Planting the seeds for Food is Medicine in Kansas

The potential of medically-tailored food assistance for tackling persistent health challenges

Sunflower Foundation

KANSAS FOOD IS MEDICINE INITIATIVE

FROM CLINIC TO COMMUNITY

What are evidence-based Food is Medicine programs?[1-3]

1. Therapeutic provision of medically-tailored meals, groceries, or produce prescriptions specifically designed to treat or manage specific clinical conditions delivered in nexus with the healthcare system
2. As a best practice, "medical tailoring" and "dosing" of prescribed foods should be based on personal nutrition needs and baseline food insecurity as identified by a registered dietitian or other qualified, licensed healthcare professional
3. Since foods and meals are shared at the household level, many FIM models are also considering "whole family" needs.

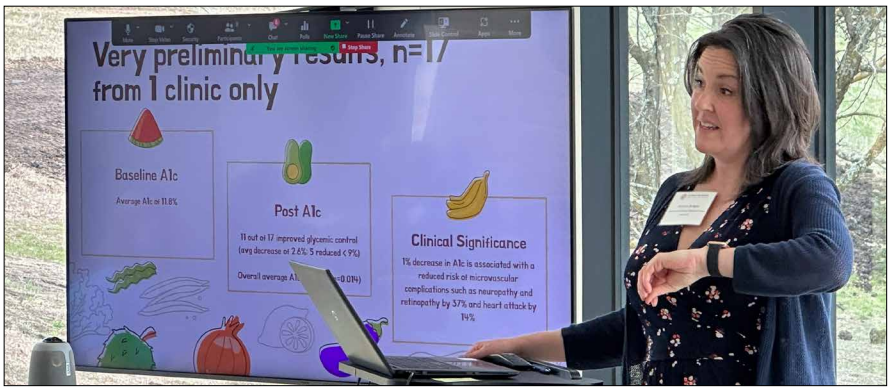
Overview

The *Kansas Food is Medicine Initiative (KFIMI)*, led by Sunflower Foundation, aims to improve the health of Kansans by improving management of chronic disease through nutritious food access, education, and healthcare integration – all while catalyzing health systems change statewide. Over the past three years, six Federally Qualified Health Centers (FQHCs) across rural, frontier, and urban communities have participated in a real-world comprehensive study of FIM feasibility, effectiveness and implementation.[4]

Participant Profile

- 100% living with pre-diabetes, diabetes, or other cardiometabolic health condition
- 70% experiencing food insecurity
- 50% with depression diagnoses
- 15% Medicaid, 22% Medicare and 8% dual coverage insured

Each clinic co-designed[5] and implemented programs that combined healthy food access with individual or small group nutrition education to support sustained behavior change. Although participating patients received different levels of nutrition support, based on each clinic's program, everyone received a mix of fresh produce and shelf-stable items appropriate for the dietary intervention (e.g., whole-grains) for timelines ranging from three months to one year.



KFIMI Clinical Outcomes at 3 months	Phase 1 (n=175)	Phase 2 (n=204)
Patients Experiencing Improved A1c levels	60%	62%
Greatest A1c reduction	↓ 7%	↓ 8%
Average A1c reduction among those with baseline >9%	↓1.3%*	↓1.7%*
Average A1c reduction overall	↓0.7%*	↓ 0.9%*
Average A1c reduction among those with hypertension	↓ 5.75/3.07 mmHg*	↓5.23/3.52 mmHg*
KFIMI Mental Health Changes at 3 months		
Depression (PHQ9) +	No change	↓Depression
Depression (scale 0-27)	↓0.4	↓1.44*
Quality of life (vitality score)	No change	↑Vitality
Vitality (scale 0-100) #	↑2.9	↑6.26*
Quality of life (flourishing scale) #	No change	↑Flourishing
Flourishing (scale 1-21) #	↑0.15	↑0.2*

A1c = Hemoglobin A1c, a marker for average blood sugar over the last three months
** Denotes statistically significant differences, p<0.001*
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Rural Implementation

The KFIMI is distinct in its emphasis on Food is Medicine implementation in rural and frontier communities – a profoundly understudied area to date. The process evaluation for this project revealed challenges inherent and distinct to rural communities:

- Smaller populations mean workforce shortages, such as registered dietitians and limited clinic capacity
- Both food and patients must travel long distances in rural areas of vast geographic spread
- Resource and infrastructure gaps hinder food aggregation and distribution with limited opportunity for "economies of scale."

