



AAFP NATIONAL RESEARCH NETWORK ANNUAL REPORT 2005-2006

**AAFP National Research Network
Scientific Activities Division
American Academy of Family Physicians
11400 Tomahawk Creek Parkway
Leawood, KS 66211
913-906-6000 x3178
tstewart@aafp.org
<http://www.aafp.org/natnet.html>**

EXECUTIVE SUMMARY

American Academy of Family Physicians National Research Network

Annual Report 2005-2006

The AAFP's National Research Network (NRN) continues to be successful in expanding its research activities and efforts at practice improvement. While conducting these project the NRN continues to bring in revenue from sources not traditionally utilized by the AAFP. For the period June 1, 2005 through December 31, 2006, the NRN received \$3,400,407 in new multi-year funding. The new projects include the following:

- \$300,000 from the Robert Wood Johnson Foundation's Prescription for Health initiative.
- \$50,000 from the US Department of Health and Human Services' Office of Research Integrity (through the Association of American Medical Colleges)
- \$531,221 from the Agency for Healthcare Research and Quality (through a subcontract with Olmsted Medical Center)
- Two awards totaling \$135,576 from the AHRQ-funded PBRN Resource Center at Indiana University Purdue University at Indianapolis (IUPUI)
- \$67,000 from John Mullaly, MD, a family physician in Port Huron, Michigan
- \$322,814 from Opt-E-Scrip, Inc..
- \$1,977,296 from the PepsiCo Foundation for a joint NRN-Americans In Motion (AIM) fitness and health education intervention project.

In addition, three small awards, totaling \$16,500, were awarded to the NRN. These awards include a survey on prostate cancer screening and support for two planning retreats.

Of the eight awards listed above, seven of them, totaling \$3,077,593, came from non-pharmaceutical sources, thus demonstrating the NRN's commitment to AAFP Internal Management System (IMS) Objective B4, "(to) broaden our financial base of support from ... non-traditional markets". As a result of these awards, the NRN has passed the \$7,000,000 mark in external funding awarded since its inception and is forecast to "break even" financially in fiscal year 2006-2007.

Other highlights of the year include:

- Funding has been secured and planning has begun for two retreats to be held in early 2007. These retreats, one focusing on distance collaboration and one focusing on practice change, will serve to help direct the NRN's future course in both areas.
- Continued development of the Residency Branch of the NRN, including the enrollment of 62 family medicine residency programs in the NRN.
- The first Affiliated Network agreements between selected regional practice-based research networks and the NRN.

- A refining of internal operating documents and procedures to facilitate collaborative work with outside investigators and improve fiscal tracking.
- Eleven manuscripts published or accepted for publication with several more in the final stages of development.

Through the liaison relationship with the Commission on Science (COS), the AAFP-NRN is working to support AAFP Strategic Objective 3.6 which is to promote and implement research/generation of new knowledge into lifelong learning. In addition, also with COS and other appropriate entities, the NRN will continue participation in the Linkage Initiative.

The Network continues to work with the several divisions within the AAFP structure. These include the Communications Division, the Center for Health Information Technology, the Practice Support Division, Research and Information Services Division, the Division of Continuing Medical Education, Online and Custom Publishing, and The Robert Graham Center. The Network also continues to work with the staff of the AAFP's Development Division and the AAFP Foundation to secure additional non-government sponsored project funding. These relationships have contributed greatly to the success of the Network.

These successes, along with others described in this Annual Report, illustrate the continuing growth in family medicine research in this country, the important role practice-based research networks play in maintaining this growth, and the NRN's contributions to this growth.

American Academy of Family Physicians National Research Network

Annual Report 2005-2006

General Information

Background

In August 1999, the American Academy of Family Physicians' Board of Directors approved the business plan to establish the AAFP National Network for Family Practice and Primary Care Research. The network was renamed the AAFP National Research Network (NRN) in 2003. The board-approved mission of the Network is to conduct, support, and promote primary care research in practice-based settings that addresses questions of importance to the discipline of Family Medicine and improves health care and the health status of patients, their families, and communities.

Commitment of the NRN to the AAFP's Strategic Objectives

The AAFP NRN's primary focus is on AAFP Strategic Objective 3.6 "(to) promote and integrate the generation of new knowledge in all aspects of lifelong learning." Every activity of the AAFP-NRN uses this objective as a "litmus test" to determine the appropriateness of the project.

However, the AAFP-NRN is dedicated to all of the Strategic Objectives of the AAFP. Please see Appendix 3 for examples of how the Network has contributed to some of the other Strategic Objectives.

Goals and Objectives of the National Research Network

The NRN staff and senior leadership of the Scientific Activities Division (SciAct) went through a series of retreats and meetings to develop a new five year set of goals and objectives. The current five-year goals are presented below:

1. The AAFP NRN will be recognized as one of the premier practice-based research networks (PBRN) in the nation within our defined research focus. Furthermore, the AAFP NRN research focus will flow from the Future of Family Medicine Report and align with the AAFP efforts to support the transition to the New Model of Care.
2. The AAFP NRN will be recognized as the premier facilitator of family medicine PBRN research. This will include promoting collaborative efforts between PBRNs and promoting PBRN – family medicine residency research collaboration.

3. Develop stable funding streams including long term hard funding as well as reliable soft funding partners to sustain a core group of research staff.

The Impact of the NRN on Healthcare Delivery and Third-party Payment

This past year has seen the first true fruits of the NRN's research as it directly impacts family physicians. The following excerpts from **Putting Research into Practice**, by Jane Stoeber, published in AAFP News Now, March 21, 2006, illustrates three examples of how the NRN's work is changing family medicine.

Putting Research into Practice

Practice-based research is becoming a two-way street. As family physicians and their staff members conduct research, they reap the rewards of providing better patient care; improving their office systems; and, sometimes, obtaining new equipment and expanded reimbursement.

During the past five years, FP researchers have learned how to blend quality improvement and research, said Wilson Pace, M.D., director of the AAFP National Research Network. The network has collaborated with other groups in sponsoring depression-and-QI and spirometry studies. These two research projects are in the final report-writing phase. These studies show how research leaves its footprints in grass-roots practices; FPs learn through the projects, and the lessons stick long after their practices have completed the research work.

Study on Depression and QI

FPs Ron Mansolo, M.D., and Elizabeth Burnell-Mansolo, M.D., a husband-and-wife team in Leander, Texas, and nurse practitioner Megan Passe, R.N., who works with them, took part in a 2004-06 study on depression and quality improvement. They tested the usefulness of a patient health questionnaire for determining whether patients are depressed, and they are finding the lessons learned from the research invaluable for enhancing their patient care.

"I knew one patient was depressed, but he wasn't real open about how he was feeling," said Burnell-Mansolo. She had him fill out the questionnaire, and his answers indicated a more serious degree of depression than she had suspected. "At that point, I increased the medication, and at the next visit, the patient was better," she said.

Patients eventually build up a reservoir of questionnaires, said Burnell-Mansolo. "Sometimes I pull out old questionnaires and let patients see how much they're improving."

The practice found the questionnaire so valuable that Mansolo created similar tools on conditions such as attention-deficit/hyperactivity disorder, cancer, chronic illness and diabetes; another is issued to patients coming in for a general physical exam.

As part of the depression study, the practice also created a QI team that then multiplied. Representatives from billing and the front office and the practice's medical assistants now hold regular sessions to trouble-shoot, and all staff members, including the physicians and Passe, meet each month for team-building.

The team meetings help define problems and solutions for everyone in the office. "The biggest problem patients had was holding on the phone too long," said Marilynn McAlister, office manager. By looking at the problem in the team setting, everyone was encouraged to get involved in solving it. "Now whoever answers the phone tries to really listen instead of putting the patients on hold at first," said McAlister. When getting an answer to a question will take awhile, staff members promise to call the patient back within two hours. "And we do," said McAlister.

Spirometry Research

Mansolo, Burnell-Mansolo and Passe also took part in a 2004-05 spirometry study that tested whether FPs and their staff members could do accurate pulmonary function tests, or PFTs, and whether in-office spirometry would change FPs' assessment of the severity of patients' asthma or chronic obstructive pulmonary disease -- thus, changing their care plan for the patient. Study FPs received spirometers to keep and use at their practices, and, during the study, pulmonologists checked their spirometry interpretations.

The addition of this service again helped Burnell-Mansolo and Mansolo enhance their patient care. "A woman I saw recently was complaining of shortness of breath, but I didn't hear her wheezing when I examined her," said Burnell-Mansolo. She started the patient on medication and, within a few days, had Passe give the patient a PFT. The results indicated the patient needed more assistance, so Burnell-Mansolo ordered inhaled steroids. "The PFT helps with diagnosis and treatment," she said.

The addition also helped boost the practice's accounts receivable. Insurance companies pay for the PFTs, Mansolo said. "Being able to treat our patients in our office saves money" for the health care system as a whole, he added.

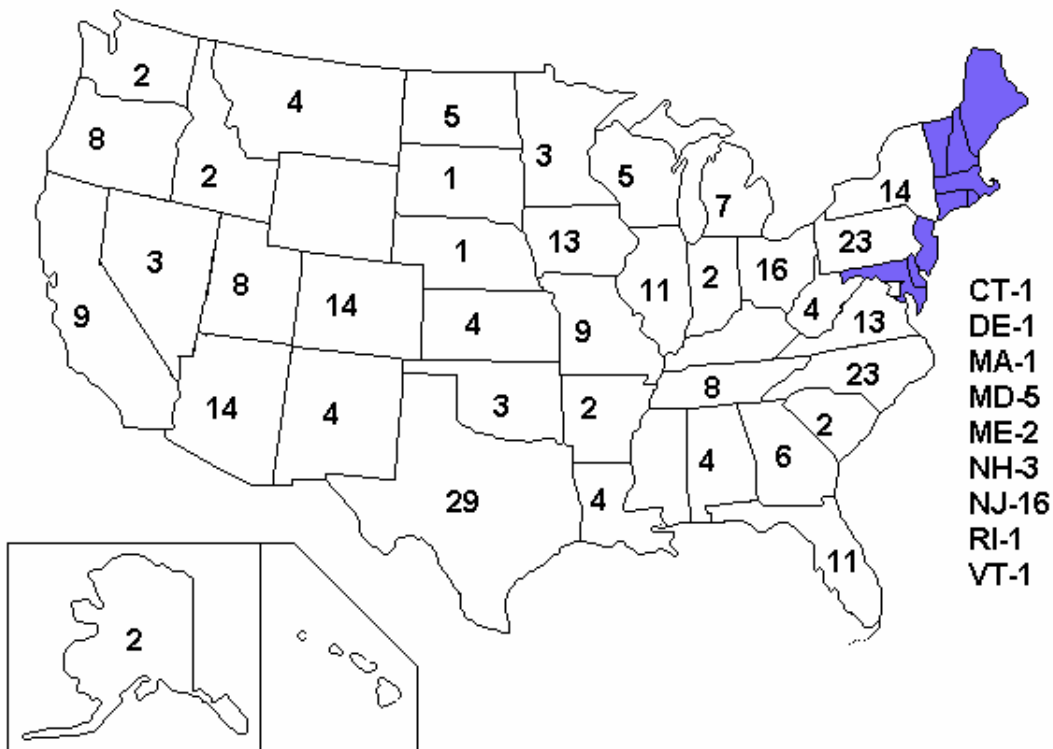
NRN research has also been used to reverse a third-party payor's decision on payment for services.

