NORTHSTAR Products
Table of Contents

NORTHSTAR: The Northern States Ambulatory Research Network

Jessica Behm, Network Coordinator, NORTHSTAR

The Department of Family and Community Medicine of UNDSMHS is the home of a new research venture known as NORTHSTAR: The Northern States Ambulatory Research Network. The project is the vision of Charles E. Christianson, M.D., Sc.M., and Kimberly Krohn, M.D., M.P.H. NORTHSTAR, the first practice-based research network in the state of North Dakota, is composed of primary care providers within the state and adjacent areas, including family physicians, general internists, physician assistants, and nurse practitioners.

Practice-based research networks (PBRNs) are rapidly becoming a popular tool in the area of healthcare research. PBRNs are composed of a group of practitioners who come together to conduct research on their practices. The research conducted within these networks expands the traditional research emphasis of discovery and incorporates an additional aspect of quality improvement. Traditionally, many community-based practitioners who are interested in quality improvement and research have encountered challenges, specifically in the limited avenues available to them to pursue and share their ideas. PBRNs provide the bridge that connects the needs and desires of the community-based practitioners to the necessary tools and resources available to them. NORTHSTAR will become that bridge for North Dakota practitioners. The activities of NORTHSTAR will focus on quality improvement in rural practice, conducting best practices research, and identifying and testing new methods of health care delivery in rural settings. The issues and research topics addressed by the network will be developed through the input of the network participants; thus creating a research environment that is tailored to the needs of North Dakota practitioners. NORTHSTAR will create a new learning community where professional primary care practitioners can discuss ideas and share methods of practice with others from the area. The overall goal that we strive to achieve with this program is to improve the quality of care in the rural primary care setting for both patients and practitioners.

We are currently seeking any practitioners interested in research to participate in the project. Your participation in NORTHSTAR is essential for its success. As a member of NORTHSTAR, you will have the ability to direct the network's research towards the topic areas that you feel are important within your clinical practice. There is no cost or fee to become a member of NORTHSTAR. Also, there is no minimum commitment required of our members. You have the freedom to choose which projects you would like to be involved in as well as the amount of time you would like to spend on each project. If you are interested in participating in NORTHSTAR or have any more questions concerning the project, please feel free to contact the director, Dr. Christianson, or the network coordinator, Jessica Behm at anytime. You can also access information from our network web site at **www.med.und.nodak.edu/northstar**.

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North Dakota Health Workforce Summit

Submitted by Mary Amundson

In December of 2006, the Center for Rural Health, in partnership with the Dakota Medical Foundation and others, held a Health Care Workforce Summit in Bismarck to address health care workforce issues in North Dakota. The purpose of the Summit was to explore current and emerging challenges associated with the supply and demand of health care workforce in the state, and begin to develop an action plan to address these challenges. Ensuring an adequate health care workforce for North Dakota citizens requires creating a shared statewide agenda. Among the summit participants were state legislators, representatives from state government, statewide organizations, economic development commissions, health care employers, educators, and health care providers.

Workforce shortages are a challenge for the entire health care system with projected physician shortages between 85,000 and 96,000 by 2020 reported by the Federal Council on Graduate Medical Education (January 2005). Although some experts suggest a shortage exists, others imply the problem is a maldistribution of the workforce. Whether this phenomenon is called a shortage or maldistribution, the impact on rural communities experiencing an inadequate number of physicians is the same as these shortages can negatively impact health care quality and access to health care services. Shortages can increase stress on available providers and contribute to higher health care costs by increasing the use of overtime pay and expensive temporary personnel. Demand for health care providers is driven by many factors ranging from

Dilated Retinal Exams in Clinical Care (DREC): A NORTHSTAR Project

Jessica Behm

The Northern States Ambulatory Research Network (NORTHSTAR), the first practice-based research network in the state of North Dakota, focuses on quality improvement in practice, conducting best practices research, and identifying and testing new methods of health care delivery in rural settings. NORTHSTAR has now enrolled over 25 primary care providers from around the state and adjacent areas. For the last year NORTHSTAR has addressed diabetes care.

In November of 2007 we developed our first research project "Dilated Retinal Exams in Clinical Care" (DREC). As many primary care practitioners know, a common issue in rural North Dakota is the lack of access to an appropriately trained professional for dilated retinal examinations for individuals with diabetes. The objective of the DREC project was to further investigate this issue. The first phase of the project was completed in March. With the assistance of the two family medicine residency clinics in Minot and Bismarck, we randomly selected 100 diabetic patient charts and collected data concerning their compliance with yearly retinal exams as well as other recommended diabetes monitoring tests. The data exhibited surprising results. Only 16% of Minot patients and only 32% of Bismarck patients had a documented retinal exam. This was considerably less than the other diabetes monitoring tests: Microalbumin, A1C, and Lipids (See Table 1). The dramatic differences between the results brought about several other questions. Were these numbers accurate or were there patients who had a dilated retinal exam but their results were just not documented in their chart? If this was the case, how many of the patients actually had exams? We addressed these questions with a second phase of the project.

