ACTUARIAL SPECIALTIES | HEALTH

Rural Health Care Case Studies

A compelling cross-section of possible solutions to managed care challenges in rural America

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The health care challenges for Americans in rural parts of the country are well-documented.[1] Access to and affordability of both health care and health insurance are problematic. This article will delve into several programs and interventions that are affecting rural health care nationwide.

The initiatives outlined in this article range widely in terms of geography, but they also vary in the root causes they attempt to address, the mechanisms used to address those root causes and the types of organizations driving change. Reported results are sometimes anecdotal or qualitative observations; several of the initiatives are ideal for analytical research into their outcomes, financial and otherwise. Taken in total, they form a fascinating portfolio of ideas for health actuaries to consider in their own settings. The initiatives include:

- Food banks to “treat diabetes with food” in Pennsylvania
- A purchasing alliance to support managed care in rural Colorado
- Community health workers (CHWs) integrated into care teams in Appalachia
- A program to address the needs of mothers with opioid use and their newborn babies in Tennessee

These initiatives have been driven by health plans, providers and community organizations, often working in concert.

TREATING DIABETES WITH FOOD[2]

Problem

According to the American Diabetes Association, about 10.5 percent of the population had diabetes in 2018.[3] A key challenge for managing diabetes is ensuring a proper diet, and in rural areas, this can be more challenging due to socioeconomic factors, including low incomes, high prevalence of obesity and lack of access to fresh produce. In one study involving food insecurity among the uninsured, two-thirds of patients reported choosing between food and medicine at least once during the past year.[4]

Solution

A key challenge for managing diabetes is ensuring a proper diet, which can be more challenging in rural areas.

Leaders at the Geisinger Health System, reflecting its outward approach to community outreach, understood the link between food insecurity and uncontrolled diabetes. In 2017, it launched Fresh Food Farmacy, an on-campus food bank that is available for food-insecure patients with HbA1c levels greater than 8.0. The provisions are significant—referred members are eligible for 10 meals per week for themselves and their families. Furthermore, among other efforts, Geisinger worked with an existing community-based program (food bank) to provide these meals cost-effectively. Primary care providers can refer members into the program. As of this writing, there are three locations: a hospital campus in a rural area, a new facility in an urban “food desert” and a federally qualified health center (FQHC).

Results

Participating members have seen a two-point drop in HbA1c levels. To estimate the potential financial impact of such a change, we can turn to recent research that has linked a 1 percent reduction in HbA1c for all patients with a 2 percent reduction in total costs, and a 13 percent reduction in diabetes-related costs. For patients with a beginning HbA1c greater than or equal to 7 percent, the results were somewhat less dramatic on a percentage basis, but still significant (1.7 percent reduction in all-cause total costs and 6.9 percent reduction in diabetes-related costs).[5] Even at these lower percentages, because patients with HbA1c greater than or equal to 7 percent are more expensive on average, the actual dollar savings per patient are greater.

Other Considerations

Alongside the provision of healthier foods, the results reflect the impact of increased education efforts. Participants meet with a dietitian to learn how to prepare healthy meals. Implementing a similar program should involve the

patient's care team, including CHWs who may be needed to assist patients with issues like housing and transport in addition to food insecurity.

Strong community connections will support the successful implementation of a program like Fresh Food Farmacy. This includes developing relationships with local suppliers. Through its community relationships, Geisinger has been able to supply provisions at a cost of about $1,200 to $1,500 a *year* per patient.

RURAL COLORADO COMMUNITY LEADERS BUILD A PURCHASING ALLIANCE[6]

Problem

Rural counties have high rates of uninsured residents, and those who live in rural Summit County, Colorado, have struggled in particular with the high cost of insurance. For individuals, small businesses and large employers there, health insurance prices were among the highest in the United States. Despite having a relatively healthy population, health insurance costs in Summit County remained high—for a variety of reasons.[7]

Solution

Peak Health Alliance was created to address these high insurance costs, with an initial focus on hospital prices. Driven by community leaders, Peak agrees upon rates with local hospital/providers. Peak then provides that pricing information to carriers, who bid premium rates based on those prices. Combined with a new state reinsurance program, the alliance has had a significant impact on the cost of health insurance for local residents.

Results

Peak reported that health premiums in Summit County were reduced by more than 20 percent from 2019 to 2020, with a further decrease of about 9 percent on average for 2021. Furthermore, Peak Alliance now encompasses seven counties, with the lowest premiums in the individual market.[8]

Other Considerations

Peak's approach has been characterized as using a scalpel rather than a sledgehammer.

