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RUPRI Center for Rural Health Policy Analysis

Elements of Successful Rural Diabetes Management Programs

P2006-2

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The RUPRI Center for Rural Health Policy Analysis is one of eight Rural Health Research Centers supported by the Federal Office of Rural Health Policy (ORHP) Grant No. 1U1C RH03718-01. This project was funded by ORHP, Health Resources and Services Administration, U.S. Department of Health and Human Services. The specific content of this paper is the sole responsibility of the authors.

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Executive Summary

Research Objective

The objective of this project was to learn about local innovations implemented by rural chronic disease management (DM) programs, using diabetes as a proxy for all chronic diseases. We explored how local innovations overcame challenges of the rural setting in order to provide effective and efficient DM.

Summary of Findings

1. Challenges to patient participation in a DM program include low income, cultural differences, and long travel distances.

    - Study participants reported that patients experienced barriers to following prescribed treatment. However, these barriers are often a symptom of the high levels of poverty and uninsurance in rural areas. Prescription assistance programs and partnerships with local organizations or other providers are helpful.

    - Many successful DM interventions have bilingual personnel and rely on strong community ties to educate and motivate their patients.

    - Residents in rural areas face environmental factors that limit their access to care providers. Although many people who live in rural areas see these challenges as part of daily life, participants reported an ability to serve more patients more effectively when the rural environment, including weather and travel distances, is considered.

2. Initiating and sustaining DM in resource-scarce areas pose unique challenges.

    - Inadequate funding for staff, a shortage of qualified professionals, low unemployment rates, and high staff turnover are common challenges in rural areas. Health care facilities that engage their staff in ongoing education and emphasize the importance of team work and shared responsibility appear to meet those challenges. Recruiting support staff from the community and training these new employees may be another option to ease the staffing shortage.

    - Updated technologies are often cost-prohibitive and require technical expertise that is not always available in a rural setting. Membership in a collaborative helps secure funding for technology and may provide on-site technical assistance.

    - Few rural clinics have a certified diabetes educator (CDE) to conduct patient education classes due to limitations in staff time and funds for the required education. Furthermore, only diabetes education taught by a CDE is reimbursable. Many rural clinics provide diabetes education to the best of their ability without a CDE.

3. Successful DM programs in rural communities tend to have several things in common, including the following:

- Committed administrations and/or champions with the vision of providing holistic, quality health care relevant to the rural environment

- Participation in collaboratives so that they may learn from other rural DM programs by sharing implementation ideas and innovations

- Strong support systems that make the overall health and wellness of the community a priority

Background

The prevalence, cost, morbidity, and mortality associated with diabetes and other chronic conditions have resulted in the need for new models of disease management (DM) that can overcome the fragmentation and provider-centered nature of the U.S. health care system. The American Diabetes Association indicates that the management of diabetes requires an ongoing, physician-coordinated, multidisciplinary, team approach that focuses on collaboration with the patient to develop an individualized treatment plan and goals.[1] There is considerable support for a chronic care coordination model as the most effective way to address chronic disease conditions.[2, 3] However, the adaptability of such a model to rural environments has not been sufficiently examined. It is important to examine this model in the rural environment because rural is characterized by low-income populations experiencing longer periods of uninsurance and poorer health,[4] higher prevalence of diabetes,[5] fewer providers serving a low volume of patients, limited resources, and geographic and climatic constraints. A Kaiser study on Health Insurance in Rural America found that racial and ethnic minorities in rural areas are more economically disadvantaged than minorities living in urban areas.[6] Additionally, Mueller, Patil, and Boilesen found that lack of insurance, rural residence, and minority status all combine to lower the utilization of health care services.[7]

This project focuses specifically on diabetes care management and quality improvement programming as a foundation for understanding the adaptability of chronic DM programs in a rural environment.

