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Perspectives on Implementing Mobile Health Technology for Living Kidney Donor Follow-up: In-Depth Interviews with Transplant Providers

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Abstract

Background: United States transplant centers are required to report follow-up data for living kidney donors for 2 years post-donation. However, living kidney donor (LKD) follow-up is often incomplete. Mobile health (mHealth) technologies could ease data collection burden but have not yet been explored in this context.

Methods: We conducted semi-structured in-depth interviews with a convenience sample of 21 transplant providers and thought leaders about challenges in LKD follow-up, and the potential role of mHealth in overcoming these challenges.

Results: Participants reported challenges conveying the importance of follow-up to LKDs, limited data from international/out-of-town LKDs, and inadequate staffing. They believed the 2-year requirement was insufficient, but expressed difficulty engaging LKDs for even this short time and inadequate resources for longer-term follow-up. Participants believed an mHealth system for post-donation follow-up could benefit LKDs (by simplifying communication/tasks and improving

donor engagement) and transplant centers (by streamlining communication and decreasing workforce burden). Concerns included cost, learning curves, security/privacy, patient language/socioeconomic barriers, and older donor comfort with mHealth technology.

Conclusions: Transplant providers felt that mHealth technology could improve LKD follow-up and help centers meet reporting thresholds. However, designing a secure, easy to use, and cost effective system remains challenging.

Keywords

mHealth; living kidney donation; follow-up

INTRODUCTION

Background

Prior to 2013, transplant centers in the United States were encouraged but not required to collect post-donation living kidney donor (LKD) follow-up data.¹ As a result, at 2 years post-donation, clinical information was only reported for 50% of LKDs and lab data was reported for only 30% of LKDs.² Therefore, in 2013 the Organ Procurement and Transplantation Network (OPTN)/United Network for Organ Sharing (UNOS) began requiring transplant centers to collect clinical and laboratory data for LKDs at 6-months, 1-year, and 2-years post-donation,³ with required compliance thresholds of 80% for clinical data reporting and 70% for laboratory data reporting for LKDs who donate after December 31, 2014.³ However, LKD follow-up continues to be a challenge for transplant centers, and meeting compliance thresholds has proved difficult. Only 43% of centers met reporting thresholds for LKDs who donated in 2013, indicating that novel methods for collecting LKD follow-up data are needed.⁴⁻⁸

The National Institutes of Health Consensus group defines mHealth as “the use of mobile and wireless devices to improve health outcomes, healthcare services and health research”⁹. Within the transplant community, mHealth technologies have been used to address numerous challenges in the field, including educating transplant recipients and candidates, improving adherence and self-management behaviors of recipients, helping patients on the waitlist find a living donor, and aiding in the screening and evaluation process of LKD candidates.¹⁰⁻²⁰ However, mHealth technology has not yet been explored as a method for improving LKD follow-up, despite the well-documented challenges of collecting follow-up data. Improved follow-up data collection is needed to improve understanding of long-term risks associated with live donor nephrectomy, as existing analyses are limited by incomplete LKD follow-up data.^{5-8,21-23} However, development and implementation of mHealth technology to address challenges in LKD follow-up requires an understanding of barriers to and advantages of mHealth technology from the provider perspective.

In order to develop an mHealth system specifically designed for collecting and reporting post-donation follow-up data from LKDs, we interviewed providers involved in national initiatives to improve post-donation follow-up and care management to understand perceived patient- and center-level facilitators and barriers to implementing an mHealth system.

