MODELS OF INTEGRATED HEALTH CARE: HOW DO THEY WORK IN RURAL KANSAS?

Kansas Association for the Medically Underserved (KAMU)
The Primary Care Association of Kansas

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Founded in 1989 and incorporated as a 501(c)3 in 1990, the Kansas Association for the Medically Underserved (KAMU) became recognized nationally as the Primary Care Association of Kansas in 1991. In this capacity, KAMU represents a diverse group of organizations. Membership includes public and private non-profit primary care clinics; federally qualified community health centers; private individuals who have a keen interest in service for Kansas' underserved populations; local health departments; rural health clinics and National Health Service Corps sites; and the Statewide Farmworker Health Program.

MISSION

The Kansas Association for the Medically Underserved supports and strengthens its member organizations through advocacy, education and communication

The Association is governed by a Board of Directors who are elected annually from the membership. KAMU is a chartered member of the National Association of Community Health Centers. It works in partnership with the United States Department of Health Resources Service Administration (HRSA), the U.S. Bureau of Primary Care, the Kansas Department of Health and Environment-Office of Local and Rural Health, and the State Primary Care Office.

About the Publication

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By Katie Miller
"Pure Country; Child overlooking the vastness of the Flint Hills"

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TABLE OF CONTENTS

BACKGROUND AND EXECUTIVE SUMMARY

Hundreds of thousands of Kansans have difficulty accessing health care. Insurance is the main way people gain access to care, but more than 12 percent of the Kansas population is uninsured. Many who are insured are considered underinsured because their plans inadequately cover their medical care. Access is especially problematic for the almost 800,000 people who earn incomes at or below 200 percent of the Federal Poverty Level (FPL) and are more likely to be uninsured or underinsured. Families with incomes at 200 percent of the FPL are working but earning $37,060 gross annually, for a family of three. Although access is a problem throughout Kansas, residents in the rural parts of the state face the most significant access problems because of severe shortages of primary care providers and geographic distances.

Primary care safety net clinics throughout the state are working hard to provide affordable access to care — and, in fact, provide services for about one-third of all the state's low-income uninsured. However, the clinics lack adequate resources to cover the entire state or to provide services outside of traditional primary medical care.

The "Access for All Kansans" project was initiated to address the needs of low-income and rural Kansans in accessing comprehensive, integrated, cost-effective health care services and identifying possible new models of service delivery in targeted geographic areas, particularly in rural and frontier areas in western Kansas. The United Methodist Health Ministry Fund in Hutchinson funded the project to further the efforts of a group of Kansas stakeholders — the Kansas Access Workgroup — formed to consider possibilities for increasing this access.

This project culminates the work and interest of many people, organizations and policymakers who joined together to form the workgroup. The Kansas Legislature acknowledged the need for expanded access during its 2009-2010 session, when the Senate Public Health and Welfare Committee directed the Kansas Association for the Medically Underserved (KAMU) to develop a 5-10 year safety net growth plan. Now in 2011, with a new governor and new legislators taking office, KAMU doesn't yet know whether this charge remains. However, in 2010, recognizing that the safety net clinics alone could not provide comprehensive health care services for all people in need, KAMU convened a group of stakeholders to come up with ways to better meet this need.

The workgroup includes representatives from KAMU, the Kansas Association of Community Mental Health Centers, the Kansas Association of Local Health Departments, the Kansas Dental Association, the Kansas Department of Commerce, the Kansas Department of Health and Environment, the Kansas Health Institute (KHI), the Kansas Health Policy Authority, the Kansas Hospital Association, the Kansas Medical Society and the Kansas Public Health Association.

This project involved the Kansas Access Workgroup, KHI and the University of Kansas. In its first phase, through data analyses, the project team determined existing healthcare funding by geographic areas that appear to be most underserved and under-resourced. In the second phase, the project team conducted an extensive review of the academic and gray literature to identify innovative, effective models of care and ways to pool funding. KHI and KAMU also convened stakeholders in two rural counties in western Kansas to obtain consumer input about their communities and models of care. This report summarizes findings of the project's second phase.

As in Kansas, stakeholders in other states have formed workgroups to develop plans for improved rural health care quality and access. Many states have published the outcomes of these efforts in the form of state plans. This project summary report uses commonalities found in these plans as its conceptual framework. Within this framework, the summary describes the models and reports that are the results from analyses of qualitative data collected during the community meetings about integrated care.

Integrated care is a broad concept encompassing all aspects of health care delivery including consumers, providers, technology and communities. No one model of integration exists since the concept includes multiple dimensions. The Institute of Medicine defines integrated care as health care that is "comprehensive, continuous, coordinated, culturally competent, and consumer-centered." This care can be described in terms of the approach used for coordinating care between health care providers and levels.

The principles of integrated care generalize to rural health care settings, but not easily. Delivering health care in rural areas presents significant and unique challenges. These include provider shortages, low volumes of patients, poverty and limited access to care due to geographic distances. To deliver integrated care in rural areas, providers and systems must devise creative methods to overcome such barriers. Some methods depend on information technology (IT). Even the approaches to addressing challenges are not without challenges. For example, sometimes broadband width in rural areas insufficiently facilitates the use of telehealth.

Various states have hurdled these barriers with ingenuity. For rural residents, Maine offers health care via school clinics and mobile units. The literature talks about "home-grown" providers, who are those people who live in rural communities and gain health care skills to serve their communities. For example, at least one Kansas community paid for the nursing education of a clerical staff member who later served the community as a health care provider.

North Carolina and North Dakota have creatively improved rural access, coordination and quality. Supported by supplemental state Medicaid funding for case management, Community Care of North Carolina implemented a modified Medical Home Model that saves the state more

than $160 million annually in Medicaid costs. Health care providers in rural North Dakota have established cooperative arrangements to provide local access to quality care by sharing resources, expertise, infrastructure and service delivery. Regionalization, networking, better communication and collaboration through primary care and technology rather than centralization of services, were the keys to improved accessibility, efficiency and health outcomes.

Similar to North Carolina and North Dakota, other states seek through their state plans to alleviate problems of rural health care by developing integrated systems. The plans call for formally structured relationships among providers in communities and regions. They describe the provider relationships formed and systems developed using different terms such as clusters, collaborative, systems and networks. These provider collaboratives may take the form of delivering care in different locations or co-locations. Arrangements may be between separate entities serving shared patients or an organization of professionals with client records, protocols and expenses under one administrative body. Electronic communication links professionals and flexible funding supports the care being delivered.

Various models offer guidance about forming relationships and delivering care. Providers frequently coordinate care through the Patient-Centered Medical Home Model. Other models include the Federally Qualified Health Center (FQHC) and the Advanced Practice Nurse Transitional Care Models.

Blended and braided funding mechanisms support integration. Global funding methods transform reimbursement from encounter-based to enrollment-based payments. This change fosters stable financing and recognizes the time and costs associated with delivering a broad range of services such as care coordination.

These models, funding mechanisms and IT solutions are just ideas until they are put in place. The literature discusses the experiences of other states and how they found that successful implementation consistently requires community involvement in planning, community assessment, strong leadership and shared values. During the Kansas stakeholder convenings, the importance of community involvement, leadership and values came to life. It appears that making change in Kansas will indeed require these common elements.

When discussing their communities' strengths and challenges, meeting participants echoed and breathed life into the challenges of rural health care discussed in the literature. Both counties were suffering from the effects of the bad economy, including a lack of jobs and poverty. Both had overall shrinking populations as well as sizeable groups of aging and uninsured residents experiencing difficulty accessing care due to finances, provider shortages and geography.

Integrated models of care and other methods could alleviate some of these problems but neither stakeholder group readily embraced the idea of change. When discussing options for improvement such as those found in the FQHC model and Affordable Care Act (ACA) provisions, strong values and beliefs surrounding federal vs. local roles surfaced. At both meetings, a few community leaders voiced disdain for anything starting at the federal level. Others may have held but not expressed different opinions.

However, the meetings did unearth interest in change. Some attendees at both events expressed interest in the FQHC model. In addition, members of one community said they would be interested in pursuing grants such as those offered under the ACA if they had funding and technical assistance.

This interest could grow with time and cultivation. Like the experiences of other states, with community assessment and involvement, strong leadership and shared values, these health communities would likely develop a sense of ownership of planned change and investiture in the success of its implementation.

Both communities discussed their strengths and a commitment to the health of their residents was obvious. In these locations, a platform for implementing a model of care is already in place based on this commitment, established relationships and a strong sense of community. It seems that, even with the problems rural residents face, in some ways, care coordination in small communities occurs more easily than elsewhere simply because everyone knows each other. One community thought others should emulate their system as a model of care coordination, and it appeared that some of its elements could complement formalized models.

Some Kansas Access Workgroup participants expressed interest in moving beyond the group's initial charge. Several agencies said they would include the safety net in their strategic planning, and at least one suggested that pooling financial resources to enhance and increase care would be an acceptable approach. Findings from the Access for All Kansans project work could provide the basis for future efforts in the state, to perhaps move ahead from concept to model development and — finally — possible implementation of a pilot project in a receptive rural community in the western part of the state.

Models of Integrated Health Care

1. INTRODUCTION

In 1934, the Committee on the Costs of Medical Care, funded by six private organizations including the Milbank Memorial Fund, published a report on possible solutions to curb rising health care costs in the United States. The group's first recommendation stated: "Medical services should be more largely furnished by groups of physicians and related practitioners, so organized as to maintain high standards of care and to retain the personal relations between patients and physicians."

Almost three quarters of a century later, The Commonwealth Fund found that while pockets of integrated care existed across the nation, the transition for which the committee had called had not taken place. Commonwealth's 2008 report, *Organizing the U.S. Health Care Delivery System for High Performance*, found that health care in the United States was still characterized by fragmented service delivery at the national, state, community and practice levels. Providers were practicing in the same communities, caring for the same patients and generally working independently. Commonwealth identified four examples of how this fragmented delivery was contributing to the poor overall performance of the health care system:

- patients navigate unassisted across different providers and care settings, fostering frustrating and dangerous experiences;
- poor communication and lack of clear accountability for a patient among multiple providers lead to medical errors, waste, and duplication;
- the absence of peer accountability, quality improvement infrastructure, and clinical information systems foster poor overall quality of care; and
- high-cost, intensive medical intervention is rewarded over higher-value primary care, including preventive medicine and the management of chronic illness.

The below scenario highlights some of the problems associated with fragmented health care delivery.

> *Mary has type 2 diabetes. During a foot check, her doctor found an ulcer requiring daily dressings. Because Mary's vision and mobility are limited, her doctor's office called to arrange for a home care nurse to change the dressings. Mary also received dialysis. Until her doctor's office called home care for the dressings, the home care nurse, who had been checking Mary's blood sugar at the request of the diabetes clinic, didn't know that Mary was undergoing dialysis.*

If Mary's services had been integrated, the diabetes clinic, home care and dialysis unit would have worked together to manage her care. This could have eliminated at least two services each week since both the dialysis unit and home health care were checking Mary's blood sugar. Mary's situation offers an example of how the system drives costs up with duplicated tests and services and quality down.

1.1. Integrated Care

Integrated care is a broad concept encompassing all aspects of health care delivery including consumers, providers, technology and communities. No one model of integration exists since the concept includes multiple dimensions. The Institute of Medicine defines integrated care as health care that is "comprehensive, continuous, coordinated, culturally competent and consumer-centered." This care can be described in terms of the approach used for coordinating care between health care providers and levels. Health care system literature identifies three levels of integrated care: clinical, organizational and system.

1.1.1. Clinical Integration

Clinical integration involves coordinated care and support provided to individuals in a clinical setting. The Patient-Centered Medical Home Model (PCMHM) represents one way to clinically integrate care. The PCMHM is not a location, but a health care model that provides people with timely, well-organized care and improved access to providers. In this model, the primary care provider and care manager coordinate health care services and community resources. It also helps patients and their families make healthy choices to prevent or manage chronic illness, and improves quality and safety by using health information technology (HIT) and evidence-based medicine and clinical decision-support tools.

Co-locating services offers a means of clinical integration where entities such as physical health, mental health and dental providers house in the same location, reducing administrative duplication, increasing efficiency and improving the quality of patients' experiences. However, co-location only brings about integration if the health center processes promote collaboration, communication and coordination of care among the different providers.

In Mary's case, a clinically integrated system would provide a care manager who would coordinate her dialysis treatments, regular foot and vision exams, wound care and blood sugar checks to make sure she receives appropriate care on schedule without duplicative procedures. These efficiencies would simplify treatment of Mary's chronic condition and reduce health care costs.

1.1.2. Organizational Integration

Organizational integration includes management and coordination among organizations that facilitate acute care, rehabilitation and community and primary care. These arrangements may include sharing information using HIT and coordinating care for shared patients. For Mary, organizational integration could manage other potential diseases.

Because depression is common among persons with diabetes, during check-ups, trained medical assistants at Mary's clinic would screen for depression. If Mary needs behavioral health services, they could be provided on-site because in this model, the clinic partners with a local community mental health center. In addition, Mary's providers could better coordinate her care by sharing and updating an electronic medical record (EMR) containing services rendered, treatment plans and test results. Finally, to ensure that everyone is updated, the mental health center staff and clinic staff would hold case conferences.

Overall, organizational integration would improve the quality of Mary's care in many ways. By monitoring her regularly for health issues associated with diabetes, providers could identify and treat conditions while they are easy to manage. The EMR would allow each provider to make decisions based on her complete medical history, decreasing the possibility of medical errors and duplicative testing, including lab results, medications, allergies and diagnosis. According to a sizeable body of research, this would mean more efficient and effective treatment that saves time and money.

1.1.3. System Integration

The literature identifies system integration as an approach to achieving good results in health care including cost savings, improved outcomes and increased safety. This incorporates coordinated strategic functions such as planning, financing, purchasing and service coverage in geographic areas. This occurs after a community makes progress in determining health priorities and mobilizing resources and health care systems.

System integration requires building a community coalition to create processes to improve accountability, strengthen linkages between providers and community resources and coordinate care across the community and the health care system. With system-wide integration, the coalition aims to improve the health of residents while reducing health care costs. It also shifts the health care system from episodic care to proactive care focused on actively managing health and preventing chronic illness and acute care.

