Mental Health Services Act: Innovations

Collaborative Statewide Early Psychosis Program Evaluation

FY 2020/21 Annual Innovation Report: Early Psychosis Learning Health Care Network

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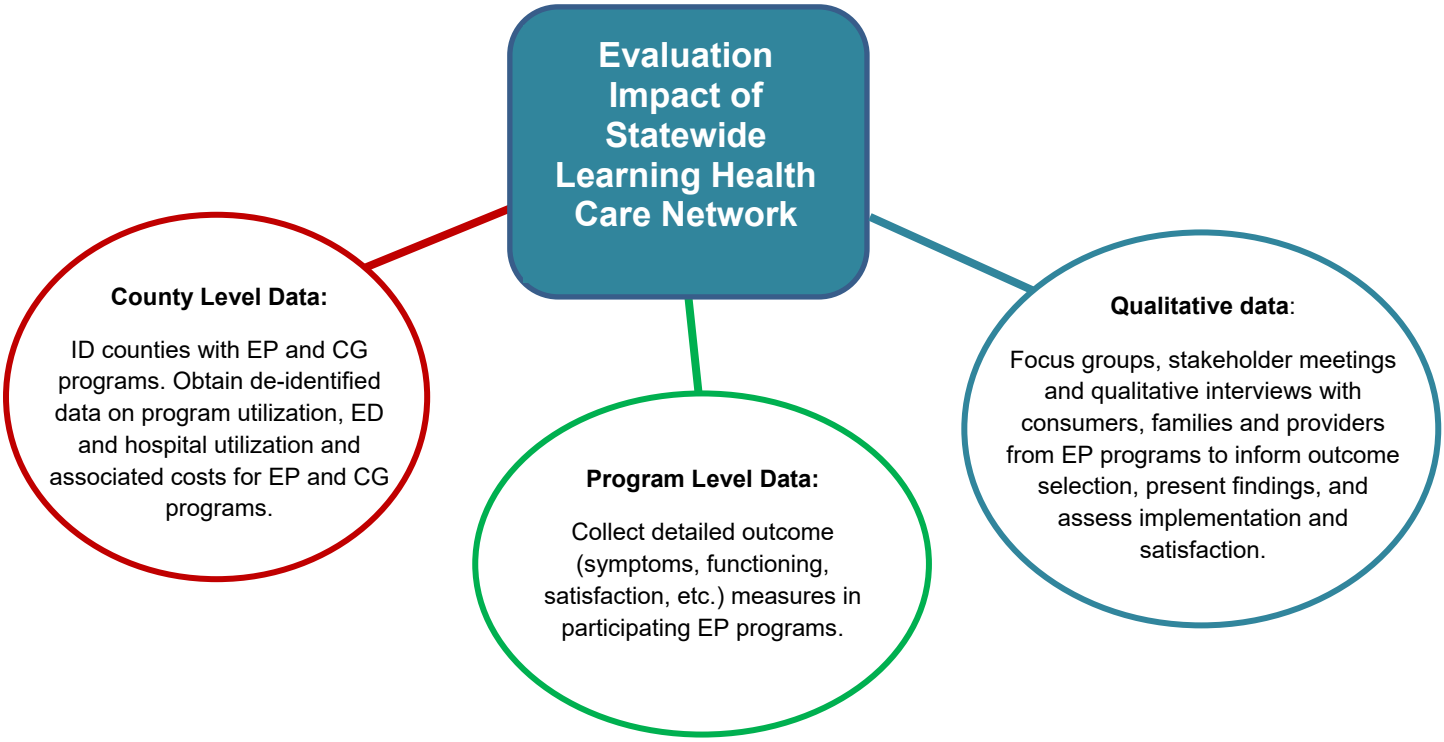
Background

Multiple California counties in collaboration with the UC Davis Behavioral Health Center of Excellence, received approval to use Innovation or other Prop 63 funds to develop infrastructure for a sustainable learning health care network (LHCN) for early psychosis (EP) programs. Of those counties with approved funding, the following counties have processed and executed contracts between their behavioral health services departments and UC Davis as of June 30, 2021: San Diego, Solano, Sonoma, Los Angeles and Orange. One Mind has also contributed $1.5 million in funding to support the project. Napa and Stanislaus Counties have received approval to use Innovation funds to join the LHCN; their onboarding into the LHCN will be completed over FY 21-22. This Innovation project seeks to demonstrate the utility of the network via a collaborative statewide evaluation to assess the impact of the network and these programs on the consumers and communities that they serve. This project, led by UC Davis in partnership with UC San Francisco, UC San Diego, University of Calgary and multiple California counties, brings consumer-level data to the providers' fingertips for real-time sharing with consumers, and allows programs to learn from each other through a training and technical assistance collaborative. This Statewide EP Evaluation and LHCN propose to 1) increase the quality of mental health services, including measurable outcomes, and 2) introduce a mental health practice or approach that is new to the overall mental health system. The project must comply with the regulatory and funding guidelines for evaluation as stipulated by the applicable Mental Health Services Act (MHSA) funding regulations, contract deliverables, and best practices.

There are three components to the data collected for the LHCN: County Level, Program Level, and Qualitative data (Figure 1). The protocol for collecting each component has been reviewed by an Institutional Review Board (IRB) and approved before commencement of data collection. Further, aspects of the data design will be shaped by the input of stakeholders, including mental health consumers, family members, and providers.

Figure 1. Three Components of the Evaluation Associated with the Statewide LHCN.



This project was approved for funding using Innovation Funds by the MHSOAC in December of 2018. The California Early Psychosis Learning Health Care Network (LHCN) represents a unique partnership between the University of California, multiple California counties, and One Mind to build a network of California early

psychosis (EP) programs. Additionally, we were able to leverage this initial investment to obtain additional funding from the National Institutes of Health (NIH) in 2019, which enabled six university and two county early psychosis programs to join and also linked the California network to a national network of EP programs, including UCSF PATH, UCSD CARE, UCLA Aftercare & CAPPS, Stanford Inspire, San Mateo Felton BEAM UP/(re) MIND, UC Davis EDAPT and SacEDAPT programs. The overarching name of the project, which encompasses the LHCN and the NIH-funded components, is now "EPI-CAL." In this and future reports, we will refer to the LHCN only when describing components of the project that are specific to the LHCN evaluation (e.g., county data analysis).

Our EPI-CAL team has made significant progress towards our goals outlined in the innovation proposal during the 20/21 fiscal year, which are summarized in the current report.

Executive Summary

The purpose of this document is to provide the EP LHCN Mental Health Services Act (MHSA) Annual Innovation Report to review EP LHCN goals accomplished during FY2020/2021. This report will include summaries and status updates on the infrastructure of the LHCN, steps taken towards implementation, and barriers that have been identified over the course of the last fiscal year. While the counties involved in the EP LHCN may be at different stages in the process, the overarching LHCN is moving forward as planned.

- Prior to beginning activities for the LHCN, UC Davis had to have an executed contract with each of the participating counties so each party could mutually agree to a scope and terms of work. As of June 2021, UC Davis had executed contracts with Solano, San Diego, Los Angeles, Orange, and Sonoma counties. The Napa County LHCN and Aldea contracts were under review. In addition to existing LHCN counties, Stanislaus County has received approval to join the LHCN. We are working together to execute their contract before officially beginning activities in their county program.
- We have held two LHCN Advisory Committee meetings in the last fiscal year, which was comprised of a county representative from each participating county, a clinical provider from each participating EP program, and consumers and family members who have been or are being served by the participating programs. We will continue to hold Advisory committee meetings on a bi-annual basis.
- In the coming year, we plan to begin fidelity assessments in EPI-CAL/LHCN clinics. We have scheduled fidelity assessments for all participating programs in the LHCN network with an executed contract.
- We have administered self-report questionnaires to providers and consumers and in the pre-implementation period of the project, as outlined in the LHCN proposal. The battery of questionnaires, including baseline and pre-implementation surveys, have been designed to assess potential factors that could influence outcomes for EP consumers that are measured in the project. By the end of the fiscal year, we have had 11 consumers and eight clinicians complete pre-implementation questionnaires across three participating clinics. While we have eight clinicians who responded, 46 clinician surveys have been completed as clinicians can complete surveys about multiple eligible consumers. We've had 152 providers complete the baseline surveys.
- We have continued to hold focus groups with consumers and providers to elicit feedback on the custom application (Beehive), including six focus groups to develop the End User License Agreement (EULA) and presentation of data-sharing options for Beehive users. Our team used feedback from these groups to update the EULA video and EULA screens in Beehive. We have summarized the qualitative feedback we've received on Beehive in a qualitative report. This includes feedback from wireframe focus groups, alpha version focus groups, and EULA/data-sharing focus groups.
- In the past year, we completed the testing and initial deployment of the Beehive application in EPI-CAL/LHCN clinics, starting with alpha testing, followed by beta testing, then full deployment across the network.
- In order to prepare for our county-level data evaluation component of the LHCN, established the data collection process for obtaining county-level utilization and cost data for a retrospective 3-year timeframe for preliminary evaluation for both EP and comparator group (CG) programs. We have also written a report on the feasibility of obtaining cost and utilization data for this retrospective period.

Current Project Goals

The current document summarizes project activities conducted for the LHCN during the 20/21 fiscal year. This includes the following project activities:

1. Establish a Stakeholder Advisory Committee that will meet at least every 6 months.

2. Schedule for EP Program Fidelity assessments.

3. Complete Pre-LHCN implementation questionnaires

4. Produce qualitative report on ongoing issues and suggestions on the app/dashboard from EP program staff and other stakeholders; including results of focus groups

5. Conduct initial site visits, detailing training of EP program staff in data collection

6. Provide feedback from beta testing of LHCN application for data collection

7. Subcontractor to make modifications to software application and dashboard to reflect findings from pilot testing and qualitative report

8. Get preliminary results on program-level data from 2 pilot EP programs, including interviews with EP programs to understand barriers and facilitators to app implementation

9. Outline plan for training EP program staff from non-pilot programs on app implementation and outcomes measurement

10. Establish data collection process for obtaining county-level utilization and cost data for prior 3-year timeframe for preliminary evaluation for both EP and comparator group (CG) programs.

11. Report on feasibility of obtaining cost and utilization data from preliminary multi-county integrated evaluation.

1. Establish a Stakeholder Advisory Committee that will meet at least every 6 months

The Advisory Committee for the LHCN is comprised of a county representative from each participating county, a representative of each participating EP program, and up to five consumers and five family members who have been, or are being served, by EP programs. This committee is co-led by Bonnie Hotz, family advocate from Sacramento County. Recruitment for the Advisory Committee is ongoing, and we have confirmed membership with multiple stakeholders. These include past consumers, family members, clinic staff and providers. Even though we have already held several Advisory Committee meetings, we continue to distribute flyers to all participating clinics, as their contracts are coming through, to make sure the Advisory Committee is open to all LHCN member clinics. In the 20/21 fiscal year, we held Advisory Committee meetings on December 8th, 2020 and June 7th, 2021.

December 8th, 2020 Meeting

During the first bi-annual meeting of the fiscal year, we gave a progress report on development of the battery, county data analysis, program-level survey data reports, and the alpha phase of the application. When reviewing the battery, family stakeholders expressed that they liked the question regarding how a consumer's role may have changed in response to mental health challenges. County and provider stakeholders appreciated the thoroughness of the battery and pointed out support for asking about involuntary hospitalizations. County stakeholders also expressed support for the level of detail collected regarding risk for

homelessness, and it was pointed out that we might want to ask whether commercial insurance is provided by one's employer due to the heavy cost burden of paying for private insurance.

During initial site visits, providers and staff at each EP program were asked to complete a battery of surveys related to factors that may impact Beehive implementation (e.g., organizational readiness for change, comfort with technology) or consumer-level outcomes (e.g., provider burnout, stigma around mental health, views on recovery). When reviewing the program-level survey data, there was general support for the way data was visualized. Various stakeholders gave helpful insight into how to interpret some of the data, especially how COVID affects the burnout and organizational challenges data. We were also provided with guidance around additional questions that should be asked to help clarify the COVID data, including whether staff may have assignments to homeless shelters or emergency services, anxiety around working with consumers with COVID, and whether staff are fully working from home or have to continue to work in the program in person. Family stakeholders also agreed that this was valuable data as those at a management level can use this data to see if providers are feeling overworked or burned out, which can affect the quality of care.

Finally, we reviewed progress on the development of the application to-date and received generally positive feedback on the alpha version of the application.

June 7th, 2021 Meeting

We held the most recent Advisory Committee meeting on June 7th, 2021. The meeting was also held remotely due to the COVID-19 pandemic. During the meeting, we gave a progress report on the county data analysis, provided a summary of findings from the EULA focus groups, shared the EULA video, discussed progress on Beehive training, and solicited feedback on the Barriers and Facilitators interview guides. When reviewing the EULA video, a consumer stakeholder expressed that the video was very clear and informative; they liked how the video explained how data would be de-identified and liked the images used to represent that. A family stakeholder commented that they appreciated that this video might help new families and consumers to feel more comfortable using the application, especially regarding the transparency and clarity of the video.

When giving an update on Beehive training progress, we had program leadership from pilot programs give their feedback on how Beehive has been integrated into their program so far. Program leadership communicated to the committee that clinicians have made some changes to their schedule and structure of sessions to introduce Beehive and that it can take some additional time when first orienting to Beehive, and that they found planning ahead has been effective. They also shared that consumers have generally had a positive reaction to this platform. Finally, they found it is important to share feedback to leadership from a clinician perspective around how this change impacts additional clinical responsibilities.

Prior to the Advisory Committee meeting, we shared our Barriers and Facilitators interview guides so attendees could review the guides ahead of time in preparation to give feedback at the meeting. The purpose of the Barriers and Facilitators interview is to explore consumer and provider experiences of integrating and utilizing the Beehive system in clinical practice. This includes understanding how intake procedures were modified to incorporate registering new consumers into the system, provider and consumer experiences of adding their data into Beehive, and their experiences of integrating measurement-based based care during the consultation. We wanted feedback at the meeting in order to know if we are asking all the right questions and asking them in the right way. Providers gave feedback that it is very important to understand how Beehive can be integrated into billable time and how long the surveys take to complete. Family stakeholders gave feedback that included clarifying the wording on some questions, including a question that asks the consumer whether the application helped them meet their treatment goals, as well as asking the consumer if the application captured the most important parts of their experience.

2. Complete Pre-LHCN implementation questionnaires

In the LHCN proposal, we proposed to ask consumers and providers to complete self-report questionnaires in the pre-implementation period of the project. Consumers are asked to complete self-report questionnaires about insight into illness, perceived utility of the application, satisfaction with treatment, treatment alliance, and comfort with technology. We also have providers at each clinic complete questionnaires on Treatment Alliance, Use of Data in Care Planning, Perceived Effect of Use for the LHCN, and Comfort with Technology. In addition to the originally planned pre-implementation surveys, we have provider surveys that assess demographics, eHealth Readiness, Organizational Readiness for Change, Attitudes Toward Evidence Based Practice, Clinician Attitudes of Recovery and Stigma, Modified Practice Pattern Questionnaire, and Professional Quality Scale. This battery of questionnaires is termed the “baseline” surveys and have been designed to assess potential factors that could influence outcomes for EP consumers that are measured in the project. Therefore, the study team felt it was important to assess these factors for inclusion in the future analysis of outcomes data.

To date, 152 EP program providers and staff completed our baseline surveys on E-Health readiness, comfort with technology, and basic demographics. We have had 121 EP program providers and staff complete the second set of surveys on organizational readiness for change, burnout and satisfaction, attitudes on evidence-based practices, clinician attitudes on recovery and stigma, and practice style. The results of the findings from the surveys are compiled into a custom report for each clinic, including suggestions for potential action items as a first step in using data to enhance care delivery in EP programs.

At the time of this report, we have had 11 consumers and eight clinicians complete pre-implementation questionnaires across three participating clinics. While we have eight clinicians who responded, 46 clinician surveys have been completed as clinicians can complete surveys about multiple eligible consumers. These survey responses include representation from the Solano Aldea SOAR and San Diego Kickstart clinics. We are currently in the process of continuing to recruit clinicians and consumers from EPI-CAL clinics who have not had Beehive implemented in their program.

3. Schedule for EP Program Fidelity assessments.

Each early psychosis clinic will undergo a fidelity assessment to determine their adherence to evidence-based practices for first-episode services using a revised version of the First Episode Psychosis Services Fidelity Scale (FEPS-FS). The FEPS-FS represents a standardized measure of fidelity to EP program best practices (Addington et al., 2016; First Episode Psychosis Services Fidelity Scale: (FEPS-FS 1.0), 2015). The FEPS-FS was developed using an international expert consensus method, focused on six domains: (1) population-level interventions and access, (2) comprehensive assessment and care plan, (3) individual-level intervention, (4) group-level interventions, (5) service system and models of intervention, and (6) evaluation and quality improvement. The FEPS-FS has been recently revised to meet the agreed upon standards of EP care in the US and allow large-scale fidelity evaluation. Additionally, most programs within EPI-CAL also provide services to individuals with the clinical high-risk syndrome (CHR), for whom evidence-based best practice differs from FEP care in a number of respects. Consequently, to provide a program assessment that most accurately represents the care delivered, alongside the FEP-FS we will be piloting a new scale under development designed to assess the components of care delivered to individuals with the diagnosis of CHR, known as the CHRP-FS.

Each EP program will participate in an assessment of EP program components using the revised FEPS-FS/CHRPS-FS, which will be completed via web-based teleconference. The fidelity assessment will be used to identify program strengths and possible areas for improvement, which can serve an important driver to improving early psychosis care delivered in EP programs in the LHCN. Additionally, the ability to evaluate the

impact of service-level factors on consumer-level outcomes collected by Beehive will provide us with important new insights into what particular components of the EP program of care are associated with improved outcomes in different domains. These findings can then be disseminated across the network (and beyond), further informing care and shaping service delivery.

Assessments will be completed in groups of 2-6 programs per quarter, starting in September 2021 until December 2022. Assessments will be completed by trained clinical staff with expertise in early psychosis care and supported by evaluation administrative and research staff. Prior to the assessment taking place, the assessors and administrative/research support staff will undergo a two-day training to go through the manual and conduct a mock site visit based on real cases. Prior to the evaluation, EP program sites will participate in an introductory meeting, in which an overview of the FEPS will be provided and the components of the evaluation will be discussed. The assessment will be conducted in consultation with Don Addington, M.D. from the University of Calgary, author of the FEPS-FS and CHRPS-FS scales. Dr. Addington will also provide the overview presentation to the participating sites.

At the time of this report, EP program fidelity assessments have been scheduled for two programs for the fall quarter of 2021: Orange County OC CREW program (November 29 - December 3, 2021) and San Diego Kickstart program (November 1-5, 2021). Aldea SOAR Solano is scheduled for the following quarter (January 17-21, 2022), Sonoma Aldea SOAR will take place in the second quarter of 2022, the five LACDMH programs are scheduled for the third quarter of 2022 (July, August, September), and Napa Aldea SOAR is schedule for the fourth quarter of 2022.

4. Produce qualitative report on ongoing issues and suggestions on the app/dashboard from EP program staff and other stakeholders, including results of focus groups.

Over the course of the past year, the EPI-CAL team has conducted extensive qualitative research in order to engage various stakeholders and utilize their valuable feedback to shape the development of the Beehive application. We received qualitative feedback throughout the development of this custom application in three different types of qualitative focus groups: wireframe focus groups, alpha testing groups, and data-sharing/end user license agreement (EULA) focus groups. We have conducted a total of 23 focus groups spanning these three focus group types in order to get detailed feedback and suggestions for the application and dashboard from EP program staff, EP program consumers, and their family members.

Wireframe focus groups

Quorum and the EPI-CAL research team have worked collaboratively to develop the wireframe for the tablet and web-based applications. The UC Davis team used these storyboards as materials for focus groups to obtain feedback on the application and dashboard’s design, flow, and functionality.

Methods
We conducted a total of 16 wireframe focus groups. Each group was 90 minutes long and categorized by the types of participants, including research staff, clinic providers, clinic administration, consumers, and their family members. Two groups were held with research staff and data experts (12 participants), six groups were held with providers at EP programs (36 participants), three groups were held with clinic administrators (20 participants), one group was held with both EP providers and clinic administrators (nine participants from Los Angeles County programs), and four groups were held with consumers and families (17 participants; see Tables 1 & 2). We did not meet separately with consumers and families for these groups, but instead held combined groups for consumers and families to attend together. Due to COVID-19, all focus groups were conducted over video conferencing (Zoom or WebEx). To maximize convenience and availability for staff

during this time of transition, multiple groups were scheduled and open to participation from staff at any EPI-CAL clinic. Many of the groups had representation from multiple clinics in the network, which allowed for the study team to better understand the differing needs and environments of programs in the network. During each group, EPI-CAL research staff presented various aspects of the application storyboard, which allows for visualization of the look, feel, and functionality of the application prior to development. Each presentation was tailored to demonstrate scenarios pertinent to how specific users (i.e., providers, clinic administration, consumers, and families) will interact with the tablet and web applications. We asked for feedback on the look and feel of the application, the functionality of the application as it relates to the current EP program workflow, and ease of use and acceptability for both consumers, support persons, and staff.

