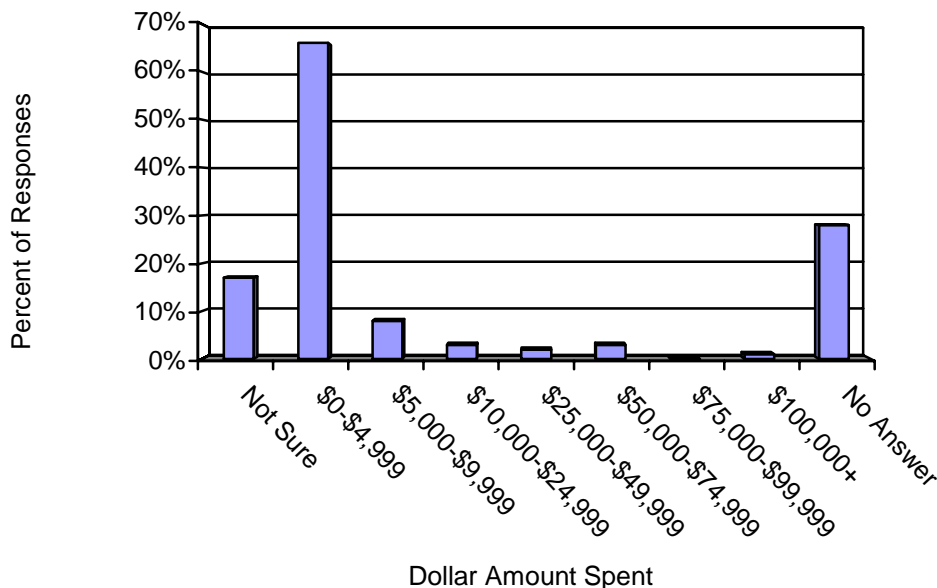
Figure 12. Top Five Reasons for Advanced Practice Providers to Leave a Practice by Region



Estimated Recruitment Expense

Sixty-six percent of respondents statewide reported \$0 - \$4,999 as their estimated cost to recruit Nurse Practitioners, Physician Assistants, Certified Nurse Midwives, and Certified Registered Nurse Anesthetists statewide over the last 12 months (Figure 13). Eight percent reported spending \$5,000 - \$9,999, and 4% reported spending over \$49,999 on advanced practice provider recruitment over the last 12 months.

Figure 13. Estimated Amount Spent on Advanced Practice Provider Recruitment in the Last 12 Months Statewide



MENTAL HEALTH PROVIDER DEMAND

Recruitment

Greater MN reported the highest number of mental health providers being recruited in (26.5) (Table 7). In **Rural MN**, 8.5 Clinical Psychologists and 7 Social Workers were being recruited. **Metro MN** reported recruiting 10 Clinical Psychologists and 6 Social Workers.

Table 7. Regional Mental Health Providers Being Recruited in 2003

Provider Type	Greater MN	Rural MN	Metro MN *
Clinical Psychologists	12.5	8.5	10.0
Social Workers	14.0	7.0	6.0
Total	26.5	15.5	16.0

* Survey sample included 226 randomly selected clinics and all 23 hospitals, 19 CHC's, and 10 MHC's in the seven-county metropolitan area.

Survey respondents reported that a similar number of Clinical Psychologists and Social Workers, approximately 22, were successfully recruited in **Greater MN** during the past year (Table 8). Approximately 32 providers were lost in both **Greater MN** and **Rural MN**. In **Metro MN**, 17.9 providers were lost due to relocation, retirement or death and 23.7 were recruited. The net gain was 4% or less for Social Workers and Clinical Psychologists statewide.

Table 8. Number of Mental Health Providers Recruited vs. Number Lost in 2003

Provider Type	Region	# of Respondents	# Practicing	# Recruited	# Lost	Net Gain (%)
Clinical Psychologists	Greater MN	127	153.8	21.3	18.0	3.3 (2.1%)
	Rural MN	114	131.0	19.3	14.0	5.3 (4.0%)
	Metro* MN	75	113.4	10.2	6.8	3.4 (3.0%)
Social Workers	Greater MN	127	262.9	22.3	16.9	5.4 (2.0%)
	Rural MN	114	198.1	20.3	15.9	4.4 (2.2%)
	Metro* MN	75	95.9	13.5	11.1	2.4 (2.5%)

* Survey sample included 226 randomly selected clinics and all 23 hospitals, 19 CHC's, and 10 MHC's in the seven-county metropolitan area.

Vacancies

Social Workers represented the greatest proportion of mental health providers practicing in **Greater MN** and **Rural MN** (Table 9). In **Metro MN**, Clinical Psychologists represented the largest group of mental health providers. The highest number of vacancies was found for Social Workers in **Greater MN**.

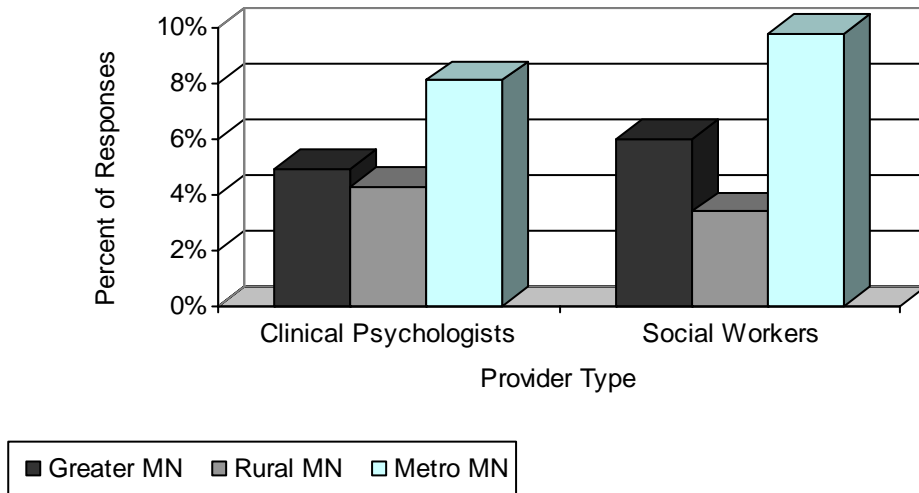
Table 9. Mental Health Providers Practicing and Vacancies by Region in 2003

Provider	# Practicing Greater MN	# of Vacancies Greater MN	# Practicing Rural MN	# of Vacancies Rural MN	# Practicing Metro* MN	# of Vacancies Metro* MN
Clinical Psychologists	153.8	8.0	131.0	6.0	113.4	10.0
Social Workers	262.9	16.9	198.1	7.0	95.9	11.1
Total	416.7	24.9	329.1	13.0	209.3	21.1

* Survey sample included 226 randomly selected clinics and all 23 hospitals, 19 CHC's, and 10 MHC's in the seven-county metropolitan area.

