



# OPEEKA'S

## Person-Centered Intelligence Solution (P-CIS)

Pronounced /Pieces/ for short!

[www.opeeka.com](http://www.opeeka.com)



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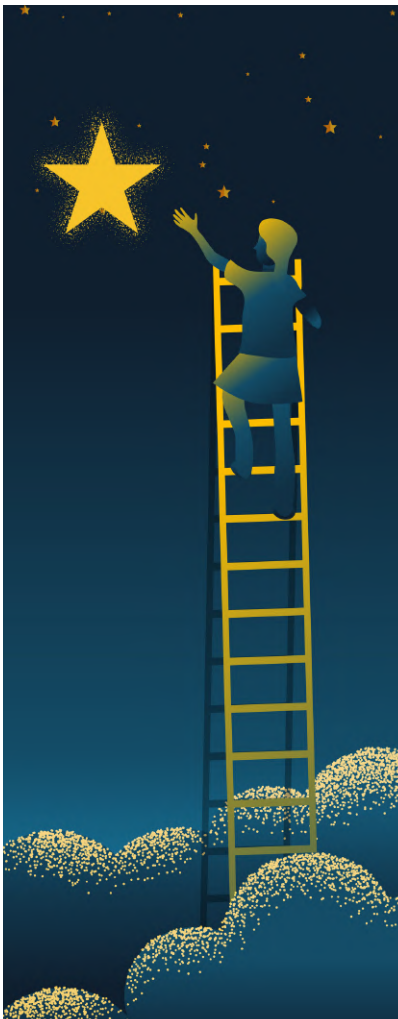
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**Kate Cordell, PhD, MPH**

*Kate Cordell*



## President's Introduction

Well-being is as challenging to define as it is to develop. Just about every person struggles with well-being from time to time, and for some it is a lifelong battle. At Opeeka, our mission is to promote well-being, for those who benefit from occasional reminders of gratitude to those who struggle with depression, addiction, homelessness and safety. If well-being is a ladder, then our goal is to help empower every person to take upward steps.

When reaching for that next rung, sometimes we may benefit from a helping hand, and a variety of assistance is available through programs, interventions and therapies. Everyone's circumstances are unique and what may be helpful to one person may be less so for another. That is why person-centered care is so important.

Opeeka's Person-Centered Intelligence Solution (P-CIS, /Pieces/) uniquely facilitates the implementation of person-centered care while tracking trajectories of recovery and resilience. P-CIS supports collaboration between the person, his/her/their natural supports and a care circle of helpers. P-CIS supports the use of custom definitions and assessments of well-being.

P-CIS allows tracking on any domain of well-being, applying Success-Focused Artificial Intelligence (SF-AI) to identify positive trajectories of recovery and resilience on any combination of well-being domains. Building local knowledge bases of what works for whom, P-CIS facilitates nimble adjustments to care before a person disengages, terminates care, or steps back down a rung on the ladder of well-being.

At Opeeka, we help you define and track well-being. From your efforts, we provide you insights on what works so that care will result in continuous improvements in well-being. We help people and their care circle together, to climb the ladder of well-being with maximal effectiveness and efficiency.

## Chapter 1: What is P-CIS?

P-CIS is an assessment and outcomes management tool designed to help social and human services and mental/behavioral health care agencies and their staff to plan and guide person-centered care while measuring progress along personal trajectories of recovery and resilience. It does this in two ways.

First, P-CIS converts assessment and discovery information responses on all types of questionnaires into highly useful information about a person's story and about a person's change in circumstances during care. This informs care planning and delivery decision-making in ways that a service team can't do otherwise.

Secondly, P-CIS uses success-focused artificial intelligence (SF-AI) to learn about an agency's population needs and drivers of success. P-CIS can help an agency better understand practitioner successes as well as population trends. This process, described further in Chapter 7, reinforces good care decisions, reducing and preventing institutionalized biases. P-CIS promotes collaboration (see Chapter 2), assesses personal definitions of well-being (see Chapter 3), captures and helps honor voice and choice (see Chapter 4), tracks recovery and resilience (see Chapter 5), helps improve systematic reviews of appropriateness and adequacy of care (see Chapter 6), and provides insights into what works for whom (see Chapter 8).

P-CIS can help agencies evidence program strengths, instilling confidence for expanding successful services. P-CIS can also help agencies guide staff toward successful decision processes as well as foster and recognize staff strengths, improving staff self-confidence and retention. It can identify who an agency is serving well and for whom additional services and supports might be indicated. P-CIS can help agencies prove and improve on their own stories of success.



# Chapter 2: Creating Collaborations

Whether your staff work in multi-disciplinary teams, child and family teams or care circles, P-CIS facilitates collaboration and teaming to promote transformations of well-being. In P-CIS, you can identify large programs or more specific models or interventions; or you can track more detailed modularized evidence-based practices (EBPs), which could be combined under one larger care plan. Regardless of the level chosen for tracking, all of these activities are called "Collaborations" in P-CIS, to promote the concepts of person-centeredness in care. Staff are referred to as "Helpers" of the Collaboration and family members and other non-paid natural supports are called "Supports."

In P-CIS, a person in care can be enrolled in multiple Collaborations at one time. For example, a person may be enrolled in a Collaboration for PTSD, and as necessary, another overlapping Collaboration for recovery from addiction. If specific practice is implemented, perhaps Eye Movement Desensitization and Reprocessing (EMDR) is also provided. The person would be enrolled in all three Collaborations during the times applicable for each practice or set of practices, as seen in the example below.