	Retinal Exam	Microal-bumin	A1C	Lipids
Minot	16%	80%	86%	85.7%
Bismarck	32%	54%	68%	62%

In phase two of the DREC project, we decided to contact the patients directly via telephone to collect information concerning their retinal exams. The phone calls were conducted by two residents from the Minot family medicine clinic. Each resident was provided with a script which outlined the three questions to be asked. The initial question was "Did you have a diabetic eye exam at an eye doctor's office during 2006 or 2007?" If the patients answered yes, they were asked two follow up questions: "Which eye doctor did you see?" and "Could you give me an approximate date of the exam?" The results of this phase of the project were equally surprising as the first. Of the 50 randomly selected patient charts, 42 (84%) of them did not have a documented retinal eye exam. The residents were able to make contact with 21 of these patients. Their conversations revealed that 11 (52%) patients actually had a yearly retinal exam but the information was not recorded in their chart. Important information concerning the non-compliance to yearly retinal exams was also gained from conversations with the 10 other patients. Some expressed that the eye exam was not considered a priority compared to other healthcare requirements. Others indicated that financial concerns were the reason why they chose not to have the exam. We found that a majority of the patients did not know dilated retinal exams were covered by Blue Cross Blue Shield; however, once they were informed of this, many indicated they would make an appointment.

We are currently broadening the scope of our study of diabetes care. For this next phase, we chose a "best practices" approach to research, which involves selecting exemplars in the field of diabetes care and learning about some of the practices they employ to retain such a high level success. In June, Blue Cross Blue Shield of North Dakota released the list of their 2007 Diabetes Care Provider Achievement Award Winners, composed of providers and clinics that were selected based on their performance on five criteria outlined by the American Diabetes Association Standards. We have interviewed six physicians from this list and asked them to discuss the practices they used their clinics for care of diabetic patients beyond standard care. We are already seeing similarities between the physicians' practices. Some of the beneficial methods mentioned were the assistance of a diabetes educator/nurse, electronic diabetes registries, clinic guidelines outlining specific diabetes goals, and the performance feed back provided by the BCBSND Diabetes Care Provider Reports. Our future plan for the project involves identifying a final list of practice interventions, then asking a broader group of network physicians to indicate which interventions they use in their practices, and correlating the answers with their diabetes care outcomes. In this way we can identify which of these interventions are actually associated with better care.

As you can see, the first year of the NORTHSTAR project has been a busy but successful venture. However,

this success would have never been possible without the assistance of our participating physicians and clinics. Drs. Kimberly Krohn, Suima Aryal, and Nabeel Nasir of the Minot Family Medicine Residency Clinic; Drs. Jeff Hostetter, Karin Willis, and Kelly Longie from the Bismarck Family Medicine Residency Clinic; Dr Eric Johnson from the Altru Health System in Grand Forks; Dr. Robert Kemp from the Craven Hagen Clinic in Williston; Drs. Ronald Wiisanen and Mary Jo Lewis from the Meritcare Health System in Fargo/Moorhead; and Dr. Susan Betting from the Q & R Clinic in Mandan.

If you are interested in participating in NORTHSTAR or have any more questions concerning the project, please feel free to contact:

Charles Christianson, MD, ScM - Network Director
Jessica Behm - Network Coordinator
501 N Columbia Road Stop 9037
Grand Forks, ND 58202-9037
(701) 777 – 3240 cchristi@medicine.nodak.edu
(701) 777 - 3266 jbehm@medicine.nodak.edu

Or you can access our website at:
www.med.und.nodak.edu/northstar

IMPORTANT DATES TO MARK ON YOUR CALENDAR

November 1, 2009
NDAFP Fall CME **Grand Forks, ND**

January 19 - 23, 2009
32nd Annual Family Medicine Update
Big Sky, MT

June 17-19, 2009
NDAFP Annual Meeting & Scientific Assembly **Bismarck, ND**

January 18-22, 2010
33rd Annual Family Medicine Update
Big Sky, MT

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NORTHSTAR: The Northern States Ambulatory Research Network

NORTHSTAR, the first practice-based research network in the state of North Dakota, is composed of primary care providers, including family physicians, general internists, physician assistants, and nurse practitioners, within the state and adjacent areas.

The focus of NORTHSTAR is improvement of quality of primary care, particularly in rural practice. The network is a joint venture of the Department of Family and Community Medicine of UNDSMHS and the primary care practitioners of the state. Charles E. Christianson, M.D., Sc.M., of Grand Forks and Kimberly Krohn, M.D., M.P.H. of Minot, supported by a grant from the Physicians Foundation for Health Systems Excellence, are working to get NORTHSTAR into action.

Practice-based research networks (PBRNs) are rapidly becoming a popular tool in the area of healthcare research. PBRNs are composed of a group of practitioners who come together to conduct research on their practices. The research conducted within these networks expands the traditional research emphasis of discovery and incorporates an additional aspect of quality improvement. Traditionally, many community-based practitioners who are interested in quality improvement and research have encountered challenges, specifically in the limited avenues available to them to pursue and share their ideas. PBRNs provide the bridge that connects the needs and desires of the community-based practitioners to the necessary tools and resources available to them. NORTHSTAR will become that bridge for North Dakota practitioners.