Health care quality is being addressed from a variety of policy perspectives. The 2001 Institute of Medicine report, *Crossing the Quality Chasm*, calls for sweeping action involving a five-part strategy for change in the U.S. health care system.[3] This agenda for change includes use of evidence-based approaches to address common conditions, the majority of which are chronic. The Health Resources and Services Administration's (HRSA) Office of Rural Health Policy (ORHP) sponsors the Rural Health Outreach Grant Program, which currently has a number of grants that address services related to chronic conditions, and the Rural Health Network Development Grant Program includes grants that involve collaboration among provider organizations in relation to chronic disease care. HRSA's Bureau of Primary Health Care sponsors the Health Disparities Collaborative (HDC) program, which focuses on reducing disparities in health outcomes for poor, minority, and other underserved people. The Centers for Disease Control and Prevention (CDC) also supports state-based programs aimed at reducing the burden of diabetes overall while improving access to care and services for high-risk populations. The importance of quality improvement initiatives is recognized by the Centers for Medicare & Medicaid Services (CMS) through their funding of Quality Improvement Organizations (QIOs) in each state. The QIOs are assigned specific tasks to complete to promote effective, efficient, and quality care to patients. Although their scope is not limited to diabetes, QIOs work to improve the management of chronic disease through activities such as measuring and reporting performance, aiding in adoption and use of information technology, and redesigning care processes.

Diabetes care management is a prominent part of each of the above-mentioned Federal initiatives to address chronic disease and improve quality of care in both urban and rural areas. Increased

knowledge of the relationship between current approaches and policies and their appropriateness and affordability in rural delivery systems can help policy makers develop policies regarding chronic DM that will be effective in a rural environment.

Methods

In this study, we examined diabetes management programs as a proxy for all chronic DM programs. An initial list of Federal agencies, private foundations, and professional trade associations involved in chronic diabetes management was compiled through an Internet search and contacts with key informants. We conducted 37 telephone interviews with program administrators at the national, state, and local levels across four major diabetes initiatives: the CDC Diabetes Prevention and Control Program (DPCP), the HDC composed of Community Health Centers, CMS through QIOs, and the ORHP Outreach and Network programs. The sample was geographically stratified across six states: Maine, Nebraska, New Mexico, South Carolina, Washington, and Wisconsin. For further description of each of the programs, please see the study-related document titled *Rural Diabetes Care Management Programs: An Inventory of Sample Programs in Six States* available at http://www.rupri.org/healthpolicy/.

We used network sampling, wherein initial contacts were asked to supply names and contact information for other members of our target population. The first interviews were conducted with national representatives, which led to referrals to state-level participants. Further referrals were collected from state-level contacts to local-level participants at clinics operating in the rural environment.

The interview instrument was based on the Chronic Care Model,[8] literature searches, and research on electronic DM registries. We initiated discussions with questions on organizational and program characteristics, partnerships, challenges, effectiveness of the program, considerations made for rural facilities, and ideas about the future of DM in general. Interview duration was between one and three hours. Our results were derived empirically from responses to the interview questions. Interviews were transcribed and analyzed using NVivo qualitative analysis software, and the research team looked for similarities and differences across the geographic and organizational range. This protocol was approved by the University of Nebraska Medical Center Institutional Review Board.

Results

Challenges and Innovations Specific to the Rural Patient Population

Challenge 1: Low-income patient populations have difficulty paying for medications and services.

- Getting to the doctor regularly and taking prescribed medication is important for managing any chronic illness. Study participants discussed feeling frustrated with patients who did not keep appointments or did not follow prescribed medication instructions; however, many participants also pointed out that most noncompliance was caused by patients' inability to pay for needed medications.

Innovation 1: Find resources that target the needs of low-income populations.

- Because patients' inability to pay for expensive prescription drugs interferes with their treatment, some clinics with DM programs decided to intervene. These clinics sought funding to subsidize prescription assistance programs or on-site pharmacies that help uninsured and underinsured patients get access to necessary medications. Funding sources included Federal pharmacy programs as well as pharmaceutical company programs.

- An underinsured assistance program developed with funding from a Federal grant was described by one study participant as follows:

    - *"We have an underinsured assistance program of our own that will help with needs for persons with diabetes for not only medications and supplies, but being able to come and see our providers. That is something that [will] go away, of course, when the grant goes away, but it has been very helpful for some people here because sometimes it takes weeks, if not months, to get people on other underinsured programs through pharmaceutical companies, and we can take care of the more immediate needs through our own funding through the grant."*

    - *"A lot of people are uninsured or underinsured and may or may not be able to afford their medications. This is a big concern as far as managing their disease. We started a prescription assistance program where if they [patients] indicate that they cannot afford their medications, we refer them to our social worker who runs the patient assistance program, and they try to find ways for them to receive their medications at no cost."*

Challenge 2: Many rural areas have a culturally diverse patient population, requiring awareness on the part of clinic staff in order to deliver effective health care.