FP Raj Kachoria, M.D., of Macedon, N.Y., chair of the family physicians' section of the eight-county Rochester (N.Y.) Independent Physicians Association, or RIPA, is another participant in the spirometry study who discovered its financial benefits. Kachoria shared information about the spirometry study, as well as the manual for study participants, with RIPA members and then with an HMO that contracts with RIPA. "The study information and the manual backed us up on the value of doing spirometry in our offices," said Kachoria. "We now have a guideline from the HMO for primary care physicians to do spirometry, and we're not getting questions when we bill for it."

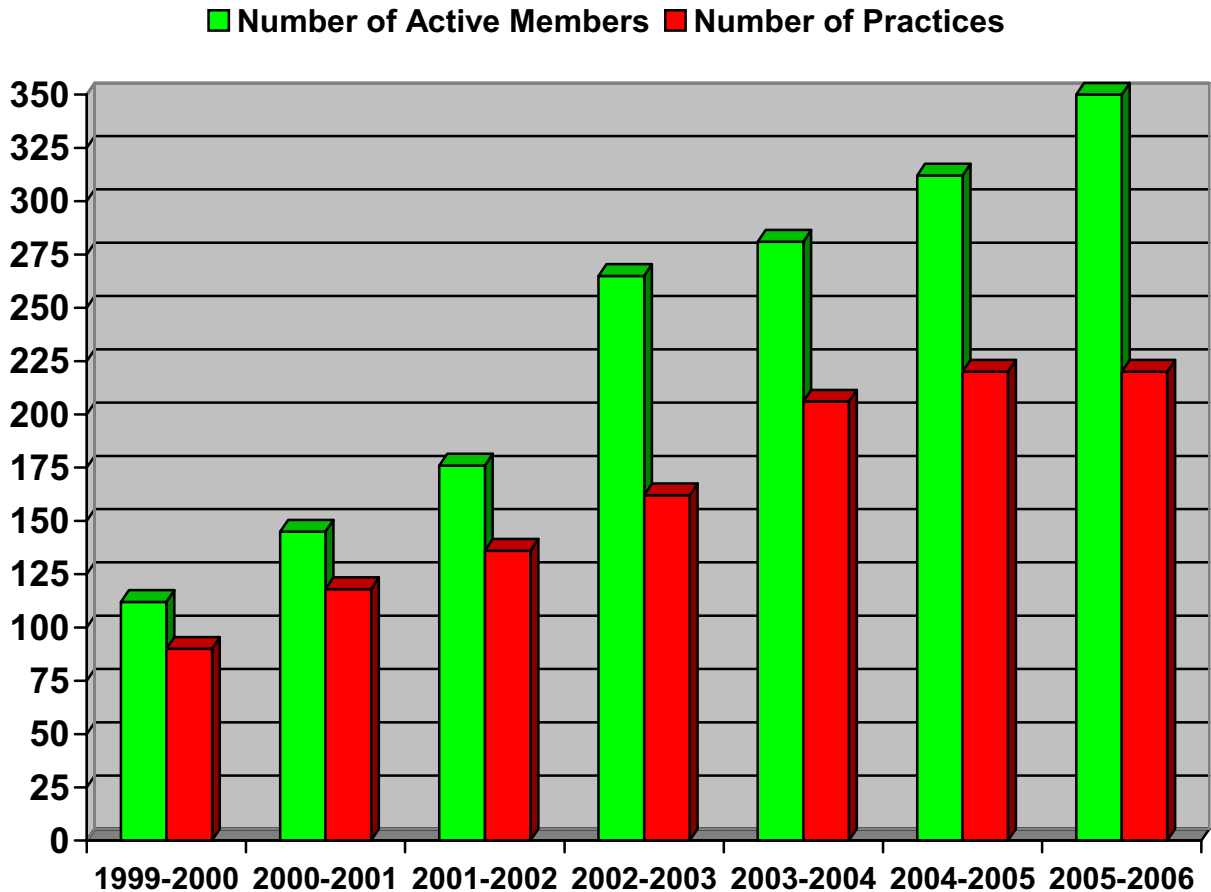
Membership

As of December 31, 2006, the National Research Network had 350 clinician members in 202 practices from 46 states, and four Canadian provinces. In addition, the NRN's affiliated regional networks bring approximately 1,000 additional family physicians to the number of potential participating clinicians (see below for more information regarding affiliated networks).

US NRN Membership by Location (as of December 31, 2006)



Growth of the National Research Network 1999-2006



The growth of the National Research Network, as illustrated above, can be attributed to a number of factors, including:

- A greater awareness on the part of the membership of the AAFP of the importance of practice-based research, due in part to the greater familiarity of the practicing family physician of the recommendations of the Future of Family Medicine report.
- The opportunities made available for practice quality improvement.
- An increased sense of contributing to the betterment of healthcare and healthcare delivery.
- Advocacy on the part of current NRN members to encourage their colleagues to participate.

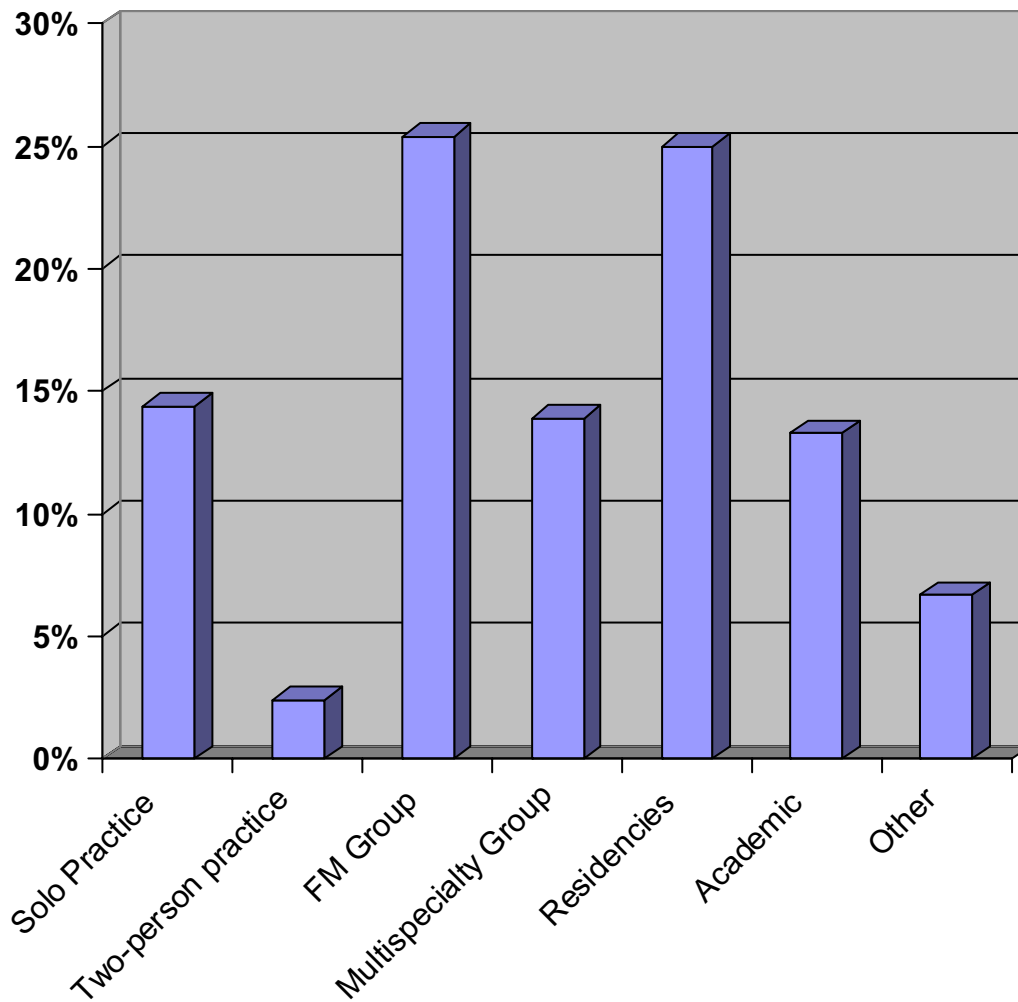
The Demographics of the NRN

In many areas, the NRN reflects the overall membership of the AAFP. Some of the highlights from the most current demographics survey include:

- A breakdown by sex: 71% male, 29% female
- 14% of the NRN members are minority physicians
- 91% of NRN members have hospital admitting privileges.
- 44% of NRN members report using an electronic health record (EHR) in their practice. This is up from 35% in 2004.
- The patient populations for NRN member practices average 34% minority patients.

The graph below illustrates the distribution of the members of the NRN by practice type. The two categories showing the greatest growth are residencies and small group practices.

Membership by practice type



First Formal Affiliations with Other Family Medicine PBRNs

Affiliation between a regional network and the AAFP NRN should bring a number of benefits. For the NRN, better national representation, a greater number of potential study participants, and a more formal way of doing what we are already doing are some of the potential benefits. For regional networks, affiliation would offer greater potential to conduct larger-scale studies, extend reach outside of their local area, and participate in more national studies. In addition, mutual benefit will come from knowledge sharing in the areas of research methodology and biostatistics and resource sharing in the areas of information technology, network management, and communication.

We are asking a select group of existing networks to affiliate in order to fully test the concept. The two affiliation requirements are that (1) a network be primarily composed of family physicians and (2) a network must qualify for membership in the Federation of Practice Based Research Networks. The network does not have to be a full member of the Federation but that would be encouraged.

The NRN formalized affiliation agreements with 11 regional family medicine PBRNs. The networks include:

- The Kentucky Ambulatory Network (KAN), a state-wide PBRN affiliated with the Department of Family Medicine at the University of Kentucky.
- Oklahoma Physicians Resource/Research Network (OKPRN), an independent state-wide PBRN supported by the Department of Family and Preventive Medicine at the Oklahoma University Health Sciences Center.
- MetroNet, a local PBRN serving the Detroit metropolitan area and affiliated with the Department of Family Medicine at Wayne State University
- The Upstate New York Practice Based Research Network (UNYNET), a regional PBRN affiliated with the State University of New York at Buffalo.
- SNOCAP, a consortium of three PBRNs based out of the Department of Family Medicine at the University of Colorado Health Sciences Center.
- LA Net – A local PBRN affiliated with the USC Department of Family Medicine and operating in Community Health Centers in underserved areas in the Los Angeles area.
- Residency Research Network of South Texas (RRNeST), a regional network made up of nine family medicine residency programs in south Texas and based out of the University of Texas Health Sciences Center at San Antonio.
- RIOS Net, a state-wide rural PBRN affiliated with the University of New Mexico.
- Penn State Ambulatory Research Network, a local network of clinics owned by Penn State University-Hershey.
- Capital-Adirondack Practice Based Research Network, a regional PBRN serving the Capitol Region in New York state. This PBRN is affiliated with the School of Public Health at the State University of New York at Albany.

- Virginia Ambulatory Care Outcomes Research Network (ACORN), a state-wide PBRN affiliated with Virginia Commonwealth University.

These affiliations allow both the NRN and the regional networks to share resources, including clinician members.

Advisory Group/Scientific Review Committees

The Advisory Group of the National Research Network is made up of Network clinicians, experienced family medicine researchers, community members, and AAFP staff. The Advisory Committee serves to advise NRN staff on such items as overall research direction, research foci, and other “big picture” issues. The Advisory Committee meets once a year in face-to-face meetings and as needed via phone conference.

