



Center for Rural Health
University of North Dakota
School of Medicine & Health Sciences

<http://medicine.nodak.edu/crh>

Current and Projected Workforce: North Dakota and National Perspectives

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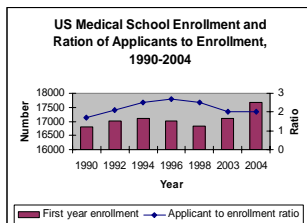
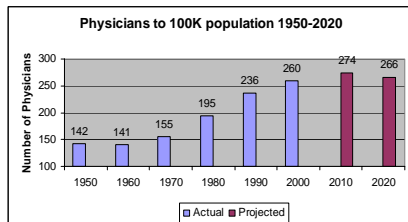
North Dakota Health Care Workforce Summit

December 5, 2006

Bismarck, ND

*Connecting resources and knowledge to strengthen
the health of people in rural communities.*

National Health Care Challenges



Medicine

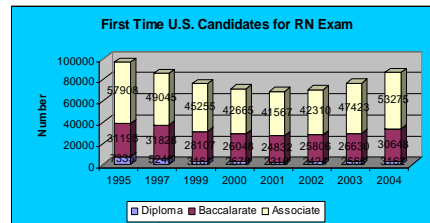
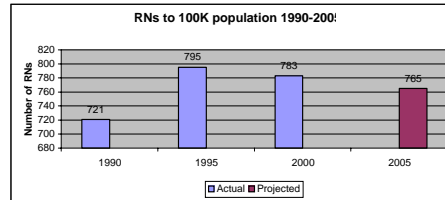
- Perception of growing shortage in physicians; particularly in sub-specialties
- Growing pressure from AAMC and others for more allopathic medical schools

Source: Lohr KN, Vanselow NA, Detmer DE. The Nation's Physician Workforce: Options for Balancing Supply and Requirements. National Academy Press, Washington DC: 1996. 4. JAMA, September 7, 2005 - Vol. 294, 9, 1069 . Analysis by Center for the Health Professions, Health Workforce Tracking Initiative, 2006

National Health Care Challenges

Nursing

- Short run improvement in situation
- Real shortage out 2010 and beyond with retirement and increasing demand
- Difficulty in generating new capacity

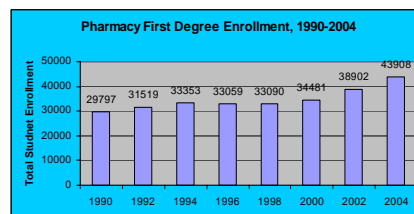
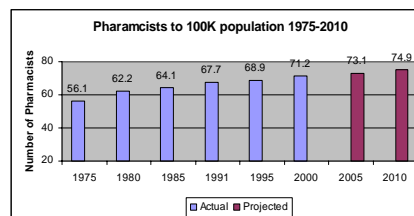


Source: National Council of State Boards of Nursing, September 2005, Center for the Health Professions, UCSF. 2005; Analysis by Center for the Health Professions, Health Workforce Tracking Initiative, 2006.

National Health Care Challenges

Pharmacy

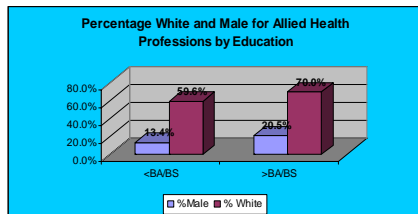
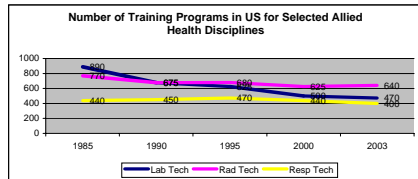
- Growing capacity
- New practice demands
 - Clinical Pharmacy
 - Retail growth
 - Medicare Part D
 - Aging population
 - More chronic care
 - New expensive biologics



Source: Bureau of the Health Professions, HRSA, DHHS, The Pharmacist Workforce: A Study of the Supply and Demand for Pharmacists, Washington, DC: DHHS, 2000; American Association of Colleges of Pharmacy, September 2005; Analysis by Center for the Health Professions, Health Workforce Tracking Initiative, 2006

National Health Care Challenges

Allied Health

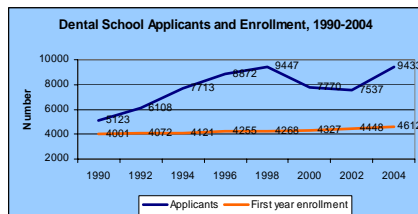
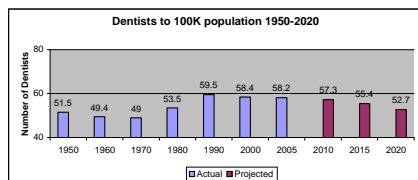


- Stealth shortage
- Pressing need in
 - Radiological Techs
 - Respiratory Techs
 - Laboratory Medicine
 - PT
 - OT
 - Pharmacy Techs
- Limited new partnerships emerging

Source: Health Workforce Solutions, Robert Wood Johnson Foundation, 2005; Analysis Center for the Health Professions, 2006.