The activities of NORTHSTAR will focus on quality improvement in rural practice, conducting best practices research, and identifying and testing new methods of health care delivery in rural settings. The issues and research topics addressed by the network will be developed through the input of the network participants; thus creating a research environment that is tailored to the needs of North Dakota practitioners. The Department of Family and Community Medicine provides the support for project design and administration; as part of this support Jessica Behm has been brought on board as the network coordinator. NORTHSTAR will create a new learning community where professional primary care practitioners can discuss ideas and share methods of practice with others from the area.

NORTHSTAR is in the process of selecting the topic for their first research study. We are looking at several proposals which have been suggested to us by practitioners in the state. One set of topics involves diabetes care. A common issue for primary care practitioners in rural North Dakota is the lack of access to professional dilated retinal examinations for patients with diabetes. The project would address the most effective ways to have an ophthalmologist examine patients either in person or via digital fundus photography forwarded electronically. Another possible topic involves the use of patient education to enhance self-management of this chronic disease. Meritcare has successfully piloted a patient-education model using nurse educators which has been shown to improve quality of care and reduce costs. Another topic we are discussing is West Nile virus illness, particularly the study of the pediatric aspects of the West Nile virus and the long term follow up of patients with this condition.

We are currently looking for more practitioners interested in participating in the network. As a member of NORTHSTAR, you will have the ability to direct the network's research towards the topic areas that you feel are important within your clinical practice. There is no cost or fee to become a member of NORTHSTAR, and there is no minimum commitment required of our members. You have the freedom to choose which projects you would like to be involved in as well as the amount of time you would like to spend on each project. If you are interested in participating in NORTHSTAR or have any more questions concerning the project, please feel free to contact the director, Dr. Christianson, or the network coordinator, Jessica Behm at anytime. You can also access information from our network web site at **www.med.und.nodak.edu/northstar.**

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GUEST AUTHOR

"North Dakota Medicine" Spring 2008

The "Unseen" Physician Shortage

WE READ ALMOST EVERY DAY OF A new development in science offering the hope of a "major breakthrough" for one disease or another. The next time you hear such an offer, consider one of these rarely asked but vital questions:

"Who made this discovery?"
According to the National Institutes of Health (NIH), it is more likely to be a Ph.D. researcher than a doctor. From 1972 to 1997, the percentage of physicians applying to the NIH for grant money slipped from 40 to 25 percent. The result is that in 1996 only 36 percent of money for clinical research went to physicians while 52 percent went to Ph.Ds. In 1984, there were approximately 15,000 doctors conducting NIH research. By 2004 that number had fallen by 1,000. Currently, only 8 percent of physicians involved in clinical research of any kind (NIH or pharmaceutical trials) are under the age of 40. So what is the big deal?

"Who will be turning this major breakthrough into practical treatment?"
As aptly put by Mold and Peterson*, "Although academicians have certain important skills and resources, these assets are insufficient." Most practicing physicians will tell you they have learned much of what they know about medicine from their patients. Practicing doctors realize that very rarely does a patient actually present with the "classic" case of a disease. Thus clinical training is full of aphorisms as "The patients don't read the textbooks." Ph.D. scientists have indeed only read the textbook, and this lack of clinical experience hampers the direction, the interpretation and, ultimately, the practical application of their findings.

"How can we make research more practical?"
Again Mold and Peterson have characterized a new way of thinking, "It is at the front line where patients, clinicians and information meet where learning begins." Thus in order to capture this "learning" at the source, the Practice-Based Research Network (PBRN) was born. PBRNs are organizations that link primary care physicians and academic researchers, involving each in the practice of the other's craft in order to make research more practical and to hasten the dissemination of research findings.

"How can physicians in rural North Dakota be involved in research?"
The Northern States Ambulatory Research Network (NORTHSTAR) has recently been formed in the UND medical school's Department of Family and Community Medicine, under the direction of **Charles Christianson, M.D.**, associate professor of family and community medicine. The goal of NORTHSTAR is to harness the vast and largely untapped expertise that exists in the rural medical practices of states like North Dakota. We use this expertise to do research that addresses the needs of patients, and elevates their level of care. In so doing, we hope to bring together and energize the primary care providers of our state.

PBRNs have proven their usefulness over the past decade. The research done by these groups of "boots-on-the-ground" physicians has greatly expanded the knowledge base we call evidence-based medicine.

Jeff Hostetter, M.D. (Family Medicine Residency '03) Director, UND Family Medicine Residency Program, Bismarck

For more information, contact: **Charles Christianson, MD or the NORTHSTAR coordinator, Jessica Behm** or go to **www.med.und.nodak.edu/northstar**

*Mold, J., Peterson, K. Primary Care Practice-Based Research Networks: Working at the Interface Between Research and Quality Improvement, Annals of Family Medicine, May/June 2005, 5 (Supplement 1):S12-S20

northern states north star ambulatory research network

Dear Dr Smith,

We would like to introduce you to the Northern States Ambulatory Research Network. NORTHSTAR is a practice-based research network composed of primary care providers in North Dakota and adjacent areas who focus on quality improvement in their practices. It is a joint venture of the Department of Family and Community Medicine at the School of Medicine and Health Sciences and practitioners and practice organizations in the state. The topics NORTHSTAR addresses are chosen by our network participants, thus creating an agenda tailored to the needs of those who work with patients on a daily basis. The overall goal of NORTHSTAR is to improve the quality of care in the primary care setting for both patients and practitioners like you.

