# HOW P-CIS ENABLES COORDINATED CARE ACROSS A SYSTEM OF CARE

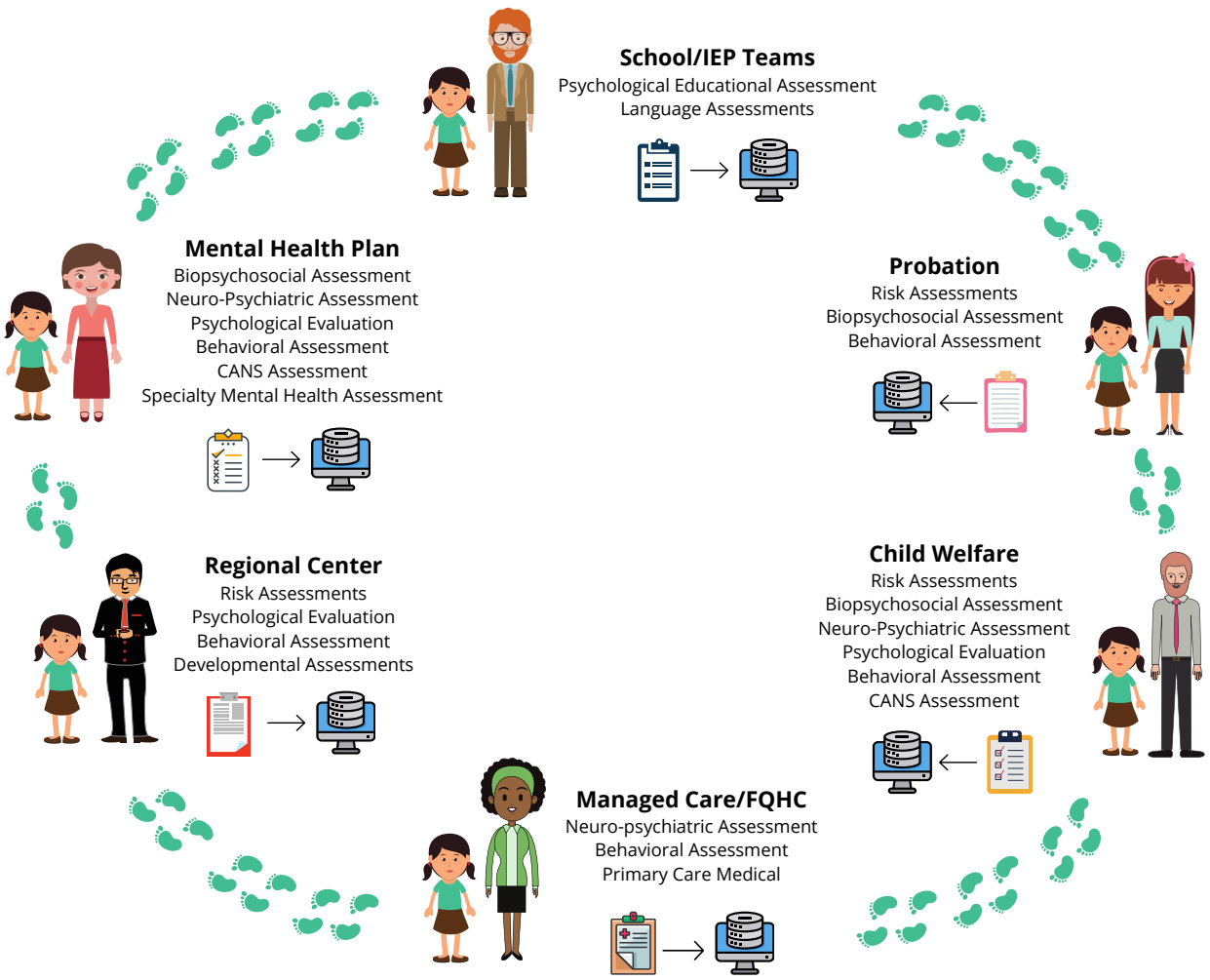
OPEEKA

# CONTENTS

This whitepaper begins a conversation about how to remove technology barriers from the system of care in order to support collaboration and coordination of care for multi-system served children/youth and families.

## The Challenge

Children, youth, and families who are served by multiple public programs are often challenged to navigate an uncoordinated system of care by traveling to many different agencies and knocking on many different doors. To access care, children/youth and families must tell and re-tell their stories to many different people. Once in care, multiple programs collect duplicative information, provide competing care plans, often with opposing schedules. Children, youth, and families could achieve better outcomes through a better coordinated system of care.



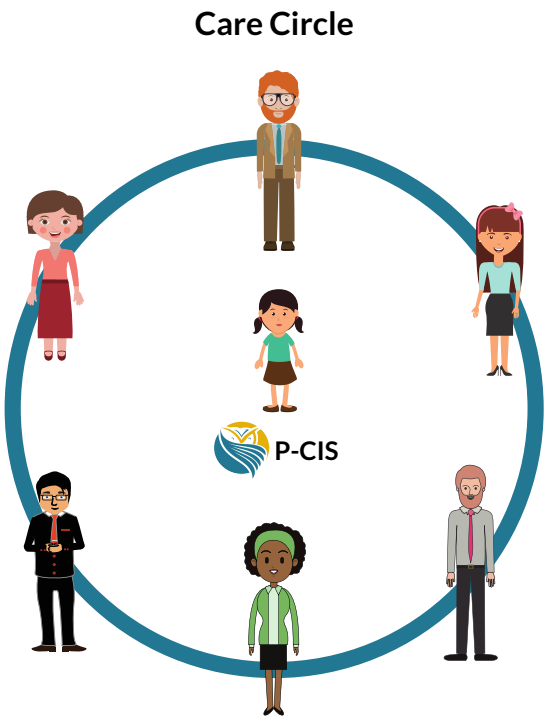

*A system of care is a spectrum of effective, community-based services and supports for children and youth with or at risk for mental health or other challenges, that is organized into a coordinated network with a supportive infrastructure, builds meaningful partnerships with families and youth, and addresses their cultural and linguistic needs, in order to help them to function better at home, in school, in the community, and throughout life (Stroul and Blau 2010, p61).*

## Supporting a System of Care

Organization, coordination, and support: These elements are what make a system of care meaningful for children and families who are being served by more than one program, provider, and network of service. Historically, technology has been a barrier to coordination of care. Those who were providing care had to maintain their records internally, as a means of maintaining confidentiality. But those barriers no longer make sense given the technological advancements in online information security. It is now possible to coordinate collaborative AND confidential sharing of client information in a secure and HIPAA compliant environment. Technology can now support and further enable collaboration between various health and service providers.