National Health Care Challenges

Dentistry



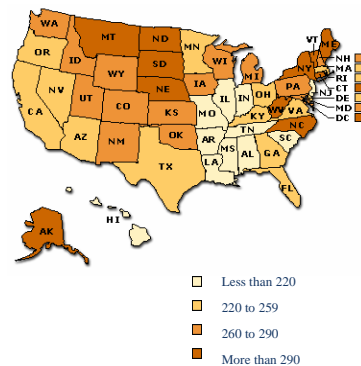
- Growing demand for education
- Modest growth in education capacity
- Vast under service needs in specific populations
- Need new practice model

Source: Bureau of Health Professions, HRSA, DHHS. Data from the Eighth Report to Congress 1991; American Dental Education Association, September 2005; Analysis by Center for the Health Professions, Health Workforce Tracking Initiative, 2006.

North Dakota Health Care Challenges

Supply Is Currently Below The National Average For:

- Physicians
- Dentists
- Dental Assistants
- Podiatrists
- Pharmacy Technicians & Aides
- Emergency Medical Service & Paramedics
- Radiology Technicians

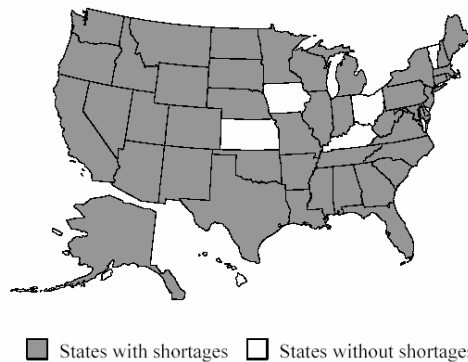


Sources: Kaiser Family Foundation State Health Facts.org, Bureau of Labor Statistics, State Occupational Employment and Wage Estimates, May 2005; New York Center for Health Workforce Studies (2006). [The United States Health Workforce Profile.](#)

North Dakota Health Care Challenges

Future Nursing Supply will be at Crisis Levels by 2020

Map 2: States with Projected Shortages of FTE Registered Nurses in 2020



Source: [Projected Supply, Demand, and Shortages of Registered Nurses: 2000-2020](#) U.S. Department of Health and Human Services, Health Resources and Services Administration, Bureau of Health Professions, National Center For Health Workforce

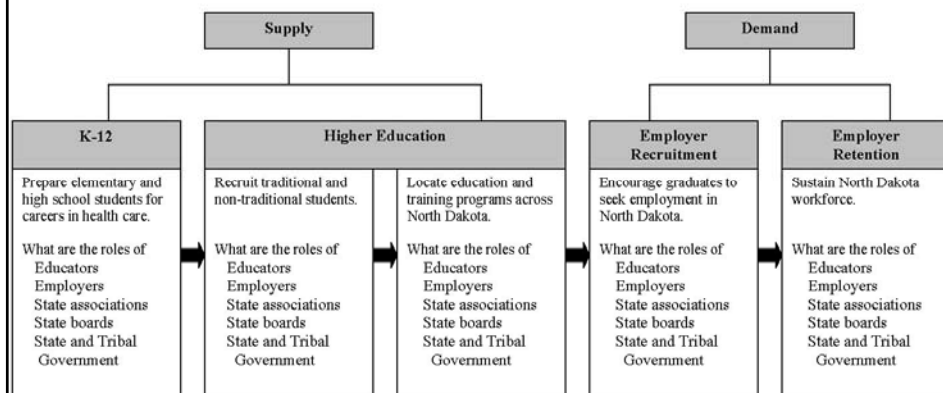
North Dakota Health Care Challenges

Percent Growth (2004-2014) of Health Care Occupations in North Dakota

Occupation	% Growth	Occupation	% Growth
Dentists	-2.7%	Dental Hygienists	18.3%*
Pharmacists	10.4%	EMS and Paramedics	11.6%
Family Practitioner	7.6%	Physician Assistant	25.4%*
Registered Nurses	19.8%*	Licensed Practical Nurses	4.1%
Occupational Therapists	13.0%	Physical Therapists	13.1%
Medical and Clinical Laboratory Technologists	14.1%	Medical and Clinical Laboratory Technicians	12.9%

Source: Job Service of North Dakota 2004-2012 North Dakota Employment Projections.