NORTHSTAR focuses on quality improvement in practice, conducts best practices research, and identifies and tests new methods of health care delivery. You may have already heard of our current project on diabetes titled Dilated Retinal Exams in Clinical Care (DREC). As you know, the standard of annual retinal examination for diabetic patients has lower compliance nationally and especially in rural North Dakota where patients face problems with access to an appropriately trained professional. The objective of the DREC project was to investigate this issue further through chart review. We identified problems in documentation as well as performance, and are testing interventions directed toward the documentation issues. We are now looking more broadly at best practices of diabetes care in our setting. In the future we will look at other issues affecting North Dakotans, such as breast cancer screenings and flu vaccinations.

We are currently seeking participants for our network. Your participation in NORTHSTAR is essential for its success. As a member you will have the ability to direct the network's research towards the topic areas that you feel are important within your clinical practice. There is no cost or fee to become a member of NORTHSTAR. Also, there is no minimum commitment required of our members. You have the freedom to choose which projects you would like to be involved in as well as the amount of time you would like to spend on each project.

Please look over the informational brochure enclosed with this letter. If you are interested in participating in NORTHSTAR, you can fill out the enclosed enrollment form and fax it to (701) 777-3849. If you have any more questions concerning the project, feel free to contact us at any time or you can access information on our website at www.med.und.nodak.edu/northstar.

Thank you and we look forward to hearing from you,

Charles E. Christianson, M.D., Sc.M.
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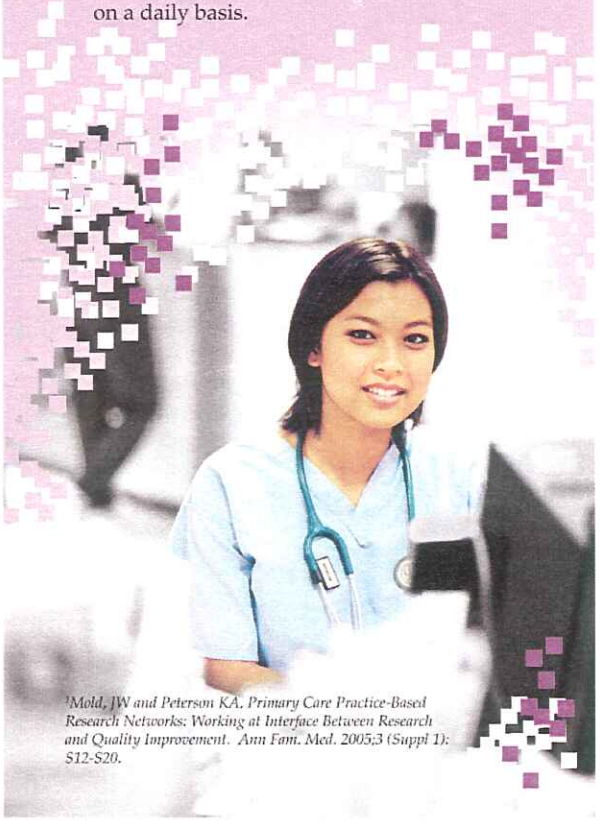
What is a practice-based research network (PBRN)?

PBRNs are composed of a group of practictioners who come to conduct research on their practices. They adopt a method of research that combines the traditional research approach of "discovery" with the "application" aspect of quality improvement.[1] The issues and research topics are developed through the input of the network participants; thus, creating a research environment tailored to the needs of those who work with patients on a daily basis.



[1]Mold, JW and Peterson KA. *Primary Care Practice-Based Research Networks: Working at Interface Between Research and Quality Improvement. Ann Fam. Med. 2005;3 (Suppl 1): S12-S20.*

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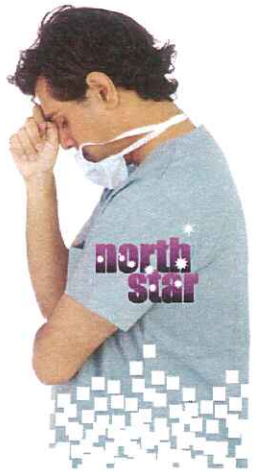


