San Francisco Whole Person Care Strategy and Planning Services

Current State Report

v3.0

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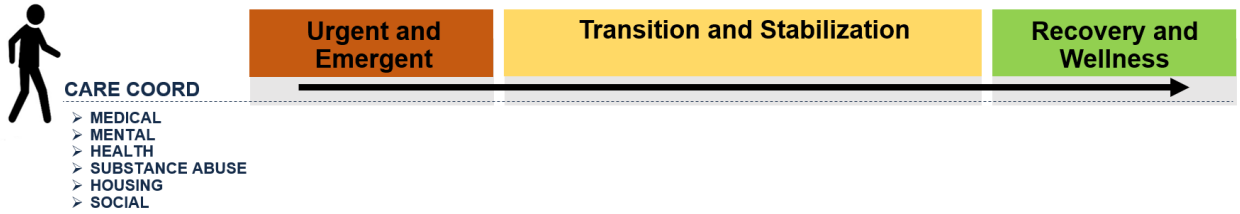
1.0 Executive Summary

The City of San Francisco (the City) is a participant in the Whole Person Care (WPC) pilot program managed by the California Department of Health Care Services (DHCS) under the Medi-Cal 2020 waiver. The DHCS WPC program provides funding for San Francisco to test initiatives aimed at providing integrated care coordination for a target population of vulnerable adult beneficiaries who are experiencing homelessness with special attention to those who are long-term homeless and High Users of Multiple Systems (HUMS).

SF's overall aim is to transition the vulnerable populations from urgent to wellness care using care coordination that covers all aspects of care.



Specifically, the WPC strategic aspirations are:

	WPC Strategic Aspirations
	Improve outcomes, fill gaps and reduce rework by increasing integration among county agencies, health plans, and providers and by developing infrastructure to ensure sustainability in the long term
	Increased access and utilization of services by increasing care coordination and appropriate access to care for the most vulnerable Medi-Cal beneficiaries
	Reduce inappropriate utilization of emergency services through the establishment of comprehensive care plans and programs such as permanent supportive housing
	Define and achieve targeted quality and administrative improvement benchmarks that focus on improving health outcomes and paying for improvements in health status rather than for services provided
	Establish capabilities to monitor and measure the success rate of different approaches and the capabilities to evolve and improve
	Achieve the broader goal of citywide inter-agency data sharing that improves collaborations and helps the City gain broader insights

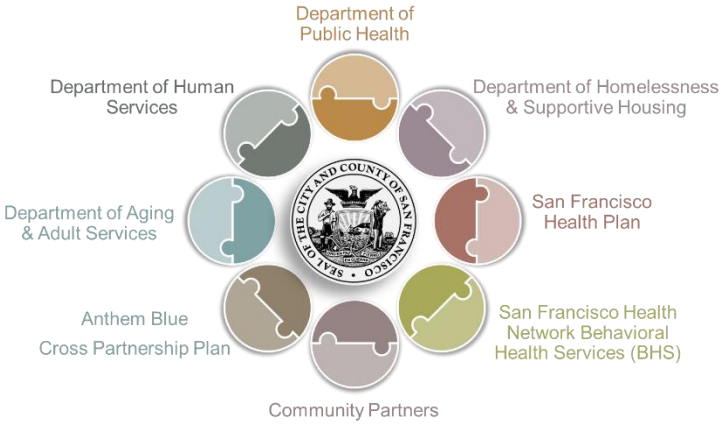
The City identified a series of WPC metrics[1] by which to measure the success of the program and achievements towards the strategic aspirations, broken into three categories of metrics:

- Universal metrics such as Reduce emergency department utilizations (HEDIS)
- Variant metrics such as Creation of Universal Assessment Tool with homeless individuals
- Outcome metrics such as Housing Care Coordination – Measures the success of our ability to identify and assess homeless individuals for coordinated entry

Co-led by the Department of Public Health (DPH) and the Department of Homelessness and Supportive Housing (HSH), the City leadership and stakeholders from the various WPC

[1] *The full list of metrics can be found in Appendix 6.13.*

participating departments and organizations have committed to do “whatever it takes” to make the SF WPC program a success.



To deliver on that commitment, each department identified and dedicated resources to participate in WPC planning and implementation activities that have been organized into the following groups:

- Executive Steering
- Core Planning
- IT Leadership
- System Admin
- System of Care Transformation Teams
- Analysts/Researchers
- Data Governance
- Finance Lead
- Operations
- Complex Care Providers

In concert with the WPC Evaluation Team and the WPC Service Design Team, Gartner conducted over 30 discovery interviews with these various stakeholders to gain a better understanding of SF WPC landscape.

San Francisco has multiple agencies and numerous services intended to benefit its vulnerable populations, with each utilizing different electronic record-keeping systems.

Org. / Dept.	Services	Current System
DPH	Primary Care	eCW
	Urgent Care	LCR
	Emergency Services	PulseCheck
	Specialty Care	eCW
	Inpatient / Rehabilitation	LCR
	Long-Term Care	
	Jail Health Services	JIMS
	Complex Medical Care	LCR / CCMS
	Transitions / Home Health	SF-GetCare
	Sobering Center	CCMS
	Medical Respite	CCMS
	Homeless Health Resource Center	
	Community Mental Health	Avatar
	Residential Mental Health	Avatar
	Substance Use Services	Avatar
	Psych. Emergency Services (PES)	Avatar
	Street Medicine	None / LCR
	Shelter Health	None / LCR
	Unified Command Units	

Org. / Dept.	Services	Current System
HSH	Street Outreach Team (HOT)	CCMS
	Coordinated Entry	ONE (family)
	Transitional Housing	N/A
	Supportive Housing	N/A
	(Housing) Services for Homeless Veterans	Homelink
	Shelter Services	CHANGES
	Navigation Center Services	Navigation Center DT Web-Based Form
	Onetime Resource Center Services	N/A
	Homelessness prevention	N/A
	Encampment Resolution	CCMS
	Direct Access to Housing (DAH)	CCMS
	Stabilization Rooms	CCMS
	Housing Ladder	ONE/TBD

Org. / Dept.	Services	Current System
HSA	Medi-Cal, CalFresh/SNAP, CalWORK/TANF, County Adult Assistance Programs (CAAP)	CalWIN
DAAS	In-home Supportive Services (IHSS)	SF-GetCare, CMIPS
	Adult Protective Services (APS)	LEAPS
	County Veterans Services	Panoramic
	Community Living Fund	Panoramic
SFFD	EMS6 Outreach	
SFHP	Medi-Cal	PreManage
	Healthy Kids HMO	
	Healthy Workers HMO	
	SFHP Care Coordination / Health Homes	
Institute on Aging	Community Living Fund	SF-GetCare
	Home Care and Support	
	Social Daily Program	
	Community Clinic	
	Behavioral Health	
	Adult Education	
HR360	Substance use treatment services	AVATAR
	Primary care health	
	Mental Health Programs	
	Full-spectrum integrated care	

Org. / Dept.	Services	Current System
Baker Places	SSI Advocacy	AVATAR
	Medically managed Detox	
	Acute care	
	Transitional licensed care	
	Residential treatment services	
	Supported housing with case management	
	Extended residential treatment	
Anthem Blue Cross Partner-ship Plan	Primary Care	
	Ambulance services	
	Dental care	
	Early and Periodic Screening, Diagnosis, and Treatment (EPSDT) services	
	Behavioral health treatment (BHT)	
	Emergency and post-stabilization services	
	Family planning services	
	Long-Term Services and Supports (LTSS)	
	Mental health and substance use services	
	Pregnancy and maternity care	
	Vision services	
	Prescription Drugs	
	Healthy living services	
	Women's Health	
	Children	
	Managing illnesses	
	Disease Management	
	Care Management	
	Mental Health	

However, services provided to the vulnerable population tend to be silo'd and episodic, and transitions frequently result in clients being lost-to-follow-up. Each department leverages its core processes and IT systems to deliver it services with limited programmatic or system sharing capabilities. For the few designated staff that help coordinate care, there is high reliance on paper and personal knowledge and connections to provide the client with service referrals.

The City is looking to leverage WPC funding to close service and care coordination gaps and to provide comprehensive client-centric services by using existing programs and staff more efficiently and effectively. To achieve that, the City has identified multiple initiatives for reaching the desired WPC program outcomes while ensuring the ability to sustain and evolve its capabilities in supporting the vulnerable populations beyond the program funding period. WPC services are grouped by payment model.

Incentive Payments	Fee for Service Payments	Per Member Per Month Capitated
■ Open Four Navigation Centers ■ Open One Resource Center ■ Open One Fully-Integrated Health Resource Center ■ Social Detox to become Drug Medi-Cal Certified	■ Cover Additional 90 days of Dual Detox Residential Treatment in MH Setting ■ Cover Additional 90 days of Dual Detox Residential Treatment in SA Setting ■ Expand Medical Respite Bed Days	■ Outreach and Engagement Services (Shelter, Navigation, and Sobering Center Services) ■ Enhanced Care Coordination Services (Coverage and expansion of Shelter Health and Street Medicine Teams, SFHOT

Incentive Payments	Fee for Service Payments	Per Member Per Month Capitated
■ Medical Detox to become Drug Medi-Cal Certified ■ Develop universal assessment tool	■ Open Psych Respite (Hummingbird) ■ Provide Resource Center Services ■ Provide Coordinated Entry Expansion Services ■ Provide Encampment Response Expansion Services	and other complex care teams) ■ Enhanced Housing Transition Services ■ Housing and Tenancy Stabilization Services

While there are numerous user groups delivering these services part of the various departments across the City, a sub-set will have elevated focus on delivering WPC services including care coordination and comprehensive care management. While each user group might have a different focus, the sum of the services they provide will help the WPC population reconnect with the medical, housing and social services they need to transition to better wellness.

The WPC funding has enabled the hiring of additional staff, mostly to complex care management and coordinated entry, housing transition and stabilization services.

While delivery of WPC services is occurring in the City, the WPC discovery interviews[1] have revealed a number of specific barriers that need to be addressed to attain the WPC strategic aspirations:

[1] *For a list of Gartner WPC stakeholder discovery interview see Appendix 6.1.*

Program Challenges
1. Decisions made at points of client encounter are not fully informed by a client's multi-disciplinary history leading to non-optimal service
2. Recording and sharing of aggregated client data across the broader care team is limited and results in incomplete information
3. Data quality issues identified in the aggregated system require workarounds if issues are not resolved in source systems
4. Complex Care Teams lack the tools for monitoring service delivery to make better workload or training decisions
5. Limited client data results in incomplete ability to get reimbursed for Medi-Cal covered services
6. Extensive manual efforts are needed to provide WPC State reporting
7. Most services are episodic, focused on the immediate need / crisis with difficult transition to next steps that will help the client prevent repeated future crisis episodes
8. Even in complex cases, clients commonly are difficult to engage and fall off the radar if care is rejected or after completing a program. Other than Primary Care, no one owns the long-term (e.g., lifetime, residency in SF) wellbeing of the client once they no longer meet criteria for that level of care
9. Demand for complex care services often exceeds the capacity and prioritizing the right services to the right clients is a challenge
10. Need for and adoption of a client-aggregated data system or care coordination across silos are not fully bought-into based on current CCMS usage evidence
11. There is a lack of clarity on City-wide direction for supporting WPC and its sustainability beyond the initial implementation

Current State Quotes

Analysis of causes for these various barriers can help illuminate the interventions that will need to be implemented to address the current gaps. While technology is a tool that can address some of these gaps it is **critical to address people- and process-related gaps** in concert to attain successful on-going operations of the future state WPC vision.

SF DPH has been delivering care coordination services with limited coordinated technology support. The Coordinated Care Management System (CCMS) has been the main technology platform for integrated health and social determinants data, data sharing, risk assessment, and population stratification for vulnerable clients. CCMS integrates and aggregates clients' medical, behavioral, housing, and social data from multiple source systems that do not otherwise share information. CCMS makes that comprehensive client summary data available to the various care delivery teams in their source systems and enables San Francisco to better understand its most vulnerable populations. Begun in 2005, CCMS has evolved to become **a nationwide leading vision** for how to better support coordinated care for complex, high risk, and vulnerable clients. Invaluable learnings from developing and utilizing this integrated data system have informed the approaches and requirements for the future WPC platform.

The City has identified the need for the following technology components to support addressing some of the current gaps:

Data Sharing Platform	**Care Management and Coordination Tool**
Multi-Agency Universal Assessment Tool	**Data Analysis/Reporting Toolset**

While there are currently numerous IT systems used by various user groups within the overall City WPC ecosystem, there are a sub-set that are of particular relevance and importance to WPC given the nature of the functionality they provide and data they hold. These are as follows:

Coordinated Care Management System (CCMS) — A repository of aggregated client data from multiple agencies and systems used by DPH for data sharing and for case management by complex care teams.

Online Navigation and Entry (ONE) System — A Homeless Management Information System (HMIS) currently being rolled out by HSH to manage all their housing programs.

SF-GetCare — A client management and service care coordination platform used by DAAS to coordinate services for elders and to persons with disabilities and to provide discharge assessment and planning for client transitions back into the community. It's also used by DPH to manage transitions placements, LHH operations, restorative care and rehabilitation.

PreManage — A solution for health plan clients and providers that is used to record and communicate client encounters from all healthcare care venues, not just Emergency Departments, independent of network, health plan, hospital, or geography.

Epic — A unified Electronic Health Record (EHR) planned for use by DPH that serves inpatient, ambulatory and emergency departments and provides a number of modules to support patient engagement, clinical operations, managed care, specialty care, revenue cycle, population heath, and connections to the provider community.

Analysis of these IT systems helps identify the best capabilities within these existing systems that should be considered as part of the future WPC solution requirements. To that effect, each of these IT systems were evaluated for their ability to deliver the business and technical capabilities required for SF WPC.

- **Business capabilities** enable the business needs of the various WPC end users to allow them to effectively carry out their tasks and activities, including:

- Point of Service — Needs, expectations, and motivations of providers and clients when delivering or receiving care
- Panel Management — Needs, expectations, and motivations of providers, panel analysts and clinic directors when planning and preparing to care for clients in caseloads or panels
- Population Health — Needs, expectations, and motivations of administrators and researchers when using vulnerable populations data
- Invoicing and Reimbursement — Needs, expectations, and motivations of program administrators when working on financial reporting
- Data Sharing and Aggregation — Needs for medical, behavioral, housing and social data from various data sources, aggregated and shared with WPC ecosystem partners to empower care teams to better serve SF's vulnerable populations

- **Technical capabilities** enable the operations of the system including its performance, security, and ability to integrate and share data; all dictated by the underlying platform architecture, including:
  - Master Identity Management — Reconciling clients and providers across IT systems and ensure conflicts are addressed on-going
  - Data Aggregation & Transformation — Data exchange options that must be supported with source systems and common standards that will be in place to transform the data to
  - Secure Messaging — Notification and alert mechanisms needed to enable care teams and providers to collaborate to serve clients more effectively
  - Data Sharing APIs — Supported approaches for sharing the aggregated client data with external IT systems

While each of these systems does provide support for a number of core business capabilities that are required to enable WPC, these functions are only partially provided and only for a subset of the full WPC ecosystem entities and user groups. Similarly, each have limitations for meeting the technical needs of the overall WPC ecosystem. Identified limitations include:

Coordinated Care Management System (CCMS) — Department of Public Health

	Business Capabilities	Technical Capabilities
Evaluation	■ Does not support street teams for documenting encounters in the field ■ Lacking in shared needs assessments ■ Is read only and CCMS does not provide means for communications between care team members such as alerts and coordinated care plans between care team members ■ Does not provide access to repository of service resources ■ Does not provide referral management ■ Lacking in client goal, program and care team management	■ Based on older technologies that DPH struggles to support and extend with limited IT staff ■ Lack of support for street teams; UI not designed to work on mobile devices ■ Only four source systems support the embedding of the CCMS WPC Summary page using a Single Sign On (SSO) workaround ■ Platform does not provide high-availability which risks potential loss of functionality and cannot easily scale to handle additional load

	■ CCMS was never built to handle invoicing / re-imbursements which requires extensive manual work ■ AD HOC or additional analytics demand manual intervention or application development work	■ CCMS lacks the capability of role-based access control limiting ability to extend access to broader user groups ■ Limited data integration options; mostly batch ■ As part of the WPC effort, leadership is looking to replace CCMS with a 3rd party vendor supported platform

Online Navigation and Entry (ONE) System — Department of Homelessness and Supportive Housing (HSH)		
	Business Capabilities	**Technical Capabilities**
Evaluation	■ Fundamentally designed and optimized for housing-specific needs and services ■ Designed as a data entry tool, not easily populated at time of service ■ Limited ability to meet the broad range of interagency service areas supported by WPC ■ Designed around client consumption of programs rather than for case or client management ■ Missing business capabilities for client goal management, shared care plans, case management, and population health management	■ No integration with common industry identity management and MDM platforms ■ APIs are designed for data sharing and not workflow/multisystem real-time integration and documentation is lacking ■ Bitfocus ability to provide support for expanding their platform to support WPC needs is also limited based on available staff

SF-GetCare (IR2) — Department of Aging and Adult Services (DAAS)		
	Business Capabilities	**Technical Capabilities**
Evaluation	■ Fundamentally designed and optimized for serving older adults and persons with disabilities with limited ability to address the broad range of client types served by WPC ■ Currently lacking support for the broad range services and interagency needs required by WPC populations ■ Care plan for a given client is not centrally managed and shared across all GetCare and non-GetCare external tools ■ Business capabilities for workflow and Service Definition and Management, reimbursement / invoice support, population health management and analytics are present but require vendor	■ Complicated deployment model of multiple instances of the GetCare platform for each department and user group ■ Usability tends toward experienced users familiar with the system's numerous detailed which could seem overwhelming for other user groups and use cases ■ RTZ does not publish integration and data APIs for external consumption ■ Certain reporting and analytics data extracts are delivered as a service performed by vendor rather than a self-service or automated process

	development effort for customization and configuration	

PreManage — San Francisco Health Plan		
	Business Capabilities	**Technical Capabilities**
Evaluation	■ PreManage is not a care management platform hence it lack care management capabilities such as eligibility determination for services, goal and caseload management ■ Shared care plan is not a structured plan data set but rather unstructured free form text that cannot be edited ■ Does not provide automated referral workflow management or ability to configure workflow ■ System was not intended to be built to provide invoicing support ■ Currently lacking support for the broad range services and interagency needs required by WPC populations ■ Does not provide a consent management component to collect, author, remind and enforce client data access based on status of consent	■ Does not provide end-user driven configurations for adding new services, assessments, workflow, business rules…etc. ■ Uses a proprietary master data management solution that would need to integrate with identifies of systems across multiple City departments and would need to provide an identity resolution / exception handling that can be accessed by all source system designated stewards ■ Has limited data and workflow / message API integration support

Epic — San Francisco Department of Public Health		
	Business Capabilities	**Technical Capabilities**
Evaluation	■ Ability to display data from external systems require custom implementation and mapping process to add the data into Caboodle for each system ■ Currently lacking support for the broad range services and interagency needs required by WPC populations ■ Does not provide business-user driven configurable workflows or to define new services ■ Electronic consent not supported in Epic Social Determinants module	■ Fragmented user experience between different mobile and desktop apps supported on limited devices ■ Does not provider an API gateway with policies for managing external source systems access for bi-directional data exchanges with Epic ■ Epic Social Determinates is a new module released February 2018 with future support level for the module too early to gauge

* For a high-level side-by-side comparison of these systems' ability to enable WPC capabilities see appendix 6.10.

The evaluations of these systems indicate that none as they stand is readily capable of meeting the full scope of SF WPC interagency business and technical needs.

Considerations for a future state WPC technology solution must also factor in analysis of the City's in-flight projects and upcoming IT initiatives to determine relevance for WPC. This includes initiatives related to source systems participating in WPC data sharing in addition to ones related to enterprise technology components and platforms that influence the proper integrate of a WPC future state platform into the City's infrastructure. The following table lists these various in-flight IT projects and initiatives:

DPH IT Initiatives Relevant to WPC	Description and Implications for WPC	Target Completion Date
Epic	An Electronic Healthcare Records (EHR) system that will replace many of the current DPH legacy systems **Implications:** ■ Epic will replace a number of WPC data sources for DPH medical and behavioral health systems including, CCMS transactional applications, Invision and eClinicalWorks (eCW), demanding planning of WPC platform consumption of health data pre and post Epic go-live	Phase 1 live August 2019. Phase 3 will include functionality to replace Avatar
NextGate eMPI	A market-leading Cloud-based Enterprise Master Person Index (eMPI) that provides an enterprise wide unique identifier of each client. It will store the various client identifiers of each source system along with the latest copy of core client data elements such as date of birth **Implications:** ■ Provides a unique identifier for WPC clients and potentially leveraged for unique identifier of providers and City staff part of the WPC ecosystem	Passive Mode with Invision and Avatar summer 2018 with full go-live with Epic. No current plans to be used by non-DPH partners.
Health Leads Reach referral platform	A platform that enables health systems to manage their social needs programs and improve population health via a comprehensive service resources database **Implications:** ■ Potential integration with the WPC platform to enable care teams to quickly identify available service resources to refer clients to	Pilot in two San Francisco Health Network (SFHN) locations summer 2018 and full implementation by end of 2018
Sequoia HIE	An eHealth Exchange that provides and improves public health reporting through secure, trusted, and interoperable health information exchange **Implications:** ■ Likely no impact as the HIE data will be consumed within Epic which is already one of the core interfaces for WPC	Go live with Epic

Technology-related stakeholders have provided the following key IT recommendations for consideration in the procurement and ongoing operations of the WPC future state technology solution:

a) **Leverage vendor solutions with the ability to provide ongoing maintenance and support**

b) **Consider platforms that enable the City to continuously improve, refine, and enhance capabilities over time to meet changing business needs**

c) **Increase adoption and success with user experience-focused designs**

d) **Consider the use of smaller decoupled components and API services where appropriate**

e) **Consider vendors who can provide 80% of functionality and work with the vendor or City to build the remaining 20%**

f) **Consider vendors with public sector experience and ideally SF-specific experience**

g) **Leverage learnings from successful mobile initiatives already in development within the City as applicable**

h) **Attain clarity on the City organization that will own and support the new WPC platform on an ongoing basis**

In conclusion, the analysis of the WPC current state landscape has revealed that SF has a nationwide leading vision and an abundance of services that can help SF's most vulnerable populations. However, programmatically, there are care coordination gaps in transitions between services as the most vulnerable populations enter and exit the services ecosystem without transitioning to the right next set of steps. Closing these gaps can take these populations from a series of episodic and urgent care high utilization towards recovery and wellness. The WPC program aspirations aim to close these gaps by making the right set of people, process and tool changes that lead to a client-centric service delivery model that uses the existing programs and staff more efficiently and effectively. The City's key stakeholder have made a commitment to attain these aspirations by doing "whatever it takes" to make the SF WPC program a success.

Analysis of WPC current state barriers revealed the need for elevating care coordination, data sharing and providing key user groups with the right tools to make more informed decisions while supporting WPC populations. These key user groups play a key role in WPC delivery and hence need to be formally empowered, expanded and better supported. The current technical solution landscape includes a number of WPC relevant systems however as they stand each on their own are not readily capable of meeting the full scope of SF WPC business and technical needs. A new future state WPC platform must provide the full range of WPC needs, incorporate all of the capabilities provided by any current tools being replaced and properly integrate into the City's current and planned IT infrastructure while factoring in the City's IT leadership guidance.

2.0 WPC Program Summary

The California Department of Health Care Services (DHCS) approved San Francisco's proposal to expand Medi-Cal funding for years 2016 through 2020 through its Whole Person Care (WPC) Medi-Cal Waiver. The City's pilot is co-led by the Department of Health (DPH) and the Department of Homelessness and Supportive Housing (HSH) and is dedicated to developing and implementing service delivery enhancements that will reduce costs associated with High User of Multiple Systems (HUMS) and improve health outcomes for San Franciscans experiencing homelessness.

2.1 WPC Participants

The SF WPC program includes a number of leading City departments, service providers and community partners who are experienced with and passionate about providing better care for San Francisco's vulnerable populations. Following are the SF WPC pilot participants:

- **San Francisco Department of Public Health (DPH)** — Lead entity for WPC and the healthcare anchor for the program with a mission to protect and promote the health of all San Franciscans through the Population Health Division and the San Francisco Health Network (SFHN)
- **Department of Homelessness and Supportive Housing (HSH)** — Co-lead with the singular focus of addressing homelessness in San Francisco by providing essential homeless-serving programs and housing units that previously existed in other departments across San Francisco city government
- **San Francisco Health Plan (SFHP)** — Public not-for-profit Medi-Cal managed care plan that enrolls ~85% of the City's Medi-Cal managed care members and for which DPH is the largest provider of care with over 40% assigned to their primary care clinics or where San Francisco General Hospital is their designated hospital
- **San Francisco Health Network (SFHN)** — Operates the system of healthcare services for the SF Department of Public Health, including Zuckerberg San Francisco General Hospital, Laguna Honda Hospital, Transitions, County Mental Health Plan, County Substance Use Disorder Health Plan, Jail Behavioral Health Services, among others to provide an array of services that address the medical, mental health and substance use disorder treatment needs using a diverse network of civil service and contracted community-based organization programs
- **San Francisco Department of Human Services (DHS) under the San Francisco Human Service Agency** — Provides public assistance to low-income children and families, single adults, disabled people, and seniors in San Francisco, including welfare-to-work programs, Food Stamps, Medi-Cal, SSI-advocacy, and general assistance.
- **San Francisco Department of Aging and Adult Services (DAAS) under the San Francisco Human Service Agency** — Plans, coordinates, serves and advocates for community-based services for older adults and adults with disabilities
- **Institute on Aging (IOA)** — A nonprofit community-based agency providing comprehensive health, social, and psychological services for seniors and adults with disabilities and chronic illness
- **Anthem Blue Cross Partnership Plan** — Administrates state-sponsored programs in California, providing services to over 1.2 million CA residents

- **HealthRIGHT 360 (HR360)** — A nonprofit community-based agency of four free medical clinics and over 20 behavioral health programs specializing in providing substance use treatment services
- **Positive Resource Center (PRC) / Baker Places** — A community-based agency that provides transitional residential treatment services with focus on individuals with mental health, substance abuse, and HIV/AIDS-related issues. It operates the only medically managed Detox in the State

2.2 Target Populations

Although DHCS reimburses the City only for those individuals who are covered by SF County Medi-Cal, the WPC target population is made up of all **homeless adults** regardless of their insurance coverage, with a special focus on those who are high utilizers of health urgent/emergent services.

In 2017, DPH's stratification of this population identified an anticipated total of 16,954 unduplicated persons who would be serviced by the WPC pilot over the life of the program with a total of 10,856 persons served in each given year after accounting for attrition and new persons served each year. The population served falls into four risk categories (Severe, High x 2, and Elevated) based upon their high use of crisis services and their length of time known to be struggling with homelessness. The following table shows the prevalence of disorders for each risk category.