This whitepaper discusses each point in subsequent chapters.

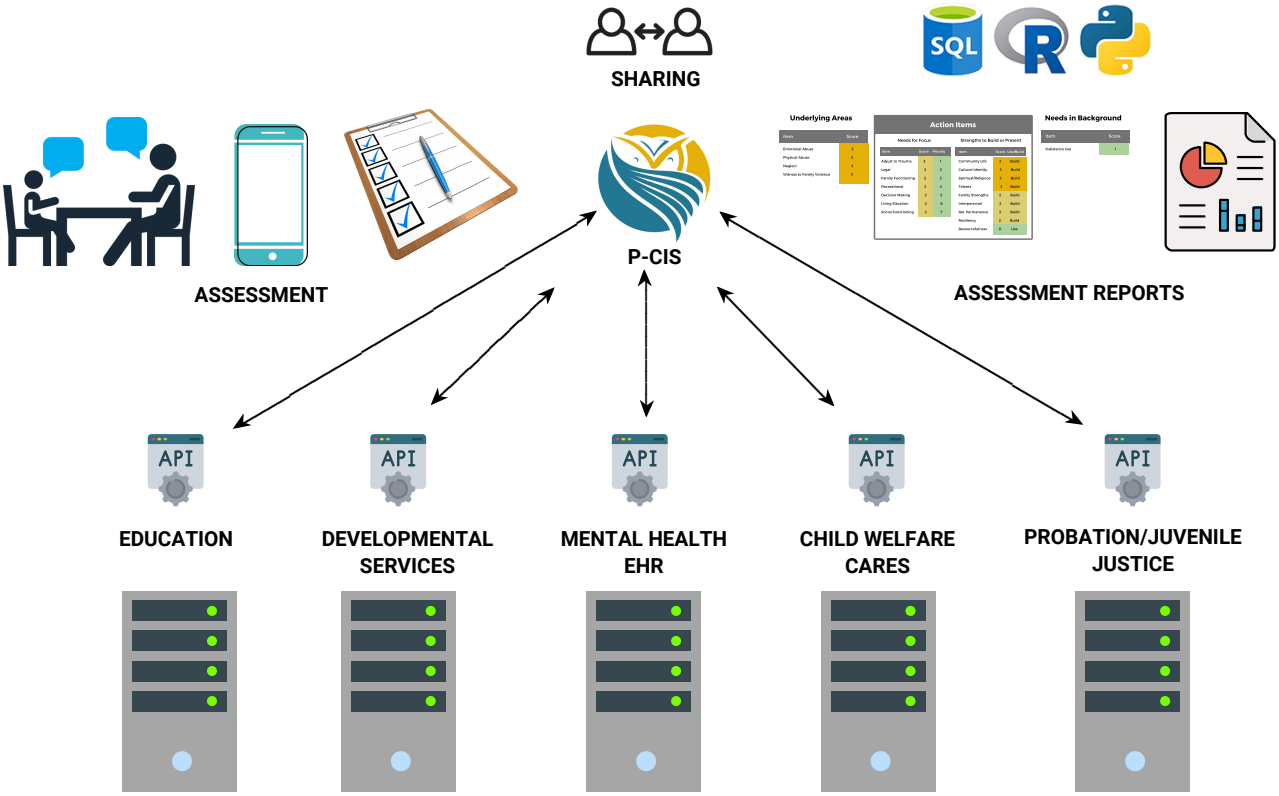
- Commitment to implementation of an integrated core practice model (Chapter 1)
- Processes for screening, assessment, and entry to care (Chapter 2)
- Processes for child and family teaming and universal service planning (Chapter 3)
- Unifying Information for Coordinated Care (Chapter 4)
- P-CIS Care Circles (Chapter 5)
- Evaluating the System of Care (Chapter 6)



## Person-Centered Intelligence Solution Overview

Opeeka's P-CIS is a HIPAA compliant, multi-agency solution that allows care agencies to coordinate outcomes over time, from an initial screen to post-care satisfaction surveys. Assessments are at the heart of every care system, helping to identify eligibility, level of care, rate of reimbursement, cultural preferences, level of need, areas of strength, functioning, past experiences, diagnosis, progress, satisfaction and final outcomes. P-CIS converts any type of questionnaire information into meaningful information at the point of care, mapping responses onto story maps and trajectories of resilience and recovery. P-CIS connects data directly to analysis engines, so that information gathered is immediately funneled into outcomes evaluation – so that care can be adjusted while people are still in care. See Opeeka's President's Whitepaper for more information about specific functionalities of P-CIS.

Designed to integrate with any platform or existing electronic record, P-CIS also unifies outcome tracking across the elements of care. P-CIS unifies information through six modes: electronic record integration, direct entry, emailed invitations to complete questionnaires, Inquisitive Data Exchange (IDE) with external records, P-CIS Care Circles, and data warehouse linkages. Whether data is collected directly in P-CIS or through electronic records, P-CIS' prudently designed multi-agency allows organizations to judiciously share very specific information about people who are co-served, encouraging teaming, and coordinating efforts for multi-system and cross-county care. The inter-operability with electronic records means that staff will not need to find and log into yet another system of siloed information as P-CIS can launch from your agency's native electronic systems. P-CIS passes only the relevant and permissible information back to the electronic system of record, allowing audits to continue from within existing systems of authority, without change. However, because P-CIS supports HIPAA compliant multi-tenancy, this means that error-prone and burdensome secure file transfer to county or state authorities will become unnecessary, freeing staff time to support information where it makes the most impact – at the point of care.



