



CHESS HEALTH
Real Evidence. Real Recovery.

**THE ROLE OF TECHNOLOGY AND COLLABORATION
IN THE WAR AGAINST THE OPIOID EPIDEMIC**
Improving Care and Outcomes Throughout the Continuum

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Recent data from the Centers for Disease Control indicate there were more than 63,600 deaths from drug overdose in the U.S. in 2016, an increase of 21% from 2015. Broken down, that's 174 deaths each day, of which 67% were from opioids.¹ The Addiction Policy Forum explains "To put the numbers in perspective, we lose the equivalent of nearly three sold-out 747s every week to drug overdose deaths; seven if we include alcohol related deaths." (Addiction Policy Forum Update email, December 21, 2017) The number of overdoses from heroin alone have risen 533% since 2002. While the epidemic is not confined just to the U.S., 80% of all opioid pills manufactured are consumed here.³

The estimated cost of this epidemic? \$78.5 billion.² Fortunately, on October 26, 2017, the government declared the opioid crisis a public health emergency, which may increase the scope of resources available to providers, communities, and those suffering from substance abuse.⁴



Dr. Kenji Oyasu, an emergency department physician in the Chicago area, was disturbed at the steady stream of overdoses and drug seekers entering the ED each day. He became frustrated that the only resources he could provide were his own cell phone number – obviously not sustainable – and a list of treatment clinics, most of which had up to 90-day waiting lists. He also faced a shortage of providers offering treatment to which he could refer his patients. In a bold attempt to do more, Oyasu opened his own outpatient treatment center.⁵ And others are following suit. American Physician Partners (APP), an emergency department management organization serving 62 hospitals in ten states, faced the same situation in the EDs it managed. According to Dr. Erik Petersen, Regional Vice President at APP and founder of the Midwest Institute for Addiction, APP opened several treatment centers focused on medication-assisted treatment and behavioral therapy to continue care after patients are discharged from the ED.

HOW DID WE GET HERE?

It is difficult to point to a single factor in bringing us to this point. But most would agree that insurers, healthcare providers, and pharmaceutical manufacturers all play a role in varying degrees. For example, a recent article in the New York Times highlights the propensity of insurance companies to approve cheaper opioid drugs while denying less addictive drugs, which are often more expensive. In the same vein, many insurers approve opioids without requiring authorization, but require authorization for less-problematic, but as or more effective drugs. In one case, an insurer recommended a patient switch from Butrans, which are an effective alternative to opiates, to OxyContin or extended-release morphine, which are less expensive.⁶

Surprisingly, value-based care also can be implicated, primarily due to its emphasis on patient satisfaction. Many hospitals must report patient satisfaction scores as a measurement for the Merit-Based Incentive Payment System (MIPS).⁷ When patient satisfaction is tied to provider reimbursements, it is understandable why those providers want to do everything they can to help patients reduce pain, even if that means giving in to a patient's request for opioids. Finding a way to effectively monitor pain levels is difficult, thus the invention of the 1 – 10 pain rating scale. In the midst of these new pressures, the goal has become absence of pain as the ideal outcome.

Pharmaceutical companies also have come under scrutiny, many of which are accused of pressuring physicians to use opioids, touting their safety and effectiveness for treating pain. Forty-one states are now working together to investigate pharmaceutical manufacturer and distributors to find out what role they've played in causing the current opioid epidemic.⁸

Regardless of how we got here, there are proven ways to positively impact and reverse this crisis.

CREATE COMMUNITY PARTNERSHIPS

Treating patients in silos of care lowers outcomes and increases costs. This is especially true for substance abuse patients. It is important to identify community resources for warm handoffs to ensure patients get the right help at the right time. This could be a patient-focused van service to provide transportation to and from appointments, or physicians who agree to take same-day appointments and referrals. Create a list of specialized providers who do treatment outside of traditional treatment clinic. Reach out to these providers, and then create your own list to have on hand. It is also helpful to have a specialist from local treatment clinics in the ED to ensure the handoff goes smoothly, which reduces the likelihood of patients being lost to gaps in care.

The Central Kansas Foundation (CKF) provides an excellent example of a successful community partnership focused on patient care throughout the continuum. *(Chart 1. A Community Partnership Model)*

LEVERAGE TECHNOLOGY

Creating and sustaining successful prevention and treatment programs requires connectivity that extends throughout the continuum of care. Substance abuse patients need access to providers 24 hours a day, every day of the week, regardless of their location. Technology can make it easier to keep patients engaged in their recovery program, enabling a higher likelihood of long-term success.