**Current Collaborations**

Collaboration Post-Traumatic Stress	Start Date 7/1/2020	End Date	<input checked="" type="checkbox"/> Primary
Collaboration Recovery Alcohol & Drug	Start Date 7/6/2020	End Date	<input type="checkbox"/> Primary
Collaboration EMDR	Start Date 8/3/2020	End Date 8/28/2020	<input type="checkbox"/> Primary

P-CIS promotes a collaborative care circle by identifying the many Supports and Helpers for a person in care. In addition, the P-CIS multi-tenant architecture supports collaboration between agencies and jurisdictions (i.e., counties or authorities). Helpers can be from the same jurisdiction/agency or from a number of collaborating jurisdictions/agencies within a system of care. In this way, Helpers from social services agencies can work together with behavioral health providers and the person in care, securely sharing information between all parties to unify a care plan. Although P-CIS promotes sharing, it holds the highest regard for data security and sensitivity, allowing each individual piece of data to be shared or redacted as confidential information.

**Current Supports**

First Name Gabriel	Last Name Marin	Relationship Friend	Start Date January 1, 2020	End Date
Phone 555-555-5555	Email jp2020@gmail.com			



## Chapter 3: Assessing Well-being

P-CIS supports customized definitions of well-being. Depending on the focus of a Collaboration, improving well-being may take on many forms. For one person in care, improvements in well-being may be defined by decreased symptoms of anxiety, assessed by a Hamilton Anxiety Rating Scale, reaching success at a particular goal. For another person in care, improvements relate to adjustments to traumatic experience, measured by improvements on a post-traumatic stress disorder (PTSD) test. P-CIS flexibly allows the calibration of any type of questionnaire or set of questionnaires to track indicators of well-being. Each question on a questionnaire is identified as a potential need, strength or underlying item.

Questions which are identified as potential needs ask about areas where the person could use help, services or supports. An example of a need question is: "How many times in the past month have you felt sad." Questions identified as potential strengths ask about areas in which a person has or could develop skills or talents. An example of a strength question is: "How many times in the past month have you woke up and felt hopeful about your day." In these examples, feeling sad represents a potential need for focus in a collaboration while feeling hopeful represents a potential strength to use or build upon. Questions which are identified as underlying items generally include areas which are important to consider but which cannot be altered. For example, a traumatic experience or a prior suicide attempt are underlying items which cannot be changed but are important to keep in mind during care.










When P-CIS is calibrated, each question of an agency's chosen questionnaire or assessment is identified as a need, strength or underlying item. Collaboration Leads, usually a care coordinator or manager, can identify required questionnaires with reminder schedules for persons enrolled in a Collaboration. When calibrating a Collaboration type, the lead can set thresholds for each question above which areas will be identified for focus of care, kept in the background as watchful areas or not considered during care.

This helps guide staff, especially new staff, on where to focus time and energy during care. For example, a Collaboration for youth with indications of first break early psychosis might set a very low threshold for addressing anxiety and auditory perception anomalies. Alternatively, a collaboration for juvenile justice involved youth might set a low threshold for questions which ask about unstructured and unsupervised recreational time spent in the community. P-CIS allows customizable collaboration to help guide staff on which needs are important for focus and which strengths are important to build for specific populations served.



In the example below, the line chart shows that the person in care initially identified 12 areas as needs for focus or strengths to build. The number of areas which were a focus in care increased to 13 and then to 15 over the first year. By day 399 in care, the number of areas of focus decreased to eight.

The colored grid below identifies the specific areas of focus. While only the top four questions from the questionnaire are visible in the screen shot, one can see that the person is working with supports to improve family functioning, and that living situation, social functioning and recreational time are all being monitored as prior needs of focus which are now in the background.