- Contrary to a commonly held belief, rural areas are often composed of populations rich in cultural and linguistic diversity. Community members tend to have lower incomes and education levels along with higher rates of unemployment and uninsurance. Participants reported that noncompliance with prescribed treatment is often a function of these challenges.

- Although some participants reported that their patient population was not diverse, other participants pointed out that diversity is not just language differences; diversity includes differences in the following:

    - Age
    - Education and literacy levels
    - Cultural and ethnic background
    - Food choices
    - Health literacy

Innovation 2a: Employ bilingual and/or culturally competent staff.

- Based on data from our interviews, many successful DM programs have bilingual and culturally competent personnel on staff and rely on strong community ties with local partners to educate and motivate their patients.

- Specific to language differences, participants stated that hiring bilingual staff—physicians, nurses, and educators—is ideal. Other helpful strategies included posting signs in a variety of languages, having materials available in many languages, and having an electronic DM registry that flags for interpreter needs.

- Participants discussed a variety of innovations that they employ to accommodate diversity in their patient population. A handful of interview participants at the national, state, and local levels believed in the benefits of training all employees (doctors, nurses, and support staff) in cultural competency. Statements converged around the notion that providers who are culturally sensitive can more effectively reach their patients and promote lasting behavioral change.

Innovation 2b: Provide education appropriate for patients' culture, age, and literacy level.

- Diabetes educators may tailor education to be culturally as well as age appropriate, which can include adjusting the speed at which classes are taught. In addition to the text, illustrations on handouts or educational materials should reflect the cultural norms of the patient population.

    - *"In talking with Native Americans, I know that when you present literature to them they want, not a picture of a white woman or man on it, but they want somebody that looks like they are from their tribe. We are very sensitive to tailoring materials and information to the population. We recently did a focus group up north close to the Canadian border and they speak a lot of French. They said they would like the information in English, but if we could do it in French also, it would be nice. We ask that question at every opportunity: 'How do you want to receive information or materials?' "*

- Using lay health educators, such as promatoras, is an excellent means of reaching patients in the community who differ culturally from those who work in health care. Promatoras are Hispanic community members who are specifically trained in health education.

- Participants achieved community outreach through local partnerships with churches, businesses, schools, or shops.

- For patients with low literacy levels, participants used illustrations with few, simple words as educational tools.

    - *"We have a bilingual CDE [certified diabetes educator] and bilingual doctors and nurses. . . . If we see . . . patient[s] [who aren't] really looking at their*

materials, we know that maybe they don't even understand Spanish or they can't read. We put information in pictures . . . so they can understand what we are telling them."

Innovation 2c: Create a patient advisory board that represents the diversity of the community.

- Some facilities have a patient advisory board that is diverse, including minority community members, elderly, and youth. One facility had a "cultural committee" as a part of its advisory board.

Challenges and Innovations Specific to the Rural Environment

Challenge 3: Long travel distances to providers can prevent patients from receiving timely and recommended care.

- Residents in rural areas face environmental factors that limit their access to care providers. Inclement weather, long travel distances to a medical home, and lack of conveniently available specialists or wellness facilities present challenges for patients with a chronic illness.

- Participants noted that although many residents see environmental challenges as part of rural life, caregivers find it is important to accommodate patients in order to alleviate these challenges and increase compliance. Participants reported an ability to serve more patients more effectively when the rural environment, including weather and travel distances, is considered.

Innovation 3a: Help coordinate transportation.

- According to participants, some DM programs offer free transportation coordinated through volunteer community organizations in order to help patients who do not have personal transportation make it to their appointments.

- Some study participants made public transportation schedules available at the clinic and printed these schedules on health literature handouts. Other clinics have a van or handibus to provide transportation to patients who need it. For example, one participant said, *"We have a van that goes and gets people who need to come in to see the doctor."*

- One participant's organization encourages carpooling among patients to help coordinate rides to their facility.

Innovation 3b: Minimize patients' travel.

- Many rural places have a shortage of health professionals, particularly specialists. Study participants reported coordinating with certain specialists in areas where they are in short supply. DM programs contract with specialists who travel to rural areas for events such as a "Diabetes Day," where all diabetes-related appointments are taken care of on one

calendar day, once per month. Specialists who visit rural clinics one day each month could include the following:

  - Endocrinologists
  - Podiatrists
  - Diabeticians
  - Ophthalmologists
  - Cardiologists

- A small number of participants discussed keeping travel distances in mind when multiple visits are required, such as when lab tests and physician consultation are both necessary. Many rural residents do not have time to drive long distances to the clinic once for the lab work, again for physician consultation, and a third time for patient education. Interview participants explained that scheduling all appointments on one day—lab work in the morning, education while the lab work is being analyzed, and physician consult later in the day after the lab results are complete—is more convenient for some patients and can help them keep necessary appointments.

