Top Ways School District Leaders Can Impact Health Care Costs

Cost-effective chronic disease management for schools.
Executive Summary

Improved chronic disease management has the potential to dramatically impact Medicare Advantage costs, since 75% of Medicare enrollees have at least one chronic condition. Furthermore, patient behaviors, such as weight loss, tobacco avoidance, physical activity, taking medications properly, and self-monitoring blood pressure or glucose, greatly affect the course of their conditions. Despite knowledge about the effects of patients’ actions on their health and the need for support to allow patients to make good health decisions, comprehensive lifestyle interventions and support systems for chronic disease management are not ubiquitous. Barriers include shortages of providers, lack of expertise, cost of paying for multiple members of a care team, and difficulty of use for plans and patients.

Lark offers chronic disease management platforms powered by artificial intelligence (AI) for Diabetes, Hypertension, Pre-diabetes, Weight Management, and Tobacco Cessation. Along with a suite of optional connected devices, members use Lark as a text-based health coach via their smartphone without limits. While others in the chronic disease space attempt to create expensive and soloed products based on human coach outsourcing, Lark integrates with existing work flows while offloading the burdens of day-to-day chronic disease management. Cost-effective chronic disease management may need to rely on innovative programs such as Lark.

Background

As alternatives to Medicare Parts A and B, Medicare Advantage plans covered 20.4 million people, or 34% of Medicare enrollees, in 2018[1], and accounted for 30% of total Medicare benefits, costing about $206.4 billion in 2017. Medicare Advantage plans have the ability to offer more or different services than Medicare Part A and B, but with this flexibility comes the challenge of paying for the additional services.

3 in 5 adults manage at least 1 chronic disease, and more than 2 in 5 manage at least two chronic conditions
Cost of Chronic Disease

Chronic diseases are by far the biggest cause of expenses in the country, accounting for 80% of the $1 trillion the U.S. spends on medical care each year. When considering the costs of medical expenses and lost productivity, diabetes, heart disease, and arthritis and related conditions each cost over $300 billion, and Alzheimer’s disease costs $200 billion. Obesity costs $150 billion in medical expenses. Smoking, an underlying risk factor for most chronic conditions and the leading cause of preventable death in the U.S., costs over $300 billion annually in lost productivity and medical expenses.[2]

The significance of chronic diseases is especially pronounced in the Medicare population. Among individuals at least 65 years old, 3 of 4 have at least one chronic condition[3], and 45% of

“For Lark to truly make a dent in America’s diabetes crisis, it is crucial that our scalable approach is engaging and sustainable across all age groups.”

- Julia Hu, CEO of Lark Health

Some of the most detrimental and expensive chronic conditions in the U.S. are heart disease, diabetes, arthritis, and Alzheimer’s disease. [5] Overweight and obesity, which affect 2 in 3 American adults, is an underlying cause of these, and hypertension, which affects 1 in 3 American adults, is a top risk factor for heart disease and stroke. Prediabetes affects nearly half of adults over 65 years and is a risk factor for type 2 diabetes. While all of these conditions have a genetic component, they are largely considered to be preventable with lifestyle choices. In addition, once patients develop these conditions, their behaviors affect the course of the disease, such as its progression and which treatments are required.

The Health and Economic Cases for Chronic Disease Management

Tertiary prevention refers to managing a condition to reduce its impact. For patients who already have a chronic condition such as type 2 diabetes or hypertension, chronic disease management is a form of tertiary prevention that can lead to lower overall healthcare costs due to less need for more expensive treatments for complications and comorbidities linked to uncontrolled conditions.

The economic benefits of tertiary prevention can be striking. For example, the annual economic burden for someone with prediabetes is $510, and this number increases $10,970 if the patient
is diagnosed with diabetes. However, patients with prediabetes who are at least 65 years old have been found to lower diabetes risk by 71% with simple lifestyle changes focusing on losing weight and increasing physical activity in the national Diabetes Prevention Program (DPP) run by the Centers for Disease Control and Prevention.

Using the example of managing diabetes to lower complication risk, note that over 25% of patients with type 2 diabetes may develop chronic kidney disease[6] As this advances, it can lead to end stage renal disease (ESRD) and the need for dialysis at an estimated annual per-patient cost of $89,000. These calculations [7] are more than hypothetical; it turns out that Medicare pays $34 billion annually for hemodialysis.

Again, though, the risk for ESRD and other diabetes complications dramatically drops with proper care. In diabetes, health behaviors such as blood sugar monitoring, weight control, regular physical activity, tobacco avoidance, and medication adherence are associated with improved blood sugar control and lower risk for complications and comorbidities such as hypertension, peripheral neuropathy, vision problems, and amputations.

These examples are dramatic but realistic, and they present strong cases for the benefits of chronic disease management and the other chronic conditions affected by lifestyle are good targets for self-management programs.

