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RUPRI Center for Rural Health Policy Analysis

**Information Technology and Rural Health Networks:  
An Overview of Network Practices  
P2004-3**

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## **Abstract**

This paper focuses on the use of information technology (IT) in rural health networks. We conducted detailed interviews with spokespersons for 15 rural health networks that received funding from the federal Rural Health Network Development Grant program. In general, we found that IT was most beneficial to the network when it was integrated into the initial plans for network development, scaled to the needs of the specific project, and expanded to new applications only as the network itself matured to take on new tasks. With that trajectory, the use of IT was as varied as the networks in their evolution. Even within our modest sample, we found considerable variance in readiness to use IT applications, uses of IT for management and other purposes, and projections for growth in the use of IT applications.

The federal Rural Health Network Grant program had an impact on the development of IT within the networks we studied. Some networks used grant funds to purchase hardware, software, and external technical assistance. Their development as networks led them to develop email capacity, which in turn made them aware of other possible IT applications.

Rural health networks develop slowly, over time, and so does their use of IT. Since network grants are limited to three years, policy makers should consider either extending those grants or establishing a separate grant program specifically designed to support building and using IT and/or networks. Further, the availability of universal service funds and opportunities for grant support to help defray initial setup costs should be continued, with no sunset date set until rural networks and other rural providers have had sufficient time to develop their uses of telecommunications to support information systems they will use.

A final policy implication from these interviews is the value of creating a user group of networks who are trying new applications of IT. Rural networks can learn a great deal from each other about the process of implementing new initiatives through the effective use of IT, and about how specific uses of IT advance goals of improving local health care services in rural areas.



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This paper will provide an overview of how rural health networks are using information technology (IT). Detailed interviews with spokespersons for 15 rural health networks that vary in size, scope of activities, and region of the country provide a database of specific experiences in considering the use of IT, implementing the technology, and using the technology for network activities. By making the interview findings available in this paper, we hope to help other rural health networks and similar organizations make the best use of IT.

## Background

Relatively little is known about how rural health networks use IT. Information that is available addresses the general area of management information systems (MIS) or use of MIS in relation to broad functional areas. Moscovice, Wellever, and Krein (1997) reported that of 180 rural health networks surveyed, 24.4% indicated they used some form of MIS as a management tool. In addition, based on telephone surveys in 1996 and 2000, Gregg and Moscovice (2003) found that in networks of 20 or fewer members

- 21.0% reported that *at least two* members used the same network-wide information system in 1996, a percentage that declined to 19.4% in 2000
- 8.4% reported that at *all* members used the same network-wide information system in 1996, a percentage that declined to 5.4% in 2000

However, Gregg and Moscovice found that the percentage of network members sharing common programs increased in a number of functional areas:

Functional Area	Percentage of Networks with at Least Two Members Sharing Common Programs		Percentage of Networks with All Members Sharing Common Programs	
	1996	2000	1996	2000
Using substantially the same physician credentialing system	27.7	30.2	16.0	17.0
Sharing medical records among network members	11.8	17.0	6.7	8.5
Using substantially the same clinical protocols	10.9	35.7	4.2	26.4

Functional activities in which techniques and approaches are shared are potential areas where network operations can be enhanced by the use of IT. Gregg and Moscovice (2003) also reported that in 2000, 40% of networks were using an automated MIS, and 81% provided members with performance-related data. Growth in network size and diversity of membership, in network budgets, and in administrative staff are all indicators of a need for management efficiencies that effective use of IT might facilitate (Gregg & Moscovice). Gregg and Moscovice conclude their discussion of the evolution of rural health networks

with a call to discuss “the professionalization of rural health network executive roles” (p. 176). This paper provides some evidence of how networks are using IT for that purpose.

The Monitoring Report for Fiscal Year 1998 of the Rural Health Network Development Grant program contains the responses of 32 of the 34 grantees in the original funding cycle to questions regarding the use of clinical and financial MIS. Of the 32 grantees that responded, approximately three-fourths reported that they did not have a network-wide financial MIS, and no grantees reported that more than 50% of members used a network-wide clinical and financial information system (Office of Rural Health Policy, 1999). Some network participants in the AcademyHealth “Networking for Rural Health” project looked to the assistance offered through that program to improve the use of IT. A network in Maine (the Maine Health Alliance) used targeted consultation to help develop case management software to implement disease-management protocols, and the Upper Peninsula Health Care Network in Michigan used targeted consultation to help deal with a shortage of hospital coding personnel by taking advantage of the existing video conferencing system in the network (Moscovice & Elias, 2003).