The current Advisory Group members are:

Chris Lupold, MD – Charlottesville, VA – NRN Clinician

Sandra Burge, PhD – San Antonio, TX – Representing the Residency Branch of the NRN

Joan MacEachen, MD – Ketchikan, AK – NRN Clinician

Kurt Elward, MD, MPH – Representing the AAFP Commission Science

Daniel Triezenberg, MD – South Bend, IN – NRN Clinician

Raj Kachoria, MD – Macedon, NY

Kevin A. Peterson, MD, MPH – Minneapolis, MN - Representing the Federation of Practice-Based Research Networks

Wilson D. Pace, MD – Staff Executive

Mindy Spano – Recording Secretary

Community members include:

Thomas C. Brown, JD – Attorney in private practice

Stacy Daniels-Young, PhD – Black Healthcare Coalition of Kansas City

Scientific Review Committees

Newly created at the 2005 Convocation, the AAFP-NRN has established two Scientific Review Committees. These two committees will serve as review groups and will receive a 1-2 page review sheet to be used by the individuals for review of potential NRN projects. The members of the groups will discuss the project via a listserv and or conference calls. In the future, these groups may be used for manuscript and grant proposal review. The two groups consist of NRN physicians and study coordinators.

Network Staff in National Leadership Roles

As the Network has established its national reputation, this has led to staff being asked to serve on high-profile national panels.

Wilson Pace, MD, Network Director, and Thomas Stewart, Research Administrator for the NRN, were appointed to the AHRQ PBRN Resource Center Steering Committee. The Resource Center, located at Indiana University, serves several coordinating functions for the AHRQ-funded PBRNs. Dr. Pace was chosen to serve on the PBRN Registry Subcommittee and Mr. Stewart was selected to serve on the Annual PBRN Meeting Subcommittee.

Dr. Pace was also appointed to the Institute of Medicine Committee on Identifying and Preventing Medication Errors. The Committee's report, "Preventing Medication Errors: Quality Chasm Series", was released on July 20, 2006. Dr. Pace serves as a consultant to the University of Rochester for the Clinical Translation and Science Award grant and consults with the Precedent dental network for the NIDCFR (NIH) as part of his commitment to improving practice-based research nationally.

Research Projects

As of December 31, 2006, the NRN had ten active projects, including seven research studies, two retreat projects, and one consultation agreement. The funding for these projects came from seven separate funding sources, with a total funding amount of \$3,880,907. Ninety-one percent (\$3,550,907) of this funding came from what are considered non-traditional funding sources (funding sources outside of the pharmaceutical industry). Please see the Network Grant Activity section of this report for more detailed information about the financial activities of the NRN. (See Appendix 5 for a detailed schematic of how an idea becomes a Network project.)

Current Studies

Prescription Methods Assessment Project (PMAP) (March 2006-February 2008) PI: Wilson D. Pace, MD, FAAFP. Research grant awarded from Opt-e-scrip, Inc. to the American Academy of Family Physicians National Research Network. We are collaborating with Penn State Ambulatory Research Network and Opt-e-scrip, Inc. The "Prescription Methods Assessment Project" is a randomized clinical trial at the patient level that will compare two methods of prescribing medications, 1) the standard way that physicians prescribe medications (*standard group*) and 2) the N-of-1 trial method (Opt-e-scrip methodology), on patient health-related outcomes. Specific aims of the project are: 1) To evaluate whether the (N-of-1) intervention prescription method can be successfully integrated into primary care practices; 2) To determine whether use of the intervention prescription method changes medication selection for patients with osteoarthritis and gastroesophageal reflux disease; 3) To examine the effects of the N-of-1 trial method (Opt-e-scrip methodology) on medication compliance; 4) To examine the effects of the intervention prescription method on medication costs. This project will assess the integration of the Opt-e-scrip prescription method into 20 primary care practices that will each use the method to assist with medication selection in 30 to 40

patients with a new diagnosis or uncontrolled osteoarthritis and GERD. Patients will be assigned to one of the two study groups and followed-up for 6 to 9 months.

The Impact of Brief Primary Care Counseling and Novel Physiological Measures on Patient Physical and Emotional Health - AIM-HI (12/1/06-11/30/09) funded by the PepsiCo Foundation. PI: Wilson D. Pace, MD, FAAFP. This research project brings together the American Academy of Family Physicians National Research Network (AAFP NRN) and the AAFP's public health initiative, Americans In Motion (AIM). This project will develop and evaluate a practice improvement program to improve family physicians' delivery of effective patient-centered behavior change interventions for "fitness" (physical activity, nutrition and emotional well-being). We seek to develop a unique program that positions fitness in a central role as "the treatment of choice" when dealing with issues of prevention and treatment of chronic conditions. In addition, this newly developed program is intended to help shift the paradigm of family physicians' use of common advice-giving methods to more effective patient-centered lifestyle counseling. Ultimately, this program will seek to improve care for all patients through fitness-related physician interventions. Specific Aims are 1) Develop, from existing materials, sets of culturally appropriate patient education materials to support office-based counseling on behavioral change for physical activity, diet and emotional well-being (depression and anxiety); 2) Develop, from existing materials, an evidence-based educational/implementation program to improve delivery of effective patient-centered lifestyle counseling during routine office visits; 3) Evaluate the impact of an evidence-based educational/implementation program using a randomized controlled trial. 3.1. Evaluate the effects of encouraging clinicians and office staff to personally use educational tools and how this affects the intervention as delivered to patients. 3.2 Evaluate the effectiveness of the intervention on (both primary and secondary) patient level behavioral change and additional physiologic measures of increased exercise and improved diet.

TRPPD: Translating screening and management of PPD into primary care (9/30/05-9/29/10) funded by the U.S. Agency for Healthcare Research and Quality (AHRQ) (subcontract with Olmsted Medical Center). PI: Barbara P. Yawn, MD, MSc. Goals, Objectives, Aims: 1) To assess the impact of a universal PPD screening and follow-up management program on patient-oriented outcomes associated with PPD; 2) To assess the impact of a universal PPD screening and follow-up management program on practice-based process measures associated with PPD; and 3) To explore the impact of practice characteristics on the translation of research regarding a PPD screening and follow-up management program.

Telephone-Linked Care Prescription for Health (7/1/05-6/30/07) funded by Robert Wood Johnson Foundation. PI: Wilson D. Pace, MD, FAAFP. Collaborating with Boston University, Prescription for Health National Program Office, Prescription for Health Analysis Team, and 8 American Academy of Family Physicians National Research Network's practices. Specific Aims are: 1) Integrate a proven, totally automated computer telephone intervention, Telephone Linked Care – Behavior Change (TLC-BC), into primary care practices; 2) Demonstrate improvement in health behaviors (i.e., diet,

physical activity, and smoking) for individuals randomized to use the TLC-BC system compared to individuals who receive only printed self-help health educational materials. In addition, risky drinking will be identified; 3) Evaluate the direct costs associated with the use and operation of the TLC-BC system within the primary care setting. The TLC-BC system has previously been shown effective for single behaviors in controlled conditions. We expect clinicians will be able to use data from the ongoing feedback loop TLC-BC creates to enhance their care. Importantly, we believe the overall cost per patient per degree of behavior change will be substantially lower than any other behavior change intervention in primary care, while retaining much of the feel of personal counseling.

AZMATICS: Azithromycin Asthma Trial in Community Settings: Funded by the American Academy of Family Physicians Foundation, Wisconsin Academy of Family Physicians, Pfizer (for in-kind supply of study drug). PI: David Hahn, MD, MS, Clinical Professor, Department of Family Medicine, University of Wisconsin Medical School. This study is being run out of the office of Dr. Hahn and the Wisconsin Research Network (WREN). The AAFP NRN is one of several networks which have agreed to recruit ten physicians to participate in this study and to serve on the study Steering Committee. The primary hypothesis is that azithromycin will significantly improve asthma control (decrease symptoms and medication use) by 3 months (end treatment) and the improvement will continue to 12 months (end study). The primary outcome variable is overall asthma symptoms. Secondary outcomes are asthma medication use, quality of life and exacerbations. We will examine the predictive value of baseline patient characteristics including age, sex, smoking, co-morbid respiratory diagnoses and degree of airflow limitation. We will also examine for any imbalances between study groups in controller medication use, other antibiotic prescriptions and acute respiratory illnesses during the one-year study period.

Factors Affecting Willingness to Provide Unreimbursed Care in Primary Care (Oct 2005-May 2007) funded by the Agency for Healthcare Research and Quality (AHRQ). PI: Wilson D. Pace, MD, FFAFP. The goal of this study is to examine the situations (if any) under which a clinician provides care with no reimbursement, establishes a sliding pay scale, or accepts Medicaid (with/without co-pay) and his/her reasons for those choices.

Research Question: What situations (if any) do family physicians provide unreimbursed or discounted care? Overview of Methods: This project is divided into two parts. The first part is a preliminary interview of a small sample of members of the AAFP NRN. The purpose of the interview is to gather information on a wide variety of topics related to the provision of free and reduced cost health care services in private primary care practices. The responses to this preliminary survey will be used to inform the development of the study methodology and instruments for the larger study of a random sample of members of the AAFP on issues surrounding the provision of free and reduced cost health care services in primary care.

Investigating the Representativeness of Practiced-Based Research Networks: The Case of the American Academy of Family Physicians National Research Network

(6/1/05-10-31-05) funded by the AAFP Foundation. PI: Wilson D. Pace, MD, FAAFP. This project will determine the extent to which AAFP NRN members are representative of the larger population of family physicians with respect to their self-reported clinical practices/behaviors and their knowledge and beliefs about selected clinical care issues. The degree to which NRN physicians and their non-NRN counterparts do not differ will provide strong evidence for claims of representativeness and generalizability of study results conducted in the AAFP NRN. This study consists of analyses across five separate national surveys conducted between 2001 and 2004 by the AAFP NRN in distinct clinical areas (bioterrorism preparedness, hepatitis C, hyperlipidemia, pharyngitis, and immunization). Each survey collected data from NRN and non-NRN family physicians. We will conduct descriptive analyses and applicable tests on these survey data in comparisons between NRN and non-NRN family physicians. Additional analyses will also be conducted to determine the degree of statistical comparability of AAFP survey respondents to the population of AAFP active members.

Evaluating Tools for Health Promotion and Disease Prevention (10/1/03-9/30/07) funded by a CDC Cooperative Agreement MM-0630 through AAMC. National Research Network funding is through a subcontract with Case Western Reserve University, Cleveland, OH. PI: (Case Western): Louise S. Acheson, MD, MS; PI (AAFP NRN): Wilson Pace, MD. Goals, Objectives, Aims: 1) To work with the Centers for Disease Control (CDC) and two other teams of funded investigators to refine protocols and coordinate data collection for a clinical study of a CDC health risk assessment tool as a means to increase preventive behaviors of adults with increased risk of chronic diseases; 2) To investigate the effects of the health risk assessment tool, self-administered by patients before their visits with family physicians, on patients' risk perception and preventive health behaviors.

Developing Resolutions for Continuing Medical Education Conflicts of Interest in Research Presentations (6/1/05-5/30/07) funded by the Association of American Medical Colleges (AAMC) and Office of Research Integrity (ORI) [Responsible Conduct of Research Program for Academic Societies]. PI: James M. Galliher, PhD. Goals, Objectives, & Aims: In response to the growing interplay of academia, professional societies and industry, a number of organizations have updated their guidelines for the ethical conduct of research. We propose a qualitative study to examine the personal and institutional approaches taken in the conflict resolution process. Research Hypothesis: Successful organizational-based solutions can be identified to identify and resolve potential conflicts of interest in dissemination of research through peer-reviewed, CME-based presentations.

