

Jaspr Health

Suicide Risk Assessment & Intervention: Digital Opportunities

Thursday, October 7, 2021



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Transcriber: Holly Fox-Schauffner

Kelly Korner: Alright, welcome, everyone. I'm Kelly Koerner. Julie, maybe you want to introduce yourself in a moment? We're incredibly excited to begin our shared partnership of webinars and educational events that we hope -- I'll speak for myself. Maybe Julie can add hers. Our hope is to bring together information that may facilitate using technology in zero suicide implementations. That group of us who are trying to improve suicide care -- what information and conversations might be most useful?

Julie, I'll pass it to you to say more.

Julie Goldstein: Thank you, Kelly. I'm Julie Goldstein, the director of the Zero Suicide Institute. Hopefully, you're familiar with Zero Suicide. It's a transformational approach for how healthcare systems need to think about installing suicide care best practices. How do you know you're identifying everybody at risk? What are you doing once you do? How do you know that they're getting across the board from all providers at all visits no matter what door they enter -- behavioral health, oncology, etc. -- that they're getting best practices routinely.

Effective suicide care is a bundle of interventions. You can find out more information at zerosuicide.com. The zero Institute provides training and consultation on the suicide training implementation. Our partnership with Jaspr Health is making sure you're identifying and caring with people at risk for suicide in specific settings, that they get these best practices, and using tools to ensure all people at risk get the same high quality, meaningful, and help to live their lives in a meaningful way.

I'm excited to have this partnership with you. We know that technology is critical to do these best practices routinely, consistently, and well. I look forward to learning how to use technology in suicide risk.

Thank you, Kelly.

Kelly Koerner, PhD: It's super cool.

I'll introduce myself more. I'm Kelly Koerner, a clinical psychologist by background. I re-tooled in human centered design and engineering. Our team that I work with most closely are among the lot of very talented suicide scientists, technologists trying to figure out how to become more feasible using digital technology in delivering the kind of care we aspire to.

A few disclosures before we get into the conversation -- I do work from SBIR and NIHM funded grants. I'm part of an institute that develops technology where I'm employed and have stock options. My views today are from an academic or science perspective rather than representing the Evidence-Based Practice Institute, which owns Jaspr Health.

My hope today is to focus on how evidence-based interventions we know currently work can be digitized to better scale them for reliable, safer care. What are the benefits of doing that? Then turn into two particular areas where the technology is most advanced.

One is around prediction science, identification and detection of those at risk. I will talk about barriers to adoption there.

The other is evidence-based practices ready for dissemination. How can those be translated to technology in a high fidelity way?

I'll save time at the end for questions. There's a ton of ground to cover. We'll see how far we get.

I want to start with the first slide. You may have seen this CDC slide I got from Dave Jobes.

In every other area -- infant death, influenza, TB, heart disease, stroke -- there's been a systematic decrease in the number of deaths from those causes. That's not been the case for suicide death. Why?

I think the primary reason is that in other domains, there's been a systematic, evidence-based protocol put in place across the healthcare system wherever a person with that condition shows up for help. It's not yet been done as much for the condition of suicide. There's emerging data you may have seen, the meta-analysis, around the fact that the same is true for death by suicide. If you can put into place systematic evidence-based protocols, you CAN reduce death by suicide.

If you think of how to make that more feasible with technology, as we begin to move into using technology for this purpose -- I'll step back further -- why would you want to use it at all. When our first grants were reviewed, the feedback was "you can't use technology. This is a people problem, people who are suicidal, and they need other people to interact with. That's what they want." To foreshadow, that's not true as such a blanket statement. There are ways that technology can be used -- I'll show you data from our own work -- where patients experience it as more acceptable and safer to tell their story in a digital format like a chat bot. They're more open, and there are ways to standardize care that feel empathic and caring, especially in contrast to high pressure environments like an emergency department where the variability in care and staffing available -- providers may not be at their best because of other demands. The care is variable for the suicidal individual.

The second takeaway is that there's high satisfaction with *some* technology assisted care. Technology offers a number of benefits. I'll let you glance at this slide. It's everything from increased access, better standardization, lower cost, etc.

The most important for me is there's an empowered stance that can be facilitated where a person can manage their own condition. That spirit of patient-centered interventions that are aligned so you can support staff -- the patient is better able to manage their own condition in a way that staff is more precise. I think that's an emerging area that's super important because of how

ongoing staff shortages impact our field. Those of us who are trying to improve suicide care have to deal with not having as many care providers to do it. How can technology help fill that gap?