Continual improvement in IT makes at least the basic uses more economical and therefore more likely to be of use to rural health networks. Most networks are in the early stages of organizational development (Moscovice, Gregg, & Lewerenz, 2003), making the consideration of how to use technology effectively a timely management activity. The most common network objective among those surveyed in 2000 was to help meet the needs of network members (Gregg & Moscovice, 2003). This objective can be achieved through functional activities, which include human resources, finance/accounting, marketing/planning, and management information (Moscovice, Gregg, & Lewerenz, 2003).

## **Overview and Organization**

In this paper, we focus on the use of IT by rural health networks. In general, we found that IT was most beneficial when it was integrated into the initial plans for network development, scaled to the needs of the specific project, and expanded to new applications only as the network itself matured to take on new tasks. With that trajectory, the current use of IT was as varied as were the networks in their evolution. Even within our modest sample, we found considerable variance in readiness to use IT applications, uses of IT for management and other purposes, and projections for growth in the use of IT applications.

The balance of this paper describes why rural health networks use IT, what applications the networks are using, how network managers and members use substantive IT applications, when IT is used during the evolution of the network, and projected future uses of IT. The detailed methodology of this study is provided in the Appendix.

## **Why do rural health networks use IT?**

Networks with a mission to use information effectively were most likely to be using IT. For example, a network whose mission was to improve access through increasing enrollment opportunities into health plans had no particular reason to adopt IT. Conversely, a network



whose mission was information collection and dissemination to advance preventive health habits saw value in IT for building a knowledge base. The leadership saw both monetary savings from sharing information electronically (versus using postage) and improvement in how rapidly information could be communicated. A network with the general mission of improving access to quality health care programs in their rural counties believed IT would make the tasks associated with coordination among multiple network members much easier: “And nowadays, when you’re trying to organize people and staff meetings and provide feedback to people, it’s so much easier.”

Some networks were using IT because of the natural interests of key members. In a network focused on improving health care among pregnant women and families with young children, “people who had been working together to get this to happen” were “technology savvy” and were distributing bylaws and other documents electronically. Simply put, “that’s the way business was done here.” It was a means of overcoming the problems otherwise associated with distances between network members. Another network informant identified one particular individual who was active in securing a network grant, who believed in the need for electronic communications.

For some networks, communications were critical to accomplishing their mission. In plans to carry out a mission of enhancing the health of people in the community through better access to services, one network, after completing a community needs assessment, identified as a priority “a need to do a better job of communicating resources that are available in the community,” which they did by developing a website. Another network also developed a website as a means of dispersing information, although this activity was not tied directly to the network’s mission. Two of the network interviewees had missions that included networking their billing and collections across providers. For these networks, using email and computer files as attachments was critical to their effectiveness. They were able to realize savings for network members due to more complete, accurate, and timely filing of billing statements (and, in turn, collections). One of those two networks saw further savings through using MSN Messaging instead of mail and phone calls (to carriers in other area codes), and from ordering supplies electronically (websites offer discounts).

Networks not yet using IT intensively might do so if their missions are served by better communications. For example, one network sought to standardize data collection and case management for seven hospitals, which it facilitated with access to that information electronically from a central source. Other networks with missions of improving communications among members might also become more frequent IT users, at least for email.

To summarize, reasons networks move quickly to utilize IT include the following:

- Direct link to advancing the explicit mission of the network
- Identification of savings through the use of technology
- Influence of leaders of the network
- Means of achieving specific priorities derived from the mission

Absence of any of these motivations to adopt IT does not necessarily argue against promoting electronic communications. However, if there is no link to the mission, if there is no personal motivator to encourage use of IT, and if there are members of the network resisting conversion to IT, there is no compelling reason to push for a technique that could become more disruptive than beneficial.

### **What IT applications are the networks using?**

The most common use of IT in network management is the same use common to many of us—communications through email. Uses of email range from limited communications to using messages with attachments as a tool in network governance and management. One network made very little use of email: “The only email correspondence we used was for the grant evaluator for this year. . . other than that, we strictly have used paper.” Another network had not used email yet, but had purchased computer equipment and software to support the network, so use could increase. Two other networks were using email to facilitate communications among network members. In networks that used email, not all members had the capability of receiving and sending email; one network manager estimated that only 70% of members were using email.