Whereas managed care initiatives are often driven by health plans or health systems, Peak's success arises from the engagement and advocacy of local community leaders outside of the health care industry. The model started with grassroots efforts within the community and brought in nontraditional health care partners—chamber of commerce, county government, school districts, consumers and small employers—who have emerged as stronger advocates than traditional partners, such as large self-funded employers. These community leaders were provided with data analysis and access to health care consultants, and Peak emerged as a result of their efforts.

Peak also engaged with hospital leadership. Hospitals are often among the largest employers in a rural community, and hospital leaders value their relationship with the community. They understand the need for lower prices for local residents, but at the same time bring the perspective of struggling with their own financial sustainability. Peak works with hospitals to try to address both needs. Even with that engagement, there have been some cases of independent hospitals preferring not to contract with Peak.

Peak's approach has been characterized as using a scalpel rather than a sledgehammer. They started with understanding hospital prices and migration through analysis of a hospital/county claims data set. Throughout the community, Peak works across all lines of business to gain greater negotiating leverage. And because it can look at the whole county, it has a greater ability to impact migration of care outside the local community—resulting in more care being delivered locally and more health care dollars going to local hospitals and providers.

There are several key drivers of Peak's success. First is access to an all-payers claims database, which is a way for the public to access health claims data. The regulatory environment allowed for Peak's role and development. It was critical to bring consumers and employers to the table and have meaningful conversations in the community—prior to Peak, this effort had been ongoing for almost a decade. Finally, a genuine commitment to change in the community was necessary. Indeed, there are some counties that have expressed interest in an approach similar to Peak, but they don't yet have the investment from community leadership to make the effort successful.

Ironically, an emerging concern is the potential development of an individual public option statewide. Such an option could enroll members currently participating in the Peak network, reducing the volume of patients and negotiating power with providers. There is a possibility that the statewide option, through broad price controls, might be more of a sledgehammer than a scalpel. Regardless, Peak's continuing, fundamental mission is to lower the price of health insurance in rural communities in Colorado. Looking ahead to 2022, Peak is considering adding counties to the alliance, actively looking for solutions in the pharmaceutical space, developing behavioral health strategies and identifying care coordination strategies to help drive further premium reductions and overall improved public health.

CHWS IN RURAL APPALACHIA[9]

Problem

Accessing health care can be problematic in rural areas, particularly for those with chronic conditions. Residents may have limited financial resources, challenges with transportation, issues related to managing their conditions and

a lack of understanding of what options are available to them. CHWs play a critical role in providing support to these individuals, whether in the patients' homes, out in the community or in a health care setting. In rural Appalachia, for example, residents may form close bonds with their CHWs who come from the local community.

However, it can be challenging to demonstrate the value of CHW support, particularly in such a way that would convince payers to enter into an innovative payment model. In rural Appalachia, CHWs are typically grant-supported, and a self-supporting, sustainable funding mechanism would ensure long-term engagement of CHWs with rural residents.

Solution

It can be challenging to demonstrate the value of CHW support, particularly in such a way that would convince payers to enter into an innovative payment model.

Researchers led by Richard Crespo, Ph.D., of the Marshall University School of Medicine, embarked on a project to measure and report CHW outcomes in a way that would convince payers to provide ongoing funding for CHWs. Focusing specifically on patients with diabetes, the researchers demonstrated significant improvements in outcomes with the integration of CHWs into chronic care management teams at FQHCs. While more robust analysis is needed, initial results point to improvements in HbA1c during the study period.

Health plans were engaged to analyze potential savings for high-use members using the CHW-integrated chronic care management teams. One plan identified a savings of approximately $5,000 per patient over a four-month period. At the time of the report, other payers were in the process of engaging in the initiative to introduce the program and measure the results. The intent is that these payers will find a solid business case for creating an equitable payment model for CHW services.

Results

The research team was able to engage multiple plan payers in discussions regarding a potential payment model. Furthermore, plans have agreed to use their own data to support a business case for such a payment model, including an actuarial study, as part of a memorandum of understanding. One plan has agreed to work with a health center to share data and support the development of a potential payment model that includes the health center. The researchers are seeking other means of demonstrating outcomes, including analyzing adherence to standards of care and expanding analysis to include care for chronic obstructive pulmonary disease (COPD), congestive heart failure (CHF), dental needs and hypertension as potential additional avenues to demonstrate tangible outcomes for payers.

Other Considerations

The researchers understood that in order to engage payers, they would need to demonstrate an impact to bottom-line costs, so they focused their efforts on measuring outcomes that could be directly linked to health care costs. It was important to keep payers informed throughout the project, and to ensure familiarity with previous studies demonstrating CHWs' effectiveness with reducing emergency department and hospital utilization. The researchers then worked with the payers to understand the point at which the data would be reliable enough to support a payment model.