In Mary's community, she could be treated for diabetes within a comprehensive regional health care system. The public health department could convene businesses, local government,

consumers, medical providers and service providers to develop common communication strategies, financial resources and technical systems to make sure the community is preventing and managing diabetes, if identified by the community as a health concern. Local providers and communities could pool resources to better serve residents with diabetes and related disorders. Mary's diabetes might have been diagnosed earlier at a community health fair's free screening offered by the health department. And, her primary care clinic, home health agency, dialysis center, family caregivers and Mary could have collaboratively developed a treatment plan to address all of her needs, including psychosocial needs.

To continue Mary's example, a care manager would coordinate the care plan based on one EMR. The community's health information exchange (HIE) network would facilitate care coordination between Mary's providers and herself to avoid duplication of health care procedures and medication mismanagement. In Mary's community, her care manager would be aware of exercise programs for older adults with chronic illness at the recreation center and about nutrition education and chronic disease self-management programs at the senior center. Both the Area Agency on Aging and the Public Health Department secured funding for these programs to help Mary's community reduce the cost of diabetes treatment on its health care system. Mary's care manager would connect her with these programs at the senior center and the recreation center. The care manager could also arrange for transportation to these programs and appointments to minimize barriers to access.

1.1.4. Integration and Rural Health Care Delivery

The principles of integrated care generalize to rural health care settings, but not easily. Delivering health care in rural areas presents significant and unique challenges. These include provider shortages, low volumes of patients and limited access to care due to geographic distances. To deliver integrated care in rural areas, providers and systems must devise creative methods to overcome such barriers. Some methods include approaches such as telehealth (considered health care via TV) and IT. Even the approaches to addressing challenges are not without challenges. For example, sometimes broadband width in rural areas insufficiently facilitates the use of telehealth and IT. And, telehealth lends itself primarily to care for which providers don't need to examine patients (e.g., mental health).

Various states have hurdled these barriers with ingenuity. For rural residents, Maine offers health care via school clinics and mobile units. The literature talks about "home-grown" providers, who are those people who live in rural communities and gain health care skills to serve their communities. For example, at least one Kansas community paid for the nursing education of a clerical staff member who later served the community as a health care provider. North Dakota and North Carolina have also creatively improved access, coordination and quality.

North Carolina

North Carolina offers another example of integrated care delivered throughout the state, including rural areas. Community Care of North Carolina (CCNC) implemented a modified medical home model by sharing care coordinators in cooperation with the state Medicaid authority that pays an annual $3.00 per-patient fee for care coordination. According to independent cost-benefit analyses, this arrangement not only helps consumers and providers, but saves the State of North Carolina more than $160 million annually in Medicaid expenses.

CCNC organized a large group of physicians and leaders in health care who support the medical home model. Because of CCNC's statewide structure, members come from every county in North Carolina and speak up on behalf of CCNC. CCNC says this powerful voice is difficult for state legislators to ignore when enacting health legislation.

North Dakota

North Dakota also represents states that have found creative ways to deliver integrated care in rural areas. Enhanced communication and collaboration rather than centralization of services held the keys to quality and accessible health care in North Dakota.

Health care providers in rural North Dakota have established cooperative arrangements to provide local access to quality care by sharing resources, expertise, infrastructure and service delivery. One example is the Northland Healthcare Alliance (NHA), a virtual network that resulted from a collaboration of hospitals and long-term care facilities whose goal is to provide rural residents with the same access to quality care as people receive in more populous parts of the state.

The NHA approaches this goal from different angles. The NHA shares services such as capital equipment purchasing and maintenance, accounts receivable and collections, employee benefits, group contracting, education, grant development and marketing. NHA welded together diverse funding streams to reduce operating costs, increase buying power and purchase resources to be pooled. A shared mobile magnetic resonance imaging (MRI) service allows residents to receive affordable care locally. Midlevel practitioners staff satellite clinics and keep in telephone contact with physicians, who travel a circuit to each satellite clinic on a regular schedule. The NHA says this cooperative effort not only keeps revenue local; it also reduces travel time and cost for patients. The NHA provided critical support for securing grant funding to create new FQHCs in three rural communities. In addition, a rural Mental Health Consortium provides mental health services in remote areas through clinical nurse specialists with authority to prescribe psychotropic medications.

North Dakota uses various forms of technology to improve coordination and bridge gaps in service provision. Some North Dakota home health agencies use telemedicine to monitor patients who live long distances away. The Northwestern North Dakota Information Technology Network is developing EMRs to be shared by providers. At one FQHC, consumers using telemedicine services save an average of seven hours in travel time per consultation. The North Dakota Telepharmacy Project and other networks extend the rural workforce to remote areas through electronic linkages, promote cooperation among providers and enable patients to secure timely care without travelling long distances. This innovative approach to telepharmacy required a coordinated effort among partners to change law restricting implementation. Appendix A of this summary describes these models and others in more detail.

2. STATE PLANS FOR DEVELOPING INTEGRATED RURAL HEALTH CARE SYSTEMS

Rural health care providers face numerous challenges, including increasing chronic illness due to aging populations, high poverty rates, low education levels and substantial numbers of uninsured residents. While rural areas are often attractive places to live, they can be physically isolated by geographic distances. Some challenges communities face, in addition to population health status and environmental isolation, include a shortage of care providers and access to capital to expand services. Despite these challenges, rural health care providers are highly motivated to form relationships with each other to maintain high levels of access to care and maintain high levels of quality.

Many states have developed statewide plans for rural health to provide better access and improved care with limited resources. Similar to Kansas' efforts, the other states have typically formed workgroups of stakeholders from government, public and non-profit agencies to develop their plans. These workgroups have examined their states' rural health care delivery and recommended changes that would support high-quality, viable rural health care delivery models. The groups have generally focused on building sustainable rural health systems that can deliver essential health services necessary to improve rural health care and the health of rural residents. The plans developed are premised on the belief and goals that all residents should have timely access to a fundamental set of services as close to their homes as possible. The plans outline ways to achieve these goals including models for the future and the roles of rural provider organizations in health care delivery.

Many states have been testing new models of health care delivery, often with FQHCs leading the way. For example, in Kansas, KAMU is working with the Kansas Association of Community Mental Health Centers and Kansas Health Solutions on a joint integration project, partnering with FQHCs and community mental health centers to provide better integrated care for patients with both mental health and primary care diagnoses such as depression and diabetes. The goals of this project are improved quality of care, better medication management, fewer hospitalizations and ER visits, reduced costs to the health care system and more productive citizens.

Initiatives elsewhere include sharing professionals (e.g., care coordinators and dieticians) located in organizations such as hospitals and school clinics, and rotating the professionals between stations. Some states are testing pooled approaches and policy changes that shift funding from episodic care to enrollment-based care. Such funding changes pay for care coordination and same-day visits to reduce travel time.

3. COMMONALITIES AMONG STATE PLANS

3.1. Summary Framework

The state plans for rural health share commonalities, which this summary uses as its conceptual framework. It starts by identifying and expanding upon the commonalities. Then, the summary gives a sample of how two of the state plans share common aspects. It touches the high points of the Washington State plan, then it goes on to more fully describe Maine's planned approach to rural health care. The PCMHM and chronic disease management form the foundations of both states' visions for service delivery. Some other common elements of several state plans include:

Forming Structural Relationships

- Providers from different sectors form relationships that assume various names such as clusters, cooperatives, collaboratives and networks.
- Formally structured relationships coalesce in community and regional systems.

Providing Integrated Care

- Primary and specialty providers coordinate care via various models, most often through the PCMHM.

Communicating

- Providers in community and regional systems form linkages for communication.
- HIT systems facilitate communication and sharing information in each community or regional system.

Creatively Funding Services

- Providers pursue appropriate financing that flexibly funds the care delivered.

Implementing Change

- Communities implement change via planning, strong leadership and shared vision.

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4. EXAMPLES OF STATE PLANS FOR DEVELOPING INTEGRATED RURAL HEALTH CARE SYSTEMS

4.1. Washington State Plan

The *Rural Health Care: Strategic Plan for Washington State* report describes concrete steps that the state will take to achieve the common parts of plans described above and how the state intends to deliver care in rural areas. Among other steps, the plan calls for:

- *Forming Structural Relationships* by strengthening local care through regional systems that link primary care and specialty providers

In Washington State, FQHCs work with local hospitals and other community entities such as social services, forming the basis for further developing relationships.

- *Delivering Integrated Care* by establishing state-wide or regional resource centers to provide assistance with transformation toward medical homes

The centerpiece of Washington State's rural health care plan is for primary care to become medical homes, with comprehensive, patient-centered care, health information, health promotion, chronic care management and coordination to contain costs and enhance quality.

This evolution will be achieved by:

- *Communicating* through developing HIT to link providers and advance partnerships

- *Creatively Funding Services* by improving payment methods to support transforming primary care to the PCMHM

Washington State recognizes that the PCMHM will require payment reform, which must recognize the added value of services (e.g., care coordination). This will require change from fee-for-services payment to global payment methods, from encounter-based to enrollment-based.

- *Implementing Change* by bringing community leaders together to plan for improved community health and adopting a leadership structure to create community-centric local health systems

The Washington State plan envisions community health assessment and evidence-based protocols driving care planning through formal linkages between providers in systems. Responsibility and accountability for care will be shared by community leaders, health care providers, public health and the community at large, reflecting mutual values and community and rural health needs.

4.2. Maine Plan

Maine's plan shares similarities with the Washington State plan and others in that it also calls for changing the way rural health care services are organized, delivered and financed. Maine planners consider current models for providing rural services, associated costs, financing and reimbursement strategies unsustainable. Maine's primary care capacity cannot be maintained without local and regional collaboration for health care delivery and changes in the fee-for-service payment system. Increased collaboration and new methods of financing, such as regional budgeting, will be necessary to improve access, quality and efficiency.

Framework of Maine's Goals

The framework of Maine's goals follows:
- Addressing need by integrating systems and services to promote access and quality and efficiency while mitigating costs
- Integrating all health care services through the PCMHM
- Within the PCMHM, promoting and expanding the Planned Care Model (PCM) to improve continuity of care for persons living with chronic conditions
- Encouraging interoperable IT and telehealth to manage costs and improve access, quality and performance
- Reforming funding mechanisms

Work Force Drives Models of Care

In Maine and other states, the limited workforce in rural areas has been driving models of care. In some areas, a limited number of physicians and dentists manage teams of other professionals. Advanced practice nurses, physician assistants, advanced practice dental hygienists and Emergency Medical Services (EMS) personnel play leading roles. This requires greater emphasis on training of mid-level providers.

Forming Structural Relationships and Delivering Integrated Care

Maine is making progress with forming structural relationships. The Maine Health Access Foundation[1] has provided leadership in integrating primary care and mental health services. Like in Kansas, Maine's FQHCs are leading the way in testing new care initiatives, sometimes with critical access hospitals. Moreover, numerous examples of school-based primary health care have been showing promise for improving access to care and expanding health literacy in rural areas.

Maine formulated goals for forming structural relationships and delivering integrated care.

Goal: Maine's rural health system must provide a foundational, core level of health services within local communities or a reasonable regional cluster of communities.

Maine's plan calls for putting an array of services in place for rural residents as fundamental building blocks. This care includes primary and specialty, urgent, education, prevention, dental, mental health and substance abuse. Services will include referral linkages and telehealth support in clusters of communities.

Goal: Maine's rural health system should functionally integrate physical, behavioral, oral and public health services.

Maine planners believe an effective rural health system should integrate services across disciplines, specialties and sectors. Care can be coordinated in various ways, including by care managers, small multi-disciplinary teams and via IT-assisted systems. However, Maine intends for the core of coordination to rest with primary care providers.

System Development to Implement Patient-Centered Medical Home Model

With limited financial and provider resources, integration in rural Maine will entail developing regional systems to implement the PCMHM. These will be composed of clusters of rural communities and multiple providers coalescing around regional approaches to care. Current developments in Maine's health system illustrate complementary approaches to this end being considered.

The first system model under consideration in Maine is building upon emerging consolidations of hospitals and providers (including converting some rural hospitals to Critical Access Hospitals) and accelerating the evolution of rural hospitals into small diversified local health

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[1] http://mehaf.org/

systems. The key to developing these systems is to build upon the current grouping of primary care providers to 1) deploy medical homes for all residents and to 2) focus on population health improvement through planned care.

The PCMHM requires providers to meet several functional requirements, including:
- providing round-the-clock access to care without patients' having to go to the emergency room;
- delivering comprehensive, coordinated primary care;
- managing chronic or complex conditions;
- carrying out timely, clear communication between providers and patients;
- working collaboratively with consumers and each other to manage complex conditions; and
- engaging in continuous quality improvement.

Rural systems evolving in Maine could present the foundation for PCMHM implementation. Hospitals have become the core around which a diversified set of primary care, specialty medical, mental health, long-term care and public health have been developed and linked through formal and/or informal affiliations. Many rural hospitals operate physician practices, ambulance services, hospices, school health programs, home and long-term care and skilled nursing facilities along with traditional inpatient and outpatient services. Some are already viable diversified small systems, and this trend toward these systems has accelerated during recent years. Hospitals, especially CAHs, already employ a majority of providers in rural communities. FQHCs work collaboratively with rural hospitals. These emerging formal and informal health systems represent a platform for implementing change.

A second, complementary system model to put the PCMHM into place is the existing structure for Maine's public health system made up of District Coordinating Councils[2] and Comprehensive Community Health Coalitions[3], as described on their websites. The public health system could provide a framework for local and regional collaboration, planning and sharing resources.

Maine sees advantages of these models including:
- Formal networks and affiliations provide the opportunity to develop common, shared clinical, HIT and other systems that can improve quality and safety of health care.
- Shared systems should lower average costs and increase efficiency.
- Including public health, mental health, substance abuse and other sectors in network models can facilitate service coordination and care management across sectors.

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[2] http://www.maine.gov/dhhs/boh/olph/lphd/index.shtml
[3] http://www.maine.gov/dhhs/boh/phwg/index.htm

- Including multiple disciplines, services and sectors in networks can facilitate greater community engagement and support.
- Linkage with Maine's public health infrastructure provides opportunities for system planning, service coordination and regional resource development, all with a population health focus.