Some networks were making extensive use of email to manage the business of the network. One common use was to circulate announcements and exchange information via email. One network administrator described using email instead of faxing material to network members. Another said: “For the board, I email everything. I email notices, I attach documents, and there is certainly a decrease in postage. I have no clerical staff, and that makes a big difference as well in terms of having to copy and stuff envelopes.” One network located in a particularly remote area made extensive use of email and web-based information searches. This network’s use of the technology to assist patients was especially intriguing:

I know there have been instances where patients had questions or wanted information at the time of their visit or maybe you didn’t have something in your file or something in your textbooks or in your resource books that would really provide that information so what we’ve done is gone online or researched on the data or typed up something for them and then emailed it to the patients at their home address so that then they could pull up that information.

That same network used MSN Messaging to attach files to bills when sending the bills to their service, located a considerable distance from the network. Another network used a “Team Room” on their intranet server to enable members to access discussion groups, projects, and management information.

We found very limited use of IT for clinical purposes. Two networks were using online services for provider credentialing. One network, through a special grant, was using IT for a teleradiology program that started three years prior to our interview. The teleradiology network included three rural hospitals and three rural radiologists. Two networks were using electronic billing and collections systems. One network installed a computer specifically to

manage use of pharmaceuticals. Using a pharmacy program from All Script and software from ProMed, the system printed prescription labels based on patient identification and provided the formulary that was used by the patient's insurer. The system also flagged medications when there was a potential adverse interaction with other medications being taken by a patient. That same network provider used MediSoft for managing patient flow.

Four networks had websites in operation at the time of the interviews, and two additional networks were planning to create websites. One of the operating websites was a secondary page on a site used by a larger consortium. Network members did not use this site extensively. Another of the four websites posted information about the network and studies done by the network, but the website was not used extensively for managing the network. A third network had a website that the respondent felt "wasn't all that successful." This response was attributed to the network not being very active at the time the website became operational. The respondent added, "My members really don't use the Web very much...when they need technical information, they have other resources that they go to." That network did use the website to download teleconferences. The fourth network website had just become active at the time of the interview. They were anticipating extensive use of the site to find resources, an e-health function.

In summary, the networks contacted for this project, selected on the basis of published mission statements or goals that seemed likely to generate use of IT, were making only limited use of IT. Most networks were using email, at least for routine communications. Some networks that were doing more used email to manage the activities of the network, but none were making extensive use of listserv capacity. A few networks were using electronic systems for billing and collection. Networks were not taking advantage of IT support for clinical activities, with some exceptions related to credentialing and one example of support for prescription practices. None of the networks were making extensive use of websites.

### **How do network managers and members use substantive IT applications?**

Several networks were using internet service providers, but most of the networks were not set up to use a single internet service provider or a single source for hardware and software. Most of the networks were using telephone lines for communications. The exceptions were those with special needs, such as compression technology for digital transmission in the teleradiology program. The network using its system for pharmaceuticals also used palm pilots for providers, which included anatomy charts and the capability to go online. Networks had explored more advanced technology, but at times discovered they could not move forward because of the limitations of communications lines in their area: "We have a whole telehealth section that came through the network, that doesn't work terribly well because we don't have T1 lines. So they provided the equipment and the technical training in theory for us to be able to do that, but it hasn't really panned out at this point." Where more advanced communications lines were available, access was not always uniform throughout the network's geographical area: "We're currently, in our main community, using satellite. We also do have T1 capability...it varies by community. A lot of it is just phone modem with sometimes up to 50k, but not all the time."

As might be expected given the variability in technology and applications, only a few network officials described special steps to secure technical support for their IT systems. Three network spokespersons described using an external consultant. One network was in the process of converting their system at the time of the interview, with the help of a consultant. Another network was working with a consultant who helped write the initial network grant and was, at the time of our interview, helping them select software and learn how to use what had been selected previously, and providing report-writing support. The third network had an established relationship with a computer networking service that helped them with communications. The networking service charged a monthly rate and made two visits to the network each month in addition to being available as needed. A consultant from the service installed the network's system and was responsible for maintenance, including equipment repair and replacement. Two network respondents described their own in-house capabilities to troubleshoot and provide technical support. One of them maintained dedicated computer staff. The other was much more ad hoc, with the network manager sometimes involved in working through problems of software use.