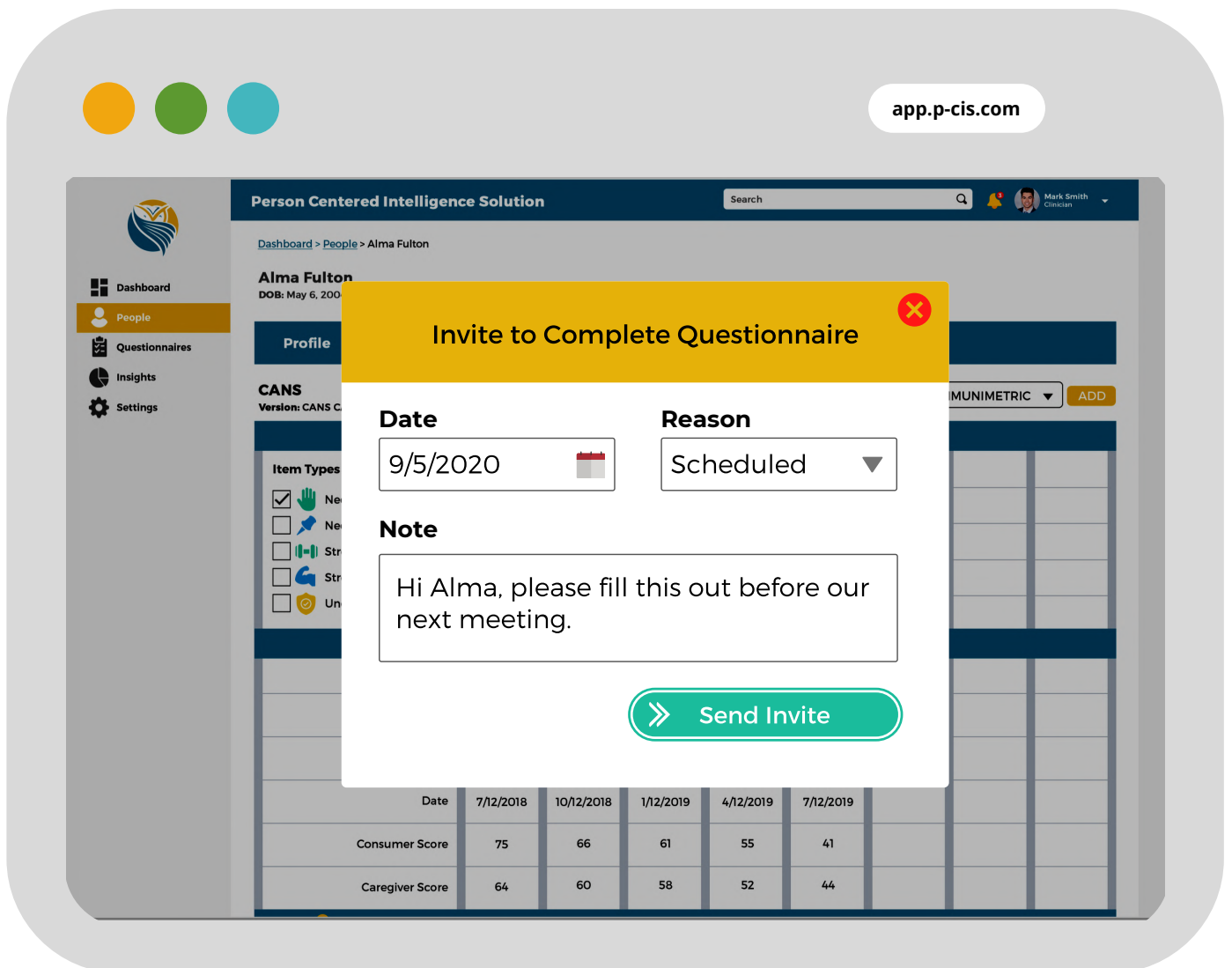
	Time 1	Time 2	Time 3	Time 4
<b>Item Types</b>			15	
<input checked="" type="checkbox"/>  Need for Focus				
<input type="checkbox"/>  Need in Background		13		
<input checked="" type="checkbox"/>  Strength to Build	12			
<input type="checkbox"/>  Strength Present				
<input type="checkbox"/>  Underlying Item				8
<b>Status</b>	Complete	Complete	Complete	Complete
<b>Days in Collaboration</b>	0	150	346	399
<b>Date</b>	2/8/2018	7/9/2018	1/20/2019	3/15/2019
<b>Consumer Score</b>	40	50	47	40
<b>Caregiver Score</b>	3	9	11	5
<b>Life Functioning Domain</b>	10	15	13	10
+ FAMILY FUNCTIONING 	2	1	2	2
+ LIVING SITUATION 	2	1	2	1
+ SOCIAL FUNCTIONING 	2	1	1	1
+ RECREATIONAL 	2	1	1	1



# Chapter 4: Honoring Voices

For person-centered care, individual and family voice are important. P-CIS supports the collection and tracking of each person’s responses on a questionnaire, otherwise known as an opinion or a voice. A questionnaire can be completed by any member of the care team, including the person in care, their Supports or their Helpers. In addition, the questionnaire can be completed as a combined voice, meaning that the person and their care circle discussed the questions and came to a consensus on the responses. This is called a communimetric, meaning it is a metric that was formed through communication.

In addition to the options of entering assessment responses by each individual’s voice, P-CIS allows an ‘Invite to Complete’ option, which allows Helpers to email a link to people in care or other team members in the care circle to submit their voice for an assessment, without requiring the recipient to be an official user of the software. Helpers select the person from the care circle who will complete the assessment and email them a time-limited, one-time use secure link to a blank questionnaire. Once the recipient has completed the assessment, the responses show in the P-CIS dashboard as that person’s voice.





# Chapter 5: Tracking Recovery & Resilience

P-CIS tracks recovery and resilience over time. In addition to tracking changes in needs and strengths, P-CIS generates a story map which helps illustrate a person’s circumstances. A story map transforms assessments into a visual map so that members of a circle of care can focus on needs and strengths, while considering underlying items and background needs.

In the example below, on the left, one can see that this person experienced several traumatic events listed as Underlying Areas. On the right, one notes the Background Needs, or needs that have not risen to a level that require help. These are needs to be monitored by the care circle members. In the center-left of the map, one sees a prioritized list of needs which are a focus of the collaboration. To the right of that list are the strengths that have been identified to build or the ones already present to use. As this person moves through care, the story map will update as the person’s circumstances shift over time.