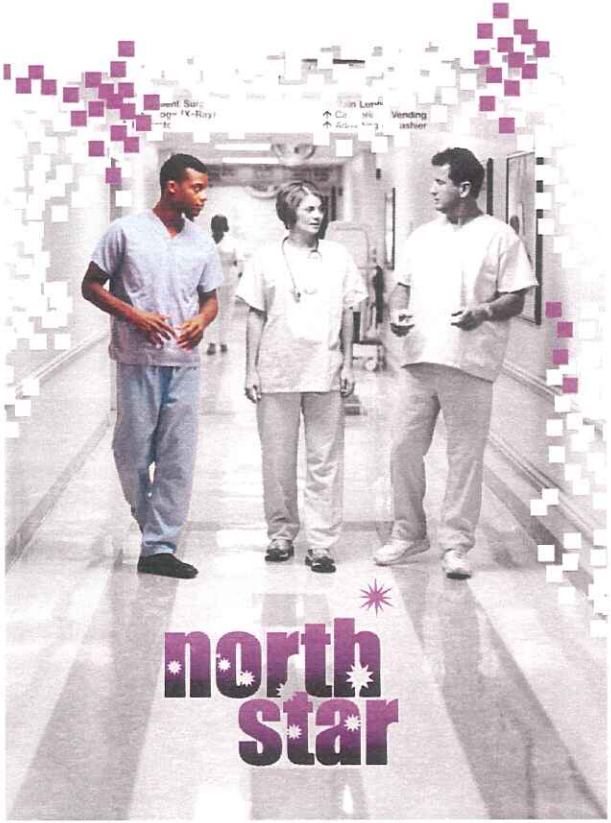
Let's answer
those questions **together**

Northstar is supported in part by

UND The University of North Dakota

Do you wish you could

- Direct research topics towards areas important to your clinical practice?
- Help control research results that would be directly beneficial to you, your practice, and your patients?
- Network with like-minded North Dakota practictioners to discuss ideas and practice methods?



northstar - Defined

The Northern States Ambulatory Research Network (NORTHSTAR) is a practice-based research network (PBRN) composed of primary care providers in the state of North Dakota and adjacent areas, including family physicians and general internists, as well as physician assistants and nurse practitioners.

NORTHSTAR is based in the Department of Family and Community Medicine at the University of North Dakota School of Medicine and Health Sciences and is directed by Charles E. Christianson, MD, ScM. Jessica Behm is the network coordinator.

northstar - Goals

- **Improve the quality of care** within the **rural primary care** setting.
- **Address issues** that are important to practitioners in the field of primary care.
- Conduct **best practices** research.
- Identify and test **new methods of health care** delivery in the rural setting.
- **Create a learning community** composed of professional primary care practitioners from across the state of North Dakota.

northstar- Benefits

- You have the ability to **direct research topics** towards areas important within your clinical practice.
- You can help **create research results** that directly **benefit you**, your practice, and your patients.
- You will have the opportunity to be involved in a **network of professional practitioners like yourself** where you can discuss ideas and share methods of practice with others from around the state of North Dakota.

Interested in joining **northstar?**

Please contact:

Jessica Behm
Network Coordinator
501 N. Columbia Road Stop 9037
(701)-777-3266
jbehm@medicine.nodak.edu
www.med.und.nodak.edu/northstar

northstar - How it works

1. You identify a problem, issue, concern
2. Submit your ideas to **northstar**
3. Together we generate study questions
4. **northstar** designs and conducts a study within our participating clinics
5. We analyze the data and provide you with the results
6. You and your colleagues implement the results

northstar Enrollment Form

The Northern States Ambulatory Research Network (NORTHSTAR) is a network of clinicians who conduct primary care research in our practices and work together on an ongoing basis in order to improve primary health care for our patients and communities.

The following are criteria for participation in NORTHSTAR. By signing below, you signify your agreement to the criteria listed.

1. I am a primary care clinician.
2. I am interested in participating in practice-based research.
3. I agree to complete a brief practice survey.
4. I understand that periodically I will be offered the opportunity to participate in NORTHSTAR studies. I also understand that I may initiate studies if I feel inclined.

Name:_____ Signature:_____ Date:_____
(Please Print)

___ **I am a returning member.** *Please verify that the attached information is correct. If not, please provide us with your updated contact and practice information.*