In summary, the rural health networks in this study had not, for the most part, developed sophisticated uses of IT. Therefore, they were not using sophisticated technology and did not require special assistance to resolve technical difficulties. The few networks that were exceptions to this general scenario were using external consultants to help them choose or develop software and use it effectively.

### **When should a network focus on developing uses of IT?**

The short answer to this question is, “when it makes sense.” The few networks we found who were making the most use of IT were those for whom that use contributed directly to a major goal or activity of the network. For example, the network with teleradiology needed sophisticated equipment and high-speed communication lines for that activity. However, even within that network, the use of IT for other purposes had not advanced very much past email over telephone lines. It is essential that the timing of network development and IT solutions coincide. One network that launched an IT project discovered that necessary background research had not been done in terms of protecting confidentiality and patients' rights. They also discovered they had not achieved consensus within the network about needs of individual members versus needs of the network. Another network in this study had moved forward with IT because they were undergoing a six-month process of changing their patient information system. Until they knew what that system was, there was no need to press forward with automation.

Another timing issue is that rural health networks should not count on IT making a real contribution to network activities until potential barriers to its use have been overcome. One common barrier was readiness of the network staff, both managerial and clinical, to maximize the potential of IT. Those active in the network had to be ready to use new systems, even when the application was direct and relevant: “The biggest barrier I can think of is getting people comfortable, because it's like something new, and that's why it's taken us a while to get the system set up where we're going to start getting the patients into the computer as they call in for appointments or being able to generate a super bill, because

that's something new and different; it's not the old paper hard copy." Yet another timing issue is that rural health networks should not raise expectations that cannot be met in the near term. People in one network were frustrated when the initial elements in a multipart roll out of the system did not work. Another frustration was not getting workable answers from technical consultants, a common scenario for a period in one of the networks. Implementing a new technology and the information system that goes with it took longer than was sometimes anticipated in grant applications: "It is extremely time consuming and difficult. We just now have been able to gather the data we needed. The grant has been very helpful in allowing us to tap into resources and do research to come up with a good plan. Now we need time to implement it and the grant is running out."

In summary, the key issue in timing the implementation of any IT initiative is the readiness of network members. This includes their readiness individually, especially among the leadership, and their readiness programmatically. Networks should undertake IT initiatives only when doing so will have an immediate impact on meeting the goals of the network.

### **What is the future of IT in rural health network development?**

The future of IT in rural health network development can be viewed in terms of phases of communication enhancement. In the first phase, we should expect to see even more use of email as a principal means of communication. Network respondents in this study reported cost savings associated with that technology, as well as improved communications. At the time of the study, not all networks were equally adept at using email, in part because some of them faced problems of slower-speed lines, which frustrated email users. Not all network members were optimal users of email; some were not users at all.

A second phase of enhanced communication is collecting and exchanging information via electronic media. Collecting common information in a central place, such as the network office, can enhance planning for the network to improve services in the region. Electronic information can also help in evaluation of network activities. Creating listservs would allow network members to communicate more effectively and share information. As one network representative pointed out, using listservs could enable them to reduce the number of meetings currently held to exchange ideas and share information.

A third phase of enhanced communication is interacting with the public through electronic media. Several network representatives described a desire to do more with their websites. One possibility was to provide information to the public in their area: "Part of what we may end up doing once we get the information collected is use it as a resource to find resources, and that would be e-health. We would be using our website to do that." That network determined from feedback that people were using the website now, and they sought a wider range of users. A regional network that includes a community health center envisioned a broader network of 10 community health centers sharing the same website. Specific community-oriented programs could be managed through a website: "I think the wider-spread use of email and websites could be used locally to provide information to the public as well as the providers, which we're thinking of doing, resurrecting our website for a community diabetes program that we're starting."

A fourth phase of enhanced communication is using IT to administer health services. Three networks discussed using IT for clinical purposes. One respondent saw clinical application as the next step in the evolution of their system: “I’m hoping that at some point we get beyond patient information, demographics, and eligibility and into more clinical support services around mental health issues and physical health issues, especially around drug regimens and things like that.” A second network respondent described uses in telehealth that included communication, i.e., the transmission of data and imaging, between practitioners. The third network respondent described a desire to set up telehealth with a large regional hospital for the purposes of accessing physicians in the emergency room to help with interpretation of x-rays and EKGs. At the time of the interview, they were preparing a grant application for that project.