Metro MN had the highest vacancy rates for both Clinical Psychologists and Social Workers (Figure 14). In **Greater MN** and **Rural MN**, vacancy rates were 6% or less for both Clinical Psychologists and Social Workers.

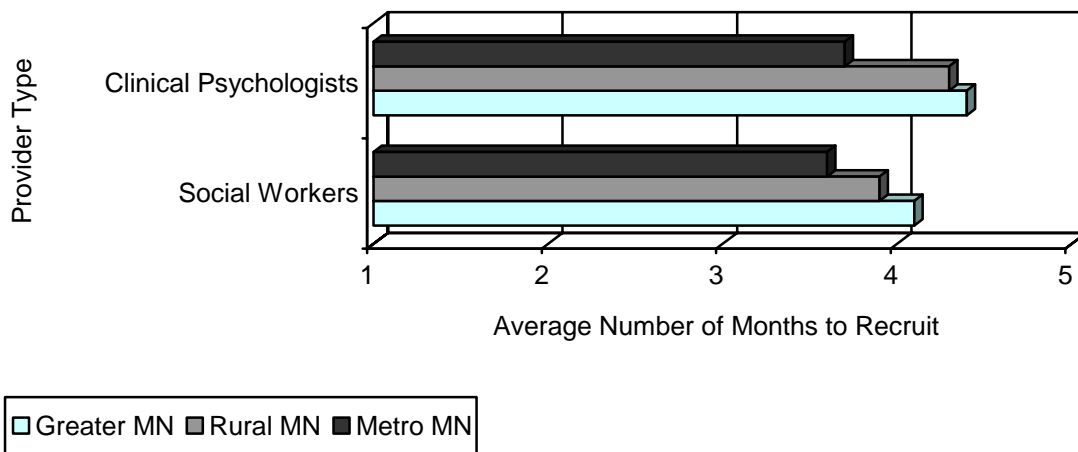
Figure 14. Mental Health Provider Vacancy Rates by Region



Length of Recruitment

In **Greater MN**, facilities that had successfully recruited mental health providers in the past 12 months reported an average of 4.1 months to recruit Clinical Psychologists and 4.4 months to recruit Social Workers (Figure 15). **Rural MN** facilities reported a similar length of time to successfully recruit mental health providers. **Metro MN** reported requiring less time to recruit mental health providers, with an average of 3.7 months for Social Workers and 3.6 months for Clinical Psychologists.

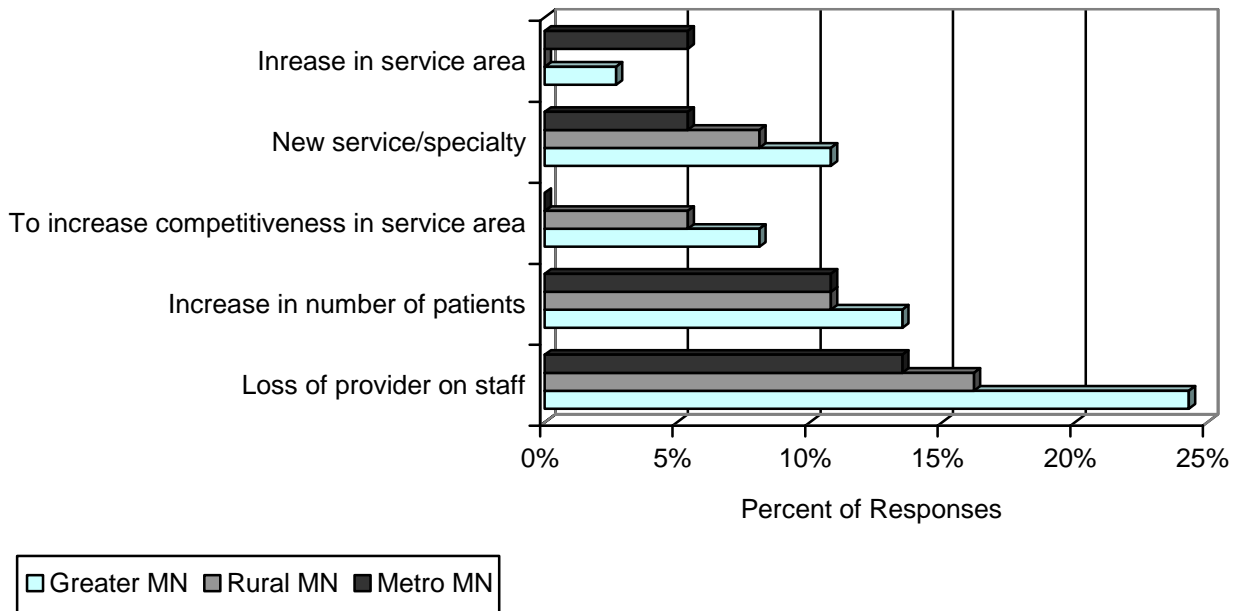
Figure 15. Length of Time to Recruit Mental Health Providers by Region



Reasons for Recruiting

Of the 37 facilities recruiting Clinical Psychologists and Social Workers statewide, the top reasons for recruiting were the loss of a provider on staff and an increase in the number of patients (Figure 16). Twenty-four percent of the respondents in **Greater MN** reported loss of provider on staff as their number one reason for recruiting, followed by 16% in **Rural MN** and 13.5% in **Metro MN**.

