Formal Program Evaluation:
Patient and Provider Experiences with Firefly Health

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BACKGROUND

A large, self-insured public benefits administrator in the Northeast was interested in learning more about its new virtual primary care program through Firefly Health. One of the carriers ("Carrier") for this purchaser recently contracted with Firefly to provide integrated, virtual primary care services to its members. Seeking to fully understand provider and patient satisfaction and experience with this new program, the purchaser worked with Catalyst for Payment Reform to commission this evaluation, hoping to gain insights as to whether the program should be expanded.

Firefly Health is a primary care provider team that includes a medical doctor, nurse practitioner, health guide and behavioral health specialist. The health care team is available to patients via a mobile app. Initiation of care with Firefly starts with an extensive health assessment followed by regular video or chat check-ins. For the purposes of this study, participants were individuals who were members of the Carrier and opted to use Firefly as their primary care provider.

METHODS

UC Davis conducted the semi-structured telephone interviews with Firefly patients and members of the Firefly health care team. Both patient and provider participants were were informed that they were going to participate in a 1-hour interview. Patient participants were primed to discuss their experiences with receiving primary care services through Firefly. Provider participants were primed to discuss their experiences providing care under the Firefly model.

The facilitator guide was developed in consultation with a health services researcher, a sociologist, leadership of the Firefly team, and representatives of the Carrier. The patient facilitator guide inquired about the length of time as a patient with Firefly, utilization and experiences with Firefly, usability of Firefly application, access to Firefly services, alignment of Firefly services with patients' healthcare expectations and needs, trust in Firefly's services, and perceptions of high value care. The provider facilitator guide inquired about length of time working at Firefly, Firefly's model of care, provider burnout, ability to provide individualized care, patient trust building, working in a virtual environment, and ability to provide high value care under Firefly's model of care.

The Carrier sent an introductory, recruitment email to recruit patient participants. The population sample of patients who are the Carrier's members and actively using Firefly is 19. Firefly sent an introductory, recruitment email to recruit provider participants. All individuals who contacted the study were invited to an interview and completed the interview. Telephone interviews were conducted in April and May 2021.
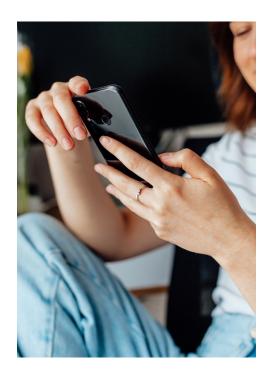
Interviews were audio-recorded and coded. The development of themes emerging from the qualitative data was in theory guided by the constant comparison method: immersion in the transcripts, development of themes and codes, coding the transcripts, and reintegrating the codes into an explanatory narrative. Transcripts were analyzed with a grounded theory approach in which codes, categories, and themes that emerged from the data were identified.

This study was approved by the University of California, Davis Internal Review Board. All participants verbally consented to participate in the study and to be audio recorded.

RESULTS

PATIENTS

The research team conducted four (N=4) interviews with Firefly patients. Participants included two female and two male patients and all participants reported being a member of Firefly for at least one-year. In the past year, all participants had at least one acute medical need and some participants reported a chronic medical condition that is currently being managed by the Firefly team. All participants reported choosing Firefly because they wanted something different from their primary care provider. Patient participant's experiences prior to joining Firefly with their primary care providers were generally positive—high levels of trust, responsiveness, and access to services. Participants noted they initially switched to Firefly for primary care due to the availability of providers when they needed it and appeal of managing their own healthcare. The research team observed that participants had a high sense of self efficacy when it came to managing their health and healthcare.

Participants spoke positively about the responsiveness of their healthcare team and patient centered care. They reported that their care team listens to their values when it comes to health care. For example, one participant noted her previous primary care provider was too quick to refer her to an urgent care, while the Firefly team works with her preferences for a more holistic approach to treatment and care before suggesting medical intervention. Participants noted that the app allows the Firefly team to track the conversations they have had with each member of their primary care team, which means the patient does not need to repeat themselves with each new encounter.

Three out of four of the participants have since referred their family members to enroll in Firefly. The fourth participant did not have any family members on her plan to refer. All participants intend to keep Firefly's services unless they experience major changes in their health or if Firefly were to change their services.

There was a high level of trust of the Firefly team. Trust was attributed to responsiveness from Firefly, providing care that aligned with each patient's healthcare needs and values, ensuring patients were able to access needed services both within Firefly and for in-person visits, and reminders for follow-up and preventive care. Participants had not experienced this type of care with their previous health care providers and supported this model of care. However, they did not feel that Firefly could work for all patients, such as those who may not feel comfortable with remote interactions or have greater healthcare needs.

Firefly CARE TEAM

The research team conducted five interviews with employees of the Firefly care team—two physicians, two social workers, and one health navigator. All participants spoke highly about the ways in which Firefly's model of care facilitated their ability to provide high quality, holistic care to their patients, "This was an opportunity to redesign primary care from the ground up in a way that I felt it should work." (Physician) All provider participants had previous experience working in health

systems with more traditional models of care, such as in-person patient visits at large health systems.