An Integrated Care Model identifies shared values, core components, and standards of practice for agencies serving children, youth, and families. P-CIS was built as a solution which supports ten guiding principles of such a model. Discussed further and with examples in Opeeka's President's Whitepaper, P-CIS addresses each of these topics as briefly outlined below.

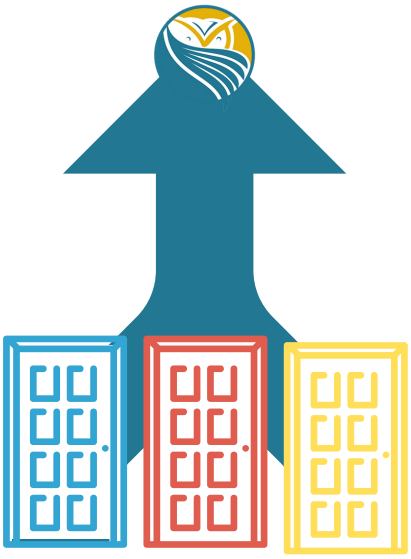
## Integrated Care Model Guiding Principles Operationalized in P-CIS

| | |
|---|---|
| **1. Family voice and choice** | P-CIS tracks each individual's opinion and graphs perceptual differences over time. |
| **2. Team-based** | P-CIS helps multiple staff who may be assigned to the same person to work together as a team. |
| **3. Natural supports** | P-CIS captures and tracks all family members and natural supports for a person in care. It also captures each support's responses on assessments. |
| **4. Collaboration and integration** | P-CIS supports multiple helpers from different agencies to work with the same information or shared records. |
| **5. Community-based** | P-CIS tracks person participation in residential and community-based settings. It automates algorithms which instantly produce recommendations for step-down care so that a person in residential care can return to lower-intensity community-based care more quickly. |
| **6. Culturally respectful** | P-CIS tracks any type and any number of affiliations (e.g., Tribe, Church, Wellness Center, Medicaid Status), preferred language, primary language, unlimited race/ethnicities, identified gender, sex, and sexual orientation. All of these options are customizable to meet local population needs. |
| **7. Individualized** | P-CIS encourages individualized care by helping staff quickly see when care is tracking along successful trajectories, encouraging nimble adjustment to care when needed. |
| **8. Strengths-based** | P-CIS tracks strengths present for each person as well as for a population. It also tracks strengths that can be built as a goal. On dashboards, staff can quickly see how strength-based the care is for a person, program, or entire agency. |
| **9. Persistence** | P-CIS Care Compare helps staff find what has worked for people with similar circumstances in the past. This supports care circles to continue to generate ideas on what might work for this person today. |
| **10. Outcomes-based** | P-CIS is an outcomes management solution. It converts assessment information into trajectories of resilience and recovery for individuals, groups, programs, staff, supervisors, agencies, counties, and states. P-CIS helps identify strengths and needs for individuals and for systems alike. |

A child or youth's access to care can be difficult due to restricted pathways (e.g., families must enter care through the child welfare agency to access mental health related services because their health insurance won't cover the service needed), and limiting criteria for entry (e.g., people must have specific set of circumstances or diagnoses), with families turned away from service because they tried to access certain services through the 'wrong door' (Miller, Blau, Christopher, & Jordan, 2012). When a child/youth presents for care, an agency might not know about or have access to the same screens or assessments already performed by another agency in the system of care. The child/youth and family must complete the same screens and assessments multiple times at different agencies to access a necessary part of care.

The process for screening, assessing and determination of care are specific to an agency and local population. These processes also adapt as policies and population needs adjust over time. **A system which facilitates screening, assessment, and entry to care must be flexible to accommodate a wide variety of processes and must be adaptive to adjust over time. P-CIS manages any type of screen or assessment, applying level of care and rate determination algorithms to produce recommendations immediately upon completion.** All of this functionality is flexibly customizable by organization administrators. When screening or assessment processes change, local agencies can directly adjust settings in P-CIS, and P-CIS implements the change in process across care - instantly.

Additionally, P-CIS supports sharing of screening, assessment, goals, and outcomes information within a Care Circle. When two or more agencies agree to collaborate to serve children/youth for certain types of care, each agency can designate exactly which programs/practices to share, which contingent screens/assessments to share, and which contingent questions to share for which individuals under which circumstances (e.g., release of information was obtained, a signed waiver was collected, informed consent was gathered.) In this way, when a child/youth presents for care, an agency that is part of a Care Circle in P-CIS can search for that person and access any legally shared screens, assessments, outcomes, and goals for that child/youth — for just the information that was not redacted. If the screen or assessment was recent, then the child/youth and family do not need to undergo another of the same type of screen or assessment. In addition, family goals can be shared and aligned. Any additional information can be shared back by partner agencies. Notes related to that screen or assessment will alert the care partner about complementary care, and the staff can work together to coordinate plans. **Now, there is no 'wrong door,' because all doors lead to the person-centered care which is centralized in P-CIS.**



**No Wrong Door**

*When a child/youth presents for care, an agency that is part of a Care Circle in P-CIS can search for that person and access any legally shared screens, assessments, outcomes, and goals for that child/youth — for just the information that was not redacted.*

*Now, there is no 'wrong door' because all doors lead to person-centered care which is centralized in P-CIS.*

Health providers nationwide have worked hard over the last years to implement successful child and family teaming processes, reflecting the evolving science behind evidence-based practice. Yet a practical integrated approach remains to be realized due to technological barriers and siloed organizations.

## Current technology barriers result in:

- **Duplicate Efforts and Wasted Resources.** Duplicate assessments are being collected across agencies where data sharing is not technologically possible.
- **Uninformed Practice.** Important information which could inform practice never reaches the point of care in time.
- **Unsupported Data.** Local partners have local needs and may use different versions or altogether different screens/assessments/goals. When there are differences, this creates more barriers to capturing and sharing important information and data.
- **Uninformed System.** It is impossible to evaluate or monitor care for a whole child/youth and family because each agency in the system captures only one part of the overall well-being and safety of the child/youth and family.
- **Unsupported Collaboration.** System partners utilize different electronic systems to capture information, screens/assessments/goals on different timelines. They use different words to identify common tasks and practices. There is no universal system to support a collaborative workflow.