How? The most important is to transition into technology. I'll weave in the suicide science and what we know.

The most important first thing to recognize is when you treat suicidal behavior, you need suicide-specific care. Suicide isn't a symptom of another diagnosis. An app for depression can't be counted on treating, helping people at risk for suicide. The evidence is strong for suicide specific care.

That's a good place to make the point that if people are interested in the kind of literature behind this, I didn't put together a reference list, but feel free to reach out to me. I'll share that. I'll stick to distillation points for this talk.

Several suicide-specific treatments are ready to be digitized in my view. What would be those targets? It could be anything from ideation all the way to attempts and post-attempt intervention to reduce ongoing risk.

Let's think about how many people are impacted and the scope of the problem itself using 2019 data. Of the 12 million adults who had serious thoughts of suicide, about 3.5 million made a plan. Of those, about half (1.4 million) made an attempt. Interestingly, of those, 1.2 made a plan before they made an attempt BUT a significant portion, upwards of 200,000, made no plan before they made an attempt. For some folks, it's a more rapid transition. That has a lot of implications for how we implement our technology.

This idea of treating any of these targets -- when you do, you want to have a similar suicide-specific task being performed across the levels of service. We're used to thinking of this triage from early presentation up to folks with more complex and long-term problems. We're trying to triage our interventions to match the level from things that are appropriate to do universally up to those where you will select and deliver to those at elevated risk and those with a condition to treat specifically.

Across the different settings and at each level of care, you're focusing on detecting and identification, assessing the risk, focusing on stabilizing the acute crisis (especially in high-risk transitions), and then treating the drivers, so you're reducing long-term risk.

Does that make sense? This is a basic model. This is how we think of care when delivered by humans. We should think about technology enabled suicide care the same way, looking across the system of care, and triaging.

To jump in, from the science, we can identify at risk groups, but right now, predicting that transition from suicide ideation to an attempt is difficult.

As you start thinking about using technology to identify and help predict who really needs our

help the most, any time you identify, you have to appropriately treat. I'd say this is one of the main barriers I've seen as you increase screening with technology or by culling your EHR. The obligation falls on providers to do something about it. Then, people don't want to know or see the data because they're on the hook. The more you can predict, the more obligations to treat. Therefore, you have to bump up resources of caring for people. Better screening alone is no magic bullet. There's sexiness in the science.

I'll talk about what the opportunities are if you think universal. There's been beautiful public health campaigns. I'll give one example.

This is super interesting -- using social media to train teenagers. As you know from tweens all the way up there is high exposure to suicide content in social media. There's concern about the impact and how social media drives worse outcomes for young people.

In one beautiful study, they provided teens basic education about how to consume anything dealing with suicide content, cutting content, self-injury content, and how do you help others? In that study, you see some indication that it was helpful. It's hard to demonstrate, but it's an interesting way of putting a bunch of content out there at the universal level, so people can self-manage, self-help appropriately. That's one example of detecting and intervening.

Another set of things coming out that are interesting have to do with culling the electronic health record, medical record, and predicting who's in an at risk group. Who should we consider for outreach and triaging in that way?

Currently, we think of giving a big, long measure. Maybe it's the two item, followed by the 10 item, followed by many item measure.

Computer adaptive testing allows you to not have to do those lengthy measures. It asks a few questions. From that, you can make good decisions, as good as if you did the longer battery. With computer adaptive testing, it's less burdensome on the patient to not answer as many questions. It's more efficient. But there are barriers to adoption which I'll talk about in a sec.

Back to indicated -- Ed Boudreaux has a cool center grant that we're participating in, a bunch of us who are commercializing technology. One cool exploratory study in on a product called Lemurs. It's an app you can have on your mobile device. Rather than monitoring your risk going forward by asking you to report to monitoring questions, it lands on your phone. It consumes the data already on your phone and indicates risk from digesting your already existing phone data.

These are examples of some emerging things around detecting suicide risk. There are real -- I don't know the right level of word -- there are such barriers. It's sexy, but it's hard to implement. Let me walk through some factors that influence our adoption of these potential advances in prediction.

You may know Joe Franklin and others, who put out a beautiful paper looking at how good we

are at predicting the transition. We think we know who is at risk, and who really attempts suicide.