Table 1. WPC Target Population Categories

Risk Category	Homeless Population (FY 1617) with DPH record	Serious Medical 48%	Psych 58%	Drug/ Alcohol 63%	All 3 31%
Severe	High user AND Long-term Homeless	90%	89%	96%	78%
High	High user NOT Long-term Homeless	75%	83%	91%	57%
	Long-term Homeless, NOT High User	63%	72%	79%	44%
Elevated	NOT Long-term Homeless, NOT High User	35%	46%	51%	18%

These 4 risk categories are mutually exclusive, however, over time a person might move from one category to another. Regardless of specific risk category, all members of the WPC target population would benefit from the same set of services provided under the WPC program.

2.3 WPC Services

The SF WPC application to the State lists the following services that will be provided under the program. These services are a combination of existing services that will be better leveraged to support individuals enrolled in WPC in addition to new services that are designed to fill current service gaps. WPC services are grouped by payment model.

Incentive Payments
■ Open Four Navigation Centers
■ Open One Resource Center
■ Open One Fully-Integrated Health Resource Center
■ Social Detox to become Drug Medi-Cal Certified
■ Medical Detox to become Drug Medi-Cal Certified
■ Develop universal assessment tool

Fee for Service Payments
■ Cover Additional 90 days of Dual Diagnosis Residential Treatment in MH Setting
■ Cover Additional 90 days of Residential Treatment in SA Setting
■ Expand Medical Respite Bed Days
■ Open and provide Psych Respite Services (Hummingbird Place)
■ Provide Resource Center Services
■ Provide Coordinated Entry Expansion Services
■ Provide Encampment Response Expansion Services

Per Member Per Month Capitated
■ Outreach and Engagement Services (Shelter, Navigation, and Sobering Center Services)
■ Enhanced Care Coordination Services (Coverage and expansion of Shelter Health and Street Medicine Teams, SFHOT and other complex care teams)
■ Enhanced Housing Transition Services
■ Housing and Tenancy Stabilization Services

Services are further elaborated under section 5.1.

2.4 WPC Ecosystem User Groups

Clients will have access to a wide-range of WPC ecosystem services regardless of their point of entry to the ecosystem of services. Services will be delivered on the shoulders of user groups that are part of various agencies and departments across the City. Each user group might have a different focus, but the sum of the services they provide will help the WPC population reconnect with the medical, housing, and social services they need to transition to better wellness. While there are numerous user groups delivering these services, a sub-set will have elevated focus on delivering comprehensive care management and extended coordination of care for the most vulnerable that would need to be better supported.

The WPC funding has enabled the hiring of additional staff civil servant and contract, from licensed clinical staff to case managers to peer navigators. All DPH's WPC new hires are part of DPH's Street Medicine and Shelter Health Teams, while HSH's new WPC-related hires are mostly for coordinated entry, encampment resolution, housing transition and housing stabilization.

Table 2. WPC Ecosystem Services User Groups

	Care Coordination	Care Providers and Care Teams		ANALYTICS
DPH	▪ Medical Complex Care Case Manager ▪ Behavioral Health Case Managers	▪ Street/Shelter Medicine Workers ▪ Peer Navigators ▪ Sobering Center Social Workers ▪ Medical Intensive Case Managers ▪ Emergency Department Social Workers ▪ Primary Care Behavioral Assistants ▪ Complex Care Case Mgmt Team	▪ Primary Care Physicians ▪ ED & Urgent Care Providers ▪ Medical Respite ▪ Sobering Center ▪ Jail Health Nurses ▪ Substance Use Counselors ▪ Inpatient/Rehab Transitions Specialists ▪ Visiting Nurses/Home Health Workers	▪ MADI Group ▪ Billing – LCR and Avatar
HSH	▪ Housing Case Manager	▪ Homeless Outreach Team (SFHOT) Specialists ▪ Coordinated Entry Specialists ▪ Navigation Center Intensive Services Coordinators and social workers ▪ Shelter Navigation Center ▪ Shelter / Stabilization Room Case Managers ▪ Housing Transition Specialists and Case Managers	▪ Housing Transition Specialists ▪ Housing Case Managers ▪ Shelter Staff ▪ Coordinated Entry ▪ Encampment Resolution	▪ HUD billing ▪ HSH IT
HSA		▪ Benefit Navigator ▪ SSI Advocacy	▪ Benefits Eligibility Workers ▪ Social Workers	▪ CalWIN Data Analyst
DAAS		▪ Community Living Fund Intensive Case Managers ▪ Case Managers	▪ Adult Protective Transition Specialists ▪ In-Home Supportive Services Case Managers ▪ County Veterans Case Managers	▪ DAAS Data Analyst
SFHP		▪ Care Coordinators	▪ Case Managers	▪ SFHP Data Analyst

3.0 Current WPC Program Challenges

3.1 City Whole Person Care Program Insights

While the Department of Health Care Services reimburses the City only for those homeless individuals who are covered by San Francisco Medi-Cal, the target population for SF WPC is all homeless adults, regardless of their Medi-Cal status and regardless of whether services they receive are billable to the State using WPC pilot funding. The WPC core team has been working to support the delivery of this broad vision for helping the City's most vulnerable clients. The future WPC platform should be able to support data sharing and care coordination for all of San Francisco's shared vulnerable populations.

Delivery of WPC services is currently occurring in the City, however, WPC discovery interviews[1] focused on identifying current state technology and data barriers to delivering on this vision have revealed a number of common challenges and opportunities highlighted by service delivery teams across various departments. Future WPC technology solution success will require resolution of these strategic impediments through coordinated governance and staffing, policy and protocol, service design and delivery, as well as data and technology capability solutions.

Table 3. Strategic Impediments to WPC Success

Program Challenges	Additional Observations
1. Decisions made at points of client encounter are not fully informed by a client's multi-disciplinary history leading to non-optimal service	■ Providers and other care team members have limited access to tools providing data about clients at the moments and locations where they are encountering clients ■ Data that *is* available at the points of client encounter do not represent the full breadth of information known about a client across the ecosystem of WPC-relevant departments, services, and platforms
2. Recording and sharing of aggregated client data across the broader care team is limited and results in incomplete information	■ Existing data documentation is designed for depth of information about specific episodic and silo'd service delivery needs and is incomplete for WPC purposes ■ Data is often aggregated within a Department, Agency, service type and/or care domain area, but with the exception of the limited CCMS, it rarely crosses the full WPC ecosystem of services or care providers ■ Relevant aggregated data is inconsistently available to a subset of WPC care coordinators, care team members, and providers
3. Data quality issues identified in the aggregated system require workarounds if issues are not resolved in source systems	■ Access to aggregated data provides knowledge of data quality issues but with no ability to resolve them ■ Policies and responsibility for resolving identified data quality issues in data source systems are not currently in place

Program Challenges	Additional Observations
4. Complex Care Teams lack the tools for monitoring service delivery to make better workload or training decisions	■ Existing tools do not provide the ability and analytical insight for Complex Care Teams to effectively monitor service delivery and make beneficial operational adjustments about resourcing, workload, training, and services
5. Limited client data results in incomplete ability to get reimbursed for Medi-Cal covered services	■ Maintaining continuous Medi-Cal status for eligible clients is complex due to limited advance notification of coverage lapse dates and the challenging logistics of timely and effective communication with homeless clients ■ Existing aggregate systems were not designed to generate supporting documentation for reimbursement and invoicing needs leading to challenges in claiming reimbursements for eligible services
6. Extensive manual efforts are needed to provide WPC State reporting	■ Currently available data aggregation, analysis, and reporting tools provide limited ability to readily generate WPC State reporting required to receive WPC pilot funding – extensive manual manipulation is required to generate these reports
7. Most services are episodic, focused on the immediate need / crisis making it challenging to transition clients to next steps that will help them prevent repeated future crisis episodes	■ Clients encounter and engage with the WPC ecosystem through a variety of channels that are primarily optimized to provide reactive and crisis care to the client with the initial and immediately required service ■ Similarly, data capturing tools and fields are optimized for documenting immediate and episodic client needs ■ Responsibilities for further care coordination, criteria for determining additional client needs, and channels for transitioning clients to additional services require additional definition and are currently operationally inconsistent
8. Even in complex cases, clients commonly are difficult to engage and fall off the radar after completing a program as no one owns the long-term (e.g., lifetime, residency in SF) wellbeing of the client	■ Clients experience gaps in care between receiving episodic services due to unclear responsibility for maintaining ongoing client care coordination across funding and agency silos ■ Technical solutions and available data are not optimized to provide comprehensive monitoring tools or longitudinal client insight
9. Demand for complex care services often exceeds capacity and prioritizing the right services to the right clients is a challenge	■ WPC is lacking a consistent and comprehensive means for assessing client acuity and needs and determining which is the most appropriate service(s) for the client and the associated priority for an individual client to receive the identified service(s) ■ Current tools do not provide full analytical insight for supporting service design efforts such as determining the level of need and appropriate capacity for individual services
10. Need for and adoption of a client-aggregated data system or care coordination across silos are not fully bought into based	■ CCMS adoption is limited by incomplete understanding and exposure of the CCMS value proposition across the full WPC ecosystem

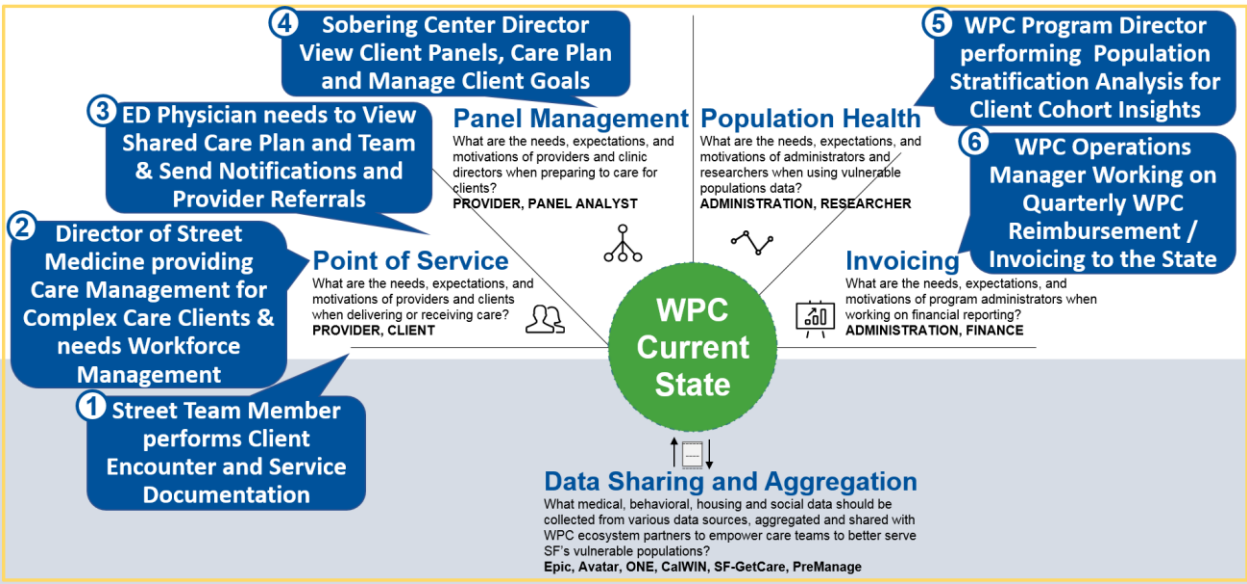
Program Challenges	Additional Observations
on current CCMS usage evidence	
11. There is a lack of clarity on City-wide direction for supporting WPC and its sustainability beyond the initial implementation	■ The inherent cross-department, cross-service domain nature of the WPC program leads to complex program and platform support requirements ■ City-wide direction for governance, funding, staffing, and other required dimensions of support for WPC beyond the initial implementation and finite pilot period have not been clearly identified and articulated

3.2 Sample Scenarios

The following sample WPC scenarios help illuminate current challenges in delivering WPC given the current state of technology enablement for SF WPC. These scenarios are grouped around the key high-level capabilities required to support WPC:

- Point of Service — Needs, expectations, and motivations of providers and clients when delivering or receiving care
- Panel Management — Needs, expectations, and motivations of providers, panel analysts and clinic directors when planning and preparing to care for case coordination panels
- Population Health — Needs, expectations, and motivations of administrators and researchers when using vulnerable populations data
- Invoicing and Reimbursement — Needs, expectations, and motivations of program administrators when working on financial reporting
- Data Sharing and Aggregation — Needs for medical, behavioral, housing and social data from various data sources, aggregated and shared with WPC ecosystem partners to empower care teams to better serve SF's vulnerable populations

Figure 1. Sample WPC Scenarios Illuminating Current State Challenges



Sample Scenario #1: Street Team Member performs Encounter and Service Documentations for various Clients

Scenario:

John of the San Francisco Homeless Outreach Team believes in the importance of thorough documentation of encounters with clients given the insights it provides to the broader team during subsequent opportunities for care

1. OPPORTUNITY

John unexpectedly meets David, a 40 year old homeless individual, who he had met before and he was not ready to engage but is this time round.

2. ENCOUNTER DOCUMENTATION

John asks David about his circumstances over the last few month and about his current needs. John used a paper form to summarize the encounter, checking the basic needs checkboxes but also adding detailed encounter notes.

3. COLLECTION AND MANAGEMENT Of ENCOUNTER FORMS

Encounter forms by the various teams are currently sent to Laguna Honda for a data entry team to enter into a siloed Microsoft Access database. Only partial data on the encounter form related to invoicing is entered. The limited data is later exported to XLS, cleaned up, and then loaded into CCMS.

4. LOST OPPORTUNITIES AND RISKS

The insightful comments captured during encounters are not all digitally entered and aggregated so they can be shared with broader care teams that can have deeper insights regarding clients. Dependency on paper forms also increases the chance that they can be physically lost.

Sample Scenario #2: Director of Street Medicine providing Care Management for Complex Care Clients and needs Workforce Management for team

Scenario:

Street Medicine program director needs to analyze service delivery patterns provided by his team to better inform the approach to service delivery and elevating the team's key skillsets

1. SERVICE DELIVERY

Street Medicine program provides health service to clients with very limited support to the team's service delivery and operations.

2. TRACKING OF DELIVERED SERVICES

The lack of core technology solution to support the team throughout the day results in inability for identifying patterns of types of services provided to clients. Paper encounter forms are stored in a box, around 500-1000 a month. Paper forms used to be sent for manual data entry as unstructured notes into Invision, however this process was stopped with no notification to the team.

3. WORKFORCE MANAGEMENT CHALLENGES

Decisions related to workforce sizing, key skills needs, new staff hiring and training is challenging given the lack of service delivery data entry / tracking and analytics that are specific to the team's operations.

4. FINANCIAL LOSS

Some encounters are not being counted and billed for through WPC, which are lost opportunities for reimbursement by the State.

Sample Scenario #3: ED Physician needs to View Shared Care Plan and Team & Send Notifications and Provider Referrals

Scenario:

An ED Physician treats a homeless patient for the fourth instance of a condition that would not exist with appropriate preventative care

1. CARE

A homeless individual suffering from a repeated ailment presents to the Emergency Department to receive treatment. The patient is registered, processed, and is waiting for care.

2. IDENTIFICATION

An Emergency Department physician is assigned and attends to the patient. During the course of treatment, the physician discovers that the client frequently utilizes the ED for preventable conditions and would benefit if engaged in coordinated care that can help the client with social benefits.

3. OUTREACH AND REFERRAL CHALLENGES

The physician does not know what steps they can take to engage the client with the right care teams and is not sure what services are available. The physician is also unable to see the clients social determinants to decide if there is something they can do themselves before moving on to the next patient.

4. DISCHARGE

The client leaves the ED and is likely to return back given the lack of support. This might have been circumvented if a care manager could be contacted to meet with the client prior to discharge to determine the client's interest and eligibility for social services that could help them stay healthy and out of the ED.

Sample Scenario #4: Sobering Center Director View Client Panels, Care Plan and Manage Client Goals

Scenario:

Sobering Center supervisor is working with her care coordinators to plan their week on Monday morning. They are working to identify the next set of actions for their clients that need to take place during the week

1. PLANNING

The supervisor's Monday planning meeting with her care coordinators aims at identifying the key next steps for their client panel that they need to be focused on during the week.

2. INSIGHTS

Currently there are no support tools to help the team scan the patients admitted to the Sobering Center and manage and prioritize caseloads or other panel management activities.

3. WORKAROUNDS

The team can find aggregated information in CCMS, but only by looking up each patient one at a time. The team uses this information to determine the right next step for each of their clients. The inefficiency of the effort prevents the team from providing better service to their clients.

Sample Scenario #5: WPC Program Director performing Population Stratification Analysis for Client Cohort Insights

Scenario:

WPC Program Director needs to perform analytics around population stratification for patterns that might identify a new cohort of clients that the program should focus on

1. POPULATION STRATIFICATION NEEDS

WPC Program director needs to perform population stratification analytics.

2. APPROACH

Although the data resides in CCMS, there is not direct access to data in a business friendly manner and the data cannot be readily analyzed. The Program Director contacts the developer to perform the necessary manual technical tasks to provide the necessary data and updates requested.

3. OUTCOME

Given the limited technical resources experienced with CCMS, the process can take a long time due to resource bottlenecks. This is especially true around WPC State reporting cycles. The whole process is repeated when the Program Director needs the next set of data insights.

4. RAMIFICATION

Currently there is a long list of outstanding data and analysis request that are pending, which represent potential for better identifying and serving SF's vulnerable populations.

Sample Scenario #6: WPC Operations Manager Working on Quarterly WPC Reimbursement / Invoicing to the State

Scenario:

WPC operations manager working on preparing WPC quarterly reporting that is due to the State at the end of the month

1. NEEDS

The WPC operations manager needs to submit a set of reports to the State to enable the City to continue receiving funding for the WPC program.

2. PROCESS

WPC operations and invoicing resources need to go through a time consuming process that involves the following steps.

1. CCMS validation reports for resolving duplications
2. Run WPC Quarterly – Enrollment and Utilization
3. Download excel, save as excel workbook in temporary location
4. Remove garbage text, delete and move columns around,
5. Verify all eligible (Enrollment status column should all be Yes)
6. Check all have enrollment dates
7. Get authorization signed by Barbara Garcia
8. Upload to the state

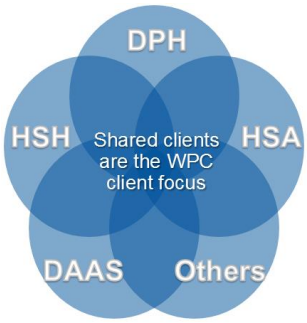
3. RESULT

While the heroic team manages to meet the demand, the team's effort spikes during the reporting period for a number of weeks, preventing them from engaging in other activities that can help improve the delivery of the WPC program.

4.0 Current WPC Technology Landscape

4.1 City Whole Person Care Ecosystem

SF WPC is supported by a number of organizations that are participants in the program and provide numerous services to clients. Each organization serves their own set of clients, however a subset of clients are served by multiple departments and occasionally at a high service utilization rate. WPC intends to provide care coordination for this subset of common clients to significantly enhance the effectiveness and efficiency in helping these clients improve their overall well-being.



The following table illustrate the abundance of programs and services provided by each participating organization, their scope of focus and their IT systems relevant to WPC.

Table 4. WPC Ecosystem

Org. / Dept.	Programs and Services Most Relevant to WPC	Scope / Boundaries Relevant to WPC	WPC Relevant IT Systems (Current)	WPC Relevant IT Systems (Future)	
DPH	**Medical** ▪ Primary Care ▪ Urgent Care ▪ Emergency Services ▪ Specialty Care ▪ Inpatient/Rehabilitation ▪ Long-Term Care ▪ Jail Health Services ▪ Complex Medical Care ▪ Transitions/Home Health ▪ Sobering Center ▪ Medical Respite ▪ Homeless Health Resource Center **Behavioral** ▪ Community Mental Health ▪ Residential Mental Health ▪ Substance Use Services ▪ Psych. Emergency Services (PES) **Outreach** ▪ Street Medicine ▪ Shelter Health ▪ Unified Command Units	▪ Vulnerable populations	▪ LCR ▪ eCW ▪ Avatar ▪ JIMS ▪ Vital Records ▪ EDIE ▪ PES eChart ▪ CCMS	▪ Epic ▪ Avatar then Epic ▪ JIMS then Epic ▪ Vital Records	WPC PLATFORM TBD
HSH	▪ Street Outreach Team (HOT) ▪ Coordinated Entry ▪ Transitional Housing ▪ Supportive Housing ▪ (Housing) Services for Homeless Veterans ▪ Shelter Services ▪ Navigation Center Services ▪ Onetime Resource Center Services ▪ Homelessness prevention ▪ Encampment Resolution ▪ Direct Access to Housing (DAH ▪ Stabilization Rooms ▪ Housing Ladder	▪ Homeless, previously homeless or in risk of being homeless	▪ CHANGES ▪ ONE ▪ XLS data sources ▪ CARBON ▪ CCMS	▪ ONE ▪ CARBON	
HSA	▪ Health Insurance (Medi-Cal) ▪ Food and Nutritional Support (CalFresh) ▪ Cash assistance (CalWORKs and CAAP) ▪ Supplemental Security Income (SSI) ▪ Employment training	▪ Low income children and families ▪ Dependent, disabled and senior adults	▪ MEDS ▪ CHANGES (CAAP)	▪ CalWIN	
DAAS	▪ In-Home Supportive Services (IHSS) ▪ Adult Protective Services ▪ Community Living Fund ▪ Mental Health Conservatorships (LPS) ▪ County Veterans Services ▪ Care Transitions ▪ Meals Programs ▪ Adult Day Programs ▪ Connection to Senior Centers/Activity Centers ▪ Referral Services (Social, Medical, Housing, Employment, Translation, Transportation and Care Givers)	▪ Older adults and their families ▪ Adults with disabilities and their families	▪ SF-GetCare (Not in CCMS)	▪ SF-GetCare ▪ Panoramic	
SFHP	▪ Medi-Cal Managed Care Plan, Healthy Kids and Healthy Workers HMO ▪ Health Homes	▪ 86% of the city's Medi-Cal managed care members	▪ PreManage (Not in CCMS)	▪ PreManage	

* For more details reading SF WPC Ecosystem Technology Systems and Tool, see Appendix 6.3.

4.2 Technology Landscape

The current SF WPC IT solution landscape and vision has evolved since the original submission of the SF WPC application to the State. This section provides an overview of relevant in-flight projects and systems in place that either directly or indirectly support the WPC program.

Building an enterprise-scale WPC technology solution demands analysis of in-flight projects and upcoming IT initiatives that might be of relevance to WPC. This includes projects related to source systems that will participate in data sharing but also ones related to enterprise technology components and platforms that are being implemented that must be taken into consideration to enable the WPC platform to properly integrate into the City's infrastructure. The following table lists these various in-flight IT projects and initiatives:

Table 5. In-flight IT Projects and Initiatives Relevant to WPC

DPH IT Initiatives Relevant to WPC	Description and Implications for WPC	Target Completion Date
Epic	An Electronic Healthcare Records (EHR) system that will replace many of the current DPH legacy systems **Implications:** ■ Epic will replace a number of WPC data sources for DPH medical and behavioral health systems including Invision and eClinicalWorks (eCW) at initial rollout followed by AVATAR at a later date ■ Decisions and plans will need to be devised for future state WPC platform consumption of health data pre and post Epic go-live	Phase 1 live August 2019. Phase 3 will include functionality to replace Avatar
NextGate eMPI	A market-leading Cloud-based Enterprise Master Person Index (eMPI) that provides an enterprise-wide unique identifier of each client. It will store the various client identifiers of each source system along with the latest copy of core client data elements such as date of birth. Provider options for integration with source systems including end of day file drops and HL7 API **Implications:** ■ Provide a unique identifier for WPC clients ■ Potentially leveraged for unique identifier of providers and City staff part of the WPC ecosystem (DPH credentialed staff, care coordinators and social workers plus credentialed medical and behavior health clinician consortiums and CBOs) ■ CCMS is not part of the scope of the eMPI due to the nature of it mostly hosting clients from other source systems already covered within the eMPI scope ■ NextGate contract has built in flexibility that allows additional scope once funding is secured	Passive Mode with Invision and Avatar summer 2018 with full go-live with Epic. No current plans to be used by non-DPH partners.
Health Leads Reach referral platform	A platform that enables health systems to manage their social needs programs and improve population health via a comprehensive service resources database **Implications:**	Pilot in two SFHN locations summer 2018 and full implementation by end of 2018

DPH IT Initiatives Relevant to WPC	Description and Implications for WPC	Target Completion Date
	■ Potential integration within the WPC platform to enable care team to quickly identify available service resources to refer clients to	
Sequoia HIE	An eHealth Exchange that provides and improves public health reporting through secure, trusted, and interoperable health information exchange **Implications:** ■ Likely no impact as the HIE data will be consumed within Epic which is already one of the core interfaces for WPC	Go live with Epic

Within the overall City WPC ecosystem, there are systems that are of particular relevance and importance to WPC given the nature of the functionality they provide and data they hold. These are as follows:

Coordinated Care Management System (CCMS) — A repository of aggregated client data from multiple agencies and systems used by DPH for data sharing and for case management by complex care teams.

Online Navigation and Entry (ONE) System — A Homeless Management Information System (HMIS) currently being rolled out by HSH to manage all their housing programs.

SF-GetCare — A client management and service care coordination platform used by DAAS to coordinate services for elders and to persons with disabilities and to provide discharge assessment and planning for client transitions back into the community. It's also used by DPH to manage transitions placements, LHH operations, restorative care and rehabilitation.

PreManage — A solution for health plan clients and providers that is used to record and communicate client encounters from all healthcare care venues, not just Emergency Departments, independent of network, health plan, hospital, or geography.

Epic — A unified Electronic Health Record (EHR) planned for use by DPH that serves inpatient, ambulatory and emergency departments and provides a number of modules to support patient engagement, clinical operations, managed care, specialty care, revenue cycle, population heath, and connections to the provider community.

These systems are discussed further in the following sections. This includes their ability to deliver a set of core capabilities that are required to enable WPC. These capabilities can be classified under two main categories:

A. Business Capabilities	B. Technical Capabilities
The functions that enable the business needs of the various WPC end users to allow them to effectively carry out their tasks and activities	The technical capabilities that enable the operations of the system including its performance, security and ability to integrate and

A. Business Capabilities	B. Technical Capabilities
	share data; all dictated by the underlying platform architecture

* Definitions of the various business and technical capabilities can be found in Appendix 6.8 and 6.9.