Maine planners have adopted the following vision for rural health systems:
- Promote and support primary care-based practice as the core of a rural health system.
- Advance the development of collaborative regional health networks designed around the principles of primary care, care coordination, continuity of care across disciplines and sectors.
- Pursue coordinated and blended funding strategies that enable more flexible funding and promote collaboration among rural health and public health providers.
- Increase the use of telehealth and communication technologies.

Goal: Rural health systems must support a planned care model that ensures better care coordination, chronic care integration and quality of care.

Chronic diseases account for 75 percent of the health care provided in the nation. Two-thirds of the rise in health care costs is attributable to the escalating prevalence of chronic diseases. To address these problems, Maine's FQHCs and other providers have been collaborating to implement the Planned Care Model (also known as the Chronic Care Model). The PCM calls for managing chronic or complex health conditions (e.g., heart disease, diabetes and depression) in a primary care setting.

The PCM is designed to ensure that persons with chronic conditions receive appropriate and timely care to prevent complications, enhance outcomes and reduce costs. The six elements of the PCM, quoted below, depend upon effective care coordination across providers and systems.

- *Community Resource*s: Resources are identified and made available to patients and health care providers who coordinate care.

- *Health System Organization:* The system is organized to meet the patients' needs and monitor performance improvement.

- *Self-Management Support:* Patients are provided with education, support and clinical feedback about their care. Patients drive their care by collaboratively developing personal goals with the provider team.

- *Decision Support:* Care is provided based on, where possible, evidence-based guidelines and integrated into primary and specialty care.

- *Delivery System Design:* Patients' care is provided through a team approach including a designated Care Manager.

- *Clinical Information Systems:* A registry or electronic medical record system provides reminders to patients and providers.

Implementing the Planned Care Model in Maine

Human Resources: Maine plans to train current staff in rural practices to perform new roles on provider teams as one approach for rural primary care practices to execute elements of the PCM. When [MaineHealth](#)[4] (the state's Medicaid program) implemented the "AH!" Asthma Health Program, some practices trained office receptionists to call and remind consumers about appointments while others trained medical assistants to assess patients' asthma severity.

Many rural practices do not have the volume of patients to support a care manager. Other providers (health educators, dieticians and mental health providers) are often unavailable in rural communities. Sharing these providers with or locating them within other health care organizations (e.g., clinics and hospitals) in the community is likely to provide the best solution to this problem. Through Maine's [Community Care Initiative](#)[5], one hospital uses nurse care managers to assist partner organizations in managing and coordinating local medical and social service needs. A Community Outreach Coordinator is located at a social service organization.

Decision Support: Primary care providers must keep up to date on research and evidence-based guidelines and protocols because they treat many chronic conditions. Health care providers and organizations have developed tools to help implement these guidelines and protocols. For example, MaineHealth created flipcharts for guidelines and posters for exam rooms with reminders about assessments. The Maine Health Alliance uses web-based Care Management Software including guidelines, protocols and care plans in many Maine communities. Providing a central location for these tools, such as the [Maine Quality Forum](#)[6], would save rural providers time and money in developing their own tools.

Clinical Information Systems: One essential element of the PCM is a registry or EMR. Some providers use the free Veterans Health Information Systems and Technology Architecture

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[4] http://www.mainehealth.org/
[5] http://www.maineinitiatives.org/
[6] http://www.mainequalityforum.gov/

(VistA) EMR provided by the Veterans' Health Administration. Rural care providers can use HealthInfoNet, described below, funded by the American Recovery and Reinvestment Act of 2009, to implement Maine's statewide registry system.

Funding from the Federal Communications Commission's [Rural Health Care Pilot Program](http://www.fcc.gov/cgb/rural/rhcp.html)[7] also helps these efforts. The Rural Western and Central Maine Broadband Initiative has been constructing a regional broadband network of health clinics. The New England Telehealth Consortium connects health care sites across Maine, New Hampshire and Vermont.

PCM Implementation Structure: Maine plans to create a structure to ensure community-wide implementation of the PCM. Two primary system options, mirroring those for putting the PCMHM in place, could provide a PCM implementation platform.

The Health Department District Coordinating Councils could implement the PCM. The public health system could incorporate prevention and planned care. Regional councils include representatives from health care and other stakeholders for greater community acceptance of change.

A second strategy for PCM implementation is to rely on community collaboratives, Physician Hospital Organizations or health systems that already exist. These local community or health systems could orchestrate the PCM based on the rural community's health needs or system's level of readiness. This strategy would need collaborative referral mechanisms for specialty and urban providers.

Communicating

Maine planners developed communication goals.

Goal: Maine's rural health care system must have an interoperable health information technology system that facilitates communication, improves quality and efficiency and supports greater integration among health and public health care providers.

The nationwide focus on HIT continues to increase. Federal and state governments have primarily highlighted EMRs and health information exchange (HIE) capabilities. HIE allows for electronic exchange of clinical information between HIT systems. Funding from the Federal Communications Commission to create regional broadband networks has improved rural health care providers' ability to utilize HIT.

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[7] http://www.fcc.gov/cgb/rural/rhcp.html

Health Information Exchange

To transfer and share clinical information among multiple providers, Maine's HealthInfoNet offers a statewide HIE that allows all Maine providers to access hospital, laboratory, pharmacy, physician and other patient data. In addition, the system lets providers send data that combines with the public health information system[8]. HealthInfoNet intends to assist rural providers who haven't adopted the system with implementation.

Regional systems offer another approach to obtaining HIT for rural providers. Maine's Inland Northwest Health System[9] developed a regional health information organization (RHIO) among urban and rural hospitals. A RHIO is a formal organization within a geographically defined area that oversees the electronic exchange.

The Maine plan discusses various strategies and financial incentives to promote HIT adoption. Health insurers use reimbursement and financial incentives such as payment and cost differentials and direct reimbursements. Direct reimbursement for HIT, such as virtual provider-patient visits, may offer the greatest impact for rural providers. Medical malpractice insurers, health care associations, state and federal governments also assist in funding HIT. Medical malpractice insurers offer discount rates to providers using HIT since these systems improve outcomes and reduce malpractice liability.

Physicians, hospitals and other providers can establish collaboratives and relationships to invest in HIT. For example, by collaborating with IT vendors, the American Academy of Family Physicians allows rural providers to secure HIT at reduced costs or through flexible payment plans.

Federal funding has supported HIT adoption. The Agency for Healthcare Research and Quality offers HIT planning and implementation grants and has funded state and regional demonstration projects on HIT systems interoperability. The Library of Medicine gives planning grants to support trans-organization information management structures. The U. S. Department of Agriculture provides loans and grants to fund telehealth projects. The Health Resource and Service Administration (HRSA) also offers grants for EMR and implementation.

Maine plans to take advantage of funding opportunities. The state intends to provide technical assistance for grant applications to rural health care providers. Maine planners encourage MaineCare to use a Medicaid enhanced match to support the adoption of EMRs. Maine also plans to expand telehealth, as identified in another communication goal.

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[8] http://www.hinfonet.org/
[9] http://www.healthimaging.com/index.php?option=com_articles&view=article&id=6604

Goal: Maine's health care system must have a telehealth infrastructure that is accessible, adequately reimbursed and enhances access to care.

Information technology (IT) is generally considered information handled by computers while telehealth is seen as "medicine via TV." Telehealth services have provided rural residents with improved access to specialty care. Providers also offer home monitoring for chronic illnesses, mental health medication management and radiology services through telehealth. Maine received a grant from HRSA Office for the Advancement of Telehealth to implement a telehealth resource center.

Researchers have found that patients using telepsychiatry enjoy the same outcomes at lower costs compared to individuals meeting with a psychiatrist face to face. Telehealth has been shown to improve patients' ability to manage their conditions, to lower costs of providing home skilled nursing care and to reduce the number of health care visits. Teledentistry has been used to identify caries in preschool children, which could improve child access to dental care.

Creatively Funding Services

Goal: Financial access to the rural health system and the overall financial stability of the system are essential for the health of rural populations and communities.

Maine found that financial and policy incentives impede service integration. Categorical federal and state funding for health and public health services have promoted a service system characterized by siloed services and systems. Diverse funding sources for health and public health services have specific purposes and requirements that limit flexible funding to address needs across multiple funding sources. For example, financing substance abuse and physical and mental health systems in segmented sectors is detrimental to service integration and care continuity.

In contrast, coordinated funding gives providers the flexibility to appropriately respond to local health care needs and provide care (e.g., case management) not covered by per-service payments. The U.S. Department of Health and Human Services braids multiple funding streams that let the Healthy Maine Partnerships[10] overcome barriers to providing needed care posed by categorical funding.

Maine intends to conduct and evaluate demonstrations of coordinated funding. Maine's Office of Rural Health and Primary Care, a part of the Office of Local Public Health[11] plans to develop new projects and funding requests under the Medicare Rural Hospital Flexibility grant program

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[10] http://healthymainepartnerships.org/
[11] http://maine.gov/dhhs/boh/orhpc/

to advance both horizontal integration of organizations (linking CAHs together) and vertical integration (linking CAHs to FQHCs and other health care entities) and develop networks for quality improvement and HIT initiatives. This office will then test new policies, reimbursement and funding mechanisms.

Other payment modifications will also help. One approach to expanding access, including to specialty providers, is reimbursing for group visits where providers see several people with the same or similar health condition at the same time. Maine planners believe that covering group appointments would save residents travel time and improve the ability to manage their illnesses. Such appointments could also save MaineCare and other insurers money. This would let providers offer services to more people in a shorter period of time and let patients share experiences and learn from each other, like in support groups. Study results have found group visits to be particularly effective in managing diabetes. Paying for same-day primary care and specialty visits would encourage the co-location of specialty providers, such as psychologists and nutritionists, in rural primary care practices, reducing inefficiencies, missed appointments and travel time for patients.

Financially Implementing PCM

The DHHS notes that the PCM saves more than $3.00 for every dollar spent. However, to successfully implement PCM and realize this saving, MaineCare and other health insurers will need to change reimbursement policies. The PCM calls for payment to help providers either support care managers or train staff to provide care management.

Maine planners encourage their Legislature, through the insurance commission, to mandate including these services in insurance policies and MaineCare. Pilot projects would be needed before universal adoption of this strategy.

Implementing Change

The changes discussed above still need to be implemented. In Maine and in other states, the responsibility for developing plans for service arrays and how they are provided is to rest at the community level, determined by regular community needs assessments and resources. Successfully doing so has consistently included community involvement in planning, community assessment, strong leadership and shared values.

5. SUMMARY AND DISCUSSION

The literature talks about how to develop rural integrated systems. It outlines formally structured relationships among providers in communities and regions. The state plans describe the provider relationships formed and systems developed using different words such as clusters, collaborative, systems and networks. The formal, structured relationships among professionals coalesce in community and regional systems. The combination of providers who form relationships varies. The clusters may include FQHCs, rural health centers, hospitals, primary care physicians, community mental health centers, dentists, health departments, schools, social service agencies, home health care and long-term care facilities. Electronic communication links professionals and flexible funding supports the care being delivered.

Various models offer guidance about forming relationships and delivering care. Community Care of North Carolina and the North Dakota models offer approaches specific to rural areas. The Four Quadrant Model gives a roadmap for coordinating care between systems such as primary and specialty care. The literature describes coordinating care, most often through the Patient-Centered Medical Home Model. Other models include the FQHC, the Advanced Practice Nurse Transitional Care Model and IMPACT. Appendix B explains these models and others more fully.

The provider arrangements discussed in this summary may take the form of delivering care in different locations or co-locations. These arrangements may be between separate entities serving shared patients or an organization of professionals with shared client records, protocols and expenses under one administrative body.

Whatever the configuration, if providers coordinate care and manage transitions, they have to communicate. HIT and EMR provide linkages for this communication. Research findings demonstrate that they also save money and promote patient safety. HIT can also supply a mechanism that enables virtual networks of providers that can span multiple locations, maximizing care continuity, cost savings and purchasing power.

HIT requires funding. In Wisconsin, health plans, hospitals and manufacturers proposed a plan to offer tax benefits, low-cost financing and income tax exemption for technology purchases or upgrades. The Affordable Care Act (ACA) offers grants to help pay for EMR systems. The funds can be used for software and hardware, including handheld computers and upgrades to enable e-prescribing. Among the other HIT provisions of the ACA is a method to better coordinate care for persons with chronic illnesses. The ACA will attempt to establish a provider network that includes care coordinators, a chronic disease registry and home telehealth technology.

Blended and braided funding also support integration. Global payment methods transform reimbursement from encounter-based payments to enrollment-based payments. This fosters stable financing and recognizes time and costs associated with providing a broad range of services such as care coordination. Appendix C of this summary expands upon braided and blended funding.

Braided funding and other approaches discussed above are just ideas until they are put in place. The literature discusses the experiences of other states and how they have found that successful implementation consistently includes community involvement in planning, community assessment, strong leadership and shared values.

The Kansas Association for the Medically Underserved (KAMU) has convened stakeholders in two rural communities in western Kansas where the importance of community involvement, leadership and values came to life. It appears that making change in Kansas will indeed require these common elements formulated into collaboratively developed goals that allow communities to have ownership of the health of their communities and investiture in planned outcomes.

6. LOOKING FORWARD: THE KANSAS SAFETY NET

Thanks to the "Access for All Kansans" grant funded by United Methodist Health Ministry Fund, KAMU was able to convene stakeholders and facilitate health meetings in two rural communities in western Kansas during December 2010. These locations are not identified by name to maintain confidentiality.

Meeting participants represented many disciplines, including city and county governments, clergy, commerce, education, Emergency Medical Services (EMS), health departments, hospitals, medicine (e.g., physicians and nurses), mental health, pharmacy, residential care, rural development and social services. Twenty-three people attended the first meeting and 24 the second.

The meetings started with overviews, introductions and presentations of each county's health ranking among the 105 Kansas counties. Facilitators posed questions that attendees answered. However, the environment was relaxed and people also conversed as desired. Engaged participants talked extensively about the healthcare strengths and challenges of their communities. These shared both similarities and differences. Attendees expressed opinions about building upon strengths and making change to resolve challenges as well as the feasibility of implementing models of integrated care.

Strengths

Shared Strengths

Both communities counted strong county health departments and their leadership among their strengths. The health department administrators were leading the way in community development and collaboration. In addition, collaboration among the health departments across the state seemed to be strong, smooth and turf-free.