___ **I am a new member.** *Please provide us with the following information:*

Degree: MD DO PA NP MPH Other **Specialty:** _____

E-mail:_____ **May we contact you via e-mail?** YES NO

Are you a resident? YES NO **Are you a fellow?** YES NO

Please list your research interests, if any: _____
_____

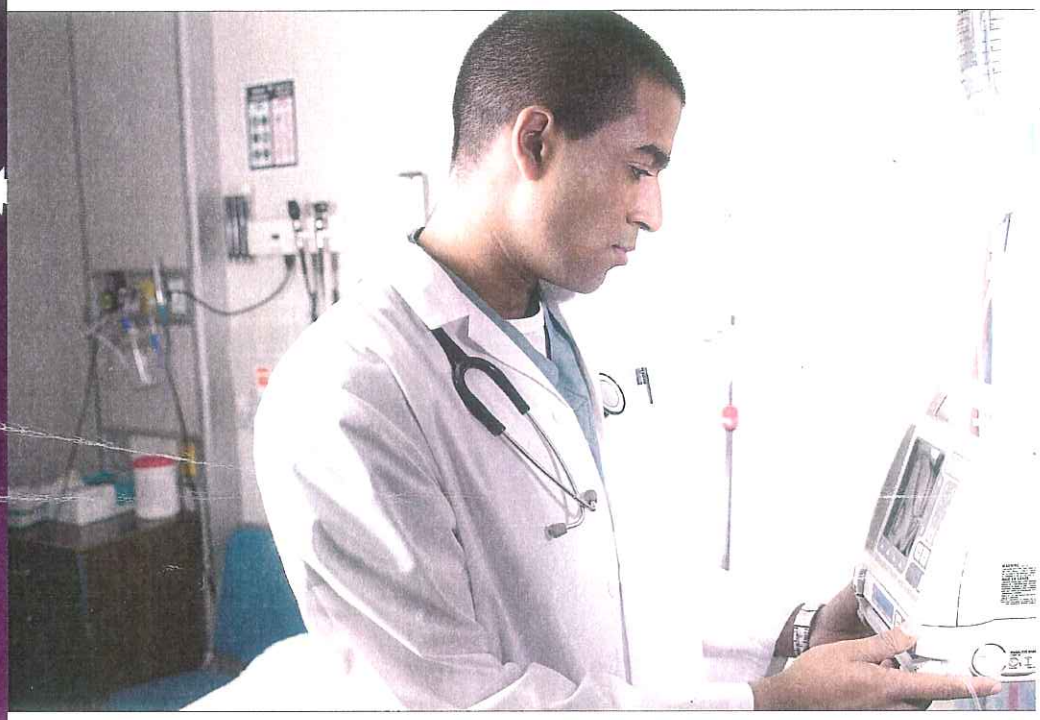
Practice Name (1): _____
Address: _____
City: _____ State: _____ Zip: _____
Phone: _____ Fax: _____
Days/Hours at this location: _____
Approx. Number of primary care clinicians at this location: ____ Approx. number of patient visits per half-day by member: _____

Practice Name (2): _____
Address: _____
City: _____ State: _____ Zip: _____
Phone: _____ Fax: _____
Days/Hours at this location: _____
Approx. number of primary care clinicians at this location: ____ Approx. number of patient visits per half-day by member: _____

Please complete this form and return to:
Jessica Behm, MA • Network Coordinator, NORTHSTAR
University of North Dakota School of Medicine and Health Sciences
Department of Family and Community Medicine
501 N Columbia Road • Stop 9037 • Grand Forks, ND 58202-9037
jbehm@medicine.nodak.edu • Fax: (701) 777-3849

What is NORTHSTAR?

- A new research network composed of primary care practitioners from across the state.
- Sponsored by the University of North Dakota's School of Medicine and Health Sciences.
- Housed at the Department of Family and Community Medicine.
- First Practice-Based Research Network in North Dakota.



What is a Practice-Based Research Network (PBRN)?

- "Putting research into practice and practice into research."
- A network composed of practitioners who come together to conduct clinical research.
- Network members determine the research project topics.
- Research is tailored to the needs of the practitioner.
- Intersects traditional research with quality improvement.
- Research results are easily assimilated into everyday practice.

The University of North Dakota

north star

What are the goals of NORTHSTAR?

- Improve the quality of care within the rural primary care setting.
- Address issues that are important to practitioners in the field of primary care.
- Conduct best practices research.
- Identify and test new methods of health care delivery in the rural setting.
- Create a professional learning community for North Dakota primary care practitioners.

What are the benefits of joining NORTHSTAR?

- Can direct research topics towards areas you feel are important within your clinical practice.
- Help create research results that benefit you, your practice, and your patients.
- Opportunity to become involved in a state network composed of professional practitioners.
- Participation in research studies is completely voluntary.
- No membership fees!
- No minimum time commitment!

How can you become a member?

- Go to our web site and fill out our enrollment form.
  www.med.und.nodak.edu/northstar

- Contact our Network Director:
  Charles E. Christianson, MD, ScM
  (701) 777-3240
  cchristi@medicine.nodak.edu

- Contact our Network Coordinator:
  Jessica Behm
  (701) 777-3266
  jbehm@medicine.nodak.edu

Diabetes in Primary Care

NORTHSTAR's Pilot Project: Dilated Retinal Exams in Clinical Care (DREC)

A study of North Dakota diabetic patients and their rate of compliance to yearly retinal examinations

Phase 1:

- Randomly selected 100 diabetic patients charts from Minot and Bismarck family medicine residency clinics
- Collected data concerning their compliance with yearly retinal exams as well as other recommended diabetes monitoring tests
- 16% of Minot patients and 32% of Bismarck patients had a documented retinal exam
- Considerably less than the other diabetes monitoring tests: Microalbumin, A1C, and Lipids

Table 1

	Retinal	Micro	A1C	Lipids
Minot	16%	80%	86%	86%
Bismarck	32%	54%	68%	62%

Phase 2:

- Were there patients who had a dilated retinal exam but their results were just not documented in their chart?
- Contacted the Minot patients directly via telephone to collect information
- Of the 50 randomly selected patient charts, 42 (84%) of them did not have a documented retinal eye exam
- We were able to make contact with 21 of these patients. 11 (52%) of the patients actually had a yearly retinal exam but the information was not recorded in their chart
- Some reasons for not receiving a retinal exam included:
  - It was not considered a priority compared to other healthcare requirements
  - Financial concerns; many patients did not know dilated eye exams were covered by Blue Cross Blue Shield