The high level assessments of these systems against these capabilities are based on information gained from discovery interviews, vendor demos, responses to questions and relevant public information online. The assessment is intended to structure the information gained in a consistent and consumable manner and does not represent an endorsement or denouncement for any of these systems. The scoring of each system capabilities is based on the following:

Score	Score Description
✔	System capabilities demonstrated are STRONGLY ALIGNED with WPC needs
?	System capabilities demonstrated are MARGINALLY ALIGNED with the WPC needs
✘	System capabilities demonstrated are STRONGLY MISALIGNED with the WPC needs
●	System capability evaluation was not completed

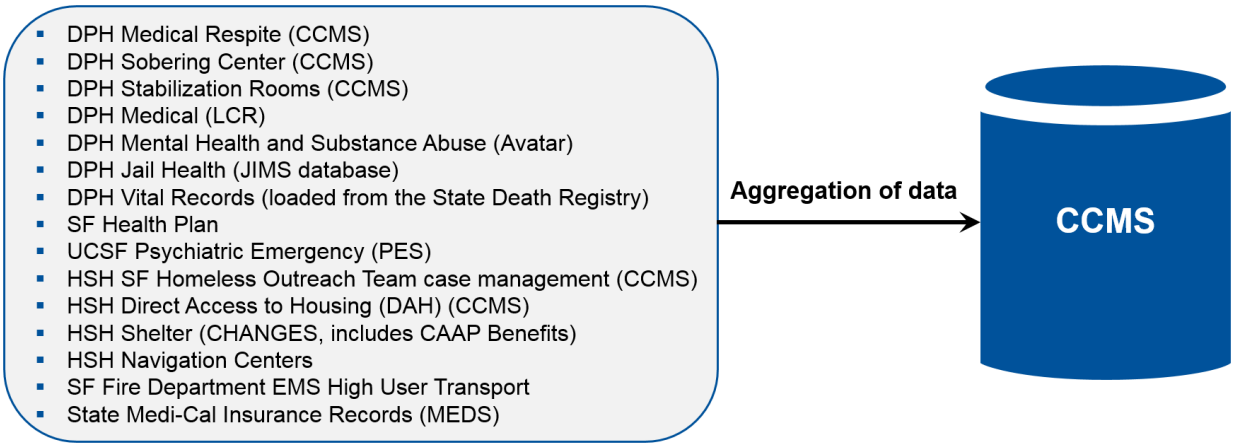
* For a high-level side-by-side comparison of these systems' ability to enable WPC capabilities see appendix 6.7.3.

4.2.1 Coordinated Care Management System (CCMS)

SF DPH has been delivering care coordination services with limited coordinated technology support. The Coordinated Care Management System (CCMS) has been the main technology platform for integrated health and social determinants data, data sharing, risk assessment, and population stratification for vulnerable clients. CCMS integrates and aggregates clients' medical, behavioral, housing, and social data from multiple source systems that do not otherwise share information. CCMS makes that comprehensive client summary data available to the various care delivery teams in their source systems and enables San Francisco to better understand its most vulnerable populations. Begun in 2005, CCMS has evolved to become a nationwide leading vision for how to better support coordinated care for complex, high risk, and vulnerable clients. Invaluable learnings from developing and utilizing this integrated data system have informed the approaches and requirements for the future WPC platform.

4.2.1.1 CCMS Overview

CCMS is a composite database of integrated data for vulnerable populations from source databases across the City that aggregates data from the following sources:



The aggregated data represents a longitudinal whole person perspective of each client with additional insights and visualizations showing the clients' service consumption history and risk factors / vulnerabilities. The data covers all SFHN clients that are 18 and older if they meet certain risk factors, including any history of homelessness, any urgent/emergent service history; e.g., ED, medical inpatient, Psych ED, psych inpatient; any behavioral health service history; e.g., mental health and substance use disorders, and/or any jail history. New clients to the system of care can also be added to CCMS using the CCMS applications. Once a CCMS record is created, it is routinely updated through data feeds from source systems. While CCMS reports enable the identification of specific sets of clients, for example WPC-eligible or homeless adult clients, there is no means in the actual CCMS applications that allows users to search for or manually flag clients as such.

CCMS provides access to data in two modes, both pointing to the same underlying data:

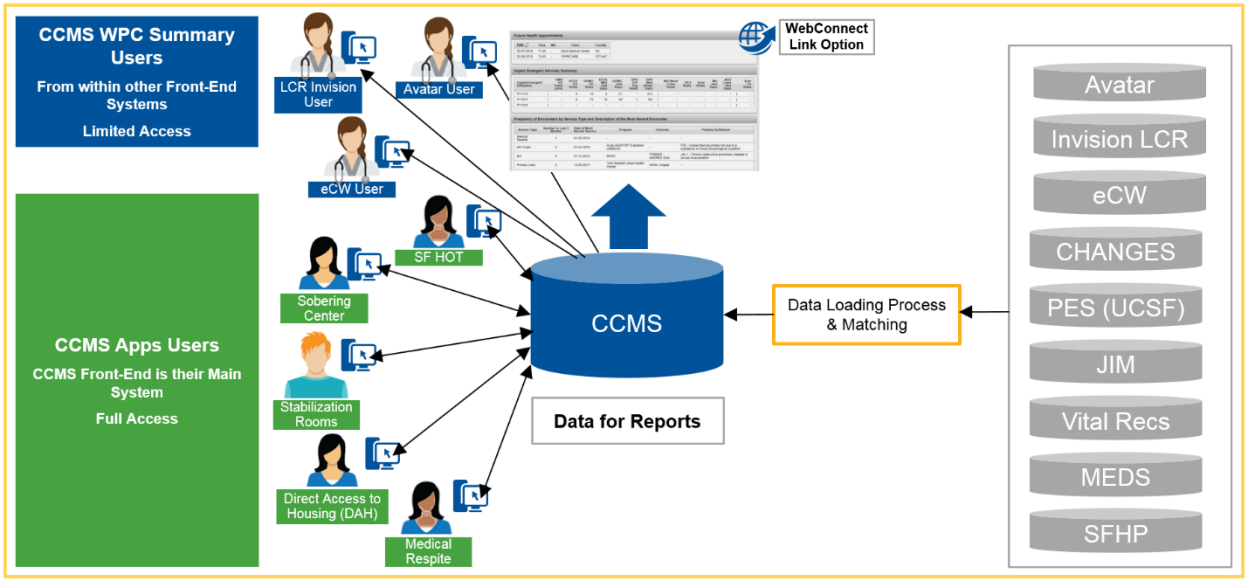
1. **CCMS WPC Summary —** Read-only to client integrated summary accessed from within source systems which are currently Avatar, eClinicalWorks (eCW), Invision/LCR and PulseCheck in addition to access through the web. This access mode is used by the large majority of the CCMS users
2. **CCMS Applications** — A set of applications used by specific user groups to support their core programs. They provide update capabilities including ability to add a client directly into CCMS or for adding the CCMS user / provider to the client's care team. All of the following CCMS applications provide a link to the WPC Summary Page for the client being viewed.
   - **<u>CCMS Case Management tool (A.K.A. CCMS Main Application)</u>** — Primarily used by SF HOT case managers and outreach specialists to manage their clients. This is the only CCMS application that allows the user to view the integrated data from the rest of the CCMS applications and source systems.
     - ❑ Allows adding clients, cases and progress notes
     - ❑ Manages case information including perceived problems, considerations, living situation, income and benefits, legal status, health status
     - ❑ Allows clients to be enrolled into a treatment plan and a street-to-home plan
     - ❑ Tracks provided services such as case management, coordination of primary / behavioral care or other services
     - ❑ Operate over the same client data as the CCMS WPC Summary

- **Sobering Center** — Used by Sobering Center case managers serving the vulnerable acutely intoxicated clients to support their operations including admission, tracking services provided to client and discharge. Data captured include referral source, living situation and purposes of admission. Medical data provided by the client during admission is not aggregated with the rest of the data in WPC summary
- **Stabilization Rooms** — Used by program case managers of specific sets of hotels to manage the admission of eligible clients to units / rooms for stabilization. It provides reports on usage per case manager or per hotel. The application is also used to maintain the definitions of the various locations, including wheelchair and pet support.
- **Direct Access to Housing (DAH)** — Used by program case managers to determine eligibility of clients to available housing under the program and manages the inventory of building. Data managed includes client demographic, income, living situation, application for DAH, history of housing retention and behaviour info. It provides reports on the history of occupancy of each unit, applications in process, vacancies and on the number of years clients are homeless. The application allows searching through the full CCMS client list, however it does not provide a means for only viewing DAH clients.
- **Medical Respite** — Used by Medical Respite case managers providing the medically and psychiatrically complex homeless adult clients with the following services:
  - Recuperative care — Urgent care, meals, Nursing care, medication management, patient education, and wound care
  - Temporary shelter
  - Coordination of services — Primary care, social services, linkages to housing and transportation

  It supports respite operations including admission, tracking services provided to client and discharge. Data captured include referral source, living situation, purposes of admission and number of respite days. Medical data provided by the client during admission is not aggregated with the rest of the data in WPC summary

The following diagram illustrates the two modes to access CCMS and the data flow into CCMS generated from both direct users and data loaded into the back-end from other source systems.

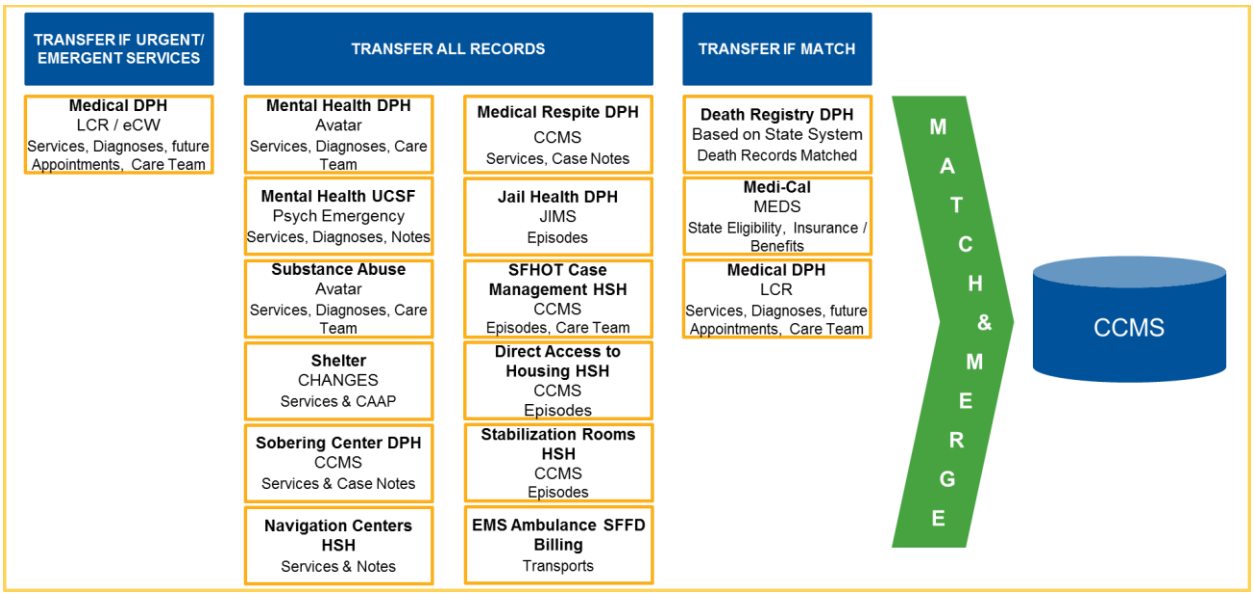
Figure 2. CCMS User Access Modes and Data Sources



* For view of CCMS WPC Summary from within Avatar, see Appendix 6.3.

Depending on the data source and type of data, either all data is transferred to CCMS staging database tables or only a filtered set of records are transferred based on a matching condition, as seen in the following diagram.

Figure 3. Transfer of Source System Data into CCMS Database



* For details on CCMS data sources refresh rates, see Appendix 6.4.

These aggregated data sets allow the various CCMS user groups to gain insights to better serve their clients. For example, a health provider can use the CCMS WPC Summary page to lookup other members of the treatment team and the client's recent history of services encounters and providers to consult with to make a more informed treatment decision.

Frequency of Encounters by Service Type and Description of the Most Recent Encounter

Service Type	Number in Last 3 Months	Date of Most Recent Service	Program	Clinician	Primary Dx/Reason
Medical Respite	1	[redacted]2018	-	-	-
ED	4	[redacted]2018	SFGH	[redacted]	J44.1 - Chronic obstructive pulmonary disease w (acute) exacerbation
MH Outpt	3	[redacted]2018	Hyde Adult FSP Outpatient (38BRA3)	[redacted]	F29 - Unspecified psychosis not due to a substance or known physiological condition
Primary Care	1	[redacted]2017	Tom Waddell Urban Health Center	[redacted]	-
Hospitalization	1	[redacted]2017	SFGH	[redacted]	J44.1 - Chronic obstructive pulmonary disease w (acute) exacerbation
1171 Mission	0	[redacted]2017	-	[redacted]	Complex Chronic Care
Urg Care	0	[redacted]2017	Tom Waddell Urgent Care	[redacted]	-
Psy Crisis Res	0	[redacted]2016	Dore House Crisis Res (38GM1)	[redacted]	F29 - Unsp psychosis not due to a substance or known physiol cond
Crisis Day	0	[redacted]2016	Progress Foundation Dore Clinic (38I12)	[redacted]	F29 - Unsp psychosis not due to a substance or known physiol cond
Ambulance	0	[redacted]2015	-	-	Tachycardia
PES	0	[redacted]2012	SFGH Psy Crisis Stabilization (8812CS)	-	296.90 - Mood disorder NOS

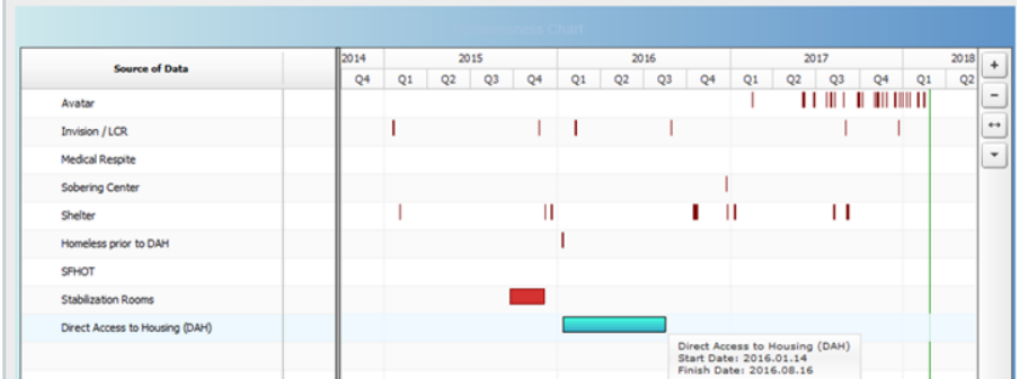
**Primary Care Behavioral Health data available for nine primary care clinics 4/1/2011-10/31/2015; available for only one clinic (Larkin Street Youth Clinic) 11/1/2015-Present.

Provider History

Member	Program	Beginning Date	Ending Date	Last Visit Date	Phone	Email
[redacted]	Hyde Adult FSP Outpatient (38BRA3)	[redacted]2016		[redacted]2018	415-[redacted]	
	Medical Respite	2017		2018	415-	
	SF HOT				415-	[redacted]
	Tom Waddell Health Center			2016	415-	
	inactiv- SFHP CareSupport Team	2015	[redacted]2017	2017	312-	
	A Woman's Place (38BKOP)	2016	2017	2017	415-	
	Dore House OP (38GM3)	2016	2016	2016	415-	
	Dore House OP (38GM3)	2016	2016	2016	415-	
	South of Market Outpatient (38719)	2012	2014	2014	415-	
	South of Market Outpatient (38719)	2012	2014	2014	415-	
	Baker Place Grove St Outpatient (8978OP)	2012	2013	2013	415-	
	Baker Place Grove St Outpatient (8978OP)	2012	2013	2013	415-	
	Shrader House Outpatient (8966OP)	2012	2012	2012	415-	
	Shrader House Outpatient (8966OP)	2012	2012	2012	415-	
	A Woman's Place (38BKOP)	2012	2012	2012	415-	

Similarly, a housing provider can check the housing history, client benefits and risk factors to better understand the client's ability to maintain a home to decide the most suitable type of housing option for the client.

Longitudinal Graphical Display of Homelessness



Month	Aid	Aid Source
2018-02	(60) SSI/SSP - Disabled	Avatar
	Medi-Cal-San Francisco Health Plan	MEDS
	Other Coverage	Inv - Outpatient
2018-01	(60) SSI/SSP - Disabled	Avatar
	Medi-Cal-San Francisco Health Plan	MEDS
	Other Coverage	Inv - Outpatient
2017-12	(60) SSI/SSP - Disabled	Avatar
	Medi-Cal-San Francisco Health Plan	MEDS
	Other Coverage	Inv - Outpatient

Risk Factors

FY	HUMS?	HUMS Rank	U/E Care Costs	Elixhauser Comorbidity	Functional	Jail Health Days	Days Conserved	Total SFGH Admits	30-D Inpt Readmits	Non-Acute Days	Out Of Net U/E Svcs	Missed Appts	Homeless?
FY1314	n/a	-	-	-	-	-	11	-	-	-	-	-	-
FY1213	-	-	-	MED-MH-SA	-	-	244	10	9	-	-	4	Yes
FY1112	Yes	3	$189,919	MED-MH-SA	-	13	-	4	1	-	-	3	Yes
FY1011	Yes	34	$110,190	MED-MH-SA	-	-	-	3	-	-	-	1	Yes
FY0910	Yes	125	$64,041	MED-MH-SA	-	-	-	2	-	-	-	1	Yes
FY0809	Yes	75	$44,429	MED-SA	-	-	-	1	-	-	-	-	Yes
FY0708	-	-	$1,652	SA	-	-	-	-	-	-	-	-	Yes

In addition to providing a view of the aggregated data from the various source systems, the CCMS WPC Summary page also provides added insights. This includes early mortality predictions data based on the Elixhauser Comorbidity Index which factors in the client's history of medical, mental health and substance use to predict risk of premature mortality.

Early Mortality Prediction based on Elixhauser Comorbidity Index **

The Elixhauser Index is a research tool used to predict early mortality among inpatients. It is being tested here for ambulatory care patients. Ability to identify tri-morbid and co-morbid chronic, or urgent conditions is expected to add risk assessment value.
The Elixhauser Index (Quan et al, Med Care, 2005) is a list of 31 co-occurring conditions that contribute to early mortality.

Morbidity	Elixhauser Dx Category	Last 2 Years	All History
MH	Psychoses	27	43
	Depression	2	7
SA *	Drug Abuse	10	33
	Alcohol Abuse	3	9
Medical	Chronic Pulmonary Disease	44	134
	Obesity	14	37
	Diabetes, Uncomplicated	13	17
	Liver Disease	2	12
	Cardiac Arrhythmias	3	7
	Fluid and Electrolyte Disorders	1	5
	AIDS/HIV	-	-

* For a view of the various data elements that display on the CCMS WPC Summary, see Appendix 6.3 and the Left-Navigation Links section of the CCMS Use Guide, Appendix 6.6.

CCMS supports the following sets of user groups*:

- **Case Managers and Clinicians** — view individual records for their assigned clients with new documentation streaming in overnight or in real time, and they see the other care coordination team members and contact information
- **Supervisors, Program Evaluators and Quality Management** — read individual charts and caseload reports for quality control
- **Epidemiologists and Researchers** — aggregate data to better understand client trajectories and indicators of system needs/successes
- **Planners, Policy Makers, and Administrators** — have an ever increasing choice among regularly scheduled reports to help prioritize limited resources

* A more detailed list of CCMS user titles and groups can be found in Appendix 6.5.

The CCMS user community is generally within DPH but also includes any other agency that has access to LCR, Avatar, or eCW. Historically, user-base expansion outside of DPH has been limited due to firewall constraints for access, CCMS legacy technology constraints, limited IT staff support and lack of awareness of CCMS. This impeded the WPC goal of care coordination and expanding WPC population enrollment and service consumption. These issues have been recently addressed to enable CCMS to better support WPC in the interim.

CCMS includes various historical data reaching back as far as 1998. Data integration consists of de-duplication, i.e., matching, reconciling conflicting client information (e.g., demographics) and linking client records. CCMS built-in reports include:

- Overlap and Demographic Reports are Intersection Reports
- Target Populations Reports
- Time variables stored and date ranges in reports
- Timeline reports — Client Time in treatment

* For further details on CCMS, see the CCMS User Guide referenced in Appendix 6.6.

Current State Quotes

4.2.1.2 CCMS High-Level Assessment

This section provides a high-level assessment of the CCMS capabilities that are relevant to WPC. The assessment factors in both the underlying CCMS capabilities that were developed to support the CCMS Client Summary in addition to those developed to support the various CCMS specialized applications as combined they represent the overall CCMS platform.

A. Business Capabilities

CCMS provides support for a number of core business capabilities that are required to enable WPC. The following table provides details regarding the Platform's business capabilities.

Table 6. CCMS Business Capabilities Assessment for WPC

Missing Partial Provided

Business Capability	Description	
1. Aggregated Client Summary View in External Systems	+ CCMS WPC Summary page providers comprehensive sets of aggregated data from various source systems along with links to provide additional details, including the client care team and services + CCMS WPC Summary page is accessible from within a number of source systems. It can also be directly accessed through the CCMS application by authorized users	✔
2. Alerts and Communication	− Does not provide means for alerts and communications between care team members − Does not allows alerts for clients' upcoming events and communications to be scheduled	✘
3. Shared Needs Assessment and Risk Stratification Tool	+ Provides client specific risk stratification data visualization that is presented part of the CCMS WPC Summary page − Does not include an inter-agency shared needs assessment across the full WPC eco-system	?
4. Manage a Shared Care Plan	− No shared care plan support, however certain CCMS applications allow development of program specific client care plans	✘
5. Encounter and Service Documentation	+ Provides means for adding progress notes that include location of incident, time, staff name and whether it was face-to-face + Tracks provided services inclusive of diagnosis for services such as case management, coordination of primary / behavioral care or other services	✔
6. Service Eligibility, Enrollment, and Discharge	+ Manages application intake, eligibility, enrollment, and discharge for the various CCMS applications' programs + Tracks provided services such as case management, coordination of primary / behavioral care or other services	✔
7. Client Goal Management	− No support	✘
8. Referral Management	− Does not manage referrals	✘
9. Workflow Management	+ Provides workflow capabilities for the specific CCMS apps needs − Custom built for specific usage with CCMS apps with no generic capability to configure workflows	?
10. Case Management	+ CCMS case management tool allows the creation of cases to capture the client's perceived problems, living situation, income and benefits and health status among other data + CCMS tracks case progress notes overtime and includes a cases tab that lists the client's history of cases − CCMS case management capabilities are customized for the specific needs of supported programs − Does not provide ability to configure and manage caseloads	?
11. Panel Management	+ Provides client aggregated data for panel teams to better manage their clients	?

Business Capability	Description	
	− Does not easily provide panel management capabilities such as self-service system interactions	
12. Care Team Management	+ Care team is aggregated from data feeds from external systems plus care team data entered from CCMS applications + Care team is linked to the client which ensures consistent display of the client's care team across all cases and programs	✔
13. Workforce Management	+ Allows the association of various staff to a given supervisor + Workforce insights are provided through reports − Lack of ability to assign sets of clients or cases to specific staff − No workforce on-screen updatable data that allow case and staff re-allocation	?
14. Service Definition and Management	+ Provides service definition and management capabilities, for example managing inventory of building / entities, unit occupancy / vacancies for DAH and Stabilization Rooms − Lacks the ability to track enrollment priorities using dynamic queues − Requires customization to update program and service management definitions / criteria	?
15. Population Health Management	+ Supports the identification of WPC client populations and classification based on aggregated client data + Provides client vulnerabilities classification and risk based on aggregated client service consumption and behavioral patterns + Pre-defined reports and manual analytics can be used to create grouping of clients	✔
16. Reimbursement/Invoice Support	+ Provides some support for an approach to deliver SF WPC invoicing and re-imbursement reports to the State mostly using external documents − CCMS was never built to handle invoicing and re-imbursement report generation which demands intense effort from the two DPH CCMS resource, the CCMS IT and CCMS data expert. These resources become off limit for all other work around WPC reporting deadlines, resulting in bottlenecks and lost opportunities for contributing to more strategic or enhancement type efforts − The CCMS technology architecture requires extensive manual coding by the one CCMS IT resource to add missing data feeds, such as new housing related invoicing data feeds from SF HSH	✘
17. Operational Analytics	+ WPC metrics reports have been recently added + Provides a set of pre-defined reports with capability to apply filters to narrow results down and export data into XLS − Extra analytics demand manual intervention or application development work	?

Business Capability	Description	
18. Performance Analytics	– Provides a set of pre-defined reports with capability to apply filters to narrow results down and export data into XLS – Manual technical work and data analysis is required ongoing to work around CCMS and data quality issues. The overhead for addressing CCMS process and data quality issues by the limited CCMS staff slows progress of potential enhancements that can reduce the current manual work – Extra analytics demand manual intervention or application development work	?
19. Client Portal	– No support	✗
20. Consent, Privacy and Authorization	– No support	✗

B. Technical Capabilities

CCMS is built on top of a technology platform which is the foundation that enables the various capabilities observed and consumed by end users. CCMS has evolved since 2005 and is currently supported by the following technology stack components:

Table 7. CCMS Platform Technology Stack

Component	Description
Virtualization Environment	■ **N/A**
Web Server Technology	■ Apache Tomcat cross-platform HTTP server ■ Oracle Application Server 10.1.2 on Windows 2003 ■ Oracle Restful Services
Application Language	■ Oracle Forms (CCMS Case Management Tool) ■ Oracle APEX 5.0.4.00.12 (All other CCMS Apps)
Reporting BI Engine	■ Oracle APEX reporting (embedded) running on dedicated set of database tables but within the same database instance
Data Analysis Engine	■ Exports to XLS
High Availability/Load Balancing	■ None
Database Server	■ Oracle Enterprise Edition RDBMS 12.1.0.2.0
Operating System	■ Windows 2012 R2

The following table provides details regarding the CCMS technical capabilities that are relevant to WPC.