Other common strengths identified emerged as the themes of Services and Community Resources and included the following descriptors:

Services

- Strong EMS's that enjoy support of city officials

- Excellent hospitals, with one described as beautiful and an asset

- Facilities for older adults, including nursing homes with adult day care in one community and a lively Area Center on Aging in the other

Community Resources

- Ministerial alliance and church involvement that help meet basic needs such as for food, prescriptions and transportation

Strengths Identified During Meeting A

Two persons participating in meeting A captured the spirit of health care in their community when they said:

> *"Continuity of care is a strength because people know each other. We all know each other and are familiar with the network of workers, familiar with agencies and what programs are available. There is a real a sense of community."*

> *"We lead the nation in collaboration. People should use us as model for care coordination."*

During this meeting, additional strengths emerged under the themes of Relationships and Sense of Community, Services and Providers, and Community Resources, as follow:

Relationships and Sense of Community

- Strong sense of community, sound relationships and established referral and health care delivery mechanisms

- Good coordination between health care agencies committed to sharing and working together with each knowing what the other is doing with a specified patient

- Community involvement in medical care with follow-up made possible by a small community with a small population, unlike larger areas where attendees saw the possibility of people falling through the cracks as greater

- Tradition of working together with team effort in health care without regard for who gets credit

- Learning about patients via two-way relationships and discussions between agencies

- "Wonderful" relationship between health department and clinic

- Strong community leadership committed to making health care a priority

Services and Providers

- Providers invested in the health of their citizens and encouraging them to take responsibility for their own health care

- Strong patient assistance program in hospital delivering financial help and health education

- Even without all needed services, available services that are well coordinated with direct referrals made

- Provider knowledge of each other's capabilities (i.e., who is best able to help in crisis)

- Some specialty services — cardiology, dentist, podiatrist, optometrist, urologist — from providers that come on a regular basis

- Very good mental health system

- Rural trauma team development course with people working together, discussing shortcomings and highlighting strengths and weaknesses

Community Resources

- Active civic organizations (e.g., Lions Club, Rotary and Chamber of Commerce)

- Health and human services committee that meets regularly

Strengths Identified During Meeting B

Participants at meeting B also expressed a strong sense of community noted at the first.

> *"We have an excellent nursing staff with many years of experience and they are very nurturing to younger nurses. And we care for them because they are our neighbors and friends and family. It's a package deal — with providers, the health department, clergy, pharmacy staff and others. "*

Additional strengths noted at meeting B emerged under the theme of Services and Providers, as shown below.

Services and Providers

- Two health clinics

- Specialty clinic with services (neurologists and surgeons) by rotating physicians that come into the community

- Good work force including three physicians and an excellent nursing staff

- Personal, compassionate care for older adult population

- Mental health services provided one day each week in the community

- Pharmacy with full-time pharmacist who works hard to coordinate services and secure financial support when needed

- Orthodontist providing services one day each week

- Some providers pooling resources for increased buying power

- A few service providers co-located with health department

Challenges

Shared Challenges

Stakeholders also discussed challenges common to both communities which emerged as four themes: Economy, Demographics, Providers and Services, and Education, as follow:

Economy

- Poor economy and lack of jobs

- Poverty

Demographics

- High and growing number of persons uninsured

- Sizeable portion of population earning low- to mid-income level income

- Aging population

- Overall shrinking population

Services and Providers

- High emergency room (ER) usage with related costs

- No local home health services

- No obstetric services

Education

- Desire for health education and help with behaviors (diabetes education, drug and alcohol use)

Challenges Identified During Meeting A

Additional challenges identified during the first meeting that emerged under the themes of Economy, Demographics, Providers and Services, and Education follow:

Economy

- No jobs for the persistently mentally ill, making meeting state mental health authority employment goals difficult

- Need for medical assistance that doubled in the last 6 months due to job loss or benefit cuts

- Hospital operating at a loss with "taxpayers ultimately paying the cost"

Demographics

- Prevalence of co-occurring substance abuse and mental health problems

- Majority of people applying for patient assistance program who reside outside the county

Providers and Services

- Difficulty providing services to small number of people

- No permanent local primary care physician

- No local dentist

- Waiting time for primary care appointments, resulting people seeking care at the ER

- Need for hospital pharmacy

Education

- Lack of general education resulting in some people needing help completing financial assistance forms

- Need for patient education about prevention, health risks and responsibilities and options for self care

- "Need to reward people who take steps to prevent or reduce illness rather than rewarding people who get sick due to lack of illness management and use resources that they can't pay for"

- Need for education about Medicare benefits

- Need for knowledge about health reform, what is available for each age group, ideally a website with easily accessible information

Challenges Identified During Meeting B

Community B was also dealing with additional challenges which emerged under the theme of Providers and Services, as given below.

- Shortages of psychiatrists and others prescribers who can write prescriptions for psychotropic medications

- Need for additional mental health services

- Incompatible televideo services for mental health services

- Need for more resources for caregivers such as support groups and in-home respite care

- Nursing home offering adult daycare is full and not accepting new clients

- Dentist who doesn't accept Medicaid

- No local SRS office

- Duplicated services and turf issues

- Anesthesiologist services available only once each week

- Residents getting medical care in other communities

Forming Relationships

As part of their effort to move rural safety net services toward integrated care, KAMU and others want to collaboratively promote the development of relationships among providers and other community members in rural Kansas communities.

"It's all about relationships," said participants at both meetings.

Comments like the above quote highlighted the importance of relationships in health care. For example, in community A, two "home-grown" physicians had just left. Although rotating physicians and midlevel professionals were providing care, residents were looking for a permanent physician with whom they could "develop a relationship."

These meetings suggested that, even with rural challenges, some small communities may more readily form relationships and coordinate care than urban areas. This outcome may be attributable to a strong sense of community and to the fact that in small communities "everyone knows everyone."

Providers in these rural areas have been forming relationships, which participants counted among the communities' strengths. However, the locales offered a contrast in their formulations of these arrangements, showing how relationships can be both gratifying and challenging.

As described, community A has developed strong relationships and is coordinating care in a manner that they believe could serve as a model for replication. Stakeholders said they know exactly what services others offer, and, with established relationships, they readily make

connections for referrals. Providers said they usually call to make referral appointments for patients while the patients are in their office, and easily follow up and manage transitions. Professionals work together to do whatever is needed in the best interest of their patients. When providers crossed over disciplines to deliver whatever services best help community members, this flexibility seemed the norm. For example, in community A, EMS staff members were providing injections for patients in their homes, developing a familiarity with the patients and communicating with their primary care provider.

Conversely, in community B, turf issues seemed to be at play. Stakeholders expressed concern about competition and duplicated services. During a conversation about forming formal relationships, it appeared that entertaining concepts such as a network arrangement threatened the independence of providers. One participant expressed concern in terms of a "mother ship" taking charge of health care. Attendees at the other meeting voiced similar worries. During discussion about forming multi-county initiatives for change such as establishing a FQHC, it was apparent that the stakeholders who spoke out wanted to keep health care local.

Other dynamics identified highlighted the importance of relationships and the human element in health care. Residents of community B had developed a relationship with a nurse practitioner. When this provider left, her patients became very upset, many of whom followed her to her new practice in another county, taking business out of the area.

Thereafter, residents assumed an active role, holding a community meeting to voice their concern and request more choice in providers. Health professionals were responsive and opened a new practice to meet this desire. Stakeholders have been working hard to rebuild the trust of patients and keep health care in their community.

In addition to these dynamics, pockets of successful partnerships in community B were obvious. Some providers had co-located at the health department and a mental health provider was driving from another town to serve consumers at the health department one day weekly.

Community Readiness to Make Changes and Feasibility of Implementing Models of Integrated Care

The literature talks about the importance of assessing community readiness for change. Meeting attendees expressed varied opinions about making changes to build upon strengths and address challenges as well as about the feasibility of implementing integrated models of care.

In terms of models, the ACA allocates $11 billion for FQHC expansion, which offers opportunities to bring federal funds into the state. Because it seemed like the FQHC model could resolve some of the challenges identified by both communities, the facilitators asked participants about the feasibility of starting FQHCs in their communities. Neither community immediately embraced the idea of implementing change in the form of a FQHC or other initiatives.

Some of this low degree of readiness to make changes seemed attributable to the values of a few individuals in both locations. However, it should be noted that these opinions stemmed from a limited number of participants and all present may neither have shared the expressed opinions nor voiced their own.

A few people at both locations stated their personal values and beliefs about federal vs. local administration in the form of a strong dislike of federal involvement at the community level, illustrated by the following quote:

> *"We will change things at the local level, not the federal level. The local level has to decide at what level they want to fund health care. Rural America has to ask themselves: What can they do to maximize what we DO have?"*

In community A, although a sizeable portion of the population earned low to moderate incomes and were having difficulty accessing care, one prominent community member said they had no interest in ACA provisions such as premium tax credits and cost-sharing subsidies aimed at helping these people. Similarly, when asked about the feasibility of implementing the FQHC Model, a few attendees at both locations again expressed disdain for anything originating at the federal level.

During the FQHC discussions, stakeholders in both locations expressed hesitation about having adequate volumes of patients to support the model. A multi-county approach that could resolve this issue was discussed.

Attendees representing the community mental health centers offered notable exceptions to attitudes about the feasibility of implementing an FQHC. At both meetings these attendees appeared receptive to the model.

In community B, although a few participants didn't especially like the idea of federal involvement, they seemed amenable to change and further conversation. Thinking of the future, one participant expressed a desire that an FQHC could fulfill.

"I would like it to all be under one operation. It all gets back to fulfilling the needs of the community. We need to think about that first. But sometimes that gets kind of lost in the scheme of things."

Near the end of the two meetings, it became time to discuss the feasibility of implementing other models of integrated care such as the Four Quadrant Model. Key providers had already left for various reasons (e.g., emergency calls). Although interested, those present said the discussion would be moot without the involvement of these professionals.

In addition to values, the weight of everyday demands surfaced at meeting A. Several key people said they were overwhelmed with daily responsibilities and could not take on new initiatives such as implementing a FQHC or taking advantage of grants offered by ACA — anything that would add time to their workload. Some individuals did express an interest in applying for ACA grants and other grant opportunities, *if* they could gain outside technical support and assistance with grant writing.

7.1. APPENDIX A: MODELS OF ORGANIZATIONAL AND SYSTEMS INTEGRATION

This appendix describes models of organizational and systems integration. It starts with an overview of the models framed by the attributes of an ideal health care delivery system identified by The Commonwealth Fund. It then describes models with more specificity.

The 2008 Commonwealth report, entitled *Organizing the U.S. Health Care Delivery System for High Performance,* focused on the organization of health care delivery at the local level, considering the relationships among physicians, hospitals and other providers. The report identified six attributes of an ideal health care delivery system, each of which has been proven to be a vital driver of high performance, as quoted below:

Attribute 1: "Information Continuity — Patients' clinically relevant information is available to all providers at the point of care and to patients through electronic health record systems."

To deliver effective and efficient health care, providers need access to patients' complete medical histories. EMR systems are the best way to have this information available. Ideally, patients can access their records through their providers' EMR systems.

In addition to timely and relevant clinical information, EMRs offer tools that support providers such as clinical decision support systems, reminders about preventive and routine services and e-prescribing.

Studies have demonstrated the potential for HIT to transform health care delivery, making it more effective, efficient and safer. EMRs improve the quality of care by increasing adherence to clinical guidelines, enhancing providers' capacity for disease monitoring and reducing service duplication and medical errors.

In addition to efficiencies from better care and reduced test duplication, EMRs improve administrative efficiency. Practices with EMRs report savings from decreased transcription services and supply costs for charts and storage space for medical records.

Attribute 2: "Patient care is coordinated among multiple providers and transitions across care settings are actively managed."

Some people see multiple providers (e.g., primary care physicians, specialists, social workers and physical therapists) across different settings (e.g., hospitals and physician offices). So, it is

critical that care is coordinated and that transitions among care settings are managed. Otherwise, patients may become frustrated, medical errors are more likely and unnecessary health care services may be provided.

"Attribute 3: Providers (including nurses and other members of the care team) within and across settings are accountable to each another, reviewing each other's work, and collaborating to reliably deliver high-quality, high-value care."

Ideally, providers within and across settings deliver consistently high-quality, high-value care. Providers develop mutual accountability based on shared responsibility and commitment to quality. This is evidenced in a performance improvement infrastructure, including peer review procedures, sharing best practices and routine monitoring and feedback about provider performance. Collaborative efforts, supported by effective leadership and shared goals, result in better performance than when providers work alone.

Attribute 4: "Patients easily access appropriate care and information, including after hours; there are multiple points of entry; and providers are culturally competent and responsive to patients' needs."

With patient-centered models, such as the PCMHM, appropriate care is readily accessible. Individuals should be able to access health care when they need it and when it is convenient. This means same-day appointments for urgent care and extended office hours. Providers should be culturally competent and show respect for and understanding of patients' preferences, cultural, social and economic backgrounds.

Patients should be able to enter the health system multiple ways, such as through e-health visits in addition to primary care clinics. Consumers should have 24-hour access to clinicians who can help them navigate the system to meet urgent care needs.

Evidence demonstrates that people who receive health care in a location that is well-organized and offers enhanced access to providers are more likely to get needed care, receive reminders about preventive screenings and report better chronic condition management than those who do not receive regular care in such locations.

Attribute 5: "There is clear accountability for total patient care."

Often physicians or other professionals may feel accountable just for the care they deliver. Without accountability for total care, it is easy to ignore care coordination and transitions and focus on high-cost, intensive medical treatment instead of higher-value preventive care and

chronic disease management. Ideally, some individual is accountable for the complete care of patients across providers and care settings. This accountability may lie with a physician, a medical home or other designee.

"Attribute 6: The system is continuously innovating and learning to improve the quality, value, and patients' experiences of health care."

Providers and health care administrators should be continuously learning and applying knowledge to improve quality, value and patients' experiences. Innovation drives performance improvement.

Current State of Systems

Although health care delivery is fragmented, pockets of innovation and high performance in the U.S. exist. Commonwealth found that:

- Some existing models and delivery systems have achieved many of the attributes of ideal health care delivery.
- There are multiple approaches to organizing providers to achieve these attributes.
- Some form of organization (i.e., relationship among providers with established mechanisms for working across providers and settings) is necessary to achieve these six attributes.
- Leadership is critical to the success of health care delivery.