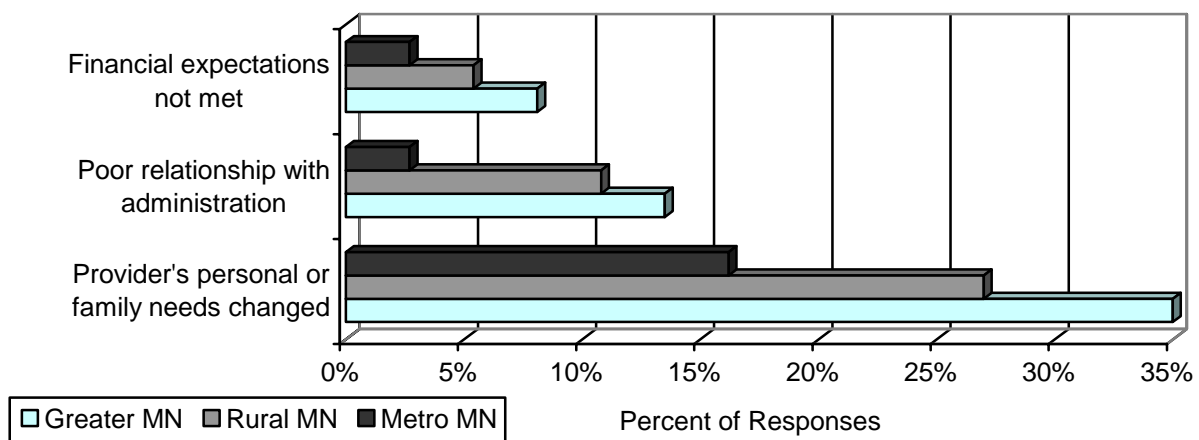
Figure 16. Top Five Reasons for Recruiting Mental Health Providers by Region



Reasons for Mental Health Providers Leaving a Practice

The most common reason Clinical Psychologists and Social Workers left a practice were the provider's personal or family needs changed (Figure 17). Less than 10% of respondents reported that providers left due to retirement, or financial expectations not being met.

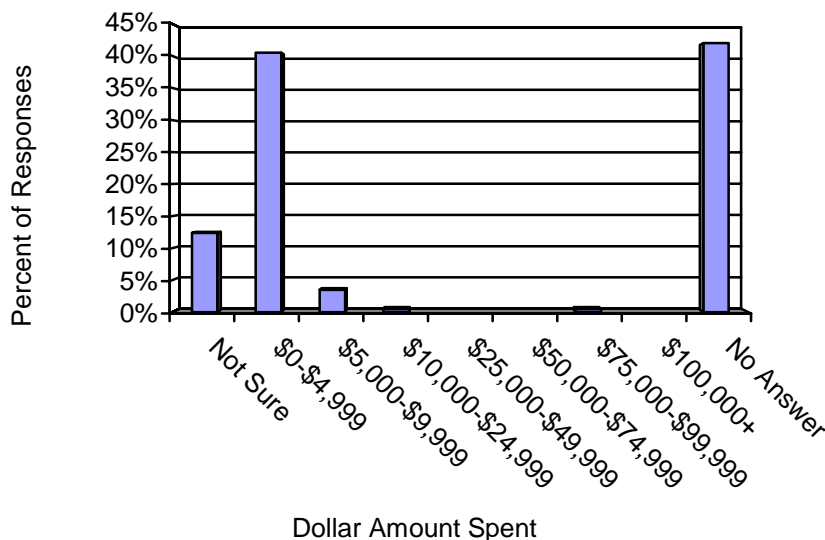
Figure 17. Reasons for Mental Health Providers to Leave a Practice by Region



Recruitment Costs

Forty-one percent of respondents statewide reported \$0 - \$4,999 as their estimated cost to recruit Clinical Psychologists and Social Workers over the last 12 months (Figure 18). Less than 5% of respondents reported spending \$5,000 - \$24,999 and 1% reported spending \$75,000 - \$99,999 on recruitment of Clinical Psychologists and Social Workers.

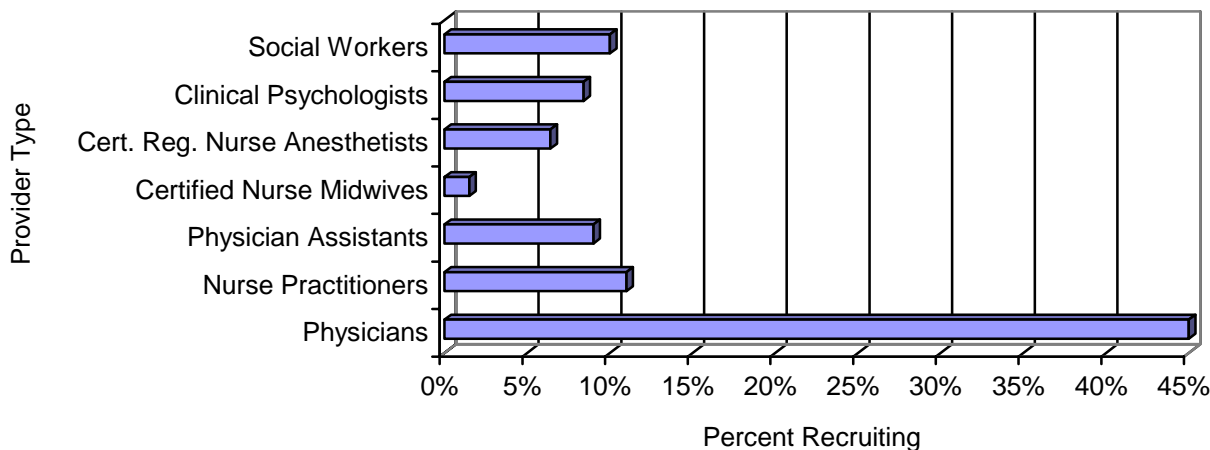
Figure 18. Estimated Amount Spent on Mental Health Provider Recruitment in the last 12 months Statewide