**Problem Statement**

If simple lifestyle behaviors can reduce the health and economic costs of chronic diseases, then why are they continuing to become more prevalent and expensive? The question is even more relevant when talking about Medicare Advantage plans, since they need to find innovative cost-saving measures to be able to afford the extra services they cover and improve margins. Some of the barriers include lack of scalability, cost of care of other programs, and patients not engaging in all of the behaviors that can help them manage their conditions and maintain health.

**Lack of Scalability in Chronic Disease Care**

Scalability is essential for chronic condition management programs to have an impact in Medicare Advantage on the bottom line. Patient populations affected by chronic conditions are large, but medical and health coaching professionals are costly and in short supply. A high proportion of medical visits are for chronic condition care.[8,9] It may not be surprising, then, that healthcare is distributed among the few and not the majority. In fact, 30% of chronic disease spending is for the most expensive 5% of patients, and the top 1% spend 22.7% of healthcare dollars.[10]

Programs also need to be quickly scalable at low costs because of their growing need. For example, 366,000 patients over 65 years develop diabetes each year, contributing to the already-noticeable shortage of physicians and diabetes educators.

The design of most disease management programs contributes to these high costs and shortages rather than helping them.

Lark’s low-cost coaching and connected device program can be distributed without limits to patients at the low, moderate, and high acuity level in each condition while remaining cost-effective.
Challenges in Patient Behaviors

Patient behaviors have a great impact on their conditions, but few patients practice optimal self-care and lifestyle behaviors. Only one-third of adults maintain a normal weight, despite high BMI leading to poorer blood glucose and blood pressure control, and higher risk for heart disease and arthritis. Fewer than half of adults meet physical activity guidelines, to the tune of over $100 billion in medical costs per year,[11] and 1 in 7 adults smoke.[12] Yet, Lark has produced research showing that amongst older adults, it has superior outcomes in weight loss, average 4.3% of body weight at month 12.

The list of poor self-care habits continues. Nearly half of Americans report being short on quality sleep,[13] while only 1 in 8 adults meet fruit and vegetable consumption recommendations[14] and 1 in 12 get recommended amounts of whole grains.[15]

Medication adherence is another health behavior that can save lives and money, but that patients are falling short in when caring for their chronic conditions. Only 51% of patients are adherent, while non-adherence raises the risk of death by 50 to 80%.[16] The numbers of hospitalizations are greater for non-compliant patients, with the differences being greater among older patients.[17]

The annual cost of medication non-adherence is a staggering $289 billion.[18] Specifically for diabetes, the cost of prescription medications is $656 more for compliant patients than for non-compliant, while the cost of medical care is about $5000 higher for non-compliant patients. The numbers are similar for hypertensive patients.[19,20]

While each of these health behaviors is apparently up to individual patients, patient support can help. Patients at high risk for type 2 diabetes who participate in a DPP, for example, are far less likely to develop diabetes than at-risk patients without the support of a DPP. For any of the chronic disease-related health behaviors, support such as nutrition and weight counseling, exercise program guidance, tobacco cessation programs, and assistance with self-monitoring and medication adherence can lead to better outcomes. The following factors may prevent patients from achieving health outcome and behavior goals when offered traditional, in-person services.

- Limited interactions. Patients may be permitted only a certain, possibly inadequate, number of interactions with each specialist on their care team.
- Lack of specialists. Patients may be offered calls with doctors and nurses, but may not have a referral to a nutritionist, health educator, or mental health professional with specific expertise in managing their condition.
- Inconvenience. Counseling available only in-person or through phone calls may prevent patients from seeking the help they need.
- Lack of spontaneity. The need for pre-scheduled appointments may deter patients from asking questions about details, such as how to take a medication, or about in-the-moment issues, such as what to order at a restaurant.
• Inadequate accountability. Healthcare professionals are unlikely to check in with the patient multiple times daily with reminders about medications and physical activity, or with feedback and advice on food choices and sleep.

• Poor engagement. Patients may lose interest and quit the program before establishing the habits they need to stay healthy.

Program Limitations

Lifestyle-based interventions are simpler and less invasive than treatment than can be needed if patients’ conditions worsen - for example, for a patient with hypertension, compare the cost of weight loss counseling to control blood pressure to the average cost of $18,000 to $32,000 hospitalization for a stroke if blood pressure remains uncontrolled.[21] They also lead to better outcomes. Still, patients are not yet benefitting fully from them.

To help patients establish and maintain healthy behaviors that can reduce disease risk and improve chronic disease management, Medicare Advantage plans need to offer holistic lifestyle coaching services to more than just the sickest few patients. To be realistic in such large populations with diverse chronic diseases, programs need to be easy to implement and run. They need to target the most impactful health behaviors and use evidence-based techniques to effect positive behavior change. They must be comprehensive, yet personalized, and designed for specific chronic conditions, and be able to reach patients and keep up with the latest science and practice.

Chronic Disease Management Solutions

Ideal chronic disease management programs in Medicare Advantage plans are affordable and effective in that they reduce the need for more expensive treatments and services among participants. They must allow for rapid and infinite scalability without increasing costs, reducing quality, or placing a burden on the plan administrators, and they must engage patients to allow for long-term changes in behavior. Lark is the only chronic disease management solution based on artificial intelligence (AI) with unlimited coaching, on a variety of health behaviors for management of common chronic diseases.