METHODS

Study population

We contacted a convenience sample of transplant providers and thought leaders who serve in leadership roles on one or more national living donor committee via email. National living donor committees that qualified providers as potential participants included the American Society of Transplant Surgeons (ASTS) Living Donor Committee, The Organization for Transplant Professionals (NATCO) Living Donor Committee, the American Society of Transplantation (AST) Living Donor Committee, the United Network for Organ Sharing (UNOS) Living Donor Committee, and the Scientific Registry of Transplant Recipients (SRTR) Living Donor Collective. In order to recruit participants with adequate knowledge of follow-up practices at their center, we allowed individuals that we contacted to participate in the in-depth interview themselves or refer us to someone else at their transplant center. Total kidney and liver living donor volumes among participating centers were found for the period 7/1/2017–6/30/2018 using the Scientific Registry of Transplant Recipients.²⁴

Study design

A semi-structured interview guide was developed by the research team, piloted among clinical transplant physicians, surgeons, nurses, administrators, and researchers at our center, and revised based on feedback provided during pilot testing. The interview consisted of semi-structured questions about the provider's role on the transplant team, experience using mHealth, current challenges faced in collecting and reporting mandated follow-up data, the role of mHealth in overcoming these challenges, and suggested implementation strategies for a novel mHealth system to capture LKD follow-up data (Appendix 1).

A research assistant familiar with human subjects research (AKE) conducted all interviews over the phone and took field notes during interviews. The interviews were audio recorded, transcribed verbatim, and checked for accuracy. The interviewer and participants had no prior relationship or knowledge of each other at the time of the interview. For the purpose of this research study, mHealth was defined for participants as "mobile applications used for healthcare." The interview study was acknowledged by the Johns Hopkins Medicine Institutional Review Board (IRB00126708).

Qualitative analysis

Interviews were conducted until thematic saturation was reached. Interviews were analyzed for thematic analysis using NVivo Pro 11, a qualitative analysis software widely used in qualitative health services research.²⁵ Themes were derived from the interviews and were iteratively refined by two independent coders. Differences in application of codes were resolved by discussion between the two independent coders until a consensus was reached. Major themes and sub-themes were derived from content analysis.

RESULTS

Study population

Of the 32 transplant providers contacted by email, 14 agreed to participate in the individual interview, and 8 referred us to someone else at their transplant center. Of those 8 referrals, 7 responded and agreed to participate. The remaining 10 providers initially contacted either did not respond (N=5) or were from institutions where a representative had already participated in our study (N=5).

Overall, 21 transplant providers representing 20 different centers in the United States and all 11 OPTN/UNOS geographic regions participated in a single, individual interview (Figure 1). Total kidney and liver living donor volumes among participating centers ranged from 5 to 120 for the period 7/1/2017–6/30/2018. Interview duration ranged from 7 to 27 minutes. Participants' roles on the transplant team included living donor coordinator (N=8), transplant program managers (N=3), social worker/independent live donor advocate (N=2), transplant surgeon (N=2), living donor transplant program director (N=1), clinical care supervisor (N=1), donor medical director (N=1), administrative director for clinical transplant services (N=1), consultant (N=1), and transplant center advisory council member (N=1) (Table 1). When asked about prior mHealth use, 9 participants (42.9%) had used mHealth in an occupational setting, 4 (19.0%) had used mHealth in a personal setting, 3 (14.3%) had used mHealth in both occupational and personal settings, and 5 (23.8%) had no prior experience using mHealth technology (Table 2).

Challenges faced in obtaining LKD follow-up

Transplant centers reported many challenges to meeting the current data collection and reporting requirements for LKD follow-up (Table 3). The most commonly reported challenges to meeting LKD follow-up were cost of follow-up and in-adequate staffing at the transplant center. Other challenges reported were meeting all OPTN/UNOS requirements, international or out of town donors, lack of donor engagement, and lack of long-term data collection.

Cost of follow-up—Limited financial resources were reported as a barrier to collecting LKD follow-up data. One participant stated, “I think that [follow-up] needs to be reimbursed in some way because we can't just keep paying for it over the years. It's not cost effective.” Some transplant centers have taken on the cost of follow-up, with one participant stating, “We just decided as a transplant center that it's our responsibility that they have this follow-up so we do pay for the cost...” However, other transplant centers do not cover the cost of follow-up for their donors and reported this as a barrier to the required data collection and reporting. One participant stated, “...we do have to have [donors] use their own insurance for follow-up care. We didn't really have any way around that or didn't have the resources to pay for the care...” Another participant mentioned donors being “perturbed” over the fact that follow-up appointments had to go through their own insurance, and said that donors without medical insurance pose another challenge to completing the mandatory follow-up.