### Underlying Areas

Item	Score
Emotional Abuse	3
Physical Abuse	3
Neglect	3
Witness to Family Violence	3

### Action Items

Needs for Focus			Strengths to Build or Present		
Item	Score	Priority	Item	Score	Use/Build
Adjust to Trauma	2	1	Community Life	3	Build
Legal	2	2	Cultural Identity	3	Build
Family Functioning	2	3	Spiritual/Religious	3	Build
Recreational	2	4	Talents	3	Build
Decision Making	2	5	Family Strengths	2	Build
Living Situation	2	6	Interpersonal	2	Build
Social Functioning	2	7	Rel. Permanence	2	Build
			Resiliency	2	Build
			Resourcefulness	0	Use

### Needs in Background

Item	Score
Substance Use	1

P-CIS tracks how individual needs change over time or in combination with other needs, as seen by comparing depression and anxiety in the Item Detail Report to the right. “Notes” for each time point can help contextualize these changes over time, bringing together the most relevant pieces for care planning.

### Depression

Time	Days in Collaboration	Value
1	0	2
2	196	2
3	359	1
4	480	1
5	530	2
6	699	1

**Notes**

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### Anxiety

Time	Days in Collaboration	Value
1	0	2
2	196	2
3	359	1
4	480	1
5	530	2
6	699	2

**Notes**



# Chapter 6: Notify Reminders & Alerts

P-CIS notifies care circle members with important information, allowing Helpers to be even more effective in their collaborations. P-CIS reminds Helpers when scheduled assessments are coming due or are overdue.

P-CIS can also alert Helpers and Supervisors when assessment ratings suggest a need for greater levels of intervention. For example, Collaboration Leads can calibrate and customize P-CIS to alert Helpers and Supervisors when a person with a history of psychosis self-assesses a high level of anxiety, allowing Helpers to provide appropriate care and services to potentially prevent psychotic break.

### ▼ Psychosis with High Anxiety

Rule Name Psychosis with High Anxiety	Rule Level Safety Supervision	
Question Anxiety	Operator >=	Value 3
	Join By AND	
Question Psychosis (Thought Disorder)	Operator >=	Value 1

+ [ADD CONDITION](#)



P-CIS can also alert Helpers and Supervisors for Level of Care, placement or other changes based on combinations of question thresholds. In this example, people assessed with this questionnaire in a trauma-informed collaboration are recommended for step-down care options when symptoms of depression, anxiety, sleep and adjustment to trauma all subside. This function makes P-CIS a uniquely powerful resource in effective transition and discharge planning, an area where nearly all service providers struggle.

### ▼ Step Down Care

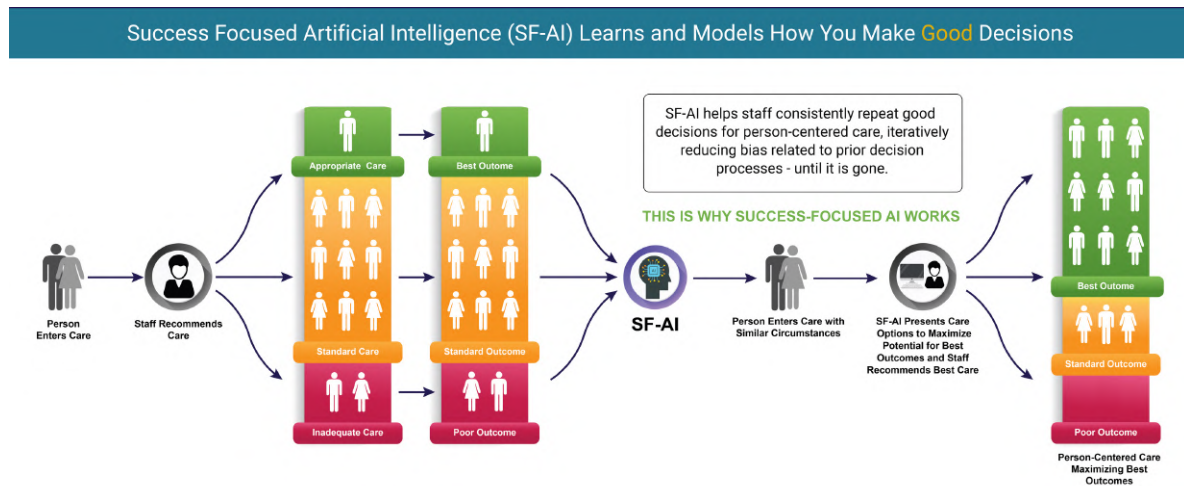
Rule Name Step Down Care	Rule Level Level of Care	
Question Depression	Operator <=	Value 1
	Join By AND	
Question Anxiety	Operator <=	Value 1
	Join By AND	
Question Sleep	Operator <=	Value 1
	Join By AND	
Question Adjustment to Trauma	Operator <=	Value 1

[+ ADD CONDITION](#)