SUMMARY

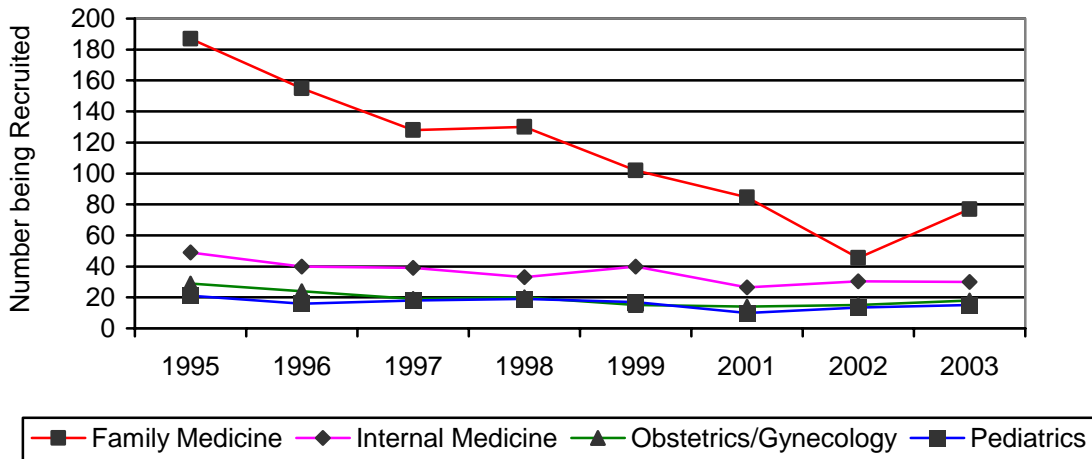
The 2003 Minnesota Health Workforce Demand Assessment found that almost half of all respondents were actively recruiting Physicians. Approximately 10% were recruiting Nurse Practitioners, Social Workers, and Physician Assistants, while 8.4% were recruiting Clinical Psychologists, 6.4% were recruiting Certified Registered Nurse Anesthetists and 1.5% of respondents were recruiting Certified Nurse Midwives (Figure 19).

Figure 19. Percent of Respondents Recruiting Providers in 2003 Statewide



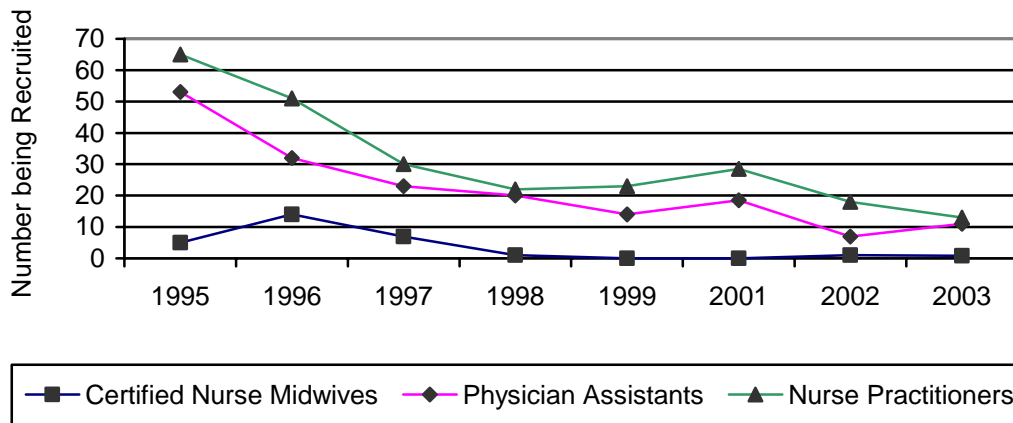
Primary care physician specialties represented at least 35% of the demand in each region. This assessment indicated an increased demand for Family Medicine, Obstetrics/Gynecology, and Pediatrics in **Greater MN** as compared to 2002, while the demand for Internal Medicine stayed the same (Figure 20). Family Medicine had the greatest number of openings in each region. Overall, each region reported a net gain in the total number of physicians recruited versus lost compared to the number practicing. In **Greater MN** the highest vacancy rates were in Obstetrics/Gynecology, and Orthopaedic Surgery, over 10%, and the lowest rate was in Cardiovascular Disease. In **Metro MN**, Cardiovascular Disease, Dermatology and Psychiatry all had high vacancy rates, over 10%, while Pediatrics and Gastroenterology had vacancy rates of 0.

Figure 20. Demand for Primary Care Physicians in Greater MN by Year



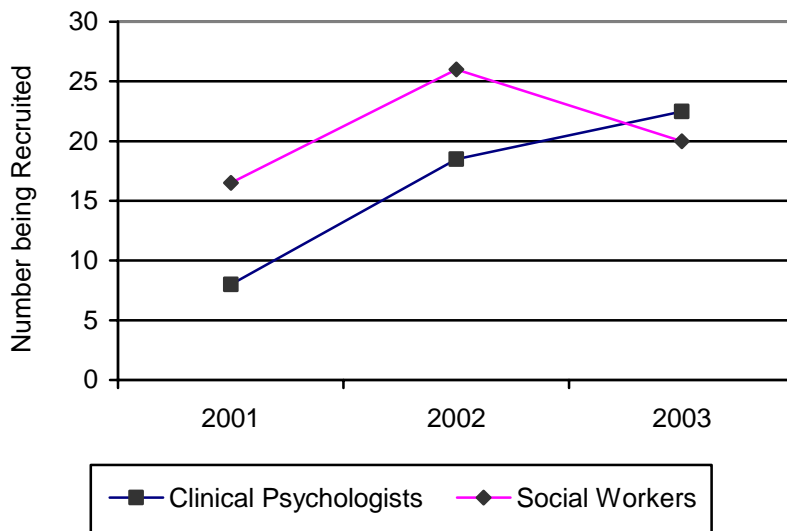
The demand for Nurse Practitioners decreased in 2003 compared to 2001 (Figure 21) and the demand for Physician Assistants increased. The majority of Nurse Practitioner recruitment was for Family Nurse Practitioners. As in past years, there was minimal recruitment reported for Certified Nurse Midwives. Nurse Practitioners and Physician Assistants had positive gains in the total number practicing with significant numbers recruited in the past year. In **Greater MN** and **Rural MN**, Family, Obstetric and Psychiatric Nurse Practitioner specialties, as well as Certified Nurse Midwives, had vacancy rates over 5%.