Staffing—Participants also reported staffing to be a major challenge to collecting and submitting follow-up data as required for two years. Participants described the current process of obtaining LKD follow-up data as “labor-intensive”, “time-consuming”, “cumbersome”, and “logistically challenging”. One participant reported calling some LKDs over 30 times in order to obtain follow-up data. Another participant recalled, “We...added another person because it was just too much. We only have one, I was the only living donor coordinator and it was just too much, you know? It was too much volume to do the follow-up, too.”

Meeting all OPTN/UNOS requirements—Another challenge expressed by participants was meeting all OPTN/UNOS requirements within the mandated timeframe of 60 days before or after the 6-month, 1-year, and 2-year donation anniversaries. One participant expressed feeling that the existing national regulations were not a good reflection of the quality of follow-up care being provided to LKDs, stating, “...if you look at my numbers in UNOS... they’re just barely passing their requirements, but it’s not because we don’t deliver good follow-up care.” The participant goes on to say, “...it’s really hard for [patients] to comply in the 60-day window that UNOS gives us and I think that’s the most frustrating part.” Another participant reported compliance with UNOS follow-up regulations as affecting the selection of living donors stating, “...it really puts a cramp on who we can accept and still stay compliant with our regulations.” Additionally, one participant mentioned OPTN/UNOS reporting thresholds as leading to more conservative practices in the selection of donor candidates, restricting to potential LKDs who are more likely to complete follow-up

International/out of town donors—Participants reported that donors who live far from the transplant center, especially international donors, were a major challenge to collecting complete LKD follow-up data. One participant stated, “I think it’s...hard when people live in foreign countries or very far away from the transplant program to deliver good follow-up care, because then you’re at the mercy of another provider.” Another participant said that out-of-state donors tend to lose “momentum” for follow-up because of lack of communication between the donor and the transplant center.

Obtaining lab values—Another challenge reported by participants was obtaining the required lab values to fulfill OPTN/UNOS regulations. One participant stated, “The biggest challenge would be them physically getting their blood drawn and their blood pressure checked.” Another participant remarked, “Healthy people don’t have it in their mind that they need to get lab work.”

Lack of donor engagement—Participants also discussed lack of donor engagement as a challenge to collecting the required 2-year follow-up data. One participant stated, “...they’re busy and they feel good and it’s just a pretty predictable scenario.” Participants mentioned young age and lack of understanding of the importance of follow-up as barriers to keeping donors engaged with the transplant center. One participant remarked, “...just like most young people, you know, they don’t feel this pertains to them.” Another stated, “How do you

get [donors] to see that this is a priority for them, particularly the follow-up, and...still continuing to have routine medical care after donation?”

Lack of long-term data collection—Despite challenges participants face in collecting the required 2-year follow-up, many participants prefer long term-data collection for proper care management post-donation, but recognize the inevitable challenges to engaging patients long enough to collect this data. One participant stated, “...two years is really a token effort to try and detect any sort of meaningful consequences of living donation...” Another participant stated that they would prefer to follow their donors for a longer period of time, but “time and money commitments make it difficult so I feel like the short nature of it is a concern.”

Benefits of an mHealth system for LKD follow-up

Participants were optimistic about the benefits of an mHealth system for collecting follow-up data and believed mHealth could address some of the challenges currently faced by transplant centers and donors (Table 4).

Convenience—Participants believed that an mHealth system for collecting LKD follow-up would be a more convenient way for donors to communicate with the transplant center. One participant remarked, “[Donors] want to communicate by something electronic: texting or email...So we need to be able to accommodate donors the way they’re used to communicating.” Additionally, an mHealth system would allow donors to complete their follow-up at the most convenient time for them. One participant stated, “I just think they can answer when they can, after hours. We’re only here 8 hours and the challenge [is] trying to catch them when they might be working... [mHealth has] more flexibility.”