The North Dakota Health Care Workforce Pipeline



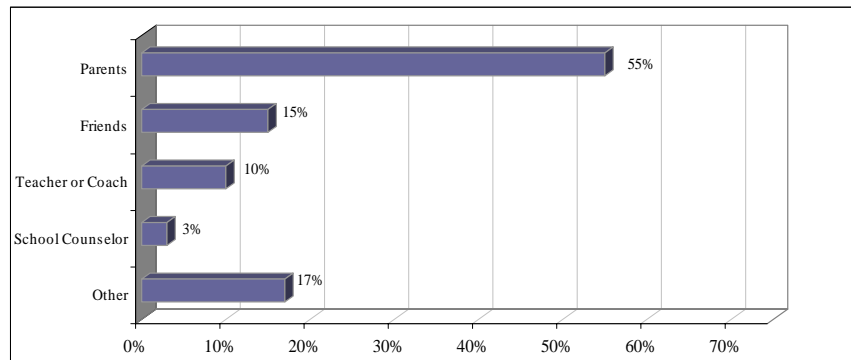
K-12

Prepare elementary and high school students in basic science and exposure to role models.

2005 Fall Enrollment for ND
Kindergarten-8th Grade- 70,830
Ninth grade- 12th Grade- 34,551

K-12

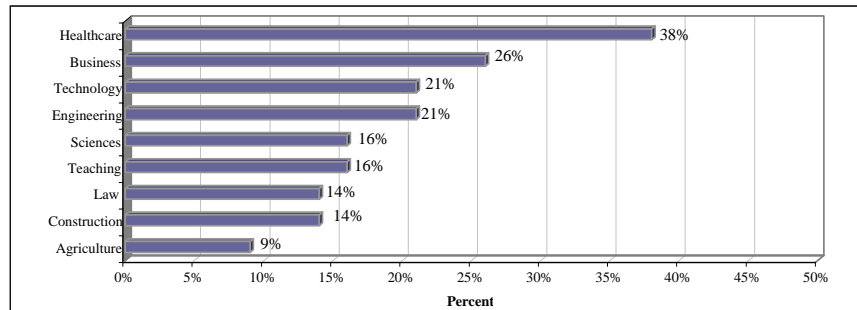
Most Important Source in Choosing Future Career— High School Students



Source: Hanson, B., Moulton, P., Rudel, R. & Plumm, K. (2006). High School Student Survey Results. Report of the North Dakota Nursing Needs Study. Center for Rural Health, University of North Dakota.

K-12

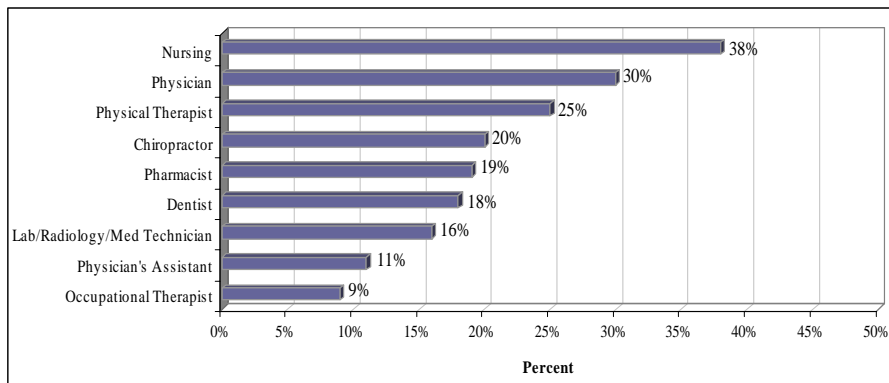
High School Student: Future Careers



Source: Hanson, B., Moulton, P., Rudel, R. & Plumm, K. (2006). High School Student Survey Results. Report of the North Dakota Nursing Needs Study. Center for Rural Health, University of North Dakota School of Medicine and Health Sciences.