The science up to probably 2015, maybe a little further back, is pretty crappy. We weren't better than chance at predicting who would make a suicide attempt, especially in the near term that matters to us for clinical decisions. [Franklin's analysis] is based on a lot of earlier work for the last 50 years. The same risk and predictive factors we use in our human assessments. We can stratify people to a risk group, but it's an illusion that we can predict who will or will not attempt suicide particularly in short time frames. We are only now beginning to improve research in near term transition from ideation to action.

I'd like to share that [Franklin et al] paper if anybody's interested. It should influence us all, I think.

What do you do about that? If you ask our 10 or 20 questions in a suicide risk assessment, and it doesn't necessarily help truly predict who's really at risk, what do you do?

One cool answer is algorithms, which might measure hundreds of variables from sleep to past attempts to all kinds of things. Then they arrive at a prediction that can be very high. I think some accuracy is in the high 80s to predict that this person is at quite high risk at an attempt in the next 6-12 months.

Even though we're starting to move toward algorithms, the problem is their adoption. To anchor this more, what does this look like in practice?

Computerized clinical decision support is underway. We're aware of this if, then style of clinical decision support. You're at an interface with an engine behind it. When you ask it a question, it pulls from a knowledge base, and it serves an, "If this, then do X." We have alerts, reminders, etc. That's the clinical decision support we're familiar with.

Another way clinical decision support could work is that that same interface doesn't have a knowledge base, but it's more of an emergent look at a bunch of data. That machine learning and other types of AI powered interfaces are serving you something. The clinician doesn't have that same "if, then" relationship to it. It's like you ask a question, and it comes back, and you say, "Why do you think that?" It says, "because I looked at a bunch of data."

The problem with this emergent use of machine learning for algorithmic driven stuff is it's hard for users to release our autonomy. The data are super clear that an algorithm is almost always better than a human. That's a super hard thing to sink in. I'd be like, "Yeah, but . . ." Clinicians start to balk at that, even though it's repeatedly shown.

We think, "It's not good enough." For example, think of ways in which AI are driving cars, you could ask Uber to send you a car. It would show up and have no driver and take you where you want to go. If it's a straight road with no traffic, you'd go. You'd want it to go slow. As the complexity of the navigation increases, you want a human driver.

Even if I showed you data that showed that the car had less bad outcomes, crashes, etc., and it was more efficient than your human driver, there's some way that as the complexity goes up, you probably prefer a driver.

Similarly, there is neat, computerized surgery coming out, totally driven by different types of algorithms. If you were the person having surgery, how comfortable do you feel? Maybe if it's a topical something -- if it's deep in your brain, complicated -- how do you feel looking at this picture and imagining yourself in the surgery chair? if you're the human monitoring it, how do you feel?

This releasing of autonomy and adoption, even when we see the data that it's better than I am at predicting whether or not this person will transition to suicide attempt, there's a certain way where it's hard to release that autonomy. It doesn't feel comfortable to do so. I hope that makes sense. This is one of the main barriers. The prediction science stuff looks great, but adoption is a hard sell.

The other thing about these methods, like LEMURS, is that passive monitoring and data mining that are emerging, but ethics are also emerging. It's not clear. How do you feel if I cull your electronic medical record and detect risk and send you a caring contact? Does that feel caring or Big Brotherly? "We have all this information about you. Therefore, we're reaching out." There's something weird and not acceptable about it. I don't think we have the right ethics around it yet, and we haven't had enough people with lived experience discussing how to tackle this sensitively.

These are some of the factors that are influencing the adoption of technology used to help with detection of risk, identification of those at risk, and triaging who really does need help from our detection?

I'll weave in the suicide science that should influence how we digitize evidence-based practices and influence our adoption of technology. First, there's a lot of variability in the transition from ideation to action. You may have seen this. I want to show you a few nice papers about this.

There's huge variation in a day in ideation. There's a lot of variability of that decision making from ideation, having access to your method, and having your place. I'll show you a bit about this.

This quote is true.

[Quote on screen]

Intense suicide ideation -- on the right is a beautiful study at individual level using a way of reporting on daily suicide ideation. It's a momentary assessment model.

At the top in the green area are people who had not much variability and a low rating or mean

level of suicide ideation. Then you move to more variability, still low frequency of suicide ideation. Then you get into people who have higher mean, more variability. Then you've got a super interesting group who are kind of chronically suicidal. It's always high, but there's not much variability. Then you have the bottom, people with a high mean and high variability.