Table 1

Total Wireframe Focus Groups	**16**
Research Focus Groups	2
Provider Focus Groups	6
Clinic Admin Focus Groups	3
Provider & Clinic Admin Focus Groups	1
Consumer & Family Focus Groups	4

Table 2

Total Participants*	**94**
Research	12
Providers	36
Clinic Admin	20
Providers & Clinic Admin	9
Consumer & Family	17

**Participants could attend more than one group*

Results

Our research team discussed and synthesized the feedback for the application developers to support application development (see Appendix I). When integrating the feedback into application development, we endeavored to balance consumer and family needs with provider and staff needs. Overall, stakeholders approved of the look and feel of the application. Some stakeholders (both consumers and providers) noted that the color scheme and layout seemed overly clinical. They suggested, specifically when presenting surveys, to bring in more color, engaging imagery, and visual information. Occasionally, stakeholders disagreed on whether certain visual aspects of the application were acceptable or not. For example, several providers and family members raised the concern that the current images (drawings of individuals who do not have facial details drawn in) would be disconcerting or upsetting for consumers. However, when we asked consumers about this, they said they felt either neutrally or positively about these images. Often, stakeholders unanimously agreed on an aspect of the user interface that should change, such as changing the color of the survey progress bar in the tablet application to be more prominent.

Stakeholders provided several suggestions to improve integration of the application into their EP clinic workflow and procedures. After demonstrating the process of registering a new consumer in the tablet, clinic staff, consumers, and families alike emphasized the importance of having an option for clinic staff to pre-register consumers if they gather registration information over the phone prior to the consumer's first visit in the clinic. Stakeholders agreed this would reduce burden on the consumer and demonstrate that the clinic was

well organized and listening to the information consumers and family members had already provided.

Some stakeholders provided feedback specific to their role in the clinic. For instance, participants in a focus group with clinic administrators from various programs suggested that demographic information that clinic staff regularly report to their county, for example, be visualized on the clinic administrator dashboard. We subsequently built in data visualizations for race, ethnicity, sex, gender identity, and other metrics which clinics are commonly asked to report. On the other hand, consumers and their family members, from their unique perspective as consumers, nearly unanimously agreed that when viewing data visualizations on the web application with their provider, they would not like to see the results of the symptom survey as the default display. They instead preferred to see a more recovery-oriented measure, such as the Questionnaire about the Process of Recovery (QPR), when first looking at their survey responses. Based on this feedback, we will set the QPR to be the default data visualization presented when a provider is clicking into a consumer's data on the web application.

During focus groups with Los Angeles County stakeholders in August 2020, our team also asked for feedback about how to adapt both the data collection and data visualization components of the application for use with telehealth. Multiple EP staff participants agreed that a remote data collection option, which would allow consumers to complete surveys from home, would be ideal. Consumer and family stakeholders agreed with providers for the remote option, but and were split between their preference for a mobile application or a personalized link that could be emailed or texted from their provider. Consumer and family stakeholders said they would prefer to look at their data with their provider and would not necessarily want individual access to look at their results from home.

Alpha Version Focus Group

We held a focus group for stakeholders to review the alpha version of the Beehive application to elicit valuable feedback from our stakeholders on the development of the Beehive application. This feedback was valuable as it was the first opportunity for stakeholders to review the application in a production environment, rather than wireframes or plans.

Methods

On October 22, 2020 the EPI-CAL team conducted a focus group with four staff members from an EPI-CAL clinic (SacEDAPT) including a clinician, two peer case-managers, and a clinical supervisor. The focus group began with a demonstration of survey-completion on the tablet application and a demonstration of navigation around the web application, including registering a new consumer and viewing consumer survey data visualizations. Focus group attendees were asked for their comments and questions on the application. They were asked to think about the feasibility of the integration of the application within their current clinic workflow and ease of use. After the demonstration, the focus group attendees logged into the alpha version of the application and were able to test out functions such as consumer registration and data visualization.

Feedback

Focus group participants made suggestions to improve the application, including changes to language, look and feel, features, and information presented to consumers (Table 3). The UCD team discussed these suggestions and the action taken is described in Table 3.

Table 3: Examples of Alpha Focus Group Feedback

Suggestion /Question Content Area	**Example**	**Outcome**

Language Used in Application	It is unclear that “primary language” during tablet registration refers to the tablet display language.	UCD team discussed and decided to rename this field to “Display language” to make this clearer.
Information Presented to Consumers	During consumer follow-up visits, a reminder should be added about confidentiality and how data will be used. This information is covered in detail at the first visit but consumers may forget after 6 months.	UCD team will plan to draft a message to returning consumers at follow-up visits that will remind them of confidentiality and how data will be used.
Application Feature	Will consumers have the option to visualize any service that they deem important as part of their treatment, for example, case management, or just the four options listed (medication management, individual therapy, group therapy, education/employment support)?	UCD team to discuss this feature with developers. It is not part of alpha and is not yet functional, but there will be variation at the program-level and consumer-level services offered and received, so flexibility in this visualization will be needed.
Look and Feel of Application	The image that appears during survey completion does not represent people of color.	While there is diversity of sex/race/ethnicity in the images throughout the survey modules in the application, it is currently showing the same image repeatedly for each survey question. UCD team to ask developers whether different images can appear during each survey to avoid over-representation of one sex/race.

Data-sharing & EULA focus groups

To develop the End User License Agreement (EULA) and presentation of data-sharing options for Beehive, the EPI-CAL team conducted a series of six focus groups to gather stakeholder feedback (n=24). Two different phases of groups were conducted: (1) Data-Sharing Preferences Focus Groups, and (2) EULA Focus Groups. Each type of group was conducted three times with a different group of stakeholders in EPI-CAL EP clinics: (1) providers and clinic staff (n=14), (2) consumers (n= 6), and (3) family members and support persons of consumers (n=4). Some stakeholders attended both phase 1 and phase 2 groups.

Focus groups were conducted remotely via web conferencing (Zoom for the provider group, WebEx for the consumer and family groups), each lasting approximately 90 minutes. Informed consent was collected before the groups.

Phase 1 focus groups

These three groups were conducted in August 2020 to understand stakeholders’ views on how their personal health information is and should be used. The introduction to the discussion topics began with a brief description of the EPI-CAL study and a review of definitions of key terms (e.g., privacy, confidentiality). The first part of the discussion focused on stakeholders’ understanding of and perspective on data sharing. The second part focused on stakeholder’s understanding of and perspective of changing sharing options (i.e., “living informed consent” and “the right to be deleted”). The third part of the discussion focused on stakeholders’ understanding of and perspective on sharing different types of data (i.e., identifiable vs. de-identified) at different levels (i.e., individual- and group-levels).

Using notes and preliminary analysis of the transcripts from these focus groups as guidance, the EPI-CAL team developed the materials for the EULA focus group, described below. In general, stakeholders expressed that they were willing to share their de-identified data in order to “help others” (i.e., increase funding to their EP program or other EP programs, contribute to EP research that will improve treatment options for others, promote policy changes that increase accessibility to EP programs). They indicated that transparency of what data is collected, who has access to the data, and how it will be used is imperative for them to make informed decisions about data sharing. They also highlighted the importance of describing the data protections that are in place (i.e., laws and regulations) as well as knowing how the entity to which they are entrusting their data actually follows those laws and regulations. They expressed that giving them more control over their data (i.e., ability to access their own data, change their data sharing permissions, delete their data) would make them more comfortable sharing data.

Table 4

Total Data-Sharing Focus Groups	**3**
Provider Focus Group	1
Consumer Focus Group	1
Family Focus Group	1

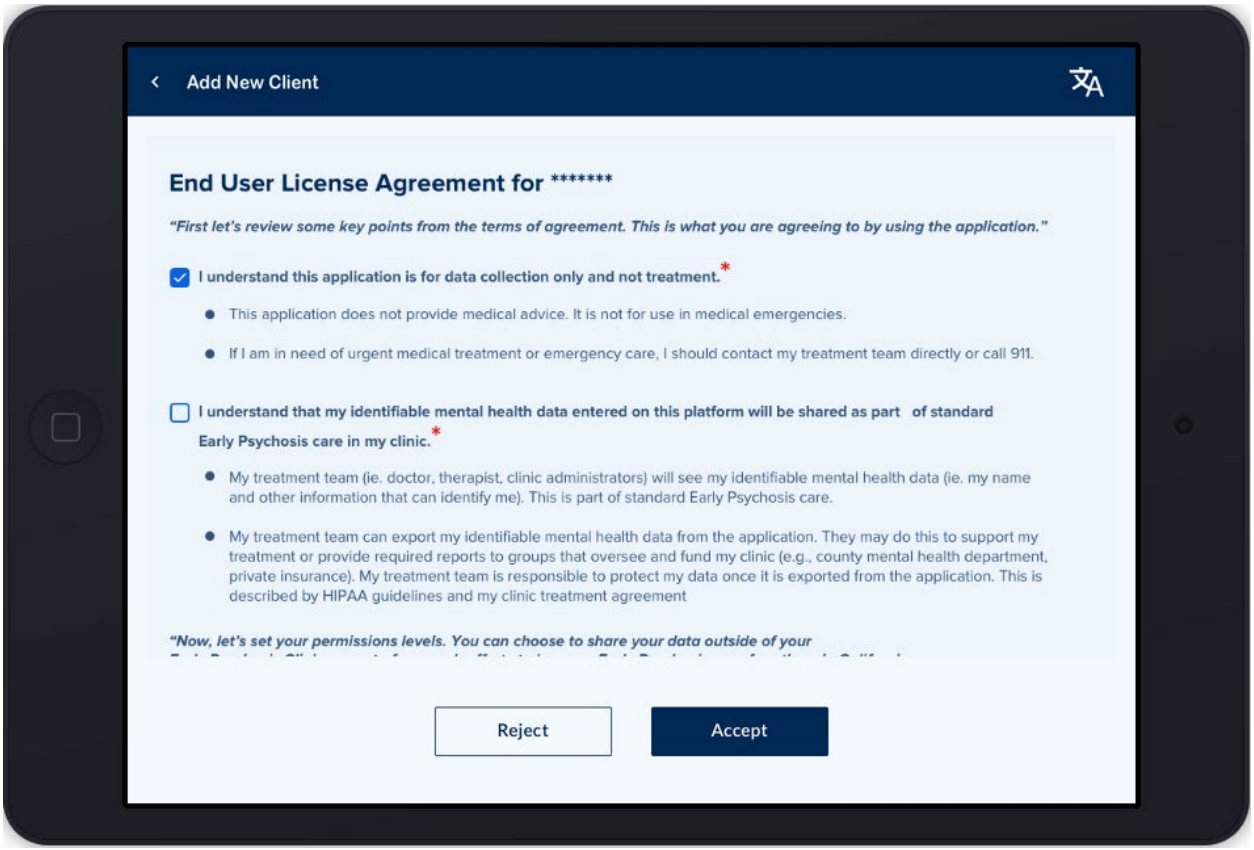
Table 5

Total Participants	**19**
Providers	9
Consumers	6
Family	4

Phase 2 Focus Groups

The three EULA focus groups were conducted in January 2021 to understand stakeholders’ response to how the End User License Agreement (EULA) in Beehive is presented. First, participants were shown an informational video (YouTube link: https://www.youtube.com/watch?v=jzrVmToiGmo&ab_channel=EPI-CAL) created by the research team presenting the key points of the Beehive EULA. After watching the video, participants were asked their opinions about how the information was presented, what questions they still had after watching the video, and how they felt about this method of presenting a EULA. Participants were then shown a demonstration of how the EULA would be presented in the application (Figure 2), with a specific emphasis on the screen on which users may opt-in to data-sharing outside of their clinic for research purposes. Participants were asked for their perspective on how the information was written and presented.

Figure 2: EULA Demonstration



In general, stakeholders thought that using a video to present the EULA was a creative approach that may help users to understand this information better than if they were simply presented this information in a written format alone. All stakeholder groups commented on how to further clarify the information provided.

Provider stakeholders made suggestions about slowing the pace of the video, simplifying visuals, and even culling information from the video to make it simpler. Consumers similarly commented that they would want the ability to pause the video and ask questions of a clinic staff member while watching the video.

In contrast to provider suggestions to remove information from the video to simplify it, consumers approved of the level of detail provided in the video. Consumers said the video helped them to understand the concepts presented. For example, one consumer indicated he had a very clear understanding of how data becomes de-identified by watching the video. Consumers even stated areas where they thought additional detail could be beneficial. For example, consumers thought the video should provide a bit more information about how Beehive would directly benefit them if they chose to use it as part of their care.

Family stakeholders likewise approved of the level of detail provided in the video. For example, they agreed it was important to include the level of detail currently present in the video to describe the relationship between National Institutes of Health (NIH) and EPI-CAL. All participants said the video helped them to have an understanding of the research scope of EPI-CAL and how the data may be used at the national-level as part of the NIH funded study.

When presented with the Beehive EULA screens, stakeholders thought that the written information on data sharing was consistent with the information presented in the video. Stakeholders provided suggestions to change text and formatting. All stakeholder groups agreed that it needed to be made clearer what was optional (e.g., sharing de-identified data with UC Davis researchers) and what was required (e.g., acknowledging that that the application is for data collection, not treatment). A suggestion on how to do this simply would be to add "(optional)" to the text on those statements, rather than relying on a lack of asterisk to indicate that it is

optional. One provider stakeholder suggested requiring a response of yes or no for the options to share data with research, rather than a checked box meaning “yes” and a blank box meaning “no.”

The research team used feedback from these groups to update the EULA video and EULA screens in Beehive. Some changes were implemented for Beta testing (e.g., providing more information about how Beehive may directly benefit users) and others will be considered for future versions of the application (e.g., re-formatting Beehive EULA screen). User feedback from Beta testing will help the team to prioritize what changes to implement moving forward.

Table 6

Total EULA Focus Groups	**3**
Provider Focus Group	1
Consumer Focus Group	1
Family Focus Group	1

Table 7

Total Participants	**14**
Providers	8
Consumers	3
Family	3

Summary

The extensive, iterative, feedback-process detailed in the qualitative section of this report has significantly informed the construction of the Beehive application. We find stakeholder feedback extremely valuable as it ensures that aspects of the application are designed and built with the end-user in mind, increasing the likelihood that other users will find the product useful and valuable. This process has significantly improved our understanding of what different groups of stakeholders consider important in a data-collection application to be used in early psychosis care. In addition, it has reinforced that a collaborative approach is foundational to the success of this project.

5. Conduct initial site visits, detailing training of EP program staff in data collection.

In our original LHCN proposal, we proposed in-person site visits to conduct the initial training for the Beehive application. However, due to the COVID-19 pandemic, we had to adjust our training plan and conduct the first training “site visits” remotely. This began with a pre-training meeting with leadership at each site to discuss which program staff members would be designated as providers, group analysts, or group and clinic admin in Beehive, as well as to cover topics around integrating Beehive into their current data collection system. Next, we conducted a three-part training series to introduce Beehive to each program (Part 1, Part 2, and Part 3). Our remote trainings began with our pilot sites on March 22, 2021 with Part 1 training for UC Davis SacEDAPT and EDAPT. These were followed with trainings for the Aldea SOAR Solano program on March 22, 2021, and the Part 1 training for San Diego Pathways Kickstart on March 31, 2021. In June, 2021, we began to onboard non-pilot sites, starting with the Los Angeles County PIER programs. All LA County PIER programs completed Part 1 trainings in June 2021, starting with The Help Group on June 14, 2021.

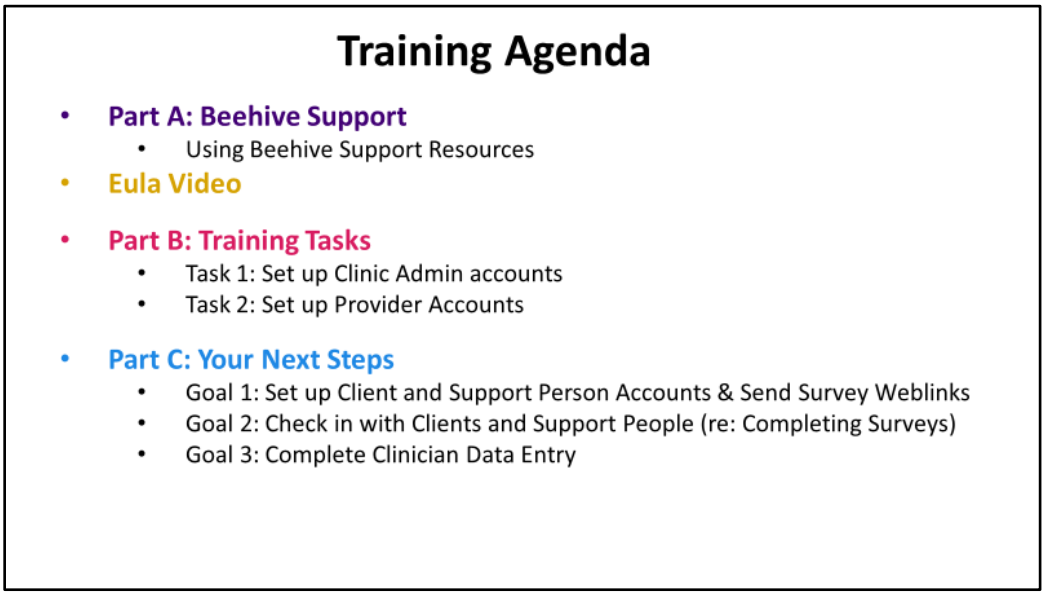
Part 1 Training

The general outline for the first training is as follows:

1. Re-introduction to the EPI-CAL project, including the overarching purpose and goals of data collection via Beehive
2. Presentation on the value of Beehive and data collection
3. Beehive Application training session (see Figure 3)

Presentation- "The Value of Beehive and Data Collection"
An EPI-CAL team member, Leigh Smith, Ph.D., gives a brief presentation that first focuses on how Beehive was developed using input from stakeholders and providers. Next, she provides a historical example of data collection that led to significant innovation in health care by giving a brief vignette of John Snow's work with the Cholera outbreak in London in 1854. She then draws parallels between Snow's work and how Beehive was designed, focusing on a meaningful connection between providers and stakeholders, a holistic approach to data collection, and prioritization of record keeping through automation and data consolidation. After, she speaks about Beehive's power to facilitate dialogue between providers and consumers, and within/between clinics, through reports provided by the Beehive team or generated within Beehive. Dr. Smith covers the purpose of participating in a Learning Health Care Network (LHCN), and how valuable information collection can be in informing treatment. Finally, she emphasizes the ability of Beehive's data collection in shaping care by illustrating how over a million points of data can be generated if each of the 18 EPI-CAL clinics enrolled 80% of their consumers and completed the baseline and two follow-up surveys in the first year.

Figure 3: Training Agenda



Part A: Using Beehive Support Resources
We provide all EP program staff with the link to our detailed resource guide, accessed here: https://sites.google.com/view/beehiveguide/home

The resource guide was created so that EP program staff may reference, in detail, how to use the Beehive application and complete the tasks reviewed during the training. This includes: Creating Clinic or Group Admin Account & Inviting them to Beehive, Accepting Beehive Invite & Completing Registration, and Adding a Provider and Inviting them to Beehive. The resource guide also provides information on how to complete the "homework" that was assigned during the first training, including Adding a Consumer & Support Person and Completing Clinician Data Entry.

End User License Agreement (EULA) Video

We show the EULA video to all EP program staff for two reasons: 1) to streamline the registration process for staff during the training (as all users watch this video as part of the registration process), and 2) to orient them to what consumers and families also see when they first access the Beehive system. The EULA video can be accessed here: https://youtu.be/3E8hiEkIvSQ. The EULA video was developed through focus groups with EPI-CAL stakeholders (consumers, family members and providers) to ensure that core aspects of Beehive (e.g., security, consent and data sharing) were clear to users. The EULA video describes what Beehive is and how it is part of the EPI-CAL project, the purpose of Beehive, how data is shared and stored, and users' options for data sharing. Every new user of Beehive will be presented with the EULA video before making their data sharing choices.