Case Studies

Commonwealth completed 15 case studies of models possessing the identified attributes and cited them as examples of high performance systems. The following section illustrates how the models — rural and urban — demonstrate these attributes. The end of this appendix expounds upon selected rural models.

Attribute 1: Patients' clinically relevant information is available to all providers at the point of care and to patients through electronic health record systems.

In nearly all of the models in the Commonwealth report, providers have created infrastructures for exchanging information and sharing EMRs. Laboratory and tests results are available to all providers, no matter who ordered the work. In some systems, such as the Group Health Cooperative, Henry Ford, Geisinger and Kaiser, EMRs contain portals that allow people to access their medical information and make appointments online.

Figure 1. Integrated Models

Multiple Models of Organizing for High Performance

"One important lesson from the case studies is that there are several ways to organize providers to achieve high performance. Below we identify four models. Although there are variations within these models, and many organizations cross categories, this categorization is useful as we consider policies to promote greater organization.

Model 1: Integrated delivery system or large multi-specialty group practice, with a health plan.

In this model, a single entity includes a delivery system (hospitals, physicians, and other providers) and a health plan. The insurance function gives it flexibility in organizing to deliver high-value care. This is the most common model among the 15 case studies. However, only Kaiser Permanente is a closed model that exclusively serves patients who are members of Kaiser Health Plan. Others, such as Geisinger Health System, are open systems that serve patients both within and outside their health plans.

Founded in 1945, Kaiser Permanente (KP) is the largest nonprofit health maintenance organization (HMO) in the United States, integrating care and coverage for 8.7 million members in eight regions. The organization has three separate, but cooperative, entities: Kaiser Foundation Health Plans, Kaiser Foundation Hospitals, and nine Permanente Medical Groups. These entities have their own governance and management structures and exist in a "partnership of equals" under exclusive and interdependent contracts.

Founded in 1915, the Geisinger Health System is an integrated delivery system serving 2.5 million people in northeastern and central Pennsylvania. It employs 12,000 people, including a multi-specialty group of some 650 physicians. About 30 percent of Geisinger Clinic patients are enrolled in the Geisinger Health Plan. Likewise, about half of The health plan's 209,000 members have a physician in Geisinger-owned clinics. The health plan also contracts with more than 15,000 independent physicians and 80 community hospitals.

Model 2: Integrated delivery system or large multi-specialty group practice, without a health plan.

In this model, a single entity includes a delivery system but no health plan. Examples of this model include the Mayo Clinic and Partners HealthCare.

Mayo Clinic is the world's oldest and largest integrated multi-specialty group practice, serving about 520,000 patients a year. From its roots in a 19th-century family practice, Mayo by the 1920s had developed into a private, nonprofit organization dedicated to patient care, research, and education with a salaried staff representing nearly every medical discipline. Today, Mayo Clinic is located in Minnesota, Florida, and Arizona. It employs 54,900 staff, including 3,400 physicians and researchers. Mayo Health System is an affiliated regional system of clinics, hospitals, and nursing homes serving about 2.4 million patients in Minnesota, Wisconsin, and Iowa.

Founded in 1994, Partners HealthCare is a non-profit organized delivery system serving more than 1.5 million patients in greater Boston and eastern Massachusetts. The system includes two founding academic medical centers, four community and three specialty hospitals, community health centers, a physician network, home health, and long-term care services. Partners Community Healthcare, Inc., contracts with more than 1,000 primary care physicians and 3,500 specialists. The network is organized into Regional Service Organizations (RSOs) ranging from a 10-physician group practice to a physician-hospital organization of more than 250 physicians. Within each RSO, physicians coordinate care for their patients and share financial risk against system-wide pay-for-performance goals.

Model 3: Private networks of independent providers, such as an independent practice association (IPA) or virtual network

In this model, a private association organizes multiple independent providers, or providers join together to share and coordinate services. An IPA usually contracts with insurance agencies to provide comprehensive health care services on a capitated basis, but makes fee-for-service payments to individual providers. The association or network may provide infrastructure services (e.g., performance improvement and care management) similar to those provided in Models 1 and 2. The Hill Physicians Medical Group and virtual networks in North Dakota are examples of this model.

Founded in 1984, the Hill Physicians Medical Group is an IPA based in northern California. It is owned by 236 physicians and contracts with about 2,200 independent providers. Hill contracts exclusively with HMOs, and serves 350,000 patients in its region, including 30,000 Medicare risk patients. This represents about 40 percent of the participating physicians' patient base.

Health care providers in rural North Dakota have established cooperative arrangements to provide local access to quality care by sharing resources, expertise, infrastructure, and service delivery. For example, the Northland Healthcare Alliance is a network of 25 hospitals and long-term care facilities that develop and share services, such as a mobile magnetic resonance imaging service and grant development for community health centers. The Northwestern North Dakota Information Technology Network is developing electronic medical records to be shared by 11 hospitals. A Rural Mental Health Consortium provides onsite mental health services in remote areas through clinical nurse specialists. The North Dakota Telepharmacy Project and other networks extend the rural workforce to remote areas through electronic linkages, promote cooperation among providers, and enable patients to receive timely care without the burden of long-distance travel.

Model 4: Government-facilitated networks of independent providers.

In this model, **government takes an active role in organizing independent providers, usually to create a delivery system for Medicaid beneficiaries. They may develop care coordination networks, provide information technology infrastructure, perform care management,** or deliver other services characteristic of an organized delivery system. Community Care of North Carolina is an example of this model from the case studies. The Danish health care system provides an international example.

Founded in 1998, **Community Care of North Carolina (CCNC)** is a public–private partnership that provides key components of a medical home and care management for more than 817,000 of the state's Medicaid and SCHIP patients. CCNC is a community-based system of 14 regional networks, each of which is a nonprofit organization consisting of a partnership of local providers including hospitals, primary care physicians, and county health and social services departments. The state provides resources, information, and technical support. Physician fee-for-service reimbursement is supplemented by a per-member per-month (PMPM) fee for case management. The regional networks also receive a PMPM fee to cover the cost of care management and network administration.

Denmark has a universal health insurance system that emphasizes patient-centered primary care. Physician practices are private, earning fee-for-service payments plus a fee for serving as a patient's medical home, while the government facilitates infrastructure that is essential for organization. There are organized after-hours services and a nationwide health information exchange maintained by an independent nonprofit organization. Ninety-eight percent of primary care physicians have paperless offices, and prescriptions, lab and imaging tests, specialist consult reports, and hospital discharge letters flow through a single electronic portal accessible to patients, physicians, and home health nurses."

Source: The Commonwealth Fund

Attribute 2: "Patient care is coordinated among multiple providers and transitions across care settings are actively managed."

Organized health care delivery models coordinate care and manage transitions. Several, including Geisinger, Group Health Cooperative and Henry Ford, are developing primary care sites to be medical homes or centers of care coordination.

Intermountain Healthcare (IHC) operates a mental health program where behavioral health professionals support primary care in treating patients with dual conditions (physical and mental illnesses). The Mayo Clinic assigns every patient a coordinating physician who ensures that they have care plans and receive clear communication about their care.

At Community Care of North Carolina (CCNC), care management is vital. CCNC is a non-profit organization and system of regional networks with local providers, county health departments and social services. CCNC networks depend on case managers with the same responsibility across all networks to identify high-risk patients, deliver disease management education and follow-up. They help patients coordinate their own care and access services. They also collect data and outcome measures.

A systematic approach to coordinating patient care and managing transitions requires an organizing entity. This mechanism is obvious in one organization with a single organization housing multiple providers and a care setting responsible for all aspects of care. Individual providers or small practices that seek to offer well-coordinated care must establish multiple connections with other providers and settings. These linkages are the beginning of organization.

Delivery systems with health plans have financial incentives to mange care and transitions For example, programs enjoy return on their investment through reduced costs from fewer emergency room visits or hospitalizations.

Strong evidence shows that care coordination can improve health outcomes and reduce costs, especially for persons with complex care needs. In North Dakota, MeritCare Health System and Blue Cross Blue Shield conducted together a pilot study of the Chronic Disease Management Model (CDM) that links patients with diabetes to a primary care clinic nurse. This team-oriented approach to coordinating diabetes care resulted in a significant increase in the delivery of recommended care and improved clinical outcomes such as control of blood sugar and cholesterol, lower tobacco use and decreased hospital admissions. Independent analyses found that CCNC saved annual costs of $102,000 for 192 patients.

The Geisinger Health System serves a largely rural population in north central and northeastern Pennsylvania and has one of the largest concentrations of rural elderly in America. The system coordinates care in a primary care setting through its Advanced Medical Home program.

Geisinger assigns patients at high risk for complications to a nurse case manager embedded as a member of the primary care team who coordinates care with patients' primary care physicians to develop and implement customized care plans. This includes using evidence-based protocols, outreach and follow-up. The nurse makes sure patients receive timely follow-up care after hospital discharge and analyzes the circumstances if patients are readmitted. The system has shown improvements in care and cost control, including about $100 savings per member per month from reductions in hospitalizations among diabetic patients.

As with care coordination, evidence shows that care transition programs result in better outcomes and lower costs. In the Advanced Practice Nurse (APN) Transitional Care Model, APNs follow up with hospitalized cardiac patients after discharge to provide customized home care. A randomized clinical trial of this protocol found increased average time to first readmission and significantly fewer re-hospitalizations as well as lower costs over 52 weeks post-discharge. Together, these changes resulted in a one-third reduction in total Medicare outlays.

Similarly, the University of Colorado Health Sciences Center found that patients and caregivers who received tools and support from a nurse transition coach when discharged from the hospital were significantly less likely to be readmitted. The hospital that provided patients adequate information about managing their conditions after discharge was significantly less likely to re-admit them for the same condition.

Attribute 3: "Providers (nurses and other team members) within and across settings are mutually accountable, review one another's work, and work together to reliably deliver high-quality, high-value care."

All the models create a culture of quality. Providers assume group responsibility and accountability to one another. At Kaiser Permanente, this means transparency, sharing performance data among peers and using feedback to improve performance. Kaiser physicians are both individually and collectively responsible for quality and affordable care. Performance outcomes and aligning incentives with performance goals reflect this shared accountability.

The Institute of Medicine identifies teams as key to redesigning health care organizations. The IMPACT program, from the University of Washington, uses teamwork to improve efficiency and

quality of care for patients with late-life depression. Under this model, a depressed person's primary care physician works with a care manager (nurse or social worker) to develop and implement a treatment plan.

A psychiatrist provides weekly caseload supervision to the care manager. If the patients' conditions don't improve, the psychiatrist suggests treatment changes. In multiple studies, the IMPACT program has been shown as significantly more effective than usual care for depression. A randomized controlled trial found that 45 percent of IMPACT patients had a 50 percent reduction in depressive symptoms after 12 months, compared with 19 percent in the usual-care group. Studies of IMPACT unearthed that patient costs over four years for all medical care were about $3,300 less than others receiving usual care.

Attribute 4: "Patients have easy access to appropriate care and information, including after hours. There are multiple points of entry and providers are culturally competent and responsive to the needs of the patient."

In addition to primary care, Intermountain Healthcare serves underserved populations at school-based and community clinics.

Many of the models, including Group Health Cooperative, the Marshfield Clinic and Denver Health, ensure same-day access and 24/7 alternatives (i.e., call lines and urgent care centers) to emergency department care. HIT is key to improving access and making scheduling appointments easy. Systems like Henry Ford Health System's interactive Web site, "MyHealth," offer virtual medical consultations or "e-visits."

Attribute 5: "There is clear accountability for the total care of the patient."

Although some of the models assigned an accountable physician (e.g., Mayo Clinic) or an accountable practice (e.g., Geisinger's Medical Homes) for a patient, each of the health systems assumed accountability for them. Even though consumers move between providers and settings, they remain within the health system. This arrangement is most clear in the prepaid practices such as Kaiser Permanente because there is clear financial accountability for total patient care. However, other delivery systems also assume responsibility for patients, shown in care coordination and transitions management.

Attribute 6: "The system is continuously innovating and learning in order to improve the quality, value, and patients' experiences of health care delivery."

All the models showed evidence of innovation and continuous quality improvement. EMRs enable performance improvement efforts across many providers. For example, the Health and Hospitals Corporation uses HIT to implement evidence-based practices via standing orders and routine screening protocols, while HealthPartners uses EMRs for safety alerts and clinical reminders.

In addition to HIT, organized delivery entities use their size and infrastructure to improve health care quality and value. For example, Intermountain Healthcare adopted an overarching strategic plan called Clinical Integration that focuses on improving value in key processes.

The HealthPartners program rests on three pillars: integrated management information systems, integrated clinical and operations management structure and integrated incentives. Within two years, HealthPartners realized $20 million in cost savings from 11 clinical improvement projects.

HealthPartners employs a comprehensive model for improvement consisting of**:** setting ambitious targets; measuring optimal care; reaching agreement on best care practices and supporting improvement; aligning incentives and ensuring transparency of results.

Even without an organizing entity, providers can engage in performance improvement projects and use external resources (e.g., the Medicare Quality Improvement Organization program, Institute for Healthcare Improvement campaigns or national quality improvement collaboratives). However, they experience difficulties working across provider settings and are unable to implement innovations like the CDM program in North Dakota or the Advanced Medical Home program at Geisinger.

These models illustrate that care meeting the six attributes of ideal health care delivery requires organization. The Commonwealth report defines organization as "relationships among providers who have established mechanisms for communication or working across providers and settings."

Greater organization leads to higher performance. Information can flow more easily among providers in an organized infrastructure than among unrelated providers. More organized providers are more likely to have the resources and expertise to invest in infrastructure, from HIT to staff and processes for quality measurement and improvement.
- Physicians and other health care providers have easy access to colleagues for formal and informal consultation and knowledge sharing.
- Providers can hold one another accountable for delivering high-quality care.
- They have the potential to efficiently allocate resources for optimal care

<img> They can offer multiple points of access to care.

Considerable literature describes studies of the relationship between organizations and performance on measures of clinical quality, efficiency and patient experiences. Overall, the literature demonstrates that more organized systems perform better than less organized systems on measures of clinical quality and reduced health care costs and have a mixed record on patients' experiences. However, organization by itself does not necessarily lead to high performance.