K-12

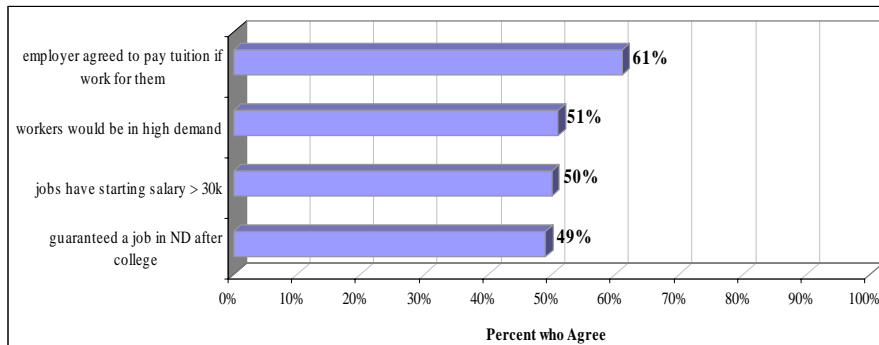
High School Student Area of Health Care Interest



Source: Hanson, B., Moulton, P., Rudel, R. & Plumm, K. (2006). High School Student Survey Results. Report of the North Dakota Nursing Needs Study. Center for Rural Health, University of North Dakota School of Medicine and Health Sciences.

K-12

High School Student Scenarios that would Encourage Healthcare Careers



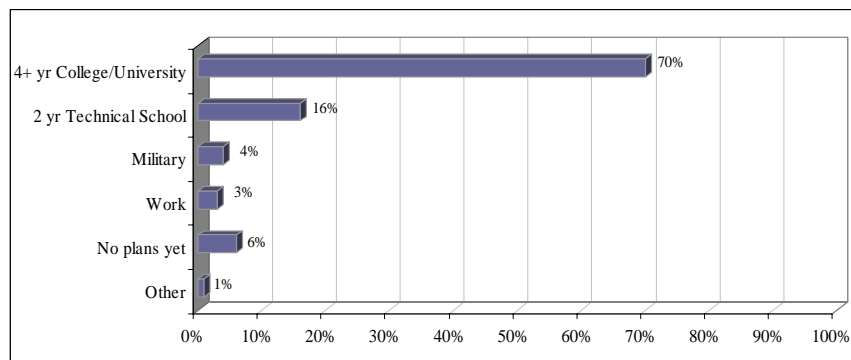
Source: Hanson, B., Moulton, P., Rudel, R. & Plumm, K. (2006). High School Student Survey Results. Report of the North Dakota Nursing Needs Study. Center for Rural Health, University of North Dakota School of Medicine and Health Sciences.

Higher Education - Students

Recruit traditional and non-traditional students from across North Dakota

Higher Education - Students

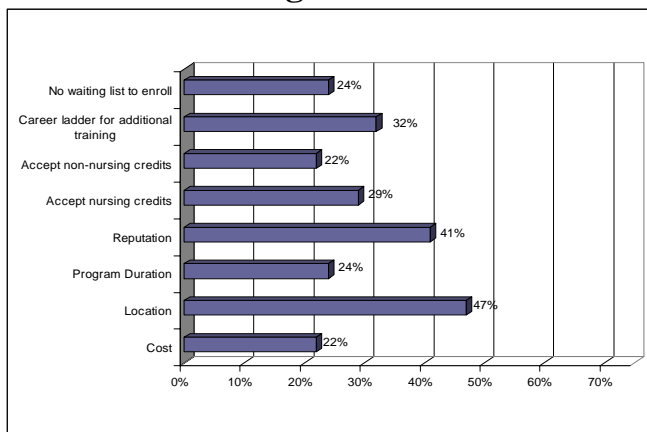
Post-High School Graduation Plans



Source: Hanson, B., Moulton, P., Rudel, R. & Plumm, K. (2006). High School Student Survey Results. Report of the North Dakota Nursing Needs Study. Center for Rural Health, University of North Dakota School of Medicine and Health Sciences.