Best Practices in Diabetes Care

- Selected "exemplars" in the field of diabetes care and asked them to describe some of the practices they employ to retain such a high level of success. Physicians were chosen from Blue Cross Blue Shield's 2007 Diabetes Care Provider Achievement Award Winners list
- Some of the common practices we've seen so far:
  - Presence of a diabetes educator/nurse
  - Use of electronic diabetes registries
  - Adoption of clinic guidelines outlining specific diabetes goals
  - Performance feed back provided by the BCBSND Diabetes Care Provider Reports
- Conducted a literature search to examine other research findings

Next Steps

- Develop a final list of practice interventions
- Survey physicians to indicate which interventions they use in their practices
- Correlate their answers with their diabetes care outcomes
- Identify which interventions are actually associated with better care

The University of North Dakota
School of Medicine & Health Sciences

Diabetes Care Interventions: A Best Practices Study

Charles E Christianson, MD, ScM and Jessica Behm, MA
NORTHSTAR Research Network

Introduction

Best practices research is "a systematic process used to identify, describe, combine, and disseminate effective and efficient clinical and/or management strategies developed and refined by practicing clinicians" (Mold and Gregory, 2003). The objective of this project was to use a best practices research approach to identify which diabetes care interventions produced better practice compliance with recommended processes of care in North Dakota clinics.

Methods

- Mixed Method Study
- Interviewed 6 exemplar physicians concerning the clinical practices they chose to implement to improve the care of their diabetic patients.
- Compared answers with literature and constructed a list of 11 diabetes care interventions (DCI):
  - Clinic Guidelines
  - Diabetic Patient Registry
  - Electronic Health Records
  - Reports/Feedback on Performance
  - Diabetes Nurse Educator
  - Reminder Letters /Follow Up Calls
  - Standardized Visits
  - Presence of a Dietician
  - Educational Information for Patients
  - Support Groups
  - Information on Community Resources
- Developed a questionnaire asking physicians which of the DCIs were available and used within their clinics.
- Compared results to the physician's Diabetes Care Provider Reports provided by Blue Cross Blue Shield of North Dakota (BCBSND). Data included:
  - Number of Patients
  - Annual Office Visits
  - Annual HbA1C
  - Annual Lipids
  - Annual Micro albumin
  - All 5 Criteria Met

Results

Demographics

N =	85
Family Medicine	66
Internal Medicine	19

Average Years in Practice	16.48
Average Diabetic Patients per Week	14.06
Average Time Spent with Patients (in minutes)	21.95

- Top 5 DCIs Available and Used by North Dakota Physicians

Available

	%
Diabetes Nurse Educator	81.2
Educational Info for Patients	77.6
Clinic Guidelines	75.3
Dietician	75.3
Reports/Feedback on Performance	62.4

Used

	%
Diabetes Nurse Educator	85.9
Dietician	80.0
Educational Info for Patients	70.6
Clinic Guidelines	67.1
Reminder Letters/ Follow Up Calls	65.9

- Three of the eleven DCIs had a relationship to one or more outcomes measures.
- " Use of a Diabetic Patient Registry" had a positive correlation to the HbA1C, Retinal Exam, and All 5 Criteria Met measures.
- "Reports/Feedback on Performance had a positive correlation to the Retinal Exam and All 5 Criteria Met measures.
- "Use of a Dietician" had a positive correlation to the Office Visits, HbA1C, and Lipids measures.

Pearson Correlations

		Office Visits	HbA1C	Eye Exam	Lipids	Micro albumin	All 5 Criteria Met
Diabetic Patient Registry	Pearson Correlation	.101	**.248***	**.352****	.141	.186	**.287***
	Sig. (2-tailed)	.387	**.031**	**.002**	.226	.107	**.012**
Reports/ Feedback On Performance	Pearson Correlation	-.004	.095	**.303****	.174	.069	**.244***
	Sig. (2-tailed)	.972	.417	**.008**	.133	.554	**.034**
Dietician	Pearson Correlation	**.269***	**.234***	.015	**.238***	.099	.074
	Sig. (2-tailed)	**.019**	**.042**	.899	**.038**	.395	.523

* Correlation is significant at the 0.05 level (2-tailed)
** Correlation is significant at the 0.01 level (2-tailed)

Conclusions

Use of a diabetic patient registry, reports or feedback on performance, and a dietician were all associated with improvement in practice compliance to a number of important diabetes care measures. Identifying which diabetes care interventions are most effective provides clinicians with information they can use to prioritize interventions within their practice. By using the best practices research approach we were able to not only discover what works best in North Dakota clinics but also extend that knowledge to other practicing physicians from around the state.

Limitations

- Small Sample Size
- Correlation ≠ Causation
- Role of the Patient
- Just Blue Cross Blue Shield Patients
- Looking at process measures, not patient outcomes (meeting criteria)

Next Steps

- Compare survey results with patient outcomes for HbA1C, BP, and Lipids.
- Use the North Dakota MediQHome system to analyze the entire patient population, not just BCBSND

Resources

Mold JW and Gregory ME, *Best Practices Research,* Fam Med 2003;35(3):131-4.