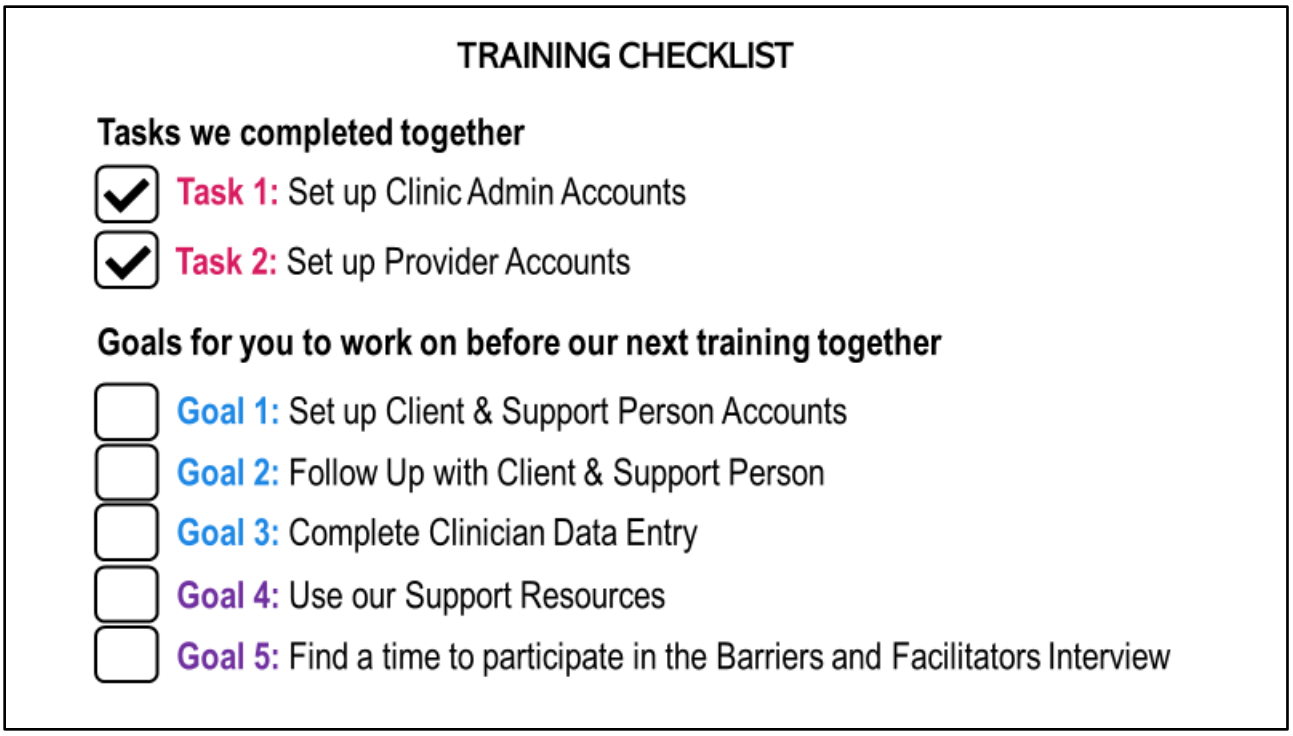
Part B: Training Tasks: Setting up Clinic Admin/Provider Accounts and Registering Consumers
There are three main types of accounts in Beehive; each account is associated with the ability to complete certain actions in the Beehive system in line with that person's job duties. The Group Admin account is for program-level staff members who provide supervision and administrative support across clinics within a particular group – for example, a Group Admin is a person whose position includes oversight of activities at more than one clinic. The Clinic Admin account is for staff members who provide supervision and administrative support within a specific clinic in a group. Finally, Provider accounts are for staff members providing direct services to consumers in a particular clinic, for example therapists, prescribers, and peer support specialists. There is a general hierarchical structure to the relationship between these account types, such as who can invite new users and who can download data from Beehive.

The first training task is to set up Clinic Admin and Provider accounts in Beehive. For the initial Part 1 trainings, EPI-CAL staff created Group and Clinic Admin accounts prior to the first training meeting and sent those specific users their invitations during the live training (for trainings of non-pilot sites, EPI-CAL staff assist all admin users to register at the pre-training meeting). Once participants with Admin-level accounts accept their invitations and completed the registration process, EPI-CAL staff guide them through creating provider-level accounts for their staff and inviting those staff to complete registration in Beehive. For sites utilizing a Single Sign-On (SSO) authentication scheme, the EPI-CAL staff also walk them through the process to log in through their institution.

Part C: Next Steps
Once all providers conclude the registration process, EPI-CAL staff demonstrate the process of registering a consumer and support persons in their support network. Next, the survey collection timeline is introduced. Baseline surveys are available for 75 days after the consumer's intake date (due date of 60 days after intake + 15-day grace period to complete surveys). After baseline, follow up surveys are opened every six months, with a ±15-day window for completion. Next, the process for consumers and primary support persons to complete/request help to complete surveys is shown, along with the steps to manually resend surveys. Participants are then given the goal to register two consumers and their support persons (if applicable) in Beehive, and have the consumers complete their surveys before the next training session (see Figure 4). A Beehive consumer introductory script is provided to support the program staff in talking about Beehive to potential participants.

The original plan for Part 1 training was to cover the process to input clinician entered data during the training session, but due to time constraints, we could not cover this section in the initial training. Instead, clinicians and administrative staff were provided with the section of the resource guide that covers the steps to complete this process, and plans were made to elaborate further on clinician-entered data during a later training once consumers have been added to Beehive.

Figure 4: Training Checklist



Part 2 Training

The second Beehive training focuses on how providers can utilize individual level data in care. The Beehive team introduces the EPI-CAL Core Assessment Battery (CAB), including its domains and how these domains were selected from stakeholder input. Next, the trainer presents two surveys from the EPI-CAL CAB: the Modified Colorado Symptom Index (MCSI) and the Questionnaire about the Process of Recovery (QPR). Then, the trainer shows participants where to find consumer data in Beehive. The trainer then demonstrates how to present the data visualizations available in Beehive and asks the group what questions or concerns the sample visualizations elicit from them. Participants then participate in small group exercises focused on example data visualizations of the MCSI with the goals of 1) exercising their data comprehension skills and 2) practicing using data to explore a consumer's story.

During small group exercises, an example consumer's MCSI scores are displayed, and participants are prompted to discuss the "story" that could be illustrated by this data set. For example, providers are presented with a graph in which MCSI scores are going up over time (indicating more frequent and/or distressing symptoms; Figure 5A) and then asked to interpret possible situations that could be leading to these data trends for this sample consumer. After providers correctly identify that the example consumer is experiencing an increase in frequency and/or number of symptoms, they are asked how they might use this information in treatment (e.g., modify the consumer's treatment plan to help reduce the frequency of these symptoms). When time allows, we cover what the visualizations would look like if there are missing data and the negative impact of gaps in data on its use in care. To this end, providers are presented with MCSI graphs to illustrate that gaps in knowledge can drastically affect data interpretation (Figure 5B). To try to help combat these issues involved with missing data, the team also explains how to increase consumer buy-in to Beehive.

Figure 5: MCSI Example Graphs from Beehive

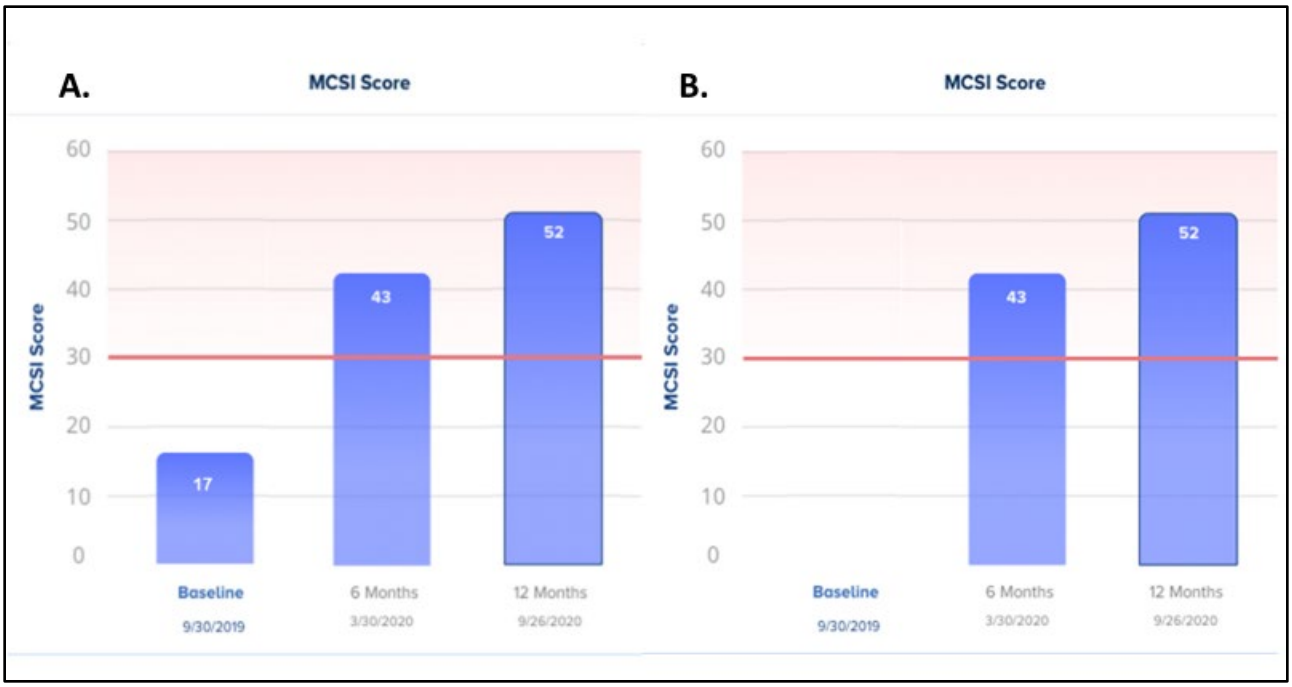


Figure legend: A. Representation of data showing increasing trend in MCSI symptom severity; B. Representation of how missing data (shown here at baseline) impacts the visualization

After these exercises conclude, small groups reconvene back into the larger group, with a member from each group presenting their group's discussion/findings to the rest of the site as a whole. As each small group has different themes and discussions that come up during the exercises, the larger group discussion is meant to help to broaden participants' understanding of data interpretation.

Next, the training details the types of urgent clinical issues that are currently tracked by Beehive, including "Risk to self", "Risk to others", "Risk of homelessness," and "Plan to stop taking medication". These issues were identified during focus groups with EP program stakeholders as critical moments for intervention during treatment. The training team also explains where each one of these alerts can be triggered within the assessment battery. Importantly, we stress that Urgent Clinical Issues in Beehive are not a replacement for each clinic's standard risk management procedures; instead, Beehive can be used as an additional tool to inform their standard risk management approaches. We also cover how to resolve urgent clinical issues using the responses programmed into Beehive (i.e., "Modified treatment plan", "Conducted risk assessment" or "Sent for emergency care") as appropriate for these alerts.

To conclude the training, the trainer introduces the "Data Use in Care" question pop up and its different response options. This pop-up appears intermittently when a user leaves a page on Beehive which displays consumer's data. It asks the user whether they reviewed the data with the consumer or family and then asks them how the data impacted treatment. These response options are the same as the response options programmed into the urgent clinical issues – the training team intentionally takes the approach of presenting these two Beehive features together to help maximize participant comprehension. These data will contribute to a data-driven understanding of Beehive's impact (e.g., whether and how staff use data as part of treatment) on the participating programs of the LHCN.

Thus far, Part 2 trainings took about two hours each and were conducted over the month of April for the pilot programs. SacEDAPT & EDAPT had their Part 2 training on Monday, April 5th, from 8am-11am. Solano's Part 2 training occurred on Monday, April 12th from 11am-1pm. The Pathways-Kickstart Part 2 training was on Wednesday, April 14th from 9am-11am.

Part 3 Training

Part 3 training revolves around applying and expanding the data interpreting skills gained in Part 2 training, with actual data from consumers that was collected after the last (Part 2) training. During Part 3 training, participants are split into small groups, and given a GUID of a consumer that receives services at their clinic. These GUIDs are identified by the site's point person before the start of each Part 3 training and consist solely of consumers that have completed their surveys and have agreed in the EULA to share their de-identified data with UC Davis. This is to ensure that each small group has real-world data to interpret, and that the data for this exercise is ethically sourced.

Before beginning to interpret real consumer data in these small groups, participants are oriented on how to input and view Clinic-entered data and how to assign additional surveys to consumers.

Part 3 training also familiarizes participants to two more measures included in the Core Assessment Battery: the SCORE-15 and the Questionnaire about the Process of Recovery (QPR). These measures were selected because they both capture quantifiable scores on domains (family impact and recovery, respectively) that were identified as high priorities by EP stakeholders during EPI-CAL outcomes focus groups. These measures were chosen for this training as, like the Modified Colorado Symptom Index covered in Part 2 Training, they are scored measures which are visualized in Beehive.

For the small group activity, each participant is assigned to a small group with at least one EPI-CAL team member to orient them to the small group worksheet which includes training activities and discussion questions about finding, interpreting, and using consumer data as part of care. As these trainings require participants to examine their consumer's data (i.e., PHI), EPI-CAL training team members are only present for the beginning of the small group exercise to introduce the activity, but they leave prior to any discussion or sharing of PHI. EPI-CAL staff encourage each participant to take an active role within the small group: note taker, screen sharer, delegate to report during large group debrief, etc. Each small group uses the small group worksheet (Appendix II) to guide their time in the small group.

After the small group exercise, participants rejoin the larger group to share their findings. After each small group has presented their findings with the rest of the groups as a whole, the EPI-CAL team facilitates a large group discussion which encourages participants to look for trends and assess what they could mean. After encouraging pattern recognition, the training team will encourage participants to view their consumer's data through this analytical lens and demonstrate how their treatment plans could benefit from this approach.

In the reporting period, we conducted our initial Part 3 trainings with two sites. Solano's Part 2 training occurred on Monday, June 7, from 11am-1pm. SacEDAPT & EDAPT had their Part 3 training on Monday, June14 , from 8am-11am.

Implementation Support After Initial Beehive Trainings

We introduce each program to their EPI-CAL staff point person who will be reaching out for regular check-ins to resolve any questions they may have as they are familiarizing themselves with the Beehive application. The point persons are introduced during pre-training and the Beehive training series. The initial check-ins are conducted weekly (or as needed by the site) where we will resolve issues as they arise and support staff with accessing resources and learning to use Beehive.

While most point person support consists of email or other electronic communications to answer questions and provide guidance, some sites require additional support. Additional "booster" trainings may be conducted over Zoom, with the potential to expand to in-person trainings as appropriate relative to the COVID-19 pandemic. Also, point person support over video calls is used to provide other forms of support or technical assistance. At one site, a point person began to provide survey completion reminders to clinicians at their weekly Zoom

clinical check-in meetings, while a different site's point person began to provide Urgent Clinical Issue resolution support via their weekly check-in emails.

6. Feedback from beta testing of LHCN application for data collection.

The first part of beta testing was internal user acceptance testing (UAT) by the EPI-CAL team. UAT began when the developers released the beta version of Beehive to the EPI-CAL team, who created test clinics and users at all levels in order to test various use-scenarios to ensure Beehive was working as expected and report any issues in cases where there were typos, bugs, etc. To do this, our team created test accounts as consumers, primary support persons, providers, group analysts, clinic admins, and group admins. These accounts also allowed us to test the sign-up process from different user perspectives. We then reviewed all the surveys in each bundle to check if they were appearing as expected against our survey codebook. We tested survey access and completion on the desktop application (including different browsers), the tablet, as well as Android and iOS mobile devices to confirm proper application formatting on the different types of devices users would access Beehive on. We also interacted with Beehive to emulate other use cases to ensure features outside of the surveys were working as expected (e.g., downloading data reports, viewing and agreeing to data sharing permissions, adding and editing users as a clinic admin). Any typo or bug that was found was reported in a shared review document and corrected internally, if possible, or sent to the developers if it was not an issue that could be resolved by our team. For example, we found that the EULA page was not displaying the video or displaying the data-sharing options correctly. Reports of issues were accompanied by screenshots or screen recordings, where possible, to aid in resolution of items.

After the initial training on Beehive in three pilot programs (see previous section on training), beta testing began in the pilot programs. We solicited feedback from providers and staff in each of the pilot programs after their initial introduction to the Beehive application via a feedback survey (see Appendix III). Thus far, feedback showed that the training was a little too fast paced, that there were plenty of opportunities to give feedback or ask questions, and that users only felt a little confident in using Beehive after the first training. We plan to re-assess users' confidence in using Beehive after the additional trainings take place, as we would expect their confidence to improve after more training and exposure to Beehive. There were mixed responses on practice time, with some individuals expressing the need to have more time to practice using Beehive during the training while others did not need to use training time to practice. There was also variability in the responses regarding the potential value of Beehive, ranging from thinking Beehive will add a little to a great deal of value to their job.

In addition to feedback surveys, we have assigned each pilot program an EPI-CAL staff point person. This point person manages any issues that arise as users implement Beehive in their assigned program. Clinic staff have been provided with their point person's contact information, as well as instructions on how to create a support request ticket in the Beehive application. The ticket system allows Beehive users to create a support request, resolve a request, and escalate a request outside of their clinic or group.

7. Subcontractor to make modifications to software application and dashboard to reflect findings from pilot testing and qualitative report

After receiving feedback from Beehive beta testing (Section "*Feedback from beta testing of LHCN application for data collection*" described above) the EPI-CAL team pushed issues to the application developers to implement in future versions of the application. The types of issues reported were bugs, cosmetic issues, fixes to already implemented features, usability problems, and requested new features.

“Bugs” are errors in the application producing unexpected results. One bug that was identified as part of internal beta testing among the research team was that the response to slider-type questions was not being saved in the database. This was resolved in the next build provided by the developers.

“Usability problems” were aspects of the beta application that did not function as desired, but that were not errors in coding (i.e., bugs). One such issue that was identified as part of internal beta testing among the research team was that character limits and permitted characters needed to be expanded in many of the text boxes throughout the application.

When features were not implemented as originally asked for, the EPI-CAL team categorized these issues as “fixes.” For example, upon receipt of the application, the dropdown menu for “race” within the registration for staff-users, consumers, and primary support persons only allowed for a single selection. The fix for this issue was to allow users to select all that apply in the “race” dropdown. This was implemented in the next release of the application.

“Cosmetic issues” include fixing typos, updating text and imagery in the application, and improving formatting. One cosmetic issue that was identified as part of internal beta testing among the research team was that the image that appeared on the survey instruction and survey question screens did not represent the diversity of the stakeholders for whom the application was developed. The EPI-CAL team had selected images to use throughout the application to represent this diversity. However, the same image appeared repeatedly on the survey screens, which is where consumers and support persons will spend the majority of their time in the application. The resolution to this issue was to change the image to a landscape image to avoid overrepresentation of any one personal identity (i.e., race, ethnicity, gender) on the application.

New features were requested when testing revealed a need for them in the application. For example, EPI-CAL staff determined that additional demographics fields needed to be added to the primary support person registration. Please see Appendix IV for a complete list of items that were identified during pilot testing.

8. Get preliminary results on program-level data from 2 pilot EP programs, including interviews with EP programs to understand barriers and facilitators to app implementation.

Preliminary results on program-level data from 2 pilot EP programs

After our initial trainings with EDAPT/SacEDAPT and Solano SOAR Aldea programs in March, programs were able to begin enrolling consumers into Beehive. Basic demographic information is collected via phone screen and entered into Beehive by clinic staff when initially registering a consumer and their support persons. All consumers had to complete the EULA before being presented with surveys. When consumers complete the EULA, they indicate whether they want to share their data with UC Davis and/or the NIH for research purposes beyond using Beehive for the purpose of their clinical care. Their choices are explained in detail in the EULA video. Our goal is to have 70% of consumers agree to share their data with UC Davis and NIH.

For the current report, we are reporting on data collected up through May 31, 2021 for those who agreed to share their data with UC Davis. Forty-one consumers were registered in Beehive across two pilot clinics, and of those, 22 completed their EULA indicating their data sharing permissions. Of those who completed their EULA, 17 consumers agreed to share their data with UC Davis (77%). Therefore, in the current report we are reporting demographic data for those 17 individuals across two clinics who have registered in Beehive, completed their EULA, and agreed to share data with UC Davis. It is important to note that clinic staff register consumers and invite them to Beehive; consumers then complete their registration and then have the ability to complete surveys. So, if someone has been registered in Beehive, it does not necessarily mean that they have completed any of the outcomes surveys available in Beehive.