In sum, the future for IT in rural health network development, based on responses from this set of networks, is nearly boundless. The evolution of networks and the use of IT are parallel tracks. From these interviews, we learned that there is a progression in the use of IT that makes a great deal of sense. As a network first comes together and implements a management plan for collaboration among network members, the most logical use of IT is email. Even that modest use of IT may require considerable effort to overcome resistance by some network members and the frustration of sometimes-limited capacity in rural communications networks. When a network begins to implement collaborative projects, more sophisticated means of sharing information and taking actions based on what is available in a centralized database become relevant. At this stage, rural networks are likely to reach for consulting assistance. Beyond these basic applications of IT, the networks we interviewed described more creative applications that included sharing information with the public through websites, improving clinical care through information sharing and making information available at the bedside (palm pilots), and using telehealth applications.

### **What are the policy implications of these findings?**

The federal Rural Health Network Development Grant program had an impact in the development of IT in these networks. Some networks used grant funds to purchase hardware, software, and external technical assistance. Their development as networks, funded through the grants, led them to develop email capacity, which in turn made them aware of other possible IT applications. The first policy implication, then, is that the basic network grant program continues to be valuable as it relates to effective use of IT.

A second implication is related to the first. Rural health networks evolve slowly, over time, as does their use of IT. Since network grants are limited to three years, policy makers should consider either extending those grants or establishing a separate grant program specifically designed to support building and using information networks. Currently, rural health networks are finding ways to support IT development as part of general grants such as network and outreach grants administered by the federal Office of Rural Health Policy. As more is learned about the value of IT to network development and how networks can use IT effectively for multiple purposes, finding the means to help with IT development as a discrete activity is in the best interest of rural residents desiring stable, effective systems of health care delivery. Most of the rural networks in this study have not built IT platforms

capable of supporting other initiatives, such as electronic medical records or special quality initiatives.

A third implication is that the need continues for public policy support to extend capacity for high-speed communications links to rural providers. Any perceived lack of hard push from providers to underwrite costs of connecting distant points may be related more to the timing of when rural providers are ready to utilize such a system than to the underlying need. Therefore, we have likely not seen the end of demand for subsidies through federal and state universal service funds and interest in grant programs to compensate for initial capital expenses.

A final policy implication from these interviews is the value of creating a user group of networks who are trying new applications of IT. Rural networks can learn a great deal from each other about the process of implementing new initiatives through effective use of IT, and about how specific uses of IT advance goals of improving local health services in rural areas.

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## Appendix

### Methodology

Initial interviews were conducted from October 28, 2002, to December 20, 2002, with individuals from 15 (out of 30) rural health networks funded by the federal Office of Rural Health Policy. All interviews were conducted via telephone and lasted approximately 30 minutes. If respondents cited activity in one of the four main areas—(1) governance and management of the network, (2) providing management and clinical information services for network members, (3) providing or assisting members with community patient e-health services, (4) providing or centrally purchasing technical support services for network members—attempts were made to schedule a second interview to collect more detailed information about network activity in these areas. Six follow-up interviews were conducted via telephone from November 8, 2002, to December 23, 2002.

All interviews were tape recorded and transcribed verbatim. Interviews were read several times and coded according to 16 focus areas (and one additional section for data that could not be coded). The focus areas were based on themes that captured meaning and content shared across all interviews. A database was constructed, with responses grouped by focus area. The focus areas were as follows:

- Developing and using websites
- Management uses, including a subset focused on email
- Clinical uses, including credentials and certification
- E-health services/telehealth
- Use in database development
- Technical glitches, troubleshooting, and support (people-oriented support)
- Equipment used/technical infrastructure (technical-oriented)
- Working with telephone companies
- Barriers
- Major drivers advancing the use of technology
- Provider use of IT and provider reaction to network use of IT
- Relationship to keeping services local, rural
- Future
- Demographic information about the project (number and type of members, geographic area)
- Other funding
- Mission/focus of project

### First Phone Interview Protocol

- 1. What is the mission or focus of your network?**
- 2. How many and what type of members do you have (hospitals, clinics, nursing homes, public health units)?**
- 3. How would you describe the geographic area in which you serve? (number of counties, any physical geographic barriers, i.e., mountains)**