Evaluating the Clinical Usefulness of a Hepatitis C Shared Decision Support Tool (Jan 2005-Dec 2006) funded by Schering Corporation (Kenilworth, NJ). PI: James Galliher, PhD. Goals, Objectives, Aims: To assist primary care clinicians in the often-difficult treatment process for the hepatitis C virus, the American Academy of Family Physicians has commissioned the development and evaluation of a Decision Support Tool with funding provided by the Schering Corporation. The Decision Support Tool has

been developed, and we now propose to gather preliminary data on the perceived usefulness of the Hepatitis C Decision Support Tool from both primary care clinicians and their applicable patients. If this Shared Decision Tool is favorably evaluated by both clinicians and patients, it will be revised as needed and made available to primary care clinicians for their use when discussing treatment options with their patients for hepatitis C.

Completed NRN Studies

The AAFP NRN has, as of December 31, 2006, completed 15 studies. The studies have covered such topics as patient safety/medical error research, diabetes outcomes, bioterrorism preparedness in the ambulatory primary care setting, patient-physician communications, asthma care, and others. Summaries of these studies can be found in Appendix 1.

Network Publications

As the NRN has matured, the number of peer-reviewed journal articles published has grown dramatically. The Network has had 16 manuscripts either published or accepted for publication, 11 of these between June 2005 and December 2006. This year marked the first publication of results from the National Research Network's research to appear in another specialty journal. The results of the joint AAFP/AAP project looking at pharyngitis care in the journal *Pediatrics* (2006 Jun;117(6):1871-8). Work continues on analyzing data and preparing additional manuscripts.

With the increase of the number of publications comes the increased opportunity for the NRN's work to be cited in other publications. As of February 1, 2007, published work of the NRN has been cited at least 132 times (based on information in on the *Google Scholar* website). As the number and relevance of the NRN's publications increases, it is anticipated that the number of times the Network's work is cited in other research will continue to grow.

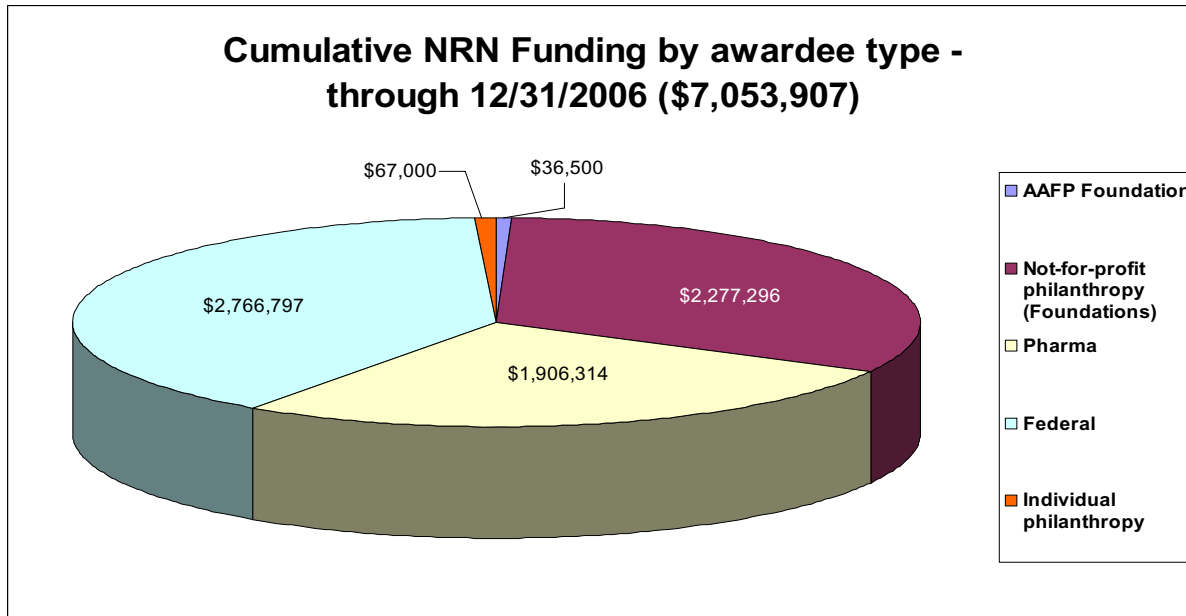
A complete listing of NRN publications, including abstracts, can be found in Appendix 2.

Network Grant Activity

Funding sources

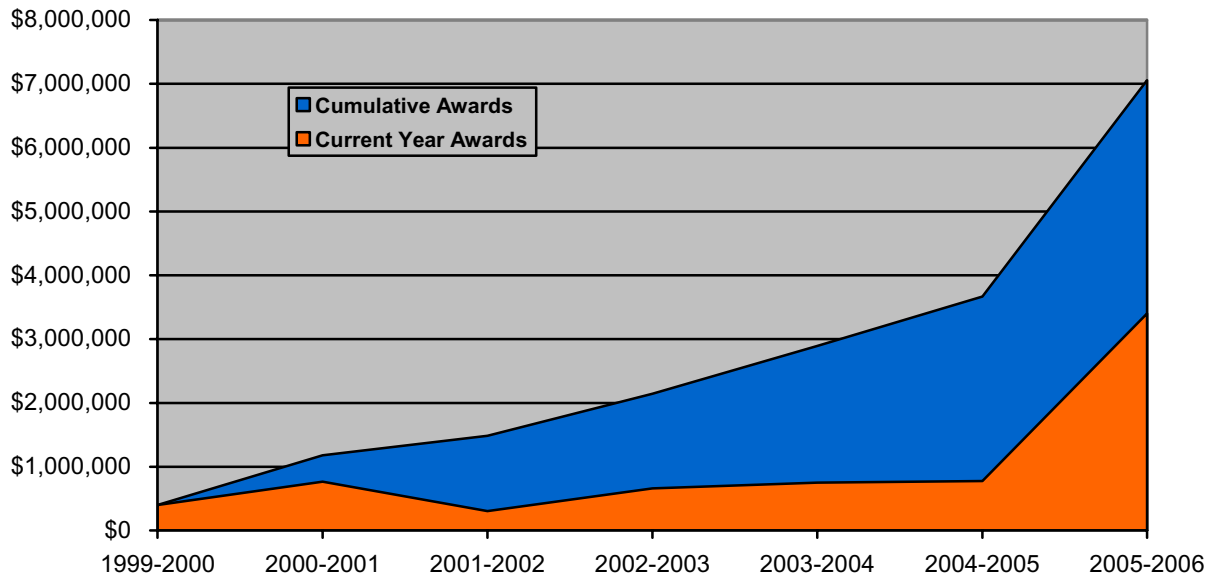
In concordance with the AAFP's Internal Management System (IMS) Objective B4 "(to) broaden our financial base of support from ... non-traditional markets", the NRN continues to be successful in securing funding from non-pharmaceutical industry sources. As of December 31, 2006, 39% of the NRN's external support dollars have come from federal government sources, such as the CDC, AHRQ, and institutes within NIH, 31% from not-for-profit foundations (including the AAFP Foundation), and 28% have come from traditional, pharma-based, industry sources. In order to insure the continued financial stability of the Network, the focus remains on securing funding from Federal sources, most of which pay an indirect rate of 42-46.4%, and from commercial

sources, where the indirect rate, while frequently built into the budget, ranges from 22-25%. As a comparison, most foundation-based funding pays between 0-10% in indirects.



Funding growth

As of December 31, 2006, the NRN has topped the \$7,000,000 mark in external funding awarded. The graph below illustrates both the annual awards made to the NRN as well as a cumulative total of awards since the Network's inception.



Current Grants

- A three-year, \$1,977,296 grant from the PepsiCo Foundation. Wilson Pace, MD, Principal Investigator
- A 18 month, \$320,000 grant from Opt-E-Scrip, Inc., Wilson Pace, MD, Principal Investigator
- A five-year, \$531,000 grant from AHRQ for Post partum depression screening. Barbara P. Yawn, MD, MSc, Olmsted Medical Center, Rochester, MN, Principal Investigator
- A two-year, \$300,000 grant from the Robert Wood Johnson Foundation's Prescription for Health program.
- A two-year, \$50,000, award titled Addressing Conflicts of Interest in Research CME Presentations. This award, funded by the Association of American College of Medical Colleges (AAMC) and the federal Office of Research Integrity (ORI),
- A \$74,000 subcontract with the AHRQ PBRN Resource Center at the University of Indiana to examine unreimbursed care issues in family medicine.
- A four-year, \$553,761 grant, funded by the CDC through a subcontract with Case Western Reserve University, to test a family history screening tool. Louise Acheson, MD, MS, Principal Investigator.

2006 Convocation of Practices and Networks

The Sixth Annual Convocation, sponsored by the AAFP and co-hosted by the NRN and the Federation of Practice Based Research Networks, was held March 2-5, 2006 in Dallas, TX , with the theme "Putting the Family in Family Medicine Research." Keynote speakers included James Martin, MD, former President of the AAFP and Chair of the TransforMED Board of Directors, Lee Green, MD, MPH, Professor, Department of Family Medicine at the University of Michigan, and Dr. James Bray, an expert in the importance of family in health care. Several new study ideas and concepts were presented along with research results from the AAFP Network as well as network members of the Federation of Practice-Based Research Networks.

The 2006 Convocation also included the third annual research skills training workshop. This workshop was specifically geared to the practicing family physician with an interest in research. The faculty included experts in many areas of family medicine research and the topics included such things as how to develop a research question, research design, and manuscript preparation. Based on feedback from the 2005 and 2006

workshops, plans are to adjust the curriculum to focus more on study implementation in the practices and repeat this workshop at the 2007 Convocation.

The 2007 Convocation will be held March 1-4, 2007 at the Founders Inn Conference Center in Virginia Beach, VA. The Network staff is working hard to secure funding to assist a greater number of its member physicians with the expenses for attendance at the Convocation.

Federation of Practice-Based Research Networks

The National Network staff has provided the secretariat functions for the Federation of Practice-Based Research Networks (FPBRN), which is comprised of 60 constituent and affiliated networks. Starting December 1, 2006, the Research Advocacy staff of the AAFP, also located in the Scientific Activities Division, has assumed responsibility for these functions. The FPBRN represents over 10,800 primary care clinicians and 11.5 million patients. The Federation is a joint sponsor of the Annual Convocation, with a separate track designed specifically by and for the Federation Networks.

Network Staff

The staff of the National Research Network consists of 10 FTEs: nine full-time staff located in the Leawood, KS AAFP headquarters office, and four part-time staff, totaling 1.0 FTE (including the NRN's Director) in the Department of Family Medicine at the University of Colorado Health Sciences Center. With the inclusion of indirects paid on grants received by the NRN, all staff costs are currently covered by outside funding.

The National Research Network is a part of the AAFP's Scientific Activities Division, directed by Herbert F. Young, MD, MA. This division reports to Norman B. Kahn, Jr., MD, Vice-President for Science and Education. (See Appendix 4 for a detailed organizational chart for the Network).

Wilson D. Pace, MD, FAAFP, Director

Wilson Pace is a family physician researcher who recently stopped practicing due to his extensive travel demands. He has been leading practice-based research networks since 1998. Dr. Pace is a recognized expert in ambulatory patient safety as well as advanced PBRN research methods. He became Director of the AAFP NRN in 2004.