A physician participant highlighted the three key components to Firefly's model of care: a) addressing behaviors known to lead to illness or disease (motivating behavior change), b) building longitudinal relationships with patients in which communication is the foundation for strengthening the relationship (building relationships), and c) deconstructing traditional notions and use of time in primary care models (deconstructing time).

Motivating Behavior Change. A physician participant noted that a majority of illness (e.g., diabetes, obesity, depression) can be prevented with behavior change. Key to improving health behaviors is health navigators. Health navigators are trained in motivational interviewing and working with patients to maintain health promoting behaviors and change behaviors known to result in illness and disease. Key to the motivating behavior change are the health navigators. Health navigators work directly with patients toward their overall wellness goals. All members of the team work closely with patients to identify and discuss barriers to achieving their healthcare goals, such as weight loss, disease management, and attending a specialist appointment. The team works with patients to problem solve on how they might overcome behavioral or logistical barriers to reach their goals.

A provider participant noted that they are not a behavior change app but do focus heavily on behavior. The Firefly platform allows for members of the care team to schedule follow-up reminders for patients. Provider participants spoke highly about the reminders feature. Specifically, this feature allows them to remind patients about follow-up or preventive care visits, send motivational messages and support to patients, and check-in with patients about events in a patient's life that are important to them.

Building relationships. Every communication with a patient is seen as an opportunity toward building a longitudinal relationship with a patient, "We're able to have that

continuous discussion with patients." (Social Worker) In addition to intentional communication, Firefly invests heavily in supporting the care team with referral specialists, engineers, and marketing so that communication with the care team in enhanced, "We are intentional with our communication." (Physician) Communication is not always about medical need.

Deconstructing Time. Physicians discussed the ways in which Firefly's model of care deconstructs time to allow for individualized, patient-centered care and trust-building. Physician participants reported that the Firefly model deconstructs time by opening-up continuous engagement with patients. A physician participant noted this approach is more similar to an in-patient setting. Continuous engagement with patients provides the healthcare team with insight into the lived experiences of patients. Interaction with patients is not confined to visits and patients can be seen while at home in a way that is convenient to the patient—connecting with patients any time of the day depending on their need. Physicians still maintain a schedule of synchronous meetings. However, medical needs are met with interventions and solutions that are timely and makes sense for the patient's needs.

A physician participant illuminated the way in which the three components of this model of care intersect to optimize patient centered throughout the engagement process. Through relationship building and intentional communication, providers are building and investing in a long-term relationship with their patients. For example, if a patient is having trouble with behavioral change, their care team can remind them of instances where they have been through similar or more challenging instances to motivate the patient. Participants felt this was a powerful aspect of the Firefly model of care.

MENTAL HEALTH

The Firefly model enables patients' continuous access to members of their care team through the Firefly app. While this is enables continuity and accessibility of care, mental health providers were cautious with the chat function, "It's not appropriate for the therapeutic model. Actually, my being readily accessible is not a great thing for a therapeutic relationship. I do set boundaries with that…I will check-in on their mood on an agreed upon time. That's what's great about the chat, I'll do things like that." (Social Worker) One mental health provider participant noted that this creates an opportunity to have a frank conversation about patient self-efficacy in their treatment plan and the role of their mental health provider in their treatment.

Mental health providers identified benefits to engaging with patients in a virtual environment. They reported patients are often more at ease in their homes and they could gather more clues from the patients (e.g., how they interact with people) and certain diagnoses could come through because patients are more comfortable, "You get a little glimpse into their life when they are in their own personal space." (Social Worker) Providers also noted that participants are less likely to no-show to the virtual visits. In general, virtual mental health visits were not a hinderance to care rather there are key potential benefits. Expectations for a timely response to patients is more challenging for mental health providers due to the length of their visits. If in a therapy session, a response might not occur until an hour later.

HIGH VALUE CARE

This dismantling of the traditional patient-provider model of engagement promotes higher value care and services. Continuous communication enables providers to take a watch and wait approach rather than overtreat due to the uncertainty of when a patient can return for a visit. A physician participant provided the example of when a patient calls for an acute need. The care team begins a conversation to monitor the patient's condition over time rather than attempting to have all needs met in a single visit, "This model allows us to keep track of patients in their care journey. Rather than if a patient doesn't show-up to an appointment." (Physician) The care team also takes time to research a condition and check-in with each other and, if needed, seek advice from colleagues or specialists. This model allows the healthcare team to provide much more continuous care, "I find myself ordering fewer things. Here, I'm able to keep in communication with the patient and monitor it for a few days. In the past, since I was so time pressured, I just would order the test during the visit." (Physician) Another physician noted, "I use less interventions

because I am able to watch and wait. Patients know you're going to check in and providers are available to communicate." (Physician)

Under the Firefly model of care patients are able to access the cost-effective care they need when they need it. For example, patients don't have to drive to a visit and pay for parking, they can attend a visit between meetings, and message their care team when they have a question rather than wait for an appointment. "I love when patients message me. A patient asked me if they should take a turmeric tea and within seconds I can tell them if there is a harmful interaction. If I didn't have that interaction with them, they'd never ask." (Physician) Firefly is an integrated model of care where patients can easily connect with other members of the care team and the care team meets frequently with the patient.