Organization and Quality

A growing body of research shows that more organization is associated with higher quality. Large group practices perform better than solo practices. For example, large practices are twice as likely as small groups or solo practitioners to engage in quality improvement and utilize EMRs. They are also more likely to practice in teams, use performance and outcome measurement for quality improvement and provide preventive services than solo practitioners or small groups.

Organization and Efficiency

Few studies have focused on the relationship between organization and efficiency. Older studies have demonstrated that costs are about 25 percent lower in prepaid group practices than in others. A more recent study revealed that chronically ill Medicare beneficiaries receiving integrated care use significantly fewer patient resources in the last 24 months of life, compared with the national average. Total physician and hospital spending for patients in organized systems was 24 percent and 2 percent less, respectively, than other practices.

More research indicates that health care systems and models emphasizing primary care demonstrate better outcomes at lower cost than other models. Medicare beneficiaries have more visits with primary care physicians and fewer visits with specialists, spend fewer days in intensive care and incur lower health care costs.

Organization and Patient Experiences

Large group practices (e.g., Harvard Vanguard Medical Associates in Massachusetts) have achieved high performance on measures of patient satisfaction, demonstrating that it is possible for organized systems to excel in this area. One study found that an intervention focused on improving doctor-patient communication, coordination of care and access to care led to improved patient experience.

Integrated Care in Community Coalition

The Group Health Cooperative (GHC) in Washington State and Idaho exemplifies an integrated approach by implementing a PCMHM, enhancing the roles of a multidisciplinary care team and using EMRs to deliver proactive care.

IT offers one key to improving patient communication with care teams, engaging in evidence-based care and reducing fragmented services. GHC uses technology to involve care teams and frontline staff and to standardize their work.

The GHC began in 1947 as a community coalition dedicated to making quality health care available and affordable. It is one of the few health care organizations in the country governed by consumers. Its 11-member Board of Trustees — all health-plan members elected by other members — work closely with management and medical staff to ensure that the organization's policies and direction put the needs of patients first.

Organizational and Systems Integration and Delivery Models in Detail

Selected rural models outlined in Figure 1 above are described in more detail below. These include the North Dakota Rural Models (NDRMs) and Community Care of North Carolina (CCNC).The NDRMs represent Commonwealth Model 3, composed of a network of independent providers organized as a virtual network, and CCNC represents Model 4, a government-facilitated public/private network of providers accepting Medicaid. These models appear more adaptable than the others to the Kansas Safety Net.

North Dakota Rural Models

The North Dakota Health Care Environment

North Dakota's health care environment shares similarities with rural areas in Kansas. North Dakota has a population of approximately 640,000 people with half the counties containing six or fewer people per square mile. North Dakota's population in general is older and has lower average income than the population of urban states. Overall, statistics show that rural populations tend to be less active, more obese and have higher rates of smoking and alcohol use than their urban counterparts.

These health behaviors are associated with chronic diseases such as diabetes, hypertension and coronary artery disease. These population and behavioral differences make up the context for medical care in rural versus urban areas. For example, a common challenge facing rural areas is an inadequate array of health care resources such as skilled staff, facilities, equipment and pharmacies.

More than half the counties in North Dakota are designated Health Professional Shortage Areas despite efforts to attract physicians through debt forgiveness programs and to promote primary care among medical students. Many small North Dakota towns have only one or two doctors and communities find it difficult to replace retiring physicians.

Access to care is further challenged by physical distances between health care providers and organizations. In the past, "networking" was done by telephone and automobile. In many rural areas, paper medical records are still transported physically by car from one location to another. These barriers to care coordination can contribute to treatment errors, decreased efficiency and increased cost of care.

To help overcome these challenges, health care providers in rural North Dakota have established various cooperative arrangements and networks to share resources and expertise. These efforts can be compared to the regionalization in public education where one school or district serves several small rural communities. For example, six delivery systems provide the majority of the health care in North Dakota through regional clinic networks and small rural hospitals linked to urban hospitals.

Virtual networks built on telemedicine and telepharmacy also promote integration, extend the rural workforce and enhance communication by allowing distant providers and facilities to transmit and receive critical patient data instantly.

Many small North Dakota communities rely mostly on small Critical Access Hospitals (CAHs) for their health care needs. These small hospitals act as a "health care central," providing a wide range of community health care: pediatric, emergency, inpatient, skilled nursing and home health services in a single physical location.

Some CAHs share administrators and equipment, such as IT networks. These linkages strengthen CAHs through improved coordination, quality and efficiency of health care. The three examples below show how cooperation among health care providers, payers and policymakers promotes high-performing health care initiatives.

Example 1. Collaborative Chronic Disease Management

Not-for-profit MeritCare (MC) Health System is North Dakota's biggest integrated delivery system, with two hospitals in the Fargo–Moorhead area employing physicians and midlevel practitioners who provide care in clinic sites in North Dakota and Minnesota. MC has been recognized as a leading integrated health network and as one of the top-performing hospitals in the U.S.

Blue Cross Blue Shield of North Dakota (BCBS-ND) is the dominant insurer in the state. BCBS-ND and MC collaborated to conduct a CDM Model pilot at two of MC's internal medicine clinics to test the assumption that chronic disease care (e.g., diabetes) is most efficiently provided by a "medical home" through their primary care physician's office.

Before the pilot began in 2005, payers contracted with outside disease management companies to provide this service. However, without relationships with these companies, physicians expressed concern that they couldn't control the messages their patients were receiving.

The CDM pilot program was considered a means to redirect fragmented funding streams and services to provide comprehensive diabetes care by linking patients with a CDM nurse stationed in their medical home or primary care clinic. At the intervention clinic, physicians referred individuals with diabetes to the CDM nurse for a one-on-one session to determine their knowledge of diabetes, set goals for self-management, establish need for follow-up care in-person or by telephone and make needed referrals such as to a dietitian nutrition for counseling.

MC's EMR system supported quality improvements by standardizing data collection and tracking an expanded set of clinical measures, beyond available claims data. These measures helped consumers track progress in meeting their self-management goals while providing feedback to physicians on their performance in meeting outcomes. The EMRs help physicians and other clinicians consistently deliver evidence-based care at recommended intervals by generating "look-ahead" reports before patient appointments.

The results of the pilot over two years held promise.
- There was an 18 percent increase in proportion of patients who received a complete care bundle of five recommended services—a physician office visit, hemoglobin A1c test, eye exam, lipid test, and microalbumin test—at the intervention clinic (from 48.5 percent to 57.4 percent), compared to a non-significant decline in this bundle of measures at the control site (from 57.3 percent to 53.7 percent).
- Outcomes in the intervention site were 5 percent to 15 percent better on ambulatory measures (control of blood sugar and cholesterol, tobacco use and aspirin therapy).

- Hospital admissions decreased by 6 percent and ER visits decreased by 24 percent in the intervention group, while increasing by 45 percent and 3 percent, respectively, in the control group.
- Annual costs per member were $530 lower than in the intervention group based on historical trends, saving an estimated $102,000 for 192 patients in the pilot.
- The pilot increased efficiency by shifting patient care from specialists to PCPs with increased use of midlevel providers including physician assistants and nurse practitioners.

Participating physicians endorsed the new program because it freed them to see more patients. Although they had to redesign their office practices, with a multidisciplinary care team and new computer systems, to meet the program parameters, the new systems allowed them to improve care and meet performance goals. Patient engagement and satisfaction also improved because patients received more one-on-one time with nurses and providers they trusted at their medical home.

The program created a commitment from PCPs to generate trust and use data to drive improvement and shift the clinical episodic practice to a long-term focus from individually provided care to team-based care.

Example 2. Cooperation through Rural Networks

North Dakota health care providers in rural areas are developing collaborative relationships to serve their patients by sharing organizational infrastructure and delivering service. These relationships take the form of common ownership of hospitals and clinics or virtual arrangements among independent organizations with common interests.
West River Health Services (WRHS) provides care to rural residents across North and South Dakota. The network consists of a 25-bed CAH, a central community clinic attached to the CAH and five satellite rural health clinics.

WRHS provides a full range of diagnostic, imaging, therapeutic, home health, long-term care and wellness services. Its mission is to provide residents of rural areas with the same level of care enjoyed by residents of urban areas. The WRHS team is a multi-specialty group of physicians and midlevel professionals.

Family physicians practice with a hardy continuity of care, following people across inpatient and ambulatory care settings. Midlevel practitioners staff satellite clinics and keep in telephone contact with physicians, who travel circuits to each satellite clinic on a regular schedule.

One physician describes the experience visiting satellite clinics as: "I'm much like a trapper checking a trapline. Then I return as a pack mule, hauling lab work and X-rays back to the hospital with me." Although clinics have electronic access to laboratory results and clinical notes, the remainder of the medical record has to be duplicated until WRHS purchases a full EMR system.

The WRHS network is composed of interdependent parts. According to WRHS, each clinic is financially viable only as part of the whole. Hospitals couldn't survive without the clinic structure. A group practice is more appealing to many prospective physicians than an isolated private practice, which enhances physician recruitment in the rural areas. Shared resources of a network structure make efficiencies and care coordination possible.

At WRHS, shared patients and shared resources facilitate the network's goals of quality and excellence and treating patients like family. The hospital's departments engage in ongoing quality improvement activities.

Northland Healthcare Alliance (NHA) is a 10-year-old virtual network of rural and urban hospitals and long-term care facilities that share services, equipment purchasing and maintenance, accounts receivable and collections, employee benefits, group contracting, benchmarking, education, grant development and marketing. The network's shared expertise and information among members enhances funding opportunities due to increased visibility with funding organizations, strengthens negotiation for joint contracting, and reduces isolation through collaborative activities.

Like other rural networks, NHA relied on grants (e.g., federal Community Access Program) to fund start-up activities. To sustain operations, NHA welded together diverse funding streams. A resource developed for one member may be shared with others. For example, a shared mobile magnetic resonance imaging (MRI) service allows residents to receive affordable care locally. This cooperative effort not only keeps revenue local; it also reduces travel time and cost for patients. NHA provided critical support for securing grant funding to create new FQHCs in three rural communities.

Other examples of joint services and activities include sharing an IT specialist between organizations, promoting and enrolling eligibles in Medicaid and SCHIP and acting as a rural development site for the Program of All-Inclusive Care for the Elderly (PACE), which combines Medicare and Medicaid financing to help seniors.

The Northwestern North Dakota Information Technology Network works cooperatively to develop hardware and software infrastructure for EMRs shared by CAHs and a tertiary-care

hospital. This builds on collaboration between two CAHs that realized efficiencies by sharing one computer server and clinical information software.

The Rural Mental Health Consortium provides on-site mental health services in four geographically isolated locations with shortages of mental health professionals. Masters-level trained clinical nurse specialists provide assessment, intervention and ongoing management services, with authority to prescribe psychotropic medications and provide counseling services eligible for third-party reimbursement.

Example 3. Cooperation to Promote Telemedicine and Telepharmacy

The North Dakota Telepharmacy Project is a collaboration between the North Dakota State University (NDSU) College of Pharmacy, the North Dakota State Board of Pharmacy and the North Dakota Pharmacists Association to restore, retain or establish pharmacy services in medically underserved rural communities. Within this project, a licensed pharmacist at a central pharmacy supervises filling of prescriptions by a registered pharmacy technician at a remote telepharmacy site. Telepharmacy is a form of telemedicine or telehealth, which is growing in usage.

In telepharmacy, a pharmacist communicates with the technician and the patient through audio and video computer links (see Figure 2). This allows a pharmacist to be virtually in two places at once. With providers spread over long distances in rural underserved areas, this capacity can be lifesaving.

Figure 2.Telehealth, Telemedicine and Telepharmacy

"Telehealth, Telemedicine, and Telepharmacy

Telehealth is a strategy to bridge geographic gaps between providers or between patients and providers using electronic information and communications technologies such as videoconferencing, transmission of diagnostic test results such as X-rays and laboratory tests, and remote monitoring of patient vital signs and clinical conditions. Applications of telehealth include the provision of clinical care (telemedicine) and of supportive services such as continuing medical education for providers or health promotion for patients.

Telemedicine can be used to connect providers for clinical consultations and decision support and to connect patients to primary or specialty care providers for diagnosis and treatment. This type of practice can be particularly useful in rural and remote areas where there is often a shortage of accessible health care professionals, providing a mechanism for patients in remote areas to receive timely care and attention without the burden of long-distance travel by providers or patients.

Telepharmacy represents a unique and innovative way to deliver pharmacy services to rural areas using information and communication technology to incorporate safe practices of the traditional mode of

delivery. In the United States, pharmacies are permitted to use pharmacy technicians to assist in filling prescriptions under the direct supervision of a licensed pharmacist. Some states, including North Dakota, Washington, Alaska, and Nebraska, have passed legislation or issued regulations enabling expanded scope of practice for pharmacy technicians or other health professionals supported by telepharmacy or through remote drug dispensing devices.

In recognition of the benefits of telehealth to improving health care accessibility, the U.S. government established the Rural Telemedicine Grant program in 1994. Since 2002, a replacement program, the Telehealth Network Grant Program, has helped communities build the human, technical and financial capacity to develop sustainable telehealth programs and networks."

Source: The Commonwealth Fund Report

In response to the need for prescribers, with the backing of the North Dakota Pharmacists Association, the North Dakota State Board of Pharmacy issued administrative rules and permits for the provision of remote telepharmacy services. The Board acted under its existing legislative authority to "regulate and control the practice of pharmacy" in the State, while also communicating with a legislative rules committee to keep the Legislature informed of its action.

In 2002, Congress established a federal matching grant program within the Health Resources and Services Administration's Office for the Advancement of Telehealth that awarded $2.5 million to the NDSU College of Pharmacy to help fund the start-up costs of the telepharmacy network. Remote telepharmacy sites must be self-sustaining after one year of operation and all have been successful.

By January 2007, 57 North Dakota sites were participating in the telepharmacy project, including 21 central pharmacies and 36 remote telepharmacy sites. On average, remote retail telepharmacy sites are about 60 miles from central sites and fill about 70 prescriptions per day in communities with a total population of about 800 people.

A new retail telepharmacy opened in Spring 2008, joining three established telepharmacies that serve as contractors to FQHCs participating in the federal 340B Drug Pricing Program.

Several rural hospitals are participating in the telepharmacy network through a partnership to ensure 24-hour pharmacist coverage at their institutions, in accordance with written agreements and standards of practice to comply with regulatory requirements.