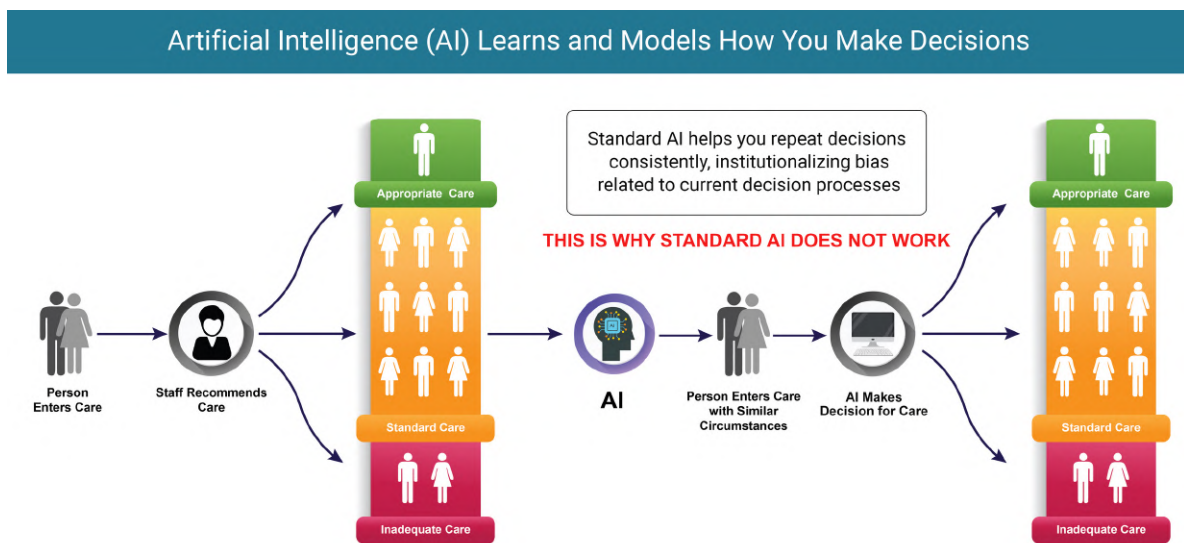


# Chapter 7: Success-Focused Artificial Intelligence

P-CIS employ's Opeeka's proprietary Success-Focused Artificial Intelligence (SF-AI) to generate population Insights, providing interpretable results designed to help care workers use their own expertise and knowledge – supplemented by their history of success – to make the best and most appropriate decisions for care. P-CIS returns examples of successful outcomes on which to base future successful decisions, filtering out institutional bias.



Traditional Artificial Intelligence (AI) bases its future predictions on past decisions, institutionalizing poor decisions and reinstating biases. In contrast, SF-AI provides users with information on all of the options which have resulted in successful outcomes for people of similar circumstances, helping care providers to make decisions which are more likely to result in success again and again. Rather than regressing to the mean, P-CIS helps providers **regress to the best**.



Somewhere, at some time, a person with a certain set of circumstances experienced recovery and resilience. P-CIS capitalizes on examples of success to identify how Helpers and teams can do better. Over time, SF-AI continues to support good decision after good decision, while still considering the full combination of circumstances that a person faces. By regressing an agency toward decisions for optimal well-being, P-CIS promises to help identify and reduce institutionalized bias.