That variability in the day and how you might transition those high points into action and the relatively rapid onset -- you have an event, a social rejection, for example. Then ideation goes up. That needs to be factored into the technology we adopt, design, or build.

This is another nice, individual study method. From the lifetime onset of thinking about suicide, at the top line, there's some time at which you transition to a current thought where you're planning and some mulling. Then there's the final decision. There's method access. How would you do it? There's usually some period of time of thinking about that until you decide what method you will use. Then there's the place, the opportunity. You might have a method, but there's not the availability of place. All of those factor into the transition from thinking about it to making an attempt. Then there are preparatory actions, how to get the alignment together to make an attempt. Then there's the length of time over which all of these different components have been considered.

If you work with people who are suicidal, you know there's a lot of variability in how long someone's struggled with these thoughts and their own pattern of transition. I'll show you a couple of pictures from this same study.

I won't go into the weeds, but I'll highlight a few examples. In the upper left, the person reported they hadn't thought about it much. Within a minute, they decided.

Look at the far right to a person who had more than 5 years of thinking about suicide. It wasn't constant. It was an early time in their life when they thought about it, and it returned later in life, about a year ago. They kind of thought about method, and they changed their method, that red line. But they knew their place early on. It was continuous from a lot earlier. Then they made an attempt. They thought about it over a week's time.

This type of variability is something clinicians know, but in terms of how any scaled evidence-based practice rolls out, it should be informed with factoring in how variable that person's transition will be.

The prediction isn't a silver bullet. This individual variability really has to influence how we implement technology.

At the individual level, this is purposely blurred. You could substitute in anybody. I picked someone in the mid-range of suicide ideation variability.

We want to think about their risk and long-term drivers. One task is to assess in a way that lets us manage the acute risk, get them out of the current crisis. But that's not enough. What's really needed is to reduce their long-term risk to move them out of the woods.

At the population level, I think of this as stepped care. What's needed with a population approach to suicide-specific care where things are available at the bottom of the pyramid that are appropriate and can be used by folks who are paraprofessionals, peers, people with lived experience, family members, clergy up to the crisis hotline all the way through emergency, brief intervention, crisis mobile, up through the more expensive levels of care.

How can you have a treatment that's ready for digitization that would be appropriate for all these?

Dave Jobes loaned me his slide.

Certain treatments have data across some of these levels of care. DBT, Cognitive Behavior Therapy for Suicide Prevention, Brief Cognitive Behavioral Therapy has good data for outpatient, some up to inpatient. The data for all is also looking good.

These evidence-based procedures are ready for digitization, I think.

Then there's cool emerging stuff that you may be aware of, these briefer interventions like the Teachable Moment Brief Intervention for Suicide, ASSIP, etc., focus on how you can in a brief way, help someone move from a suicidal state to a state where you've reduced their long-term risk,.

At all levels you want screening, assessment and brief interventions and ideally caring contacts, another evidence-based service that can be delivered. This full suite could be digitized and used across the stepped care model.

Let's go into where technology stands on these now. You can type questions at any time in the chat. I'll try and save some time at the end for questions.

We're doing good for time.

Last takeaway. I'm a scientist by background and training. I have a bias towards things with evidence being given precedence and disseminated to reach most people. But the science lags way behind the explosion of behavioral health apps, including those for suicide.

Given the lack of evaluation data, what do you do as a practitioner? Which do you adopt as a person running the adoption of technology across the healthcare system?

If you're science based, it's hard. The science is young, yet, we have to solve the problem. The demand is going up for suicide care. The resource for providing evidence-based care is going down in terms of qualified behavioral health professionals able to do it. So practically how should you move forward as you must despite the lack of data?

I'll go through my short list of criteria. Look for fidelity, good user experience, and a science first business model, so it's trustworthy. That's my short list of how to think about it.

I'll show you examples of science-backed technology, some other apps that have been commercialized and not science-backed. Then point to a few cool emerging things that aren't available right now, but I'd like to share where that's at.

Given the state of science, how I think about it, is we have to be pragmatic. You have to move. You can't wait for all the science to come in. How?

First, fidelity, credibility of the makers. If they can show a high fidelity and that it has been tested as a person-led treatment, that's good. If the people making it are credible, good. That's the first line of what to adopt.