  - *"[It's] one-stop shopping. Let's say if they are going there the same day, the lab's done soon enough before their appointment so that way the results are back when the patient sees the provider . . . because patients can't come one day for a lab and come three days later to see their doctor. . . . Over time [we] have recognized that for compliance we need to keep those appointments together, and while they're here, give them everything that they need."*

Innovation 3c: Utilize flexible scheduling.

- Participants stated it is important to provide flexible scheduling for appointments and educational opportunities. Participants explained that diabetes education schedules can change to meet the needs of the patient population, allowing for early morning, lunch hour, evening, or telephone diabetes classes.

  - *"They've [diabetes educators] had to change to meet the needs of the patients, where they may meet early in the morning, they may meet during lunch, they may meet with a patient after hours, they may have to do the curriculum by phone, or parts of it by phone, when the patient may have a ride this week but not next week, and that sort of thing. So they've really had to flex what they're doing with the patient, more so than [have] the providers."*

Challenges and Innovations Specific to Rural Health Care Providers and Personnel

Challenge 4: The task of keeping rural providers aware of changes in clinical guidelines can be difficult due to limited time and resources.

- Staying up-to-date with evidence-based practices is an important element of chronic care delivery.

Innovation 4a: Promote ongoing provider education using efficient information exchange.

- Provider education on patient self-management emphasizes patient-centered care and engages providers and patients as partners in improving health outcomes. As one participant stated,

    - "*I think, really, having providers learn . . . [patient] self-management and understand self-management [is important]. Because, often the provider wants them to do one thing and the patient [needs to] make sure that they have food next week. So, they're [the patient and the provider] often on a different page. . . . The provider [should] be understanding enough to [realize] what the patient needs . . . and eventually, they'll get through what [they want] them to do. And [the provider needs] to be understanding of that.*"

- Many rural providers in our study rely heavily on the Internet for information. Electronic journals, newsletters, and Listservs were mentioned as specific ways the Internet is employed by providers in rural areas.

- One network created a virtual resource center, which is staffed by a single person and described here:

    - *"This is a staff person that goes around to all the individual providers in the community, the rural health centers. [The staff person] provides them with free resource materials on any topic around patient education. And since diabetes is one of the things that we provide them materials with, we have provided all of the practices in the area with a standardized basic diabetes education brochure. It's actually a booklet, which is very low literacy to meet the needs of our population; lots of pictures, big print, and it's been standardized so that we're all saying the same thing. This staff person is continually working with the practices to find out what their needs are. If there's a change, for example in clinical guidelines, it's that person's responsibility to pull the old materials and make sure what's new and current is put in place so that we're sure that [providers] will have access to those materials and they don't have to go hunting for them."*

Innovation 4b: Participate in collaboratives to share educational resources.

- Clinic providers involved in a collaborative program benefit from efficiencies in shared knowledge, training, and materials. For example, HDC participants receive intensive programmatic training in a regional setting where participants share experiences and receive up-to-date best practice strategies. Unfortunately, many of the key clinic contacts reported facing a hardship when their sole providers were attending conferences out of the office and not providing patient care for which they are paid. Ways that some clinics were able to mitigate challenges to training include the following:

    - Participating in teleconference calls
    - Facilitating peer-to-peer discussions
    - Bringing an expert to the facility to speak or train
    - Requesting more localized or regional conferences from state- and national-level program administrators

Challenge 5: Rural providers are sometimes resistant to change.

- Simply exposing providers to best practices and educating them on key clinical guidelines is not enough to cultivate change in an organization.

- Study participants expressed frustration with some rural practitioners who practice in isolation, communicate insufficiently, and resist change. These issues, combined with inadequate funding for staff, a shortage of qualified professionals in rural areas, low unemployment rates, and high turnover, further challenge the efficacy of rural DM.

    - *"We have this big problem with a lot of the staff that are involved [in DM] looking at the process as job enlargement verses job enrichment."*

Innovation 5: Implement a team approach supported by senior clinic personnel.