Collaboration is possible. One step is to remove the technology barriers.

## Technology barriers addressed by P-CIS:

**No Duplication of Efforts.** P-CIS fosters collaboration through its Care Circles. In Care Circles, agencies can set up sharing for sets of people and sets of questionnaire types and allow for the redaction by question as necessary. Since P-CIS uses a standardized data model for questionnaires, any type or version of assessment can be shared or unshared at any time. Sharing can happen between any participating partner agencies in Care Circle.

**Informed Practice.** Since P-CIS Care Circles support secure sharing of data and P-CIS Application Programming Interface (API) supports secure exchange of data between electronic record systems, information about children's/youth's and families' needs, strengths and circumstances can be available in real time at the point of care. P-CIS can ingest data from departments, agencies, local electronic records and any other standardized data source. In this way, P-CIS will allow every child/youth and family to experience informed practice through a fully supported and integrated practice model.

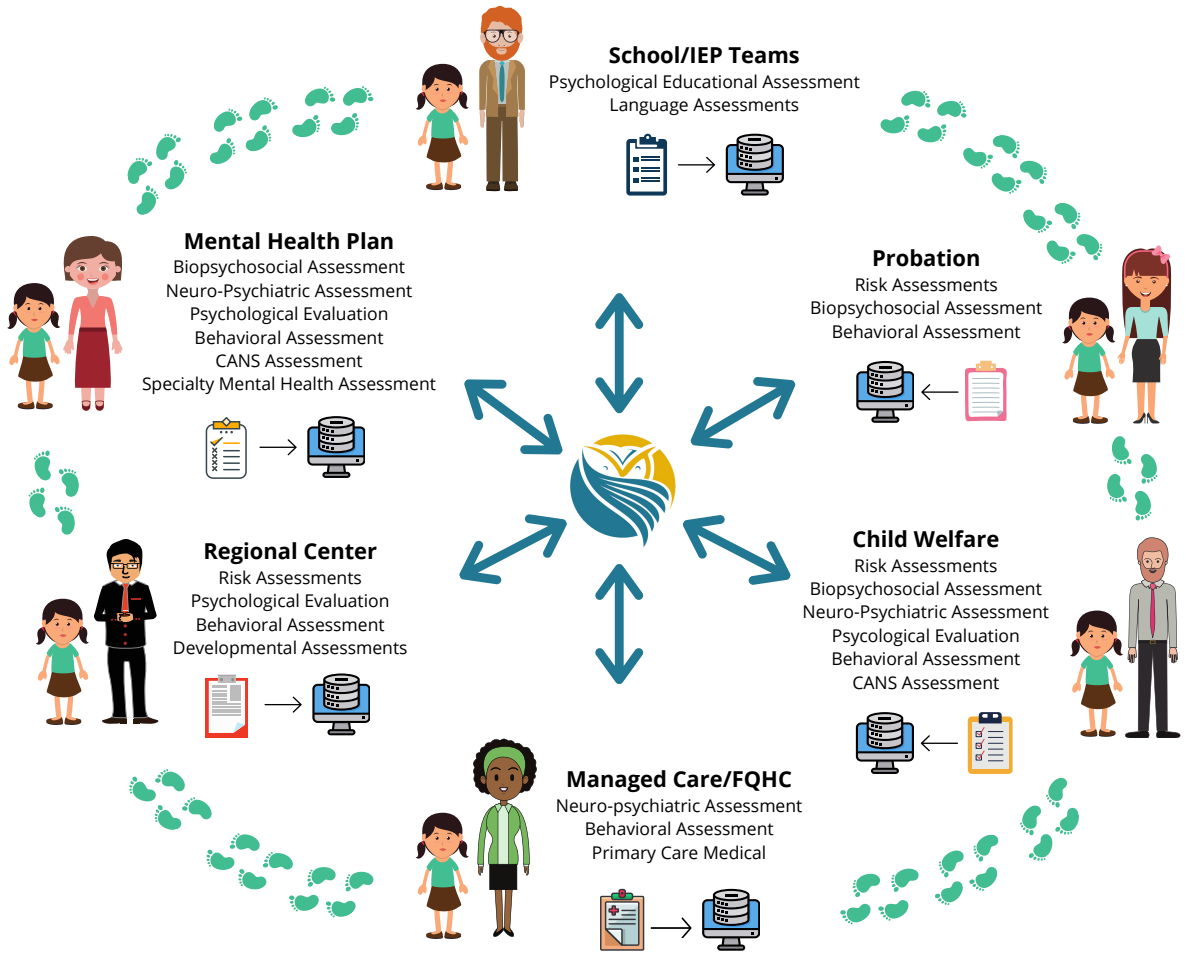
**Supported Data.** P-CIS supports any type of assessment or questionnaire and allows for multiple versions. In this way, local and state agencies can choose the assessments and the versions of assessment that are right to inform local practice. P-CIS standard and questionnaire agnostic system allows for easy calibration of nearly any type of assessment in just a few minutes. So not only does P-CIS support any version of the CANS, but it also supports any version of the Strengths and Difficulties Questionnaire (SDQ), the Pediatric Symptom Checklist (PSC), Wraparound measures and tens of thousands of other questionnaire types, including an agency's own questions. P-CIS also captures youth voice, supported by an Invite to Complete functionality which allows staff to email questionnaires to youth, caregivers, supports and external workers for completion. P-CIS tracks whose voice each response represents.

**Informed System.** P-CIS acts as a central repository for all assessments, outcomes, and goals for the individual children/youth and families served by the system of care. Further, P-CIS integrates analytical engines of R and Python such that data funnels directly into customizable analytic processes. P-CIS comes with standard person-level, family-level, staff-level, program-level, county-level and state-level dynamic analytical dashboards powered by R and Python. In addition, local analytic staff can customize new evaluation models and dashboards through the P-CIS open analytical interface. In this way, staff can monitor system outcomes and algorithms for quality, performance, and bias. P-CIS supports any level of ongoing monitoring and supports higher level analytics such as regression, machine learning and artificial intelligence. P-CIS uniform data and automated analytical models support evidence-informed decisions at person/family, local, and state levels.