Next is to actually use the app. User experience -- it could be super high fidelity, but if it doesn't have good user experience. People won't use it. It might be well aligned with science, but it's not usable.

The last part is science first business model. The details here may not be of interest to all on the call, but you want the incentives for folks making the app to be that they care about improving the state of care as much or more than having a good business model.

I think that is a little hard for the field in that folks who have that main allegiance to science are in academic settings where they don't have resources to sustain good apps for a long-term. I'll show an example of that.

Yet the access to carry out intense, complicated research isn't well-supported in nearly all commercial apps. Some things have been commercialized and the studies are still pending for them. There's a disconnect about incentives aligning for people who make and sustain apps, to evaluate them. Those who have incentive to evaluate them don't have the business skills to get it out there. We're in a tough spot consequently as a field.

That's why I think, All things being equal, if you can find a more science-first company, that's good.

The other implication of the state of the science is that suicide apps should only be adjuncts to therapy, not replacements. Anything that is technology for suicide care does need that human standing to monitor or some version of it being an adjunct to treatment. That's my point of view given the state of our science.

You may know Cyber Psych, Stephen Schueller and team. It's a beautiful website that evaluates apps based on criteria similar to the ones I laid out. They are slowly but surely evaluating any behavioral health app. That's a great place to go to try to evaluate a specific app.

Examples. I can't show everything in the field, but I'll show some.

First, let's look at digitizing cognitive behavior therapy or any type of behavior therapy to make it

possible for someone to use a website or app to go through a digital version of that therapy.

Bottom line from this meta analysis, which is probably one of the better summative studies:

If you can get your person to do the digital therapy, just like with anxiety, depression, and other areas, they get good benefits. The effect sizes aren't crappy.

But there are two problems. One is it's hard to get people to do it. Some of the studies have dropout rates of 87% of people who don't complete the treatment. That's a problem if you have something useful, but nobody will use it. That's probably the main thing that the digital health field is working on, engagement.

The second problem is that common sense digital adaptations are always having impact you would assume. Most of us would assume if you digitize something, it will be fine. There are a couple of studies that show that the folks with the digital version actually did get more suicidal and had worse outcomes. It's not clear why based on flaws in the study methodology. We could speculate that you tried it, didn't connect as meaningful, so you felt more discouraged. That made suicide ideation go up.

It could be any number of things. But this brings me back to how important it is that the science is lagging behind. Yes, there are some promising digital interventions one could use after someone's had a suicide attempt or been identified at risk to help them treat that in a self-administered, self-management way. If you get them to use it, you should be monitoring their outcomes to see if they get better. Are they having negative impacts?

I think digital self-help is an interesting area and emerging. Science is young. Again, this is a good study to see more detail evaluation on particular treatments.

Moving now to other digital technologies like apps, which I'll focus mostly on today, some stuff is commercial ready with no or little science behind it. Some stuff has science behind it that's ready for commercialization. There's a ton of science backed stuff that's in development but unavailable to those who have to do something about the problem.

I'll show you examples and pause for questions.

You can think of a continuum of care from self-help to something with a provider engaged in it in some way like a coach, peer navigator or support, up to a provider of different levels of credential who are riding along. The person is using the app between sessions or on their own with help from the provider checking in all the way to tech enabled delivery of care. This is where technology is integrated fully for the provider and patient or person at risk. That's emerging.

I'll highlight some oldies but goodies. Then I'll talk about newer stuff.

Do you know Kruase's Calm Harm? It's not that old, but it's beautiful, I think. It's award winning for good reason. I think it's visually pleasing. It has stuff you'd like it to have. BUT it doesn't have

any data. What do you do about that as a practitioner--should you adopt it? It's focused for teens, although I'd say my adult patients who use it have enjoyed it.

This is one of those examples where the clinical study is pending and it's an indication of how hard it is to pull off evaluation research. You can get survey stuff, but it's not robust.

Does this app actually help? We don't know. Yes, it's beautiful. 1.75 million people downloaded it. Cool.

So let's put that out there on the end of the spectrum of no data, but widely used. Is that okay? I don't know. I'd put that out there to you. I have patients use it. I think it's cool.

How about on the science backed? Another oldie but goodie is Virtual Hope Box, which was originally developed in the context of care for military folks. It's a little dated in its user interface now. Nonetheless, it has some data, and it's meant to be used as a supplement to ongoing support in therapy with a digital version of your crisis plan. This is a self-help app example.