Figure 21. Demand for Nurse Practitioners, Certified Nurse Midwives and Physician Assistants in Greater MN by Year



Mental Health providers have only recently been included in the Minnesota Health Workforce Demand Assessment. Comparing 2001 to 2003, the number of Clinical Psychologists being recruited increased from 8 to 22. Demand for Social Workers was at 16.5 in 2001, rose to 26 in 2002 and decreased to 20 in 2003 (Figure 22). The vacancy rates for Clinical Psychologists and Social Workers in **Greater MN** and **Rural MN** were 6% or less.

Figure 22. Demand for Clinical Psychologists and Social Workers in Greater MN by Year



With the increasing demand for specialty healthcare services due to a growing and aging population and advances in technology, the demand for specific non-primary care physicians remains higher than available providers in **Greater MN** and **Rural MN**, as seen by the high vacancy rates. Moreover, Family Medicine demand in **Greater MN** increased 59% from 2002, showing a significant increase in demand. Several initiatives designed to improve recruitment of primary care providers in Minnesota have contributed to the increase in placement over the past ten years. These include the Minnesota Department of Health’s Office of Rural Health and Primary Care programs, such as Loan Forgiveness, the J1 Visa Waiver Physician Recruitment and the Collaborative Rural Nurse Practitioner Program in addition to other state programs. Loan Forgiveness Programs are currently offered for mental health providers and Psychiatrists are eligible for the J1 Visa Waiver Program. These incentives, as well as the new Area Health Education Center Grant received by the University of Minnesota, help facilitate the education of rural mental health professionals and may impact the vacancies in Minnesota.

APPENDIX A

2003 Minnesota Health Workforce Demand Assessment

Methodology

The 2003 Minnesota Health Workforce Demand Assessment survey instrument was designed to assess demand for physicians, advanced practice providers, and mental health providers in Minnesota. Specifically, it was intended to determine:

- if a hospital or clinic was currently recruiting physicians, nurse practitioners, physician assistants, certified nurse midwives, clinical psychologists and social workers;
- the number of providers currently practicing by specialty;
- the number of positions by specialty currently vacant;
- the number of positions newly created;
- the number of vacancies due to the loss of a provider;
- the number of providers being recruited by specialty;
- and the time and resources used for recruitment in the previous twelve months.

The survey, originally developed in 1993 has not been substantially modified since 1994. In 2003 Clinical Psychology and Social Work was separated out from the advanced practice provider section.

The surveys were mailed in January 2003 and included a cover letter and a pre-paid business reply envelope. A new online response option was presented to the sample. Reminder postcards were mailed to the entire sample after one month. A second mailing of surveys was sent to non-responding hospitals, both hospitals and clinics, health systems, mental health centers, clinics and others. Follow-up phone calls were made to large health systems and hospitals that had not responded. Clarification of possible duplicate reporting by organizations was verified by phone or email contact with the administrator or recruiter.

To avoid duplication of responses, respondents were asked what other communities or satellites the responding organization recruits for and what other organizations may also report the respondent's recruitment data. Two additional questions asked if the respondents were affiliated with a health system and, if so, they were asked to identify the health system.

Survey Sample

The mailing list, originally developed in 1993 for Greater MN, was used and included 199 organizations. Annual updates have been made by comparing the list to current lists from various agencies and associations. The Greater MN list includes hospitals, hospital and clinics, health systems, mental health centers and clinics. The list of Greater MN clinics obtained in 1999, which included all Blue Cross/Blue Shield providers from the Minnesota Department of Health, Health Economics Program, was updated for mailing purposes. The list of hospitals was obtained from the Minnesota Hospital Association. Hospitals that had previously indicated they do not recruit physicians, advanced practice nurses, or physician assistants in the 2002 survey and asked to be excluded were not included in the sample. Indian Health Service sites and tribal clinics were identified by the Bemidji Area Indian Health Services.

For the 2003 Demand Assessment metropolitan list, the list created in 2002 of a sample of 226 clinics and 23 hospitals in the metropolitan seven-county area was used. The Metro MN list includes the seven-county metropolitan area (Anoka, Carver, Dakota, Hennepin, Ramsey, Scott, and Washington). The list of urban underserved community health centers located in a HPSA or medically underserved area within the seven-county metropolitan area, and state mental health centers were identified from the Office of

Rural Health and Primary Care, Minnesota Department of Health. Large clinics or health systems with multiple satellite clinics were asked to complete one survey for all of their sites.

A total of 448 responses were received from the Metro MN and Greater MN clinics, hospitals, both hospitals and clinics, health systems, mental health centers and clinics (includes certified rural health clinics, community/migrant health center, health system, hospital-based clinic, independent practice, state facilities and tribal clinic or IHS clinics) n = 448 (Figure 1).

Figure 1. Facility Type of Demand Assessment

Type of facility	Greater MN	Metro MN	Total
Clinic	93	186	279
Hospital	33	23	56
Combined Hospital/Clinic	42	10	52
Health System	10	2	12
Mental Health Center	20	21	41
Other	1	7	8
Total	199	249	448

(Source: Minnesota Department of Health, Blue Cross/Blue Shield providers and Minnesota Hospital Association and the Minnesota Medical Business Resources)

A total of 448 surveys were mailed, deletions included 3 facilities because the recruiting information was reported by an affiliated facility, 5 were due to duplication, 6 do not employ these types of healthcare providers, 1 clinic is no longer in business, 1 clinic is no longer independent and 1 survey was returned due to an insufficient address, resulting in a sample of 431. A total of 45% percent (202) of the 2003 Minnesota Health Demand Assessment surveys were returned.

Response Rates

Of the 199 surveys mailed for Greater MN, the response rate was 63% (n = 127) (Figure 2). The Greater MN respondent’s self-reported type included 46 clinics, 19 hospitals, 40 were both clinic and hospital, 13 mental health centers, 6 health systems and 1 self reported in the other category and 2 did not indicate a facility type.) The Greater MN survey respondents included 11 organizations in Duluth and Rochester and 110 organizations in rural areas.