All models built in P-CIS by Opeeka or local staff are built with a combination of SQL, Python and R code. Therefore, all statistical models built in P-CIS can be exported from P-CIS and implemented in any other system which supports these universal languages. In this way, all development of custom models can be retained through any transition to any other system that supports these standard languages.

**Supported Collaboration.** P-CIS serves as the interoperable glue between all types of electronic records used by agencies in a system of care. Acting as a data super highway, P-CIS not only supports uniform data exchange, it also provides secure and judicial sharing of information on one child/youth or sets of children/youth and families. In addition, it provides useful transformation and visualization of data to inform individual care as well as system performance. With P-CIS, everyone in the System of Care can work from the same information supporting coordination of assessments, care planning, outcome monitoring and goals between system partners.

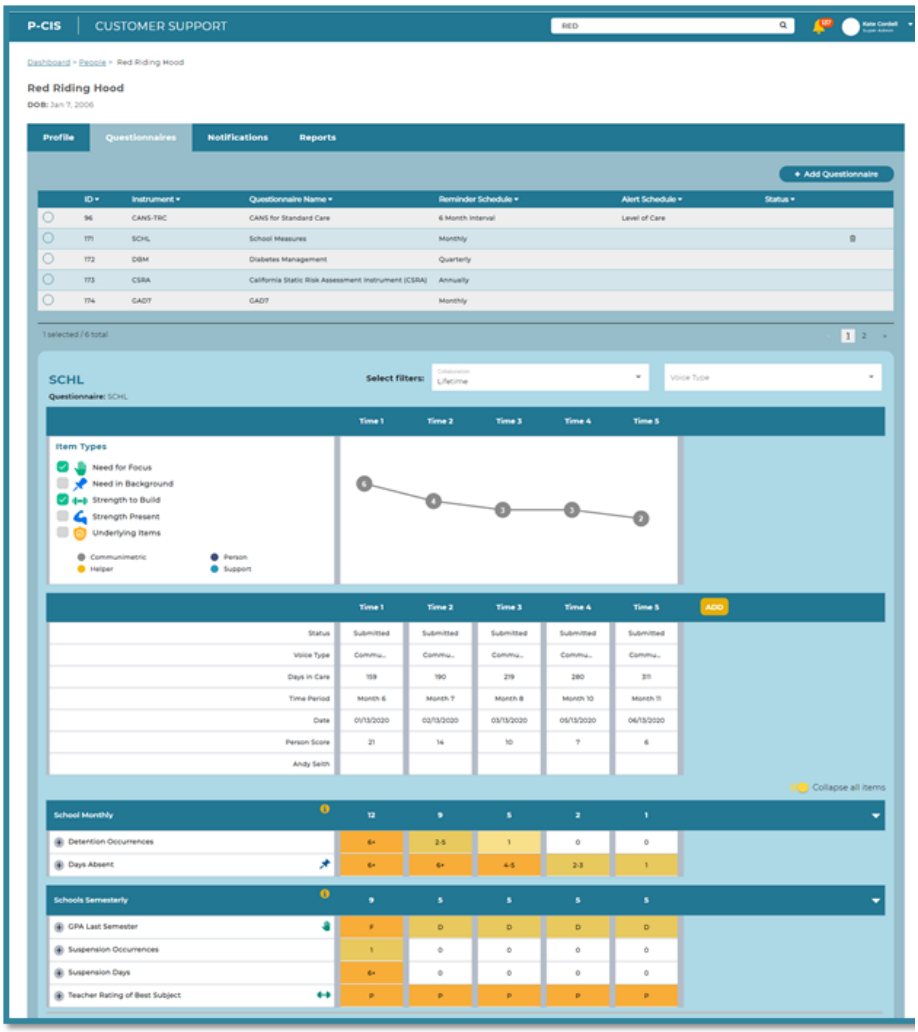
**P-CIS Unifies a Circle of Care for Child and Family Teaming and Universal Service Planning**



P-CIS unifies data across a system of care in many ways. As seen in the example here, Red Riding Hood is a young person who is served through foster care, school, primary care (for diabetes management), juvenile justice, substance use, and mental health. Information on her outcomes across these domains in her life are unified here in P-CIS. This is the social worker's view of Red Riding Hood's information after Red agreed to sharing information across her care providers. The Child and Adolescent Needs and Strengths (CANS) was ingested from the child welfare (foster care) record. The information from the Generalized Anxiety Disorder 7 (GAD7) assessment was completed by Red Riding herself through an emailed electronic questionnaire. Information from school indicators (e.g., absent days, suspensions, and grades) was ingested through Inquisitive Data Exchange (IDE) from the school systems. The California Static Risk Assessment (CSRA) was completed by juvenile justice worker through a P-CIS Care Circle.

**Information United Across a System of Care in Six Ways:**

1. Information ingested in P-CIS via electronic record integration
2. Information ingested in P-CIS via Inquisitive Data Exchange (IDE)
3. Information entered directly in P-CIS online
4. Electronic questionnaire emailed to person or member of care circle to complete offline
5. P-CIS Care Circles (See Chapter 5)
6. Data warehouse linkages (See Chapter 6)



P-CIS uses a process Opeeka developed called Inquisitive Data Exchange (IDE). Inquisitive Data Exchange standardizes sharing of information across agencies into blocks of questions where one agency asks a question of another agency. As seen in the example below, Identifying a block of information to request from a partner is as simple as creating a questionnaire. Imagine that one agency is asking another agency about the things they need to know. Each piece of information is organized into a question and response standardized as a HL7 FIHR questionnaire resource (https://www.hl7.org/fhir/questionnaire-examples.html). Questions are formulated in simple sentences. Responses can be multiple choice, free text, dates and numeric ranges. This structure standardizes the exchange of nearly every type of information and displays groups of related pieces of information succinctly together, color coding responses where helpful.

In the figure below, Child Welfare Foster Care is requesting information from School for six questions. The exchange is stated simply so that policies can be drafted and information can be formulated to support the exchange. The results of that data exchange are shown in the Child Welfare Foster Care as shown in the prior figure.