Aaron Bonham, MS, Senior Research Associate

Aaron provides support on research projects through the various stages of implementation. He manages data as it is collected and assists with preliminary analyses.

Elias Brandt, Research Assistant

Elias provides support on AAFP NRN studies through all stages of implementation. He oversees data collection and assists with preliminary data analyses.

L. Miriam Dickinson, PhD, Senior Scientist

Miriam is an Associate Professor in the Department of Family Medicine and an Adjunct Associate Professor in the Department of Preventive Medicine and Biometrics, University of Colorado Health Sciences Center. Miriam's areas of research and teaching interest include practice-based research, health services research, research methods, and multilevel modeling.

James M. Galliher, PhD, Research Director

Jim has served as Research Director for the AAFP National Research Network since its inception. He is been responsible for the conduct, overall supervision, staffing, and budgeting of studies fielded within the NRN. Jim has a strong background in practice-based research, large-scale survey research methodology, and statistical analysis.

Deborah G. Graham, MSPH, Associate Research Director

Debbie directs the day-to-day operations of the AAFP NRN and is part of the senior research team. Debbie also serves as project manager for selected research projects and directs the Human Subjects work of the Network.

Debbi Main, PhD, Senior Scientist

Debbi is a Professor in the Department of Family Medicine, University of Colorado Health Sciences Center. Debbi also serves as the Associate Director of the Colorado Health Outcomes Program at the University of Colorado. Debbi has considerable interest and experience with mixed methods of data collection and analysis (quantitative and qualitative) with much of her research focusing on understanding and improving the quality and outcomes of primary care.

Brian Manning, MPH, CHES, Senior Research Associate

Brian became involved in research in 1999 following a brief stint in the NFL. Since then Brian has been involved in 4 large scale randomized clinical trials that address areas in smoking cessation, dietary modifications, and patient/doctor communication.

Angela Meers, MPA, Research Assistant

Angie provides support on AAFP NRN studies through all stages of implementation. She oversees data collection and assists with preliminary data analyses.

Mindy Spano, Senior Staff Assistant

Mindy provides administrative support to all NRN staff and assists with various activities within the Network. She also acts as Recording Secretary for the FPBRN.

Elizabeth W. Staton, MSTC, Writer

Elizabeth works on improving written, graphic, and electronic communication and usability. She writes and edits grant applications, papers, and other materials, and manages NRN web site. She is also an Instructor in the Family Medicine Department, University of Colorado Health Sciences Center.

Thomas V. Stewart, Research Administrator

Tom has coordinated the efforts of the NRN since its founding. He is responsible for maintaining the financial and administrative information for the NRN. He also communicates regularly with network members and facilitates studies throughout the network.

Appendix 1: Completed NRN Projects

Completed NRN Studies

Initiative to Improve Depression Care. (10/1/04-3/31/06) PI: Paul Nutting, MD, MSPH. This study was funded by six pharmaceutical companies including Pfizer US Pharmaceuticals, Eli Lilly and Company, Sanofi, Forrest, AstraZeneca, and Wyeth-Ayerst. This purpose of this project was: 1) To develop and test a process for supporting practice improvement through enhancing skills of practice champions (change agents) through a modified Improvement Collaborative; 2) To use the MAP/RAP approach to identify and test simple office systems for monitoring depression severity using the PHQ-9. The project emphasizes strategies to monitor and adjust therapy during acute and continuing phase treatment of depression; 3) To examine characteristics of office practices (values, structures, and processes) that are associated with initial adoption and ongoing maintenance of both the Improvement Team and its activities and the changes intended to improve depression and chronic care.

Estimating Rates and Describing Causes and Consequences of Testing Process Detected in Family Physician Offices. (10/1/02-9/30/05) PI: John Hickner, MD, MS. This study was funded by the Agency for Healthcare Research and Quality (AHRQ) (R21 HS013554-02) with additional funding support from the American Academy of Family Physicians. This purpose of this project was 1) To *describe* Testing Process Errors detected in family medicine practices by physicians and office staff *and estimate rates* of Testing Process Errors as reported during intensive one-week monitoring periods; 2) *To investigate causes and consequences* of these errors; and 3) *To generate hypotheses* about interventions to avert laboratory and imaging process errors in primary care practices, which we will test in subsequent studies. The article titled “Can a national primary-care error reporting system make a difference in medical practice was published in *Focus on Patient Safety* (2004) 7(1):5-6 and The article titles “Learning from Different Lenses: Report of Medical Errors in Primary Care by Clinicians, Staff and Patients. A Project of the AAFP National Research Network” was accepted for publication in the *Journal of Patient Safety* (in press). Chapters titled “The challenges and successes of institutional review board review and approval of practice-based research network patient safety research studies” and “The AAFP Patient Safety Reporting System: Needed bridges for the next chasms in patient safety” were published in *Advances in Patient Safety: From Research to Implementation*. Volume 3, AHRQ Publication No. 050021.

Physician, Staff and Patient-Reported Errors in Primary Care. (10/1/01-9/30/05) PI: John Hickner, MD, MS. This study was funded by the Agency for Healthcare Research and Quality (AHRQ) (**P20-HS11584**), with additional funding support from the American Academy of Family Physicians. This purpose of this project was 1) To understand if family doctors, their office staff, and their patients will report medical errors and lapses in patient safety during a defined, intensive study period; 2) To compare patterns of errors reported by doctors, nurse practitioners/physician assistants, other staff, and patients; 3) To estimate error rates in primary care practices as reported by physicians,

nurse practitioners/physician assistants, other staff, and patients during an intensive monitoring period; 4) To test and refine error-reporting tools for primary care practices; and 5) To explore linkage and sequence of events, when possible. The article titled "The Testing Process in Family Medicine: Problems, Solutions and Barriers as seen by physicians and their staff: A Study of the AAFP National Research Network" was published in the *Journal of Patient Safety* (2006) 2(1):25-32. The article titled "Barriers and Motivators for Making Chapters Error Reports from Family Medicine Offices: A Report from the AAFP National Research Network" has been accepted for publication in the *Journal of the American Board of Family Medicine*. Chapters titled "The challenges and successes of institutional review board review and approval of practice-based research network patient safety research studies" and "The AAFP Patient Safety Reporting System: Needed bridges for the next chasms in patient safety" were published in *Advances in Patient Safety: From Research to Implementation*. Volume 3, AHRQ Publication No. 050021.

Spirometry. (5/1/04-7/3/05) PI: Barbara P. Yawn, MD, MSc (Olmsted Medical Center). This study was funded by the National Heart, Lung, and Blood Institute (NHLBI). This pilot study is designed to assess the accuracy of spirometry testing completed in the family physicians' office. To assess the clinical value, the study also explored the impact of using spirometry on physician-assigned disease severity and care decisions. The study continued for five months to assess the ability of the practices to continue to produce high quality spirometry testing over an extended period. This information is important to determine the role and potential value of spirometry in family physicians' practices and the support requirements for maintaining high quality testing.

Improving Communications during Office Visits (ICDOV) (4/01/04-7/1/06) PI: James M. Galliher, PhD. This study was funded by Pfizer, Inc and conducted from May 2004 to July 2006. The primary aim of this study was to assess the effectiveness of the "Ask-Me-3" health communication and patient advocacy program on physician/patient communication and patient question asking during office visits. Several national presentations have been made with another presentation scheduled for 2006 NAPCRG research conference. A main effects manuscript on the effects of the Ask-Me-3 program on patient question asking and selected patient outcomes is being completed to be submitted for publication review in fall 2006.

Hyperlipidemia Survey of Family Physicians. (3/1/04-3/31/05) PI: James M. Galliher, PhD. This study was funded by the Merck/Schering Plough Joint Venture. There were two phases to this project: 1) a pilot survey of National Research Network physicians in September and October 2003 and a random sample survey of about 1200 AAFP active members with data collection completed in August 2004. This study provided baseline data on family physicians' current practices regarding coronary risk assessment and treatment. A manuscript was published by the *Journal of the American Board of Family Practice (JABFP)* [Charles R. Eaton, et al.; 2006 19(1):46-53] entitled "A national study of family physicians' knowledge, beliefs, and self-reported practice patterns regarding Hyperlipidemia".

Pharyngitis Survey. (02/15/05-12/31/04) PI: Richard E. Besser, MD (Centers of Disease Control and Prevention). This study was conducted by the American Academy of Family Physicians and the Centers for Disease Control & Prevention. Surveys were sent to 263 National Research Network physicians, 1000 other AAFP members, and 1000 AAP members. The purpose of the study was to 1) Evaluate current diagnostic methods and treatment approaches for children with Pharyngitis by primary care practitioners (pediatricians, and family practitioners); 2) Identify factors associated with the use of appropriate laboratory methods by primary care practitioners; 3) Assess the treatment regimen including antimicrobial choices, length and goals of therapy; 4) Determine the impact of full implementation of Clinical Laboratory Improvement Act (CLIA) on the performance of these tests in office settings. A manuscript entitled, "Clinicians' Management of Children and Adolescents with Acute Pharyngitis" was published by the journal *Pediatrics* [Sarah Y. Park, et al.; 2006 117(6):1871-1878].

Survey on Hepatitis C. (4/28/03-3/31/04) PI: John Hickner, MD, MS. This project, funded by Schering, conducted a survey of 1200 AAFP active members and 250 AAFP National Research Network members on issues related to the diagnosis and treatment of hepatitis C in primary care settings, including knowledge, current practices, and barriers to treatment. A manuscript of the results was published in the journal *Family Medicine* entitled "Hepatitis C identification and management by family physicians" [Elizabeth C. Clark, et al.; 2005 37(9):644-649].

Pneumococcal Immunizations among Older Adults. (09/28/01-09/27/02) PI: John Hickner, MD, MS. This study funded by AHRQ investigates the use of handheld computers by nurses/medical assistants to obtain research data from patients regarding the prevalence and barriers to pneumococcal immunizations in primary care settings. Data collection in 25 Network practices was completed in summer 2003. A revised manuscript will be submitted for publication review in fall 2006 entitled "A Comparison of Data Collection Outcomes Using Paper Forms vs. Handheld Computers in an Office Based Patient Survey: A Study from the AAFP National Research Network" [James M. Galliher, et al.].

Primary Care Network Survey (PRINS). (09/28/01-09/27/02) PI: John Hickner, MD, MS. This study was funded by AHRQ as part of a PBRN development grant to collect information on Network physicians, their practices, and patient visits. Twenty practice-based research networks participated in this survey, making this the largest study of primary care visits ever undertaken in the United States. A main-effects manuscript across all participating PBRNs has been accepted for publications by *The Annals of Family Medicine* (in press) [Helen J. Binns, et al.].

Alcohol Screening Study: "Comfortable Engaging". (2001-2002) PI: Daniel C. Vinson, MD, MSPH (Department of Family and Community Medicine, University of Missouri-Columbia). Thirteen family physicians from the National Research Network enrolled 666 patients in this randomized trial, which compares two screening tools for problem drinking. Data collection was completed in March 2002 and the study results were in *The Annals of Family Medicine* [Daniel C. Vinson, et al.; 2004 2:398-404].

Cancer Care by Family Physicians. (08/20/01-12/31/01) PI: John M. Hickner, MD, MS. This study, funded by the AAFP Annual Clinical Focus, consisted of in-depth telephone interviews with 15 Network physicians and 15 of their patients under active cancer treatment. This qualitative study sought to understand the roles of family physicians caring for their patients with cancer. Interviews were completed in April 2002. A manuscript titled "Physician and Patient Views of Cancer Care by Family Physicians: A Study from the AAFP National Research Network" has been accepted for publication in *Family Medicine* (in press) [John M. Hickner, et al.]