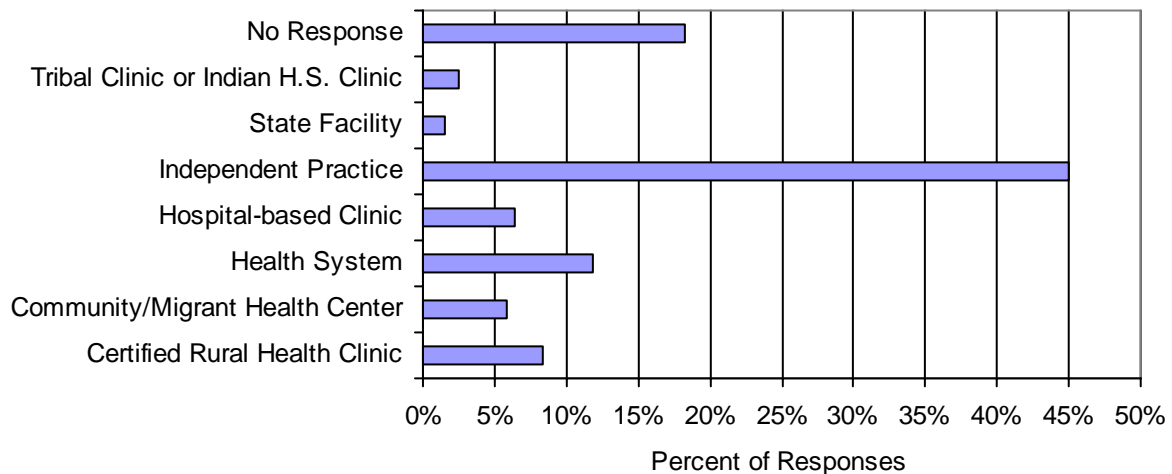
Of the 249 surveys mailed for the seven-county metropolitan area, the response rate was 30% (n = 75) (Table 2). The Metro MN respondent’s self-reported type included 54 clinics, 2 hospitals, 7 were both clinic and hospital, 0 health systems, 6 mental health centers, and 6 self reported in the other category. For all of the respondent’s the self-reported type included 100 clinics, 21 hospitals, 47 were a combined clinic and hospital, 6 health systems, 19 mental health centers, 7 self reported in the other category and 2 did not indicate a facility type.

Table 2. Self-Reported Facility Type of Respondents

Facility Type	Greater MN Surveyed Type	Greater MN Self-Reported Type	Greater MN Response Rate	Metro MN Survey Type	Metro MN Self-Reported Type	Metro MN Response Rate	Total
Clinic	93	46	23.1%	226	54		100
Hospital	33	19	9.5%	23	2		20
Hospital/Clinic	42	40	20.1%		7		47
Health System	10	6	3.0%				6
Mental Health Center	20	13	6.5%		6		19
Other	1	1	0.5%		6		7
No Response		2					2
Total/Average	199	127	62.7%	249	75	30%	201

Forty-five percent of the clinics were independent, 8.4% were a certified rural health clinic, 11.8% were part of a health system, 5.9% a community health center, 6.4% were a hospital based clinic, 2.5% a tribal or Indian Health Services site, 1.5% reported being a state facility and 18.3% did not indicate a facility type (Figure 2).

Figure 2. Clinic Type of Demand Assessment Respondent



APPENDIX B
2003 Demand for Physicians in Greater Minnesota
(Includes Duluth and Rochester) (n = 127)

Demand Ranking by Specialty Group	Physician Specialty	Number Currently Recruiting	Number Reported Practicing
	Primary Care		
1	Family Medicine	77.0	863.3
2	Internal Medicine	30.0	279.2
3	Obstetrics/Gynecology	18.0	111.0
4	Pediatrics	15.0	135.2
5	Medicine/Pediatrics	3.0	8.6
	Subtotal	143.0	1397.3
	Medical Specialties		
1	Dermatology	13.0	41.8
2	Gastroenterology	12.0	63.3
3	Cardiovascular Disease	10.0	129.3
4	Hospitalist (IM)	6.5	30.1
5	Hematology/Oncology	4.0	60.5
6	Pulmonology	4.0	36.7
7	Allergy	2.0	18.1
8	Hospitalist (FP)	0.0	2.0
9	Pediatric Cardiovascular Disease	0.0	1.0
	Subtotal	51.5	382.8
	Surgical Specialties		
1	Orthopaedic Surgery	25.1	110.0
2	General Surgery	15.0	123.7
3	Urological Surgery	13.4	47.6
4	Plastic Surgery	9.0	18.2
5	Otolaryngology	8.3	45.1
6	Ophthalmology	6.2	55.7
7	Neurological Surgery	5.0	21.4
8	Cardiovascular Surgery	1.0	19.8
9	Colon & Rectal Surgery	0.0	7.4
	Subtotal	83.0	448.9
	Other Specialties		
1	Diagnostic Radiology	13.0	163.5
2	Other	10.0	226.7
3	Psychiatry	8.0	92.2
4	Neurology	7.0	80.2
5	Anesthesiology	6.0	137.1
6	Physical Medicine & Rehabilitation	4.0	36.5
7	Emergency Medicine (FP or IM)	2.5	58.4
8	Child Psychiatry	2.0	10.4
9	Pathology	2.0	62.4
10	Emergency Medicine (BC)	2.0	80.6
11	Occupational Medicine	1.0	10.0
12	Radiation Oncology	1.0	27.1
	Subtotal	58.5	985.1
	Overall Total	336.0	3214.1
	% of Primary Care	42.5%	43.5%

APPENDIX C
2003 Demand for Physicians in Rural Minnesota
(Excludes Duluth and Rochester) (n = 114)