Higher Education - Students

Most Important Factors in Choosing Education Program- Nursing Students



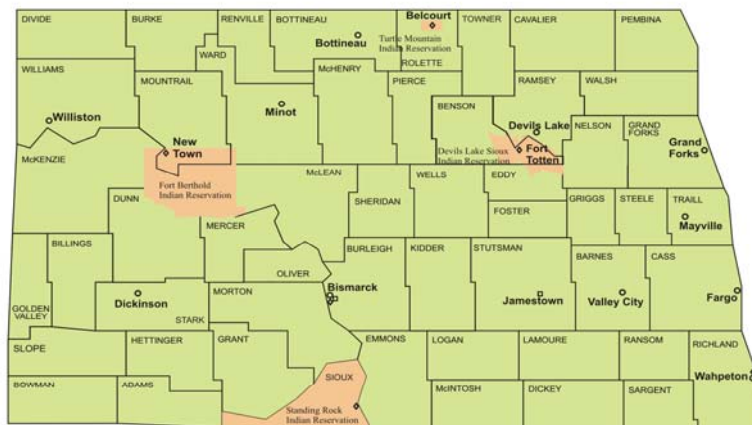
Source: Moulton, P. & Speaker, K. (2004) Student Survey Results Report part of the North Dakota Needs Study. Center for Rural Health, University of North Dakota School of Medicine and Health Sciences

Higher Education- Programs

*Locate education and training programs
across North Dakota*

Higher Education- Programs

North Dakota Colleges & Universities



- ◆ North Dakota Tribal Colleges (Cankdeskela Cikana Community College, Fort Berthold Community College, Sitting Bull College, Sisseton Wahpeton Community College, Turtle Mountain Community College, & United Tribes Technical College)
- North Dakota University System (Bismarck State College, Dickinson State University, Lake Region State College, Mayville State University, Minot State University, Minot State University-Bottineau, North Dakota State College of Science, North Dakota State University, University of North Dakota, Valley City State University, Williston State College)
- North Dakota Private Colleges and Universities (Jameson College, University of Mary)

Higher Education- Programs

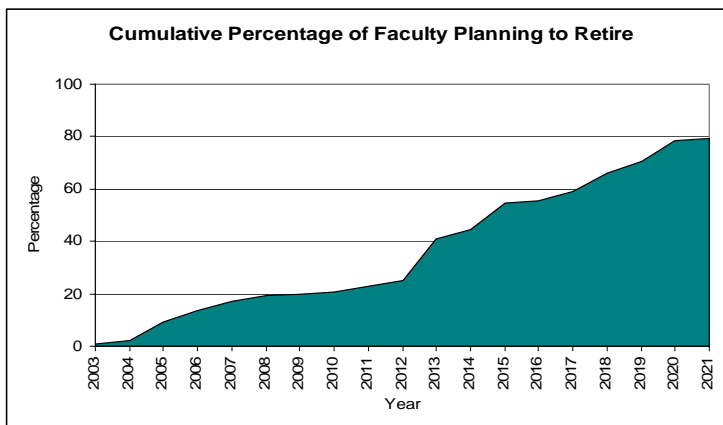
North Dakota Nursing Program Technology Use

Technology	Number of Programs that Utilize	How Often is the system Used	How many Students can use
Video Conferencing	75%	Average of 2 classes per semester	20 to 150
Video Streaming	25% will have begun use by 2006	Trial use only	N/A
Web Based Asynchronous Programs	57%	Average of 3 classes per semester	15-35
Simulations	81%	Average of 2 courses per semester	5 to 20

Source: King, B. & Moulton, P. (August, 2005). North Dakota Nursing Programs use of Technology: A Statewide Assessment. Report of the North Dakota Nursing Needs Study. Center for Rural Health, University of North Dakota School of Medicine and Health Sciences.

Higher Education- Programs

Nursing Faculty



Source: Moulton, P., Christman, S., Dannewitz, H. & Wakefield, M. North Dakota Nursing Needs Study: Faculty Survey Results. Report of the North Dakota Nursing Needs Study. Center for Rural Health, University of North Dakota School of Medicine and Health Sciences.

Employer Recruitment

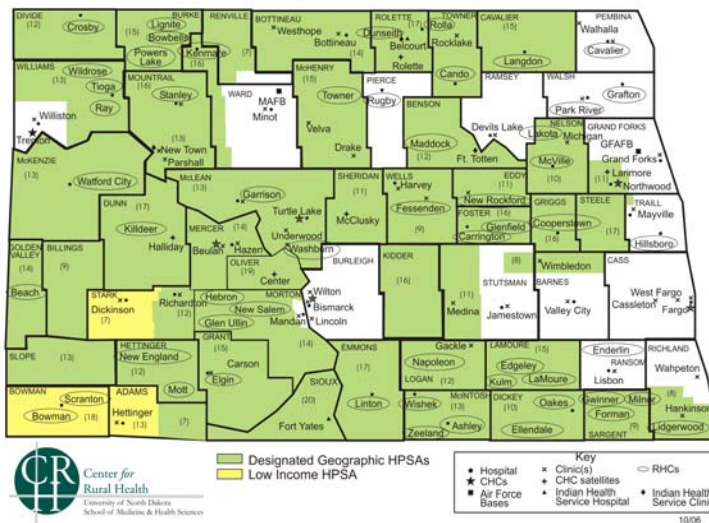
*Encourage students to seek employment in
North Dakota*