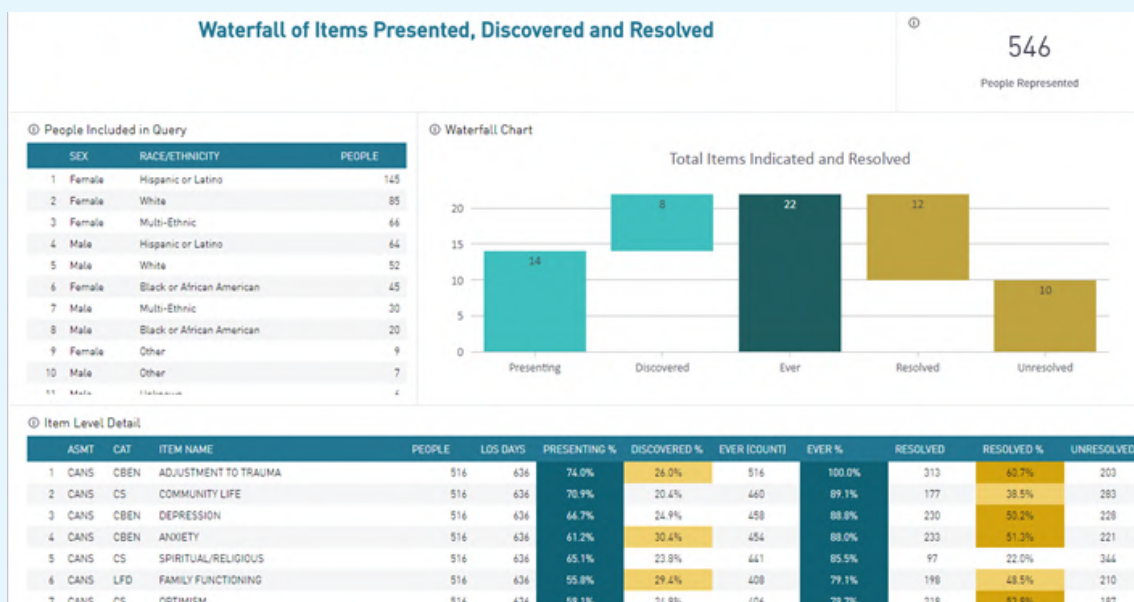


## Chapter 8: Insights Into What Works for Whom

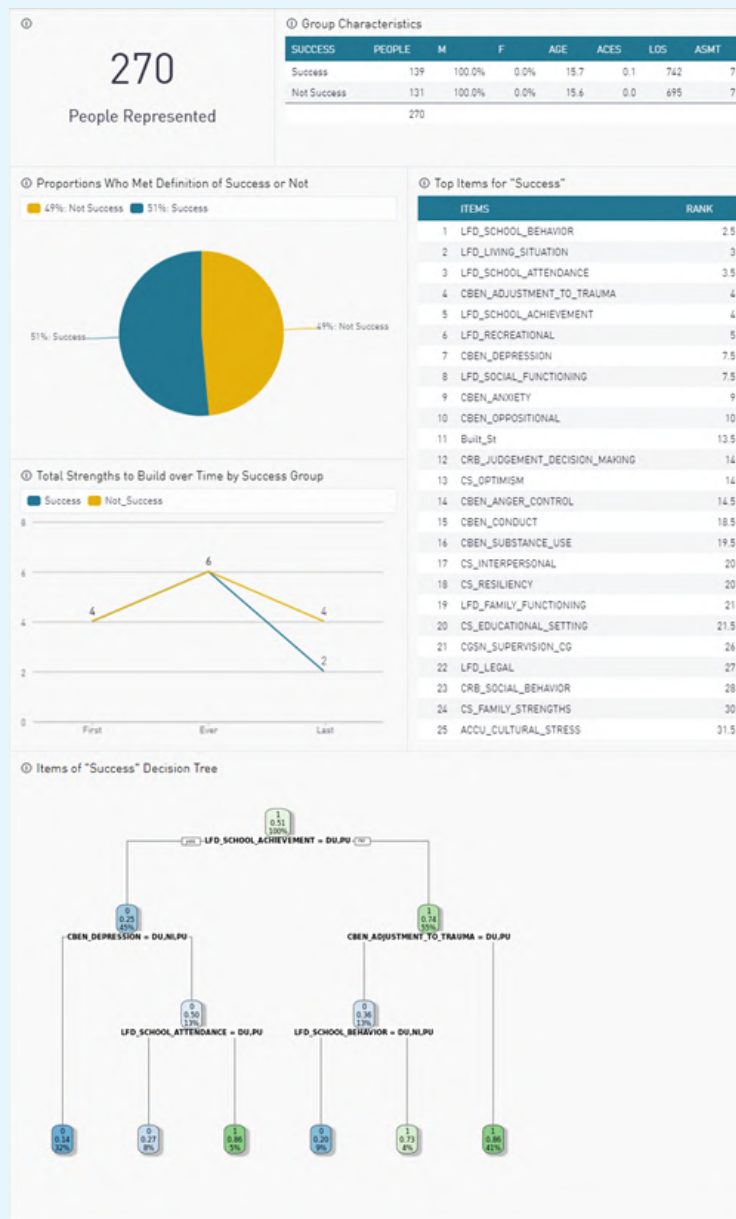
All data captured in P-CIS, from any type of assessment, funnels directly into SF-AI powered dashboards. This allows Helpers, Supervisors, Managers and Administrators to use filters to drill into insights for specific care populations. The dashboards continuously learn about an agency, their Collaborations, Helpers and service populations, updating insights based on who is served and what works for whom.

P-CIS securely and directly connects an agency's data to powerful analysis engines of R and Python, allowing agency analysts to develop their own intelligent statistical models, such as regression, latent class analysis, random forest and even neural networks – directly in P-CIS. There is no longer any need to export data from an electronic health record (EHR) into a CSV file and import it into another statistical processing application for higher level insights, as P-CIS automates analysis directly from assessment data, right after assessments are captured. Providing boundless options for visualization, P-CIS supports filtering and drilling for real-time discovery. Dynamic visualizations with deep learning statistical models are directly available and distributable to an unlimited number of staff. P-CIS has the ability to evaluate and even schedule regular re-analyses to test one's most inquisitive hypotheses.

In addition to the endless customization options, P-CIS provides three standard dashboards: (1) Waterfall of Items Presented, Discovered and Resolved (WIP); (2) Patterns and Priorities of Success (PPS); and (3) Care Compare.



The WIP dashboard helps determine the proportion of people who present with a need, strength or underlying item or are later discovered to have one. This report identifies which areas are more often resolved and which are unresolved after reassessment. By identifying needs/strengths that are often resolved by a program or staff, one can begin to identify program and staff strengths. Staff who are found to resolve needs or build strengths more often can be identified for leadership opportunities to share their approaches and methods with other staff. Conversely, we can also identify needs/strengths which are less often resolved and identify program supports and staff training needs.



The Patterns and Priorities of Success (PPS) dashboard identifies an agency's patterns and priorities of success. It helps determine which people experience successful outcomes and which people more often do not experience successful outcomes according an agency's definition of success. The definition of success is determined by the user "on-the-fly" by selecting from filters: the proportion of identified needs which were resolved, the number of strengths built and the proportion of natural support areas addressed. The user can select different definitions of success to see who is served successfully for each type of outcome. This report helps an agency begin a conversation about which persons are being served effectively, and which persons may need additional services and supports. This report can be used to help generate ideas about what changes an agency could make to staff training, its service continuum, or to support implementation of evidence-based programs. This builds organizational competency, staff confidence and wins contracts/grants for future work.