Here we report demographic information that is completed at registration, which is a subset of the demographic questions that are asked in Beehive (Table 8). Complete demographic information, including all required PEI fields, are administered via a required consumer-entered Beehive survey. For any cell that has an N less than 5 individuals, this data was masked and both the N and proportion cells were updated with "<5" and "<29%", respectively. If there were 0 individuals who endorsed a response option in the demographic surveys, the category is not represented on Table 1 (e.g., intersex under Sex at Birth); we will continue to add categories to each demographic variable if there are ≥1 individuals in each respective category.

Table 8: Preliminary Demographic Data from Beehive Pilot Testing

SacEDAPT and Solano SOAR Combined Demographics (through 5/31/21)		
Display Language	**N**	**%**
English	17	100%
Age	**N**	**%**
15-20	9	53%
21-25	<10	<58%
>25	<5	<29%
Sex at Birth	**N**	**%**
Female	8	47%
Male	9	53%
Gender	**N**	**%**
Female	7	41%
Male	<10	<58%
Unsure	<5	<29%
Pronouns	**N**	**%**
He/Him	9	53%
She/Her	<10	<58%
They/Them	<5	<29%
Race	**N**	**%**
African/African American/Black	7	41%
American Indian/Alaskan Native	<5	<29%
Hispanic/Latinx Only	5	29%
White/Caucasian	<5	<29%
Ethnicity	**N**	**%**
No - I do not identify as Hispanic/Latinx	9	53%
Yes - I identify as Hispanic/Latinx	5	29%
Prefer not to say	<5	<29%
Unsure/Don't know	<5	<29%

Additionally, providers are able to enter a consumer's diagnosis when they register individuals in Beehive, which is reported in Table 9. In the same manner as the table above, cells with less than 5 individuals were masked and both the N and proportion cells were updated with "<5" and "<29%", respectively. For most diagnostic categories except Schizoaffective disorder, there were less than 5 individuals per cell. Diagnoses are grouped according to two classes of early psychosis: 1) individuals who are deemed to be at clinical high risk for psychosis (CHR), and 2) individuals who have experienced psychotic level symptoms (First Episode

Psychosis, FEP). This reflects the wide range of psychosis diagnoses that are served by the EP clinics represented in this sample.

Table 9: Consumer Diagnoses from Beehive Pilot Testing

Diagnosis	N	%
Clinical High Risk (CHR)		
Attenuated Psychosis Symptoms	<5	<29%
First Episode Psychosis		
Substance Induced Psychotic Disorder with onset during intoxication	<5	<29%
Mood disorders with psychotic features	<5	<29%
Schizoaffective Disorder (Bipolar or Depressive Type Combined)	8	47%
Schizophrenia	<5	<29%
Missing	<5	<29%

When consumers finish registration in Beehive, they then have access to Beehive surveys. After registration is complete, Beehive makes three surveys available for completion: Adverse Childhood Experiences (ACES), primary caregiver background, and questions about other lifetime experiences and static demographics information (see EPI-CAL Enrollment Life Questions, see Table 10). If a consumer is in a survey window (e.g., at intake or six months), Beehive makes available 15 additional surveys that assess various outcomes including family functioning, education, social relationships, demographics and background, medications, and symptoms (see Table 10 and Figure 6). These surveys are presented in different bundles that are grouped based on subject matter and/or timing of the surveys (i.e., whether they receive the survey just at enrollment, or at enrollment and every six months thereafter). EPI-CAL enrollment and required bundles are automatically assigned to every consumer who registers in Beehive. However, each individual clinic also has the option of assigning addition surveys if they choose to do so. The current data only include EPI-CAL enrollment and required bundles.

Table 10: EPI-CAL Enrollment and Required Survey Bundles

Bundle Name	Survey Name	Bundle Timing
EPI-CAL Enrollment Life Questions	EPI-CAL Enrollment Life Questions	Enrollment only
	Adverse Childhood Experiences (ACES)	
	Primary Caregiver Background	
EPI-CAL Experiences Bundle	Life Outlook	Every 6 months, including intake
	Questionnaire About the Process of Recovery (QPR)	
	Modified Colorado Symptom Index (MCSI)	
	Substance Use	
	Legal Involvement and Related	
EPI-CAL Treatment bundle	Intent to Attend and Complete Treatment Scale	Every 6 months, including intake
	End of Survey Questions	

	Hospitalizations	
	Shared Decision Making (SDM)	
	Medications	
EPI-CAL Life Bundle	SCORE-15	Every 6 months, including intake
	Demographics and Background	
	Social Relationships	
	Employment and Related Activities	
	Education	

When enrolled at intake, consumer and identified support persons can be registered in Beehive by clinic staff. Beehive will then prompt them to complete registration, review the EULA, and choose data sharing permissions. Beehive then shows them the surveys that are available for them to complete within each bundle (see Figure 7 below). Respondents can choose which surveys they wish to complete in the order they wish to complete them.

Figure 6: Survey Window Timing

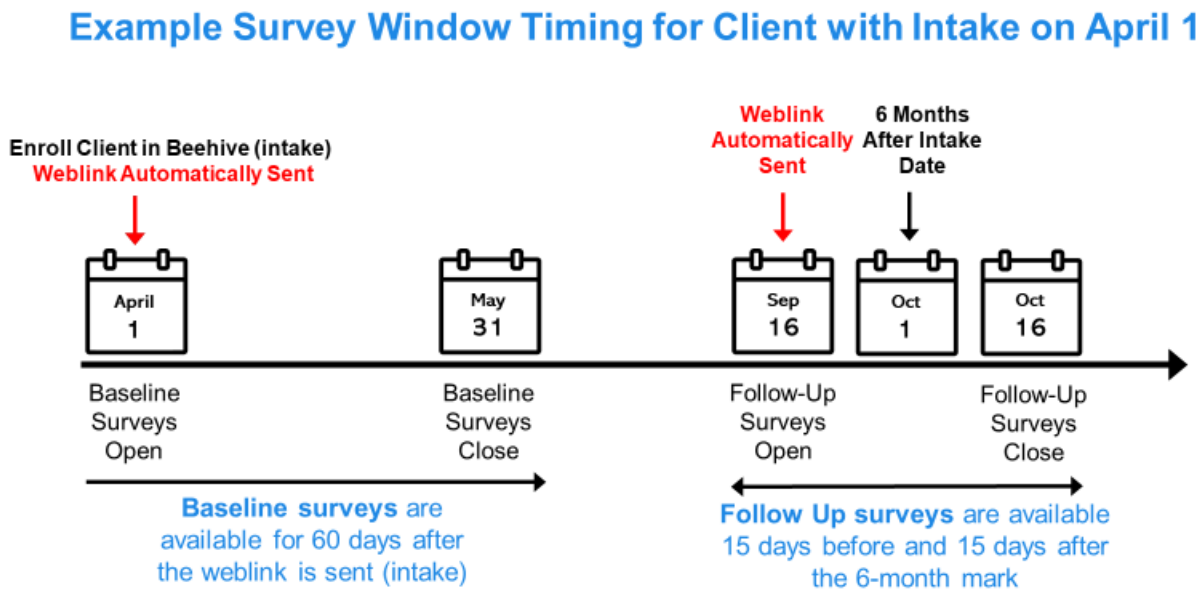
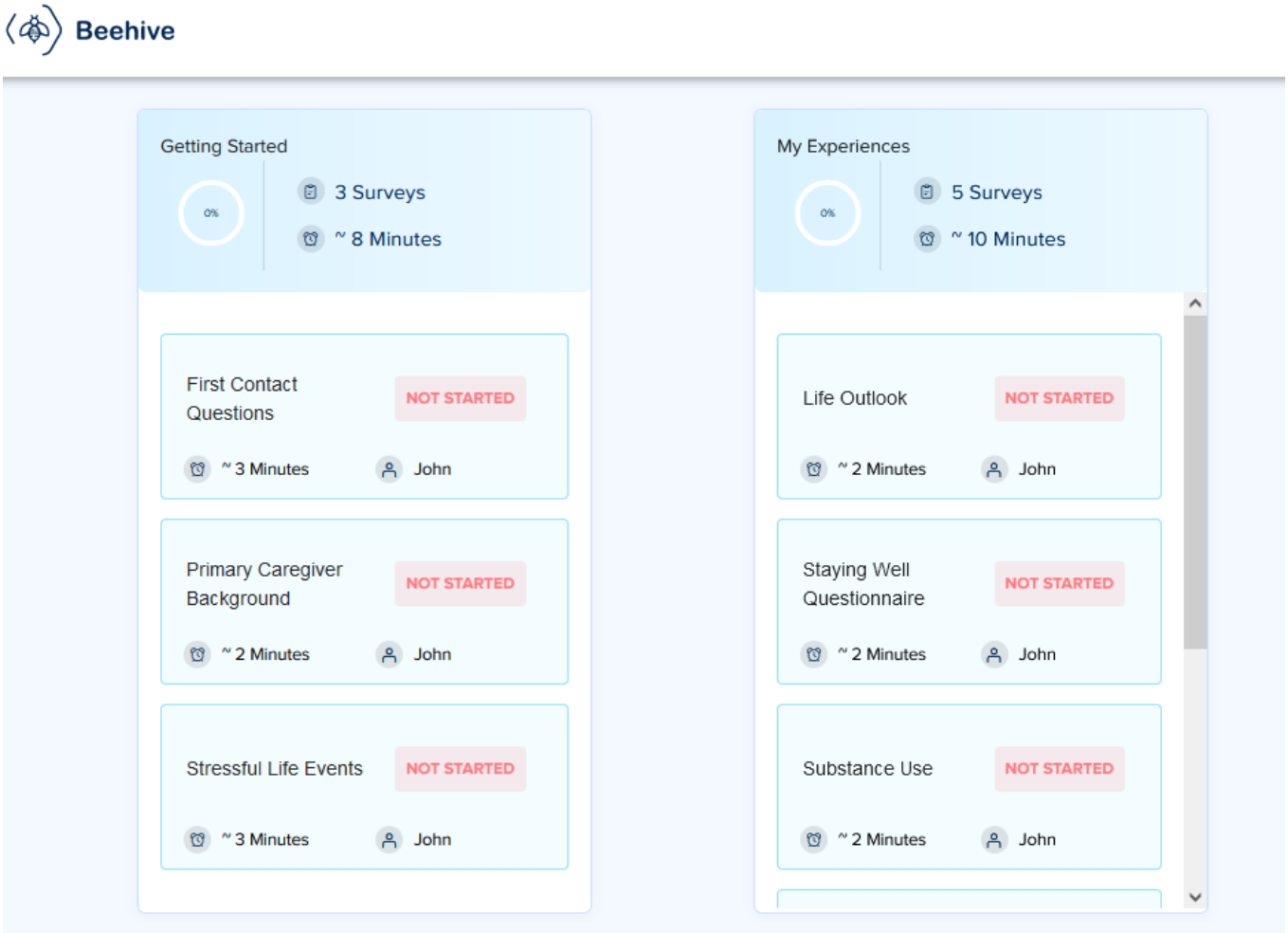


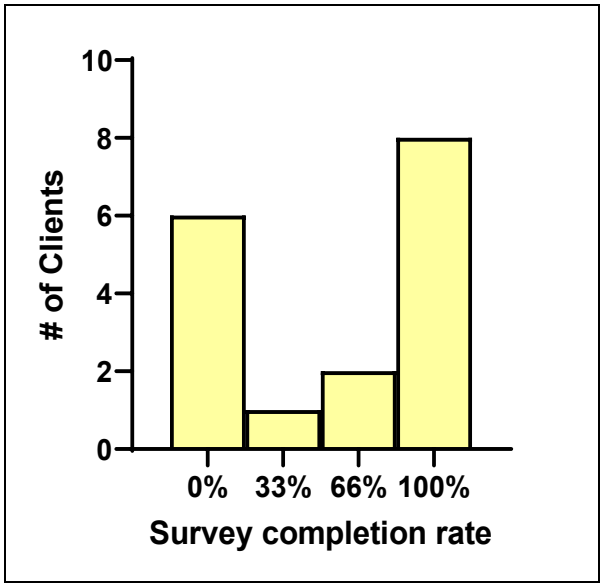
Figure 7: Surveys Available for Consumer to Complete at Baseline



During the initial phase of Beehive roll out, we asked clinics to enroll consumers and support persons who are already engaged in EP care. When these active consumers are enrolled, Beehive prompts them to complete registration, review the EULA, choose data sharing permissions, and complete enrollment surveys. If they are within the active 6-monthly survey window, they are also able to complete the EPI-CAL required bundles.

At this time, we are reporting the survey completion rate from 17 consumers on the three available enrollment surveys (EPI-CAL Enrollment Life Questions, Figure 7) because some consumers were enrolled outside of survey windows and thus were not presented with the remaining 15 surveys. The distribution of survey completion is reported in Figure 8. Survey completion rate ranges from 0-100%, with 47% of individuals completing all three enrollment surveys. The point person at each clinic site will track survey completion and inform clinic staff if there are consumers who are not completing their surveys so that the clinic staff may check in with consumers.

Figure 8: Preliminary Survey Completion Rate for Enrollment Surveys



Exploration of barriers and facilitators to implementation of the Beehive system

To support the successful integration of the data platform into clinical practice, a series of interviews will be completed with providers, consumers, and family members from participating EPI-CAL clinics. The aims for these interviews will be to determine the acceptability of the platform in this setting, identify potential barriers and solutions to implementation, and explore factors that may facilitate implementation. The interviews will focus on provider training, the data collection platform, the logistics of data collection, the data presentation platform, the feasibility and impact of integrating the data into care, and the utility of program-level metrics. To explore these topics, various stakeholders will be interviewed to share their experiences of delivering or receiving care using the application. The interviews will be audio recorded and transcribed, with the transcripts analyzed utilizing a conventional content analysis approach (Hsieh and Shannon, 2005).

Given the heterogeneity of the programs across the network, the complexity of the intake process and subsequent care composition that is the norm in early psychosis programming, and the differing needs of the different community partners involved in the process (consumers, family members, administrative staff, providers, team managers), the interview questions will be framed on a series of multiple levels. First, the interview will focus on specific barriers and facilitators that may exist within the implementation of Beehive at that specific program. Next, more generalizable factors that could potentially exist across programs will be considered. Finally, barriers and facilitators that may relate specifically to different stakeholder groups will be explored. The findings from this investigation will be used to develop a series of guidelines for successful implementation, some of which are pertinent to specific clinics, while others will be generalizable findings that will be disseminated across the whole network. The overall goal of this exercise is for the guidelines to be used by the programs to refine the implementation and integration of the Beehive platform for the benefit of all stakeholders who interact with it.

For the current report, four interviews of providers working at the EDAPT clinic were conducted. Two participants were interviewed once, while the third was interviewed twice. EDAPT is one of two pilot sites which have been charged with implementing the Beehive application into existing practice, which started on March 22, 2021. The interviews were completed by Mark Savill either alone, or with a second researcher (CH). Dr. Savill is the qualitative lead of the EPI-CAL project with expertise in early psychosis and evaluating the implementation of novel interventions in community behavioral health settings. Christopher Hakusui is a Junior Specialist who has played a significant role in the development of the Beehive application, the training, and the integration of the application into clinical services. All interviews were audio recorded, and the analysis of the transcripts will be incorporated into a broader qualitative evaluation of Beehive implementation across all EPI-

CAL clinics, to be detailed in a later report. For the current report, a brief narrative summary of the completed interviews completed is presented below.

Findings

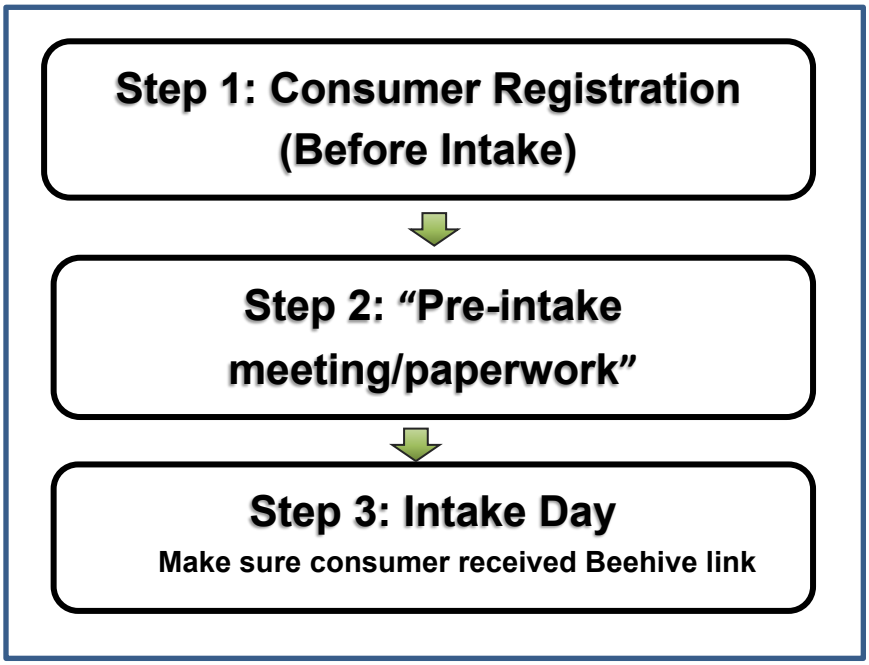
Between 4/7/2021 – 6/17/2021, four interviews were completed with three participants from the SacEDAPT program. One participant was interviewed twice, since they had not yet enrolled a consumer onto the Beehive platform at the time of the first interview and so they had additional insights to share. Two participants were clinic coordinators, and one was a peer case manager. In all cases, the participants' primary role with regards to Beehive to date was enrolling, consenting, and supporting the data collection component of the project. Therefore, the focus on the interviews centered on Beehive training, and the initial implementation of Beehive during the intake process, incorporating scheduling, consenting, enrolling, and baseline data collection both of new intakes and existing consumers. In future reports, as more consumers are enrolled into the Beehive platform and the system is fully integrated into practice, the feasibility and impact of integrating beehive data into clinical care will be explored with consumers, family members, providers, and program leadership.

Initial implementation

Prior to implementation of the Beehive application to their practice, the case managers met to develop a new intake plan that could accommodate the additional components required. During this meeting, the planning process was supported by a member of the research team (VP), which participants recognized as an important component of the process. Once the provisional plan was developed, this was then submitted to senior program management for review/approval.

The final revised intake process is presented in Figure 9. Overall, participants indicated that a significant revision to their original intake protocols was necessary. Subsequently, having the administrative team meet in collaboration with the research team to go through all intake requirements prior to implementation was considered critical. Given the additional time required to enroll consumers into the Beehive application, complete the EULA, and then complete the surveys, the team took the decision that additional steps in their intake procedure were necessary ("Step 1" and "Step 2").

Figure 9: The Revised Intake Process to Accommodate Beehive Requirements



Early Implementation of the Intake Procedure

Participants' interviews indicated that the intake process to date has been consistent with the model developed during the pre-implementation meeting. However, some additional steps have been recently proposed to help with time management when using Beehive during the intake process. This includes having the PCMs schedule an additional appointment to complete consumer and primary support person surveys that were not completed during the initial intake appointment.

Prior to implementation, participants had indicated that the ability for consumers and family members to complete data collection independently prior to the appointment would be critical to effective implementation. However, since the start of data collection, it has been evident that most consumers and family members have required additional support to complete the surveys. The support required typically focused on question comprehension and technical support. Based on current experiences, participants could not identify particular areas where support was consistently requested.

Overall, the participants suggested that the additional components added to intake process across the three stages took approximately 90 minutes, making the new intake process three hours. The main factors for the increase in time required was attributed to the additional scheduling time necessary to book an additional appointment, registering consumers into Beehive, completion of the EULA video and data permission selections, and length of the surveys consisting of Beehive required surveys and additional SacEDAPT required surveys that were integrated into Beehive. The additional procedures were noted to require additional input to the workload of the clinic coordinators, who voiced difficulty in accommodating this into their existing commitments. Additionally, some participants voiced concerns regarding the additional requirements placed on consumers and their families, particularly those who are referred directly from hospital where the intake process is required to be completed within ten days of discharge. To date, consumers and families have not been interviewed, and so their experiences will be explored and presented in later reports.

In an exploration of potential solutions to these barriers, two participants suggested that reducing the length of the intake survey at Step 3 to the just the components critical to the intake assessments, after which other elements could be completed at later appointments. One participant also suggested that they believe the process would be much more streamlined once on-site assessment resumes, given this would minimize both the technological challenges some consumers face, and would also mean that consumers and families could complete surveys in the waiting room and so would need less online support. Linked to this, another proposal was to explore options where the case managers or clinic coordinators would not be on the Zoom call during the completion of the surveys; however, there were concerns about how consumers and families would address issues without available assistance.