Streamline the process for centers—Participants also believed that an mHealth system for the purpose of LKD follow-up and care management would ease transplant center burden by streamlining the overall process. One participant stated, “...our process is somewhat cumbersome with multiple people involved, so in regard to helping on the coordinator side, I think something that can cut out these multiple middle people.” Another participant similarly expressed a desire to cut out “the middle man”, saying, “...in this day of technology you would think there is a way to get rid of manual data entry...”

Increase engagement through lab value tracking—Some participants also mentioned donors being able to track their own lab values as a way to increase engagement. Participants expressed that framing follow-up as something that is important to donors’ health rather than “just this thing they never get to see and never get to follow-up [about]” will give donors more of an incentive to complete it. One participant stated, “I think that having the numbers in front of them can help with their own engagement... being ...able to bring that to...their own doctor...and work on a strategy together.”

Maintain communication with the transplant center—Participants also believed that an mHealth system for LKD follow-up could maintain a line of communication between donors and transplant centers, which could also help to improve compliance with OPTN/

UNOS mandates. One participant stated, “I think it could really benefit and help us be compliant, but also help the patient stay in touch with their team and stay connected.” Another participant believed that maintaining communication and having a connection with donors post-donation is important, stating, “I’m all for different ways to get the data, but also to maintain communication with our patients so that they feel connected to us and that they have access to us regardless of where they live or how busy they are.”

Patient-level barriers to using an mHealth system

Although there was general optimism by participants on the use of an mHealth system for LKD follow-up, they did have some concerns about barriers for donors in using this novel technology (Table 5).

Older donor comfort with the technology—Participants expressed concern over older donor comfort with using mHealth as a way to complete their follow-up. One participant stated, “I think older donors are probably afraid of technology and it might take some time.” Another said, “I’m not sure that it would be viewed as equally vital for donors in all age groups, but maybe for donors in their twenties and thirties.” However, many participants also mentioned that it was particularly difficult to contact and obtain follow-up data from younger donors. One participant stated,

“...it’s your younger population sometimes that you have the most difficulty with, and those are the people that are going to have smartphones and be into their phones and into their apps and that sort of stuff so it might help capture some of that population.”

Language—Participants also expressed language as a possible barrier to implementing an mHealth system for LKD follow-up. One participant stated, “...there will always be a population of people where there will be a language barrier.” Some transplant centers may be in a location where they have a high population of non-English speaking donors, which would need to be addressed in the mHealth system.

Socioeconomic—Participants were also concerned about socioeconomic barriers for donors to accessing the mHealth system. One participant stated, “...some patients...don’t have the financial means to have a smartphone or have a computer at home or have internet access.” Another participant said, “...it could potentially disadvantage people who are already socioeconomically strained.”

Transplant center-level barriers to using an mHealth system

Participants also had concerns on the institutional and center-level side of adopting and implementing an mHealth system for LKD follow-up (Table 5).

Security of protected health information—A common concern among participants was the security of protected health information and HIPAA compliance of an mHealth system. One participant stated, “I think there would be a part of just assuring that it was all HIPAA-compliant and that there weren’t any concerns about...information being able to be hacked.” Another participant said it would be important in “...getting that path to

understanding what's coming in, where's it going: is it going to you, are donors using it, is it coming back to the center, how is it all going to be kept?" Participants also mentioned that donors might be concerned about the safety of their health information on an app.

Cost—Participants also expressed cost to the transplant center as a possible barrier to implementing an mHealth system. One participant wanted to know, “whether that was something the program would have to absorb or if it's something that would go into like the donor acquisition fee...what would be the avenues to finance it?”

Transplant providers' ability to learn the technology—Some participants expressed concern over the ability for the transplant providers (e.g. nurse coordinators) to learn to use the technology. One participant underscored the importance of making the application as user-friendly as possible because “many of us nurses don't have a lot of experience [with mHealth].” Another participant stated that the main challenge for transplant centers would be “learning it, getting educated and learning how to use it.”

Suggestions for the mHealth system

Participants had suggestions and recommendations for the mHealth system in order to maximize efficiency and usability (Table 6).