Short-Term Intensive Interventions

Multiple studies, including KFIMI, show clinically significant improvements within three to six months.[1-2] A1c reductions of 0.5–1.0% over this period are linked to lower risks of microvascular complications and long-term cost savings. Evidence also supports short-term intensive interventions when paired with sustained nutrition education and follow-up.

Why Didn't Everyone Improve?

Outcomes were less pronounced for those facing:

- **Moderate to severe depression**
- **Very low food security**
- **Limited health literacy**
- **Lack of basic kitchen appliances**

These findings underscore the importance of integrating behavioral health and social resources within FIM programs to help ensure patients have what they need to succeed. Patients with these risk factors may also benefit from longer-duration, higher-dose FIM programs to help ensure food security is stabilized as the first step in treatment.

Rural Implementation Considerations

KFIMI data also demonstrate that with external support and flexibility, rural clinics can overcome challenges with strategies appropriate for a rural patient base. One powerful example is the statewide charitable food system. When produce boxes from out-of-state vendors arrived spoiled and moldy, the local food bank partner demonstrated unparalleled ability to distribute fresh produce to clinics across multiple counties and became the "vendor of choice."

Health Clinic Considerations

Clinics will face implementation learning curves and can benefit from a continuous quality improvement (CQI) approach as they integrate FIM program screening, referral, and delivery protocols.

Behavior change is difficult and takes time. Clinics used numerous patient engagement strategies:

- Community Health Workers (CHWs) and those in similar roles provided important ongoing support and problem-solving.
- Flexible education formats and a connecton back to the clinic and provider were key. Third-party online education was poorly received, but local SNAP-Ed classes were popular.
- Conventional and novel approaches to encourage patient self-monitoring and increased accountability; this included home use of blood pressure cuffs and glucose monitors, as well as the Veggie-Meter®.

Future projects should consider direct incorporation of behavioral health services for FIM patients with moderate to severe depression.

Food Provision Considerations

With philanthropic support, clinics experimented with medically tailored meals, medically tailored groceries and produce prescriptions, relying on a combination of vendors. Lessons learned included:

Charitable Food System (regional food banks)

- Lowest cost due to food bank national supply chain and economies of scale.
- Fresh produce boxes arrived in good shape and were extremely popular with patients.
- Coordination among food banks and clinics was hassle-free.
- Disease-specific food boxes from national supply chain were poorly received by patients; food banks have potential to create better boxes in-house with appropriate support.

Local Grocers, Growers & Food Businesses

- Provided creative solutions, satisfied patients, dollars stay local, and community partnerships strengthened.
- Higher costs due to reality of small, local businesses; increased FIM demand may help reduce costs in the future.
- Local sourcing requires coordination by clinics; however, potential for local nonprofits to step in and assume that role.

National Vendors

- Higher shipping costs due to increased travel distance.
- Spoiled produce due to poor packaging; high patient dissatisfaction.
- Home delivery success was variable and dependent on reliability of third-party shipping vendor.
- Outsourcing did not save clinics time due to hassles of serving as intermediary between patient and vendor.

Other Considerations

- While access to fresh produce is important, many shelf-stable foods also can be accessible, affordable and therapeutic FIM strategies; e.g., dried beans, nuts/seeds, dehydrated vegetables and whole grains. However, provision of such foods should include an education component
- FIM programs have the potential to benefit both patients and their communities. External investment to boost local food ecosystems, such as producers, grocery stores, and food pantries, can help these partners pivot or scale up to meet the demand of nutrient-dense foods.[6]
- Finally, FIM programs always should keep patient preferences, abilities and resources in mind. Some clinics provided patients with start-up "cooking kits" with basics such as cutting boards and spices.