Bioterrorism Readiness of Family Physicians. (10/01/00-09/30/01) PI: John M. Hickner, MD, MS. This study, funded by the Agency for Healthcare Research and Quality (AHRQ), consisted of two parts: focus groups and a mail survey. The focus groups, exploring family physicians' knowledge and attitudes toward bioterrorism readiness, were completed at the March 2001 Annual Network Convocation. A mail survey subsequently was conducted with a random sample of active members of the AAFP and all Network physicians to further explore the issues raised in the focus groups. Data collection was completed in December 2001. The first manuscript from this study was published in the *Journal of Family Practice* entitled "On the front lines: Family physicians' preparedness for bioterrorism" [Frederick M. Chen, et al.; 2002 51:745-749].

Diabetes Outcomes Study. PI: Stephen J. Spann, MD (Department of Family and Community Medicine, Baylor College of Medicine). This study was a joint project of the AAFP National Research Network and Baylor College of Medicine with funding from Eli Lilly and Company. This was a descriptive study of predictors of glycemic control of patients with type 2 diabetes mellitus. Physicians from the Minnesota Academy of Family Physicians Research Network (MAFPRN) and two networks in Texas also participated. Data collection ended in April 2002 with data obtained from 138 physicians, three nurse practitioners and 834 patients. Three presentations were delivered at NAPCRG in November 2002. An additional presentation was delivered at the NAPCRG conference in October 2005. A main-effects manuscript has been accepted for publication in *The Annals of Family Medicine* (in press) [Stephen J. Spann, et al.].

Appendix 2: NRN Published Research

Journals (with Medline Abstracts)

Hickner J, Kent S, Naragon P, Hunt L. Physicians' and Patients' Views of Cancer Care by Family Physicians: A Report From the American Academy of Family Physicians National Research Network *Family Medicine* 2007; 39(2): 126-131.

BACKGROUND AND OBJECTIVES: There has been little research describing the role of family physicians in the care of patients with an active diagnosis of cancer.

METHODS: Using qualitative methods, we interviewed 15 family physicians and 15 of their cancer patients. We asked physicians about care of cancer patients in general and of the specific patient included in this study. Patient interviews focused on the role their family physician played in their care and their satisfactions and frustrations with that care.

RESULTS: The physicians reported coordinating referrals, providing general medical care, helping with decisions, and providing emotional support. Their involvement was more intense at the time of diagnosis and near death. The patients gave similar responses and also said they valued clear explanations and spending time with and feeling comfortable with their family physicians. **CONCLUSIONS:** Family physicians fulfill a number of important roles in caring for their patients with an active diagnosis of cancer. More research using representative samples is needed to determine the generalizability of these findings, but this study gives us some preliminary insight into the role family physicians play in cancer care.

Binns HJ, Lanier D, Pace WD, Galliher JM, Ganiats TG, Grey M, Ariza AJ, Williams R. **Describing primary care encounters: The Primary Care Network Survey and The National Ambulatory Medical Care Survey.** *Annals of Family Medicine* 2007 5: 39-47.

PURPOSE: The purpose of this study was to describe clinical encounters in primary care research networks and compare them with those of the National Ambulatory Medical Care Survey (NAMCS).

METHODS: Twenty US primary care research networks collected data on clinicians and patient encounters using the Primary Care Network Survey (PRINS) Clinician Interview (PRINS-1) and Patient Record (PRINS-2), which were newly developed based on NAMCS tools. Clinicians completed a PRINS-1 about themselves and a PRINS-2 for each of 30 patient visits. Data included patient characteristics; reason for the visit, diagnoses, and services ordered or performed. We compared PRINS data with data obtained from primary care physicians during 5 cycles of NAMCS (1997–2001). Data were weighted; PRINS reflects participating networks and NAMCS provides national estimates.

RESULTS: By discipline, 89% of PRINS clinicians were physicians, 4% were physicians in residency training, 5% were advanced practice nurses/nurse-practitioners, and 2% were physician's assistants. The majority (53%) specialized in pediatrics (34% specialized in family medicine, 9% in internal medicine, and 4% in other specialties). All NAMCS clinicians were physicians, with 20% specializing in pediatrics. When NAMCS and PRINS visits were compared, larger proportions of PRINS visits involved preventive care and were made by children, members of minority racial groups, and individuals

who did not have private health insurance. A diagnostic or other assessment service was performed for 99% of PRINS visits and 76% of NAMCS visits (95% confidence interval, 74.9%–78.0%). A preventive or counseling/education service was provided at 64% of PRINS visits and 37% of NAMCS visits (95% confidence interval, 35.1%–38.0%).

CONCLUSIONS: PRINS presents a view of diverse primary care visits and differs from NAMCS in its methods and findings. Further examinations of PRINS data are needed to assess their usefulness for describing encounters that occur in primary care research networks.

Spann SJ, Nutting PA, Galliher JM, Peterson KA, Pavlik VN, Dickinson LM, Volk RJ. **Management of Type-2 Diabetes in the Primary Care Setting: A Practice-Based Research Network Study.** *Annals of Family Medicine* 2006 4: 23-31

PURPOSE: We wanted to describe how primary care clinicians care for patients with type 2 diabetes.

METHODS: We undertook a cross-sectional study of 95 primary care clinicians and 822 of their established patients with type 2 diabetes from 4 practice-based, primary care research networks in the United States. Clinicians were surveyed about their training and practice. Patients completed a self-administered questionnaire about their care, and medical records were reviewed for complications, treatment, and diabetes-control indicators.

RESULTS: Participating clinicians (average age, 45.7 years) saw an average of 32.6 adult patients with diabetes per month. Patients (average age, 59.7 years) reported a mean duration of diabetes of 9.1 years, with 34.3% having had the disease more than 10 years. Nearly one half (47.5%) of the patients had at least 1 diabetes-related complication, and 60.8% reported a body mass index greater than 30. Mean glycosylated hemoglobin (HbA1c) level was 7.6% (SD 1.73), and 40.5% of patients had values <7%. Only 35.3% of patients had adequate blood pressure control (<130/85 mm Hg), and only 43.7% had low-density lipoprotein cholesterol (LDL-C) levels <100 mg/dL. Only 7.0% of patients met all 3 control targets. Multilevel models showed that patient ethnicity, practice type, involvement of midlevel clinicians, and treatment were associated with HbA1c level; patient age, education level, and practice type were associated with blood pressure control; and patient ethnicity was associated with LDL-C control.

CONCLUSIONS: Only modest numbers of patients achieve established targets of diabetes control. Reengineering primary care practice may be necessary to substantially improve care.

Park SY, Gerber MA, Tanz RR, Hickner JM, Galliher JM, Chuang I, Besser RE. **Clinicians' Management of Children and Adolescents with Acute Pharyngitis.** *Pediatrics.* 2006 Jun;117(6):1871-8

OBJECTIVE: Sore throat is a common complaint in children and adolescents. With increasing antimicrobial resistance because of antimicrobial overuse, accurate diagnosis is imperative. Appropriate management of acute pharyngitis depends on proper use and interpretation of clinical findings, rapid antigen-detection tests, and

throat cultures. We surveyed pediatricians and family physicians to evaluate their management strategies for children and adolescents with acute pharyngitis and to assess the availability and use of diagnostic tests in office practice.

METHODS: In 2004, surveys were mailed to a random sample of 1000 pediatrician members of the American Academy of Pediatrics and 1000 family physician members of the American Academy of Family Physicians. We assessed factors associated with physicians using an appropriate management strategy for treating acute pharyngitis.

RESULTS: Of 948 eligible responses, 42% of physicians would start antimicrobials before knowing diagnostic test results and continue them despite negative results, with 27% doing this often or always. When presented with clinical scenarios of patients with acute pharyngitis, < or =23% chose an empirical approach, 32% used an inappropriate strategy for a child with pharyngitis suggestive of group A Streptococcus, and 81% used an inappropriate strategy for a child with findings consistent with viral pharyngitis. Plating cultures in the office was associated with an appropriate management strategy, although not statistically significant. Solo/2-person practice and rural location were both independent factors predicting inappropriate strategies.

CONCLUSIONS: There is much room for improvement in the management of acute pharyngitis in children and adolescents. Most physicians use appropriate management strategies; however, a substantial number uses inappropriate ones, particularly for children with likely viral pharyngitis. Efforts to help physicians improve practices will need to be multifaceted and should include health policy and educational approaches.

Eaton CB, Galliher JM, McBride PE, Bonham AJ, Kappus JA, Hickner J. **Family Physician's Knowledge, Beliefs and Self-Reported Practice Patterns regarding Hyperlipidemia: A National Research Network (NRN) Survey.** *Journal of the American Board of Family Medicine, January-February 2006; 19: 46-53.*

Objective: Family physicians have the potential to make a major impact on reducing the burden of cardiovascular disease through the optimal assessment and management of hyperlipidemia. We were interested in assessing the knowledge, beliefs, and self-reported practice patterns of a representative sample of family physicians regarding the assessment and management of hyperlipidemia 2 years after the release of the evidence-based National Cholesterol Education Program (NCEP) Adult Treatment Panel (ATP) III guidelines.

METHODS: A 33-item survey was mailed to a random sample (N = 1200) of members of the American Academy of Family Physicians in April of 2004, with 2 follow-up mailings to nonresponders. Physicians were queried about sociodemographic characteristics, their knowledge, attitudes, and self-reported practice patterns regarding the assessment and management of hyperlipidemia. Four case scenarios also were presented.

RESULTS: Response rate was 58%. Over 90% of surveyed family physicians screened adults for hyperlipidemia as part of a cardiovascular disease prevention strategy. Most (89%) did this screening by themselves without the support of office staff, and 36% reported routine use of a flow sheet. Most had heard of the ATP III guidelines (85%), but

only 13% had read them carefully. Only 17% of respondents used a coronary heart disease (CHD) risk calculator usually or always. Over 90% of those responding reported using low-density lipoprotein (LDL) as the treatment goal but only 76% reported using non-high-density lipoprotein (HDL) cholesterol as a secondary goal of therapy.

CONCLUSION: We found a large variability in knowledge, beliefs, and practice patterns among practicing family physicians. We found general agreement on universal screening of adults for hyperlipidemia as part of cardiovascular disease prevention strategy and use of LDL cholesterol as a treatment goal. Many other aspects of the NCEP ATP III guidelines, such as use of a systematic, multidisciplinary approach, using non-HDL cholesterol as a secondary goal, routinely using a CHD risk calculator for risk assessment to guide cholesterol management, have not yet penetrated into self-reported clinical practice.

Elder NC, Graham D, Brandt E, Dovey S, Phillips R, Ledwith J, Hickner J. **The Testing Process in Family Medicine: Problems, Solutions and Barriers as Seen by Physicians and Their Staff: A study of the American Academy of Family Physicians' National Research Network.** *Journal of Patient Safety* (2006) 2 (1):25-32.

Objective: Family physicians order laboratory, imaging, and diagnostic tests on a significant portion of their patients. Problems with the testing process, including the steps of ordering tests, tracking and responding to results, notifying patients, and following up with patients, and potential improvement strategies have not been well described. Our objective is to assess problems with the testing process, potential solutions, and barriers to implementation of solutions, as perceived by family physicians and their office staff.

Methods: Focus groups were held with physicians and staff at 8 geographically diverse practices of the American Academy of Family Physicians' National Research Network who were participating in an errors-reporting study. Participants were asked about testing process errors, problems, and potential improvements. Analysis was by the editing method.