Calendar or alert system—Participants suggested incorporating a calendar or alert system for donors into the mHealth system, so that donors would be notified when they are due for completing their 6-month, 1-year, and 2-year follow-up components. One participant said, “...something like an app where those reminders might pop up on their calendar or they might get an announcement on their phone.” One participant said to incorporate a “snooze” feature, but “you can't completely dismiss it until you have a data point to put in.”

Facilitate communication between donors and centers—Participants also recommended including a feature that allowed donors to communicate securely with their transplant center. One participant mentioned allowing donors to “reach out to their transplant program... [such as the] coordinator on call... then they could have a basically 24/7 access kind of thing.” Another participant said, “...as long as it has an easy way for them to get a hold of their coordinator I think that would be super useful.”

Incorporating education and resources—Participants expressed wanting to see broader functionality of an mHealth platform beyond just follow-up. Some participants suggested including educational aspects and resources for donors in the mHealth application. One participant remarked, “I think that the thing that will be important is that... it really gives patients...tools to use in their daily life so that they can...stay as healthy as they can.” Another participant mentioned including a “five-minute blurb on issues to perpetuate a kidney-friendly lifestyle.”

DISCUSSION

In this qualitative study of in-depth interviews with transplant providers and thought leaders in the United States, participants reported numerous challenges to follow-up under the

current system and expressed optimism that mHealth could improve the follow-up process for both donors and transplant centers. Despite challenges to mHealth creation and implementation at the patient level (language, socioeconomic factors, age) and transplant center level (security of protected health information, cost, learning curve for transplant providers), mHealth has enormous potential to improve donor follow-up. Specifically, concerns about cost of mHealth interventions might be mitigated by studies on medication adherence suggesting that mHealth is a lower cost alternative to other interventions targeting patient engagement.^{26,27} In this interview study, transplant providers believed that mHealth had the potential to increase LKD engagement, streamline the process for centers, improve convenience for LKDs, and help maintain communication between transplant centers and LKDs, all of which could improve follow-up rates and center compliance with national follow-up requirements.

Our finding that transplant centers are interested in and optimistic about mHealth technology in donor follow-up is encouraging, as prior studies have shown that LKDs are also interested in using mHealth for post-donation follow-up and care management. We have previously reported that 97% of LKDs who participated in a study at our center preferred to be contacted by email or text messaging, and that electronic communication was associated with higher LKD contact rates at all mandated follow-up time points.²⁸ Additionally, previous work by our group found that 80% of LKDs surveyed at a single transplant center perceived mHealth for LKD follow-up as useful, and 79% of participants perceived accessing LKD information and resources on their smartphone as useful.²⁹ These studies show that LKDs are willing to engage with mHealth technology, and use of mHealth for LKD follow-up would be feasible in this population if transplant centers were to design and implement mHealth systems. mHealth has demonstrated some potential benefit in transplant populations, especially among recipients or for the purpose of identifying a living donor.³⁰

Concerns about meeting national follow-up requirements were reported by multiple participants in this study, as well as a belief that mHealth might help centers to maintain communication with donors that have traditionally been harder to reach. Risk factors for missing LKD follow-up data include younger age, black race, lower educational attainment, living out-of-state from the transplant center, and living outside the United States.^{2,4} Indeed, mHealth interventions in the areas of weight management and chronic disease management have been observed to be effective among all age groups, including young adults;^{31–33} therefore younger donors are an important target for improved follow-up, and also one that is well-suited to an mHealth platform. Likewise, mHealth interventions in the areas of cardiovascular disease and weight loss have been shown to improve health behaviors and healthcare engagement among African Americans.^{34,35} To address any linguistic barriers, mHealth platforms in additional languages should be independently pilot tested to assess effectiveness and reception by that donor population. Some concerns remain about low health literacy, which has been associated with lower use of health information technology, including apps, as was seen in a study of fitness apps, nutrition apps, and activity trackers.³⁶ However, apps can be successfully adapted for a low-literacy population, as was done to assess disordered eating behaviors in a low literacy population.³⁷ Given these observations, and findings that mHealth improves access to healthcare and increases self-management

behaviors of chronic diseases,^{38,39} mHealth could improve engagement with living donors at increased risk of missing LKD follow-up by making follow-up more convenient.