- Study participants reported clinics are using an interdisciplinary team approach to care and implementing other strategies from the Chronic Care Model (Appendix A). Because implementing a DM program calls for reallocation of tasks and shifting responsibilities among staff, successful adoption of a team approach often depends on the dedication of a senior clinic manager or administrator.

    - *"It's just the way we do things now. It's a whole new way. That's how the clinic does it. We've all adapted and changed along with the [Chronic] Care Model."*

    - *"They [senior clinic personnel] do a variety of things. One is that everybody on the team is to be involved. This is not about the position champion and the doctor running this, but every single person on the team has a little responsibility towards improving the clinical outcome for the patient. And the mindset also on the provider side is, this is not just about you being able to do*

all of this but being able to relieve some of that so the rest of the staff can become involved. So an example of what they'll do might be the development of a standing order so that if the patient is missing a hemoglobin A1C or fasting lipid profile, the medical assistant or the nurse can start running and ordering that test."

Challenge 6: A shortage of qualified workers exists in rural areas.

- Local-level study participants said that people who work in a rural health care facility must wear "many hats" and are often overloaded with tasks. They expressed frustration with the shortage of qualified individuals in rural areas and a lack of funds to recruit new people to the area.

- Participants believed that their facilities could benefit from an infusion of providers with new ideas and fresh enthusiasm moving to rural areas. As one participant said,

    - "*Our unemployment rate is quite low. I advertised for an LPN and had two applicants. Our resources are smaller than they used to be, and I think we don't have the younger people coming in and the newer ideas. You get new enthusiasm and young ideas and it can be really uplifting."*

Innovation 6: Hire and train community members whenever possible.

- As a solution to staffing shortages, some participants explained that their facilities hired and trained community members, which was originally done in an effort to increase diversity of clinic staff and have more bilingual employees. This proved to be a successful method of recruiting support staff and, in some places, eventually providers. DM benefited from bilingual appointment setting, bilingual course offerings, and translated materials.

- Participants also noted that many of the bilingual/bicultural support staff can be trained in medical interpretation so that they can be conveniently brought in to patient-provider visits if an interpreter is needed.

Challenge 7: Resources required for certifying diabetes educators are limited.

- Few rural clinics have a CDE to conduct patient education classes due to limitations in staff time and funds for the required education. Furthermore, only diabetes education taught by a CDE is reimbursable. This is inconsistent with the flexible labor model in a rural setting where few staff members cover a wide variety of tasks. The following quote from a nurse at a rural clinic illustrates how the flexibility of staff is vital to the sustainability of a DM program:

    - *"Because my director and administrator were supportive, I was able to go for the things that I needed. I think that some other sites dropped out [of the DM program] because of the nursing shortage. They didn't have a nurse that they*

could designate for this many hours. There were times that in order for me to get my diabetes stuff done, it was overtime because they needed me elsewhere with other jobs."

Innovation 7: Provide affordable diabetes education without a CDE.

- Many rural clinics provide diabetes education to the best of their ability without a CDE. A nurse with a background in education may be employed for this task.

- All patients pay for diabetes education, many out-of-pocket, and are charged less than Medicare rates in order to maximize the number of patients with access to classes.

    - *"A barrier for most rural areas is money for the patients to attend [diabetes management] classes. We try to keep our costs less than what Medicare would charge because we want the private pay people to come too. A lot of times, what turns them away is when they find out there is going to be some cost involved."*

Challenges and Innovations Specific to Money and Technology

Challenge 8: Updated technologies are necessary but are often cost-prohibitive.

- Most study participants discussed the lack of financial resources as a major stressor when implementing and maintaining a DM program. Participants reported that updated technologies are needed for tracking and reporting patient information but are often cost-prohibitive and require technical expertise that is not always available in a rural setting.

- As exemplified in the following quote, clinics that do not have resources to support their software systems cannot benefit from the systems' full capabilities.

    - *"We can do a query on all patients who have a diabetic diagnosis based on age and gender. I don't think we can do it based on whether they have a particular test. Until we have it modified, we cannot query and get a list of who hasn't had an HbA1C in the last quarter."*

- Generally, our participants had an adequate number of computers but could benefit from more.

- Participants stressed that having adequate human resources for system maintenance, timely data entry, analysis, and report generation can be critical for successful use of an electronic DM registry. When asked about the most challenging aspect of having an electronic DM registry, most reported keeping up with data entry as their biggest frustration.