Participating hospitals use a mobile telepharmacy cart taken directly to the nursing unit so that the attending physician or nurse can consult with a pharmacist after-hours when the hospital pharmacy is closed. In 2008, the NDSU College of Pharmacy working with a U.S. senator obtained federal funding to expand the hospital telepharmacy network so more rural hospitals could benefit from 24-hour pharmacist coverage.

Pharmacists remain actively involved as the responsible health care provider to ensure quality assurance, drug utilization review and patient counseling. Dispensing is then done by the pharmacist via audio and video links to counsel the patient. Participating pharmacists also have terminals in their homes to provide cross-coverage for colleagues.

Results of the Telepharmacy Project include the following:
- More than 40,000 rural citizens in 55 percent of North Dakota counties have access to pharmacy services in their community.
- The rate of dispensing errors was under 1 percent at telepharmacy sites, compared to a national average of about 2 percent.
- Participating rural pharmacy gross profits have doubled, achieving a margin at or above the national average.
- Each remote telepharmacy site generates about $500,000 per year for the local community, yielding 40 to 50 new jobs and an estimated $12.5 million annually that has been added to the state's rural economy.

The start-up cost for a functioning telepharmacy dyad (central site in communication with a remote site) is $36,000. In contrast, an investment of up to $250,000 would be required to set up an automated dispensing device at a remote location.

Other sites within the Northland Healthcare Alliance also use other types of telemedicine applications. They enable physician consultations using audiovisual technology in specialties where there are professional shortages, such as dermatology, ENT (ears, nose and throat), plastic surgery, burns and speech therapy.

At one FQHC, consumers using telemedicine services save an average of seven hours in travel time per consultation. Some North Dakota home health agencies also use telemedicine to monitor patients who live far away from a home health agency.

Most of North Dakota is a designated Mental Health Professional Shortage Area, and it is difficult to get trained therapists from urban areas to travel the distances needed to treat rural residents. Moreover, it is impractical to train rural therapists in specific therapeutic skills they may only rarely use. Alternative strategies used include midlevel providers or delivering therapies using telemedicine technology. With the advent of cheaper technology, a telemedicine unit now costs only $2,500 on each end, including an encrypted signal.

A telemedicine pilot in psychiatry conducted at the University of North Dakota, School of Medicine compared the delivery of cognitive behavioral therapy (CBT) to persons with bulimia, the eating disorder, by telemedicine and through face-to-face encounters with therapists traveling to remote communities with the following findings:

- Reductions in binge eating, eating disorder severity, and depression were roughly equivalent among patients who were randomly assigned to receive treatment via telemedicine or through face-to-face encounters.
- The average cost of therapy was only $73 per case for telemedicine compared to $230 per case for face-to-face care, which typically requires reimbursing providers to drive long distances for each appointment.
- In patient satisfaction surveys, people expressed no preference for one method over the other, rating the physician–patient alliance equally well.

The major challenges to the telemedicine program were professional licensure issues and the need for emergency backup at the remote site to intervene if a patient should become suicidal. Insurance reimbursement for telemedicine remains variable although demonstrations such as this one may help change these policies.

Policy Implications from North Dakota

North Dakota presents a model for other rural areas facing physician and facility shortages and may also provide lessons transferable to urban areas that also lack trained providers**.** Rural communities present a unique context of community trust and interdependence. This social capital allows them to be innovative. Resource constraints have forced providers to try new approaches and institute better practices quickly. For example, a flexible regulatory approach was key to North Dakota's use of telepharmacy.

In addition, **regionalization and networking of services supported improved efficiencies and health outcomes**. **Increased efficiencies didn't require centralization of services. Better communication and collaboration through enhanced primary care, collaborative networks and technology rather than centralization of services were keys to improved quality and accessible health care in North Dakota.** A strong sense of mission, collaboration and oversight of both process and outcomes also appear to be important for long-term success.

Conclusions about North Dakota

Geographic isolation, resource shortages and the desire to preserve the local economy fostered creativity in North Dakota. This drove local providers and policymakers to try new approaches and institute better practices. Providers regularly collaborate with each other and with policymakers to improve services and achieve outcomes that are often superior to high-cost systems elsewhere.

Community Care of North Carolina

Community Care of North Carolina (CCNC) is an innovative effort organized and operated by community stakeholders. CCNC built a network of Medicaid, primary care physicians and other local health care providers to achieve quality, utilization and cost objectives of managing of care for Medicaid recipients across the state.

CCNC was a grassroots response by practicing physicians, community healthcare leaders and state policymakers to meet the challenge of providing cost-effective, high-quality care for Medicaid patients. Within the CCNC program, approximately 1,200 primary care practices across North Carolina manage the care of about 750,000 Medicaid enrollees, roughly 80 percent of the state Medicaid population, almost 10 percent of the North Carolina population.

CCNC Structure

The statewide infrastructure supported by the state Medicaid office helps coordinate and sustain the individual networks. Each CCNC network employs a full-time program director, a part-time medical director and a team of case managers. Each is guided by a steering committee that consists of representatives from network members.

CCNC is unique because it has successfully combined the following key features on a large scale:
1. linking patients to a medical home,
2. providing case management for high-risk patients,
3. planning interventions and measuring success using quality data,
4. engaging practices in quality improvement efforts and
5. providing a statewide structure but retaining control at a regional level.

Patient-Centered Medical Home Model

One reason for the quality gap in health care in the U. S. is that although the prevalence of chronic disease is increasing, health care delivery is based on a model best suited to episodic care for acute illnesses. Optimal delivery of chronic care and preventive services requires restructuring of how services are delivered. Much research has focused on how to adapt individual practices and the current funding structure based on acute care.

The concept of the patient-centered medical home has received attention as a model to improve care based on seven key principles:
- personal relationship with physician in a physician-directed medical practice,
- whole-person orientation,

- coordinated care,
- chronic or complex conditions management,
- timely, clear communication between providers and patients,
- safety and quality, with continuous quality improvement,
- enhanced access, and
- a system of payment that reflects the added value of a medical home.

CCNC Structure Linking Patients to a Medical Home

CCNC's structure for linking patients to a medical home follows:
- Individual CCNC practices do not meet all the functions of the medical home, but they link patients to a primary care practice.
- CCNC offers improved access, which includes 24-hour on-call coverage.
- Community partners are integral members of each network, so that the CCNC medical practices are linked more strongly to the community.
- CCNC case managers are community-based, working with several practices at the same time.

Case Management for High-Risk Patients

Chronic disease care is complex. It often requires difficult treatment regimens and major lifestyle changes. Case managers have been shown to improve health outcomes and complement the work of physicians to help patients adhere to treatment recommendations and make needed lifestyle changes.

Small practices are often unable to afford their own case manager. By joining a network, the practices gain access to a team of case managers who work with all patients in a network. A single practice may share a case manager with several other small practices. The ratio of case managers to patients is generally high (about 1:4,000) but relatively few patients use a disproportionate share of resources. However, because of the local nature of the networks, each case manager is able to establish a personal relationship with each practice, fostering efficient communication.

CCNC identifies patients needing case management through claims data. CCNC patients with multiple emergency department visits, a high number of medication claims, or diagnoses of asthma, diabetes or congestive heart failure are selected for case management. Clinicians also refer patients for case management.

CCNC-specific management software helps case managers. It links to Medicaid claims data that allow case managers to see health care utilization and documentation of care.

Planning Interventions and Measuring Success

Practice-specific data are crucial in recruiting new practices to the networks, setting priority areas and monitoring success. At the statewide level, a small CCNC staff works with the state Medicaid office to extract and sort claims data.

Claims data generate information, such as the number of patients with diabetes who have had hemoglobin A1c measured in the last year or the number who were seen in the emergency department with a non-emergency diagnosis. The central office also coordinates statewide audits that generate patient-specific data like blood pressure readings. These data are aggregated by practice, then compared with national and regional benchmarks and shared with participating practices.

Practices successful in any area share strategies with other practices. Control of the network remains in the hands of the local physicians, so sharing data fosters a sense of collaboration and desire to learn from each other. Data sharing and creating reports cards are among the biggest benefits of belonging to a network.

Engaging Practices in Quality Improvement Efforts

When practices sign on to be part of CCNC, they agree to participate in the group's quality improvement efforts. CCNC defines priorities and provides guidelines on how to meet them. Medical directors and network directors share ideas in quarterly meetings to help define initiatives. These include management of diabetes, asthma and congestive heart failure as well as emergency department and pharmacy utilization.

Quality improvement efforts vary from network to network. The steering committee and medical management committee of each network, based on knowledge about the local community, define how to implement the priorities locally. Examples of local initiatives include a focus on chronic obstructive pulmonary disease, gastroenteritis, childhood development and mental health integration. To improve quality, some networks have provided practical assistance, such as supplying practices with asthma flow sheets and up-to-date diabetes guidelines.

Each region's medical director can encourage participation in a collegial way not possible with a more centralized program. CCNC allows networks to compare outcomes with other local practices, which fosters friendly competition.

Providing Statewide Structure with Regional Control

Local control has sustained the CCNC networks. CCNC found that physicians weary of outside interference and bureaucratic hassles feel empowered by a network that can respond quickly to their needs. Local control encourages creativity and ownership and each network decides how to prioritize and implement programs.

Community physicians decide what is best for their practices based on their knowledge of the community and trends in claims data. The medical community contributes to the network because local hospitals, departments of social services and county health departments all belong to the networks. However, the statewide structure led to CCNC's success, allowing collaborative learning among networks. Initiatives piloted in individual networks can be rolled across the state.

Funding CCNC

One challenge with implementing the PCMHM is the fee-for-service funding structure that doesn't pay for resources such as case management needed to facilitate care outside the office. To resolve the problem, the state Medicaid office provides direct financial assistance in proportion to the number of patients in networks.

Within the statewide infrastructure, each of the 14 individual networks has a staff that provides outreach to network practices and case management for high-risk patients. The state Medicaid offices pays CCNC networks $3.00 per patient per month ($5.00 for elderly or disabled enrollees) to assume responsibility for managing patient care through case management. Grants from local and national organizations augment state support.

The state Medicaid office also supports the individual practices in the network. In addition to the usual Medicaid fee schedule, the state Medicaid office pays $3.00 per patient per month directly to the PCP to serve as a medical home, improve disease management and participate in quality improvement.

The Success of CCNC

CCNC was implemented to stem the tide of rising Medicaid costs. CCNC was able to justify its costs within the first few years of operation. CCNC saved the State of North Carolina $60 million in fiscal year 2003. By 2006, independent analyses confirmed savings of $161 million annually. More liberal modeling puts this cost saving at more than $300 million each year. The largest savings were achieved in emergency department utilization (23 percent less than projected), outpatient care (25 percent less) and pharmacy (11 percent less).

CCNC has improved quality of care, illustrated by increased asthma control. Since initiation of the program, chart audits showed a 21 percent increase in asthma staging and a 112 percent increase in the number of asthma patients who received influenza inoculations. Emergency department visits for CCNC children with asthma decreased by 8 percent during the first year of the program. Hospitalization rates for the same group decreased by 34 percent.

In another measure of success, CCNC organized a large group of physicians and leaders in health care who support the model. Because of CCNC's statewide structure, members come from every county in North Carolina and speak up on behalf of CCNC. This powerful voice is difficult for state legislators to ignore when enacting health legislation. In addition, CCNC has helped maintain the local economy by keeping dollars in the community.

Remaining Challenges for CCNC

CCNC still faces challenges. For example, even though case management has been most successful when case managers and clinicians regularly share treatment plans, physicians have little time to meet with case managers. In some networks, web-based EMRs improve communications. One network is piloting a plan to put case managers on the physician's patient schedule for 10 to15 minutes as often as possible. The per-patient management fee may be insufficient to manage more complex medical patients. To achieve further cost savings, the program has intentionally recruited sicker and more costly Medicaid patients. As a result, the percentage of patients with more complicated chronic illnesses in the program has risen, yet the management fee has increased only slightly over 10 years.

Key Factors in the Creation of CCNC

Key factors made the creation and expansion of CCNC possible, which may be helpful to those wanting to re-create the program.

Started Small

In 1988, with the support of the Kate B. Reynolds Charitable Trust, the North Carolina Office of Rural Health conducted a demonstration project of a Primary Care Case Management Model in a small rural county.

Two large multi-specialty groups provided ambulatory care for Medicaid patients in the county. For a small case management fee, added to the Medicaid fee schedule, physicians agreed to manage the care of their Medicaid enrollees.

This demonstration project showed success in reducing unnecessary emergency department and specialty care use. The Medicaid Director, impressed by the model's outcomes, supported the application for a 1915b Medicaid waiver to roll the program out to other counties.

Strong Physician Leadership from the Start

Medicaid has a powerful regulatory function that some physicians view with mistrust. The state Secretary of Health and Human Services overcame much of this mistrust when CCNC was created as a pilot program. Believing that physicians must be engaged to improve the Medicaid program, he was able to generate legislative support and physicians have been actively leading the program since.

Strong Office of Rural Health

CCNC is administered out of the Office of Rural Health and Community Care. The office's leader, known for his charisma and leadership skills, helped recruit practices and physician leaders and the trust he developed during many years of working with local communities helped physicians overcome their skepticism of working with the state on a new Medicaid initiative. Early successes led to backing from legislative leaders, the state Department of Health and Human Services and the governor's office, which allowed the program to expand statewide.

Best Practices from Pilot Programs

Initially, several structures were tested for organizing practices. A centralized pilot program engaged selected practices across the state that had a large number of Medicaid beneficiaries. Other pilot programs centered around and operated out of FQHCs, health departments and medical centers.

Two pilot programs involving entire communities proved to be the most successful and were expanded statewide. This community model used a not-for-profit 501C3 structure and required participation by enough practices to care for at least 70 percent of Medicaid patients in that community.

Created During Crisis

In the mid 1990s talk of funding Medicaid through block grants created a crisis in North Carolina. New managed care systems saw a business opportunity and lobbied to secure contracts to manage the North Carolina Medicaid program.

Threatened by possible severe cuts in reimbursement and loss of independence, physicians saw CCNC as the opportunity to maintain local control. Physicians who might not have otherwise participated did so in the face of this outside threat. As a result, state leadership declined the budget savings promised by commercial insurers.