A limitation of this study is a small sample size, which might make it difficult to generalize these results to all transplant centers. However, the providers interviewed served in a variety of roles at their transplant centers, were drawn from all 11 OPTN/UNOS geographic regions, and represented a wide range of living donor volumes. Additionally, interviews were conducted until thematic saturation was reached, suggesting that major themes were captured. Interview participants were not asked how long they have served in their role, or in how many living donor cases they have personally participated, which limits our understanding of the participants' expertise. All qualitative studies are subject to bias, and while interview questions were open-ended, interviewer or response bias may have led to more positive responses regarding mHealth. Lastly, as this study was qualitative, we were unable to assess how many centers would be interested in implementing mHealth technology into their LKD follow-up practices. Quantitative studies are needed to assess interest in pilot testing or eventual roll-out of this technology.

Overall, participants in our study were optimistic about the use of mHealth technology for LKD post-donation care management and follow-up. Through mHealth technology, LKDs could have better access to their transplant center, be able to more conveniently report their follow-up, receive continued education, and potentially feel more engaged in their own healthcare. Future studies should explore the implementation of an mHealth system for LKD follow-up that is user-friendly, complies with standards for protecting health information, and limits burden on transplant centers or donors.

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Appendix 1:: Interview Guide

1. What is your role on the transplant team? In particular, please describe any interaction you have with living donors.
2. What past experience do you have with mobile applications used for healthcare? How was your experience with these mHealth apps?
3. How do you currently counsel LKDs about post-donation follow-up?
4. What do you feel is currently missing from LKD follow-up?
5. What challenges do you currently face with LKD follow-up?
6. Which of these challenges do you think could be addressed by an mHealth system? How?

7. What benefits do you think an mHealth system has for patients, particularly compared to other follow-up strategies?
8. Why might donors not want to or be able to use an mHealth system?
9. Why might your institution not want to or be able to use an mHealth system?
10. What other suggestions or comments do you have?

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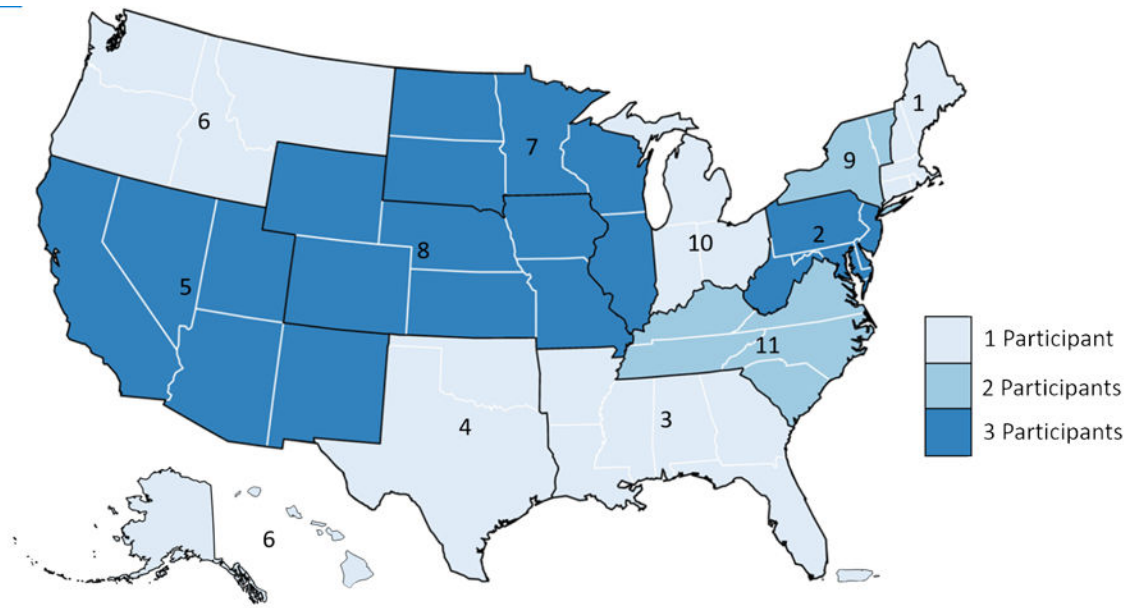


Figure 1.
Number of participants in the interview study, by UNOS region

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Table 1:

Participants' role on the transplant team.