This format for information sharing is also helpful because it operationalizes the sharing of information into a very natural communicative exchange based on asking questions and receiving answers. This eases the burden of communication about what data to exchange because one agency simply needs to formulate a question and the other simply needs to provide a response on a predetermined schedule (e.g., daily, weekly, monthly, annually) in a standardized format. Once the exchange parameters are calibrated, P-CIS acts as the coordinator to organize the questions and responses between each electronic record system. As the exchange conforms to HL7 FIHR standards, with P-CIS, data exchange between agencies in a system of care is simplified, standardized and adaptable.

## Inquisitive Data Exchange

### Instructions

Think about the information you would like to receive from a data system. What types of questions would you ask the data system if you could? What types of answers would you expect? Complete the Inquiry Table.

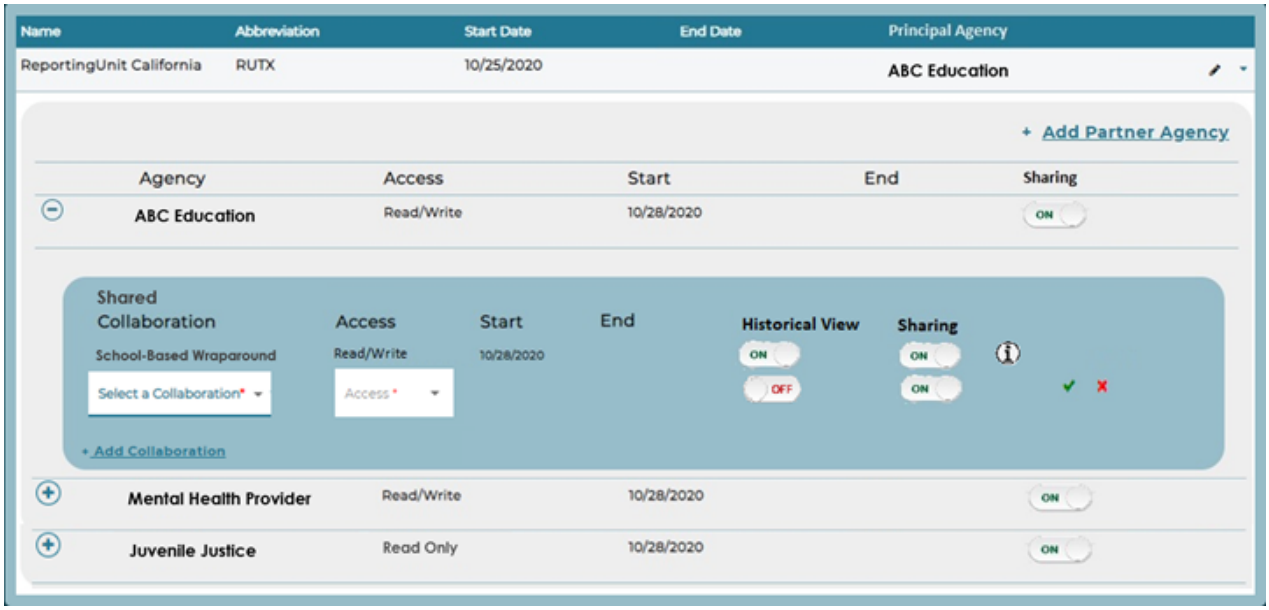
Asking Agency: Child Welfare Foster Care

Answering Agency: Education

### Example Inquiry

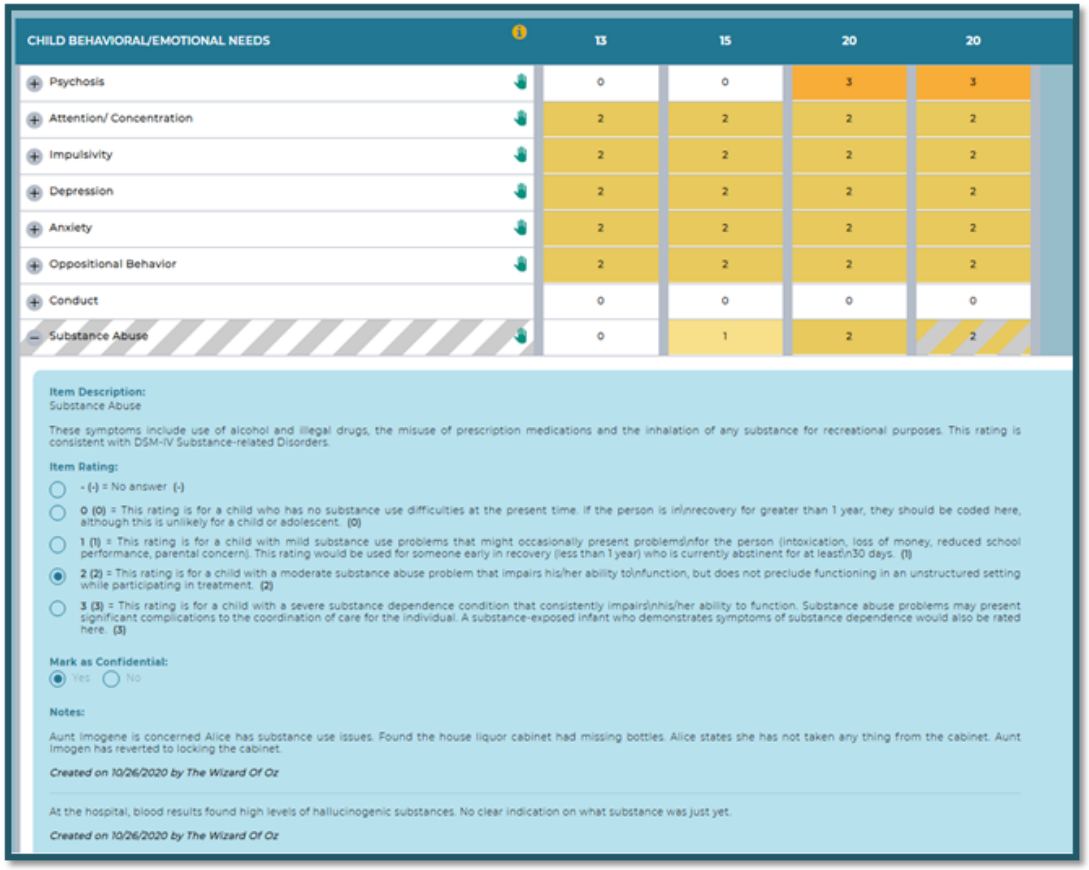
| ID | Question | Timeframe | How Often? | Measurement Unit | Possible Answers |
|---|---|---|---|---|---|
| 1 | How many detentions did the student receive? | Last 30 Days | Monthly | Occurrences | 0-999 |
| 2 | How many absentee days did the student have? | Last 30 Days | Monthly | Days | 0-30 |
| 3 | What was the student's GPA? | Last Completed Semester | Every 6 Months | Grade Point Average | 0-6 |
| 4 | How many suspensions did the student receive? | Last Completed Semester | Every 6 Months | Occurrences | 0-99 |
| 5 | How many suspension days did the student receive? | Last Completed Semester | Every 6 Months | Days | 0-180 |
| 6 | How did the student's teacher rate the student's strengths in their best subject? | Last Completed Semester | Every 6 Months | Likert Scale | Exemplary<br>Accomplished<br>Proficient<br>Partially Proficient<br>Not Evident |