- *"We would like to participate with the [QIO] project, but one of our big problems has been how to report without making a position for another person we would have to pay."*

- *"We had one part-timer just entering data, and it seemed like she had it very under control. But now they took her off and put her full-time with another position. So anytime there is a gap you have to find another way of getting that information into the system."*

- The lack of integration of ancillary systems such as patient management, laboratory, and billing with an electronic DM registry can cause redundancies and inefficiencies, and decreases data integrity.

- The lack of a technically capable leader and/or inadequate funding for information technology and assistance prohibits some rural facilities from receiving the benefits of an electronic DM registry.

Innovation 8a: Take advantage of free electronic DM registries.

- An electronic DM registry is a patient-centered electronic database tool that helps providers diagnose, treat, and manage chronic diseases. For facilities that have appropriate basic hardware, software is available free of charge (Diabetes Electronic Management System [DEMS] and Chronic Disease Electronic Management System [CDEMS]). The Patient Electronic Care System (PECS) is free to members of the HDC.

  - *"The collaborative, this large quality improvement project, [requires] that teams have a registry, a way of gathering population-based data. . . . They can choose any registry they want. CDEMS happens to be open source code, which means clinics can do anything they want to it. It's also free, free, free, free, free, and so is the technical assistance, so it makes it attractive."*

  - *"We have no funding. This has all been a part of what we have incorporated into the way we do diabetes care."*

Innovation 8b: Become a member in a state collaborative or health disparities collaborative.

- Membership in a collaborative such as the HDC can help secure hardware, software, and support for technology. Collaboratives often recommend or require a specific electronic DM registry. For example, the HDC requires that participants in their program have an electronic DM registry and strongly recommends PECS, which is free of charge to HDC participants.

- Having a standardized system benefits members because it facilitates sharing knowledge and provides them with the ability to benchmark against other collaborative members.

- Technical assistance via help lines, remote technical assistance, or on-site is often provided free of charge to collaborative members.

Innovation 8c: Find a clinic leader who champions the adoption of technology.

- Clinics not involved in a collaborative relationship can also successfully implement an electronic DM registry. Clinics that successfully embrace electronic DM registries usually have a nurse or other clinic leader who champions the adoption of technology, regardless of involvement in a collaborative.

Common Ingredients in Successful Programs

Based on data from our interviews, many successful DM programs in rural communities tend to have several things in common, including the following: they have committed, dedicated leaders with the vision of providing holistic, quality health care relevant to the rural environment; they participate in collaboratives and learn from each other by sharing implementation ideas and innovations, thus showing improvements above what can be reached on an individual level; and they have strong support systems that make the overall health and wellness of the community a priority.

Dedicated Leadership

Senior clinic personnel and administrators in rural facilities set examples and are a driving force behind the culture of the clinic. Sustainable DM programs must have unwavering support from these key team members. Providers and support staff who are reluctant to change the way they practice can be a substantial stumbling block to increasing quality of care in their communities. Senior clinic personnel should be responsible for stimulating attitudinal and cultural change among clinic staff in order to initiate a DM program. Senior clinic personnel can also motivate and promote wellness to community members by means of positive personal attitudes and behaviors outside of the clinic.

- *"Well, they're [senior clinic personnel] really the ones that take the lead for getting the staff together and the training and really sort of being the champions, so to speak. Being sort of the official contact person so that we know who to call, we know what issues come up. . . . Their role is really the champion within the practice."*

- *"That's a large part of getting into the Health Disparities Collaborative. They have to show that the leadership is involved in quality improvement, that the leadership does support implementing the care model in every way—self-management, delivery system design. The leadership can show that through policies. When they write for grant renewals, they can integrate the care model into that to show that they are very invested in it. A lot of our health centers that are in the Health Disparities Collaborative have actually done what we call storyboards, which speak to each component such as self-*

management, delivery system design, and tell patients what they are doing in each area, and they have them posted in their health center.

Interviewer: So it is actually a part of the application?

It is. To show that leadership is invested. It is asked in the narrative. But there is also a phone interview, and during the phone interview, they want the medical director, executive director, and everyone on the team that is going to be involved with diabetes care to be there and show that they really understand that this is a new system of operating and what the components of the care model are."