TELEMEDICINE

Addiction treatment and recovery can be especially challenging in rural communities where appropriate resources simply do not exist. When patients have to travel several hours for follow-up care and treatment, they are less likely to follow through. Sadly, only 10% of patients that meet criteria for Opiate Use Disorder have access to treatment.⁹ Telemedicine technology enables addiction specialists to connect with local physicians and treatment clinics on a regular basis. Specialists can educate rural physicians on best practices, and they can work in tandem to help patients get the help they need closer to home. In 2016, the government awarded a \$1.4 million grant for telemedicine to three states to help combat the opioid epidemic that has devastated rural Appalachia.¹⁰

Figure 1:
A Community Partnership Model:
Central Kansas Foundation



PATIENT-CENTERED RECOVERY TOOLS

Even the best of treatments can fall short of desirable outcomes if patients are sent back to their previous life situations without resources for recovery. Tools such as the A-CHESS app from CHESS Health can help to reverse this trend. A-CHESS, which stands for Addiction Comprehensive Health Enhancement System, is a comprehensive relapse prevention platform for managing populations with substance abuse disorders. Dr. David H. Gustafson, PhD, a nationally recognized substance abuse expert, developed A-CHESS using scientifically validated research on addiction treatment and the recovery process. Dr. Gustafson designed the app to connect patients, providers, and payers through a user interface that is simple, responsive, and easy to use, providing a personalized recovery resource in a secure environment that promotes trust, compassion, and success. A-CHESS enables recovering addicts to connect with a network of peers and caregivers, provides access to coping and motivational resources, and offers appointment reminders and other supportive features. And it works. While only 26% of health apps that are downloaded are used more than once, 80% of patients using A-CHESS were still using the app after 4 months. (Figure 2. A-CHESS Evidence-based Technology Rooted in Social Determinism)

The Central Kansas Foundation (CKF), a comprehensive addiction and treatment service, uses A-CHESS as part of its strategy to combat the opioid epidemic in state, which has been hit very hard. In 2016, there were 310 drug-poisoning deaths statewide; 95 from methamphetamine, and 104 from opioids.¹¹ One of the primary challenges to success is relapse, which most addicts experience shortly after completing a treatment program. Brenda Haaga, VP of Prevention and Early Intervention Education at CKF, worked with Chess Mobile Health on a pilot project with the University of Wisconsin – Madison. The project was centered on a randomized trial of the A-CHESS app, and results were impressive; 94% of participants were still using the app after 16 weeks. Haaga decided to integrate A-CHESS into the entire CKF program throughout its 65-county service area.

Each patient entering a CKF treatment center receives the A-CHESS app right away. It takes just 15 minutes for Peer Specialists to set up the app and educate the patient on its features. Patients are connected with caregivers and other recovery resources 24 hours a day, 7 days a week, unlike traditional programs that are available only during business hours. CKF has recently rolled out the app in emergency rooms too, which helps get the app into the hands of those in need even sooner.

Figure 2:

A-CHESS Evidence-based Technology Rooted in Social Determinism



CKF patients using A-CHESS:

- Attend 20% more group therapy sessions
- Complete the full treatment program 19% more often than non-users
- Experience 65% fewer repeat visits to the ER in the 30 days post discharge

DATA AND REPORTING

Traditional substance abuse treatment and recovery programs are typically dependent on labor-intensive workflows. Pulling data to create necessary reports requires costly resources and manual, duplicative, error-prone processes. This results in inefficiencies that negatively impact the treatment program and the organization. With A-CHESS, it's different. A-CHESS technology eliminates the need for inefficient manual processes and delivers complete, comprehensive data that delivers true results.

Using predictive relapse analytics and condition-specific content, A-CHESS provides information to patients in a proactive way so they have continuous access to the tools they need to succeed, right on their smartphone. Caregivers can also use these tools to monitor patient progress in real time.

Data collection spans the entire care encounter, from personal information to clinical progress.

- Patient demographics, Social Determinants of Health (SDoH), co-morbidities, addiction features, and medication assisted treatment
- Level of care, in/out patient, and residential
- Utilization activity, including propensity to relapse and risk of extended sobriety

Reporting functionality delivers data at multiple levels and in customizable formats to accommodate a broad spectrum of reporting needs.

- Dashboard showing survey data at individual and aggregate level, daily check-ins, utilization, and full visibility into all messaging (peer-to-peer and discussion groups)
- Outcomes-based reports for organizational reporting based on industry standards including: individual protective and risk factors report, fee-for-service reports, outcomes and measures reports for payers.