P-CIS supports information and data sharing between multiple agencies already using P-CIS. For agencies using P-CIS and establish data sharing agreements with each other, P-CIS can be used to establish Care Circles, which brings together legally shared records of information already within P-CIS. In P-CIS, sharing is managed by each agency's Organization Administrator using the following steps.




1. A Principal Agency establishes a Care Circle and adds partner agencies to the Care Circle.
    a. In this example, ABC Education is the Principal Agency. ABC Education has added Mental Health Provider and Juvenile Justice to the Care Circle.

2. Next, ABC Education adds its School-based Wraparound program as a Collaboration. Sharing is on. Any screens or assessments assigned to this program will be shared for people enrolled in the program during the time of enrollment. No question responses marked as confidential will be shared.




3. Next, when the partner agencies log in and see the new Care Circle, they can choose to share back any of their programs to the Care Circle.

4. Assigned staff will see their own records and the shared records of the same people from other agencies, identified by a sharing symbol.

5. Once sharing is stopped, the shared records disappear from shared partners' view. No information is retained.

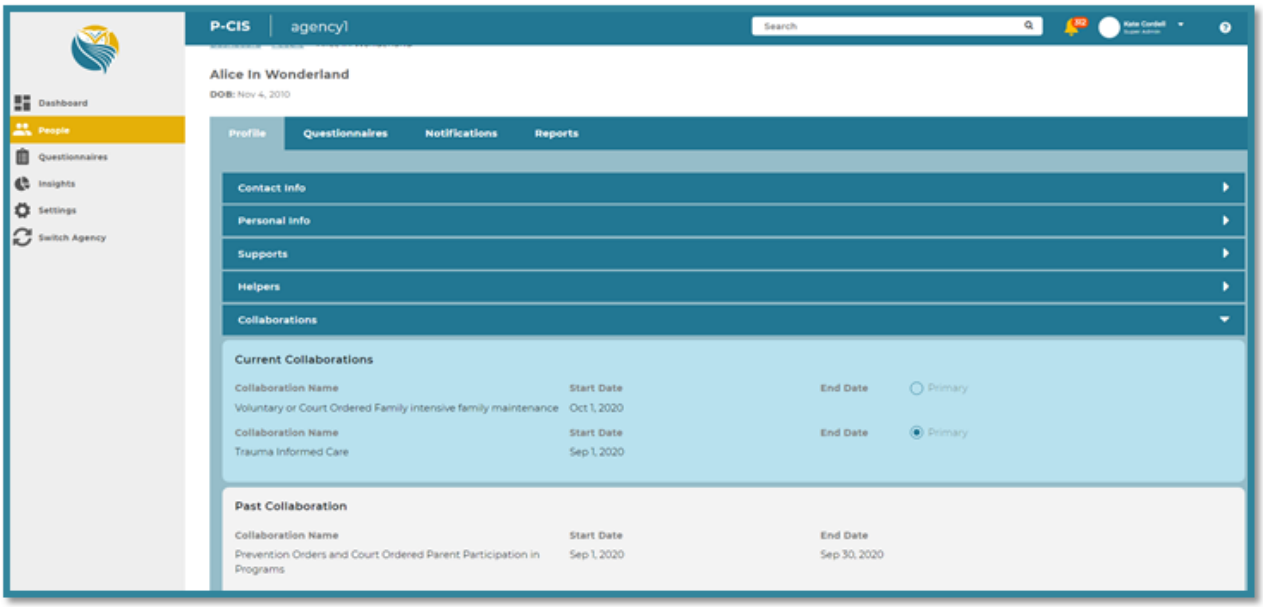
Having a platform where data can be exchanged across care providers, while maintaining strict client confidentiality, opens up the possibilities for learning more about the populations being served, including granular information about what they need, what they're getting, and what they're missing.

- Mapping the Current Continuum of Care
- Local Capacity Gap Determinations
- Planning to Address Identified Capacity Gaps Using System of Care Approach

**Mapping the Current Continuum of Care**

In order to create a more complete picture for a child/youth, P-CIS can exchange information with electronic records to track the start and end dates for each of the out-of-care settings across different agencies in the system of care. In the example, Alice and her family were placed in Prevention Orders by Probation Agency from September 1-30. Then on October 1, Alice and family started on Court Ordered Family Maintenance with Child Welfare Agency. Meanwhile, Alice was participating in Trauma Informed Care program with Behavioral Health Agency.