Participants indicated that based on previous experiences, a significant proportion of consumers typically enter data via their mobile telephones. Consequently, ongoing compatibility with mobile internet browsers was considered critical. Regarding the current incompatibility of the system with Internet Explorer, the participants were unsure if this was likely to represent a significant barrier. This issue will be explored in future interviews with consumers and family members.

Enrollment for existing consumers

Of those interviewed to date, one participant reported being involved in enrolling existing SacEDAPT consumers into the Beehive system. Overall, the procedures and challenges implementing the new protocols were considered largely consistent with new intakes, with consumers requiring the same level of support to complete the surveys. Because the surveys were being completed within their existing sessions, the participant voiced concern that this would be taking away from direct service time. To address this, the participant suggested that it would either be necessary for an additional appointment to be scheduled with the clinic

coordinator to complete the survey, or else the survey be completed outside of their treatment session without the clinic coordinator being present.

Training

Overall, participants described the training as helpful and a positive experience. While trainings have focused on the data collection component, all interview participants reported appreciating being involved in all aspects of the training. One participant suggested that being involved in all the elements meant that they would be better placed to address consumer/family member questions or queries about other aspects of the application, while others suggested that being able to see how the data can be utilized was a motivating factor in being involved in the process. Being able to see how this data could be utilized in care meant that data collection efforts were considered more important/meaningful, relative to some prior data collection efforts where neither they nor the consumer were able to access the data afterwards.

In addition to the positive experiences reported, one participant did suggest that the training was very focused on utilizing the Beehive application in care and would have appreciated more information on the enrollment and data collection process. Another participant suggested that a reference manual that details each step of the enrollment and data collection process would be very useful. In particular, a summary of what each survey question was aiming to address was considered to be helpful, given the participants reported struggling to explain how to best respond to particular questions in the survey when asked by consumers.

Importance of support

In order to support the implementation of the Beehive application, all participants suggested that having a designated point person to help address technical and logistical issues was critical. One participant suggested that having a designated person meant issues would be quicker and easier to rectify. In circumstances where that individual may not be available, the participant highlighted the importance of collaboration across provider teams to resolve issues. In addition, the current feedback system where software bugs are reported to the research team was considered effective and prompt.

Acceptability of the application

Despite challenges of data collection, most participants were positive about the possibility of utilizing the data in care. In particular, one participant identified the information collected as part of the recovery-based surveys as very useful to the services they deliver. Participants interviewed also reported being highly positive about the Beehive application, with the immediate data visualization that is available to all members of the clinic considered a significant strength. Finally, one participant indicated that the EULA was well received by consumers, containing important information that addressed multiple questions that stakeholders previously had around the data.

Discussion

Overall, the participants interviewed identified several strengths and challenges in the initial implementation of Beehive. Participants elicited some concern that the current intake process takes significantly longer relative to previous protocols. For one participant, the expectation was that some of these challenges could be alleviated by the return of in-person assessments. Other proposals included: delaying the completion of the survey to after the initial clinical intake, advocating for functionality changes to allow the Beehive system to send surveys prior to the intake date for earlier completion, and reducing the level of online support afforded to consumers during the completion of the surveys. These challenges highlight the importance of the research team providing significant support during the initial implementation process, and the necessity of the research process being as flexible as possible to help minimize stakeholder burden. In later reports, the success of implementing modifications to the intake process will be explored, with facilitators to efficient intake procedures being distributed across the network to support other programs.

More positively, participants recognized the utility of the system, and were looking forward to implementing Beehive into care. Additionally, all participants indicated that the training received was appropriate, helpful, and resulted in them feeling confident they would be able to fulfil their role. The participants indicated that the system was relatively clear and easy to use, particularly when compared to current practices that the application will replace.

Limitations

In reviewing the preliminary findings presented in this report, it is important to consider several significant limitations and caveats. Critically, these data were collected from only four interviews, all including case managers or clinic coordinators and all working at the same clinic. Consequently, a full summary of the potential benefits, challenges, and solutions have not been fully explored. In future reports, providers in other roles such as licensed clinicians, program managers, prescribers, and supported employment and education specialists will be interviewed to understand the utility and challenges of the system across different provider roles. In addition, providers from other clinics will be interviewed as the Beehive system is integrated across the network to explore the similarities and differences in implementation experiences across clinics. Importantly, consumers and family members will also be interviewed to understand the acceptability of the platform, and any barriers and facilitators to implementation from the perspective of those that receive care, in addition to those delivering care. Finally, these interviews will be conducted throughout the implementation process, from initial adoption to the end of the process where procedures and protocols are established. Once collected, these data will then be analyzed in a comprehensive and systematic manner, allowing for a deeper exploration of the implementation process relative to the findings presented in the current report.

Summary

While it is necessary to conduct a much more comprehensive assessment of the implementation of the Beehive application, multiple challenges and potential solutions and opportunities were identified. Going forward, further work to understand the experiences of providers, consumers and family members going through the data collection process and utilizing the data in care will be critical to better understand the challenges and opportunities to delivering more data-driven care in an early psychosis setting through the Beehive application. This work will take place through an extensive interview process that will be detailed in later reports.

9. Outline plan for training EP program staff from non-pilot programs on application implementation and outcomes measurement.

Our team has learned a great deal from the initial Beehive trainings regarding the most efficient way to approach training for non-pilot EP programs. One of the consistent messages was that the initial trainings were too fast paced for many users. Another major learning opportunity was that we did not have enough time to sufficiently cover all the content we had planned in each session. Therefore, instead of breaking out the initial trainings into two 2-hour sessions, we have revised our training plan to include at least three 2-hour sessions for the introduction to Beehive for non-pilot programs as well as provide a fourth training to cover additional content for the pilot programs. We will continue to incorporate any changes and feedback from additional trainings into all future trainings, as we view improvement of our training approach as an iterative process. One change we implemented to save time during Part 1 training was to register all admin users (Clinic and Group Admin) during the pre-training meetings so that we only had to register the remaining providers during the first training. This has saved a substantial amount of time in subsequent Part 1 trainings thus far. We have also broken out into small groups to register providers during Part 1 training so several people can be registered in parallel, which has also contributing to saving time.

Another important piece of information we learned from these first trainings was the need to meet with each program's IT department ahead of time to make sure that emails/server requests from Beehive are not blocked by their organization's network security protocols. For example, Solano Aldea SOAR had delays in the first training because the emails from Beehive were being quarantined. While we were able to work with IT to unblock these emails, we decided to meet with IT ahead of time and test the sign-up email process in the pre-training meeting with leadership to avoid the delays during the training moving forward. Additionally, meetings with site IT to ensure Beehive's ability to properly communicate with its servers through site networks will be conducted. Thus far, we have modified our pre-training approach with five additional programs in preparation from their training and were able to verify ahead of time that Beehive emails would not be blocked during Beehive training.

We have also identified the need to understand more about each program's intake process so that we may customize our training and support approach to each program's existing clinical workflow. We have begun collecting information and meeting with intake coordinators from each program to understand data collected during phone screen and intake, and how and where Beehive consumer registration and surveys will fit into their existing process.

Los Angeles County PIER programs were our first non-pilot sites to receive Beehive training. This process was first initiated with pre-training meetings with each program in May 2021 to set up group and clinic admin accounts, review current clinical data entry practices, and meet with each program's IT contact to ensure the Beehive email can be received by each organization's email. Then, we held Part 1 Beehive training with each program, starting with The Help Group on 6/14, followed by The Whole Child on 6/17, San Fernando Valley Community Mental Health Clinic on 6/18, and finally both Institute for Multicultural Counseling & Education Services (IMCES) programs on 6/21. We also provided tablets to each program that is was providing in-person services. In the reporting period, all clinic admin, group admin, and provider accounts were set up for those who attended the Beehive trainings. Each program was connected with their EPI-CAL point persons who assist them with any questions throughout Beehive implementation. Though each program had the ability to begin enrolling consumer and support people into Beehive by the end of this reporting period, we directed them to wait until penetration testing of the Beehive application was completed and LACDMH had reviewed the report.

During this reporting period, the OC CREW, Napa Aldea SOAR, and Sonoma Elizabeth Morgan Brown One Mind ASPIRe programs were the remaining LHCN programs that needed to receive their initial Beehive training. EPI-CAL staff had been in contact with program leadership from each of the programs to schedule the pre-training meeting, followed by the Part 1 Beehive training.

10. Establish data collection process for obtaining county-level utilization and cost data for prior 3-year timeframe for preliminary evaluation for both EP and comparator group (CG) programs.

Over the last annual period, we held a series of meetings with the EP program staff and county staff to address collection of the county-level utilization and cost data for the prior 3-year timeframe. For each county, we identified EP program information, including description of consumers served, billings codes for each service, funding sources and staffing personnel during the retrospective period. Meetings were also held with the county data analysts to discuss details about the data the county will be pulling for the LHCN team during the next annual period. The discussion included the time-period, January 1, 2017 – December 31, 2019, for which the LHCN team requested data, description of the consumers from EP programs, how similar consumers served elsewhere in the county will be identified, services provided by each program, other services provided in the county to the EP consumers (i.e., hospitalization, crisis stabilization and substance use) and data transfer methods. Follow-up meetings have been scheduled with each county to discuss issues and concerns

with the EP program data pull. Once the LHCN team has reviewed and assessed the EP program data, this data will be used to inform characteristics and availability of data elements for the CG data pull. Meetings will then be scheduled with each county to review the details of the CG retrospective data pull.

Data Collection Process

The county data analysts have identified all consumers served by the EP program between January 1, 2017 – December 31, 2019. This will include individuals who started services with the EP program between January 1, 2017 – December 31, 2019 and exclude any individuals who received services by the EP program prior to January 1, 2017. Once the county data analyst gathered all the data elements for each consumer, they sent the list of consumers to the EP program manager. The EP program manager then confirmed the list of consumers as new consumers as of January 1, 2017 – December 31, 2019, and identified whether they were: 1) clinical high risk (CHR) and enrolled in treatment; 2) first episode psychosis (FEP) and enrolled in treatment; 3) assessed and referred out during January 1, 2017 – December 31, 2019; or 4) other, with reason (e.g., incorrectly assigned to EP program in EHR). They also added any individuals missed and repeated above 1-3 categorization, if necessary. They also sent certain data elements that were not available in the county EHR to the county data analyst, who integrated them into the dataset. These data elements include information included on intake forms such as regional center involvement and referral information. The county data analysts integrated these data elements into the dataset and assigned a random ID to replace medical record numbers (MRN)s, names, and other identifying information and saved the key, in order to create a limited dataset (dates and zip code included). The county data analyst was sent a link to a secure UC Davis web portal, whereby each county can upload their county data securely and will not be able to see any other county's data.

Each county received the following data request via email:

"We are requesting a limited dataset for all individuals served in the specified *EP Program* between these dates: January 1, 2017 – December 31, 2019. Data elements requested include: 1) all diagnosis(es) (psychiatric, substance use, physical health) and dates of diagnoses; 2) year and month of birth (not date); 3) demographics, including: ethnicity (primary, secondary, Hispanic [y/n]); sex; gender; sexual orientation; Medi-Cal aid code; living arrangement (housing status); US military information; veteran status; preferred language (primary, secondary, preferred, family, English verbal proficiency); foster care/adoption; zip code; and insurance status (i.e., insurance type- find out what is available; education level; marital status; employment status); and 4) all county services utilized for the list of consumers that started services between January 1, 2017 – December 31, 2019, including: i) all outpatient mental health services for each individual including but not limited to (and as available); ii) all other mental health services including but not limited to (and as available); inpatient; crisis residential; crisis stabilization; urgent care; long-term care; forensic services and jail services; referral(s) from EP program to other services; law enforcement contacts; justice system involvement; and regional center involvement. For each service, each county will check for these data elements and include as available: service/procedure code; location code, facility code; date; EBP/supported service code; charge description; minutes; number of people in service; episode of care (EOC); encounter type; HP1 and HP2; division; building; face to face; and place of service."

Based on information received during our meetings with each county, there will be some variation in the data elements available for each county (see details in Table 11 below).

Table 11: Data elements summary for all counties retrospective data pull.

Data Type	Data Element	Source	Comments
Non-identifying ID	Identifying consumer ID removed and new ID assigned	County	Available for the following Counties: Orange, LA, San Diego, Solano

Program Name	Program Name	County	Available for the following Counties: Orange, LA, San Diego, Solano
Psychosis – category	1) Clinical High Risk (CHR) and enrolled in treatment 2) First Episode Psychosis (FEP) and enrolled in treatment 3) Assessed and referred out during Jan. 1, 2017 – Dec. 31, 2019 (add reason, if possible) 4) Other and reason (e.g., incorrectly assigned to Kickstart)	Program	Data elements # 1 and # 2 are available for the following Counties: Orange, LA, San Diego, Solano Data elements # 3 is available for the following Counties: Solano; N/A for the following Counties: Orange, LA, San Diego Data elements # 4 is available for the following Counties: Solano; N/A for the following Counties: LA; May not be available for the following Counties: Orange, San Diego
Assessed and referred out - open ended	Assessed and referred out – reason	Program	Available for the following Counties: Solano; N/A for the following Counties Orange, LA, San Diego
Other and reason - open ended	Other – reason	Program	Available for the following Counties: Solano; N/A for the following Counties Orange, LA, San Diego
Diagnoses associated with the episode of care	Diagnosis – Psychiatric	County	Available for the following Counties: Orange, LA, San Diego, Solano
	Diagnosis – Substance use	County	Available for the following Counties: Orange, LA, San Diego, Solano
	Diagnosis – Physical health	County	Available for the following Counties: Orange, LA, San Diego, Solano
Date of birth	Year & month of birth (not date)	County/Program	Available for the following Counties: Orange, LA, San Diego, Solano
Location (consumer zip code)	Zip code (as of first EP service)	County/Program	Available for the following Counties: Orange, LA, San Diego, Solano
Demographics (as of first EP service)	Race	County	Available for the following Counties: Orange, LA, San Diego, Solano
	Ethnicity	County	Available for the following Counties: Orange, LA, San Diego, Solano
	Gender	County	Available for the following Counties: Orange, LA, San Diego, Solano
	Education level	County	Available for the following Counties: LA, San Diego, Solano; N/A for the following Counties: Orange
	Marital status	County	Available for the following Counties: LA, San Diego, Solano; N/A for the following Counties: Orange
	Preferred language	County	Available for the following Counties: Orange, LA, San Diego, Solano
	Insurance status (i.e., insurance type)	County	Available for the following Counties: Orange, LA, San Diego, Solano

	Employment status	County	Available for the following Counties: LA, San Diego, Solano; N/A for the following Counties: Orange
	Living arrangement (housing status)	County	Available for the following Counties: Orange, San Diego, Solano; May not be available for the following Counties: LA
	Sex assigned at birth	Program	Available for the following Counties: Orange, San Diego, Solano; N/A for the following Counties: LA
	Gender identity	Program	Available for the following Counties: Orange, San Diego, Solano; N/A for the following Counties: LA
	Sexual orientation	County	Available for the following Counties: Orange, San Diego, Solano; N/A for the following Counties: LA
	Military service / Veteran status	County	Available for the following Counties: Orange, San Diego, Solano; N/A for the following Counties: LA
	Foster care / Adoption	County	Available for the following Counties: Orange; May not be available for the following Counties: LA, San Diego, Solano
Outpatient mental health services in EP program between Jan. 1, 2017 – Dec. 31, 2019	Date	County	Available for the following Counties: Orange, LA, San Diego, Solano
	Duration	County	Available for the following Counties: Orange, LA, San Diego, Solano
	Service / procedure code	County	Available for the following Counties: Orange, LA, San Diego, Solano
	Funded plan (original pay sources, subunit)	County	Available for the following Counties: Orange, LA, San Diego, Solano
	Service location code	County	Available for the following Counties: Orange, LA, San Diego, Solano
	Facility code	County	Available for the following Counties: Orange, LA, San Diego, Solano
	Evidence Based Practices (EBP) / supported service code	County	Available for the following Counties: Solano, LA; N/A for the following Counties: Solano, Orange, San Diego
	Medi-Cal beneficiary	County	Available for the following Counties: Orange, San Diego, Solano
All other mental health services utilized by consumers that started services between Jan. 1, 2017 – Dec. 31, 2019	Service / procedure code	County	Available for the following Counties: Orange, LA, San Diego, Solano
	Location code	County	Available for the following Counties: Orange, LA, San Diego, Solano
	Facility code	County	Available for the following Counties: Orange, LA, San Diego, Solano
	Service Date	County	Available for the following Counties: Orange, LA, San Diego, Solano

	Evidence Based Practices (EBP) / supported service code	County	Available for the following Counties: LA; N/A for the following Counties: Solano, Orange, San Diego
	Service – Inpatient	County	Available for the following Counties: Orange, LA, San Diego, Solano
	Service – Crisis residential	County	Available for the following Counties: Orange, LA, San Diego, Solano
	Service – Crisis stabilization	County	Available for the following Counties: Orange, LA, San Diego, Solano
	Service – Urgent care	County	Available for the following Counties: Orange, LA, San Diego, Solano
	Service – Long-term care	County	Available for the following Counties: Orange, LA, San Diego, Solano
	Service – Forensic services and jail services	County/Program	Available for the following Counties: San Diego; May not be available for the following Counties: Orange, Solano
	Service – Referrals	Program	N/A for the following Counties: Solano, Orange, LA, San Diego
	Service – Law enforcement contacts	Program	May not be available for the following Counties: Orange, Solano, San Diego; N/A for the following Counties: LA
	Service – Justice system involvement	Program	May not be available for the following Counties: Orange, LA, Solano, San Diego
	Service – Regional center involvement (any developmental issues)	Program	Available for the following Counties: San Diego; May not be available for the following Counties: Orange, LA, Solano
	Service – Substance use services	County	May not be available for the following Counties: Orange, Solano, San Diego: N/A for the following Counties: LA
	Services – others	County	May not be available for the following Counties: Orange, LA, Solano, San Diego

Our team provided support to the county data analysts and EP program managers regarding the data extraction and integration process through a series of email and phone conversations. Los Angeles, Orange, Solano, and San Diego counties submitted their EP retrospective datasets through the secure web portal to our team. Napa County will deposit their datasets during the next project period.

11. Report on feasibility of obtaining cost and utilization data from preliminary multi-county integrated evaluation.

As part of the LHCN evaluation, service utilization and costs are compared between EP and comparator outpatient programs in that county who serve similar consumers with EP diagnoses (Niendam et al., 2016). These comparator programs are identified by input from county representatives, and an evaluation of county

level data to identify where first-episode psychosis consumers are typically treated in their county outside of the EP program. Individuals with EP diagnoses, within the same age group, who enter standard care outpatient programs during that same time period will be identified as part of the comparator group (CG). This analysis focuses on data from Los Angeles, San Diego, Orange, Napa, and Solano counties only, until other counties join the LHCN and opt in to this part of the project. For this component of the project, the evaluation has two phases: 1) the three years prior to the start of this project (e.g., January 1, 2017 – December 31, 2019) to harmonize data across counties, and 2) for the 3.5-year period contemporaneous with the prospective EP program level data collection to account for potential historical trends during the evaluation period.

Over the last annual period, through June 2021, we held a series of follow-up meetings with each EP program's staff and County staff to address data requested for the retrospective three-year period January 1, 2017 – December 31, 2019. Each county received a limited dataset request for all individuals served in the specified EP program between those dates (see details on data elements in Table 12). Our team provided support to the County data analysts and EP program managers regarding the review and extraction of data through a series of emails, phone conversations, and meetings. The counties submitted their EP retrospective datasets through a secure UC Davis web portal on the following dates: Orange County: December 7, 2020; San Diego County: December 22, 2020; Solano County: February 2, 2021; Los Angeles County: February 18, 2021. Additionally, we requested a data dictionary from each county in order to accurately identify each variable and received the data dictionaries from all counties who submitted datasets. Napa County will deposit their datasets once the county contract has been executed.

The LHCN team reviewed each EP dataset and scheduled any necessary follow-up discussions with the program and/or County staff. All counties submitted multiple data spreadsheets and we are currently working with those counties to integrate them into a multicounty dataset, as well as integrate the data dictionaries across counties to harmonize data elements. Data are currently being cleaned and standardized in order to integrate data across counties into a multi-county analysis.

Description of submitted data

The number of individual consumers in each county's EP dataset is indicated in Table 12 below. All counties serve first episode psychosis (FEP) consumers and some counties also serve consumers at clinical high risk (CHR) for psychosis. These totals represent the number of individuals enrolled and served by the EP programs for the retrospective three-year period January 1, 2017 – December 31, 2019. We also received data on consumers who were assessed for program eligibility but referred elsewhere.

Table 12: Summary of consumers for all counties retrospective data pull.