Stanley-Brown Safety Plan has been digitized. It's an oldie but goodie. I downloaded this for screenshots recently. The ratings in the store are low. There are only a few. It's hard to know how much it's been adopted. This is a good example of the approach having great data for the human led version of an intervention, but in terms of the app being tested and it's usability, it's hard to know.

I'm pointing to the state of the field right now, which is that common sense things are being done in a way that feels practical, and useful. The cautionary tale of the conceptually strong CBT that had bad results and made people more suicidal -- we have to be cautious. We can't totally jettison science and assume that common sense means a digital version of a treatment will work. We have to monitor. Practitioners have to monitor the response people are having to the use of technology.

I'll highlight our own work. Jaspr Health has been evaluated. It's a tablet based intervention used in the ED now. It has a companion mobile app. I feel conflicted talking about our own work in too much detail, so I'll say if you're interested, you can follow-up with me.

The premise is that a digital assistant available on a tablet like an iPad can lead a person through all the evidence-based interventions they should get, and can be used in the care context. A companion mobile app allows the person to take their plan with them in a way that supports them at home.

Jaspr Health is meant to support both the patient and provider workflow. We're science backed, and address the full continuum of self-help plus, provider assisted, tech enabled.

In our randomized clinical trial, it accomplished what we hoped, it increased access to the evidence-based interventions that should be delivered in the emergency department: crisis response planning, lethal means counseling, increasing coping skills, etc.

I'll leave it there for our stuff.

In Australia, there's fantastic work being done. It's targeted to Aboriginal people and Torres Strait Islander people.

As we did with Jaspr Health, they co-developed with people with lived experience. Young people helped design this app. It has nice emerging data. It's not super strong, but it actually does help support people in outpatient care as an adjunct. This is designed for teens, 15 and older.

That's the range of self-help, a few examples, up to a little about the tech enabled just to point to the emerging science. There's a ton of cool stuff coming from academics. It will be interesting to see how the business model comes around it to be sustained.

I want to show you one more, this is TECTEC. We have just enough time to tell you this story.

Joe Franklin did this super incredible, interesting work on TECTEC.

It showed you disgusting images paired with self-injury. It was super theoretically consistent with the idea that one reason that self-harm is associated with suicide attempts is that over time, you're increasing your pain tolerance, barrier of viewing the self as something not to be harmed. If you can reestablish, condition that barrier by pairing disgust with self-harm, you could maybe see a change in the rates of self-injury and suicide attempts.

We saw nice preliminary results. By showing you disgusting images alongside cutting and other self-injury, you saw a change in the desired direction of reducing self harm. It didn't hold up over time. The results washed away, but it was promising and preliminary.

The problem was it was from an academic lab without a business model to support it. It's not available. I couldn't tell for sure, but it looks like its gone nowhere. I share this as an example of how those who do great science may not have the resource to get their applications to market.

I might stop there. There's a lot of stuff happening and things that should be disseminated, I think. They're ready and available. But doing it is hard. Getting it adopted is hard. Our incentives right now aren't set up for it to sustain it.

What matters most is changing outcomes. I might leave it there. I hope I didn't open more questions than answers for you. I wanted to give a sense of where things are right now, a survey.

Any questions?

I'm opening it up to the group. Julie?

Julie Goldstein: Yes. Thank you, Kelly.

I think that was really such an incredibly helpful overview. The field is changing so quickly. I think it's critical.

I can see some hands raised. I'll turn to Marcus and ask how people can post in the chat. Marcus, can we have people post in the chat? I can see Jill's hand. Jill, do you want to post your question into the chat?

In the meantime, how do people get started, Kelly? How do people make decisions? What would you recommend for a clinician who can make those types of decisions on their own as well as a healthcare system leader who wants to do this organizationally?

Kelly Koerner, PhD: At the individual level, there are a couple of ones I highlighted. Those self-help apps that assist a person having a digital crisis response plan, safety plan, whatever you call it -- those are worth looking at and evolving. If you can incorporate that into something you review, where you all make your insights to improve the crisis plan be pasted back into it, so it's a living document. I think that's the place for individual clinicians to think about it. That's where I'd say folks should start.

The other place that they could effectively adopt is anything that helps you do measurement-based care. Anything that lets you track a diary card of urges, lets you get at transitions and help you absorb and get what the patterns and transitions are for your specific person -- that can be super low tech like digital diary cards. I'd say that for the individual.