The Firefly program recently implemented a process for referrals. Firefly staff spoke positively about the referral process with one provider participant noting there is a lot of necessary "hand holding" to ensure patients are getting high value services. The process ensures the visits are scheduled in a timely manner, there is a high level of communication and sharing of patient information with the Firefly team, and high patient satisfaction with the services. The Firefly team holds the

providers and the offices to which they refer patients to high standards of care, such as customer satisfaction and monitoring for overuse of services. After the referral visit the Firefly team will follow-up with patients to ensure their experience was satisfactory. Firefly monitors patient experiences to assess whether they should continue to refer patients to an office visit or provider. Monitoring for high value care includes observing whether tests are being re-ordered when the same test had been recently ordered—this is viewed as unnecessary and wasteful low-value care. Firefly is forward thinking when it comes to ensuring patients are receiving high value care by looking out for unnecessary tests and treatments, high patient satisfaction, and costs to patients.

INDIVIDUALIZED CARE

The integrated model of care and patient communication approach promotes individualized patient care, "What we've been able to do at Firefly is take care of a person holistically." (Social Worker) The messaging app creates a two-way flow of information that is easily accessible to all members of the care team and the patient. The holistic, integrated approach to care enables the care team to provide services in a way that centers the needs of patients. One participant provided an example where a patient needed to see a specialist, but the care team also understood this patient had anxiety and was balancing the needs of her family. While the team worked diligently to get her an appointment with a specialist, the team also understood that the patient may not be able to attend the appointment immediately. The care team took into consideration the immediate needs and priorities of the patient and worked with the patient to ensure she got the services she needed.

Key to providing individualized care is building trust with patients. The Firefly model enables care team members to intentionally and purposefully interact with patients to build trust, "We want to make patients feel comfortable and heard. If patients feel heard it doesn't matter if it's virtual or not." (Physician)

Firefly GROWTH

All participants noted that Firefly is growing rapidly. There was general satisfaction with the ways in which Firefly is growing and scaling-up their model of care, "The backbone of Firefly has not changed except in its scale. The scope of our work is the same, it's the how often we do this during the day and number of people is more." (Physician) There was concern that as Firefly grows, the flexibility to accommodate individual provider workflows could be lost, "The pressure we have is that we are a fast-growing company...and a changing environment." (Physician) Reflecting upon the positive experiences of patients and their satisfaction with the members of their care team, provider participants acknowledged the Firefly team was comprised of

passionate and dedicated professionals. The Firefly model of care provides clinicians with the infrastructure to practice medicine and provide health care in an environment that promotes high value care and invests in relationships with their patients, "If you can create the conditions to have [providers] do what they love, they will all be incredible." (Physician)

BURNOUT

Three key themes emerged in strategies Firefly uses to prevent burnout: a) creating expectations and boundaries for shifts, b) a model of care that is proactive rather than reactive, and c) a team-based approach to patient care. All participants noted that there are clear shifts during which they are expected to respond to patient messages. Some participants noted resistance to idea of "shift work" as it may reduce their autonomy. However, they also acknowledged the well-defined boundaries and clear expectations for when they are to respond to patients is key to preventing burnout. A proactive versus reactive model of care enables providers to use preventive medicine, "This prevents burnout because we can get with patients regularly rather than see them once a year and put out fires when we see them." (Physician) The team-based approach to care ensures that all members of the team are well informed about a patient's needs and no one team member of responsible for a patient. The team-based approach and sharing of patient care helps prevent burnout.

One Firefly provider participant noted that in the virtual team environment (versus an office environment) they interact more with team members because they are constantly messaging and communicating with other members of the care team. This is in contrast to an office environment where they were in and out of visits and rarely had a moment to visit and connect with other individuals in their office.

LIMITATIONS

The total sample size of participants was relatively small (N=9). However, this is due to the small population of patients and staff from which the sample was drawn. Furthermore, participants self-selected into the study. Patient quotes were not included in this report to protect participant anonymity because comments were associated examples unique to participant treatment and care.

Beyond providing a virtual platform for engaging with patients, Firefly established a model of care that is integrated and holistic based on three key components: a) focusing on motivating behavior change to improve health, b) intentionality of communication to build relationships, and c) deconstructing traditional models of time in primary care. Firefly values go beyond the ways in which they interact with patients. The Firefly team prides itself on introspection by examining the infrastructure in which they provide care and innovating to improve care.