Table 8. CCMS Technical Capabilities Assessment for WPC

✗ Missing ? Partial ✓ Provided

Technical Capability	Description	Score
21. Usability	+ CCMS WPC Summary is directly accessible from within a number of core DPH systems − The CCMS Apps are built using Oracle Forms and demand manual install of a legacy Java release to be installed on the user desktop for CCMS apps. Each CCMS App needs a different legacy Java release. The lengthy or unsuccessful onboarding process for new CCMS applications users discourages user adoption and hence limits the ability for coordinating care. This issue does not impact the CCMS WPC Summary used by the larger majority of CCMS users which is built using Oracle Apex − The CCMS user interface is not responsive and is not suited for modern portable devices with limitation on browsers and devices it can run on. This eliminates the possibility of CCMS's use by mobile/street teams via modern portable devices − External access to CCMS[1] from outside of the DPH network requires the use of the DPH WebConnect website to gain remote access to DPH Web Application Portal where the CCMS web link resides. This configuration discourages or limits the ability of non-DPH staff from becoming CCMS users due to: ❑ The user must be aware of the correct WebConnect website address, which might not be the case on all devices they use ❑ The user must enter credentials twice, once for WebConnect and another for CCMS, which results in poor user experience	?
22. Supportability	− Support of the Platform requires heavily reliance on IT staff to customize application functions limited agility and deployment speed − Platform components are based on outdated technology, or have not been refactored to take advantage of capabilities of newer releases − Limited available resource in the marketplace to support the underlying application technology: ❑ Oracle Application Server is outdated technology by Oracle ❑ Oracle APEX code written approximately 10 years ago but has not been refactored to take advantage of the capabilities of the relatively recent APEX release that CCMS has upgraded to. CCMS UI still not responsive…etc. ❑ Windows 2003, with security vulnerabilities, running both CCMS Oracle Application Server and Apache Tomcat; however this can be easily mitigated by upgrading to a newer Windows release	✕
23. Scalability	− Platform is not running on a SaaS or virtualized environment that can easily scale to handle additional load from extra clients or heavy transactions such as analytics or reporting	✕
24. Availability	− Platform does not provide high-availability and is running on components that represent single points of failures. The lack of	✕

[1] *For more details on external access to CCMS application outside of DPH's network, see Appendix 6.11.*

Technical Capability	Description	Score
	high-availability infrastructure introduces the risk of complete loss of functionality by all users if a core CCMS technology component fails	
25. Performance	+ Response time for current load is acceptable and reports are running on a separate set of database tables − Reports tables are within the same database instance. This can potentially trigger degradation of response time for all CCMS users when heavy reports are being run − Lack of infrastructure scalability and load balancing risk performance degradation as CCMS usage and load increases − There are no formal SLAs in place	?
26. Identity	+ All CCMS applications operate on the same set of uniquely identified underlying clients ensuring consistency of client insights + Custom built matching on clients, duplicate records report and manual resolutions − Lack of personal bandwidth and process in place to promptly address duplicate in the source system results in CCMS data quality issues	?
27. Security	+ Access to CCMS direct applications and reports is role based on the user-level data privacy / access settings that can for example put limits of the user access to PES progress notes + CCMS WPC Summary is accessible from within other systems, such as Avatar, while enforcing and tracking user-level activities − CCMS lacks the capability of role-based access control for the CCMS WPC Summary and given the sensitive medical and behavioral health data in CCMS the lack of role-based access control limits the ability for expanding CCMS user-base to additional types of users or customizing it for specific roles, for example to show Substance Abuse data to authorized user groups − CCMS WPC Summary access from within other systems replies on a custom-built workaround for Single Sign On (SSO) that is not standards based limits the source systems that can integrate with CCMS	?
28. Privacy Compliance	+ Provides a report on users' view access to CCMS data elements − Lacking consent management and standards-based role-based access control to data − Logging transactions history and producing reports related to all access and updates to data elements for privacy compliance purposes is not built into the Platform design	?
29. Integration	+ The integration of CCMS data is based on batch file uploads from source systems into database staging tables. Database views with complicated logic pointing to the staging tables constitute the CCMS data that is used by the CCMS front-end + CCMS runs 8–12 nightly batch jobs and only rarely does a job fail. In case of a failure, a custom built scheduler triggers a notification to the system administrator − The CCMS technology architecture requires extensive manual coding by the one CCMS IT resource to add missing data feeds,	?

Technical Capability	Description	Score
	such as new social benefits data feeds from SF HAS. The CCMS technology architecture requires extensive manual coding by the one CCMS IT resource to add missing data feeds, such as new social benefits data feeds from SF HSA	
30. Reporting and Analytics	+ Oracle APEX Embedded Reporting provides standard interface for interacting with reports including specifying search criteria/filters and exporting the report data to Microsoft Excel − Lack ability to provide self-service AD HOC reporting, dashboards and visualizations	?
31. Governance, Support and Operations	− CCMS is a home grown system and was never fully embraced by DPH IT organization leadership with overall preference for avoiding custom grown applications. Given the lack of IT leadership support for expanding CCMS functionality or modernize its technology, CCMS team is unable to provide better quality of service to end users − There is only one core technical staff, with partial help from another developer helper, to that handles all CCMS database and front-end development and IT operational needs. Similarly there are only two key staff with deep understanding of CCMS data and numerous other job responsibilities. The staff limitation results in bottlenecks for making CCMS enhancements or producing required ongoing WPC reports. Demand for additional operational support will also increase with expansion of CCMS user base − There is low awareness of the existence of CCMS due to the lack of CCMS marketing. Users that would benefit from access to CCMS do not know it is available to them which impedes the WPC goal of care coordination	✕

4.2.2 Online Navigation and Entry (ONE) System

The San Francisco Department of Homelessness and Supportive Housing (HSH) five-year strategic framework[1] outlines goals for addressing chronically homeless adults, families with children, youth and street homelessness. To support these goals HSH is working on merging 15 different homeless services databases into one new centralized data system, the ONE System, that will allow tracking of performance of the various HSH programs and the impact on homelessness in San Francisco; establishing a comprehensive Homelessness Response System.

[1] *SF Department of Homelessness and Supportive Housing (HSH) five-year strategic framework at* *http://hsh.sfgov.org/wp-content/uploads/2017/10/HSH-Strategic-Framework-Full.pdf*

> "The new Homelessness Response System will strive to ensure that clients will not have to wander from program to program, remain on waiting lists with little or no understanding of what will happen next, or receive no information on their options. This system will also acknowledge that not everyone needs permanently subsidized housing to exit homelessness. As such, we will expand the focus on Prevention, Problem Solving, and Rapid Rehousing assistance" [1]

The goal of the One System is to cover all HSH work by all user groups in all locations.

HSH investments cover various programs and services including shelters, temporary housing, outreach, and other services. However, the majority of HSH funding is dedicated to ongoing housing subsidies and the operation of Permanent Supportive Housing for people who are formerly homeless. HSH provides eligibility screening for Permanent Supportive Housing and for units that requires "Section 8" Vouchers. HSH then refers clients to the San Francisco Housing Authority where they go through the full application process to secure a housing unit.

At least 85% of HSH's funds are distributed to services delivered via contracts with nonprofit partners. HSH invoicing by the various housing providers will continue to be processed in the HSH system "Contracts Administration, Reporting and Billing Online" (CARBON) where the providers report data to HSH monthly. ONE System does not provide contracting/invoicing capabilities.

To help open-up Permanent Supportive Housing units for chronically homeless clients, HSH's Housing Ladder will help residents living in Permanent Supportive Housing who are ready to move on to secure other subsidized housing using different means, e.g., homeless veterans-related tenant vouchers provided by the San Francisco Housing Authority.

Given the relevance of the ONE System to the homeless populations, Gartner conducted a number of interviews and performed research to better understand the ONE System implementation and the role it plays in enabling the WPC program.

4.2.2.1 ONE System Overview

The ONE System is a Homeless Management Information System (HMIS) that is based on the Bitfocus Clarity Software as a Service (SaaS) platform. The ONE System will replace 15 HSH data sources, see Appendix 6.12, which are targeted for migration by end of October 2018. While ONE is currently being rolled out by HSH, as of this writing only three data sources/systems have been migrated:

1. **SF Homeless Management Information System (HMIS)** — A web-based system by Efforts to Outcome Social Solutions
2. **Coordinated Entry System for veterans** — Homelink web-based system by Palantir
3. **Coordinated Entry System for non-veterans** — Homelink web-based system by Palantir

The ONE System implementation is currently considered by HSH to be at 15–30% completion depending on the criteria used to evaluate progress:

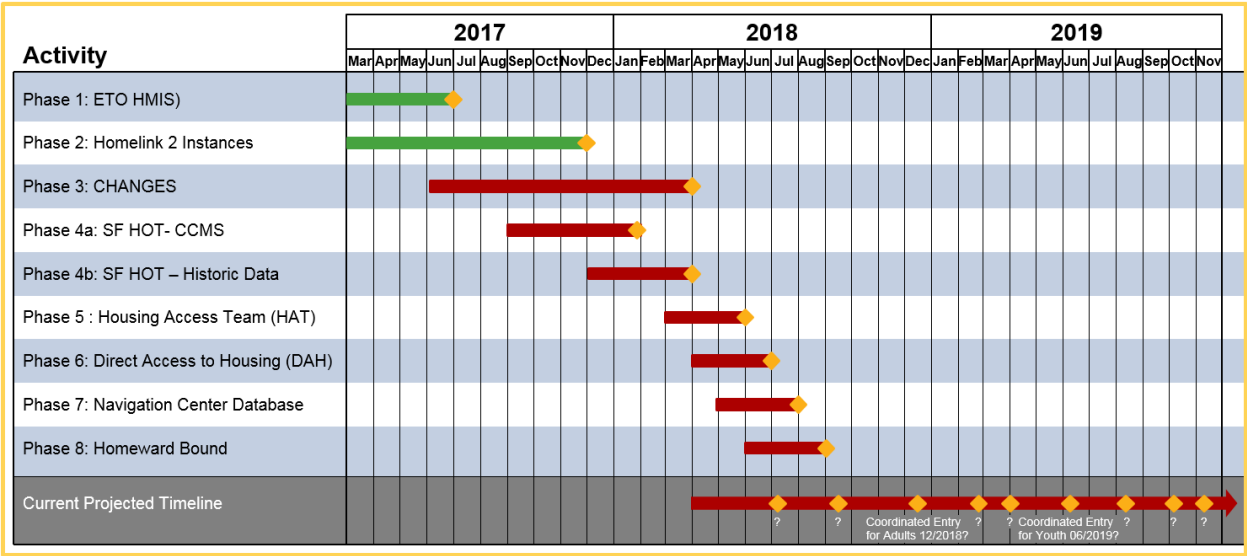
a. 15% of the way from a lights out legacy system status

b. 30% of the way there on client mix

Data usage analysis of converted data into ONE revealed that out of the approximate total 15,000 records migrated to ONE thus far, only a small set of records are actively being used. This has signaled the need for closer analysis of remaining data sources to identify how to improve data quality and determine what should be migrate into ONE.

Given this reality, HSH is shifting its focus to enhancing capabilities of migrated systems such as Coordinated Entry and boosting ONE's user adoption. Example upcoming projects might include adding workflows to provide better collaboration across participating agencies. Simultaneously, the priority for migrating the remaining data source is being reassessed by HSH's leadership team to better reflect HSH's strategic direction. The plan for migration will be updated by the end of April 2018 to guide the rest of the ONE implementation which is currently projected to continue **throughout 2019** assuming no changes in the project scope.

Figure 4. ONE System Original Implementation Timeline vs. Current Projection



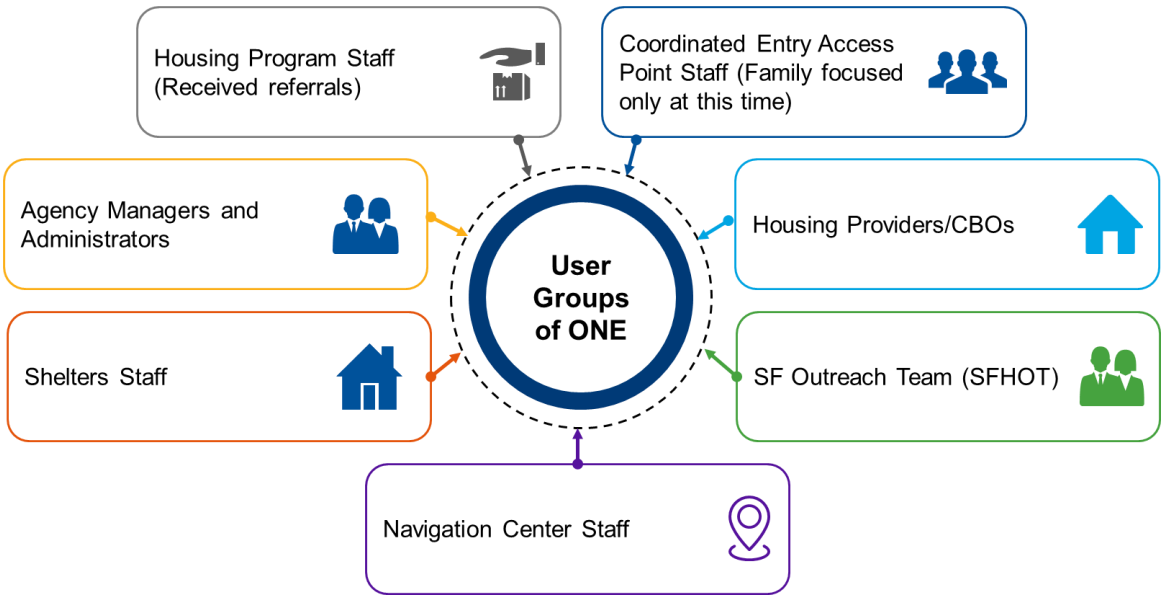
In the meantime, HSH services continue to be supported by 12 legacy systems relying on FileMaker Pro, XLS and ACCESS DB files on file share drives in addition to a couple of web-based systems that have not yet been converted to the ONE System.

The ONE System user base is currently at 400 users with the following user mix:

- 20% public employees
- 80% nonprofit Community Based Organizations (CBOs)

The projected future total users is 1500 with the majority of the CBO workforce lack strong computer skills, emphasizing the importance of ONE ease of use.

The main user groups of ONE are:



While the midterm focus for the ONE System is to support the delivery of all housing support-related services, including Coordinated Entry, there are additional goals that could be supported by ONE in the future.

Table 9. ONE System Long-Term Future State Goals

ONE Long-Term Future State Goals
Adding data feeds to ONE from external agencies such as Human Services Agency (HSA). Similar to the planned bidirectional interface with CCMS, these data feeds could help teams such as SF HOT prioritize clients
Elevating and leveraging cross-agency care coordination functionality
Having the ability to connect clients to services outside of HSH and continuing to be connected and sharing care team notes

4.2.2.2 ONE System High-Level Assessment

The ONE System is built on top of the Bitfocus Clarity platform, referenced thereafter as the "Platform," which is the foundation that enables the various capabilities observed and consumed by end users. This section provides a high-level assessment of the Platform capabilities that are relevant to WPC.

A. Business Capabilities

The ONE System Platform provides support for a number of core business capabilities that are expected of an HMIS that can also potentially be expanded to enable service delivery of WPC. These include:

- Shared Needs Assessment and Risk Stratification Tool
- Encounter and Service Documentation
- Alerts and Communication
- Service Eligibility, Enrollment, and Discharge
- Workflow Management

- Care Team Management
- Programs Management
- Workforce Management
- Operational Analytics

The Platform is organized around clients' consumption of programs and provides configurable assessments that can be used to assess clients for enrollment in multiple programs. Each client has a unique client ID across the system and a client history page that includes:

- Client housing program/service history including begin and end dates
- Housing assessments
- Housing reservations
- Housing referral history
- Notes attached to services

The Platform's client summary page can be configured to include additional client data elements from external sources such as CCMS. Clients can be linked together to create a family/household with relationships.

Clients can enroll into programs based on assessment outcome and each program can be linked to a checklist of required documents needed for the client to enter the program. Program capacity data including occupancy and availability (beds) is tracked by the provider as clients are enrolled in and out of the program. Services, for example assistance with employment or life skills training, can have an associated expense amount and be linked to a given funding source. Services can either be tied to a program or offered independent of a program, known as Transaction Services.

However, the Platform has a number of gaps in capabilities required to enable management of WPC populations, including:

- Client Goal Management
- Manage a Shared Care Plan
- View Care Plan and Care Team
- Referral Management
- Case Management
- Panel Management
- Population Health Management
- Reimbursement/Invoice Support
- Performance Analytics

The Platform does not work around cases or services provided under a given program. The data repository is predefined for HMIS's Department of Housing and Urban Development (HUD) data model. To update the Platform's core to function as a case management platform for other domains such as WPC will require additional development by the vendor.

The following table provides further details regarding the Platform's business capabilities that are relevant to WPC. The evaluated scoring is from a WPC perspective. Scoring of the Platform

for an HMIS perspective would yield higher results given that the Platform was designed from inception to support HMIS.

Table 10. Bitfocus Clarity Business Capabilities Assessment for WPC

✗ Missing ? Partial ✓ Provided

Business Capability	Description	Score
1. Aggregated Client Summary View in External Systems	+ Aggregates data from multiple housing systems and provides history of client services and basic demographics data + Client report page shows program history that includes programs and care provider of services + Client report can be further expanded to include client data elements such as consolidated care plan using data from external source systems + Was not purpose built to provide client summary access from within external systems, however the underlying technology includes embeddable reports which can be used to meet this need	?
2. Alerts and Communication	+ Users can create an alert that shows up across the page when other authorized users access the client's page + Provides email alerts to notify users that are not logged into the Platform + Sends notification when client needs to be assessed for a program they are enrolled in ahead of the service end date − Does not include SMS, but not challenging to add	?
3. Shared Needs Assessment and Risk Stratification Tool	+ Ability to easily create multiple configurable assessments with skip logic + Can provide eligibility screening for multiple programs using the same assessment; currently not leveraged by SF + Provides assessments based on Vulnerability Index — Service Prioritization Decision Assistance Tool (VI-SPDAT) used for homeless assistance + Scores clients taking a specific assessment and prioritizes them within the community queue + Further risk stratification can be built based on provided business rules − Support for non-housing assessments would require significant updates to the Platform data structures	?
4. Manage a Shared Care Plan	− Platform does not provide shared care plan management	✗
5. Encounter and Service Documentation	+ Encounter assessment provides structured encounter documentation + Encounter notes are viewable by all authorized users + Provides ability to record client consent using e-sign documents on-screen or upload scanned paper documents	✓
6. Service Eligibility, Enrollment, and Discharge	+ Provides assessments and eligibility screening + Scores clients within a given program and prioritizes them within community queue for enrollment + Tracks client enrollment and discharge	✓

Business Capability	Description	Score
7. Client Goal Management	− Limited client goal management that is not aligned to an action plan − Goals are linked under a given program and can be met by client receiving a related service or meeting goal identified during re-assessments	✗
8. Referral Management	+ Can access referral information from the integration layer + Provides options for referrals to enroll a client in a given program managed by a provider within the Platform and monitoring the community queue for status − Does not provide a direct approach for sending referrals to external parties	?
9. Workflow Management	+ Flexible workflow engine that business people can leverage to configure workflows; custom built	✓
10. Case Management	+ Allows new clients to be added to the system − Platform is designed around client consumption of programs rather than cases − Platform search functionality is focused on clients − Data repository is predefined for HMIS. To update the Platform's core to function as a case management platform for other domains such as WPC will require development	✗
11. Panel Management	+ Provides a longitudinal client history that panel teams can leverage to view the client's programs, services, referrals, reservations, assessments, locations and notes − Not specifically designed to support panel management but can be developed once clear requirements are provided	?
12. Care Team Management	+ Enables sophisticated structuring of user groups and hierarchies to enable care management teams + Built-in provider consent and privacy management for HIPPA compliance + Provides client appointments calendar views for a given user and for supervisors with ability to synchronize with external calendars such as Microsoft Outlook; not used by SF	✓
13. Workforce Management	+ Incudes a case load tab for each user with status due dates + User that enroll a given client is by default assigned to them, however the client can be reassigned to a different user	✓
14. Service Definition and Management	+ Platform is organized around programs with functionality to track enrollment priorities using dynamic queues + Platform does not currently work around services, however underlying design is able to link and view provided services under a given program; SF only uses the Projects for Assistance in Transition from Homelessness (PATH) and Runaway and Homeless Youth (RHY) categories, however the default service category menu shows many other services including food, health…etc.	✓
15. Population Health Management	− Platform does not include pre-built functionality for population health management	✗

Business Capability	Description	Score
	− Can be created through the Looker analytics layer	
16. Reimbursement/Invoice Support	− Platform does not include pre-built functionality for WPC invoicing support − Can capture invoicing data from external sources through the Platform integration layer − Reports and templates can be created through the Pentaho prep-defined reporting tool	✗
17. Operational Analytics	+ Includes pre-built operational reports and analytics + Can be further customized and expanded through the Looker analytics layer and Pentaho for prep-defined reports	✓
18. Performance Analytics	+ Performance analysis can be done through the Looker analytics layer − Does not include pre-built WPC performance dashboards	?
19. Client Portal	− No support	✗
20. Consent, Privacy and Authorization	− Provides consent management including soliciting consent, on screen signatures or uploaded signed document, reminders for upcoming consent expirations…etc.	✓

The State of Nevada has used Bitfocus Clarity Human Services HMIS since 2012. It played an integral role in their ability to achieve an end to Veteran homelessness in 2015. Nevada Clark County is the most extensive user of Clarity Human Services and is one of with 3 Continuum of Care (CoCs) regional communities.

B. Technical Capabilities

The One System's Platform is deployed as a SaaS application hosted in a Service Organization Controls (SOC) 2 certified colocation data center with each client having their own dedicated data instance while the same codebase and infrastructure is shared across all clients. The following table lists the Bitfocus Clarity platform technology stack components:

Table 11. Bitfocus Clarity Platform Technology Stack

Component	Description
Virtualization Environment	■ VMware ESX enterprise-class bare-metal hypervisor ■ ViaWest co-located SOC 2 certified data center in Las Vegas ■ Amazon Web Services (AWS) standby secondary data center
Web Server Technology	■ Apache cross-platform HTTP server ■ Nginx web server, reverse proxy, load balancer and HTTP cache

Component	Description
Application Language	■ Angular for web application front-end ■ PHP 7.1 for application logic
Reporting BI Engine	■ Pentaho 7.0 business intelligence (BI) server with Apache Tomcat (embedded) dedicated servers for pre-defined Reports
Data Analysis Engine	■ Looker (embedded) for data analytics platform
High Availability/Load Balancing	■ HAProxy Reliable, High Performance TCP/HTTP Load Balancer ■ Keepalived routing software for robust high-availability to Linux
Database Server	■ MariaDB 10.1 core data repository that is clustered and replicated to provide dedicated data supporting analytics and reporting
Operating System	■ CentOS 7.3 (Linux)

This technology stack provides a robust infrastructure foundation that enables high availability, high performance and scalability while providing flexible components that support the business needs of various clients including data integration, display and reporting. The platform provides APIs that allow third party data integration for providers that want to pull and store the data within their own systems.

The core HMIS system fields used by the Clarity platform are common to all client instances. To allow client specific customization, the platform utilizes virtual database fields to allow each client to add custom fields that are not in the core HMIS database schema. Contrasted to a rigid physical database model, this design allows client specific data to be integrated into the platform and displayed on various application pages without the need for reprogramming.

The following table provides further details regarding the Platform technical capabilities that are relevant to WPC.

Table 12. Bitfocus Clarity Platform Technical Capabilities Assessment for WPC

✗ Missing ? Partial ✓ Provided

Technical Capability	Description	Score
21. Usability	+ System is developed as a responsive web-based User Interface (UI) that works well on tablets + Provides field operations support including ease of remote access to the application (only need a browser with Internal connection) and ability to record GPS location of encounters + Bitfocus is developing a separate outreach mobile application that is further optimized for smaller screens such as phones − Support for multiple browsers is lacking	?
22. Supportability	+ Configuration based design allows System Administrators to customize the application functions without heavy reliance on IT staff + Virtual database fields and business user friendly reporting tools allow support and extension of functionality without the need for vendor to release core system code updates for every business change needed	✓

Technical Capability	Description	Score
	+ Platform components are based on up-to-date technologies and tools with available resource in the marketplace to support them + Platform releases occur every 3 months to continually enhance the platform features. While these platform updates do not impact client specific configured functions or data, updates are always pushed to the UAT and training environments before promoting to production to provide the option for clients to perform further testing when desired	
23. Scalability	+ Platform allows extra virtual servers to be spun up real time to increase capacity when needed + Current physical infrastructure in data center is sized to enable taking on numerous new clients and handle significantly higher load	✔
24. Availability	+ HAProxy and Keepalived provide high availability + Application and database are replicated on multiple servers and provide no single point of failure + Disaster Recover (DR) plan in place outlining disaster coordination roles and responsibilities along with Recovery Time Objectives (RTO) and Recovery Point Objectives (RPO) + AWS is used as the standby secondary data center and host for the database backup. Switching data centers requires the operations team to execute a manual process that takes a couple of hours	✔
25. Performance	+ Separate replicated database instances for online and reporting functions ensures that front-end application performance does not degrade due to reporting and analytics activities + VMware ESX, Linux, high-availability and load balancing components enable good performance + Data integration transactions are configured with a lower priority than online to ensure fast online response times	✔
26. Identity	+ User identities are stored in application database with no integration capability with identity management platforms − Custom built Master Data Management (MDM) for entities such as clients with no integration with common industry MDM platforms	?
27. Security	+ 2-factor authentication/device registration with email validation or Google authenticator app and device signature saved on device for configurable duration, for example 30 days + Role-based access control with sophisticated access model based on multiple dimensions such as program and provider. Controls cover view, update and delete with ability to setup roles and sharing groups that can access data across agencies and programs + Secure data sharing for cross-agency and inter-departmental sharing based on secure APIs and SFTP + Platform infrastructure hardened based on ViaWest SOC 2 hosting standards + Connection between user devices and data center is secured using encryption certificates	✔

Technical Capability	Description	Score
	+ Client's direct access to the abstracted reporting database is via the OpenVPN product which secures network connections	
28. Privacy Compliance	+ Built-in provider consent and privacy management for HIPPA compliance supporting recording of care team member certification and annual renewals + Data access compliance is provided by logging all user views, updates and deletes of all data elements tracked on the back-end DB. SSN auditing is viewable by end users from within the application + Allows services to be designated as confidential so no other provider can see that the client consumed that service + Displays warning when client consent for Release of Information (ROI) is not on file or about to expire	✔
29. Integration	+ Clarity APIs — Real-time APIs for unattended scripting of data integrations with extensions that allow client specific custom data field to be exchanged. Imported data is viewable immediately by online users + Looker APIs — Export only APIs with streaming option that provide options for both embedded UI visualizations and raw data + Custom Extract Transfer and Load (ETL) — Direct access by clients to a replica of the database, to support queries from third-party reporting software, such as PowerBI or to provide connection to client's data warehouse + Data Push — Provides the option to push data to client's data warehouse + Data Integration Tool — For attended integrations from independent housing providers and homeless data systems based on latest HUD XML specifications + Data Exports — Using Looker for scheduled CSV exports to secure FTP servers − APIs are designed for data sharing and not workflow/multi-system real-time integration − Documentation of core integration/API is lacking contrasted to Looker APIs	?
30. Reporting and Analytics	+ Pentaho BI server provides pre-defined report development capabilities + Looker data analytics platform provides data analysis, visualization and embedded analytics accessible by the application end users + Provides separate replicated database instances for Pentaho, Looker, and the abstracted database layer used by client's for direct access to data	✔
31. Governance, Support and Operations	+ Bitfocus support and operations includes: ❑ System monitoring across time zones ❑ Help desk tier 2 and technical support ❑ System Administrators service + Bitfocus can also provide the following:	?