Employer Recruitment

*Encourage students to seek employment in
North Dakota*

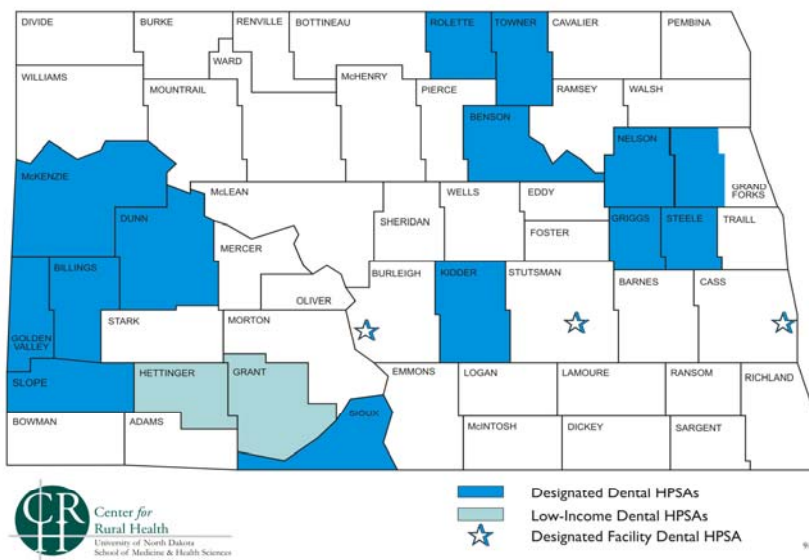
Employer Recruitment

North Dakota Health Professional Shortage Areas Rural Hospitals, Clinics, CHCs and RHCs



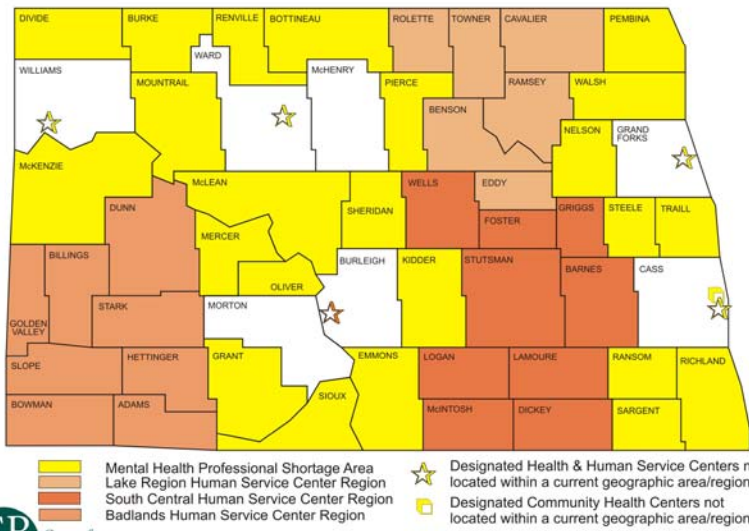
Employer Recruitment

North Dakota Dental Health Professional Shortage Areas



Employer Recruitment

North Dakota Mental Health Professional Shortage Areas



8/06

Employer Recruitment

What do we know about the state's physician workforce?

National

- average age is 51
- 26% are female
- 11% practice in rural areas
- 32% attended in-state med school
- .69/1,000 physicians/population

State

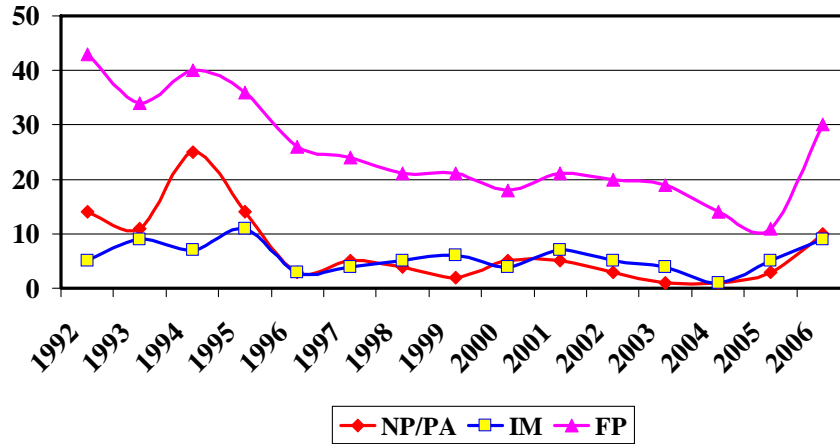
- average age is 49
- 21% are female
- 32% practice in rural areas
- 34% attended in-state med school
- 23 counties-fewer physicians than national average