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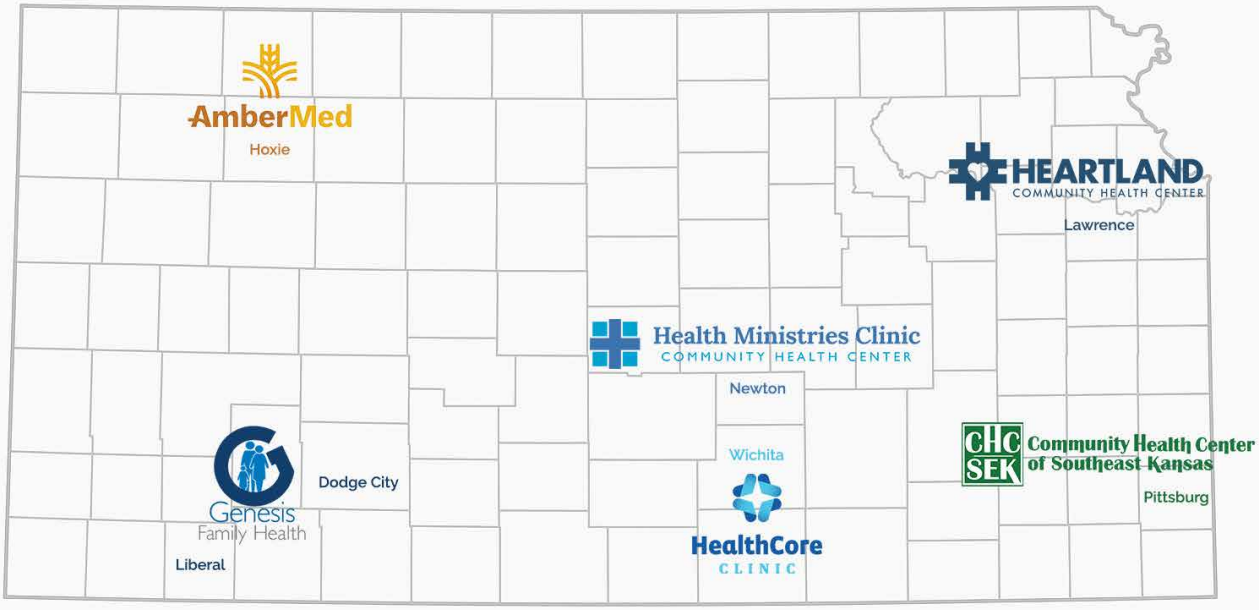

What Patients are Saying

"…I started eating the fruits and vegetables (from the produce boxes) and stopped drinking soda and eating so much bread and tortillas. I know what I was eating (before the program) was making me sick. …I learned that I was making myself sick and changed what I was eating. I love the fruits and vegetables and wish that we could get more of them."

–Male, age 56, Dodge City, KS (Rural)

"I've eaten mushrooms, asparagus, pears, and other things that I would have never in a million years even tried. It's one thing to get the food, but we've learned how to cook the food in those (SNAP-Ed) classes, and we try them together as a group …In fact, if I were to make one recommendation for this program, it would be to get it in the schools so these kids could learn how to eat healthy."

– Male, age 46, Pittsburg, KS (Rural)

"I learned through those (SNAP-Ed) classes about mindful eating. When I'm hungry, I'll now go for a drive or eat a piece of fruit from those boxes. I've lost some weight …Last week, I was able to climb back into my tractor and do some work …I haven't been able to do that for about three years now."

– Male, age 71, Hoxie, KS (Frontier)

What Providers are Saying

"…This (program) has really been the one that seems to have made a difference in A1c levels in some of my patients. …They tell me they feel so much better. These are individuals who really felt lousy just a few months ago, and this has made a difference."

–Physician, Newton, KS

"I'll admit, I was was skeptical. I had a patient ask me about it, so I went ahead and made the referral. At her next checkup, I was floored to see the change in her A1c level… this was someone who I had been hitting a wall with. But the regular check-ins (with our community health worker), combined with the fresh produce, really resonated with her…I think that accountability piece is really important…I wish that all of our patients could have access to this.

– Physician, Hoxie, KS

"This program is really important to so many of our patients. Without it, they wouldn't have access to a lot of the produce items. And they love the fresh fruit and vegetables…I think that having these items helps them to think about some of the other food choices they make and how it makes them feel…a lot of them say that when they are hungry, they are choosing to eat a piece of fruit over chips or soda."

– Nurse Practitioner, Dodge City, KS

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