During the past decade various models have been proposed to improve delivery of chronic care and preventive services, many of which provide an idealized version of care that seemed out of reach for practicing physicians. CCNC not only implemented a model of care that incorporates a number of the elements proposed by these models of care, it moved beyond the demonstration phase to prove that this model can be implemented across an entire state by practicing physicians.

CCNC has created a modified version of the medical home where patients are assigned to a primary care home that provides comprehensive longitudinal care, where case managers provide wrap-around services, where practice-specific data are used to improve care, where practices learn from each other and where community partners support care.

7.2. APPENDIX B: MODELS OF CLINICAL INTEGRATION

Integrated health care is most often coordinated through the PCMHM. Others include the FQHC, Four Quadrant Model, Advanced Practice Nurse Transitional Care Model and IMPACT.

Federally Qualified Health Center Model

A FQHC is a non-profit or public health care organization that meets criteria under Medicare and Medicaid Programs. It receives federal funding under the Community Health Center Program (Section 330 of the Public Health Service Act [PHS]), administered by HRSA.

A FQHC provides care to underserved populations and must:

- Provide primary, preventive and enabling health services (e.g., transportation) and specialty care (dental and mental health), either directly or through referrals

- Make efforts to establish and maintain collaborative relationships with other health care providers

- Maintain appropriate and necessary core staff to deliver services either directly or through established arrangements and referrals

- Serve a Medically Underserved Population or Medically Underserved Area

- Serve all persons regardless of insurance status, income and ability to pay

- Use sliding fee scale adjusted based on ability to pay

- Provide services at times and locations that assure accessibility with a 32-hours-per-week minimum and coverage during hours when the center is closed

- Ensure that FQHC physicians have admitting privileges or establish other arrangements for hospitalization

- Meet performance and accounting requirements regarding administrative, clinical and financial operations

- Maintain a data reporting system and ongoing Quality Improvement/Quality Assurance program

- Be governed by a board composed of a majority of health center patients

The biggest benefit of being a FQHC is federal grant funding. However, other benefits include:

- Fair Medicare and Medicaid reimbursement

- Medical malpractice coverage through the Federal Tort Claims Act

- Eligibility to purchase prescription and non-prescription medications for outpatients at reduced cost through the 340B Drug Pricing Program

- Access to the Vaccine-for-Children Program

- Eligibility for other federal grants and programs, including those offered by health reform, known as the Affordable Care Act

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Four Quadrant Model

The Four Quadrant Model (FQM) offers guidelines about how to integrate care. Each quadrant considers the behavioral health (BH) and physical health (PH) needs of the population and suggests the system elements utilized to meet individual needs. The FQM serves as a conceptual framework for collaborative planning in each local system such as between a community health center and public behavioral health center, using the framework to decide who will do what and how to assure coordination for each person served.

Quadrant I

Consumers with low BH-low physical health complexity are served in primary care with BH staff on site. Persons with very low/low needs are served by the primary care physician (PCP), with the BH staff serving those with slightly elevated health or BH risk.

Quadrant II

Consumers with high BH-low physical health complexity are served in a specialty BH system that coordinates care with the PCP.

Quadrant III

Consumers with low BH-high physical health complexity are served in the primary care/medical specialty system with BH staff on site in primary or medical specialty care, coordinating with all medical care providers including disease managers.

Quadrant IV

Consumers with high BH-high physical health complexity are served in both the specialty BH and primary care/medical specialty systems. In addition to the BH case manager, there may be a disease manager, in which case the two managers work at a high level of coordination with one another and other members of the team.

Quadrant II BH ↑ PH ↓	Quadrant IV BH ↑ PH ↑
• Behavioral health clinician/case manager w/ responsibility for coordination w/ PCP • PCP (with standard screening tools and guidelines) • Outstationed medical nurse practitioner/physician at behavioral health site • Specialty behavioral health • Residential behavioral health • Crisis/ED • Behavioral health inpatient • Other community supports	• PCP (with standard screening tools and guidelines) • Outstationed medical nurse practitioner/ physician at behavioral health site • Nurse care manager at behavioral health site • Behavioral health clinician/case manager • External care manager • Specialty medical/surgical • Specialty behavioral health • Residential behavioral health • Crisis/ ED • Behavioral health and medical/surgical inpatient • Other community supports
Quadrant I **BH ↓ PH ↓**	**Quadrant III** **BH ↓ PH ↑**
• PCP (with standard screening tools and behavioral health practice guidelines) • PCP-based behavioral health consultant/care manager • Psychiatric consultation	• PCP (with standard screening tools and behavioral health practice guidelines) • PCP-based behavioral health consultant/ care manager (or in specific specialties) • Specialty medical/surgical • Psychiatric consultation • ED • Medical/surgical inpatient • Nursing home/home based care • Other community supports

Application of the Four-Quadrant Model to Various Populations

The Four Quadrant template can be used to create models specific to providers other than BH and multiple populations such as school-based services for children. Older adults often use

primary care settings for psychosocial and somatic complaints and tend to be underrepresented in specialty BH populations. Research suggests, though, that they are willing to receive BH services in a primary care setting and that targeted interventions can improve depression symptoms.

Differences exist between rural and urban environments and among regional markets in terms of resources available and access to services. The FQM provides a template for considering the resources locally available and developing alternative methods of coordination (e.g., telemedicine) that may be required when specialty care is delivered in another community.

IMPACT Model

The IMPACT Model is a stepped care treatment model for treating depression. The model uses teamwork to improve efficiency and quality of care for persons with depression. Under this model, a depressed patient's primary care physician works with a care manager (nurse or social worker who may be supported by a medical assistant or other paraprofessional) to develop and implement a treatment plan. Treatment generally includes psychotherapy and medications. A psychiatrist provides weekly caseload supervision to the care manager. If the patients' conditions don't improve, the psychiatrist suggests treatment changes.

In multiple studies, the IMPACT model has been shown as significantly more effective than usual care for depression. A randomized controlled trial found that 45 percent of IMPACT patients had a 50 percent reduction in depressive symptoms after 12 months, compared with 19 percent in the usual-care group, IMPACT patients incurred costs over four years for all medical care of about $3,300 less than those receiving usual care.

Advanced Practice Nurse Transitional Care Model

The Advanced Practice Nurse Transitional Care Model (APN) is an evidence-based model of hospital-to-home health care. The APN uses a holistic approach of health care team management led by an advance practice nurse. APNs begin to work with the patient and their family and the health care team to collaboratively design an individualized discharge plan while the patient is in the hospital. This engagement creates good on-going communication about post-discharge care and expectations. The APN implements the plan in the patient's home following discharge, substituting for traditional skilled nursing follow-up.

The approach lowers costs by reducing the number of re-admissions caused by not understanding or following post-discharge care instructions, not understanding symptoms that require immediate attention and a lack of care coordination among providers. For example, if a patient starts experiencing distress and their primary care provider cannot properly care for them because they are unable to locate records of the medication prescribed upon discharge, the provider might re-admit the patient. It also reduces incidence of poor communication among providers and health care agencies, inadequate patient and caregiver education and enhances quality of care.

Findings from clinical trials funded by the National Institute of Nursing Research consistently demonstrate that the APN Transitional Care Model improves quality of care and substantially decreases health care costs. Evidence shows that care transition programs result in better outcomes and lower costs. A randomized clinical trial of this protocol found increased average time to first readmission and significantly fewer re-hospitalizations as well as lower costs over 52 weeks post-discharge. Together, these changes resulted in a one-third reduction in total Medicare outlays.

Following a four-year trial with a group of patients hospitalized with heart failure, the APN cut hospitalization costs by more than $500,000 in the experimental group, compared with a group receiving standard care – for an average savings of approximately $5,000 per Medicare patient. Compared to standard care, APN resulted in longer intervals before initial re-hospitalizations, fewer re-hospitalizations overall, shorter hospital stays and better patient satisfaction.

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7.3. APPENDIX C: BLENDED AND BRAIDED FUNDING

Blended funding, sometimes called pooled funds, structures the co-mingling of funds into a single source from which providers finance services without regard to relative contributions of the multiple funding sources. Blended funding occurs when public funders authorize their dollars to be utilized within an individual budget to respond to identified needs. Funds may be blended into one lump sum for use as needed or divided into budget categories. Either way, the use of funds rests under the direction and control of one entity.

Braided funding also involves more than one public funder authorizing their dollars to be included in an individual budget. However, with braided funding, each public funder maintains control of its dollars. Partners often favor braided funding over blended funding because the funds are categorical and the agencies maintain control of them.

Advantages of Pooled Funding

Blending or braiding funds can:

- Permit systems to fund activities that may fall outside the specified limits of categorical programs
- Allow separate funding streams to be used in flexible and coordinated ways to implement the plan objectives
- Result in more efficient use of limited resources as agencies work together to overcome barriers and eliminate duplication
- Create greater direction and control of public resources
- Establish a method for meeting a range of needs that any single funder could not effectively meet alone

Pooling Mechanisms

To braid or blend funds, a team of representatives from each group that is pooling their funds negotiates an individual budget, which can be pilot-tested before officially starting. Collaborative members review and understand available benefits and resources and establish a self-directed account. Such accounts hold service dollars from the different sources dedicated to services.

New Level of Collaboration

Blended and braided funding approaches require a high level of coordination and collaboration among public funders. Each funding source has different reporting requirements, payment

arrangements, funding cycles and approaches to evaluating return on investment. To meet multiple stakeholder needs, one agency may become the lead or single point of responsibility. This agency may also monitor expenditures through a negotiated set of reporting requirements. Sometimes collaborations outsource oversight to an external entity, such as a managed care organization.

Challenges

Blending and braiding funds is not without challenges. Some public funders are reluctant to blend their dollars in one budget because of the loss of control over how the funds will be spent. Others dislike the reporting requirements that expect all funds to be tracked and accounted for after being allocated for services.

Examples of Successful Pooling

Detailed examples of how providers have successfully braided or blended funding appear in more detail below.

Washington State Funding

In Washington State, the School-Based Mental Health Services Projects utilize blended funding and operate under a proviso to the state Mental Health Division's biennial budget, submitting reports in accordance with government requirements. Reports document the number of children served, the total blended funding amounts per child, the amount charged to each appropriation by program and services provided to each child through each blended funding project.

By state fiscal year, the Washington State Legislature and the federal government approve local school district classroom funds to be used as a match under the federal Medicaid program. Several programs operate through a cooperative arrangement between the Regional Support Network (CCRSN), the school districts and mental health providers. The CCRSN uses these resources to develop and implement demonstration/pilot projects specific to school-based mental health services. The CCRSN funds the mental health services to Medicaid beneficiaries, using the match provided by the schools to obtain additional federal Medicaid monies.

The Dawn Project

The Dawn Project provides behavioral health services to a subset of children in Marion County (Indianapolis, Ind.) that involves multiple systems. Several state and county agencies finance the project, including the state mental health agency, the state special education agency, the county

child welfare agency and the juvenile court, creating a case-rate per member per month. Indiana Behavioral Health Choices (Choices), a nonprofit care management organization, acts as the managed care entity.

Dawn Project Key Design and Financing Features

Nonprofit Lead Agency Care Management Organization: Choices, a nonprofit entity, acts as the lead agency for managing the care of children enrolled in the Dawn Project. It employs more than 26 service coordinators and case managers, who coordinate Child and Family Teams. It utilizes an extensive network of providers based on designated rates for services and supports. Choices uses a variety of managed care technologies, including case-rate financing, service authorization mechanisms, quality improvement and utilization and care management.

Broad Benefit Design: The Dawn Project covers a broad array of services and supports including counseling, in-house support for families and school truancy prevention.

Interagency Governance: The Dawn Project utilizes a cross-system governing and oversight body called the Dawn Project Consortium. It is comprised of the payor agencies, families, referring agencies, the managed care entity (Choices), advocates and additional representatives from the public schools. The Consortium meets monthly. At the service-delivery level, child and family teams work across agencies to integrate school plans, court orders, probation requirements and mental health plans into one coordinated plan.

Service Coordination and Clinical Management: Child welfare, juvenile probation or special education systems refer children to the Dawn Project. A child's enrollment in Dawn activates assignment to a service coordinator. Choices clinical management software, called The Clinical Manager, supports service coordinators and integrates clinical and fiscal data capabilities, medical records and services and payments.

Case-Rate Financing and Flexible Funds: Several state and county agencies finance the Dawn Project. Their dollars support a case-rate per member per month for services.

NorthSTAR

In Texas, the NorthSTAR model integrates service delivery of publicly provided mental health care and chemical dependency services into a single system. The state Department of Health and Human Services (DHHS) administers the combined programs. NorthSTAR has greatly improved access to providers and services at no additional budgetary costs. Descriptors of NorthSTAR appear below:

Integration: NorthSTAR provides a single system for delivery of mental health and substance abuse services to Medicaid and medically underserved patients.

Blended Funding: NorthSTAR pools funding from a variety of sources (i.e. public and private payors) to fund services for Medicaid and non-Medicaid beneficiaries.

Authority/Provider Separation: NorthSTAR utilizes a local behavioral health authority that performs no provider function.

Organization: The DHHS administers NorthSTAR and works with the Dallas Area NS Authority (DANSTX) and the local behavioral health authority. NS maintains a comprehensive data warehouse, allowing analysis of enrollment patterns, service utilization and cost. NS contracts with a private behavioral health organization, ValueOptions (VO) which is responsible for maintaining an adequate provider network, paying providers and managing care.

Financing: NorthSTAR pays VO a per-member-per-month rate for each category of enrollees in service delivery area administrative costs within an arrangement where profits are contractually limited.

Cost Effectiveness: Study findings disclosed significant cost savings realized with the NorthSTAR approach without a decline in the quality of care. Most savings were achieved through reduction in administrative costs.

Separation of Authority and Provider Functions: NS keeps fiscal and provider functions separated. Under NorthSTAR, DANSTX monitors need, plans for services and oversees the delivery of care.

Continuity of Care: Because NorthSTAR serves both Medicaid and the medically underserved population in a single model, a continuity of care is provided that is not possible under traditional models. Patients with a dual diagnosis of chemical dependence and mental illness can seek care with a single provider. Study findings also indicate that the program has positively impacted quality of care. It redirected services from inpatient settings to more appropriate levels of care in the community. It lowered hospital recidivism and maintained or improved consumer and provider satisfaction.