Technical Capability	Description	Score
	❑ Data migration and integration ❑ Policy planning and analyst which includes reporting assistance, training, data analysis and decision support – Bitfocus total team is approximately 50 resources with only a handful of System Administrators in the Bay Area – Deficiencies in project management and client-facing software development lifecycle disciplines – Ongoing licensing is a per user monthly subscription might discourage user adoption	

4.2.1 SF-GetCare

The San Francisco Department of Aging and Adult Services (DAAS) plans and coordinates an integrated range of social, mental health, and long-term care community-based services for older adults, veterans and adults with disabilities and their families to enable their independence and self-reliance. DAAS delivers on its mission using the following capabilities:

- **Benefits And Resources Hub** — Provides an integrated intake and referral access to social services for:

  In-Home Supportive Services (IHSS)

  Adult Protective Services (APS)

  Care Transitions from hospitals

  Community Living Fund (CLF)

  Home Delivered Meals Program

  Office On Aging Case Management Program and assists with employment
- **County Veterans Service Office** — Provides benefits from the U.S. Department of Veterans Affairs for veterans and their dependents
- **In-Home Supportive Services (IHSS)** — Provides help with everyday activities, such as bathing, dressing, laundry, shopping, and cooking to older adults and persons with disabilities. IHSS provides services for any age, although practically many happens to be older and uses organizations such as Home Bridge to provider staff for IHSS services
- **Support at Home** — Offers financial assistance to adults with unmet home care needs that are not eligible for other programs such as IHSS
- **The Family Caregiver Support Program** — Provides referrals to counseling, caregiver training, respite care, legal consultation and transportation for people who are unpaid caregivers of a senior or an adult with disabilities
- **Emergency Short-Term Home Care** — Provides support for those who have recently been discharged from the hospital and those awaiting IHSS services. This includes support for household chores and maintenance and personal care
- **Care Management**

Community Case Management helps with the authorization, arrangement, and coordination of services among providers and caregivers to help clients stay connected to the community

Community Living Fund helps seniors and adults with disabilities evaluate all the funding sources and service options available so they can live safely at home

LGBT Senior Isolation Prevention program serve LGBT older adults who are isolated or lonely and with a history of marginalization

- **Community Centers and Connections** — Helps clients stay connected to the community through technology, transportation, and programs to prevent isolation.

  Senior Activity Centers offer exercise programs, technology classes, social events, day trips, English as a second language classes

  Congregate Meals Program offers nutritious, low-cost meals to seniors aged 60 and older at numerous sites throughout the City

  Alzheimer Day Care Resource Centers offer programs for individuals with dementia as well as support for their families

  Adult Day Programs provide social activities and support services for people requiring support with daily living tasks

  SF Connected offers technology training and educational programs

  The Senior Companion program provides volunteer service opportunities for eligible seniors

  Village programs allow people to age in their own homes while leading active and engaging lives

To support the delivery of its various services, DAAS relies on a number of technology systems including SF-GetCare which is the focus of this section given its strong relevance to WPC.

4.2.1.1 SF-GetCare Overview

SF-GetCare is a client management and service coordination toolset that provides a wide-range of capabilities that help City departments serving older adults and persons with disabilities administer services. The toolset is built on top of the GetCare platform by RTZ Associates with a number of separate variations and installations used by DAAS as follows:

- CAGetCare — Used by DAAS Office on the Aging and by community providers to manage State requirements for providing services including nutritional programs assessment, eligibility, enrollment / wait listing and tracking service consumption. Core functionality is used by all California counties, while SF uses additional capabilities such as case management, client enrollment, and reporting. CAGetCare supports the following programs:

  Integrated Intake and Information & Referral/Assistance

  Care Transitions (CTP) and Office on the Aging case management

  Nutrition Education, Nutrition Counseling, Home-delivered meals, Congregate meals and CHAMPSS community-based meals

  Medication management

Community services plus all office on the Aging funded services, such as Transportation, Computer Training, Legal, Family Caregiver Support, etc.

- IR2 — Used by DAAS teams and by community providers and includes the following components:

  Integrated Intake — Provides intake assessments and applications for:

  Community Living Fund (CLF) - Intensive Care Management (ICM)

  In-home Support Services (IHSS)

  Transitional Support

  Home Delivered Meals

  Long-term Case Management

  Allows 200+ community providers (e.g. hospital discharge planners, case managers, home health providers, LHH social workers, home-delivered meal providers) to complete referral for submission to DAAS Intake team using a web portal. The Intake team reviews online application referrals and returns application to submitter for more information when needed, withdraw intakes, or move forward for enrollment. Post intake information is electronically fed to CMIPS, the State payroll system for IHSS

  Waiting List Management — Interfaces with CAGetCare to create waiting lists to track applicants from the point of intake to enrollment to service termination. Allows community providers to manage potential clients

  Care Transitions — Used to manage operational needs of the DAAS Care Transitions Program (CTP) to assist clients with services and support necessary for a successful community discharge from acute hospitals such as SFGH and Kaiser

  Information and Referral / Assistance Component — Allows DAAS Information and Referral (I&R) staff and Aging and Disability Resource Center (ADRC) outstations to track service referrals by program and agency, manage follow-ups and track service utilization

Additionally, RTZ provides a number of other GetCare instances that support DPH:

- SFGetCare — Used by a number of DPH teams and includes the following components:

  Laguna Honda Hospital (LHH) Operations Management Component — Manages admissions / discharges of clients and provides client assessments and care plans with needs, goals, interventions and outcomes. It receiving real-time information from DPH's LCR

  Restorative Care — Allows Restorative Care nurses to manage and schedule clients' rehab needs. E-alerts from LHH therapist users inform Restorative Care nurses of prescriptions / referrals

  DPH Transitions Placement — Used by DPH's Transitions team, including social workers and nurses, to manage assessment of clients' needs and barriers for housing and placement / referral management. It supports all operational needs such as bed management for adult rehab facilities, residential care facilities for the elderly, non-LHH skilled nursing facilities, sober living environments, residential treatment, IMDs…etc.

ZSFG Reporting Data Feed — Used by RTZ to provide data such as progress notes to DPH staff for their monthly analytic analyses

Continuing Education — Used by Transitions Team to track training of their staff on facility operators including management of classes, course enrollment, completion and certification

- LHH SFGetCare — Used by LHH Rehabilitation department to support the operations of physical, speech and occupational therapies and restorative care. The tool receives client data from LCR and from the LHH operations management component
- HOPE SF — Being developed for the Hope SF project to support the operational needs of nurses.

  Tracks group outreach, drop-ins, clinical contacts and provides case management and data outcomes reporting.

  Manages client engagement, assessment and goal setting that results in a coordinated care plan.

  Allows updates to available services, tracks referrals and service consumption

The focus of this section will be on the IR2 used by DAAS since it is the most relevant for WPC.

4.2.1.2 SF-GetCare High-Level Assessment

SF-GetCare System is built on top of the RTZ GetCare platform, which is the foundation that enables the various capabilities observed and consumed by end-users. This section provide a high-level assessment of the GetCare capabilities that are relevant to WPC.

A. Business Capabilities

The following table provides further details regarding the GetCare business capabilities that are relevant to WPC. The evaluated scoring is from a WPC perspective.

Table 13. RTZ GetCare Business Capabilities Assessment for WPC

✗ Missing ? Partial ✓ Provided

Business Capability	Description	Score
1. Aggregated Client Summary View in External Systems	+ GetCare aggregates data from a number of DPH and State data sources relevant to its needs and includes the foundation for aggregate data from additional sources + Able to view client data while upholding HIPAA and data sharing agreements − GetCare does not currently provide a client summary page that can be embedded in external systems outside of GetCare	?
2. Alerts and Communication	+ GetCare can push configurable alerts / notifications to user dashboards and email + Provides reminders of scheduled events and to-do's + GetCare's interactive Consumer Care Record (CCR) provides client-facing alerts and notifications; not used by SF	✓
3. Shared Needs Assessment and Risk Stratification Tool	+ GetCare's integrated assessment module can be customized according to programs' needs and allows users to apply for one or more programs	✓

Business Capability	Description	Score
	+ Risk assessments can prioritize clients within groups and determine appropriate levels of care management needed + There are separate risk assessments for each of the various GetCare instances used throughout the City in addition to others that can be used across all instances	
4. Manage a Shared Care Plan	+ GetCare instances have a number of comprehensive client care plans and authorized users can update goals, actions, milestones, and services − Does not provide a shared care plan for users outside of GetCare to view and collaborate on managing	?
5. Encounter and Service Documentation	+ Supports encounter documentation in structured and unstructured formats + Enables progress note taking and viewing from multiple application modules + Supports file uploads and client “Electronic filing cabinet”	✔
6. Service Eligibility, Enrollment, and Discharge	+ Provides service eligibility for currently supported programs and can be customized for new programs + The eligibility intake adds or removes next set of questions based on selected programs or provided data + Able to place clients in a holding pool, prioritize and authorize placement and track consumption	✔
7. Client Goal Management	+ Provides the ability to identify, document and manage client goals and objectives within the various care plans. These can be provided through a library of best practice goals and objectives or added manually for specific client needs. Libraries can be updated by administrators as the need arises	✔
8. Referral Management	+ Provides an Information Referral Resource directory and sends periodic outreach emails to all service providers to update their own information online; not used by SF + Able to manage, forward, assign, and monitor the referral status	✔
9. Workflow Management	+ Able to include definition, configuration and monitoring of defined sequences of tasks − Requires customization to meet each program needs	?
10. Case Management	+ GetCare applications include ability to coordinate services using eligibility assessments, and monitor interventions and outcomes. The specifics of this function would need to be configured for new applications + Allows new clients to be added to the system	✔
11. Panel Management	+ Provides reporting capabilities and analytic tools for care team meetings + Some reports are provided as a service by RTZ analysts − Does not provide purpose built panel management capabilities including self-service interactions	?
12. Care Team Management	+ Able to provide support for an extended care team with access to a defined set of service data and tracks progress of care team in meeting goals and outcomes	✔

Business Capability	Description	Score
13. Workforce Management	+ Provides ability for supervisors to assign work and for supervisees to accept or reject (with a reason) work assignments	✔
14. Service Definition and Management	+ Provides program and service management with option to provide the capability to allow client administrators to the configure new programs, assessments and eligibility rules	✔
15. Population Health Management	+ Able to flag clients to create cohorts for purposes of service provision and for reporting + Includes advanced client search / look-up tools, and can help authorized users track clients and cohorts − No purpose built population management capabilities	?
16. Reimbursement / Invoice Support	+ GetCare can be configured to generate invoices and reports are available to assist with reconciliation activities − Not purpose built for WPC invoicing and reimbursements	?
17. Operational Analytics	+ GetCare reporting includes the ability to customize outcome reports based on program needs − Not purpose built for WPC operations support	?
18. Performance Analytics	+ GetCare reporting includes the ability to customize performance reports based on program needs − Not purpose built for WPC operations support	?
19. Client Portal	− No support	✘
20. Consent, Privacy and Authorization	− Collects and stores provider and client consent	✔

B. Technical Capabilities

The GetCare system is deployed as a SaaS application that is offered to clients under the following hosting options:

- **Physical Hosting** — At secure RTZ purpose-built data centers within the continental United States that are open for inspection by clients as RTZ owns and maintains all servers and hosting hardware. Each client has discrete, dedicated application and database servers
- **Cloud Hosting** — On AWS “GovCloud” which is FedRAMP certified and each client has an isolated application instance

RTZ only uses a multi-tenancy model when doing so can achieve meaningful performance gains for example were GetCare instances belonging to related sub-agencies have substantially similar versions of Get Care.

The following table lists the RTZ GetCare platform technology stack components:

Table 14. RTZ GetCare Platform Technology Stack

Component	Description
Virtualization Environment	■ Custom Xen hypervisor
Web Server Technology	■ Security gateway (Netgate / pfSense) handles all requests
Application Language	■ Java

Component	Description
Reporting BI Engine	■ Proprietary
Data Analysis Engine	■ Proprietary
High Availability / Load Balancing	■ High availability (99.5%+), load-balanced system w/ full failover to secondary data center
Database Server	■ PostgreSQL
Operating System	■ UNIX/Linux

This technology stack provides a robust infrastructure foundation that enables high-availability, high performance and scalability while providing flexible components that support the business needs of various clients including data integration, display and reporting.

The following table provides further details regarding the GetCare technical capabilities that are relevant to WPC.

Table 15. RTZ GetCare Platform Technical Capabilities Assessment for WPC

✗ Missing ? Partial ✓ Provided

Technical Capability	Description	Score
21. Usability	+ GetCare was designed for ease of use and to reduce the amount of time required for documentation so that users can spend more time with the clients they serve. To that end, as much as possible, data can follow the client, eliminating duplicated data entry across users and care settings + GetCare is designed to support experienced users familiar with the system's numerous detailed which could seem overwhelming for other user groups and use cases + Complicated deployment model of multiple instances of the GetCare platform for each department and user group + Supports tablets with no special steps are required + In SF, LHH Social Services use the SFGetCare Tool for assessment, referral tracking, and service planning plus IR2 to apply to specific services which is not the optimal usability setup. However, this is not a limitation of the GetCare platform itself which is capable of supporting all functionality in one instance	✓
22. Supportability	+ GetCare is designed to be provided as a software as a service (SaaS) model, which reduces the burden on in-house IT and mitigates the need to hire third party vendors + Allows extensive changes to be made to workflow without development intervention. RTZ also works closely with clients to update the system as their needs evolve + Supports client managed system configurations, such as program set-up, based on a flexible table-based design; however, significant new business programs / processes typically require vendor development work	✓

Technical Capability	Description	Score
23. Scalability	+ The GetCare system was designed to scale, in terms of usage (adding new users), database size (adding new client records), and functionality (adding new features and modules) + SFGetCare grow every year for the past 14 years with no business interruptions or degradation to the user experience − Support of GetCare requires heavily reliance on IT staff to customize application functions	?
24. Availability	+ GetCare is a high availability system with 99.9%+ historical uptime. Redundancy of components is used throughout the hosting infrastructure, for example, the firewall layer has an active/passive failover cluster that prevents the security gateway from being a point of failure + Failovers will occur transparently to users with no observable impact + RTZ maintains a disaster recovery plan with scenario-based step-by-step instructions. RTOs / RPOs are defined in client-specific SLAs with no disaster model forecasts more than 24 hours of downtime / data loss	✔
25. Performance	+ GetCare's technical design prioritizes performance; servers execute most transactions in fractions of a second + All application servers utilize replication / load-balancing and RTZ continually monitors performance using third-party tools, such as New Relic, JMeter, in order to optimize source code and data tables as well as the broader hosting environment	✔
26. Identity	+ Most GetCare deployments use their proprietary built-in identity credential management. Based on client needs, GetCare can be configured to federate with third-party or proprietary identity management, SSO and two-factor authentication platforms + Two-factor authentication and SAML SSO via Okta is available. If needed, RTZ is open to work with other industry standards such as OAuth and OpenID − MDM is built-in to the database layer design with no integration with external MDM products	?
27. Security	+ Role-based authentication is used with access to client data based on HIPAA and data sharing agreements + Infrastructure has been hardened according to industry best security practices + GetCare encrypts all data in transit, including user-generated reports	✔
28. Privacy Compliance	+ Consent and privacy management is provided and can be customized for new programs or as new needs arise + Uploaded consent forms informs rules about viewing data and automatically creates an annual consent e-reminder + Service provider could "self-consent" or acknowledge that they meet listing criteria with a digital signature + GetCare provides flexibility in designating certain client consumed services as confidential with configurable rules on who can view what details	✔

Technical Capability	Description	Score
	+ A viewable / searchable audit log documents all system transactions + Email alerts do not include client data, only a key that is used within GetCare to view the data	
29. Integration	+ GetCare provides integration using various approaches. Real-time, near real-time and batch data sharing are all used according to client needs + Authorized users can extract custom datasets from GetCare for use in external ETL processes + GetCare leverages APIs that support standards such as HL7, and have certified interfaces with prominent clearinghouse and EHR vendors; − RTZ does not published APIs for external consumption	?
30. Reporting and Analytics	+ Pre-defined and ad hoc reporting capacity exists, as well as data analysis provided by RTZ + Used by RTZ to provide data such as progress notes to DPH staff for their monthly analytic analyses + GetCare includes an integrated report writer that enables users to create and save custom report filters + Provides the option to populate a local client data warehouse for client side AD HOC reporting − GetCare reporting engine runs off the production database with no degradation to system response times. RTZ offers a dedicated reporting database as an option − Certain data extracts are delivered as a service performed by vendor rather than a self-service or automated process	?
31. Governance, Support and Operations	+ RTZ is a certified California small business with fewer than 100 employees headquartered in the Bay Area. It has been in business for over 35 years and GetCare has been in San Francisco for 15 years + RTZ support and operations includes: System monitoring across time zones Help desk tier 2 and technical support System Administrators service + Clients are eligible to receive all general system updates, including common business enhancements part of GetCare's continuous delivery model at no additional cost + RTZ consistently upgrades and enhances the GetCare system and has been adding functionality every year to SF-GetCare + Client requested customization are not relevant to any other GetCare deployment flow through an established change management process. Customizations will have no effect on warranty provisions or ability to receive future system updates + RTZ provides the 211 tool in Virginia and is working on a client-facing consumer portal − RTZ recent focus is mostly on large state-wide contracts	✔

4.2.2 PreManage

The San Francisco Health Plan (SFHP) is a public not-for-profit Medi-Cal managed care plan that enrolls ~85% of the City's Medi-Cal managed care members and for which DPH is the largest provider of care with over 40% assigned to their primary care clinics or where San Francisco General Hospital (SFGH) is their designated hospital. SFHP is committed to improving the health of their clients and their experience of care. As a health payer organization SFHP helps improve the systems efficacy, helping providers check client eligibility and gain insights into their clients.

SFHP uses the Essette suite by HMS, including its care management module, to support client authorizations, claims, grievances, appeals, etc. SFHP care managers help coordinate care for their assigned set of clients that need complex care. To help increase their effectiveness they are provided tablets and receive real life notifications of events such as the care team receiving notifications when a client arrives at an ED. The notifications are generated from the Edie tool by Collective Medical Technologies (CMT) which is deployed at numerous hospitals across the county including most hospitals in SF. To further support care coordination, and as part of the Healthy Homes pilot program, SFHP is sponsoring rolling out the PreManage tool by CMT which is the focus of this section given its strong relevance to WPC.

4.2.2.1 PreManage Overview

PreManage is a client-centric clinical data real-time communication tool used by health plans and providers that is used to record and communicate client encounters from all healthcare care venues independent of network, health plan, hospital, or geography. It ensures that high-value clinical insights attach to the clients rather than to an otherwise disparate hospital, provider, or health plan EHR system. Client data includes clinical utilization history, social determinants, prescription histories and healthcare plan notes created by care managers and social workers for complex clients across all PreManage participating locations.

When a client is registered at a provider clinical system, the PreManage database is automatically searched in real-time for clients that match a given predetermined risk criteria, and notifications are sent to the client care team. The criteria for when to notify the client’s care team is totally customizable. This helps the care team determine how to best provide care for the client while reducing medically-unnecessary readmissions, stay duration, and connecting clients with external services that enhance their overall wellbeing.

Main User Groups of PreManage are:

- Clinicians who can get the client history to help them make a more informed service decision
- SFHP care mangers which have full access to manage care plans
- Plan and providers staff that analyze clients history to determine risk populations

PreManage is currently planned for use by social workers at St. Anthony's clinic in SF with plans to roll it out to other SF providers during the summer of 2018 as part of the Health Homes pilot program.

4.2.2.2 PreManage High-Level Assessment

PreManage is built on top of a platform, which is the foundation that enables the various capabilities observed and consumed by end-users. This section provide a high-level assessment of the PreManage capabilities that are relevant to WPC.

A. Business Capabilities

The following table provides details regarding the PreManage business capabilities that are relevant to WPC. The evaluated scoring is from a WPC perspective.

Table 16. PreManage Business Capabilities Assessment for WPC

✗ Missing ? Partial ✓ Provided

Business Capability	Description	Score
1. Aggregated Client Summary View in External Systems	+ PreManage is designed around client data aggregation from all locations where PreManage or Edie (Emergency Rooms) is deployed + Pulls data from other source systems such as client phone number from LCR, eCW…etc. + Allows various levels of integration options with other systems covering user interface or data level integrations. For example, an EHR system might show an indicator for a given client, based on preconfigured criteria, that there are PreManage data to view for the current client. Clicking the indicator can open up the PreManage portal to view the details + Client details is tailored for each viewing user group (ED Physicians vs. social worker…etc.) but all coming off of the same underlying data + Allow users to rate contents so the more useful and accurate data bubble + Displays client data on multiple separate tabs and allows adding provider specific tabs, for example a Shelter, then user can enter free text type notes related to that provider	✓
2. Alerts and Communication	+ Provides alerts to designated care teams and providers based on configurable rules, such as for clients that have 5 ED visits in 12 month or visit 3 facilities in 90 days + Can be configured to automatically took into progress notes for specific keywords, for example the word asthma, and use that to trigger notifications + Tracks correspondence / communication such as outreach to client	✓
3. Shared Needs Assessment and Risk Stratification Tool	+ Allows client risk identification based on client data analysis and configured criteria − Care plan is mostly free text, not a structure data entry	?
4. Manage a Shared Care Plan	+ Can view a shared care plan that is sourced from other systems care management platforms − Care plan is not a structured plan data set; it is unstructured free form text, for example clinical care recommendation notes − Does not allows for editing of a shared care plan	?
5. Encounter and Service Documentation	+ Could be added indirectly under correspondence as a free form text note − Does not support entering service documentation in a structured format	?

Business Capability	Description	Score
6. Service Eligibility, Enrollment, and Discharge	− PreManage is not a case management platform hence lack care management capabilities such as eligibility determination for services	✗
7. Client Goal Management	− No goal management capabilities	✗
8. Referral Management	+ Allows sending a notification (email, fax, SMS…etc.) to someone − Does not provide automated referral workflow management capability	?
9. Workflow Management	− No current capability to configure workflow	✗
10. Case Management	− PreManage is not a care management platform hence lack care management capabilities, for example no caseload management or case eligibility determination for services	✗
11. Panel Management	+ Allows analysis of designated client cohorts that can be assigned to different panel teams to collaborate. For example working with client cohort that has 5 ED visits in 12 month	✓
12. Care Team Management	+ Displays the full care team on the “All Providers” tab. + Can import care team from other source systems using an import data file that is based on a specific format	✓
13. Workforce Management	+ Allows grouping users to work on different client cohorts − Does not allow on screen display of workload of each user, say under one supervisor, to allow shifting of client / case load between users	?
14. Service Definition and Management	− PreManage is not a case management platform hence lack care management capabilities such as ability to configure service definition, assessments, eligibility…etc.	✗
15. Population Health Management	+ Allows the definition and analysis of designated client cohorts, for example clients with 3 facility visits in 90 days	✓
16. Reimbursement / Invoice Support	− System was not intended to be built to provide invoicing support	✗
17. Operational Analytics	+ Provides analytics that could be configured to provider required operational reports − Does not provide WPC specific operational analytics	?
18. Performance Analytics	+ Provides analytics that could be configured to provider required operational reports − Does not provide WPC specific performance analytics	?
19. Client Portal	+ Does not provide a portal that end user clients can directly access	✗
20. Consent, Privacy and Authorization	+ Able to display client consent text if provided from other source systems − Does not provide a consent management component to collect, author, remind and enforce client data access based on status of consent	✗

B. Technical Capabilities

PreManage is deployed as a SaaS application that is offered to clients as service after initial implementation phase which can include interface customizations.

The following table lists the PreManage platform technology stack components:

Table 17. PreManage Platform Technology Stack

Component	Description
Virtualization Environment	■
Web Server Technology	■
Application Language	■
Reporting BI Engine	■
Data Analysis Engine	■
High Availability / Load Balancing	■
Database Server	■
Operating System	■

The following table provides further details regarding the PreManage technical capabilities that are relevant to WPC.

Table 18. PreManage Platform Technical Capabilities Assessment for WPC

✗ Missing ? Partial ✓ Provided

Technical Capability	Description	Score
21. Usability	+ Support mobile devices in the field + Allow users to rate content so the more useful and accurate data bubbles up + Provides seamless end user experience integrating with other systems such as EHRs using SSO	✓
22. Supportability	+ Provides capabilities to configure, extend functionality for its limited scope of WPC capabilities. For example, allows adding new providers and associating data to them − Does not provide end-user driven configurations for adding new services, assessments, workflow, business rules…etc.	?
23. Scalability	+ Deployed as a SaaS application in ViaWest data center that is high trust certified	✓
24. Availability	+ Provides redundancy / disaster recovery in primary and backup data centers	✓
25. Performance	+ System deployed as a SaaS application in ViaWest data center with ability to scale as load increased	✓
26. Identity	+ Provides a proprietary patient matching engine with ability to track obscure client information that uses various aliases	?

Technical Capability	Description	Score
	− Proprietary solution would need to integrate with identifies of systems across multiple City departments and would need to provide an identity resolution / exception handling that can be accessed by all source system designated stewards	
27. Security	+ Allows identity federation using active directory + Provides role based access controls + Enforced cross system security using SSO / SAML, for example with Epic + System deployed as a SaaS application in ViaWest data center that is high trust certified	✔
28. Privacy Compliance	+ PreManage has a HITRUST CSF certification and complies with various privacy measures provide by ViaWest data center	✔
29. Integration	+ Supports custom development integrations with external systems during development phase / onboarding, for example integration with EHRs to show alerts on specific sets of clients knowns to PreManage + Allows import of client data from external sources using import data file that is based on a specific format − Has limited range of integration options (real-time APIs for both data and workflow / messaging with quality API consumption management / documentation, ETL, bulk data pull / push to City data warehouse…etc.)	?
30. Reporting and Analytics	+ Provides reporting and analytical capabilities including scheduled reports − Does not provide embeddable reports or extensive self-service analytics capabilities at various analytics levels (description, diagnostics, predictive, prescriptive)	?
31. Governance, Support and Operations	+ Vendor is growing throughout northern CA and is a current reputable vendor of WPC ecosystem partners + Factors upfront interface deployment efforts into an annual subscription fee with no upfront extra charge for integration implementation + Does not charge for sending data back to clients + Provides platform support given the SaaS deployment model	✔

4.2.3 Epic

4.2.3.1 Epic Overview

Epic is a unified Electronic Health Record (EHR) serving inpatient, ambulatory and emergency departments that provides a number of modules to support client engagement, clinical operations, managed care, specialty care, revenue cycle, population heath, and connections to the provider community. In February 2018, Epic released a new module that expands the focus from just client health care to a broader view of client's wellbeing. The Epic Social Determinants module is aimed at addressing the premise that social determinants are:

- 40% personal behavior

- 30% genetic disposition
- 15% social
- 10% traditional health care
- 5% environmental

To that effect it provides functionality that helps clients access to services that address these various determinants, including:

- Food pantries
- School programs
- Group homes
- Mental health & substance abuse programs
- Child & family programs
- Disability programs
- Social assistance
- Transportation

The social care application ask client questions with cascading logic that route applicants to the correct team or provide a recommended action. It providers assessments, and generates Epic referrals to the right work queue.

DPH is planning to deploy the first phase of the Epic EHR August 2019, however the scope of the EHR project as it stands does not include the new Epic Social Determinants module.

4.2.3.2 Epic High-Level Assessment

Epic is built on top of the technology platform, which is the foundation that enables the various capabilities observed and consumed by end-users. This section provide a high-level assessment of the Epic capabilities that are relevant to WPC.

A. Business Capabilities

The following table provides further details regarding the Epic business capabilities that are relevant to WPC. The evaluated scoring is from a WPC perspective.

Table 19. Epic Business Capabilities Assessment for WPC

✗ Missing ? Partial ✓ Provided

Business Capability	Description	Score
1. Aggregated Client Summary View in External Systems	+ Starting to support external source system data integration into Epic through the use of the Epic Caboodle enterprise data warehouse + Can display Epic data in other systems if source systems follows same standards as Epic − Ability to display data from external systems require custom implementation and mapping process to add the data into Caboodle − Requires custom development for each interface to display Epic data in external consuming systems	?