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Dilated Retinal Exams in Clinical Care (DREC)
Pilot Study

Case #_____ (Minot: begin with 101, Bismarck: begin with 201)

1) Gender: ____ Male ____ Female

2) Year of Birth : _____

3) Amount of time taken to find data on eye exam:
____ Minutes (round to nearest minute)
____ Couldn't find

4) Location of eye exam information in chart: (mark all that apply)
____ Progress Note
____ Patient data form
____ Diabetes care flow sheet
____ Written communication from eye doctor
____ Could not find in chart
____ Other: _____

5) Diabetes monitoring completed during the year previous to the visit included in the sample:
   a. Dilated retinal exam by eye care professional
      ____ Yes
      ____ No
      ____ Cannot be determined
   b. Microalbumin or UA if urine positive for protein
      ____ Yes
      ____ No
      ____ Cannot be determined
   c. A1C
      ____ Yes, Most recent measurement:____
      ____ No
      ____ Cannot be determined
   d. Lipids
      ____ Yes
      ____ No
      ____ Cannot be determined

6) Diabetes care flow sheet in use during the past year:
   ____ Yes
   ____ No

7) Number of visits to this clinic from 01/01/07 to 12/31/07:_____

8) Is there a particular provider that the patient has seen most frequently?
____ Yes, Number of visits to that provider:____
____ No, the patient has seen a different provider at each clinic visit.

Tobacco Cessation Interventions in Pregnancy

1) Do you provide care to obstetrical (pregnant) patients in your practice?
    a) Yes
    b) No

2) Do you assess obstetrical (pregnant) patients for tobacco use?
    a) Yes
    b) No

3) Do you offer tobacco cessation options to obstetrical (pregnant) patients?
    a) Yes
    b) No (Skip to question #6.)

4) Which of the following cessation tools are offered in your practice?
    (Circle all that apply)
    a) Information pamphlets, tip sheets, etc
    b) Videos with information explaining the risks, barriers, and tips for quitting
    c) Self help manuals

5) Are any of these materials designed exclusively for pregnant women?
    a) Yes
    b) No

6) Do you offer counseling to obstetrical (pregnant) patients regarding tobacco cessation?
    a) Yes
    b) No (Skip to question #8)

7) What type(s) of counseling do you offer to obstetrical (pregnant) patients for tobacco cessation?
    (Circle all that apply)
    a) In office brief counseling (pre-natal)
    b) In hospital counseling (pre-natal and/or post-natal)
    c) Referral to tobacco cessation program/class
    d) Referral to the North Dakota Tobacco Quitline

8) Do you prescribe medications to obstetrical (pregnant) patients for tobacco cessation?
    a) Yes
    b) No

9) Which medications do you prescribe to obstetrical (pregnant) patients for tobacco cessation? (Circle all that apply)
    a) Nicotine Replacement Therapy – Gum
    b) Nictoine Replacement Therapy – Lozenge
    c) Nicotine Replacement Therapy – Patch
    d) Nicotine Replacement Therapy – Nasal Inhaler
    e) Nicotine Replacement Therapy – Inhaler
    f) Buproprion (brand: Zyban or Wellbutrin)
    g) Varenicline (brand: Chantix)
    h) Other prescription medication
        Please list: _____
    i) Other over-the-counter medication
        Please list: _____

Thank you for your participation!

Diabetes Care Interventions (DCI)
P.I.: Charles E. Christianson, MD, ScM

Survey:

1) Specialty: _____

2) Years in Practice: _____

3) On average, how many diabetic patients do you see each week? _____

4) What is the average amount of time spent with each patient? _____

5) Which of the following diabetes care interventions are **available** within your clinic/facility?

___ Clinic wide guidelines on care for diabetes patients
___ A diabetic patient registry
___ Electronic Health Records
___ Reports or feedback on performance related to patient care
___ Presence of a diabetes nurse educator
___ Reminder letters and follow-up calls for patients
___ Standardized visits for diabetic patients
___ Presence of a dietician
___ Educational information for diabetic patients – i.e. pamphlets, instructional cards, NDHCRI "Tune Up" cards
___ Support groups for diabetic patients
___ Information on the local community resources available for diabetics - for example, exercise facilities, self management classes, support groups, etc.

6) Which of the following diabetes care interventions **have you used** or **encouraged your patients to use**?

___Clinic wide guidelines on care for diabetes patients
___ A diabetic patient registry
___ Electronic Health Records
___ Reports or feedback on performance related to patient care
___ Presence of a diabetes nurse educator
___ Reminder letters and follow-up calls for patients
___ Standardized visits for diabetic patients
___ Presence of a dietician
___ Educational information for diabetic patients – i.e. pamphlets, instructional cards, NDHCRI "Tune Up" cards
___ Support groups for diabetic patients
___ Information on the local community resources available for diabetics - for example, exercise facilities, self management classes, support groups, etc.