- *"I think that when you talk about the elements of chronic care and the delivery system, you have to include the senior leadership. Because you can't accomplish any of these things without having the support of the leadership because you're redesigning other's responsibilities. You're really touching upon organizational protocols and guidelines. So I would say that's also an important element when you're addressing the delivery system."*

Participation in a Collaborative

Successful DM programs in rural communities often participate in collaboratives where members learn from one another by sharing ideas and innovations. Collaborative participants can achieve improvements beyond what can be accomplished when a program operates in isolation. Rural clinics participating in collaboratives, implementing the same electronic DM registry, and sharing technical assistance resources appear to have greater opportunities for success. When faced alone, technical challenges of a DM program and the associated electronic DM registry may be much more difficult to overcome. Additionally, collaboratives that have reporting requirements can aggregate data and provide benchmarking feedback to participants. Obligatory reporting helps make clinics accountable for assessing patient care and, thus, can facilitate quality improvement efforts. Aggregate data can also inform clinic staff as to what further improvements or education is needed.

- *"The collaborative is a great resource. We have a monthly conference call the first Thursday of every month with all the clinics that are involved in the state collaborative for diabetes and share ideas. Every month we have to send in a registry report, and we get a comparison back of how all the centers are doing."*

Collaboratives (i.e., QIOs, payers, state, and national programs) that collect standardized data provide feedback to participating clinics and other state and Federal agencies regarding the effectiveness of their DM program. This feedback can inform national standards regarding best practices.

Making the Community a Priority

In addition to participation in collaboratives and having supportive leadership, rural clinics have an obligation to provide effective care that benefits both the health of individual patients and the wellness of the community as a whole. Many of the participants in our study discussed their various efforts in promoting diabetes awareness, screenings, prevention, and education. Diabetes educators and nurses participate in health fairs, present programs at community gatherings, and educate youth through the schools about the importance of good nutrition. One educator even discussed how a community member became such a diabetes health advocate that she began monitoring people's purchases at the local grocery store.

- *"I would say that's the strength of Community Health Centers. . . . They're ingrained into working with the community. It's part of the way we think in a Community Health Center—to work with our community partners and do outreach, health fairs, become members in other kinds of community-based organizations or consortiums to help dialogue and bring awareness to the issues of diabetes in the community. So that's something that they do a lot of and it's part of . . . the way we kind of think and work in our Health Centers."*

Clinic staff who work with other local providers to provide a complete continuum of DM care can increase the viability of their own practice and provide more effective and efficient care for the community. One innovative diabetes care provider approached clinicians without DM programs, OB/GYN practitioners, optometrists, surgeons who inserted insulin pumps, and other specialists and presented them with a fruit basket. After informing the clinicians and practitioners what a DM program could do to help diabetic patients, the diabetes care provider left a packet of referrals. This outreach to other providers significantly increased program participation and offered increased care to the community.

- *"We went last year on our lunch hours and took baskets of fruit and then a packet of referrals and [told other providers in the area] what we could do for their patients."*

Discussion and Conclusion

Quantitative studies of DM programs tend toward measuring outcomes or cost savings. These studies do not capture the interplay of factors that influence the success or failure of programs at the local level in a rural setting. We focused our study on how individuals involved in DM programs in rural areas experience the program at the patient-provider level. Rural providers who have implemented DM programs are innovative and resourceful, using limited resources. Change in a rural area cannot be imposed nor can it occur one organization at a time—collaboration and community involvement are vital to program success.

A major financial challenge under diabetes management is that patient education is not reimbursable unless performed by a CDE. Current reimbursement policies state that only patient encounters and CDE work are reimbursable. This poses a problem for programs in a rural setting because staff time is valuable and often must be prioritized toward tasks that can be billed. When

staff is overloaded with work, the majority of DM activity is not a high priority because it is not reimbursable. Our contacts expressed frustration with this limitation and acknowledged that the smaller patient population in rural areas made the expense of recruiting and/or educating a CDE cost-prohibitive. Until a feasible solution is found to help rural facilities certify more diabetes educators, a plan is needed to ensure quality education is taking place in the rural setting.

Although financial assistance is available to clinics through several different funding streams, specialized knowledge and nonreimbursable time is needed to apply for grants and administer programs. Program sustainability can be placed at risk because applying for grants is a task that requires specific skills and an abundance of time.