Business Capability	Description	Score
2. Alerts and Communication	+ Admission Discharge and Transfer (ADT) messages can be propagated to external systems based on extra criteria + Supports a closed loop electric communication on referrals with community service providers + Provides alerts / suggestions based on business workflow conditions, for example a next step of contacting the client after 3 days of initiating a referrals for a specific type of service	✔
3. Shared Needs Assessment and Risk Stratification Tool	+ Provides assessments, including ones with questions related to literacy, and assessment summary notes + Assessments / flow sheets that can be trended and tracked over time + Assessments cascading logic can route clients to the correct team or provide a recommended actions + Provides care plan, program enrolment and outcome tracking + Assessments and other historic client data is used to drive client's risk stratification	✔
4. Manage a Shared Care Plan	+ Provides care plan with effective dating that is shared with the care team with ability to track progress + Supports data from a multi-disciplinary team, including client's family relationships, social worker and others + Can mark specific care team participants as contributors vs. reviewers…etc.	✔
5. Encounter and Service Documentation	+ Provides support for proactive outreach campaigns	✔
6. Service Eligibility, Enrollment, and Discharge	+ Referrals for a given program are directed to that program's queue and workers within that queue operate on it + Provides program enrolment and outcome tracking	✔
7. Client Goal Management	+ Provides structured client goals and tasks functions with available resources and team participants	✔
8. Referral Management	+ Support both client self-referral and staff submitted referrals for professional / clinical referrals + Client electronic referral land in the Epic queue of the appropriate social worker, care manager….etc. The social worker initiate the process to select the appropriate programs, such as adult services, and receives recommendations for next steps + Allows electronic referrals to providers with referral cycle closing using the Epic healthy plant community portal + Has options to potentially integrate with other community provider resource repositories, such as REACH + Referrals can also be sent as faxes + Epic target referrals are sent to the appropriate Epic user group basket	✔
9. Workflow Management	+ Workflow directs referrals for a given program to that program's workers to operate on it with specific steps requiring approval routed to the appropriate party	?

Business Capability	Description	Score
	− Does not provide business-user driven configurable workflows	
10. Case Management	+ Provides comprehensive case / care management including case triage, best practice advisories, multiple program enrollments…etc. + Allows care team to track client outcomes	✔
11. Panel Management	+ Allows client cohorts to be identified and tracked for care team collaborations	✔
12. Care Team Management	+ Care team includes client relationships + Provides a view of all client care givers and their level of contribution and tracks changes over time. For example it tracks that daughter can no longer be the main care giver hence flagging the need to the care team to identify alternative measures	✔
13. Workforce Management	+ Allows work to be distributed to workforce, for example as a result of a client generated referral	✔
14. Service Definition and Management	+ Supports the structure of having one program with multiple services − Does not provide configuration to define new services	?
15. Population Health Management	+ Allows comprehensive population management capabilities through Epic population health module and through its data warehouse analytics	✔
16. Reimbursement / Invoice Support	− Does not provide invoicing support for WPC	✘
17. Operational Analytics	+ Providers operations dashboard and visualization such as caseload view − Does not provide WPC specific operational analytics	?
18. Performance Analytics	+ Provides analytics that could be configured to provider required operational reports − Does not provide WPC specific performance analytics	?
19. Client Portal	+ Epic MyChart is a client portal, that also allows assisted service by a community provider, for example at a shelter + Clients can initiate an application / assessment which results in a referral sent to the social worker team in Epic to process + Supports clients scheduling their own appointments, however that is currently limited to certain types of appointments + Support electronic signatures	✔
20. Consent, Privacy and Authorization	+ Consent requests can route to Epic MyChart as it has electronic signature and document attachments support − Electronic consent not supported in Epic Social Determinants module	?

B. Technical Capabilities

Epic is deployed as a SaaS application that is offered to clients as a supported service after initial implementation phase.

The following table lists the Epic platform technology stack components:

Table 20. Epic Platform Technology Stack

Component	Description
Virtualization Environment	■
Web Server Technology	■
Application Language	■
Reporting BI Engine	■
Data Analysis Engine	■
High Availability / Load Balancing	■
Database Server	■
Operating System	■

The following table provides further details regarding the Epic technical capabilities that are relevant to WPC.

Table 21. Epic Platform Technical Capabilities Assessment for WPC

Technical Capability	Description	Score
21. Usability	+ Epic providers a mobile toolset to support field staff during home visits. The tool displays client summary and supports appointment scheduling, assessment, care plan, encounter and ability to add notes − The Epic mobile tool only works on Android devices limiting its use − Fragmented user experience between different mobile and desktop apps supported on limited devices for a social focused solution that is in its first release	?
22. Supportability	+ Epic providers functionality to support updates to the platform functionality, such as ability to route referral requests to configurable user groups − Configuration based capabilities including adding new services, integrating with new data sources…etc. requires development work	?
23. Scalability	+ Epic is developed as SaaS platform that is scalable to support EHR level demands for scaling	✔
24. Availability	+ Epic is developed as SaaS platform in data center with redundancy and disaster recovery standards of an EHR platform critical for hospitals operations	✔
25. Performance	+ Epic is developed as SaaS platform with EHR level performance SLAs + Epic chronicles provider cache-based transactional data model to accelerate certain operations	✔
26. Identity	+ Epic is able to integrate with master data management platforms such as NextGate	✔

Technical Capability	Description	Score
27. Security	+ Epic is certified at HIPPA security compliance level protecting data in transient and at rest	✔
28. Privacy Compliance	+ Epic is certified at HIPPA security compliance level	✔
29. Integration	+ Epic already providing multiple integrates with external systems + Allows read-only summary view from another system displayed as a report / pdf within Epic + Provider ability to configure a tab / link to launch another system UI using SSO for full functionality of the external system + Allows data sets from external another system into Epic using point-to-point interface + Data elements can be added to Epic's Caboodle enterprise data warehouse after which data is available for both reports and workflows + Can support Epic data displaying in external systems as long as the receiving system follows the same standards of Epic such as HL7, ANSI, DICOM, XML, NCPDP and APIs such as FHIR − Technical development is required to get data into Caboodle for each interface / source system − Does not provider an API gateway with policies for managing external source systems access for bi-directional data exchanges with Epic	?
30. Reporting and Analytics	+ Epic providers a number of data stores and tools to support reporting and analytics functions including o Clarity reporting suite o Cogito enterprise intelligence suite o Caboodle enterprise Data Warehouse − Reporting capabilities do not include embeddable reports or extensive self-service analytics capabilities at various analytics levels (description, diagnostics, predictive, prescriptive)	?
31. Governance, Support and Operations	+ Epic is already engaged with DPH in the EHR project + Integration support accountability between Epic products to one vendor with ability to improve over time − Epic Social Determinates is a new module released February 2018 with only one customer in Europe anticipated to go live in November with future support level for the module too early to gauge	?

4.3 IT Discovery Interview Solution Insights

The WPC discovery interview with the City technology-related stakeholders have also revealed a number of IT-related insights that must be considered in the WPC future state technology solution recommendations, as highlighted in the following table.

Table 22. WPC IT Considerations

IT Considerations
The directive from DPH IT leadership is to focus on DPH's core business by leveraging vendor solutions with maintenance and support contrasted to custom developed in-house solutions
To increase likelihood of WPC technology solution adoption and success, the design must be around reducing the number of additional clicks. This is especially true in intense service proving settings such as the ED or the streets. This calls for vendors to have a good user experience expert on hand
Approach for building the WPC solution must factor in continuous improvement and ability to refine and enhance capabilities over time to cope with changing in source systems, target populations and an ever-changing ecosystem
WPC solution approach to consider the potential use of smaller decoupled components when appropriate and use API services interfaces to connect them. Warehousing and analytics solution should be separate from the core application
There are successful mobile initiatives within the City, such as the Ridealong street-based application that is currently in development and HSA's Client Screenings mobile app and back-end website, which is a home-grown food safety and depression/dementia screener that uses questionnaires to test clients cognitive skills
Vendor considerations include: ■ Considering vendors that have experience working with public sector so they are not frustrated by the slowness of the City. Check with other agencies in the City on similar vendor RFPs that have been successful for potential consideration ■ Putting emphasis on selecting vendors with human-centric design capabilities but verify that they actually utilize such approach ■ It is reasonable to get 80% of the functionality from a niche vendor and working around the 20% or have the vendor or City building the remaining
Lack of clarity on the City organization that will own and support the new WPC platform ongoing beyond the initial program funding years needs to be addressed. While there are IT organizations within the City outside of DPH that have some cross-department support, such as DT and Controllers office, however the historic level of execution is not optimal and might not be the best fit home for the WPC platform. The infrastructure that is needed to support an interagency integrated data system must also be determined and put in place for the WPC solution to succeed.

5.0 WPC High-Level Program & Technology Outlook

San Francisco's WPC program vision per SF WPC Application to DHCS will be enabled based on two key elements for the pilot:

- Innovations in Services
- Innovations in Infrastructure

This will enable SF to pair clinical programs serving high-risk individuals across the City with a new technology platform that could:

- Foster shared information
- Provide faster communications
- Enable uniform assessment and risk stratification
- Empower consistent decision making
- Build alliances and efficiency among all case managers

5.1 Service Vision

The vision of the SF WPC is to deliver services to San Francisco's vulnerable population in a manner that results in the following:

- Provides coordination and continuity of care for clients and prevents them from falling out of touch with or getting stuck in urgent/emergent high costing episodic care within the WPC ecosystem of services
- Ensures that clients are enrolled into programs and receive services for which they are eligible, maximize the City's reimbursements ability, and increase available resource to help additional clients

This will be accomplished by better leveraging a number of existing services in addition to the new services introduced under section 2.3 which are further detailed below.

- **Engagement –** A service for getting people engaged into the overall WPC ecosystem of services that meets clients where they are and builds the relationships, trust, and knowledge required for successful ongoing care coordination and service delivery
- **Care Coordination –** The primary focus of WPC – providing a lifetime of coordinated care across service areas, across episodes of acute care needs, and between the full ecosystem of existing and future services
- **Navigation centers** *(Facility)* — A low-threshold shelter for homeless individuals with significant barriers to utilizing the traditional shelter system allowing couples, pets, and belongings. Services provided by care coordinators include assessing, preparing, and guiding clients through benefits connection, housing applications, and barrier removal. The center will host an on premise HSA eligibility worker and a Coordinated Entry staff to help clients gain access to needed services and will offer service bundles
- **Building capacity to expand detoxification services** — A capacity building measure to build the infrastructure needed to sustain these programs under Drug Medi-Cal
- **Extension of residential substance use disorder treatment** — Expands the 30-day increment and 90 day total service and additional 12 weeks to better address treatment in a meaningful way for homeless clients in need to maximize success upon discharge

- **Resource center** *(Facility)* — A 24-hour/7 days-a-week center that requires no reservations that will provide brief respite and service connection to unsheltered population living on the street. Clients will be able to use the restroom facilities, take showers, receive services, and enroll in county benefit programs guided by on-site social workers that assist those in need of immediate social services. Eligible clients would be enrolled into Coordinated Entry and would receive assistance in making connections to medical and behavioral healthcare. Clients would not be able to sleep there
- **Coordinated Entry Roving Team specialist** — A capacity building measure to ensure consented clients are assessed and prioritized for Coordinated Entry and access to all shelter and housing programs. The roving team specialist will travel with the HOT and RTCN staff, adding top tier prioritized clients eligible for supportive housing into the Coordinated Entry system as soon as they are identified. Outreach and assessment staff will conduct initial intake and triage assessments, and will connect clients with housing navigators or other service providers to complete full assessments for housing prioritization and placement. The coordinated entry specialists will continue to provide care coordination, housing navigation, and referrals to needed assistance throughout the time the client is experiencing homelessness, for all beneficiaries living on the street and in encampments
- **Rapid Targeted Coordination and Navigation Team (RTCN) encampments** — A capacity building measure to address dismantling of encampments add care coordination staff. The process starts with outreach followed by concentrated intense engagement for 21–42 days with all encampment clients and continued characterization of their needs including offering shelter or navigation center services. The eligibility for RTCN WPC assistance will be based on RTCN intake that includes screening questions for Medi-Cal eligibility and needed intake questions for WPC. The full assessments including housing assessment are completed with coordination with primary care, connections to on-site health fairs and nursing, referral for treatment, behavioral health triage, and connections to ongoing services. A service plan is developed for all encampment clients with crisis intervention and linkage to resources. RTCN services will be provided on a per-encounter basis, but Care Coordinators will work with clients until they are placed in shelter or housing, working with them on treatment options, where appropriate, on gathering needed documents, and on identifying a path to housing and safety
- **Housing Transition** — Provides support to homeless individuals in making the transition into housing. This includes the following:

  Benefits eligibility support

  Searching for housing placement

  Landlord engagement

  Coordination of health and other services

  Eligibility will be based on factoring in the length of homelessness, chronicity, and vulnerability factors including mental illness and physical disabilities. Clients will be enrolled in enhanced Housing Transition services by Coordinated Entry, HOT, or RTCN staff. HSA eligibility workers will ensure enrollment in cash and nutrition benefits, and housing navigators will assist with housing unit identification, making and keeping housing appointments, getting documents such as ID and income verification, and securing other needed items for move-in. Enhanced Housing Transition services will

discontinue when a client has successfully moved into housing and has been added to the on-site or mobile team provider's caseload for tenancy stabilization.

- **Housing Stabilization** — Provides services to support a client in being a successful tenant. This includes the following:

  Early identification and intervention for behaviors that may jeopardize housing

  Tenant education, coaching and training

  Assistance in resolving disputes with landlords

  Advocacy and linkage with community resources to prevent eviction

  Updating tenant housing support plan to address existing or recurring housing retention barriers

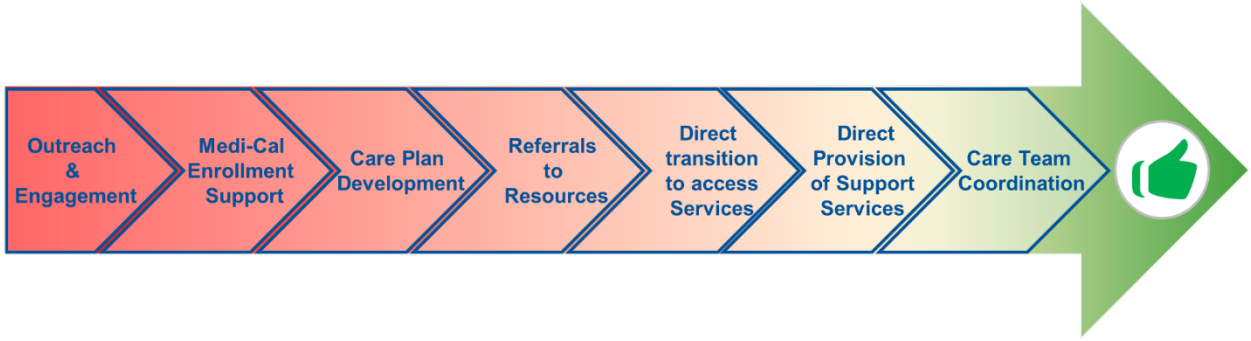
  Service will be provided to clients moving into permanent housing and will continue throughout tenant stabilization for an average of 12–24 months after placement or until client chooses to discontinue services.

- **Health Resource Center** — Provides wrap around services linked to health services to close gaps in access and acceptability for people experiencing homelessness in San Francisco. The open access (drop-in) center will serve as a full service, one-stop respite and a centralized WPC hub providing the following services:

	Services provided by WPC hub
	Screening using WPC Universal Assessment
	Benefits screening and assistance
	Activities of Daily Living (ADL) assessments
	Care of urgent medical problems and chronic medical conditions
	Psychiatric and addiction medicine services (assessment, care)
	Care coordination by developing a WPC Shared Care Plan
	Preventative services appropriate to the population
	Coordinated entry into housing (HSH)
	Transition to primary care in one of the SFHN primary care clinics or to specialized services such as behavioral health intensive case management (ICM), substance use disorder treatment, or placement in a more restrictive setting

The WPC program will be measured based on a defined set of metrics which are listed under Appendix 6.10.

Figure 1. WPC Vision for Service Delivery Journey Stages



5.2 Technology Vision

The City has developed a technology vision to enable WPC and similar future initiatives that is outlined in the following components which make up the base foundation for the future state technology solution:

A. Data Aggregation Platform

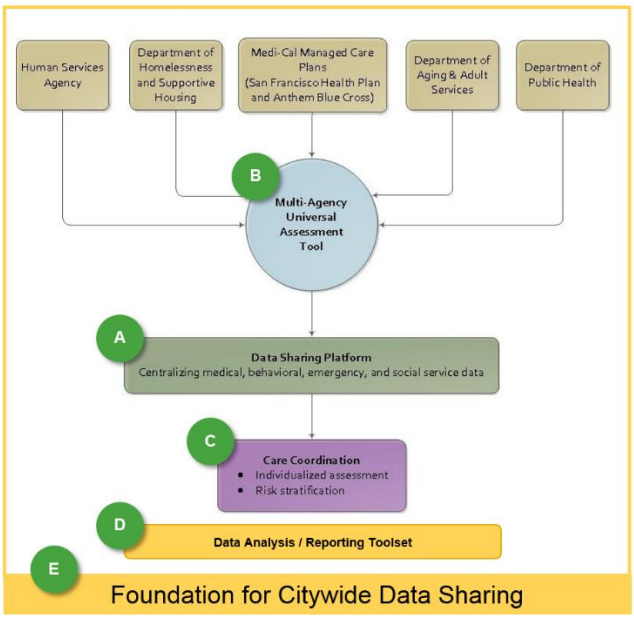
B. Multi-Agency Universal Assessment Tool

C. Multi-Agency Care Management and Coordination Tool

D. Data Analysis / Reporting Toolset

E. Foundation for Citywide Data Sharing

Figure 2. WPC Technology Solution Vision



Each of these components are described in the following sections.

A. Data Aggregation Platform

The data sharing platform will link information across agencies and disciplines enabling real-time care management, analysis and monitoring of multi-disciplinary and multi-agency data. The solution will draw upon gained experiences and learned lessons from existing tools such as CCMS and will leverage relevant best practice in this space. The following organizations will participate in WPC tow way data sharing as follows:

- **DPH** — Maintain and share relevant WPC data from its various core systems with other WPC partners to provide a real-time, actionable whole person profile. DPH data includes SFHN medical, mental health and substance use health data
- **HSH** — Build the data and technology infrastructures for WPC housing related services including coordinated entry and share housing data with the WPC aggregator platform
- **SFHP** — Provide WPC pilot partners with all relevant member information, including utilization data and access to PreManage and ensure WPC pilot is aligned and coordinated with SFHN's work on PRIME and Health Homes pilot
- **HSA** — Provide data exchange and service referrals to helping WPC Pilot participants enroll and remain on CalFresh (SNAP), CalWORKS (TANF), and the County Adult Assistance Programs (CAAP)
- **DAAS —** Provide data sharing through RTZ and participate in IT-infrastructure that will enable coordination of services and sharing of data throughout City and community programs
- **Anthem Blue Cross Partnership Plan** — Participate in bi-directional data exchange including to ensure eligible members are referred to programs that best meet their needs without duplication of services along with sharing health outcome and utilization data to help with WPC program evaluation

B. Multi-Agency Universal Assessment Tool

The shared needs assessment tool will identify WPC client needs while leveraging historical data to assess client acuity across multiple domains (e.g., health, length of homelessness) and stratify individuals into risk categories to guide the intensity of interventions.

C. Multi-Agency Care Management and Coordination Tool

The WPC care management and coordination tool will allow various members of the care team to collaborate together to develop and maintain a shared care plan and help clients:

- Remove barriers to facilitate timely connections to needed services across health, housing and social domains, which may include medical care, conservatorship, intensive case management, mental health, substance abuse residential treatment, a range of housing services and social benefits
- Ensure other providers are alerted to the client's elevated status
- Dispatch engagement workers to locate individuals in the streets or pickup wherever they present
- Provide transitional or bridge case management services and continuously monitor the client until they are fully engaged in care
- Centralize a real-time view of each client's health and social data to develop an inter-agency shared care plan, tracking of services activities provided by the various providers and alerts to client's care team of key events

D. Data Analysis/Reporting Toolset

The data aggregation platform will provide regular data flow that will accumulate the data foundation for gaining timely insights that can help the City optimize its services to help its vulnerable population. Data analytics and reporting tools will provide capabilities to develop predefined sets of operational and performance reports along with key driver and process metrics with drill down capabilities that can be posted for access by a wide range of front-line staff, workgroups, and executive sponsors.

Data can be analyzed to assess a variety of concerns, including identifying clients at highest risk, those who have fallen out of care, and those who are not engaging. These insights can help care teams and service providers to proactively engage clients to link them to much needed services. Additionally, self-service AD HOC reporting and analytics will enable authorized non-technical City staff access to the aggregated data to accelerate discovery and decision making to further optimize service delivery.

E. Foundation for a Citywide Data Sharing

The data-sharing platform model for WPC will set the foundation for Citywide data sharing that supports future initiatives to support SF's vulnerable populations and beyond.

While incremental progress is being made on defining requirements for the various components of the WPC future state technology solution in planning for implementation, the City is already working on current and interim state WPC IT activities as can be seen in Appendix 6.14.

5.3 WPC Stakeholders

Realizing the WPC future-state vision and achieving WPC program success will be attained with the engagement of various stakeholders across multiple departments and the ongoing support of the City leadership. Following are the stakeholder of key WPC organizations organized by the various stakeholder groups that have made a commitment to do whatever it takes to make the WPC program a success.

Figure 3. WPC Stakeholder Landscape

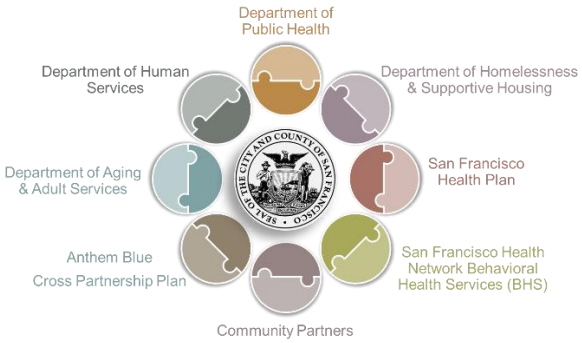


Table 23. WPC Stakeholders Matrix

San Francisco WPC Stakeholders	MAYOR'S OFFICE	DPH *CCMS, EPIC*	HSH *One*	DHS *CalWINS, MEDS*	DAAS *SF-GetCare*	SFHP *PreManage*	Community /Partners
Executive Steering	■ Mayor ■ Aneeka Chaudhry	■ Barbara Garcia ■ Bill Kim	■ Jeff Kositsky ■ Gigi Whitley	■ Trent Rhorer ■ Noelle Simmons	■ Shireen McSpadden	■ John Grgurina ■ Sumi Sousa	■ "Joel Gray (Anthem)"

San Francisco WPC Stakeholders	MAYOR'S OFFICE	DPH *CCMS, EPIC*	HSH *One*	DHS *CalWINS, MEDS*	DAAS *SF-GetCare*	SFHP *PreManage*	Community /Partners
	■ Joy Bonaguro ■ Melissa Whitehouse ■ Jason Lally	■ Roland Pickens ■ Greg Wagner ■ Alice Chen	■ Abigail Stewart-Kahn	■ Natalie Toledo			■ "Brett Andrews(Baker Places)" ■ "Vitka Eisen (HealthRIGHT 360)"
Core Planning	■	■ Maria X Martinez ■ Kiersten Robertson ■ Amber Reed	■ Kerry Abbott ■ Dara Papo	■ Susie Smith ■ City Ward	■ Cindy Kauffman ■ Jill Nielsen	■ Sumi Sousa	
IT Leadership	■ COIT ■ Joy Bonaguro ■ Carrie Bishop (Digital Services)	■ Bill Kim ■ Winona Mindolovich ■ Albert Yu ■ John Applegarth	■ Megan Owens ■ Gigi Whitley	■ Natalie Toledo	■ Natalie Toledo	■ Van Wong	
System Admin	■ Jason Lally	■ Irina Tomashevsky ■ Charis Baz ■ Carol Chapman ■ Rupal Mehta	■ Swati Pandi ■ Jason Satterfield (Bitfocus)				
System of Care Transformation Teams		■ Amber Reed ■ Roland Pickens ■ Anna Robert ■ Barry Zevin	■ Dara Papo	■ Cindy Ward ■ Jason Adamek (CAAP)	■ Carrie Wong ■ Conservator's office	■ Courtney Gray	
Analysts/ Researchers	■ Joy Bonaguro ■ Kim Hicks	■ Alice Chen ■ Ashley Yeung ■ Amber Reed ■ Tina Lee (MADI) ■ Wayne Enanoria (PHD) ■ Deb Sherwood (BHS) ■ Tom Bleecher (BHS) ■ Carol Chapman	■ Sarah Locher ■ Dara Papo	■ Dan Kelly ■ Rose Johns	■ Dan Kelly ■ Christine Lou	■ Emily Riggs	■ Hemal Kanzaria (UCSF) ■ Maria Raven (UCSF) ■ Margot Kushel (UCSF)
Data Governance	■ City Attorney	■ Spencer Williams ■ Kevin Schindler	■ Josh Jacobs	■ Vladimir Rudakov	■ Vladimir Rudakov		
Finance Lead	■ Melissa Whitehouse	■ Jenny Louie ■ Greg Wagner	■ Gigi Whitley ■ Marisa Pereira-Tully	■ Dan Kaplan	■ Dan Kaplan		

San Francisco WPC Stakeholders	MAYOR'S OFFICE	DPH *CCMS, EPIC*	HSH *One*	DHS *CalWINS, MEDS*	DAAS *SF-GetCare*	SFHP *PreManage*	Community /Partners
Operations	■ City Attorney	■ Kiersten Robertson ■ Greg Wagner ■ Jenny Louie ■ Roland Pickens ■ Carol Chapman	■ Kerry Abbott ■ Dara Papo ■ Joanna Zwyno				

6.0 Appendices

6.1 Gartner WPC Stakeholder Discovery Interview List

The following are the stakeholders that have been interviewed as of 4/27/2018 to inform Gartner's understanding of SF WPC current and future state landscapes.