1,461 licensed physicians 2004-05

25% will retire by 2015 - 42% by 2020

Source: Physician Characteristics & Distribution in the US; State Health Workforce Profiles 2004; Amundson, M., Moulton, P., Kruger, G., Speaker, K., Zavalney, B. & Monley, K. [A Survey of North Dakota Physicians](#). Center for Rural Health, School of Medicine and Health Sciences Health Professions Tracking Program.

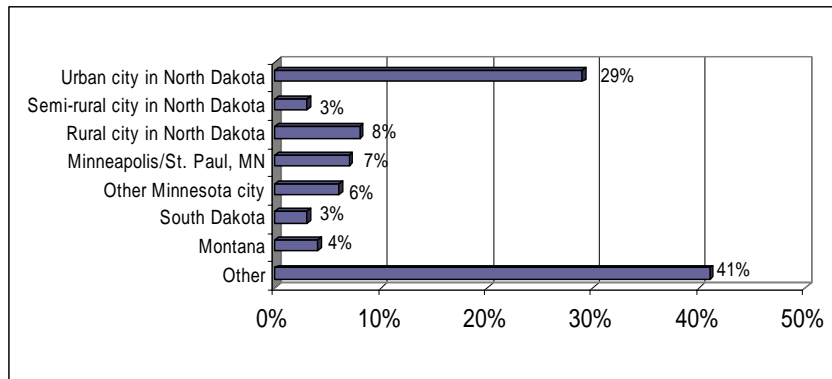
Primary Care Vacancies in Rural North Dakota 1992 – 2006



NP: Nurse Practitioner PA: Physician Assistant IM: Internal Medicine FP: Family Practice

Employer Recruitment

Medical Students & Residents Anticipated Work Location



Source: Moulton, P. & Amundson, M. (2004). Medical Student and Resident Preliminary Survey Results
Center for Rural Health, School of Medicine and Health Sciences Health Professions Tracking Program.

Employer Recruitment

What do we know about the state's dental workforce?

National

- average age is 49
- 80% generalists
- 67% are self-employed

State

- average age is 52
- 73% generalists
- 61% self employed

316 licensed dentists 2004/05

Over 60% plan to retire by 2020

Source: ADA. 1999 Survey of Dental Practice: Characteristics of Dentists in private Practice & Their Patients 2001; Amundson, M., Moulton, P., Beyer, M., Kruger, G., Speaker, K., Zavalney, B. & Monley, K. (2005) North Dakota Dentists Survey Results: Health Professions Tracking Program

Employer Recruitment

What do we know about the state's nursing workforce?

National

- Average Age: RN= 45, LPN=43
- 5% of Nurses are Male
- 6% of RNs have 2 jobs

State

- Average age: RN=44, LPN=42
- 6% of nurses are male
- 27% of RNs have 2 jobs
- Over half of LPNs and RNs have indicated larger patient care loads over the last 2 years

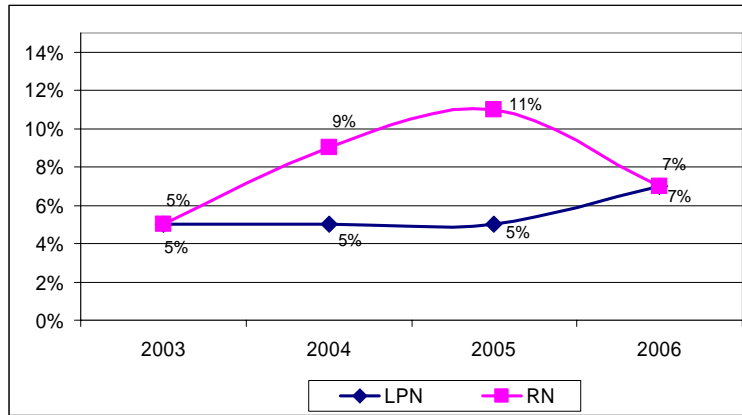
8,804 Registered nurses (RNs), 3,485 Licensed Practical Nurses (LPNS) and 649 Advanced Practice Nurses (APN)

36% of LPNs, 41% of RNs and 38% of APNs plan to retire by 2020

Source: North Dakota Board of Nursing 2005-2006 Annual Report. Hanson, B. & Moulton, P. (2006). Four Year Comparison of North Dakota Nurses: Results and Implications. Report of the North Dakota Nursing Needs Study. Center for Rural Health, University of North Dakota School of Medicine and Health Sciences.