- *"If I could just make one brief statement, because this comes up every time we go to a learning session or any of the collaborative national meetings. It is hard to do a lot of these things that are not reimbursable and yet we know that this [program] creates results. Anything you can do to improve reimbursement for, not necessarily direct patient care services, but services that still benefit patients, that would be wonderful."*

Furthermore, in the future, reimbursement may depend on a clinic's ability to provide certain indicators that can best be obtained through record abstraction or some type of electronic DM registry. If reimbursement is someday based on quality improvement data that can be tracked most efficiently through an electronic DM registry, comprehensive assistance (financial, technical, etc.) will become a necessity.

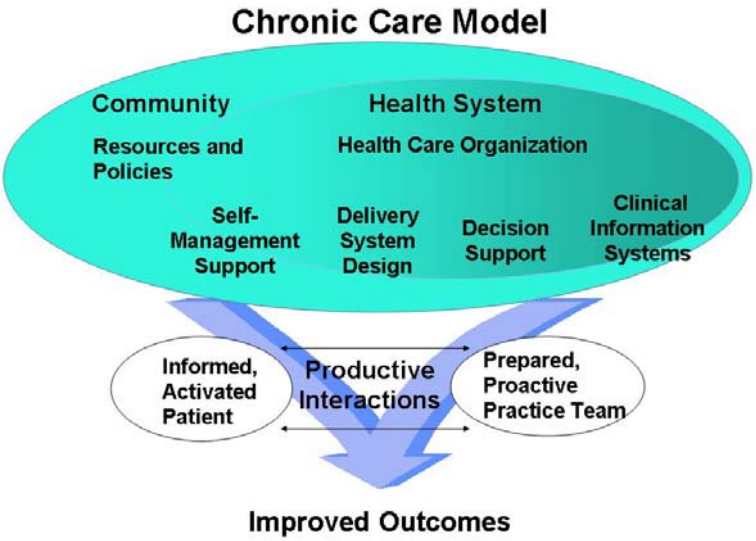
Many participants at facilities that have an electronic DM system reported an increased ability to track quality indicators and clinic/provider adherence to recommended evidence-based guidelines. With the development of pay-for-performance programs, participants felt that the capability to efficiently track certain key indicators will be critical to reimbursement in the near future.

- *"Well, I hate to be a cynic on this one, but I'm going to be. What's driving change right now is reimbursement. What's causing the changes to occur is recognition that there's a pay-for-performance criteria coming down the road."*

- *"This [pay-for-performance] is what's behind it. This is what's behind managers recommending that certain activities occur. I think there is a recognition by many clinic managers that, in order to continue to have clinics that are seen favorably by hospital management or by payers, they need to achieve certain levels of care that they were not being held accountable to in the past. They're being held accountable to those levels of care now. There's more accountability on whether care is being delivered in a manner that's consistent with the Chronic Care Model for people with chronic diseases. I think that's probably the bottom line."*

The main challenge when operating a DM program in a rural setting is to innovate and make the most of scarce resources. The flexible labor model wherein few staff members are responsible for a wide variety of tasks is one such innovation. Future reimbursement policies should consider the needs of rural clinics to remain flexible in order to optimize scarce resources.

Appendix



Source: Robert Wagner, PhD; MacColl Institute for Healthcare Innovation

The Chronic Care Model: Promoting effective change in provider groups to support evidence-based clinical and quality improvement across a wide variety of health care settings.

With support from The Robert Wood Johnson Foundation and with direction and technical assistance provided by Group Health Cooperative's MacColl Institute for Healthcare Innovation, Improving Chronic Illness Care (ICIC) was first created as a national program to test the Chronic Care Model. The Chronic Care Model was initially developed by the staff at the MacColl Institute for Healthcare Innovation as a response to the great interest in correcting deficiencies in current management of chronic illnesses such as diabetes, heart disease, depression, and asthma. Those deficiencies include rushed practitioners who do not follow established practice guidelines, a lack of care coordination, a lack of active follow-up to guarantee the best outcomes, and inadequate self-management training for patients.

According to ICIC, "Overcoming these deficiencies will require nothing less than a transformation of health care, from a system that is essentially reactive—responding mainly when a person is sick—to one that is proactive and focused on keeping a person as healthy as possible."[4] ICIC promotes the Chronic Care Model to facilitate this transformation. In summary, the Chronic Care Model encapsulates the basic elements for improving care in health systems at the community, organization, practice, and patient levels.

- *"There's definitely a change in practice. We're following the Chronic Care Model and using the flow sheet. It's helped the providers with their practice. . . . It takes less time to figure out what they need. The patients are getting better care because they reach their goals. I think the patients are much more satisfied."*

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