For the healthcare system, most of us at that level have been thinking about what we can get in an electronic health record. How can you standardize decision making? But there's a way where we inadvertently plug Columbia into your electronic health record and then simply tick the box. That approach to digitizing care can make you lose that as a clinician you're trying to change someone's risk, not tick a box. I think the electronic health record is the next place to intervene at the system level. It has to be paired with the appropriate training so that providers remain focused on compassionate individualized care.

This is where Jaspr Health works most, at the systems level. I think you've got to look for something that helps you, not just identify but TREAT without stressing your staff more. Demand on emergency departments will continue to be high. If you're going to do technology assisted, it has to lift the burden from staff.

Did that help or address your question, Julie?

I'm seeing questions.

[Reading question in chat: "Are there any apps that suicide prevention programs can use that generate texts to be sent to clients for daily suicide screenings? The client would answer a questionnaire on their phone. Obviously, the person is connected with services as well to be able to receive the texts. If a positive screening occurs it would trigger the social worker to contact the

client. (Similar to how some states conducted contact tracing w/positive COVID individuals.)"]

A lot of the work is emerging and not super commercially available at this time. I'd say that's a great emerging area.

But briefly, the idea is that questions are sent to be answered by your phone and depending on your answer, brief interventions might be suggested.

Julie Goldstein: There was a question about the level of care slide Dave created. What is "emergency respite care"?

Kelly Koerner, PhD: There's a cool model emerging where you have a room in the emergency department or adjacent, where you can be if you're suicidal. It has comfortable chairs, someone monitoring, and people are checking on you without a lot of intervention. You can go there through the peak of your crisis. Emergency respite care is one example. A lot of creative things are emerging there.

Julie Goldstein: Another question was about how systems can use these to meet joint commission requirements?

Kelly Koerner, PhD: Yes. This is where we at Jaspr Health got consultation of Joint Commissions. I'll use ours because I know it.

As an app developer, you want to build your software so it integrates within an electronic health record. Have your documentation reviewed by joint commissions and by the compliance folks. Because you want your app's documentation to move into the record so it strengthens and protects the provider, documents that you did what you said.

I'm hesitating because it's hard not to emphasize our solution since we've done so much work on this. But the important thing is the detail of the app has to align with your documentation requirements and incorporate into the provider's workflow so it's not more energy. Save energy.

The crisis stability plan should write in a way that saves the practitioner from typing everything or scan a paper copy in.

Julie Goldstein: Which is similar to a question someone asked. In what way does any technology you talked about today reduce staff time required per patient? Does it do that? Is it more likely that the main impact is on the efficacy and quality of the clinician delivering treatment? Or is it both?

Kelly Koerner, PhD: We don't have data on that yet. That's an area where we're interested and trying to collect data currently.

For example, in the emergency department, can you use the natural wait time, so the person is making progress on their treatment even as the provider has to do something else?

If you can have the person start on making their enabled crisis plan while the staff person is doing their collateral calls, that's a good use of time. If you can make documentation faster, that's a good use of time.

Right now, one of healthcare systems we are working in have great data. We're trying to measure if we can shorten the providers' workflow. Nobody has data yet about that.

Julie Goldstein: I think the ability to ensure that -- you have to fill out lots of forms before you go to the doctor. You want them to look at it and ask relevant questions. With technology, just like those standardized forms, it means they've asked the right questions of patients. That's what I think is promising about all of this technology.

Kelly Koerner, PhD: I noticed we're just coming up on time. Maybe just to start to wrap up. Thank you for coming. It's fantastic to have a community of people who are interested in technology.

We'll have a posting of this webinar up on your website, Julie, and ours.

Julie Goldstein: I can see a few other questions coming in. I'll plug the Zero Suicide listserv. It's free. There are over 3000 people on there. You can access it via the website. It's a great place to ask the wonderful conversations in chat. People have shared their resources, innovation, what we know in the literature, what's aspirational, etc.

Zerosuicide.com. Let's keep this conversation going. There's a lot for all of us to learn.

Kelly Koerner, PhD: Fantastic.

The next planned webinar we're co-sponsoring has to do with a return on investment, workforce shortage, and practicalities of that. We're aiming for November. It's super cool to start this conversation with you. Thank you, Julie.

Julie Goldstein: Thank you, Kelly. Thank you, everybody. Have a great day.

Kelly Koerner, PhD: Bye.

[End of meeting]