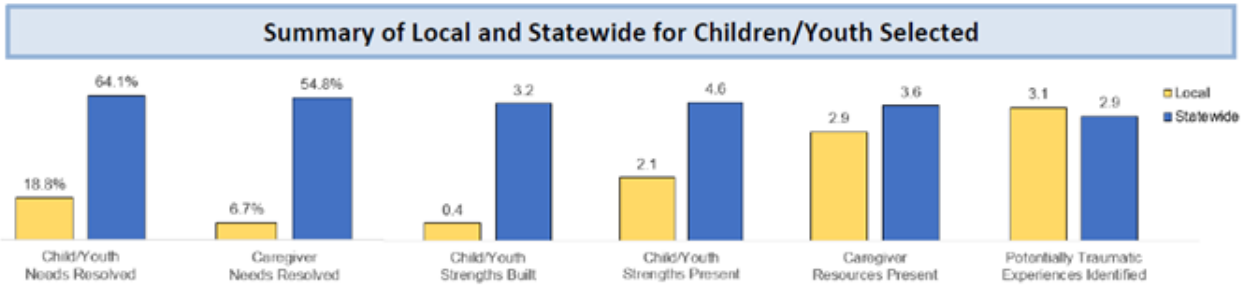
So in addition to creating a map for a hypothesized continuum of care, P-CIS can evaluate the actual use patterns across the continuum. In other words, P-CIS can answer questions like: how many people receive both mental health and substance use services as the same time? Or how many people who are in a probation program are receiving supportive employment services? Or how often are trauma-informed services provided to foster youth? P-CIS can help answer these questions and many more.



**Local Capacity Gap Determinations**

P-CIS is designed to recognize individual, population and sub-population patterns of strength, needs, traumatic experience, circumstance, cultural preference, supports and care circle. P-CIS dynamic insights allow users to drill into specific sub-populations to instantly identify most common circumstances, areas addressed and areas unaddressed – minutes after data is captured or exchanged. See Opeeka's President's Whitepaper for more information about the standard dynamic insights: Waterfall of Items Presented, Discovered and Resolved, Patterns and Priorities of Success, and Care Compare.

P-CIS embeds advanced analytics powered by Python and R to uncover significant findings through higher level statistical approaches, such as regression, classification, hierarchical analysis (students in classrooms in counties — or youth in programs in counties), longitudinal or any other approach desired. With P-CIS as the hub for Inquisitive Data Exchange, no file export is needed to support evaluation efforts. Analytic staff can log into a P-CIS Analytics Space to perform any type of gap analysis on live and historic data. Because of the standardized and highly structured format of data exchange, P-CIS cleans, merges and transforms data minutes after it is collected or exchanged. Data is then available to R and Python engines for evaluations which can be driven by selections from drop-down filters or research notebooks, alike. Imagine running a model to identify the most common unmet need while considering age, race, gender, strengths, supports and services. Imagine selecting to run the model for only children/youth who experienced commercial sexual exploitation. What is their most common unmet need? Which service or support most often helped address that need and in which geographical areas is it available on a map? P-CIS will provide these insights and more.




| Group Selected | Number of Youth | Number of Caregivers Assessed | Avg. Days in Care | Child/Youth Needs Actionable | Child/Youth Needs %Resolved | Caregiver Needs Actionable | Caregiver Needs %Resolved | Child/Youth Strengths To Build | Child/Youth Strengths Built | Child/Youth Strengths Present | Caregiver Resources Present | Potentially Traumatic Exp. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Local | 42 | 1.2 | 290 | 19.2 | 18.8% | 4.5 | 6.7% | 5.4 | 0.4 | 2.1 | 2.9 | 3.1 |
| Statewide | 361 | 2.5 | 288 | 18.1 | 64.1% | 6.2 | 54.8% | 5.2 | 3.2 | 4.6 | 3.6 | 2.9 |

**Narrative:** Based on the filters selected, there were 42 children/youth served by Local and 361 children/youth served Statewide matching the filter criteria. On average, 1.2 caregivers were assessed by Local and 2.5 caregivers were assessed Statewide for these children/youth. On average, children/youth served by Local spent 290 days in care and children/youth served Statewide spent 288 days in care.

**Needs.** Children/Youth served by Local had an average of 19.2 actionable needs (rated as '3' or '2') identified and children/youth served Statewide had 18.1. Children/Youth served by Local had 18.8% of their actionable needs resolved to a rating of '1' or '0' while in care, while children/youth served Statewide resolved 64.1%. Caregivers served by Local had an average of 4.5 actionable needs identified and caregivers served Statewide had 6.2 actionable needs. Caregivers served by Local had 6.7% of their actionable needs resolved to a while in care, while caregivers served Statewide resolved 54.8%.

**Strengths & Resources.** Children/Youth served by Local had 5.4 strengths identified to build (rated as '3' or '2') during care, and they built 0.4 strengths while in care (decreased rating to a '1' or '0'). Children/Youth served Statewide had 5.2 strengths identified to build during care and on average they built 3.2 strengths while in care. At the end of the time period selected, children/youth served by Local had 2.1 strengths present (rated as a '1' or '0') while children/youth served Statewide had 4.6 strengths present. At the end of the time period selected, caregivers served by Local had 2.9 resources present (rated as a '1' or '0') while caregivers served by Statewide had 3.6 resources present.

**Potentially Traumatic Experiences.** Children/Youth served by Local had an average of 3.1 potentially traumatic experiences, while children/youth served Statewide had 2.9.

**Planning to Address Identified Capacity Gaps Using System of Care Approach**

The Insights in P-CIS can be calibrated to monitor agencies. Once Insights dashboards are developed by analytical staff, the Insights can be democratized to one or more roles of user throughout the state. Users who log in will have access to Insights but for only the people they can access. This means that everyone can analyze their own population's needs from the same dashboard – automatically. No further development is needed because P-CIS's HIPAA compliant data access automatically applies democratization to all Insights. At any level of access, the dashboards will only analyze the people that the user can access. System administrators who roll out one dashboard will actuate insights into tens of thousands of sub-populations within minutes after launch. Everyone who logs in will see where the gaps in services lie for their own specific population. Oversight agencies will see capacity gaps across the entire system, and everyone can work together from the same information to improve care locally and regionally.

# CONCLUSION

Children/youth and families deserve the best practice and care possible. If agreements can be established between agencies in a system of care, siloed data should not be held prisoner, and technology should not be the enemy of collaboration and coordination of care, but the champion and enabler of it. The P-CIS system was built for just this purpose, and we can now address many of the challenges that currently exist.

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