**CARE COMPARE**  
Match People to Program and Staff using STORY MARKERS

Successful Interventions of Best Matches				Story Marker Items										
INTERVENTION	N	LOS	RESOLVED	ITEM	MARKER1	MARKER2	MARKER3	MARKER4	MARKER5	MARKER6	MARKER7	MARKER8	MARKER9	MARKER10
Intensive Behavioral Health Services	9	288	91.9%	1 CRB_BULLYING					39	33				-35
Outpatient Mental Health Services	8	222	90.8%	2 CRB_INTENTIONAL_MISBEHAVIOR					40	31				-36
Biofeedback	1	145	100.0%	3 CS_RESOURCEFULNESS	35				-30	30				-32
Educational Support Services	1	348	100.0%	4 CS_RESILIENCY	41					30				-31
Residential	1	319	100.0%	5 CGSN_FAMILY_STRESS_OG	37	27				26				-29
	20			6 CBEN_EATING_DISTURBANCE					27	26				
				7 CS_INTERPERSONAL	48									-32

Best Possible Matches																			
YOUTH	MATCHEE	SEX	RACE	PROGRAM	INTERVENTION	LOS	NEEDS	RESOLVEI	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	DIFF
1	Snyder, Beverly (Female 1...	To be Match...	Female	Black or African Americ...	PGM-001...	Outpatient Mental Health Servic...	182	4	100.0%	7%			3%	8%			1%		0.0%
2	Hobbs, Abigail (Female 13...	Possible Ma...	Female	White	PGM-002...	Outpatient Mental Health Servic...	135	5	80.0%	7%				4%	6%		1%		1.3%
3	Strong, Aiko (Female 12) 5...	Possible Ma...	Female	Other	PGM-002...	Outpatient Mental Health Servic...	170	3	66.7%	7%		0%	1%	6%			1%		1.5%
4	Berry, Allegra (Female 14)...	Possible Ma...	Female	Hispanic or Latino	PGM-003...	Outpatient Mental Health Servic...	233	5	80.0%	8%				3%	8%		4%	1%	1.7%
5	Berry, Allegra (Female 14)...	Possible Ma...	Female	Hispanic or Latino	PGM-003...	Outpatient Mental Health Servic...	301	5	100.0%	8%				3%	8%		4%	1%	1.7%
6	Russell, Yoko (Female 15)...	Possible Ma...	Female	Hispanic or Latino	PGM-007...	Outpatient Mental Health Servic...	319	3	100.0%	9%		0%	0%	6%					1.7%
7	Kennedy, Signe (Female 1...	Possible Ma...	Female	Hispanic or Latino	PGM-001...	Intensive Behavioral Health Ser...	241	1	100.0%	8%		0%		5%			0%		1.8%
8	Crosby, Lunea (Female 17)...	Possible Ma...	Female	Hispanic or Latino	PGM-001...	Intensive Behavioral Health Ser...	241	5	80.0%	6%			0%	4%		5%	3%		1.9%
9	Russell, Yoko (Female 15)...	Possible Ma...	Female	Hispanic or Latino	PGM-009...	Residential	319	3	100.0%	9%		0%		6%					1.9%
10	Crosby, Lunea (Female 17)...	Possible Ma...	Female	Hispanic or Latino	PGM-001...	Intensive Behavioral Health Ser...	259	5	80.0%	6%				4%		5%	3%		1.9%
11	Hart, Keiko (Female 9) 77...	Possible Ma...	Female	Hispanic or Latino	PGM-003...	Outpatient Mental Health Servic...	271	1	100.0%	6%		1%	1%						2.0%
12	Kelley, Kirsten (Female 12...	Possible Ma...	Female	Hispanic or Latino	PGM-003...	Educational Support Services	348	4	100.0%	5%			2%	7%		1%	3%	0%	2.0%
13	Dixon, Desirae (Female 12...	Possible Ma...	Female	Black or African Americ...	PGM-001...	Intensive Behavioral Health Ser...	66	5	100.0%	7%				11...	7%		4%		2.0%
14	Shields, Jamalia (Female ...	Possible Ma...	Female	Black or African Americ...	PGM-001...	Intensive Behavioral Health Ser...	432	4	100.0%	4%				1%	8%		4%		2.1%
15	Jenkins, Aline (Female 15...	Possible Ma...	Female	Hispanic or Latino	PGM-006...	Biofeedback	145	2	100.0%	9%				5%	10...		1%		2.1%
16	Oconnor, Linda (Female 1...	Possible Ma...	Female	White	PGM-001...	Intensive Behavioral Health Ser...	259	8	100.0%	5%				8%	11...		2%		2.1%

The Care Compare dashboard is a decision support tool providing information about past performance to support care decisions. For incoming people or for people needing a change to their care plan, Care Compare uses Story Markers to help identify similar people who have been successfully served previously by the agency. The dashboard displays data from the 20 most similar people successfully served, identifies the Collaborations, the care duration and the level of success. The goal of this dashboard is to support decisions for care and to plan for services by curating relevant historical information. Care Compare also assists with identifying average time in care for appropriate resource planning.