Results: A total of 139 people participated in 18 focus groups. Participants identified problems with all steps in the testing process, and also noted that filing and charting problems existed in most steps in the testing process. Underlying contributing factors included not following procedures, inadequate systems, lack of standardization, and communication problems. Perceived barriers to improvements were both cultural (leadership and staff support, tension for change) and process-related (costs, staff and work environment, external support). Desired improvements included technology, more staffing, and improved systems.

Conclusions: Family physicians and their staff easily identified errors and their contributing factors in their testing processes. Desired improvements tended to be quick fixes that may not adequately address the identified errors and barriers to improved safety in the testing process. (Publication abstract. Medline abstract not available).

Phillips RL, Dovey SM, Graham D, Elder NC, Hickner JS, **Learning from Different Lenses: Reports of Medical Errors in Primary Care by Clinicians, Staff and Patients. A Project of the AAFP National Research Network.** *Journal of Patient Safety* (2006) 2 (3):140-146.

Objectives: To test whether family doctors, office staff, and patients will report medical errors and to investigate differences in how and what they report.

Methods: Clinicians, staff, and patients in 10 family medicine clinics of the American Academy of Family Physicians' National Research Network, representing a diversity of clinical and community settings, were invited to report errors they observed. They were asked to report routinely during 10 weeks and to report every error on 5 specific days. They submitted anonymous reports via a Web site, paper forms, and a voice-activated phone system.

Results: Four hundred one clinicians and staff reported 925 errors within 717 events, 37% (265) of which came from the 5 intensive reporting days and 61% (440) from routine reports. Staff made 384 (53%) reports and clinicians, 342 (47%) reports. Most (96%) errors reported were process errors, not related to knowledge or skill. Staff reported more errors in patient flow and communication; clinicians reported more medication and laboratory errors. Reports suggest that patients with complex health issues (31% versus 20%, $P=0.013$) are vulnerable to more severe outcomes. Patients submitted 126 reports, 18 of which included errors.

Conclusions: Clinicians and staff offer different and independently valuable lenses for understanding errors and their outcomes in primary care, but both predominantly reported process- or system-related errors. There is a clear need to find more effective ways to invite patients to report on errors or adverse events. These findings suggest that patient safety organizations authorized by recent legislation should invite reports from a variety of health care workers and staff. (Publication abstract. Medline abstract not available).

Clark EC, Yawn BP, Galliher JM, Temte JL, Hickner, JM. **Hepatitis C Diagnosis, Management, and Treatment by Family Physicians.** *Family Medicine* 2005 Oct;37(9):644-649

BACKGROUND AND OBJECTIVES: Many people with hepatitis C receive all or most of their care from primary care physicians, yet little information exists about the practice patterns, knowledge, and beliefs and attitudes of family physicians related to hepatitis C.

METHODS: We mailed a written survey to a random sample of active members of the American Academy of Family Physicians.

RESULTS: Nearly all respondents (94%) reported at least one patient with hepatitis C in their practice, and 66% had diagnosed at least one new case of hepatitis C in the past year. While most respondents (85%) correctly identified common hepatitis C risk factors, only 63% reported routinely asking patients about those risk factors.

Respondents (74%) preferred to involve specialists in the care of hepatitis C patients, but half (50%) reported barriers to referral. A small number (5%) of respondents have prescribed antiviral medication within the past year. Most respondents think family

physicians should screen (94%), diagnose (98%), and provide general care (69%) for hepatitis C patients.

CONCLUSIONS: Family physicians know how to identify high-risk people and test for hepatitis C. Most prefer to refer patients with hepatitis C to specialists for workup and treatment but report frequent barriers to those referrals.

Vinson DC, Galliher JM, Reidinger C, Kappus JA. **Comfortably engaging: Which approach to alcohol screening should we use?** *Annals of Family Medicine* 2004 2: 398-404.

PURPOSE: We wanted to compare 2 screening instruments for problem drinking, the CAGE and a single question, assessing frequency of use, patient and clinician comfort, and patient engagement in change.

METHODS: The study was a crossover, cluster-randomized clinical trial with 31 clinicians in Missouri and 13 in the American Academy of Family Physicians (AAFP) National Network for Family Practice and Primary Care Research; 2,800 patients provided data. The clinician was the unit of randomization. Clinicians decided whether to screen each patient; if they chose to screen, they used the screening approach assigned for that block of patients. The clinician and patient separately completed questionnaires immediately after the office visit to assess each one's comfort with screening (and any ensuing discussion) and the patient's engagement in change.

RESULTS: Missouri clinicians screened more patients when assigned the single question (81%) than the CAGE (69%, $P = .001$ in weighted analysis). There was no difference among AAFP network clinicians (96% of patients screened with the CAGE, 97% with the single question). Eighty percent to 90% of clinicians and 70% of patients reported being comfortable with screening and the ensuing discussion, with no difference between approaches in either network. About one third of patients who were identified as problem drinkers reported thinking about or planning to change their drinking behavior, with no difference in engagement between screening approaches.

CONCLUSIONS: Clinicians and patients reported similar comfort with the CAGE questions and the single-question screening tools for problem drinking, and the 2 instruments were equal in their ability to engage the patient. In Missouri, the single question was more likely to be used.

Lindbloom EJ, Ewigman BG, Hickner JM. **Practice-based research networks: the laboratories of primary care research.** *Medical Care*. 2004 Apr;42(4 Suppl):III45-9.

Medical research has traditionally been based in academic centers, and the findings are frequently not applicable in community primary care settings. The result is a large gap between the possible and the practical in delivering high-quality primary medical care in the United States. Practice-based research networks (PBRNs), laboratories for primary care clinical research, are the appropriate vehicles for uniting the worlds of community primary care practice and clinical research. Although they have received little attention in the mainstream of clinical and health services research, PBRNs have already reported a variety of findings useful for primary care providers, and these networks have helped to identify key issues in healthcare delivery that affect important outcomes. In

this report, we outline the rationale for and history of PBRNs. We describe the organization and work of several productive PBRNs, giving examples of their studies that have changed the standards of modern primary care practice. Finally, we describe a developing electronic process for identifying research questions obtained directly from primary care providers that can be used to focus the national primary care research agenda on questions of clinical relevance and importance. As electronic technologies are fully developed and tested, they will facilitate communication between clinicians and researchers, thereby improving the effectiveness and efficiency of practice-based research.

Elder NC, Graham D, Hickner J. **Can a national primary-care error reporting system make a difference in medical practice.** Focus on Patient Safety (2004) 7(1):5-6. In 2001, the American Academy of Family Physicians established the AAFP Center for Evaluation and Research in Patient Safety in Primary Care, funded in part by the Agency for Healthcare Research and Quality. In 2002, building on our prior research in errors reporting by family physicians, we developed a web-based medical errors reporting system to serve as the central element for patient safety research and quality improvement program development. In 2003, we tested the errors reporting system in two pilot studies in 18 family physician offices/clinics, including eight residency training sites. In one of these studies, we asked physicians and staff of eight of these offices/clinics to report only on errors related to the lab and imaging testing processes. Over 700 errors were reported in a six-month period. We then visited all eight practices and held focus groups to assess the effect of participation in the errors reporting study on the individuals and the practices. In all offices there was increased awareness of errors and the need to have a systematic approach to ordering, tracking, notifying patients of results, and follow-up. Most of the offices improved at least one of their procedures for ordering and managing test results or were actively contemplating changes. We conclude that participation in errors reporting motivates changes in family practice office systems. Our next step is to incorporate specific feedback loops into the errors reporting system and to develop focused quality improvement programs using errors reporting as a central element. (Author's abstract – no Medline abstract available)

Dovey SM, Meyers DS, Phillips RL Jr, Green LA, Fryer GE, Galliher JM, Kappus J, Grob P. **A preliminary taxonomy of medical errors in family practice.** Quality and Safety in Health Care (2002) Sep;11(3):233-238.
OBJECTIVE: To develop a preliminary taxonomy of primary care medical errors.
DESIGN: Qualitative analysis to identify categories of error reported during a randomized controlled trial of computer and paper reporting methods.
SETTING: The National Network for Family Practice and Primary Care Research.
PARTICIPANTS: Family physicians.
MAIN OUTCOME MEASURES: Medical error category, context, and consequence.
RESULTS: Forty two physicians made 344 reports: 284 (82.6%) arose from healthcare systems dysfunction; 46 (13.4%) were errors due to gaps in knowledge or skills; and 14 (4.1%) were reports of adverse events, not errors. The main subcategories were:

administrative failure (102; 30.9% of errors), investigation failures (82; 24.8%), treatment delivery lapses (76; 23.0%), miscommunication (19; 5.8%), payment systems problems (4; 1.2%), error in the execution of a clinical task (19; 5.8%), wrong treatment decision (14; 4.2%), and wrong diagnosis (13; 3.9%). Most reports were of errors that were recognized and occurred in reporters' practices. Affected patients ranged in age from 8 months to 100 years, were of both sexes, and represented all major US ethnic groups. Almost half the reports were of events which had adverse consequences. Ten errors resulted in patients being admitted to hospital and one patient died.

CONCLUSIONS: This medical error taxonomy, developed from self-reports of errors observed by family physicians during their routine clinical practice, emphasizes problems in healthcare processes and acknowledges medical errors arising from shortfalls in clinical knowledge and skills. Patient safety strategies with most effect in primary care settings need to be broader than the current focus on medication errors.

Chen FM, Hickner J, Fink KS, Galliher JM, Burstin H. **On the front lines: Family physicians' preparedness for bioterrorism.** *Journal of Family Practice* (2002). September (51):745-749.

OBJECTIVE: The events of September 11, 2001, and the nation's recent experience with anthrax assaults made bioterrorism preparedness a national priority. Because primary care physicians are among the sentinel responders to bioterrorist attacks, we sought to determine family physicians' beliefs about their preparedness for such an attack.

STUDY DESIGN: In October 2001 we conducted a national survey of 976 family physicians randomly selected from the American Academy of Family Physicians' active membership directory.

POPULATION: 614 (63%) family physicians responded to the survey.

OUTCOMES MEASURED: Physicians' self-reported ability to "know what to do as a doctor in the event of a suspected bioterrorist attack, recognize signs and symptoms of an illness due to bioterrorism, and know where to call to report a suspected bioterrorist attack."

RESULTS: Ninety-five percent of physicians agreed that a bioterrorist attack is a real threat within the United States. However, only 27% of family physicians believed that the US health care system could respond effectively to a bioterrorist attack; fewer (17%) thought that their local medical communities could respond effectively. Twenty-six percent of physicians reported that they would know what to do as a doctor in the event of a bioterrorist attack. Only 18% had previous training in bioterrorism preparedness. In a multivariate analysis, physicians reported that preparedness for a bioterrorist attack was significantly associated with previous bioterrorism preparedness training (OR 3.9 [95% CI 2.4-6.3]) and knowing how to obtain information in the event of a bioterrorist attack (OR 6.4 [95% CI 3.9-10.6]). **CONCLUSIONS:** Only one quarter of family physicians felt prepared to respond to a bioterrorist event. However, training in bioterrorism preparedness was significantly associated with physicians' perceived ability to respond effectively to an attack. Primary care physicians need more training in bioterrorism preparedness and easy access to public health and medical information in the event of a bioterrorist attack.