County	FEP	CHR	Number of Consumers
Orange	Y	N	87
San Diego	Y	Y	353
Solano	Y	Y	78
Los Angeles	Y	Y	91*

*Note: The number of consumers for LA County is still being finalized and may change.

Each county submitted a dataset(s) containing the data elements that were available. As anticipated, there is some variation in the data elements available for each county, which are summarized here and listed in Appendix V below.

Diagnoses. All counties submitted data on diagnosis(es) (e.g., psychiatric, substance use) and dates of diagnoses. Physical health diagnoses were not available in San Diego and Los Angeles counties.

Demographics. All counties submitted data on year and month of birth (not date). Solano County submitted data on the following demographic data elements: ethnicity (primary, secondary, Hispanic [y/n]); sex; gender; sexual orientation; Medi-Cal aid code; living arrangement; US military information; veteran status; preferred language (primary, secondary, preferred, family, English verbal proficiency); foster care/adoption; zip code; insurance status; education level; marital status; and employment status. San Diego County submitted data on all the demographics above with a few exceptions: primary language was submitted instead of preferred language, ethnicity was submitted as a single data element, sex and gender identity were submitted instead of gender. Orange County submitted data on all the demographics above except race, education level, marital status, insurance type, employment status, sex, and foster care/adoption status. Los Angeles County submitted data on all the demographics above except gender/identity, living arrangement, sexual orientation, military/veteran status, and foster care/adoption status.

Mental health services. Each county submitted data for outpatient and other mental health services utilized for the list of consumers who started services between January 1, 2017 – December 31, 2019. All counties submitted services data for date, service/procedure code, and service location. San Diego County submitted additional data for duration. Orange County submitted additional data for duration, funded plan, and Medi-Cal beneficiary. Solano County submitted additional data for Evidence Based Practices (EBP) and Medi-Cal beneficiary. Los Angeles County submitted additional data for EBP.

Other mental health services. In addition to outpatient mental health services, San Diego County submitted data for regional center and justice system involvement. Orange County submitted data for inpatient and justice system involvement. Solano County submitted data for crisis stabilization, crisis residential, and long-term care. Los Angeles County submitted data for inpatient services, Psych ER services, and some law enforcement contacts, justice system involvement, and regional center involvement.

Next steps

The LHCN team will continue to review the submitted datasets and problem-solve with counties regarding any missing data elements, particularly other mental health services received by EP program consumers, which may need to be retrieved from different sources.

The LHCN team has finalized a comparator group (CG) definition in order to identify consumers similar to those served by the EP programs who received services in other county programs. This definition will propose basic elements based on individual consumer characteristics indicating that, during the retrospective period, they experienced early psychosis, but were not served by the EP programs. We will meet with County staff to determine the feasibility of using this definition and then formally request the data. Counties will include the same elements as the data for EP program participants and they will submit the data through the same secure UC Davis web portal as the prior data sets. We will then select subsets in each county of CG individuals matched to the EP program cohort using propensity score matching or other strategies.

In addition to the services data, we will be requesting all related cost data for the services received by consumers in the EP programs and CGs. The LHCN team has met with cost data experts to determine the best course of action for obtaining cost data from the counties. Meetings will be scheduled over the next several months with each county to review the details of the CG retrospective data pull, the cost data, and to problem-solve any issues that arise, as described above. In the second half of 2021, we will conduct the statistical analyses for individual counties and across the integrated dataset.

Discussion and Next Steps

Over this last year, the team has worked to meet each of the goals that were set for this project period. It should be noted that the LHCN represents one of the first collaborative university-county partnerships between the University of California, Davis, San Diego, and San Francisco with multiple California counties to implement and expand an integrated Innovation project. Through this endeavor, all parties hope to have a larger impact on mental health services than any one county can create on their own.

We have completed beta testing of the Beehive data collection system across three pilot EP programs, which has included detailed remote site training. Beta testing officially initiated data collection on the core outcomes battery for the EPI-CAL project, and we have already collected some preliminary demographic and outcomes data from these pilot programs. Beta testing has also provided us the opportunity to obtain detailed feedback from various stakeholders on the training and data collection process via feedback surveys as well as barriers and facilitator interviews so that we may refine our approach when we transition to data collection in non-pilot EP programs. To this end, we have already made several modifications to our training approach based on constructive feedback from pilot programs and have recently implemented these changes in our first non-pilot trainings we held with the LA County PIER programs.

The extensive qualitative focus groups detailed in this report have significantly informed the construction of the Beehive application, ensuring that the product we create is built with the stakeholder in mind to increase utility for users. Throughout the implementation of the focus groups, providers, family members, and consumers were motivated to share their perspectives on the design and flow of Beehive and how data sharing should be presented and talked about. We feel confident that we have built a data collection system that EP program staff, consumers, and family members will actually use and that it will provide data visualizations that can be used to inform and improve early psychosis care.

We have also made significant progress in the county-level data component of this project by conducting the first county data pull for the retrospective period for the EP programs. We look forward to reviewing the data for the comparator groups in the coming months.

Barriers to Implementation and Changes from Initial Study Design

While the project had experienced some delays in contracting and many barriers due to the global COVID-19 pandemic, the team feels confident that we are making excellent progress at meeting our goals and catching up with the original planned timeline. For example, we had originally planned to first conduct beta testing in Fall of 2020 but did not begin until early Spring of 2021. Additionally, in our original LHCN proposal, we proposed in-person site visits to conduct the initial training for the Beehive application. However, due to the COVID-19 pandemic, we had to adjust our training plan and conduct the first “site visits” remotely. To do this, we broke down the initial trainings into a pre-implementation meeting with leadership and three separate Beehive trainings with the whole clinic team. These were all done remotely over web conference, and training materials were provided in digital format. While we hope to conduct future trainings or booster sessions in person at some point, we will continue to hold remaining trainings remotely until further notice.

Another one of the changes from the initial study design was to add the EULA focus groups described in the current report. We added these groups because the success of the learning health care network relies on EP consumers choosing to share their data with EPI-CAL researchers for the purpose of integrating outcomes data across participating clinics. We wanted each user of Beehive to understand how their data might be used, and have agency in data sharing for purposes beyond clinical care. Therefore, we sought to develop an accessible, transparent, and flexible EULA that is presented to each user prior to use of Beehive. To do this, we added multiple data-sharing and EULA focus groups to our study design so that the EULA and related materials could be shaped by the input of stakeholders as part of the Beehive design and implementation

phase of EPI-CAL.

EP LHCN Goals and Activities for FY 21/22

In the next project period, we will continue to train non-pilot EP programs from both the LHCN and larger EPI-CAL network. As implementation of Beehive continues, we will elicit feedback from EP programs how to improve both the training process and Beehive itself via feedback surveys, regular check-ins from point people, and qualitative interviews. Our goal is to continue to improve Beehive in an iterative process and to incorporate stakeholder feedback so that Beehive be a useful data collection and visualization tool for the programs using it. As more programs are integrating Beehive into their clinics, we will continue to do interim analyses of outcomes data collected via the application and plan to have another summary for the next annual report. This will include total enrollment numbers to-date, and a report on those who have completed both baseline and follow up measures.

We will continue to move forward on the county-level data analysis, with plans to provide our initial findings on cost and utilization data from the retrospective period of the multi-county integrated evaluation. Next year's annual report will also include a summary of problems that were identified during the analysis of the retrospective county-level data, so that solutions are identified for the second round of analyses. This will inform the formulation of a plan and finalized timeline for working with counties to access final round of county-level cost and utilization data for EP and CG programs.

We will also conduct our first fidelity assessments and hope to have the assessments completed for San Diego Kickstart, OC CREW, Solano Aldea SOAR, Sonoma Aldea SOAR in the next fiscal year. The fidelity assessments for Napa Aldea SOAR and the five Los Angeles County programs will be conducted in quarters three and four of 2022, so they fall into the next fiscal year. To that end, we will complete fidelity assessment training of our EPI-CAL staff, led by expert consultant Dr. Donald Addington. As part of these fidelity assessments, we will provide detailed feedback in the form of a report to all of the participating sites.

Appendix I: Wire Frame Focus Group Feedback Provided to Quorum (Software Developers)

Scenario	Participant Number/ Comment
New Consumer Registration	• Change “homeless” to “check here if do not have a permanent address” • Absolutely need to have the option to pre-enter basic consumer data prior to their first contact with the tablet. Then need to prompt consumer to review and update info as necessary • In addition to having option to take picture on iPad, we would like to have some stock icon options for consumer to select if they do not want to use their own picture. • We would like for consumer’s preferred name to autofill whenever “consumer” is used in the application. We want to also have Primary Support Person’s preferred name autofill wherever possible. • Change “primary care provider” to “primary health care provider”
Check-In	• During clinic registration, we need to have a pool of services for programs to choose from and then the option for them to use their own language for those appointments. Their language is what would display on tablet application.
Primary Support Person Module	• Add a column or icon to indicate if any PSP are the designated emergency contact
Survey List	• Comments that survey list is too word-heavy/clinical. Suggestions to add colors, to make “cards” (instead of expandable list) • Instead of “completed” on survey list, can there be something visually dynamic to show completion of survey? (want to avoid anything juvenile/frivolous, but want something reinforcing) • Some sort of overall progress indicator • Add who is completing the survey to survey list (autofill preferred name of consumer or support person) • Rename “help” to “ask for help”
Survey Flow/Completion	• Need to make progress bar more visible: move to bottom of screen – between last response option and above next/previous buttons) instead of nested at top, and possible change color to something other than blue • Also move the question progress (i.e., 1/5) down with the progress bar • Move the “prefer not to answer” option further down on the page (i.e., Separate from the other questions… more visual separation between the two so that it is clear it is not part of the scale)
Individual Consumer Profile Page	• Add Tabs to consumer page: data entry tab for each timepoint—includes area for clinician entered data and also shows consumer’s responses to surveys (Baseline, 6 Months, 12 Months, 18 Months, 24 Months) • Instead of drop-down to select survey visualization, can we have some sort of visualization (similar to consumer list) that shows all EPI-NET battery sub bundles? Would also want some sort of color coding/icon system to indicate data that should be reviewed. • Want a visualization of service utilization (include option to filter by date range). Click into cards to see history of attendance • Want a visualization of individual survey items (not just global score). Get into this data by clicking on the bar for a given timepoint? • Is it possible to set a default visualization per consumer (i.e., One consumer wants symptom data to be the default graph, and one consumer wants the recovery data to be the default graph)?
Individual level data visualization	• Change threshold line to toggle-on/off • Add info about threshold if hover over (or click on it?) • Make threshold a solid line (instead of dotted), remove the solid line for max score at the top • Remove toggle option for comparative data. We would like to have the option to add this as a drop down (to make it less visible to consumers) • Visualize incomplete/partial data as a hollow bar

Clinic Aggregate Data	• All aggregate visualizations will need to show “missing” data • Clinic Tab: Also want to see visualizations for gender identity, disability, veteran status, preferred language • Clinic Tab: Rename “diagnosis” widget to “Primary Diagnosis” • Clinic Tab: The monochromatic blue was not well received—need colors that are easier to distinguish from one another on the pie charts (also keep in mind color blind) • Clinic Tab: Visualize duration in program by consumer (based on consumer start date. Break up into 6 month buckets). Want to see this for the whole clinic but also want to see this by provider on each provider’s page. • Survey Completion: Can we click into survey completion widget on dashboard and see a visualization of survey completion by different demographic factors: language, age (under 18 vs 18-25 vs. 22+), FEP vs. CHR, PSP registered vs. no PSP registered
Survey Bundles	• Need some kind of key for providers to link actual measure and any euphemistic names we create (e.g., We have renamed Modified Colorado Symptom Index to “Personal Experiences Inventory”). Click the actual title on the data visualization to see what title the consumer sees?
Clinic Admin Dashboard	• Swap out support request widget for “action items” widget—shows outstanding data to be entered (both monthly clinic data reports as well as outstanding individual level clinician entered data); shows consumers coming into survey window; shows number of open support requests. When monthly report is due, it is at the top of the action items list (in an eye catching color) and cannot be moved or dismissed until it is complete. (Pair with a pop-up when try to exit the page?) When it is submitted, reinforce (dancing unicorn, chrome dinosaur game, “thank you for contributing to science!!”). Put this widget in the current location of “survey completion” widget • On “clinic” widget, switch the icon for providers and consumers (consumers should have more figures than providers)
Consumer List/Info (web app	• Remove Sex from Consumer List • Remove picture from consumer list • Put DOB on consumer list instead of age (display age instead when click into consumer profile) Request to see insurance information on this list—or as part of consumer info page • Show Start Date in Consumer Profile Page Remove sex from consumer list • Want to show an icon for any open alerts per consumer on the consumer list • Show indication of missing data (add icon to data column, allow to sort by missing/incomplete data) on consumer list • All columns should be sortable
Provider Tab	• During provider registration, need a field to indicate whether provider has a supervisor (residents, trainees will be directly supervised by a licensed provider). When such a provider is visualized in the dashboard (i.e., As primary clinician in consumer list), their name should appear with “[supervisor name]” • Wondering about possibility to add a temporary provider to supplant a primary provider (i.e., Vacation, leave of absence). Would want the temporary/covering provider to receive any notifications about consumer and have consumer show in their consumer list. Is it possible to set an end-date for such a temporary provider or would it have to be manually removed?
Alerts	• Want to make “urgent clinical issues” widget more visually different—suggestion to outline it, bold the text. • History of resolved alerts should be displayed (in data tabs on consumer home page) • Want to be sure, when an alert is resolved, the alert history will show “resolved by [provider name]”

Appendix II: Beehive Part 3 Training Small Group Worksheet

Beehive Part 3 Training Small Group

Identify a group note-taker and a person who will report back to the larger group

Survey 1 *(Identify a member of your group to screen share survey 1)*

1. Find one of the 3 measures we have introduced to you in trainings: **Modified Colorado Symptom Index** (MCSI), **Questionnaire on the Process of Recovery** (QPR), or **SCORE Index of Family Functioning and Change** (SCORE-15). Next answer the following questions about that survey:
    a. What is the global score?
    b. Is there a clinical threshold?
    c. Is the global score above or below the threshold? What does that mean?
    d. Which is the highest rated individual item(s)? What does that mean?
    e. Which is the lowest rated individual item(s)? What does that mean?

2. Discussion Questions
    a. How might you use this information in care?
    b. Are the survey responses consistent with your knowledge of the consumer's experiences?
    c. What questions do you have after viewing these surveys?

Survey 2-3 *(Identify a new member of your group to screen share survey(s) 2-3)*

3. Reference the Table of Contents for the EPI-CAL battery (next page). Find one to two additional surveys that you are interested in or that might answer the questions you have from the first survey.
    a. Is there a global score? (i.e., is this survey visualized?). If yes,
        i. Is there a clinical threshold?
        ii. Is the global score above or below the threshold? What does that mean?
        iii. Which is the highest rated individual item(s)? What does that mean?
        iv. Which is the lowest rated individual item(s)? What does that mean?
    b. If there is no visualization, remember you can view the survey responses by clicking the "survey results" button at the top left of the page

4. Discussion Questions
    a. How might you use this information in care?
    b. Are the survey responses consistent with your knowledge of the consumer's experiences?

Additional Discussion Questions

5. Does either survey help you understand the other survey better?
6. Think about the different roles in the clinic and how they might use this data differently
    a. How might a family advocate or peer partner use this information compared to a clinician?
    b. How might a prescriber use this information compared to a case manager?

Appendix III: Beehive Application Training Feedback Survey

Please provide us with your feedback.

1. How would you describe the pace of the training?

- ○ It moved way too slow
- ○ It moved a little too slow
- ○ It moved at the right pace
- ○ It moved a little too fast
- ○ It moved way too fast

2. Did you have enough opportunities to give feedback or ask questions?

- ○ Yes, I felt like I had enough chances to give feedback or ask questions
- ○ No, I did not feel like I had enough chances to give feedback or ask questions
- ○ Kind of...I wish there had been more opportunities to give feedback or ask questions.

3. Did you have enough time to practice using Beehive during the training?

- ○ I would have liked a lot more time to practice
- ○ I would have liked a little more time to practice
- ○ I had the right amount of time to practice
- ○ I didn't need as much time as you gave to practice
- ○ I didn't need to practice during the training at all

4. How confident do you feel about using Beehive to complete your assigned tasks (registering consumers and support people in Beehive, and entering clinic data)?

- ○ Not at all confident
- ○ A little confident
- ○ Moderately confident
- ○ Very confident
- ○ Extremely confident

5. Honestly, how much value do you think Beehive will add to your job?

- ○ None at all
- ○ A little
- ○ A moderate amount
- ○ A lot
- ○ A great deal

If you have any suggestions for how we can improve this training, please write them below:

_____

Appendix IV: Summary of issues reported to developer during Alpha and Beta testing

Type	Issue Id	Summary	Fixed in build	Description
Bug	BEEHIVE-114	Redundant Texting messages	Next Build	1. Got a text message for the patient [removed]. The screen says 'No Records'. We should not send any erroneous and redundant text message. 2. Also, the weblink is showing 'unsecured'. Is it because it is the test environment? Can we use the same certificate to make sure this is secured message?
Bug	BEEHIVE-110	EULA video + data sharing screen does not display for PSP on iPad app	Next Build	See the linked screen recording for the issue: **Issue:** EULA video and data sharing language does not display for PSP, instead an error pop-up which says "please accept EULA permissions" appears **Additional Details:** This PSP was created on 4/30 on iPad app (V1.0.13). This error does not occur on the weblink solution. For this same test PSP, the EULA video displayed when accessing surveys via the weblink.
Bug	BEEHIVE-104	Consumer demographics form not including all active consumers	Next Build	**Issue:** Active consumer is excluded from consumer demographics report based on date range selection. **Details:** Two consumer demographics reports were pulled from the same clinic. Both reports had the same end date selected (4/8/21) but had different start dates (4/1/21 & 1/1/21). The report with the earlier start date included one additional consumer ([removed]). This demographics report is supposed to include all active consumers within the date range selected. [removed] is still active and should also show in the report from 4/1/21-4/8/21.
Bug	BEEHIVE-99	"Question Not Found. Contact Administrator" Appearing intermittently	Next Build	Please see the linked screen recording: **Issue Description:** Intermittently during survey completion, an error will briefly appear while launching a survey: "Question Not Found. Contact Administrator." However, the survey progress despite the brief appearance of this pop-up and without the need to press "ok". **Requested fix:** This pop-up should never appear for survey respondents if it is not an applicable error.
Bug	BEEHIVE-106	Level 4/5 users can resolve urgent clinical issues and PHI is displayed to them	Next Build	**Issue:** If a level 4 or 5 user clicks "unresolved" on urgent clinical issues page, a pop-up to resolve the urgent clinical issue appears AND it includes PHI (consumer name). See the linked screen recording: **Fix:** 1. Level 3A, 4, & 5 users should not be able to resolve urgent clinical issues (see table of permissions attached). This would prevent the pop-up from appearing in the first place and hence PHI would not be displayed to level 3A, 4, or 5 users. 2. If the above fix is not able to be implemented quickly, we need to remove the consumer's name (replace with GUID) from the pop-up for level 3A, 4, or 5 users.
Bug	BEEHIVE-83	Recurring Bundle not appearing as scheduled	April 15, 2021	**Issue:** The recurring bundles are not available for survey completion when scheduled. **Notes:** User created a consumer with an intake date 6 months ago (9/17/2020). When consumer went to complete weblink surveys, only the enrollment bundle was available. Consumer should also have 3 Beehive Required bundles which recur every six months available to complete.