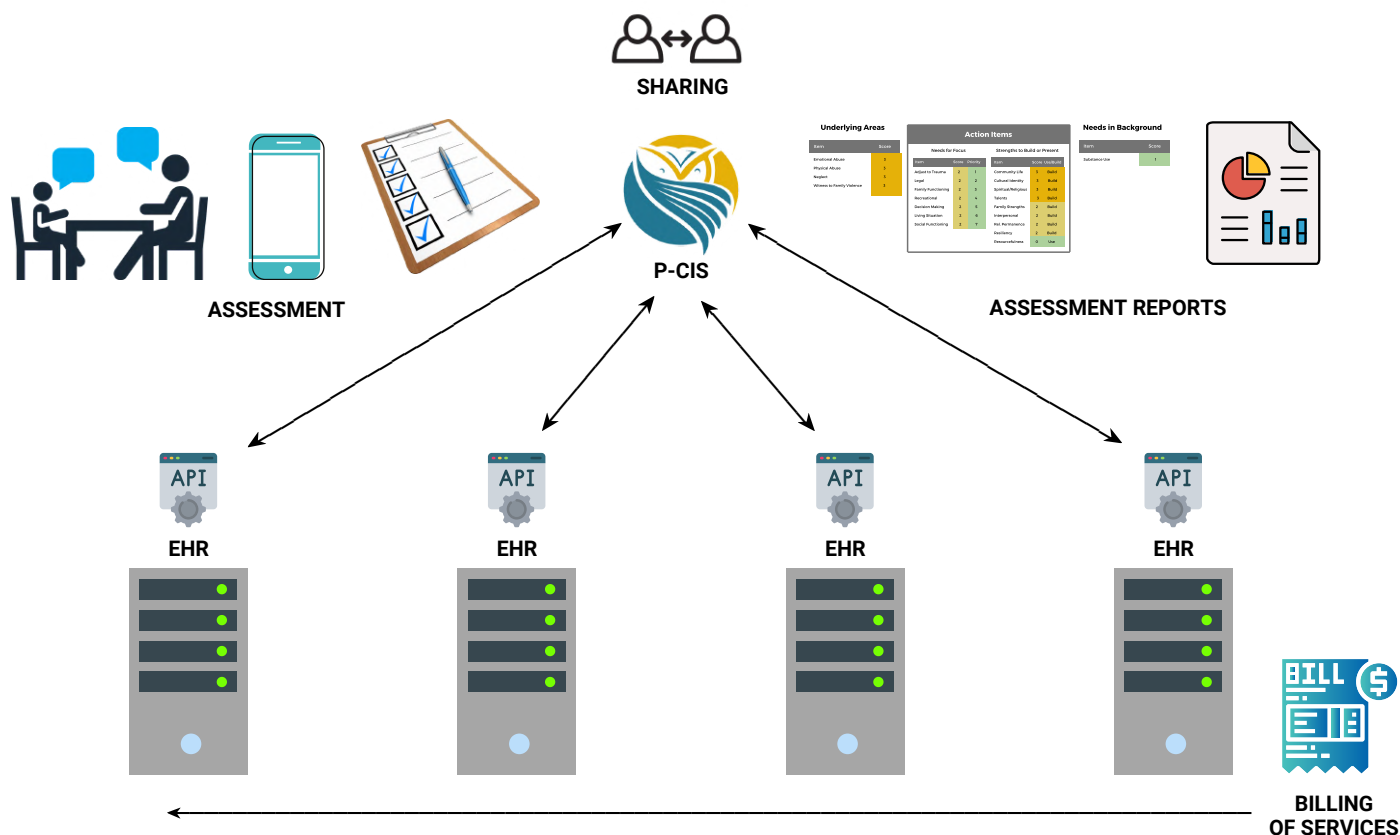


# Chapter 9: EHR & Data Warehouse Integration

P-CIS does not replace an Electronic Health Record (EHR) but it complements one. EHRs are important tools for billing and compliance. P-CIS is an important solution for managing care quality and outcomes. P-CIS is designed to work with an EHR, sharing information about staff and people as necessary. P-CIS' built-in API securely shares information with EHRs, keeping in sync with incoming staff and people in care. In addition, customization of P-CIS dashboards and SF-AI engines easily integrates additional information gathered from the EHRs, such as minutes of services, service costs, staff certifications, staff productivity, emergency incidence or time from first contact to care, for example. P-CIS integrates these additional pieces of information to further inform care quality and care planning.

P-CIS dashboards are equipped to link to existing warehouses and data repositories managed with fine-grain control to ensure secured access to all of an agency's EHR or data warehouse views and tables. On the analytics side, P-CIS can securely connect to data repositories in Azure SQL Server, Amazon AWS, Salesforce, Snowflake, MySQL, Athena, BidQuery, Qubole or via a tunneling protocol, to name a few options. Custom P-CIS dashboards can easily incorporate data and deploy data visualizations and analytics across agencies in fully HIPAA-compliant manner. Authentication on login to P-CIS drives which data pieces a person can see, democratizing data from all data repositories for an agency. P-CIS analytics replaces a need for any other data visualization and analytic tool for all data centers of an agency. It localizes visualization and analytics efforts while managing data access through P-CIS security controls.

P-CIS also offers "spaces" where an agency's analytic staff can login and perform research and evaluation across all of an agency's data. Within the analytic space, analytic staff can link to all data repositories and create centralized analytic visualization dashboards. P-CIS analytics spaces replace expensive data visualization software which offer only costly and inefficient dashboard sharing options.





## Conclusion

Person-centered care considers a person's cultural values, circumstances, desires, natural supports, cross-system involvement and care circle. Ultimately, this means that well-being is defined by the person, and person-centered care is designed to help a person climb his/her/their uniquely defined well-being ladder.

To maximize self-defined and person-centered processes, questionnaires and assessments capture information, voice and choice about a person's circumstances, desires and goals while in care. However, while much of this information is already captured and available in EHRs, until P-CIS, it has not adequately or effectively been translated in ways that support service planning or care coordination. By capturing and organizing assessment information in uniquely intelligent and useful ways, Opeeka's P-CIS helps care circle members be far more effective and efficient, and it supports an authentic person-centered and empowered care experience for all. P-CIS helps Helpers help people.