Employer Recruitment

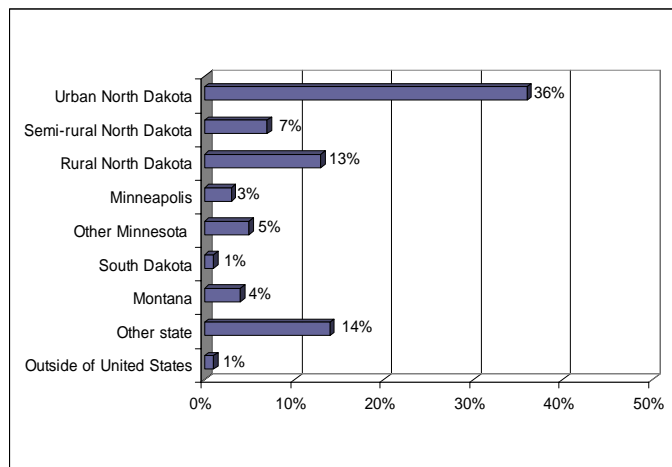
Nurse Vacancy Rates



Source: Moulton, P. & Speaker, K. *North Dakota Nursing Needs Study: Year 4 Facility Survey Results*. Report of the North Dakota Nursing Needs Study. Center for Rural Health, University of North Dakota School of Medicine and Health Sciences

Employer Recruitment

Nursing Student Anticipated Work Location



Source: Moulton, P. & Speaker, K. (2004) *Student Survey Results Report* part of the North Dakota Needs Study. Center for Rural Health, University of North Dakota School of Medicine and Health Sciences

Employer Retention

Sustain North Dakota Workforce

Concerns to address:

- Most separations occur within the first 5 years of employment
- Smaller groups have separations within first two years
-compensation & location were most common reasons
- Highest turnover rate was found among family practitioners

Source: American Medical Group Association, 2004 survey; Cejka Search and American Medical Group Association, 2004.

Potential Solutions

Available Data through Licensing Boards/ Associations

Discipline	# of Providers	Average Age
Physicians	2,907	49 (CRH survey)
Physician Assistants	425	
Dentists	352	52(CRH survey)
Nurses	12,938	44 (CRH survey)
Physical Therapists	442	
Occupational Therapy	492	
Pharmacists	786	48
Clinical Lab	891	
Licensed Social Workers	2,181	
Licensed Clinical Psychologists		
Licensed Counseling Psychologists	354	



Potential Solutions

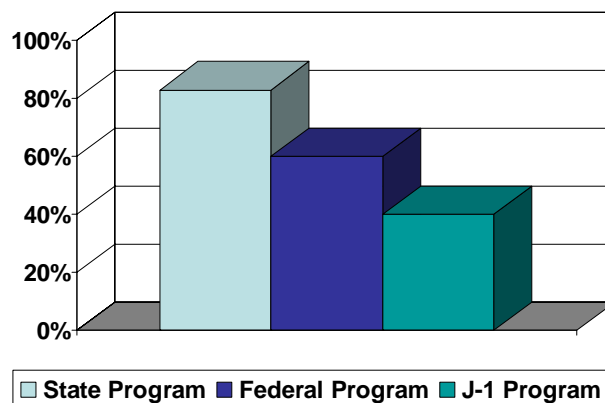
What we do have are State and Federal Loan Repayment Programs (*for some disciplines*)

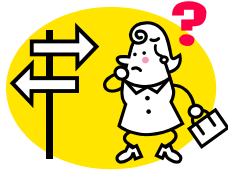
Outcome: 31 clinicians in the program (1993-2005)
14 physicians **** 5 nurse practitioners***6 physician assistants

What we *don't have* are Tuition Waiver or Scholarship Programs; programs for health professionals

Potential Solutions

Outcome of Loan and Obligated Programs 2004





If we don't know what we have...

How will we be able to plan for the future?