Book contributions

Dovey SM, Hickner JM, Phillips R. **Developing and using taxonomies of errors.** In: Walshe K, Boaden R. *Patient Safety: Research into Practice.* November 2005. ISBN: 0335218539. Open University Press, Berkshire, England. **(First prize winner in the Basis of Medicine category at the 2006 British Medical Association Book of the Year competition)**

Phillips RL, Dovey SM, Hickner JM, Graham D, Johnson M, Robinett T. **The AAFP Patient Safety Reporting System: Needed bridges for the next chasms in patient safety.** *Advances in Patient Safety: From Research to Implementation. Volume 3, AHRQ Publication No. 050021 (3).* February 2005. Agency for Healthcare Research and Quality, Rockville, MD.

The Institute of Medicine makes the case that patient safety data are a critical input for redesigning care processes in ways that will make health care safer. Mandatory and voluntary error-reporting systems are sources of such data. However, a chasm of legal and practical problems exists between the collection of error reports and responding to reporting providers to improve the quality and safety of the systems in which they work. Between 2000 and 2004, the American Academy of Family Physicians (AAFP) developed and tested a voluntary error-reporting system. In this paper we discuss the current design of the AAFP's system and the legal and practical constraints that stand in the way of its becoming a more robust quality-improvement tool. We explain decisions to make the reporting system Web-based (rather than paper-based), to be anonymous (rather than confidential), to not provide direct or specific feedback to reporters, and to make it capable of receiving reports of both "sentinel" events and "intensive" reporting. This paper will clarify what is currently done with error reports and how, despite current limitations, the reporting system informs and promotes a variety of other quality initiatives of the AAFP. We also highlight how this reporting system could more robustly improve patient safety and quality in health care if legislative and other remedies are implemented to bridge the existing chasm.

Graham DG, Pace W, Kappus J, Holcomb S, Galliher JM, Duclos CW, Bonham AJ. **The challenges and successes of institutional review board review and approval of practice-based research network patient safety research studies.** *Advances in Patient Safety: From Research to Implementation. Volume 3, AHRQ Publication No. 050021 (3).* February 2005. Agency for Healthcare Research and Quality, Rockville, MD.

Background: Institutional review board (IRB) approval of research that involves the collection of medical error reports is a major challenge. The process includes issues of

confidentiality, privacy, discoverability, informed consent, and Web site security. The challenges are more complex for multisite research. This paper describes the approaches taken by the American Academy of Family Physicians (AAFP) and the University of Colorado (CU) to address the challenges and barriers created by the IRB approval process for multisite patient safety research studies.

Methods: Between 2001 and 2004, the AAFP and CU conducted several patient safety studies involving primary care practices in three practice-based research networks (PBRNs). The AAFP conducted two pilot studies in 18 primary care clinics in which error reports were submitted by physicians, staff, and patients. The AAFP sought approval from 15 different IRBs for these studies. CU conducted a 3-year project that collected medical errors from 38 primary care practices affiliated with seven separate IRBs.

Results: AAFP successfully obtained approval from all 15 IRBs. Several sites required approval from risk management and legal departments. CU obtained approval for the primary study from seven IRBs and two hospital research committees. Secondary studies required additional approvals. Overall, the two projects had a high level of success in obtaining IRB approval. There was great variation in submission requirements, level of review, length of time to obtain approval, and required revisions.

Conclusion: PBRN research often includes atypical, multisite research activity, with practices simultaneously serving as research subjects and investigators. The high-risk nature of patient safety work further complicates this situation. Investigative work with the Office for Human Research Protections and the Agency for Healthcare Research and Quality to create a central IRB process could greatly facilitate work of this nature.

NRN Research Accepted for Journal Publication

Elder NC, Graham D, Brandt E, Hickner J. **Barriers and motivators for making error reports from family medicine offices: A report from the American Academy of Family Physicians National Research Network.** *Accepted for publication in Journal of the American Board of Family Medicine (in press).*

Graham DG, Spano M, Manning B. **The IRB Challenge for Practice-Based Research: Strategies of a National Research Network. Is It Time To Move Towards an Alternative Review Model?** *Accepted for publication in Journal of the American Board of Family Medicine (in press)*

Graham DG, Spano M, Stewart T, Staton E, Meers A, Pace W. **Strategies for Planning and Launching PBRN Research Studies: A Project of the AAFP National Research Network (AAFP NRN).** *Accepted for publication in Journal of the American Board of Family Medicine (in press).*

Appendix 3: The NRN’s contributions to the AAFP’s Strategic Objectives

Objective 1.6: “Increase awareness about FPs and their value”

The NRN, by publishing research results:

- In peer-reviewed journals
- from data generated in FM practices
- by FPs
- in studies with FP Principal Investigators

demonstrates the value of FPs to both the public and academia.

Objective 2.2: “Promote a culture of innovation into practice”

By participating in NRN studies (such as the current Prescription Methods Assessment Project (PMAP)), family physicians have an opportunity to put to the test some of the newest innovations in healthcare delivery.

Objective 2.3: “Integrate technology advances into all aspects of practice”

NRN projects such as the Patient Safety Studies, the Spirometry in Primary Care project, and the Family Healthware Tool Evaluation project have brought technology advances into NRN practices and have allowed NRN investigators to examine the impact of this technology on practice.

Objective 3.3: “Integrate quality and process improvement into all levels of learning”

QI and process improvement are integral parts of a majority of NRN studies. Two examples include the NRN’s Improving Depression Care study and the Patient Safety projects completed by the Network.

Objective 3.4: “Enhance the role of Family Medicine in Academic Health Centers ”

The NRN actively works with Academic Health Centers and Schools of Medicine

Objective 3.5: “Support strengthened education of students and residents

The AAFP-NRN has recently established a separate residency membership category. This allows residencies, as an entity, to join the NRN and participate in studies specifically geared toward residency practices. Currently, 62 residencies have joined the NRN. The involvement of FM residencies in the NRN allows the residents the opportunity to participate in the generation of new knowledge in the practice setting. The NRN is also working with others both inside and outside the AAFP to develop research curriculum tools, accessible online, for residencies.

Objective 4.2 “Enhance member abilities to deliver the healthcare their patients need”:

By participating in NRN studies, Family Physicians can stay on the forefront of new

knowledge that will directly and positively affect their ability to deliver the highest quality, evidence-based healthcare to their patients.

Objective 4.4: “Bolster patient safety initiatives”

The AAFP-NRN has conducted four major patient safety projects. These studies have resulted in, to date, seven peer-reviewed articles published (with more under development), one published conference proceedings, and over two dozen presentations.

Objectives 5.1: “Improve the image and identity of family physicians” and 5.3: “Bolster communications efforts to other members of the House of Medicine”

As leaders in the field of practice-based research, the staff of the AAFP-NRN has been requested to provide technical and administrative advice on PBRNs to the American College of Physicians and the American College of Cardiology. NRN staff also serve on the AHRQ PBRN Resource Center Steering Committee and are represented at the Institute of Medicine (IOM).

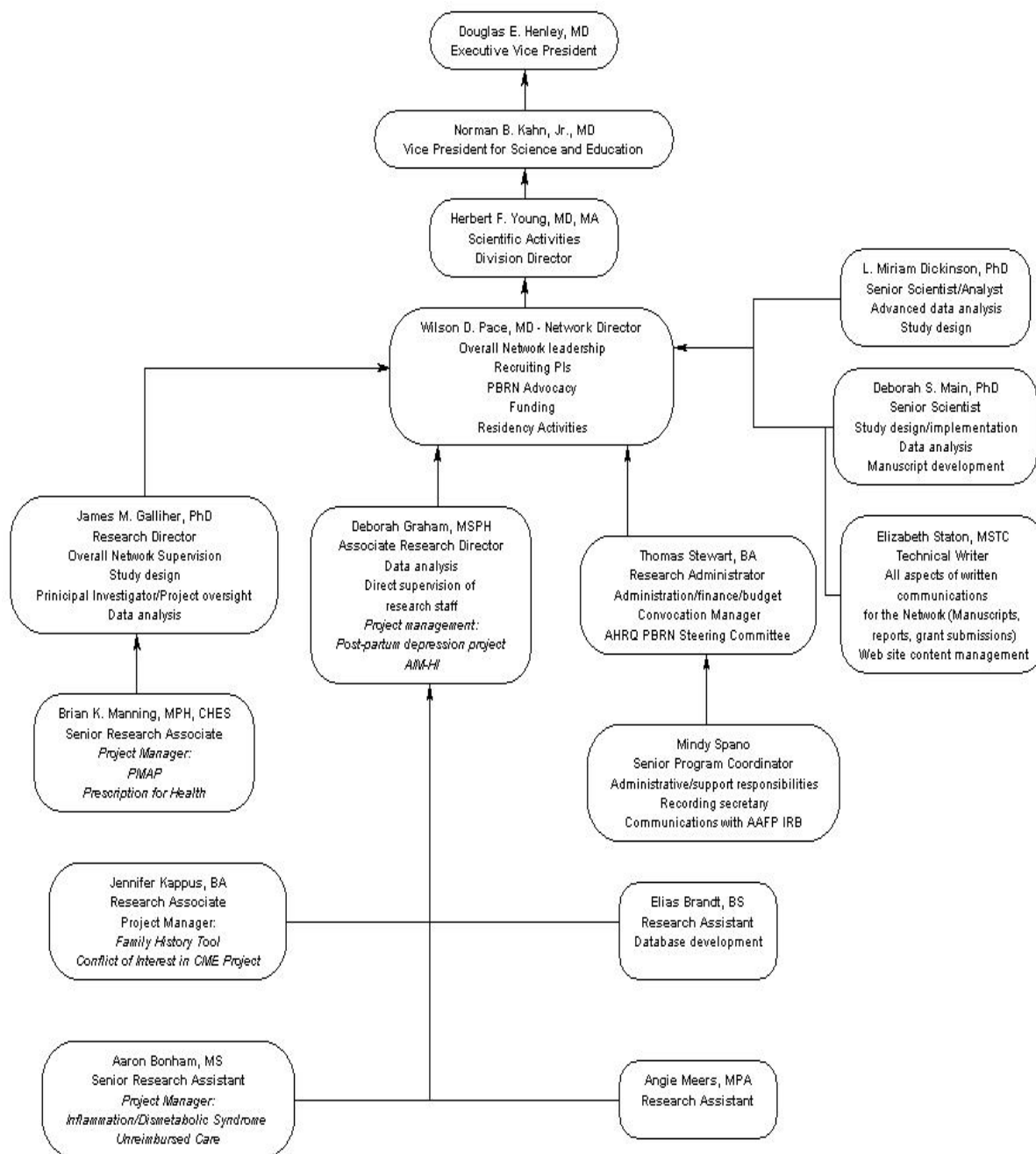
The NRN has conducted research projects, cooperatively, as equal partners, with the following specialties: general internal medicine, general pediatrics, psychiatry, and pulmonology.

Objective 6.1: “Assure family physicians are trained in the full scope of family medicine”

Some examples of how the NRN works to enhance the training activities for family physicians include:

- CME offerings at the NRN Convocation
- The NRN’s residency activities
- NRN leadership presentations at such venues as the National Conference and the Scientific Assembly

Appendix 4: AAFP National Research Network Staff Matrix with Primary Responsibilities Outlined



Appendix 5: How a research questions becomes a Network project

The Network's senior scientists are approached on almost a weekly basis with a study idea or research question for the Network's consideration. In order to keep the NRN's research agenda focused and to determine the feasibility of proposed projects, the schema below shows how an idea becomes a project of the Network

Basic Schema for All Studies Within the National Research Network