A critical component of the successful CHW model is the access CHWs have to the clinical team. When a problem comes up, a member will typically call their CHW first, who will provide that crucial link to the clinical team. CHWs also conduct important outreach. As an example, a CHW may find that a homebound patient with diabetes is experiencing uncontrolled blood sugar and isn't sure whether to call the doctor—the CHW will get the clinical team involved, and the member might end up with a new prescription for a different medication. Fidelity to the chronic care management model, including CHW integration, is also critical to success—variations will affect the credibility of potential outcomes.

It is important to note that much of the work leading up to this point has been supported by grants from multiple funding sources. The grant funds were used to pay for CHW services throughout the project. An organization seeking to follow a similar route may find it necessary to invest in CHW services until results can be demonstrated to potential payer partners such that they would support a payment model. It may also be necessary to develop payment model variations to address the diverse needs of different kinds of payers and the payment mechanisms available to them (e.g., Medicaid managed care plan versus a Medicare Advantage plan versus a self-insured employer group plan).

NEONATAL ABSTINENCE PROGRAM IN TENNESSEE[10]

Problem

In the early 2000s, public health observers noted an increase in the number of opioid-exposed newborns in Tennessee. Neonatal abstinence syndrome (NAS) occurs with newborn babies who have been exposed to narcotics before birth, with the mother taking narcotics while pregnant. Babies may experience withdrawal symptoms lasting up to several weeks or months.

In 2015, the average cost of care for a baby with NAS in the first year of life was more than nine times higher than for normal birth weight infants on TennCare (Tennessee's Medicaid program).[11] And while the national incidence rate of NAS and neonatal opioid withdrawal syndrome (NOWS) was a little

over seven cases per 1,000 births in 2017, the incidence rate in Tennessee was higher—about 16 cases per 1,000 births.[12]

Solution

BlueCare Tennessee is a subsidiary of BlueCross BlueShield of Tennessee and one of three managed care organizations that support TennCare. BlueCare has taken a comprehensive approach to help address the myriad circumstances that lead to a baby born with NAS. The approach requires coordination of activities and resources across the health care system and community, with a focus on the social determinants of health that lead to babies with NAS.

The effort to intervene "upstream" includes providing counseling around contraception and pre-pregnancy education on opioid use.

First, there is an effort to intervene "upstream" with BlueCare members, which includes providing counseling around contraception and pre-pregnancy education on opioid use. Treatment for the expecting mother incorporates medical and behavioral health care, including coordination with the obstetrician and a peer recovery specialist. Finally, hospital care has evolved to address the special needs of the babies born with NAS.[13]

Results

Multiple reports point to the impact of this focus on NAS in Tennessee. At one hospital, the NAS unit has reduced lengths of stay for babies with NAS by five to seven days. Meanwhile, the Tennessee Department of Health reports that the prevalence of NAS cases has dropped significantly from 2017 to 2019—indeed, the rate has dropped to below 2013 levels after rising steadily through 2017.[14]

Other Considerations

Reducing length of stay for babies with NAS is a key indicator of potential cost savings. With that said, it is important to recognize what was necessary to drive that reduction. The treatment for NAS has evolved considerably and now involves tools to assign scores to observations, measure the severity of symptoms and prepare babies for discharge (discharge planning even before birth has been a part of this comprehensive approach).

There is also a need for providers to stay up to date on evolving recommendations with regard to treating mothers with opioid use and their newborn babies. For example, while it has historically been common practice to use medication-assisted therapy (MAT) rather than detoxification for pregnant women with opioid addiction, recent research has shown that the mother can undergo detoxification without harm to the fetus.[15]

Organizations pursuing a similar approach may also want to consider how to pay for the comprehensive and far-reaching coordination needed to provide this level of care for both the mother and the baby—from before the mother becomes pregnant to after the baby is discharged. Savings associated with

reducing length of stay, for example, might be redirected toward funding specialized care coordination efforts.

AN ONGOING COMMITMENT TO RURAL HEALTH CARE

In describing the initiatives in this article, I relied heavily on interviews with individuals who are leading these programs. They are a diverse group in terms of background, expertise and training, but they all evinced a sense of passion and commitment to improving health for rural residents. My sincere gratitude goes to the interviewees for their time and willingness to share their experiences. I also wish to thank Karen Shelton, FSA, MAAA, and Rick Rush, FSA, MAAA, both of whom provided guidance and support throughout this project.

The initiatives described in this article are a compelling cross-section of possible solutions to managed care challenges in rural America. For actuaries who are interested in learning about other initiatives, I recommend starting with the Rural Health Information Hub.

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Statements of fact and opinions expressed herein are those of the individual authors and are not necessarily those of the Society of Actuaries or the respective authors' employers.

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