Bug	BEEHIVE-75	Issues with Survey Version and Bundle Version in Report	Next Build	In reports we have been downloading from Beehive, we have noticed some missing or illogical data in the "Bundle Version" and "Survey Version" columns. **Sample Report 1 demonstrates issue: Survey version date is later than survey completion date.** The rule should be that the survey version must always be an earlier date than survey completion date. The survey version should record what version of the survey was completed. **Sample Report 1 demonstrates issue: Survey version is newer than bundle version.** The rule should be that the bundle version is updated every time a survey is updated. So, the bundle version should never be older than the survey version. **Sample Report 2 & 3 demonstrate issue: "N/A" in Survey version or Bundle version fields.** The rule should be that this field includes either the date of creation or the date of last update. It should never be missing.
Bug	BEEHIVE-109	Network error when logging into UAT environment	Next Build	I am getting a “network error” when trying to log into the web app (happening on both Chrome and Firefox) with both the [beehiveprodacc@gmail.com] (mailto:beehiveprodacc@gmail.com) account as well as other testing accounts I set up (e.g., level 3 user). I can, however, log into the new version of the iPad app (V1.0.13) with my level 3 username and credentials. I can log in successfully to the production environment web app, as well.
Bug	BEEHIVE-108	Disable regular login for SSO Users	Next Build	UCDavis emails are still able to log in the normal way (i.e., log in without SSO). We need to close the loop and require that UCD emails log in with SSO only.
Bug	BEEHIVE-102	Clinic admin not able to see group admin	Next Build	**Issue:** When logged in as a clinic admin account, group admin are not visible on the admin tab (even when "all clinics" is selected) **Requested fix:** Clinic admin and providers should be able to see group admin and group analysts which belong to their group on the admin tab.
Bug	BEEHIVE-101	Race variable on demographics report not showing full details as entered during registration	Next Build	**Issue:** The specific race options selected by the consumer/staff member during consumer registration on tablet or web app are not displaying in the data report. In the attached report, the consumer's race is registered in Beehive as "Cambodian" under the subheading of "Asian." However, only "Asian" shows in the data report. **Fix:** The data report should show the subheading selection(s) entered during registration.
Bug	BEEHIVE-97	Provider name showing for application admin and application owner on consumer data page	Next Build	**Issue:** While logged in as application owner or application admin, the prescriber’s name and treatment team lead name are visible on consumer data page: **Fix:** For these fields, name should be replaced by GUID. Note that this is also how this page should appear for the group analyst role as well.
Bug	BEEHIVE-107	Login _ Password Length	Next Build	For Dashboard/Clinic users, When Logging, there is a Password rule to limit the password between 6 to 12 characters. Please remove the upper restriction of 12 characters. It is very hard to limit the user from entering longer and complex passwords.
Bug	BEEHIVE-85	Survey Due Date	April 15, 2021	**Issue:** All of the consumers in the below screen shot have the same intake date, but their survey due dates are not all the same. All

		Displaying Incorrectly		of the survey due dates below **should** be May 15, 2021 (i.e., 60 days after intake). **Testing Notes:** Testing indicates that the survey due date is dependent on additional surveys being assigned to the consumer. The consumers with a due date of March 17, 2021 do not have any additional surveys assigned to them.
Bug	BEEHIVE-73	Weblink not being automatically resent	April 15, 2021	Per the weblink rules shared in chat: "The weblink should be sent to the consumer/primary support person until they complete their surveys (The email and/or SMS will be sent once in a day if consumer/PSP has not answered the surveys)." **Issue:** None of our team or testers have experienced this feature of the weblink. We have only received weblink emails/texts automatically when the consumer is first registered. After that, any other weblink emails/texts received are because a user has manually re-sent them via the button on the consumer page. If this is in fact, a rule, **we would like to change the frequency of the weblink being automatically re-sent to every 72 hours** (not every 24 hours) until the surveys are completed.
Bug	BEEHIVE-94	Repeating Bundles not available as scheduled	April 15, 2021	We have set up our Beehive Required bundles to repeat every 6 months. These bundles have been available for consumers who register within their intake window. However, for consumers who are registered in Beehive outside of their baseline window, (e.g., at 12 months after intake, 24 months after intake), the repeating bundles (for consumers, PSP, and clinicians) are not available as scheduled. (Ex. GUID: [removed]) The appropriate recurrence of bundles was tested in the staging environment in March and the bundles were available as appropriate. This seems to be a new issue.
Bug	BEEHIVE-98	Data Reports showing consumer DOB for application owner & application admin	April 15, 2021	When downloading the consumer demographics report from the application owner and application admin level, Consumer's DOB is displaying instead of just the month and year. I've attached the Report guidelines for easy reference. At Level 4/5 and this field should only display month and year of birth.
Bug	BEEHIVE-103	Group Analyst Permissions unable to be changed	Next Build	**Issue:** Once a group analyst is created, their permissions level is frozen and unable to be modified by Level 3, 4, or 5 users. **Fix:** Level 3, 4, and 5 users should be able to change the permissions of a group analyst to another admin role. This is to address issues when staff roles may change or to fix errors that may be made by users during user registration.
Bug	BEEHIVE-95	Reports are missing data	Next Build	Reports are missing data within specified time range. The first attached report ("Sample Report 4") was one that was pulled on 3/17 for the "Life Outlook" Survey. This report was previously included in sample tickets. It demonstrates the number of records that were in the report between 2/22-3/17 The second attached report was pulled today from the date range 2/22-4/1. It was pulled for the "Life Outlook" Survey. It includes no data and no variable names.
Bug	BEEHIVE-96	Bug with de-identification for Application Owner & Application Admin	Next Build	When logged in as an application admin or application owner, our team discovered that if you type a provider's name into the search bar, their de-identified (i.e., GUID only, no name) record will appear. This should not be possible since application admin and application owners should NOT see provider name anywhere in the application.

Bug	BEEHIVE-24	Repeating primary support person bug	Next Build	Primary support person was added once on web application (browser= Firefox). Now, the same PSP record shows up multiple times on iPad and web apps.
Bug	BEEHIVE-93	Urgent Clinical Issues are No Longer Populating	March 15, 2021	Urgent clinical issues are no longer populating as intended. For example, test consumer [removed] answered MCSI_13 question as follows (completed surveys on weblink) This is a response that produces an alert according to survey design: Also encountered this error for consumer [removed] (completed surveys on tablet) Alert designated in survey design: Note that this feature was previously functioning as intended. This bug is new (likely as of the last update?) No urgent clinical issues showing on group admin dashboard:
Bug	BEEHIVE-36	Checkbox to indicate PSP is same as Emergency Contact not appearing at group admin level	March 15, 2021	**Here is the view of the PSP page when logged in at group admin (there is no check box to indicate that PSP is the same as emergency contact):** **This is the view when logged in as a provider or clinic admin (iPad & web): There are check boxes to indicate that the PSP is the same as the emergency contact**
Bug	BEEHIVE-72	Weblink not being auto-sent to PSP upon registration	March 15, 2021	Per rules shared in slack: weblink should be auto-sent to PSP via both email and text upon their registration in Beehive. **Issue:** Our team is noticing a consistent bug across multiple accounts that the weblink is not automatically sent to PSP via email, but it is automatically sent via text message. **Other notes:** When the weblink is manually sent (via "re-send surveys" button on consumer page), weblink is sent via both email and text. So, this bug appears to only be related to the application automatically sending emails. The weblink is automatically sent to consumer correctly via whatever method is selected in "preferred contact."
Bug	BEEHIVE-82	Data report: Value for slider question displaying as "N/A" in data report instead of the value	March 15, 2021	**Issue with data collection on slider questions:** * Any response given in the tablet is showing as "N/A" in the data report. * Responses given on the weblink are showing up properly in data report, UNLESS zero is the response, in which case it is showing up as "N/A". * Whenever the response in the data report is "N/A", it is displaying as zero on the consumer data page. In the attached data report, you will see values of N/A. These questions were answered and should be a variety of different answers. This is the visualization of survey responses in the application. These values were answered as "3" & "7" on the iPad, but both show as zero here:
Bug	BEEHIVE-91	Survey Not Progressing as Intended on iPad App	March 15, 2021	Issue: When completing survey on the iPad, the error: "Couldn't find the next question, Please contact staff" appears. This is a new error on a survey which has otherwise been functional since the last time it was edited on Feb 25. I have recreated this issue on several different test consumers during survey completion on the iPad. Please see the screen recordings for an illustration of this: **On iPad, Survey will not progress past question 1:** On weblink, Survey progresses as intended:** **Logic was never modified for this survey in survey design. Each question simply leads to the next:**

Bug	BEEHIVE-4	Issue with User Registration	March 15, 2021	GUID: [removed] User cannot complete registration. After entering a password that matches the rules shown in the modal, user gets this screen and an OTP is never sent to him. I have re-sent the invite to Beehive to have the user try to complete registration from a new link, and the same error is seen. User has tried to register with different passwords matching the requirements and continues to get the same error.
Bug	BEEHIVE-79	Reports: Need comma separation on multiple select variables	Next Build	For data fields which may include multiple responses (i.e., multi-select questions in Beehive), we need to have comma (or some other character that is not a space) separation between response options. This is especially important once "option:" is removed from the data report. Please see the attached example, consumer demographics tab, column H for how we would prefer for this to be in the data report. Issue is demonstrated in Sample Report 2 Column T which was pulled from Beehive.
Bug	BEEHIVE-68	Age not updating	Next Build	Test consumer's birthday is today and age has not updated in the system. The age should be 18 but it is still displaying as 17.
Bug	BEEHIVE-74	Provider-entry data required icon not appearing	Next Build	Data icon which indicates provider data entry is not appearing for consumers, even when there is still data to be entered for the consumer. See screen recording linked: For reference, here is an example from a different web version which shows the icon:
Bug	BEEHIVE-78	Make "other (please specify)" response it's own column	Next Build	As demonstrated in the example reports previously provided, we would prefer for the free text data entered when "other (please specify)" is selected to be it's own column. Please see the attached document "Beehive Report Examples_2021_0201", Alerts tab, Column Q for an example of how this would be pulled into it's own column. Currently the free text is included in the same column as the multiple choice selection (see sample report 2, row 8, column T)
Bug	BEEHIVE-62	Unable to Submit Registration of New Consumer on Tablet	Next Build	User is encountering error "Looks like entered email ID already exists" with an email that has not already been used in the application. User attempted to use 3 different emails (all of which were not already used in the application) and continued to receive this error message.
Bug	BEEHIVE-48	Data-Use Pop-up Not appearing	Next Build	Our team has not been able to create the data-use pop-up that is shown in this storyboard (after leaving consumer data page): We have tried at level 1, 2, & 3 users by visiting the consumer's data page more than 20 times at each level and the pop-up has not generated.
Bug	BEEHIVE-87	Free Text for "Other (please specify)" not available in data reports	Next Build	**Issue:** If "other (please specify)" is selected during survey completion on the iPad, the text entered is not showing up in the data report or on the survey results tab. **Other testing notes:** This seems specific to data entered in the tablet. Our team has completed consumer surveys via weblink and selected "other (please specify)" then entered free text into those fields. The data entered appears in the data report and is also available when viewing survey results from consumer data page. I entered data for one consumer via weblink and it showed up on both survey results and data report.
Bug	BEEHIVE-33	Logic Resetting	March 8, 21	The logic is resetting during survey creation. Please see linked videos which capture this bug.
Bug	BEEHIVE-27	PSP weblink always directs to EULA	Next Build	PSP web link invite always goes to EULA after typing in OTP. The weblink should only direct to the EULA if it has not been completed. Otherwise, if the EULA has been completed, weblink should direct to survey bundle screen.

Bug	BEEHIVE-81	Total # of Questions shown in Survey Completion Incorrect	Next Build	This survey (PSP Demographics and Background) has 6 questions but the total questions of the survey displays as "5" Note that this survey has other reported issues with it which may be contributing towards this bug.
Bug	BEEHIVE-80	Survey Failing to load after first question in Weblink Environment; Functions Properly on iPad	Next Build	After submitting a response to the first question of this survey, instead of displaying the next question, this screen is seen on the weblink: Note that on the tablet, the next question **does** display Other notes: 1.This has been recreated on our end— multiple testers have experienced this issue. 2. The survey this is from ("PSP: Demographics and Background"), has de-activated questions in it. Unsure if that is contributing to the problems we are seeing.
Bug	BEEHIVE-84	EULA video is no longer appearing for PSP on weblink	Next Build	Please see the screen recording for a PSP who was just created and accessed surveys for the first time via weblink. EULA video does not appear as it should. This issue has been recreated by several of our team members on different browsers (chrome, firefox, edge, safari). **Other testing notes:** EULA video appears appropriately for new consumers on weblink. EULA video appears appropriately for new consumers and new PSP on tablet.
Bug	BEEHIVE-57	Beehive ipad App is crashing prior to displaying EULA video	March 15, 2021	User experienced app crashing repeatedly prior to EULA video being displayed. **Consumer registration:** The app crashed at the point of transfer of ipad from clinic staff to consumer. This happened 3 times in a row then did not happen the subsequent 3 times in a row (tested a total of six times). See the linked screen recording. Where this recording ends is the point at which the application crashed. (could not capture the actual crash as it would end the screen recording and prevent it from saving): **Adding a new PSP to an already registered consumer to complete PSP surveys:** Also experienced the app crash when adding a new primary support person to an existing consumer. User attempted again to add the PSP and the app crashed in the same place. User attempted a third time and the application displayed the EULA video without crashing. (Tested total of six times): Note that crash reports were sent in testflight for both of these events. In both scenarios of the app crashing, the data that was previously entered for the new consumer or PSP was not saved, and user would need to start over with the registration process. Since we have not noticed this happening on the web app or with the weblink, we have a few weeks to solve this issue. The first beta site we are training will exclusively use web app and weblink. However we will start introducing the tablets at our site training on **3/22/21**, so we will need a solution by that point.
Bug	BEEHIVE-51	PSP Data report is empty	March 15, 2021	There is no data available in the PSP survey report. It was pulled within a time frame when data should have been entered for multiple PSP.
Bug	BEEHIVE-41	Survey Report Not showing Survey Responses	March 8, 21	The Survey Report is not showing survey responses to each variable name. (We understand reformatting of reports is happening in the next build, but just wanted to point out this crucial information is missing from the report even before it is formatted appropriately)
Bug	BEEHIVE-52	Spanish text displaying	March 15, 2021	The Spanish survey of a title displayed for a consumer for whom Spanish was not selected as the primary language. Please also note that the survey questions and responses were still in English.

		when Spanish language not selected		Screen recording: Consumer profile which shows English as the display language:
Bug	BEEHIVE-65	Camera not functioning in Beehive	Next Build	During consumer registration or editing an existing consumer\>choose consumer profile picture\>click a picture Camera screen is black, shutter button doesn't work. This issue occurred on multiple devices where the camera is verified as working outside of Beehive application. Link to screen recording:
Bug	BEEHIVE-63	Consumer Profile cannot be updated or submitted dependent on answer to ethnicity	March 15, 2021	This issue occurs on both web app and ipad app. On the web app, we receive this error depending when attempting to update race and ethnicity for existing consumers. This appears when filling in missing data for consumers that existed prior to today's code push, but only when "no, I do not identify as hispanic/latinx" or "prefer not to say" are selected. It also occurs for consumers that were created after the code push when you attempt to change their answer to ethnicity. On the ipad app, no error message appears, but the user cannot submit the update to registration. (screen recording linked below)
Bug	BEEHIVE-54	Data-Use Pop-Up Display Logic does not reset when user selects "no"	March 15, 2021	When user selects "no" as the response to the initial pop-up, the pop-up will show at every visit to the consumer's data page until the user selects "yes." The appearance of this question should not be dependent on the user's answer to the first question. It should appear between every 5-10 visits regardless of whether they answered yes or no at the previous appearance of this pop-up. Hence, if the user selects no, they should not see this pop-up at the next visit to the data page. Please see the video linked below to for a demonstration of this problem:
Bug	BEEHIVE-64	Ward of Court Piped Text not Functional on Web App	March 15, 2021	When other text is entered during consumer registration for ward of court on ipad, the piped text is functional (note the word "test") Functional: However, it is not functional in the web app when registering a consumer. Not functional:
Bug	BEEHIVE-18	Survey names and bundle names not appearing on PSP weblink	March 8, 21	Browser: Firefox PSP for consumer GUID: [removed]
Bug	BEEHIVE-31	Users are seeing support requests they should not be able to see	March 15, 2021	A Group admin is able to see a support request submitted by a Level 4 user. As a reminder here are the rules relating to permissions levels and the ability to see support requests: * Group Analyst-- see own requests * Providers- See own requests * Clinic admin- see requests made by users within clinic * Group admin- see requests made by users within group * Application Admin— see all requests across system * Application Owner— see all requests across system
Bug	BEEHIVE-8	Issue with editing bundle prior to	March 8, 21	When editing a bundle (before it has been published), there is an error that occurs in the "participant type" drop down. Instead of showing the three categories of participants, it is repeating "60 days schedule"

		publishing it		
Bug	BEEHIVE-42	Report response options inconsistent with dropdown options	March 8, 21	Responses in the application are correct, but they are not always reflected in the data reports. See the attached xlsx file with highlighted fields. 1. Typo: "HISPANIC_LATINUX" should be "HISPANIC_LATINX" 2. "Refused" is not an option on the race drop down. It is "Prefer not to say" 3. Treat spaces consistently. Sometimes an underscore is used, sometimes the space is removed completely.
Bug	BEEHIVE-2	Other Text Box Appearing Inappropriately During Admin Registration	March 8, 21	The "Other:" Textbox is appearing when "Research staff" is selected in the primary role drop down. It does not appear when "other" is selected in the primary role drop down.
Bug	BEEHIVE-7	Date of Last Update not Updating	March 8, 21	The column "date of last update" is not updating appropriately. The following surveys were updated today (2/19/21) and the date displaying in this column is still the date of creation (2/18/21)
Bug	BEEHIVE-29	Slider Question Type Bug	March 8, 21	We have a slider question in the "Life Outlook" Survey. The response range for this question is set from 0-10. When a survey respondent selects 0, the application treats the question as unanswered.
Bug	BEEHIVE-38	Group Analyst Permission Level Seeing Identifiable Data	March 8, 21	In the current build, group analyst is seeing identifiable data (i.e. consumer names). **Permissions for Group analyst allow de-identified data only**. Consumer list and urgent clinical issues should show IDs only.
Bug	BEEHIVE-26	PSP EULA completed on weblink does not display on tablet & vice versa	March 8, 21	After PSP completes EULA on weblink, this information does not update on the tablet application. Tablet application still says EULA not completed:
Bug	BEEHIVE-45	CSV upload failing	Next Build	CSV upload fails with template provided via slack.
Cosmetics	BEEHIVE-20	EULA Text Formatting	March 8, 21	1. Our team would like to add the following key to every instance of the EULA/data sharing language: *-required The asterisk should be in red as it appears in the application. 2\. We would also like to make **bold** the phrases that refer to exporting identifiable data. Please see the attached documents for reference. ****
Cosmetics	BEEHIVE-111	Update PSP Data-Sharing Language to reflect initial request	Next Build	Now that the consumer name auto-populates in the PSP EULA, please reference the document initially shared for the text on this screen (attached again for your convenience). These changes should be made to reflect what was initially requested: * Remove the quotation marks that appear in the italicized text (stricken through in red in the attached image) * Remove the sentence "Note that the consumer refers to…" (stricken through in red in the attached image)

				These changes should also be made to the Spanish language version.
Cosmetics	BEEHIVE-53	Add text to support requests to remind users not to submit PHI	Next Build	We would like to add the following text before text fields in support requests as a reminder that users should not enter sensitive patient information: "Reminder: Do NOT submit PHI"
Cosmetics	BEEHIVE-67	Fix Typo in Emergency Contact Dropdown	Next Build	Option should be "Spouse/Partner" NOT "spouse/parent"
Cosmetics	BEEHIVE-56	Update Instructional Text in Sex Dropdown on Staff Registration Screen	March 15, 2021	The instructional text in the dropdown for sex-assigned-at-birth should say "Select Sex" not "Select Gender"
Cosmetics	BEEHIVE-3	Survey Creation: Typo in Other Option	March 15, 2021	There is a typo in the survey creation module for the "Other (please specify)" option. Please correct from "specifiy" to "specify"
Cosmetics	BEEHIVE-50	Fix typo on race visualization	March 15, 2021	This may be automatically solved when fixing the typos that show in the data reports (linked issue), but if not, wanted point out the typo of "Hispanic Latinux" (it should be "Hispanic/Latinx") here as well.
Cosmetics	BEEHIVE-58	Remove "!" from EULA error message	March 15, 2021	Please remove the exclamation point from this statement: "Please select the mandatory options to accept EULA!" The message should instead read: "Please select the mandatory options to accept EULA"
Cosmetics	BEEHIVE-25	Update Language on "Upload Picture" Button	March 8, 21	For both the **web application** and **ios application**, we would like this button to say "Choose Picture" instead of "Upload Picture"
Cosmetics	BEEHIVE-6	Update text header	March 8, 21	Per feedback in alpha, please update the identified header in consumer registration to "Display Language" and not "Preferred language"
Cosmetics	BEEHIVE-30	Make consistent the presentation of phone numbers	March 8, 21	On edit consumer info page on web application: PSP phone number should be presented with dashes, as the emergency contact phone number is presented.
Cosmetics	BEEHIVE-17	Add a space to OTP consumer email template	March 8, 21	Would like to add a space between ":" & "OTP" to make it consistent with other OTP emails and make copy & paste easier. Currently: Would like it updated to : "Your one-time password is: 960894"