4. **In addition to the Rural Health Network Development Grant funds, do you receive any other funding to support the network?**
5. **Does the network use information networking technology to support the governance and management of the network?**
  - Such as use of email and attachments or a network website to support your network's board or committee work (including posting agendas and minutes, or working on documents).
  - Any other activities, projects, or systems that you can think of that are similar?
6. **Does the network use information networking technology to provide management and clinical information services for member organizations?**
  - Such as using information technology for patient referrals, reporting laboratory results, provider credentialing, quality improvement, claims management, contract management, billing, or purchasing?
  - Any other activities, projects, or systems that you can think of that are similar?
7. **Does the network use information networking technology to provide or assist members with community or patient e-health services?**
  - Such as developing or offering education programs for staff or patients on uses of e-health websites, hosting or group purchasing of e-health web services, or supporting online prescription services?
  - Any other activities, projects, or systems that are similar?
8. **Does the network use information networking technology to provide or centrally purchase technical support services for member organizations?**
  - Such as identifying potential information technology vendors for members, group purchasing of hardware or software, staff training on computer software, assisting members with HIPAA compliance, or online or onsite technical assistance?
  - Any other activities, projects, or systems that are similar?
9. **Are there any other information networking activities, projects, or systems not covered above that you can think of that your network is involved in?**

## **Second Phone Interview Protocol**

### **1. Governance/Management of the Network**

#### **a. Email**

- Does network maintain an email account for members or do members maintain own email accounts? Any members without email? Reasons/barriers—cost, availability, lack of access to computers, other?
- Is there more than one Internet Service Provider available in area—how many?
- High speed/broadband available or standard telephone speed?

- Email use probes: For board, committees/task forces, external communication? Attachments for agendas, minutes, contracts, other? Circulate documents for comment/edits within document or comment by email message? Instant messaging? Any sense of value in decreasing postage costs, doing more in shorter time, other? How long used email, any barriers, where did impetus for email come from—staff, board, other?

b. Website

- Host internally or externally? If so, by whom? Who does the content updating?
- What is maintained on site? Organizational information (members, board/committees, other), services of network? Use for communicating with members? Any consumer health information? Other?
- How long had site/any updates? Any barriers? Where did impetus for website come from—staff, board, other?

**2. Providing management and clinical information services for member organizations**

- Overview of the types of technology that you are using for \_\_\_\_\_ including an idea of the types of:
  - software,
  - hardware, and
  - kind of transmission or connectivity you have
- Drivers: Factors that influenced consideration and adoption of information networking technology
- Barriers: external/internal

**3. Providing or assisting members with community patient e-health services**

- Overview of the types of technology that you are using for \_\_\_\_\_ including an idea of the types of:
  - software,
  - hardware, and
  - kind of transmission or connectivity you have
- Drivers: Factors that influenced consideration and adoption of information networking technology
- Barriers: external/internal

**4. Providing or centrally purchasing technical support services for member organizations**

- Overview of the types of technology that you are using for \_\_\_\_\_ including an idea of the types of:
  - software,
  - hardware, and
  - kind of transmission or connectivity you have
- Drivers: Factors that influenced consideration and adoption of information networking technology
- Barriers: external/internal

**5. Other information networking activities, projects or system not covered above)**

- Overview of the types of technology that you are using for \_\_\_\_\_ including an idea of the types of:
  - software,
  - hardware, and
  - kind of transmission or connectivity you have
- Drivers: Factors that influenced consideration and adoption of information networking technology
- Barriers: external/internal

**6. Future**

- What role do you see information networking technology playing in rural health networks over the next 2-3 years?
  - For governance and management?
  - For providing management and clinical services for members?
  - For online community and/or patient e-health services?
  - Other importance?

**The following recent publications from the RUPRI Center for Rural Health Policy Analysis may be downloaded at [www.rupri.org/healthpolicy](http://www.rupri.org/healthpolicy):**

The Medicare Prescription Drug, Improvement, and Modernization Act of 2003 (P.L. 108-173): A Summary of Provisions Important to Rural Health Care Delivery. January 2004. (P2004-1)

Care Across the Continuum: Access to Health Care Services in Rural America. December 2003 (P2003-10)

Availability and Use of Health Plan Choices in Rural America: Medicare+Choice, Commercial HMO, and Federal Employees Health Benefit Program Plans. October 2003. (P2003-7)

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Enrollment in FEHBP Plans in Rural America: What Are the Implications for Medicare Reform? June 2003. (PB2003-8)

Rural Hospital HIPAA Readiness and Resource Needs. May 2003. (PB2003-6)

An Analysis of Availability of Medicare+Choice, Commercial HMO, and FEHBP Plans in Rural Areas: Implications for Medicare Reform. March 2003. (PB2003-5)

Medicare Physician Payment. January 2003. (PB2003-2)