Stakeholder/Role	Organization	Interview Date
Irina Tomashevsky, CCMS IT Developer	DPH	01/18/2018
Alice Chen, DPH Deputy CMO	DPH	02/05/2018
Albert Yu, DPH CMIO	DPH	02/06/2018
Winona Mindolovich, DPH Deputy CIO	DPH	02/07/2018
Hummingbird Place site visit	Baker Places	02/14/2018
Cohen, Emily, Navigation Center site visit Mission Street	HSH	02/15/2018
Natalie Toledo, HSA IT Manager; Robert Eickwort HSA Chief Information Security Office; Sahil Rahim, HSA Business Intelligence Director; Bernadette Casino, HSA Program Manager	HSA	02/16/2018
Dan Kelly, HSA Director of Planning; Christine Lou, HSA Analyst; Rose Johns, DAAS Lead Analyst	HSA/DAAS	03/06/2018
Rajiv Pramanik, Deputy CMIO	DPH	03/07/2018
Carrie Bishop, SF Chief Digital Services Officer	DT	03/07/2018
Dara Papo, HSH WPC Analyst	HSH	03/08/2018
Edmund Poon, HSH Analyst	HSH	03/08/2018
Kerry Abbott, HSH Deputy Director	HSH	03/09/2018
Dr. Barry Zevin, Director of Street Medicine and Shelter Health	DPH	03/09/2018
Crystal Chang, HSA IT Manager	HSA	03/12/2018
Joy Bonaguro, SF Chief Data Officer	Mayor's Office	03/13/2018
Jim Genevro, DPH Chief Applications Officer	DPH	03/14/2018
Jeff Jorgenson, SF Chief Operating Officer	DPH	03/20/2018
Megan Owens, HSH IT Manager; Dara Papo, HSH WPC Analyst	HSH	03/27/2018
Jason Satterfield, SF ONE System Business Manager Bitfocus Director of Policy & Evaluation	Bitfocus	03/29/2018
Irana Tomashevsky, CCMS IT Developer	DPH	03/29/2018
Tina Lee, eMPI Project Manager and Director of Business Metrics, Analytics and Data Management	DPH	04/03/2018
Hemal Kanzaria, ED Physician at SFGH	UCSF	04/05/2018
Jill Nielsen, DAAS Direct Services; Cindy Kauffman, DAAS Contracted Providers	DAAS	04/11/2018
Susie Smith, HSA WPC Core Planning; Vladimir Rudakov, HSA Privacy Officer; Dan Kelly, HSA Director of Planning, Crystal Chang	HSA	04/11/2018
Joanne Holland, SF Account Manager for RTZ	RTZ	04/11/2018
Joanne Holland, SF Account Manager for RTZ	RTZ	04/19/2018
Yee-Bun Lui (Ben), SFHN Chief of Community Primary Care	SFHN	04/20/2018

*Interview notes can be found at *https://drive.google.com/drive/folders/1ofnh5Htg5y8efIK2JBQK565YEDiapecF*

6.2 SF WPC Ecosystem Technology Systems and Tool

The following are the key IT systems within the WPC overall ecosystem across the various participating department and organizations. The systems are designated by the ones that will be used in the future contrasted to those that are only used currently and will be retired or no longer be used in the future state. Some of the IT systems are not yet live but are expected to be so before the end of the WPC program funding.

The following tables list the key attributes of each IT system.

Future State System			
Epic Electronic Health Record — Department of Public Health			
Description	**Purpose of System** A unified Electronic Health Record (EHR) serving inpatient, ambulatory and emergency departments that provides a number of modules to support patient engagement, clinical operations, managed care, specialty care, revenue cycle, population heath, and connections to the provider community. **Interaction with WPC** Source of clinical records for SFHN patients **Main User Groups** ■ Inpatient, ambulatory and Emergency Dept. providers and staff ■ Authorized users of SFHN clinical records. **Number of Users** ■ Expected to be 12000+		
WPC Relevant Data Elements		**Data Exchange Capabilities**	
■ Complete clinical records for SFHN patients		■ Care Everywhere, Epic's patient record exchange platform ■ HL7, ANSI, DICOM, XML, NCPDP, and other standards that are either real-time or batch, one-way or bidirectional, point-to-point or mediated by an interface engine ■ Application programming interfaces (APIs) including FHIR.	
Vendor	**S/W Product and Version**	**COTS/Custom**	**Maintenance Party**
Epic	Epic EHR	COTS	Epic
Hosting Model	**Timeline**	**Business Contacts**	**Technical Contact**
SaaS	Phase 1 live 08/2019	Albert Yu albert.yu@sfdph.org	Jim Genevro jim.genevro@sfdph.org
Comments			

Current and Initial Future State System
Avatar — Department of Public Health

Description

Purpose of System

An electronic health record (EHR) solution specifically designed for behavioral healthcare and addiction treatment in community-based, residential and inpatient programs. It offers a robust set of features that support roles throughout the organization including behavioral health assessment and treatment planning documentation, eligibility, authorizations and billing

Interaction with WPC

Behavioral Health treatment documented in Avatar is a likely point of contact with the WPC community

Main User Groups/Number of Users

Users	Estimated (2016)
County — Administrative & Clerical	90
County — Clinical	763
County — Quality Improvement	12
Contract — Administrative & Clerical	665
Contract — Quality Improvement	25
Contract- Clinical	1371
Total	**2,926**

WPC Relevant Data Elements	Data Exchange Capabilities
■ Behavioral Health Diagnosis ■ Behavioral Health related prescriptions	■ In-house developed data warehouse (DW) is populated with Avatar data. The DW is used for ad hoc reporting by various groups throughout DPH. Tables within the DW are updated as often as nightly, depending on the data and business needs ■ The NetSmart CareConnect interoperability engine can connect with referral network/partners including acute and primary care providers, laboratories, public health reporting agencies and health information exchanges (HIEs)*

Vendor	S/W Product and Version	COTS/Custom	Maintenance Party
NetSmart	Avatar RadPlus 2018 Version 2012	COTS with customization	DPH & NetSmart
Hosting Model	**Timeline**	**Business Contacts**	**Technical Contact**
ZSFG DPH data center	Ends with Epic Phase 3	Kimberly Voelker Kimberly.Voelker@sfdph.org	Jim Genevro jim.genevro@sfdph.org

Comments

Current and Future State System
Jail Information Management System (JIMS) — Department of Public Health

Description

Purpose of System

Jail Health Information Management system managing jail medical, jail psych, and HIV IS. It is connected to LCR, SFGH and Public Health laboratory

Interaction with WPC

Provides CCMS with jail health data including episodes

	Main User Groups ■ Jail health staff **Number of Users** 335

WPC Relevant Data Elements		Data Exchange Capabilities	
Client episodes		■ Monthly batch file	
Vendor	**S/W Product and Version**	**COTS/Custom**	**Maintenance Party**
Legacy Systems Solutions	Cache 2015	Custom	DPH and Legacy Systems Solutions
Hosting Model	**Timeline**	**Business Contacts**	**Technical Contact**
SF DPH data Center	End with Epic Phase 3	Wayland Bergman wayland.bergman@sfdph.org	Jim Genevro jim.genevro@sfdph.org
Comments			

Current and Future State System	
City & County of San Francisco Vital Records — Department of Public Health	
Description	**Purpose of System** SF DPH Viral Records database loaded from the CA State Death Registry records **Interaction with WPC** Death records for clients in the WPC platform, similar to how it is currently used with CCMS **Main User Groups** **Health Information Management (HIM) staff**

WPC Relevant Data Elements		Data Exchange Capabilities	
Death record information for clients in WPC platform		■ Monthly batch flat file	
Vendor	**S/W Product and Version**	**COTS/Custom**	**Maintenance Party**
DPH home grown	N/A	Custom	DPH
Hosting Model	**Timeline**	**Business Contacts**	**Technical Contact**
On-premise	Ongoing		Todd Riley todd.riley@sfdph.org
Comments			

Future State System	
ONE System — Department of Homelessness & Supportive Housing	
Description	**Purpose of System** Supports HSH service teams in delivering Homelessness & Supportive Housing services to San Francisco residents. **Interaction with WPC**

	■ Provides CCMS/future WPC platform with housing data for WPC view of clients ■ Received WPC data from CCMS/future WPC platform to allow ONE system users to have a full view of the client. Datasets will be that currently present in CCMS WPC summary screen **Main User Groups** ■ Street outreach (SF HOT) ■ Coordinated entry ■ Navigation center ■ Shelter ■ Permanent supportive housing **Number of Users** ~1500 at full adoption (~400 as of 4/9/2018)

WPC Relevant Data Elements		Data Exchange Capabilities	
■ Housing datasets including current and historic clients housing services		■ Real-time APIs, Nightly Batch ■ Secure data push and pull models / ETL	
Vendor	**S/W Product and Version**	**COTS/Custom**	**Maintenance Party**
Bitfocus	Clarity	COTS	Bitfocus
Hosting Model	**Timeline**	**Business Contacts**	**Technical Contact**
SaaS	■ Limited data today ■ Fully live: Fall 2019	Megan Owens megan.faught@sfgov.org	Jason Satterfield jasons@bitfocus.com
Comments			

Future State System	
CARBON — Department of Homelessness & Supportive Housing	
Description	**Purpose of System** CARBON is the HSH system that supports invoicing for all contracted HSH providers delivering Homelessness & Supportive Housing services to San Francisco residents **Interaction with WPC** Provide future WPC platform with housing invoicing data to support WPC reimbursement from the State. CARBON allows flexibility to create unique line items that can be billed against to provide WPC invoicing. This can be done by restructuring budgets and splitting out General Fund, HUD and WPC funding and attributing line items to its funding source **Main User Groups** ■ Providers ■ HSH Contracts Unit ■ HSH Fiscal & Budget Planners ■ HSH Program Managers and Unit Directors **Number of Users** Providers ~ 200, Contracts Unit ~ 10 , Fiscal & Budget ~ 9, Program Managers and Unit Directors ~ 15

WPC Relevant Data Elements	Data Exchange Capabilities
■ HSH housing services invoicing data	■ Limited data may be downloaded into Excel file format

		■ Currently there is no batch or existing API connected to CARBON	
Vendor	**S/W Product and Version**	**COTS/Custom**	**Maintenance Party**
Cityspan	N/A	Custom	Cityspan
Hosting Model	**Timeline**	**Business Contacts**	**Technical Contact**
Web-based service	Current system. Potential for starting developing specs for a replacement system third or fourth quarter of FY 18-19	Gilda Kemper Contracts Unit Manager gilda.kemper@sfgov.org Gigi Whitley, Deputy Director of Administration and Finance gigi.whitley@sfgov.org	Crystal Chang of HSA crystal.chang@sfgov.org (HSA holds the contract for this vendor prior to the formation of HSH)
Comments			

Future State System			
CalWIN — Department of Human Services Agency			
Description	**Purpose of System** Supports the administration of welfare in California. These include CalWORKs (TANF), CalFresh (food stamps), Medi-Cal (Medicaid), General Assistance/General Relief, Foster Care, and case management functions for employment services. It also supports County Adult Assistance Programs (CAAP). **Interaction with WPC** Provides CCMS/future WPC platform with social services data regarding San Francisco's vulnerable population including upcoming appointments and deadlines for submitting renewals for services clients currently enrolled in. **Main User Groups** ■ Social Services Eligibility Workers ■ Case Workers **Number of Users** ~2K		
WPC Relevant Data Elements		**Data Exchange Capabilities**	
■ Clients currently or historically marked as homeless adults ■ Upcoming client appointments and deadlines for submitting renewals for services clients currently enrolled in		■ HSA data warehouse, includes the CalWIN client transitional level data required for WPC. The data warehouse is expanding to include additional HSA data sources beyond CalWIN, making it an ideal WPC source for HSA data ■ Nightly batch files ■ DB Replication (refreshed every 15 minutes) ■ Real-time APIs	
Vendor	**S/W Product and Version**	**COTS/Custom**	**Maintenance Party**
DXC Technology under direction	CalWIN Enterprise App	Custom grown	DXC Technology under supervision of the CA

from CA Welfare Client Data System (WCDS)			Welfare Client Data System (WCDS)
Hosting Model	**Timeline**	**Business Contacts**	**Technical Contact**
Hosted at State-level data center	Ongoing with anticipated merging with other state welfare systems in 2023	Bernadette Casino Bernadette.Casino@sfgov.org	Natalie Toledo natalie.toledo@sfgov.org
Comments			

Future State System	
SF-GetCare — Department of Aging and Adult Services	
Description	**Purpose of System** SF-GetCare is a client management and service coordination toolset that provides a wide-range of capabilities that help City departments serving older adults and persons with disabilities administer services. Community providers (e.g. hospital discharge planners, case managers, home health providers, LHH social workers, home-delivered meal providers) complete referral for submission to DAAS Intake team using the web portal. Intake team reviews online referrals and return to submitter for more information, withdraw intakes, or move forward for enrollment. Post intake information is electronically fed to CMIPS, the payroll system for IHSS. The integrated intake supports assessments and applications for: ■ Community Living Fund (CLF) – Intensive Care Management (ICM) ■ In-home Support Services (IHSS) ■ Transitional Support ■ Home Delivered Meals ■ Long-term Case Management Client services are managed through the State-level GetCare application known as CARS but client data is shared across all GetCare application instances. **Interaction with WPC** ■ Provides future WPC platform with social services for aging and disabled vulnerable populations including client service history, progress notes, homeless flag and other client demographics and any known upcoming appointments ■ Displays the WPC platform client summary page from within SF-GetCare for additional client insights **Main User Groups** ■ Community Based Organizations (CBOs) / Providers ■ DAAS Intake processing team **Number of Users** Providers are 200+ and DAAS staff are ~40+
WPC Relevant Data Elements	**Data Exchange Capabilities**
■ Clients currently or historically marked as homeless adults ■ Care team, historic services, upcoming client appointments and deadlines for	■ Real-time and batch ■ APIs, file extracts

submitting renewals for services clients currently enrolled in			
Vendor	**S/W Product and Version**	**COTS/Custom**	**Maintenance Party**
RTZ Associates	GetCare	COTS plus modifications	RTZ Associates
Hosting Model	**Timeline**	**Business Contacts**	**Technical Contact**
SaaS	Ongoing	Jill Nielsen Jill.Nielsen@sfgov.org, 415-355-6788	Carrie Wong of DAAS carrie.wong@sfgov.org or Joanne Holland joanne@rtzassociates.com
Comments			

Future State System			
VetPro — Department of Aging and Adult Services			
Description	**Purpose of System** VetPro is a veteran claim management system that supports DAAS in delivering County Veterans Service support which primarily consists of helping veterans apply for VA benefits. The system is used to collect client information and track claim status and claim outcome. Claim information is manually input by County Veterans Service Office (CVSO) staff, not linked to a VA database. Note that this is not case management in the sense of developing a care plan, connecting to other services, etc as CVSO is primarily focused on connecting veterans to VA benefits. This platform is separate from the other products from this vendor, such as the Public Guardian and Public Administrator database. DAAS does not contract with Panoramic for an APS database. CVSO is staffed by Veterans Claim Representatives who are state-certified to help veterans and their dependents file benefit claims. They also complete income verifications for other programs (e.g., confirm receipt of pension benefit) and help veterans obtain documentation from the VA about their service. **Interaction with WPC** CVSO serves 160 – 260 homeless veterans per year. There may be overlap in clients served – not sure if people receiving care from the VA also could have Medi-Cal. It could be that WPC serves clients who are veterans and may be eligible for pensions/VA care and CVSO could help support this application process. **Main User Groups** CVSO staff **Number of Users** ~7		
WPC Relevant Data Elements		**Data Exchange Capabilities**	
■		■ Nightly or monthly Batch ■ No real time API capability	
Vendor	**S/W Product and Version**	**COTS/Custom**	**Maintenance Party**
Panoramic	Veto Pro Web version 2.2.423	COTS	Panoramic

Hosting Model	Timeline	Business Contacts	Technical Contact
SaaS	On-going	Dorian Carr County Veterans Service Officer Direct Line 415-271-4871 Dorian.Carr@SFGOV.ORG	Dave Steer Panoramic Account Manager 877.558.8526 x 1 dave@panosoft.com
Comments			

Future State System			
LEAPS — Department of Aging and Adult Services			
Description	**Purpose of System** LEAPS is an Adult Protective Services (APS) investigation and case management tool. New Reports of Abuse are input as referrals into the system and assigned to APS social workers for investigation and short-term case management if it is determined the client needs support and consents to receiving it. The tools functionality includes findings from the investigation, client risk assessment, client contacts, and case closure summary. **Interaction with WPC** It is likely that at least some WPC clients will be known to APS as one-time or recidivist clients. APS data is highly protected and may not be feasible to share externally. However, it would potentially promote system efficiency for APS to receive data about WPC clients, such as the name/contact info of WPC case manager, when the client is hospitalized, etc. **Main User Groups** Social workers in the Adult Protective Services program; DAAS Integrated Intake staff processing initial reports of abuse **Number of Users** ~80		
WPC Relevant Data Elements		**Data Exchange Capabilities**	
■		■ Nightly or monthly Batch ■ No real time API capability	
Vendor	**S/W Product and Version**	**COTS/Custom**	**Maintenance Party**
Jump Technology		COTS with custom elements and customizable features	Jump Technology
Hosting Model	**Timeline**	**Business Contacts**	**Technical Contact**
SaaS	On-going	Akiles Ceron APS director Akiles.Ceron@sfgov.org	Denise Brinkmeyer JUMP Technology CEO 918-624-JUMP denise.brinkmeyer@jumpfaster.com
Comments			

Future State System

PreManage — San Francisco Health Plan

Description

Purpose of System

PreManage is a client-centric clinical data real-time communication tool used by health plans and providers that ensures that high-value clinical insights attach to the clients rather than to an otherwise disparate hospital, provider, or health plan EHR system. Client data includes clinical utilization history, social determinants, prescription histories and healthcare plan notes created by Social Workers for complex clients across all PreManage participating locations.

When a client is registered at a provider clinical system, the PreManage database is automatically searched in real-time for clients that match a given predetermined risk criteria, and notifications are sent to the client care team. The criteria for when to notify the client's care team is totally customizable. This helps the care team determine how to best provide care for the client while reducing medically-unnecessary readmissions, stay duration, and connecting clients with external services that enhance their overall wellbeing.

Interaction with WPC

- PreManage healthcare plan data should be integrated within the future WPC system as part of the multi-discipline multi-agency client shared care plan
- Need for direct interface between PreManage and future WPC platform will depend on level of integration of PreManage and other health systems such as Epic, which is already going to be a data source for the future WPC platform

Main User Groups

- SFHP Care Mangers (full access to manage care plans)
- Plan and Providers staff that analyze clients history to determine risk populations
- (Indirect access through Epic) Clinicians get the client history to help them make a more informed service decision

Number of Users

- Planned for use by a handful of social workers at St. Anthony's clinic with plan to roll it out to other providers during summer 2018 as part of the Health Homes program
- Potentially hundreds of clinicians across various SFHP provider locations across the City when fully implemented

WPC Relevant Data Elements	Data Exchange Capabilities
Complex care clients' healthcare historical records: ■ Service utilization ■ Social determinants ■ Prescription histories ■ Healthcare plan notes	■ Direct integration with any HL7 standards-compliant interface engine or EHR

Vendor	S/W Product and Version	COTS/Custom	Maintenance Party
Collective Medical Technologies	PreManage for Plans and Providers	COTS	Collective Medical Technologies

Hosting Model	Timeline	Business Contacts	Technical Contact
SaaS	Ongoing	Courtney Gray, cgray@sfhp.org	Gabriel Waters, gabe.waters@collectivemedicaltech.com

Comments

Current State System			
CCMS — Department of Public Health			
Description	**Purpose of System** CCMS is a composite database of integrated data for vulnerable populations from source databases across the City that aggregates data from multiple agencies and systems. CCMS provides a longitudinal whole person perspective of this high-risk and complex population. It also serves as the core system for complex care management teams. **Interaction with WPC** ■ Historical aggregated client data ■ Main system for the following user groups **Main User Groups** ■ SF HOT ■ Sobering Center ■ Stabilization Rooms ■ Direct Access to Housing (DAH) ■ Medical Respite **Number of Users** ~400		
WPC Relevant Data Elements		**Data Exchange Capabilities**	
All historical CCMS data			
Vendor	**S/W Product and Version**	**COTS/Custom**	**Maintenance Party**
DPH IT	N/A	Custom	DPH IT
Hosting Model	**Timeline**	**Business Contacts**	**Technical Contact**
On-premise	Until CCMS data is migrated to future WPC platform and all users off of CCMS	Maria X Martinez maria.x.martinez@sfdph.org	Irina Tomashevsky irina.tomashevsky@sfdph.org
Comments			

Current State System	
Invision Longitudinal Clinical Record (LCR) — Department of Public Health	
Description	**Purpose of System** Longitudinal Clinical Record of patient registration and billing, Inpatient documentation and order entry **Interaction with WPC** Read-only lookup of historical clinical records **Main User Groups** SFHN providers and others accessing historical clinical documentation **Number of Users** ~20,000 users

WPC Relevant Data Elements		Data Exchange Capabilities	
■ Historical clinical records ■		■ Inbound archival records ■ Query/response interface	
Vendor	**S/W Product and Version**	**COTS/Custom**	**Maintenance Party**
Cerner (previously Siemens)	Invision V27.6	COTS + user mods	Cerner
Hosting Model	**Timeline**	**Business Contacts**	**Technical Contact**
Cerner premises	End with Epic go-live 08/2019	Todd Riley todd.riley@sfdph.org	Jim Genevro jim.genevro@sfdph.org
Comments			

Current State System	
Invision Clinical — Department of Public Health	
Description	**Purpose of System** Inpatient electronic health record aggregating lists created by clinical teams to track patients medical history **Interaction with WPC** Read-only lookup of historical clinical records **Main User Groups** SFHN providers and staff documenting or accessing inpatient care records. **Number of Users** ~20,000 users including numerous providers, 800+ nurses at SFGH, UC residents…etc.

WPC Relevant Data Elements		Data Exchange Capabilities	
■ Inpatient care records		■ HL7	
Vendor	**S/W Product and Version**	**COTS/Custom**	**Maintenance Party**
Cerner (was Siemens)	Invision V27.6	COTS + user mods	Cerner
Hosting Model	**Timeline**	**Business Contacts**	**Technical Contact**
Cerner premises	End with Epic go-live 08/2019	Todd Riley todd.riley@sfdph.org	Jim Genevro jim.genevro@sfdph.org
Comments			

Current State System	
eClinicalWorks (eCW) — Department of Public Health	
Description	**Purpose of System** Ambulatory Electronic Health Record used for outpatient/ambulatory in clinics and within ZSFG Uses include skilled nursing/long-term care inpatient documentation and order entry at Laguna Honda's skilled nursing units and at Laguna Honda's outpatient specialty care clinics (including dental). Used for outpatient documentation in specialty and primary care clinics. **Interaction with WPC**

	Ambulatory clinical care delivered to WPC participants is scheduled and documented in eCW. **Main User Groups** SFHN providers and staff documenting or accessing ambulatory care records. **Number of Users** 5612

WPC Relevant Data Elements		Data Exchange Capabilities	
■ Ambulatory care records		■ HL7 ■ Commonwell, Sequoia, Direct Secure Messaging and CDA exchange are supported	
Vendor	**S/W Product and Version**	**COTS/Custom**	**Maintenance Party**
eClinicalWorks	eClinicalWorks V10SP2.5.12.2	COTS + user mods	DPH and eClinicalWorks
Hosting Model	**Timeline**	**Business Contacts**	**Technical Contact**
SF DPH data center	End with Epic go-live 08/2019	Bryan Baysac bryan.baysac@sfdph.org	Jim Genevro jim.genevro@sfdph.org
Comments			

Current State System	
PulseCheck — Department of Public Health	
Description	**Purpose of System** Emergency Room Electronic Health records that includes physician and nurse charting **Interaction with WPC** Emergency Room care delivered to WPC participants is documented in PulseCheck. **Main User Groups** SFHN providers and staff documenting or accessing Emergency Room care records. **Number of Users**

WPC Relevant Data Elements		Data Exchange Capabilities	
■ Emergency Dept. clinical records		■ Outbound HL7, PDF, Postscript, ASCII, TIF	
Vendor	**S/W Product and Version**	**COTS/Custom**	**Maintenance Party**
Harris (previously PICIS)	ED PulseCheck version 5.6 1830i	COTS	DPH and Harris
Hosting Model	**Timeline**	**Business Contacts**	**Technical Contact**
SF DPH data center		Dr. Alan Gelb of UCSF	Van Wong van.wong@ucsf.edu
Comments			

Current State System
UCSF Psychiatric Emergency Records (PES) eChart — San Francisco Health Network (SFHN)

Description	
	Purpose of System Electronic Medical Records (EMR) system for Psychiatric Emergency Services (PES) used in UCSF and ZSFG **Interaction with WPC** Send WPC platform services, diagnostic and notes **Main User Groups** ■ Psychiatrists ■ Nurses ■ Medical Providers **Number of Users**

WPC Relevant Data Elements		Data Exchange Capabilities	
Client services, diagnostic and notes (Current data sent to CCMS)		■ Batch file nightly, previous days data	
Vendor	**S/W Product and Version**	**COTS/Custom**	**Maintenance Party**
UCSF home grown	N/A	Custom	UCSF
Hosting Model	**Timeline**	**Business Contacts**	**Technical Contact**
On-premise hosted by UCSF/ZSFG IT infrastructure team at ZSFG Building 5	End with Epic go-live 08/2019	Holly Wong holly.wong@ucsf.edu	Michael Resnick Michael.resnick@ucsf.edu
Comments			

Current System	
MEDS — CA Department of Health Care Services	
Description	**Purpose of System** The Medi-Cal Eligibility Data System (MEDS) is a statewide system that administers the Medi-Cal program. It holds records of every individual who has been reported as Medi-Cal eligible based on information it receives from each county's individual data systems. The primarily function of MEDS is to: ■ Manage the issuance of Medi-Cal cards ■ Track enrollment in other health insurance programs ■ Process claims **Interaction with WPC** Send WPC platform MEDS data on county clients that are Medi-Cal eligible **Main User Groups** ■ ■ **Number of Users**

WPC Relevant Data Elements	Data Exchange Capabilities
■ The data available on MEDS include Medi-Cal program participation, county of residence, MediCal	■ Monthly batch file

■ Share of Cost, provider type, and health insurance information for all Medi-Cal recipients., SSI case number			
Vendor	**S/W Product and Version**	**COTS/Custom**	**Maintenance Party**
State system under CA Department of Health Care Services	N/A	Custom	State system maintain under supervision of CA Department of Health Care Services
Hosting Model	**Timeline**	**Business Contacts**	**Technical Contact**
Hosted at State-level data center	Ongoing		
Comments			

Current State System	
CHANGES — Department of Homelessness & Supportive Housing	
Description	**Purpose of System** Single adult shelter reservation system that is integrated with county benefits system for county single adult benefits. The system tracks and creates reservations for homeless clients needing shelter beds and reports on shelter vacancy rates; reservations and check-ins counts. Client level homeless demographic data includes: ■ Disabling Condition ■ Last Zip Code ■ TB Status ■ Prior Residency ■ Length of Stay ■ Length in SF **Interaction with WPC** Provides details on clients' shelter related services and CAAP **Main User Groups** ■ Shelter Staff ■ Resource Center staff ■ CAAP eligibility workers ■ Benefit Net Operations team ■ 311 **Number of Users**

WPC Relevant Data Elements		**Data Exchange Capabilities**	
■ Shelter records including CAAP benefits		■ Monthly file extracts	
Vendor	**S/W Product and Version**	**COTS/Custom**	**Maintenance Party**
HSA home grown	N/A	Custom	HSA
Hosting Model	**Timeline**	**Business Contacts**	**Technical Contact**

HSA data center	End with migration of data to the ONE System in 2019	Noel Panelo, 415-345-4123	Crystal Chang, Crystal.Chang@sfgov.org, 415-557-5421
Comments			

Current State System	
Edie (PreManage ED) — San Francisco Department of Health	
Description	**Purpose of System** Edie is a patient-centric clinical data real-time communication tool used in emergency department to provide key information on the patient's clinical visit history to all EDs in the Edie network. Data provided includes prior ED utilization, social determinants, prescription histories and healthcare plan notes created by ED Case Managers and Social Workers for complex patients. When a client is registered in a hospital ED system, a message is triggered to connect to Edie to search its database which matches the client and triggers notifications to the ED system and other providers based on predetermined criteria. There are separate contracts between the vendor and each hospital with different level/extent of bi-directional data integration implemented in each hospital. **Interaction with WPC** ■ Subset of Edie data integrated into LCR is indirectly loaded into CCMS **Main User Groups** ■ ED Clinicians ■ ED Social Workers / Case Managers (full access/manage care plans) ■ (Indirect access through LCR) ED Clinicians get the Edie client history in PulseCheck, SFHP's core ED electronic health record registration system **Number of Users** ■ ~20 social workers located within various SF hospitals ■ Hundreds of clinicians view client history (read-only). Provider locations include SFGH, UCSF, CPMC and other provider facilities across the City

WPC Relevant Data Elements	**Data Exchange Capabilities**
(Indirect access through LCR) Complex care patients' healthcare historical records: ■ ED utilization ■ Social determinants ■ Prescription histories ■ Healthcare plan notes	■ Direct integration with any HL7 standards-compliant interface engine or EHR

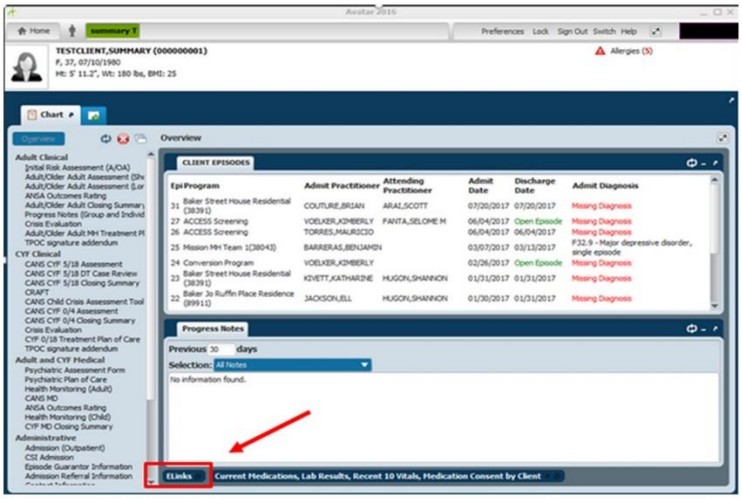
Vendor	**S/W Product and Version**	**COTS/Custom**	**Maintenance Party**
Collective Medical Technologies	PreManage ED	COTS	Collective Medical Technologies
Hosting Model	**Timeline**	**Business Contacts**	**Technical Contact**
SaaS	Ongoing	Courtney Gray, cgray@sfhp.org	Gabriel Waters, gabe.waters@collectivemedicaltech.com
Comments			

6.3 Access to CCMS WPC Summary

The CCMS WPC Summary can be accessed directly from DPH applications such as Avatar.