Cosmetics	BEEHIVE-49	Update text on data review pop-up per September 2020 feedback	March 8, 21	Per feedback given on 9/23/20, please update the text on this pop-up to: **Did you review this data with the consumer or family?**
Cosmetics	BEEHIVE-34	Survey Instructions & Survey Completion Images	March 8, 21	The images in the survey instructions and survey completion pages do not represent the diversity of the consumers we serve, so to improve UX, we would like to change these images. **We would like this image for survey instructions:** **We would like this ribbon/badge icon for survey completion:** Ideally, we would like to add color overlays (at least to fill in the star and the question mark) in the same color scheme as previous images.
Cosmetics	BEEHIVE-28	Update icon in Action Items Widget	March 15, 2021	In the Action items widget, update the icon when there is nothing overdue. Instead of red text with a red icon when nothing is overdue (image 1), can the text be green with the green icon currently used in the alerts widget (image 2)?
Cosmetics	BEEHIVE-14	Update Languages Header in User Registration	March 8, 21	The "languages other than English in which you are fluent enough to conduct therapy/provide services" needs to be a "select multiple." (currently can only select one). Since English is a response option in this drop-down, we would also like to update this header to "**Languages in which you are fluent enough to conduct therapy/provide services"**
Cosmetics	BEEHIVE-23	Updates to Alerts	March 15, 2021	**Alerts Text updates:** * We would like to remove "resolved by N/A" from the alerts widget. * Instead of "Survey Alert" we would like for the keyword from the survey to be piped in. * The formatting of the alerts should be: **\[Consumer Name\]** endorsed **\[keyword\]** on **\[Date, MM/DD/YYYY\]** * Example: **Kathleen Nye** endorsed **Risk to Self** on **2/23/2021** **Alerts Display updates:** * When alerts are resolved, they should not display in the widget **Other Alerts Functionality** * We would like to introduce a feature whereby users can click on some portion of the alerts card to be directed to the survey question/registration item that triggered the alert. Can you let us know if this is something that can be accomplished in Beta or if our team needs to prioritize it somewhere in Phase II?
Feature	BEEHIVE-40	PSP Registration Page	Next Build	In our testing of PSP surveys, we have realized we need to add a registration page as we have for clinic users and consumers to ask demographics questions such as race, ethnicity, sex, gender, DOB. This is a new request and we do not expect it to be in the March build. However, we would like to understand how much time this will take to implement.
Feature	BEEHIVE-55	Click Alert Card to Bring User to Alert Trigger	Next Build	We would like to introduce a feature in Phase II whereby users can click on some portion of the alerts card to be directed to the survey question/registration item that triggered the alert.
Feature	BEEHIVE-88	Implement Rule that Survey version captures the version of	Next Build	From BEEHIVE-75: **Sample Report 1 demonstrates issue: Survey version date is later than survey completion date.** The rule should be that the survey version must always be an earlier date than survey completion date. The survey version should record what version of the survey was completed.

		the survey that consumer completed		
Feature	BEEHIVE-113	Adding 2 additional fields to user registration	Next Build	Due to new reporting requirements from one of our funders (NIH), we need to add 2 additional fields to user registration. 1. Start date at agency 2. Start date with CSC team Both fields should have date validation. We would like for "Start date at agency" to be required for all users. We would like for "Start date with CSC team" to be **required fields for users at level 1, 2, 3, and 3A**, but **OPTIONAL for levels 4 and 5** (level 4 and 5 users may not be part of a CSC team). We understand that these changes may not be feasible to make until the end of the sprint timeline which runs through 8/9/21. Let us know when we can expect these changes.
Feature	BEEHIVE-112	Adding Variables to Consumer Demographics Form	Next Build	Given our understanding of how the consumer demographics report has been coded, we would like to add 3 additional fields to it to facilitate it's use: * intake date * registration date * status We have also realized there is no place for the free text for "ethnicity" in the demographics report so have updated the template here as well. Please see the attached for details (changes from previous version of this document are highlighted). Is it possible to wrap these in with the remaining reports in 6/14/21 UAT?
Fix	BEEHIVE-89	Implement rule that Bundle version updates whenever a survey within it is updated	Next Build	From BEEHIVE-75: **Sample Report 1 demonstrates issue: Survey version is newer than bundle version.** The rule should be that the bundle version is updated every time a survey is updated. So the bundle version should never be older than the survey version.
Fix	BEEHIVE-77	Data Reports: Remove "Option:" from data reports	Next Build	As demonstrated in the example reports, we would prefer that the survey reports include only the text of the response and the additional text ("Option:) which is demonstrated in columns U-Z in the attached report.
Fix	BEEHIVE-39	Instructional Text Formatting	March 8, 21	For the instructional text, we want this to just be a single text box (as boxed in red below) without a header.
Fix	BEEHIVE-13	Race item needs to be "select multiple"	March 15, 2021	The race drop down in user registration and consumer registration currently only allows for selection of one race. This is a "select all that apply" question and needs to allow for user to select all. Can this race question be formatted in the same way as the "clinic" selection (After user says "yes, I work in another early psychosis program that uses Beehive"?) during user registration? We like this formatting for the following reasons: 1. You can see every answer you have selected 2. It is very clear and easy to remove options once you have selected them.
Fix	BEEHIVE-19	Web App/Weblink EULA Formatting	March 15, 2021	When the EULA is presented on the web application or weblink, our team would like the following formatting change: Instead of having the required components pre-checked, we would like for all check-boxes to be blank and require the user to actively

				select each check box. This would match how the EULA is presented on the ipad application for consumers and PSP.
Fix	BEEHIVE-5	No template CSV file for consumer import	Next Build	There is no template CSV file provided for the consumer import function. Users do not know how to format data for it to be accepted by the system. Need a downloadable template file to be available in the application. In the mean time, can your team provide us with a template so we can test this feature?
Fix	BEEHIVE-59	Inaccurate Variable Name in .CSV upload template	March 15, 2021	Column F in the template .csv provided for upload needs to match the variable name for this variable provided in reports (attached, see consumer demographics report). The variable name (or header) for column F is "Sex" not "Gender".
Fix	BEEHIVE-21	Weblink Session Expired while completing surveys	March 8, 21	One our testers experienced their weblink session ending while they were in the midst of actively completing surveys. They said they had been in the session for about 1 hour, but that the session had not gone idle. Want to problem solve around this as we do not want users to be kicked out while they are actively completing surveys, even if the session has been open for some time. Related to this: when the session end, the entire chrome browser shut down (After user selected "ok"). Is it possible for the page to reset rather than shut down the whole browser (anticipate this may be annoying to users)?
Usability Problem	BEEHIVE-32	Need a way to remove questions from surveys	March 8, 21	Once a question is created in a survey, there is no way to remove it (Even prior to publishing in a bundle). There is no delete function. Questions can be de-activated. But even questions that are de-activated are still appearing for survey respondents. Questions were deactivated prior to adding to bundles and prior to publishing bundles.
Usability Problem	BEEHIVE-115	Weblink logic	Next Build	Sandesh had previously suggested setting a maximum number of times that a weblink is pushed automatically. We have discussed and wanted to start by asking for weblinks to only be automatically sent during the survey window (i.e. 75 days after intake, 15 days +/ due date for Follow-up bundles, and 15 days after assignment of additional unscheduled survey)
Usability Problem	BEEHIVE-10	Generate random unique password for new users	March 15, 2021	Our team noticed that the same password "12345678" is always assigned as the first password for account set-up. Can we instead use a randomly generated and unique password for each person to enhance security?
Usability Problem	BEEHIVE-9	Update URL in Registration Email	March 8, 21	The url for our website has changed slightly and we need to update the hyperlink in the registration email ("What is Beehive?"):
Usability Problem	BEEHIVE-22	Remove names from urls/links	March 8, 21	Survey weblinks and user registration links currently include first and last name. These absolutely need to be removed from the weblinks. Time permitting, should also be removed from the user registration links.
Usability Problem	BEEHIVE-60	Simplify and Clarify .CSV Template	Next Build	**Current Problem/Issue:** Currently, the .csv template for adding consumers is both incomplete (it does not include all registration fields, so users will still need to go in to each consumer's profile one at a time to complete registration) AND overwhelming (despite not including all registration fields, it includes many fields). **Our solution:** Since we cannot immediately solve the first issue of completeness (per your comments in BEEHIVE-45), we would like to make this template more simple and more approachable.

				Requested fix: * Can the .csv template only include the the fields in the attached document? * We assume that the variables "Ward" and "IsSelfConsent" are required for basic registration functionality. If they ARE NOT required for this .csv upload, then we would like to remove them from the template. If they ARE required, then we would like to rename them to make it easier for users to understand what they are entering. * You have explained what the "ward" variable means. We propose changing the wording to "Consumer Is a Minor" * We do not know what "IsSelfConsent" means. Please let us know so that we can consider how to best communicate this to clinic users.
Usability Problem	BEEHIVE-35	Sizing Issues on Weblink	Next Build	During testing, our team experienced a variety of "sizing issues" when completing surveys via weblink option on a mobile device. We are linking to the following video which demonstrates some of these issues: * User must zoom out, drag on first screen in order to center * Progress bar is not visible unless user know it is there and makes an effort to drag down to see it * Issue navigation buttons not appearing or requiring scrolling past a lot of blank space in order to appear We would like to discuss this on the call on Thursday, 2/25/21. Some possible solutions we have thought of are 1. Pinning items (e.g. question & progress bar pined to top; next/previous buttons pinned to bottom) 2. No splitting of words (the problem with allowing word splitting is demonstrated in below picture on the minimum anchor. It makes it difficult to read)
Usability Problem	BEEHIVE-90	Allow hyphens and apostrophes in name fields	Next Build	The system does not currently allow for hyphens or apostrophes to be included in first or last names entered into Beehive. Users may have hyphens or apostrophes in their first name (e.g. D'Angelo, Jean-Paul) or last name (e.g. Smith-Wiggins) and users need to be able to enter the proper punctuation.
Usability Problem	BEEHIVE-46	Allow application users to return to EULA to update data permissions	Next Build	All level users in the application who complete a EULA need to be able to return to the EULA to update their data permissions. This should follow the same EULA data permissions edit flow as implemented for consumers and primary support persons.
Usability Problem	BEEHIVE-47	Add registration fields to user profile	Next Build	All registration fields should be displayed as part of user profile. Users also need the ability to edit/update these fields (for example, education or license status may change) This is okay to consider for April 15 release
Usability Problem	BEEHIVE-105	'Key Word Graph' Axis not fixed to min/max values	Next Build	**Issue:** The item visualization ('key word graph') x-axis is not locked and hence does not always show the full range of possible scores. **Fix:** As discussed on 11/05/2020, we want for the min and max scores for both graphs (global and keyword) to be fixed. This allows users to easily tell when a score is low vs. when it is high. This has already been implemented on the global graph. Below is an example of what the individual, keyword graph, should look like using the data above.
Usability Problem	BEEHIVE-92	Change time of day at which	April 15, 2021	On Friday our team started receiving weblink notifications from the staging environment for consumers who need to complete surveys. We noticed that these surveys are either being sent out at 10pm or 12am. Neither of these times is ideal to send out surveys. Can we

		weblink is auto-sent		please update the time of day at which the weblink is auto-sent to 6PM PT? Hopefully there is also an option to have this time automatically adjust to the time changes that result from moving in and out of daylight savings time.
Usability Problem	BEEHIVE -100	Reports Showing "no" for data-permissions on EULA's which are not complete	April 15, 2021	**Issue:** In data reports, the "data permissions" variables display the same for consumers who have not completed the EULA as they do for consumers who have not agreed to share data for research (i.e. "No"). See the attached data report. This consumer has not completed a EULA. **Fix:** If the EULA has not been completed, these fields should read N/A.
Usability Problem	BEEHIVE -76	Extra characters in date field in data report	March 15, 2021	In reviewing the data reports, we are unsure what all of the characters indicated in column T (variable name: Demo_PSP_1) mean. This field has date validation. We see the dates but we also see extra characters ("T….") that seem to be referring to a timestamp? Fields which have date validation do not need a timestamp in them.
Usability Problem	BEEHIVE -71	UI Update for "other" text box	March 15, 2021	When consumer selects "other (please specify)" response option, the text box does not appear in line with that particular option. This may be confusing for users. We understand that modifying the way this appears may be a substantial change, so we would like to discuss this on an upcoming call to understand on what timeline it would be reasonable to ask for this change.
Usability Problem	BEEHIVE -37	Reports variable names	Next Build	To improve end-user understanding of data fields, we would like to update the date variable names to include "(UTC)". Variable names have been updated in the attached excel document, and the changes have been highlighted.
Usability Problem	BEEHIVE -69	Vertical Scroll Bar cut off of display on mobile devices	Next Build	On multiple mobile devices, the vertical scroll bar on the right hand side is cut off of the screen and there appears to be no vertical scroll bar. Can we fix the formatting of this to ensure that the scroll bar displays on mobile devices?
Usability Problem	BEEHIVE -66	Weblink UI update: Reset to top when submitting question	Next Build	During weblink survey completion, if user has scrolled to the bottom of a list of responses, then submits the answer, the next question will not re-orient to display the question. Instead, it shows the responses lower on the list (as if the view has been saved from the previous question) We need for the page to re-set to the top of the screen and show the question when the user navigates through the survey.
Usability Problem	BEEHIVE -70	Rename error message that populates for age in consumer registration	Next Build	We would like to reword the error messages that appear during consumer registration when an age that does not match whether consumer was set up as an adult or as a minor during registration. Current error message is not clear for users. New error message when incorrect age is entered for an adult: Age\<18 check DOB New error message when incorrect age is entered for minor: Age≥18 check DOB
Usability Problem	BEEHIVE -12	Weblink Formatting Issue	March 8, 21	Some of our survey questions have response options that are multiple lines long. When this happens the formatting of the text and the check boxes becomes confusing. It is hard to tell which check box goes with which response option For example, in the image below, there should be more space between the text of different response options (currently the second line of a response option is hanging very closely to the first line of the next response…).

Usability Problem	BEEHIVE-43	Reduce frequency of requiring OTP	March 15, 2021	Currently OTP is required every time user logs in. This may be quite burdensome for clinic users at sites that do not use SSO. Can we instead require OTP once per day per device?
Usability Problem	BEEHIVE-11	Show/Reveal characters when entering OTP	March 8, 21	When entering the OTP into Beehive, we would like for those characters to be shown/revealed (rather than hidden with "******" as it is currently set up).
Usability Problem	BEEHIVE-44	Update CSV button text	March 8, 21	Please change text to "Click here to attach CSV file" In the button boxed in red above, please update the text to "Upload CSV File" since that is the button used to upload, and not attach the file.
Usability Problem	BEEHIVE-16	Allow more characters in the degree textbox during user registration	March 8, 21	During user registration, the text box to specify specialty of degree does not allow enough characters. Currently, not enough space for the most common PhD we will see, "Clinical Psychology." If there needs to be a character limit, would ask for it to allow 50 characters.

Appendix V: Data Elements Summary for all Counties Retrospective Data Pull

Data Type	Data Element	Available by County	Comments
Non-identifying ID	Identifying consumer ID removed and new ID assigned	SD - available	
		OC - available	
		Solano - available	
		LA - available	
Psychosis – category	1) Clinical High Risk (CHR) and enrolled in treatment 2) First Episode Psychosis (FEP) and enrolled in treatment 3) Assessed and referred out during Jan. 1, 2017 – Dec. 31, 2019 (add reason, if possible) 4) Other and reason (e.g., incorrectly assigned to program)	SD - available	Only 1 and 2 available
		OC - available	OC Crew serves only FEP consumers
		Solano - available	
		LA - available	
Diagnoses associated with the episode of care	Diagnosis – Psychiatric, Substance Use, Medical	SD - available	Consumer can have multiple diagnoses
		OC - available	Primary, secondary, tertiary, and quaternary diagnoses
		Solano - available	Primary, secondary, and tertiary diagnoses
		LA - available	Consumer can have multiple diagnoses
Year and Month of Birth	Year and month of birth (not date)	SD - available	
		OC - available	
		Solano - available	
		LA - available	
Location (consumer zip code)	Zip code (as of first EP service)	SD - available	
		OC - available	
		Solano - available	
		LA - available	
Demographics (as of first EP service)	Race	SD - available	
		OC - available	
		Solano - available	
		LA - available	Race and ethnicity combined into one variable

Ethnicity	SD - available	
	OC - available	2 items on ethnicity - Hispanic ethnicity and self-reported primary and secondary ethnicity
	Solano - available	
	LA - available	Race and ethnicity combined into one variable
Gender	SD - unavailable	
	OC - available	
	Solano - available	
	LA - unavailable	Variable for sex only
Education level	SD - available	
	OC - unavailable	
	Solano - available	
	LA - available	
Marital status	SD - available	
	OC - unavailable	
	Solano - available	
	LA - available	
Preferred language	SD - available	Primary language available
	OC - available	
	Solano - available	
	LA - available	
Insurance status (i.e., insurance type)	SD - available	
	OC - unavailable	
	Solano - available	
	LA - available	
Employment status	SD - available	
	OC - unavailable	
	Solano - available	
	LA - available	
Living arrangement (housing status)	SD - available	
	OC - available	
	Solano - available	

		LA - unavailable	
	Sex	SD - available	
		OC - unavailable	
		Solano - available	
		LA - available	
	Gender identity	SD - available	
		OC - available	
		Solano - available	
		LA - unavailable	
	Sexual orientation	SD - available	
		OC - available	
		Solano - available	
		LA - unavailable	
	Military service / Veteran status	SD - available	
		OC - available	
		Solano - available	
		LA - unavailable	
	Foster care / Adoption	SD - available	Indicator only, before 2017 & in 2017-2019
		OC - unavailable	
		Solano - available	
		LA - unavailable	
Outpatient mental health services in EP program between Jan. 1, 2017 – Dec. 31, 2019	Date	SD - available	
		OC - available	
		Solano - available	
		LA - available	
	Duration	SD - available	
		OC - available	
		Solano - available	
		LA - available	
	Service / procedure code	SD - available	
		OC - available	
		Solano - available	

		LA - available	
	Funded plan (original pay sources, subunit)	SD - available	
		OC - available	
		Solano - unavailable	
		LA - available	
	Service location code	SD - available	
		OC - available	
		Solano - available	
		LA - available	
	Facility code	SD - unavailable	
		OC - unavailable	
		Solano - unavailable	
		LA - unavailable	
	Evidence Based Practices (EBP) / supported service code	SD - unavailable	
		OC - unavailable	
		Solano - available	
		LA - available	
	Medi-Cal beneficiary	SD - available	Combined with original pay source
		OC - available	
		Solano - available	
		LA - available	
All other mental health services utilized by consumers that started services between Jan. 1, 2017 – Dec. 31, 2019	Service / procedure code	SD - available	
		OC - available	
		Solano - available	
		LA - available	
	Location code	SD - available	
		OC - available	
		Solano - available	
		LA - available	
	Facility code	SD - unavailable	
		OC - unavailable	
		Solano - unavailable	

		LA - unavailable	
	Service Date	SD - available	Assignment open date and assignment close date
		OC - available	
		Solano - available	
		LA - available	
	Evidence Based Practices (EBP) / supported service code	SD - unavailable	
		OC - unavailable	
		Solano - available	
		LA - available	
	Service – Inpatient	SD - available	
		OC - available	Emergency room
		Solano - unavailable	
		LA - available	
	Service – Crisis residential	SD - available	
		OC - available	
		Solano - available	
		LA - unavailable	
	Service – Crisis stabilization	SD - available	
		OC - available	
		Solano - available	
		LA - unavailable	
	Service – Urgent care	SD - available	Crisis outpatient and urgent outpatient
		OC - unavailable	
		Solano - unavailable	
		LA - unavailable	
	Service – Long-term care	SD - available	
		OC - available	
		Solano - available	Psychiatric health facility service
		LA - unavailable	
	Service – Forensic services and jail services	SD - available	
		OC - unavailable	

		Solano - unavailable	
		LA - unavailable	
	Service – Referrals	SD - unavailable	
		OC - unavailable	
		Solano - unavailable	
		LA - available	
	Service – Law enforcement contacts	SD - unavailable	PERT contacts only
		OC - unavailable	
		Solano - unavailable	
		LA - unavailable	
	Service – Justice system involvement	SD - available	
		OC - available	Juvenile court/Juvenile hall
		Solano - unavailable	
		LA - unavailable	
	Service – Regional center involvement (any developmental issues)	SD - available	
		OC - unavailable	
		Solano - unavailable	
		LA - unavailable	
	Service – Substance use services	SD - unavailable	
		OC - unavailable	
		Solano - unavailable	
		LA - unavailable	
	Services – Others	SD - unavailable	
		OC - unavailable	
		Solano - unavailable	
		LA - unavailable	

*Note: The availability of these data elements is still being finalized.

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