Demand Ranking by Specialty Group	Physician Specialty	Number Currently Recruiting	Number Reported Practicing
	Primary Care		
1	Family Medicine	61.0	703.4
2	Internal Medicine	27.0	172.4
3	Obstetrics/Gynecology	14.0	66.6
4	Pediatrics	8.0	73.2
5	Medicine/Pediatrics	3.0	8.6
	Subtotal	113.0	1024.2
	Medical Specialties		
1	Gastroenterology	6.0	16.8
2	Dermatology	6.0	16.6
3	Pulmonology	4.0	9.1
4	Hospitalist (IM)	3.5	5.5
5	Hematology/Oncology	2.0	17.0
6	Allergy	2.0	7.7
7	Cardiovascular Disease	2.0	25.1
8	Hospitalist (FP)	0.0	2.0
9	Pediatric Cardiovascular Disease	0.0	1.0
	Subtotal	25.5	100.8
	Surgical Specialties		
1	Orthopaedic Surgery	15.1	62.4
2	General Surgery	13.0	85.4
3	Plastic Surgery	7.2	9.0
4	Urological Surgery	6.4	23.2
5	Otolaryngology	6.3	21.2
6	Ophthalmology	4.2	31.0
7	Neurological Surgery	1.0	7.0
8	Cardiovascular Surgery	0.0	3.0
9	Colon & Rectal Surgery	0.0	1.0
	Subtotal	53.2	243.2
	Other Specialties		
1	Neurology	6.0	19.7
2	Diagnostic Radiology	3.0	45.9
3	Psychiatry	3.0	45.0
4	Emergency Medicine (FP or IM)	2.5	50.4
5	Emergency Medicine (BC)	2.0	36.5
6	Anesthesiology	1.0	33.0
7	Physical Medicine & Rehabilitation	1.0	6.8
8	Radiation Oncology	1.0	6.0
9	Child Psychiatry	1.0	5.3
10	Occupational Medicine	1.0	4.5
11	Pathology	0.0	17.8
12	Other	0.0	15.8
	Subtotal	21.5	286.7
	Overall Total	213.2	1654.9
	% of Primary Care	53%	62%

Produced by the Rural Health Resource Center, Minnesota Center for Rural Health under contract with the Office of Rural Health and Primary Care, Minnesota Department of Health.

APPENDIX D

2003 Demand for Physicians in Metro Minnesota

(Includes the seven-county metropolitan area and urban underserved clinics) (n = 75)

Demand Ranking by Specialty Group	Physician Specialty	Number Currently Recruiting	Number Reported Practicing
	Primary Care		
1	Family Medicine	9.0	258.35
2	Obstetrics/Gynecology	7.0	64.10
3	Internal Medicine	4.0	150.20
4	Pediatrics	1.0	114.80
5	Medicine/Pediatrics	0.0	10.70
	Subtotal	21.0	598.15
	Medical Specialties		
1	Cardiovascular Disease	5.0	38.4
2	Gastroenterology	2.0	49.6
3	Dermatology	1.0	6.9
4	Allergy	0.0	10.8
5	Pediatric Cardiovascular Disease	0.0	10.0
6	Pulmonology	0.0	8.9
7	Hematology/Oncology	0.0	6.5
8	Hospitalist (IM)	0.0	6.0
9	Hospitalist (FP)	0.0	1.0
	Subtotal	8.0	138.1
	Surgical Specialties		
1	Orthopaedic Surgery	6.0	38.7
2	Neurological Surgery	1.5	9.0
3	Ophthalmology	1.0	41.4
4	Otolaryngology	1.0	22.1
5	Urological Surgery	0.5	26.8
6	General Surgery	0.0	17.2
7	Plastic Surgery	0.0	5.5
8	Cardiovascular Surgery	0.0	3.0
9	Colon & Rectal Surgery	0.0	2.0
	Subtotal	10.0	165.7
	Other Specialties		
1	Diagnostic Radiology	4.0	106.3
2	Neurology	4.0	45.8
3	Other	4.0	45.3
4	Psychiatry	3.6	30.2
5	Anesthesiology	2.0	27.5
6	Physical Medicine & Rehabilitation	2.0	7.2
7	Child Psychiatry	0.1	0.3
8	Occupational Medicine	0.0	15.4
9	Pathology	0.0	1.8
10	Emergency Medicine (BC)	0.0	0.0
11	Radiation Oncology	0.0	0.0
12	Emergency Medicine (FP or IM)	0.0	0.0
	Subtotal	19.7	279.8
	Overall Total	58.7	1182.75
	% of Primary Care	35.8%	50.6%

APPENDIX E
2003 Physician Vacancies in Greater Minnesota
(Includes Duluth and Rochester) (n = 127)

Demand Ranking by Specialty Group	Physician Specialty	Number Currently Vacant	Number Vacancies Newly Created	Number Vacancies Due to Physician Leaving
	Primary Care			
1	Family Medicine	58.8	25.0	37.8
2	Internal Medicine	18.0	2.0	12.0
3	Obstetrics/Gynecology	14.0	14.0	3.0
4	Pediatrics	10.0	7.0	3.0
5	Medicine/Pediatrics	2.0	2.0	0.0
	Subtotal	102.8	50.0	55.8
	Medical Specialties			
1	Cardiovascular Disease	7.0	2.0	4.0
2	Gastroenterology	5.0	4.0	1.0
3	Hospitalist (IM)	5.0	2.0	3.0
4	Dermatology	3.0	1.0	1.0
5	Hematology/Oncology	2.0	1.0	0.0
1	Pulmonology	1.0	1.0	0.0
7	Allergy	0.0	0.0	0.0
8	Hospitalist (FP)	0.0	0.0	0.0
9	Pediatric Cardiovascular Disease	0.0	0.0	0.0
	Subtotal	23.0	11.0	9.0
	Surgical Specialties			
1	Orthopaedic Surgery	13.1	13.0	4.0
2	Urological Surgery	9.0	8.0	3.0
3	General Surgery	8.0	5.0	3.0
4	Otolaryngology	7.1	5.0	2.0
5	Ophthalmology	2.2	1.0	1.1
6	Neurological Surgery	2.0	3.0	1.0
7	Cardiovascular Surgery	1.0	1.0	0.0
8	Plastic Surgery	0.0	0.0	0.0
9	Colon & Rectal Surgery	0.0	0.0	0.0
	Subtotal	42.4	36.0	14.1
	Other Specialties			
1	Diagnostic Radiology	16.0	12.0	7.0
2	Psychiatry	8.0	7.0	6.0
3	Anesthesiology	6.0	4.0	2.0
4	Neurology	6.0	3.0	5.0
5	Other	4.0	0.0	2.0
6	Physical Medicine & Rehabilitation	3.0	3.0	1.0
7	Pathology	2.0	1.0	1.0
8	Emergency Medicine (FP or IM)	1.5	0.0	0.5
9	Child Psychiatry	1.0	0.0	0.7
10	Occupational Medicine	1.0	0.0	1.0
11	Radiation Oncology	1.0	0.0	1.0
12	Emergency Medicine (BC)	0.0	0.0	0.0
	Subtotal	49.5	30.0	27.2
	Overall Total	217.7	127.0	106.1
	% of Primary Care	47.2%	39.3%	52.6%