Analytics based on Bayesian (probability) model are used with Brief Addiction Monitor and daily patient questions to gauge patient progress and identify immediate patient needs.

- Positive or negative trends given to provider
- Ability to overlay protective factors (alert pins) on trends
- Visibility into correlation between trends
- Customizable to dashboard

Integration is accomplished through middleware, which does 70% of integration work into the EMR. A-CHESS generates red pins (high risk), which trigger data capture, and adds that information back to EMR, thus functioning as a mini-EMR for addiction.

A randomized controlled trial by JAMA Psychiatry of 349 SUD patients with access to the A-CHESS app found:

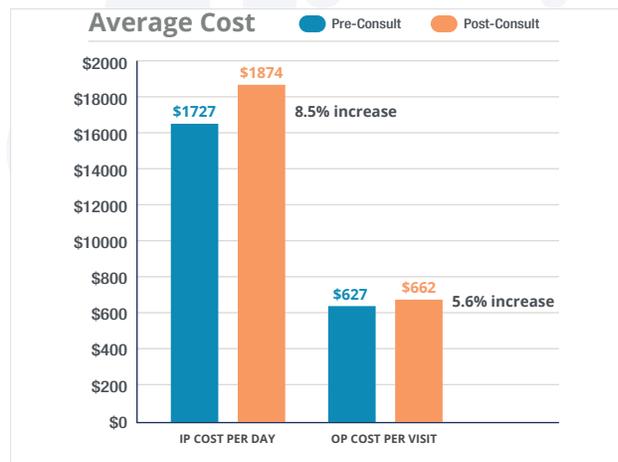
- 12% higher abstinence rates
- Reduced rate of relapse of 50%, and reduced severity of relapse

A-CHESS is the only technology of its kind recognized for relapse prevention by the Substance Abuse and Mental Health Services Administration's National Registry of Evidence-based Programs and Practices (NREPP), and is recognized by the Surgeon General for positive patient outcomes. Proven relapse predictor has been validated by Journal of Substance Abuse as a proven relapse predictor

BOTTOM LINE IMPACT

As more community organizations join forces to combat the opioid crisis, it is assumed that the cost to those entities will decrease. Is that the case? The answer depends on how you look at it. The Central Kansas Foundation has found both the cost of in-patient and of out-patient treatments actually went up after implementing a quality program. However, there was significant savings in the form of cost avoidance by getting patients into treatment programs, thus reducing the number of readmissions. In a sampling of 96 patients, 69 reduced their ED usage after the initial consultation, and 42 of those had zero return encounters post consult. (Figure 3: Cost Benefit & Lives Saved) The end result is a positive impact to both the patient and the bottom line.

Figure 3: Cost Benefit & Lives Saved



FORMULA FOR SUCCESS

Substance abuse is a devastating medical condition, one that destroys lives, tears families apart, and adds billions in costs to an already financially burdened healthcare industry. While insurance companies and pharmaceutical manufacturers and distributors are coming under increased scrutiny, industry-wide progress is certain to be slow. Yet through collaboration and patient-centered technology, front-line practitioners have the ability to make an immediate impact.

The Central Kansas Foundation has developed a calculation that brings it all together. (Chart 4. CKF Equation for SUD Integration Success) Screening, Chronic Disease Management, and Medication Assisted Treatment, combined with provider competence and appropriate patient care, are essential clinical elements for success. But these elements will fall short if they are not an integrated part of the full continuum of care, the foundation of which is access to the right treatment in the right place at the right time, and proven technology for effective treatment and recovery success.

Figure 4:
CKF Equation for SUD Integration Success

$$\frac{(\text{SBIRT} + \text{CDIVI} + \text{IVIAT}) \times (\text{C} + \text{DNH})}{(\text{E} \times \text{IATC}) \times \text{T}^2} = \text{IPO}$$

$$\frac{(\text{SBIRT} + \text{Chronic Disease Management} + \text{Medication Assisted Treatment}) \times (\text{Competence} + \text{Do No Harm})}{\text{Engagement} \times \text{Immediate Access to Care} \times \text{Technology}} = \text{Improved Patient Outcomes}$$

**Engagement x Immediate Access to Care x Technology =
Improved Patient Outcomes**

With technology and collaborative patient management, CHES Health, and the Central Kansas Foundation are winning the war on the opioid crisis, one patient at a time.

SOURCES

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