Novel Chronic Disease Management Platform

Lark is health coaching platform powered by AI. Programs include Lark DPP for patients at high risk for type 2 diabetes, Lark Diabetes Care for patients with diabetes, Lark Hypertension Care for patients with high blood pressure, and Lark Wellness. Patients may choose to enroll in a tobacco cessation program as part of their program, and manage common co-morbidities such as depression and loneliness.

Each program is based on advanced clinical guidelines for that condition, and includes coaching on health behaviors with an emphasis on establishing healthy habits. Coaching strategies are based on behavior change theories and include goal-setting and tracking towards goals, reminders, and education. Lark flags out-of-range values for blood glucose and blood pressure in the diabetes and hypertension management programs, respectively.

Lark is delivered to patients on their smartphones using a text-based interface. The AI coaching is developed with input from experts in areas such as clinical experience, chronic diseases, nutrition, physical activity, tobacco cessation, behavior change.
Some benefits of the AI platform compared to health programs delivered via interactions with live experts are:

- Getting simultaneous input from a range of experts rather than meeting with one specialist at a time.
- Personalization that increases as the patient continues to use Lark with no fear of a certain medical professional leaving the care team.
- Accessibility anytime, anywhere, instead of depending on live support to be available.
- Potential to constantly update as new practices and evidence emerge.

**Infinite Scalability**

As Medicare Advantage has over 15 million enrollees with at least one chronic condition and that number is only growing, scalability is an imperative for any functional chronic disease management program.

Lark has infinite capacity for scaling up without any loss of personalization or quality as more patients use the AI program. There are no additional costs associated with hiring new providers to serve the additional patients.

The ideal chronic disease management program must not only scale up rapidly and effectively, but also easily. Medicare Advantage plans can depend on Lark to handle the logistics of scaling to avoid the “pain” of growing pains.

**Proven Effectiveness and Designed for Patients**

Mobile health interventions have proven to be effective for chronic disease management and health behavior change, and they have the potential to be viable alternatives to traditional, in-person interventions.[22,23] Apps have been specifically recommended to increase medication adherence.[24], and Lark has shown a 25% improvement in this metric.

Lark has been shown to lead to outcomes superior to other chronic disease management programs in areas such as weight loss, with 4.3% among older adults in the program, and blood pressure control, with average reductions of over 11 mm Hg. [25,26]

*Chronic disease management is a necessity, not a choice, for Medicare Advantage Plans. Chronic diseases affect 60% of adults and place, by far, the biggest burden on the Medicare Advantage cost structure.*

In Lark Hypertension, average systolic blood pressure decreased 11 mm Hg in 6 months, and the percent of patients with controlled blood increased by ten-fold after six months (from 4% to 40%). Medical costs decrease when patients achieve better health, and there is another source of cost savings with this model: having a health coach constantly available to patients allows them to make fewer calls to a call center staffed by paid nurses.

Lark’s unique design is intended to facilitate patient use. Coaching is via text-based interactions and includes daily and weekly updates on various health behaviors, feedback and guidance throughout the day, and the option for patients to initiate conversations on topics of their choice, such as physical activity or stress. Additional benefits of Lark are:

- Unlimited coaching and interactions, anytime, with no appointment needed.
• Convenient access through the patient’s smartphone.
• No concerns about shyness or stigma when talking to a live coach or provider, or when attending group sessions as are common with other programs.

The unlimited nature of coaching through the app is particularly appealing when comparing it to Medicare requirements. In diabetes, Part B covers up to 10 hours of initial training and 2 hours of followup for diabetes self-management training (DSMT)[27] which may not be adequate for establishing long-lasting habits in areas such as medication compliance, self-monitoring of blood glucose, and choosing the right foods.

The potential for constant support with Lark allows patients to get coaching in-the-moment and regarding minor-seeming details. Unlike with a live diabetes care team, patients can ask what they should eat before they order at a restaurant. Patients’ Lark coaches may nudge patients if they have been sitting motionless for long enough to blood pressure and blood sugar control.[28]

For actions that live providers might carry out, such as reminding patients to take their medications, Lark can remind patients without the expense of having a live nurse make a telephone call.

**Conclusion**

Managing chronic disease is imperative for, but figuring out how is a challenge. Programs need to be effective, cost-effective, and scalable. They need to address the most common chronic diseases and behaviors that affect them. They need to be patient-friendly and clinically-backed. Lark offers AI-powered chronic disease management programs that help patients build healthy habits in the areas that matter most for self-management. The convenient, engaging, and effective platform can increase reach among Medicare enrollees and lead to long-term cost savings with reduction in the need for more costly treatments that can be necessary if chronic diseases are not controlled. Lark is priced lower than any competitor and charges on a low-risk performance basis. As Medicare Advantage plans cannot afford not to manage chronic diseases effectively, it is time to investigate convenient and effective options with seamless start-up and delivery.


Have question about Lark or would like to request a demo to see more?

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