APPENDIX F
2003 Physician Vacancies in Rural Minnesota
(Excludes Duluth and Rochester) (n = 114)

Demand Ranking by Specialty Group	Physician Specialty	Number Currently Vacant	Number Vacancies Newly Created	Number Vacancies Due to Physician Leaving
	Primary Care			
1	Family Medicine	46.8	20.0	28.8
2	Internal Medicine	15.0	2.0	9.0
3	Obstetrics/Gynecology	10.0	10.0	3.0
4	Pediatrics	5.0	5.0	0.0
5	Medicine/Pediatrics	2.0	2.0	0.0
	Subtotal	78.8	39.0	40.8
	Medical Specialties			
1	Gastroenterology	2.0	3.0	0.0
2	Hospitalist (IM)	2.0	0.0	2.0
3	Dermatology	1.0	1.0	0.0
4	Cardiovascular Disease	1.0	0.0	1.0
5	Hematology/Oncology	1.0	0.0	0.0
6	Pulmonology	1.0	1.0	0.0
7	Allergy	0.0	0.0	0.0
8	Hospitalist (FP)	0.0	0.0	0.0
9	Pediatric Cardiovascular Disease	0.0	0.0	0.0
	Subtotal	8.0	5.0	3.0
	Surgical Specialties			
1	Orthopaedic Surgery	11.1	5.0	2.0
2	General Surgery	7.0	5.0	3.0
3	Otolaryngology	5.1	4.0	1.0
4	Urological Surgery	2.0	2.0	2.0
5	Ophthalmology	.2	0.0	.1
6	Plastic Surgery	0.0	0.0	0.0
7	Neurological Surgery	0.0	0.0	0.0
8	Cardiovascular Surgery	0.0	0.0	0.0
9	Colon & Rectal Surgery	0.0	0.0	0.0
	Subtotal	25.4	16.0	8.1
	Other Specialties			
1	Neurology	4.0	2.0	3.0
2	Diagnostic Radiology	2.0	0.0	2.0
3	Psychiatry	2.0	3.0	2.0
4	Emergency Medicine (FP or IM)	1.5	0.0	.5
5	Child Psychiatry	1.0	0.0	.7
6	Occupational Medicine	1.0	0.0	1.0
7	Physical Medicine & Rehabilitation	1.0	0.0	1.0
8	Radiation Oncology	1.0	0.0	1.0
9	Anesthesiology	0.0	0.0	0.0
10	Pathology	0.0	0.0	0.0
11	Emergency Medicine (BC)	0.0	0.0	0.0
12	Other	0.0	0.0	0.0
	Subtotal	13.5	5.0	11.2
	Overall Total	125.7	65.0	63.1
	% of Primary Care	62.7%	60%	64.6%

Produced by the Rural Health Resource Center, Minnesota Center for Rural Health under contract with the Office of Rural Health and Primary Care, Minnesota Department of Health.

APPENDIX G

2003 Physician Vacancies in Metro Minnesota

(Includes the seven-county metropolitan area and urban underserved clinics (n = 75))

Demand Ranking by Specialty Group	Physician Specialty	Number Currently Vacant	Number Vacancies Newly Created	Number Vacancies Due to Physician Leaving
	Primary Care			
1	Family Medicine	8.0	1.0	3.0
2	Obstetrics/Gynecology	7.0	1.0	4.0
3	Internal Medicine	2.0	2.0	2.3
4	Pediatrics	0.0	0.0	0.5
5	Medicine/Pediatrics	0.0	0.0	0.0
	Subtotal	17.0	4.0	9.8
	Medical Specialties			
1	Cardiovascular Disease	7.0	1.0	3.0
2	Dermatology	1.0	0.0	1.0
3	Gastroenterology	0.0	2.0	0.0
4	Hospitalist (IM)	0.0	0.0	0.0
5	Pulmonology	0.0	0.0	0.0
6	Hematology/Oncology	0.0	0.0	0.0
7	Allergy	0.0	0.0	0.0
8	Pediatric Cardiovascular Disease	0.0	0.0	0.0
9	Hospitalist (FP)	0.0	0.0	0.0
	Subtotal	8.0	3.0	4.0
	Surgical Specialties			
1	Orthopaedic Surgery	4.0	2.0	2.0
2	Otolaryngology	1.0	0.0	1.0
3	Ophthalmology	1.0	0.0	0.0
4	Urological Surgery	0.5	0.0	0.0
5	Neurological Surgery	0.0	0.0	0.0
6	General Surgery	0.0	0.8	0.0
7	Colon & Rectal Surgery	0.0	0.0	0.0
8	Plastic Surgery	0.0	0.0	0.0
9	Cardiovascular Surgery	0.0	0.0	0.0
	Subtotal	6.5	2.8	3.0
	Other Specialties			
1	Other	4.9	0.0	3.9
2	Neurology	4.0	3.0	1.0
3	Diagnostic Radiology	4.0	2.0	2.0
4	Psychiatry	3.6	3.0	0.6
5	Physical Medicine & Rehabilitation	3.0	3.0	0.0
6	Anesthesiology	2.0	0.0	2.0
7	Child Psychiatry	0.1	0.2	0.1
8	Emergency Medicine (BC)	0.0	0.0	0.0
9	Occupational Medicine	0.0	0.0	0.0
10	Radiation Oncology	0.0	0.0	0.0
11	Pathology	0.0	1.0	0.0
12	Emergency Medicine (FP or IM)	0.0	0.0	0.0
	Subtotal	21.6	12.2	9.6
	Overall Total	53.1	22.0	26.4
	% of Primary Care	32%	18%	37%