Role	N=21
Living donor coordinator	8
Transplant program manager	3
Social worker and independent live donor advocate	2
Transplant surgeon	2
Director of the living donor transplant program	1
Clinical care supervisor	1
Donor medical director	1
Administrative director for clinical transplant services	1
Consultant	1
Transplant center advisory council member	1

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Table 2:

Past mHealth experience (N=21).

mHealth Experience	N (%)
Occupational	9 (42.9)
Personal	4 (19.0)
Both	3 (14.3)
None	5 (23.8)

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Table 3:

Challenges currently faced in obtaining LKD follow-up.

Challenge	Representative Quote
Cost of follow-up	"I think that [follow-up] needs to be reimbursed in some way because we can't just keep paying for it over the years. It's not cost effective."
Staffing	"We...added another person because it was just too much. We only had one, I was the only living donor coordinator and it was just too much, you know? It was too much volume to do the follow-up too."
Meeting all OPTN/UNOS requirements	"...it's really hard for [patients] to comply in the 60-day window that UNOS gives us and I think that's the most frustrating part..."
International/out of town donors	"I think it's...hard when people live in foreign countries or very far away from the transplant program to deliver good follow-up care because then you're at the mercy of another provider."
Obtaining lab values	"The biggest challenge would be them physically getting their blood drawn and their blood pressure checked."
Lack of donor engagement	"How do you get [donors] to see that this is a priority for them, particularly the follow-up, and...still continuing to have routine medical care after donation?"
Lack of long-term data collection	"...two years is really a token effort to try and detect any sort of meaningful consequences of living donation..."

Table 4:

Benefits on an mHealth system for LKD follow-up.

Benefit	Representative quote
Convenience	"I just think they can answer when they can, after hours. We're only here 8 hours and the challenge of trying to catch them when they might be working, so it's more flexibility."
Streamline the process for centers	"...our process is somewhat cumbersome with multiple people involved so in regard to helping on the coordinator side, I think something that can cut out these multiple middle people."
Increase engagement through lab value tracking	"I think them having the numbers in front of them can help with their own engagement...being able to bring that to...their own doctor...and work on a strategy together."
Maintain communication with the transplant center	"I'm all for different ways to get the data, but also to maintain communication with our patients so that they feel connected to us and that they have access to us regardless of where they live or how busy they are."

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Table 5:

Barriers to implementing an mHealth system for LKD follow-up.

Barriers	Representative quote
Patient-level barriers	
Older donors comfort with the technology	“I think older donors are probably afraid of technology and it might take some time...”
Language	“...there will always be a population where there will be a language barrier...”
Socioeconomic	“...some patients that don’t have the financial means to have a smartphone or have a computer at home or have internet access...”
Transplant center-level barriers	
Security of protected health information	“I think there would be a part of just assuring that it was all HIPAA-compliant and that there weren’t any concerns about...information being able to be hacked...”
Cost	“Whether that was something the program would have to absorb or if it’s something that would go into like the kidney acquisition fee...what would be the avenues to finance it?”
Transplant providers’ ability to use and adopt the technology	“I mean just the challenge of learning it, getting educated and learning how to use it.”

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Table 6:

Suggestions for the mHealth system for LKD follow-up.

Suggestion	Representative quote
Calendar or alert system	"...something like an app where those reminders might pop up on their calendar or they might get an announcement on their phone..."
Facilitate communication between donors and centers	"...they could reach out to their transplant program if there was a way of linking that program so it could get to the, say coordinator on call...then they could have a basically 24/7 access kind of thing."
Incorporating education and resources	"I think that the thing that will be important is that... it really gives patients...tools to use in their daily life so that they can...stay as healthy as they can."

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