From Avatar

1. Locate the patient record using the Search Clients field. *Note:* Enter "1" to access the Summary Testclient (Account # 000000001).
2. From the Client Overview, click on the **Elinks** button at the bottom of page.
3. From the Avatar eLINKS page, click on **CCMS Summary Page**.
4. The Patient Summary will launch in a separate browser window.



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What you see in the CCMS WPC Summary is the following:

3 **Introduction**

Brief synopsis of the patient and their diagnostic history.

4 **Care Team Members (Active)**

A list of provider(s) currently working with the client.

5 **Financial Benefits**

Displays any income and insurance the client is receiving.

6 **Vulnerabilities**

Summarizes health and social factors which contribute to the risks of early mortality or decreased quality of life. Those with Level U/E Use of Top 1% are considered high users, and are particularly at-risk and require immediate care coordination.

Introduction

[redacted] preferred language is English. Urgent sevices **Top 1%** in 2015-2016, 2016-2017, 2017-2018. Suffers from Alcohol Abuse; Cardiac Arrhythmias; Chronic Pulmonary Disease; Depression; Diabetes, Uncomplicated; Drug Abuse; Fluid and Electrolyte Disorders; Liver Disease; Obesity; Psychoses (Elixhauser conditions that predict early mortality in hospitalized patients).

Care Team Members (Active)

Role	Name, License	Program	Beginning Date	Last Visit Date	Phone	Email
	[redacted]	SF HOT			[redacted]	
		Medical Respite	03-21-2017	02-21-2018		
		Hyde Adult FSP Outpatient (38BRA3)	11-08-2016	02-06-2018		
PCP	[redacted] (MD)	Tom Waddell Health Center		11-10-2016		

Financial Benefits

Health insurance	02-01-2018	Medi-Cal, County of Responsibility: San Francisco, Healthcare Plan: San Francisco Health Plan, Aid Code: (60) SSI/SSP - Disabled
Income	02-01-2018	SSI, Aid Code description = disabled (MEDS aid_code = 60).
Enrollment in managed healthcare network	02-01-2018	San Francisco Health Network

Vulnerabilities

	Current risk factors Level of U/E Use	Homelessness	County Jail Health	Conserved	Dx Predictors Of Early Death	PCP	CM
2017-2018	Top 1%	Y	-	-	Med-Psy-SA	Y	Y
2016-2017	Top 1%	Y	-	-	Med-Psy-SA	Y	Y
2015-2016	Top 1%	Y	-	-	Med-Psy-SA	-	Y

- U/E is Urgent/Emergent
- Per CFR 42.2, SA-related information was pulled from records OTHER THAN substance abuse treatment program records.

CCMS PATIENT SUMMARY – HOMEPAGE FEATURES

21

7 Future Health Appointments

Displays future appointments.

8 Urgent Emergent Services Summary

A summary of urgent / emergent health services, organized by fiscal year (e.g., FY1617 = 7/1/2016-6/30/2017).

9 Frequency of Encounters by Service Type and Description of Most Recent Encounter

Overview of which service types the patient is accessing, how frequently, and details on last service.

Future Health Appointments

Date	Time	MD	Clinic	Facility
02-07-2018	11:40	-	Adult Medical Center	1M
03-08-2018	13:45	-	15PRICARE	15TUHC

Urgent Emergent Services Summary

Urgent/Emergent Utilization	EMS HU Trans ports	SFGH ED Visits	OOMG ED Visits	SFGH Med Inpt Days	OOMG Inpt Days	DPH O/P Urg Visits	DPH Med Respt Days	WS+Mobl Crisis Visits	PES Visits	Dore Visits	MH Inpt Days	ADU Crisis Res Days	Sobr Ctr Visits
FY1718	-	4	18	2	21	-	213	-	-	-	-	-	-
FY1617	-	8	79	19	49	1	102	-	-	-	-	-	-
FY1516	-	-	-	-	-	-	-	-	-	-	-	-	-

Frequency of Encounters by Service Type and Description of the Most Recent Encounter

Service Type	Number in Last 3 Months	Date of Most Recent Service	Program	Clinician	Primary Dx/Reason
Medical Respite	1	01-30-2018	-	-	-
MH Outpt	3	01-25-2018	Hyde Adult FSP Outpatient (38BRA3)	-	F29 - Unspecified psychosis not due to a substance or known physiological condition
ED	3	01-12-2018	SFGH	TENNER , ANDREA GAIL	J44.1 - Chronic obstructive pulmonary disease w (acute) exacerbation
Primary Care	2	12-28-2017	Tom Waddell Urban Health Center	WINN, Angela	-

CCMS PATIENT SUMMARY – HOMEPAGE FEATURES 22

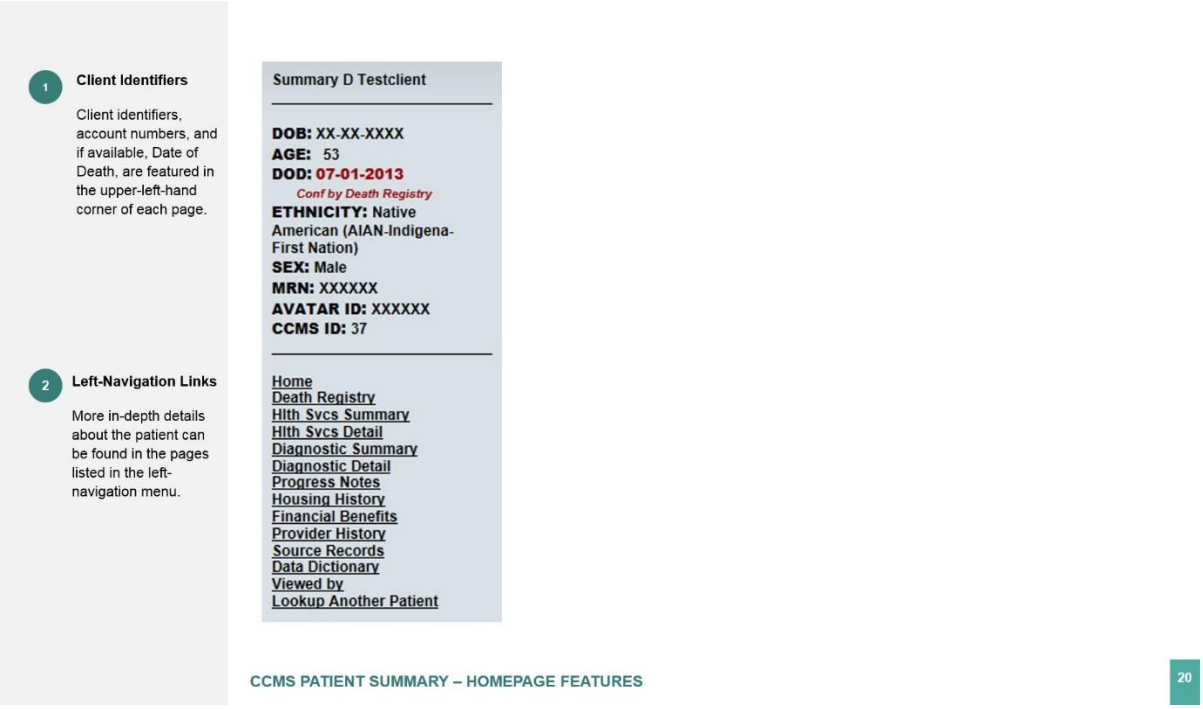
10 Longitudinal Graphical Display of Service Utilization

Lists various types of services, organized under headings of Ambulatory Care, Urgent Emergent Medical, Urgent Emergent Psychiatric, and Urgent Emergent Substance Abuse, and graphically presents utilization over time. A quick glimpse provides an idea of service utilization within various systems and different levels of care.

Longitudinal Graphical Display of Service Utilization

CCMS PATIENT SUMMARY – HOMEPAGE FEATURES 23

You can also navigate to other CCMS WPC summary pages via the left-side navigation links from the homepage.



* From DPH IT CCMS Presentation on 2018-03-01

6.4 CCMS Data Sources Refresh Rates

Sources for CCMS integrated data are refreshed according to the following:

Source Data	Frequency
DPH Medical Respite (CCMS)	Live (records update in real time)
DPH Sobering Center (CCMS)	Live (records update in real time)
DPH Stabilization Rooms (CCMS)	Live (records update in real time)
DPH Medical (LCR)	Updates nightly with one day data lag, contains urgent and stabilizing care records
DPH Mental Health and Substance Abuse (Avatar)	Updates nightly with one or two day data lag depending on the timing, contains urgent and stabilizing care records
DPH Jail Health (JIMS database)	Nightly
DPH Vital Records (loaded from State Death Registry)	Monthly
SF Health Plan	Monthly but not very regular, contains those who have Out of Medical Group Medical Services
UCSF Psychiatric Emergency (PES)	Nightly
HSH SF Homeless Outreach Team case management (CCMS)	Live (records update in real time)
HSH Direct Access to Housing (DAH) Permanent Supportive Housing (CCMS)	Live (records update in real time)
HSH Shelter (CHANGES, includes CAAP Benefits)	Monthly

Source Data	Frequency
HSH Navigation Centers	Monthly
SF Fire Department EMS High User Transport	Quarterly but not regular
State Medi-Cal Insurance Records (MEDS)	Monthly

6.5 CCMS User Titles and User Groups

The following key user titles and teams are based on an actual extract from CCMS data on 03/06/2018.

CCMS User Titles
Administrative Coordinator
Administrative Manager
Analyst
Behavioral Health Clinician
Business Analyst
Care Coordinator
Care Management Community Coordinator
Care Management Community Nurse
Care Management Supervisor
Care Navigator
Clinic Director
Clinical Nurse Specialist
Clinical Operation Lead
Clinical Program Manager
Clinical Psychologist
Clinical Social Worker
Clinical Supervisor
Counselor
Eligibility Worker
Epidemiologist
Forensic Program Director
Nurse Practitioner
Outreach Case Manager
Physician
Program Analyst
Program Coordinator
Program Director
Program Manager
Psychiatrist
Psychologist
Rehabilitation Counselor
Research Assistant
Social Worker
Street Outreach

CCMS Teams
API Wellness Center
Cancer Navigation Team
CBHS BH Access Ctr
CBHS Hoard/Clutter
CBHS ICM Placement
CBHS Jail Psychiatric Svcs
CBHS Msn MH Team II
CBHS OBIC MH
CBHS Res, Eval, QM
CBHS SOM Mental Health
CCMS Admin
CJC — Violence Intrv
DHSH
DPH TB Control
Family Svc Agency CM
HSH DAH Support Svcs
HSH Encampment Resolution Team
LHH Health At Home
LHH Psych
LINCS- Linkage, Partner Svcs, Navigation
PC CMHC Mental Hlth Svcs
PC CMHC Mental Hlth Svcs
PC CMHC Transgender Life Care
PC Complex Care — FHC
PC Complex Care — GMC
PC Complex Care — MHHC
PC Complex Care — PHHC
PC Complex Care — SEHC
PCBH Castro Mission
PCBH Chinatown HC
PCBH Curry SeniorCtr
PCBH Larkin St. HC
PCBH Maxine Hall HC
PCBH Ocean Park HC
PCBH Potrero Hill HC

CCMS User Titles
Therapist

CCMS Teams
PCBH Silver Ave HC
PCBH Southeast HC
PES
PrgFdn Dore Urg Care Clinic
Quality Review
San Francisco City Clinic CARE
SF FIRST ICM
SF FIRST Recovery
SF HOT
SFGH Emergency Dept CM
SFGH Med Soc Work
SFGH Opiate Trmt Outpt Prgm
SFGH Psych Consult/Liason
SFGH Utilization Mgmt
SFHP Care Management
SFHP Discharge Planning Prg
Shelter Health Program
Southeast Mission Geriatric Services
Tom Waddell Urban Health Center
Transitional Age Youth Services
Transitional CarePrg
Transitions Care Coord
Transitions Care Coordination
Transitions Clinic
TWUHC Medical Respite
TWUHC Sobering Ctr
UCSF CityWide CM Forensics
UCSF CityWide Frnsc Focus
UCSF CityWide Roving ICM
UCSF Trauma Recovery Center

6.6 CCMS User Guide

https://sf-wpc-ccms.gitbooks.io/ccms-user-guide/content/

6.7 High-Level WPC Capability Model and Gap Analysis

The SF WPC platform requires a set of core capabilities to enable WPC users to deliver the WPC program. These capabilities can be classified under two main categories:

A. Business Capabilities	B. Technical Capabilities
The functions that enable the business needs of the various WPC end users to allow them to effectively carry out their tasks and activities	The technical capabilities that enable the operations of the system including its performance, security and ability to integrate and share data; all dictated by the underlying platform architecture

Existing systems that are of particular relevance and importance to WPC given the nature of the functionality they provide and data they hold were assessed against WPC capabilities to determine business and technical capability gaps remaining in the current state.

6.7.1 High-Level Business Capabilities Assessment Definitions

The following are high-level assessment capabilities that are used to evaluate the business capabilities that are required to support WPC.

Business Capability	Description
1. Aggregated Client Summary View in External Systems	■ Ability to aggregate client data for multiple sources ■ Ability for workforce and external service providers to access and view summarized and fully detailed views of client data including care plan as appropriate based on client data sharing preferences, workforce or provider permissions, and reasons for obtaining data
2. Alerts and Communication	■ Ability to send, receive, and view alerts and notifications necessary for Care Coordination including: reminders, incident notifications, transition of care notifications, and messages
3. Shared Needs Assessment and Risk Stratification Tool	■ Ability to define, conduct, and utilize an inter-agency shared needs assessment across the full WPC eco-system to understand client risk level. Ability to determine a client risk score and relative priority based on client assessment
4. Manage a Shared Care Plan	■ Ability to create, document, monitor, update, and manage a Shared Care Plan of goals, actions, milestones, and services to help clients reach their target outcomes
5. Encounter and Service Documentation	■ Ability to document details of care provided inclusive of diagnosis and attempts to provide care to a client in both structured and unstructured formats and to track associated information including who provided the care
6. Service Eligibility, Enrollment, and Discharge	■ Ability to determine and manage client eligibility for participation in services based on client information and service eligibility criteria
7. Client Goal Management	■ Ability to identify, document, and manage client care goals and corresponding objectives
8. Referral Management	■ Ability to manage referrals to and between services including: forwarding, assigning, and closing out referrals and the ability for appropriate users to check on referral status and activities
9. Workflow Management	■ Ability to create definition, configuration and monitoring of a defined sequence of tasks that support a given business function. This can include automated workflows or others that involve human interactions
10. Case Management	■ Ability to coordinate services to meet a client's comprehensive needs and assessing their eligibility for available services and monitoring progress and outcomes. This includes the ability to add new clients to the system that are not yet known to the source systems
11. Panel Management	■ Ability to utilize system data, evidence-based prompts, and preconfigured criteria for panel management activities including: prioritizing clients, actions, and interventions

Business Capability	Description
12. Care Team Management	■ Ability to view and manage a client's Care Team membership and associated information including: Care Team role, relationship to client, contact information, and relevant notes
13. Workforce Management	■ Ability to manage workforce including designating supervisor/supervisee relationships and defining required approval pathways for different work items
14. Service Definition and Management	■ Ability to identify, view, and manage individual services and service groups including defining associated services, eligibility criteria, capacity, service areas, and related personnel
15. Population Health Management	■ Ability to capture, measure, and analyze performance on individual and aggregated outcomes of target populations. Ability to create registries or groupings of clients based on common status or needs
16. Reimbursement/Invoice Support	■ Ability to track and report on requisite metrics and generate supporting documentation used to successfully invoice the appropriate funding stream(s) for services rendered. (e.g., Medi-Cal, DHCS)
17. Operational Analytics	■ Ability to use a variety of reporting and analytical tools to provide insight into program operations including ability to align and forecast objectives, capture and measure outcomes, and retroactively track and report actions
18. Performance Analytics	■ Ability to use a variety of reporting and analytical tools to provide insight into WPC performance
19. Client Portal	■ Ability for clients to view and edit their own information including: contact information, care information, alerts and notifications, and uploaded files. Ability for clients to engage with their Care Team by sending and receiving communications.
20. Consent, Privacy and Authorization	■ Ability to collect and manage both clients and provider consent and authorization, including reminder for upcoming expirations and enforcement of information access compliance

6.7.2 High-Level Technical Capabilities Assessment Definitions

The following are high-level assessment technical capabilities definitions that are used to evaluate technical capabilities of the Platform.

Technical Capability	Description
21. Usability	■ An estimate of how intuitive the application is for its end users given their specific background, business usage needs and environment within which they interact with the application
22. Supportability	■ An estimate of the ease with which the Platform components can be maintained by in-house staff, third party service providers, independent hardware vendors and independent software vendors and overall agility and flexibility to enable quick deployments
23. Scalability	■ An estimate of the capability of the Platform to increase total throughput under an increased load when resources are added

Technical Capability	Description
24. Availability	■ An estimate of the resilience of the Platform (e.g., mitigating single points of failure with redundant components)
25. Performance	■ An estimate of performance characteristics (e.g., speed, latency, jitter, etc.) based on the Platform underlying technology components
26. Identity	■ An estimate of suitability of provided identity management and Master Data Management (MDM) capabilities for ensuring consistency of managed data elements from multiple sources as demanded by the underlying business needs of the application
27. Security	■ An estimate of the application capability to correctly identify and authenticate users and enforce their access to only the subset of functionality they are authorized for. It also includes the hardening of infrastructure components against threats (e.g., security breaches, viruses and other potentially catastrophic incidents)
28. Privacy Compliance	■ An estimate of capabilities provided to enable consent and privacy management compliance to the standards applicable for the application
29. Integration	■ An estimate of suitability of available integration approaches (APIs, ETL, scheduling) and latency (real time, near real time or batch) for importing and exporting data and integrating process workflows
30. Reporting and Analytics	■ An estimate of ability to meet the reporting needs by providing a range of reporting capabilities including pre-defined and AD HOC report development, report scheduling, visualization and embedded analytics for provided analytics levels (description, diagnostics, predictive, prescriptive)
31. Governance, Support and Operations	■ An estimate of maturity of planning, managing, financing and monitoring execution of application enhancements and ongoing IT operations in support of the business

6.7.3 Side-by-Side Comparison of Systems Ability to Enable WPC Capabilities

The high level assessments of these systems against these capabilities are based on information gained from discovery interviews, vendor demos, responses to questions and relevant public information online. The assessment is intended to structure the information gained in a consistent and consumable manner and does not represent an endorsement or denouncement for any of these systems. The scoring of each system capabilities is based on the following:

Score	Score Description
✔	System capabilities demonstrated are strongly aligned with WPC needs
?	System capabilities demonstrated are marginally aligned with the WPC needs
✘	System capabilities demonstrated are significantly misaligned with the WPC needs
●	System capability evaluation was not completed

The following table captures the side-by-side comparison of select City systems in their ability to enable required WPC capabilities.

Capability	CCMS	ONE	GetCare	PreManage	Epic
1. Aggregated Client Summary View in External Systems	✔	?	?	✔	?
2. Alerts and Communications	✘	?	✔	✔	✔
3. Shared Needs Assessment and Risk Stratification Tool	?	?	✔	?	✔
4. Manage a Shared Care Plan	✘	✘	?	?	✔
5. Encounter and Service Documentation	✔	✔	✔	?	✔
6. Service Eligibility, Enrollment, and Discharge	✔	✔	✔	✘	✔
7. Client Goal Management	✘	✘	✔	✘	✔
8. Referral Management	✘	?	✔	?	✔
9. Workflow Management	?	✔	?	✘	?
10. Case Management	?	✘	✔	✘	✔
11. Panel Management	?	?	?	✔	✔
12. Care Team Management	✔	✔	✔	✔	✔
13. Workforce Management	?	✔	✔	?	✔
14. Service Definition and Management	?	✔	✔	✘	?
15. Population Health Management	✔	✘	?	✔	✔

Capability	CCMS	ONE	GetCare	PreManage	Epic
16. Reimbursement/Invoice Support	✗	✗	?	✗	✗
17. Operational Analytics	?	✓	?	?	?
18. Performance Analytics	?	?	?	?	?
19. Client Portal	✗	✗	✗	✗	✓
20. Consent, Privacy and Authorization	✗	✓	✓	✗	?
21. Usability	?	?	✓	✓	?
22. Supportability	✗	✓	✓	?	?
23. Scalability	✗	✓	?	✓	✓
24. Availability	✗	✓	✓	✓	✓
25. Performance	?	✓	✓	✓	✓
26. Identity	?	?	?	?	✓
27. Security	?	✓	✓	✓	✓
28. Privacy Compliance	?	✓	✓	✓	✓
29. Integration	?	?	?	?	?
30. Reporting and Analytics	?	✓	?	?	?
31. Governance, Support & Operations	✗	?	✓	✓	?

The evaluation of these systems indicate that none of these systems as they stand is readily capable of meeting the full scope of SF WPC business and technical needs.

6.7.4 High-Level WPC Business Gap Analysis

The following table captures the summary of select City systems ability to enable required WPC capabilities and the remaining gaps in enabling these capabilities.

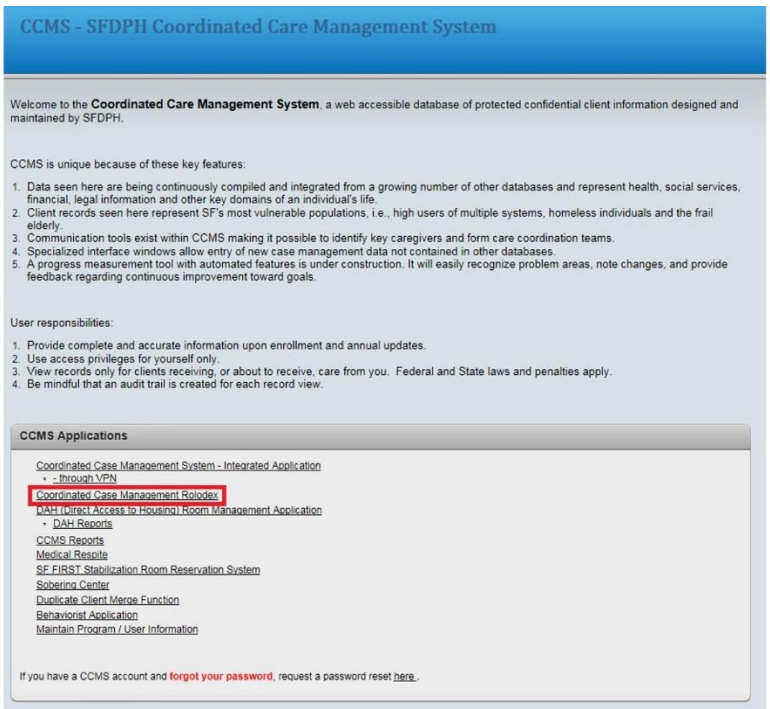
Capability	Remaining Gaps
1. Aggregated Client Summary View in External Systems	The capability to View Aggregated Client Summary Data in External Systems will need to be provided by a new platform once CCMS is retired
2. Alerts and Communications	The capability to send and receive Alerts and Communications across service domain areas will need to be provided by a new platform
3. Shared Needs Assessment and Risk Stratification Tool	The capability for a single fully standardized and comprehensive Shared Needs Assessment and Risk Stratification Tool that addresses all WPC service domain areas will need to be provided by a new platform

Capability	Remaining Gaps
4. Manage a Shared Care Plan	The capability for a single fully standardized and comprehensive Shared Care Plan that addresses all WPC service domain areas will need to be provided by a new platform
5. Encounter and Service Documentation	The capability to Document Client Encounters and Services will only need to be provided for any programs that are not otherwise being documented in an existing source platform
6. Service Eligibility, Enrollment, and Discharge	The capability to conduct client Service Eligibility, Enrollment, and Discharge activities will only need to be provided for any programs that are not otherwise being documented in an existing source platform
7. Client Goal Management	The capability to Manage Client Goals will need to be provided within the Shared Care Plan
8. Referral Management	The capability to conduct Referral Management activities across all WPC service domain areas will need to be provided by a new platform
9. Workflow Management	The capability to conduct Workflow Management will need to be provided by a new platform within the technical capabilities
10. Case Management	The capability to Manage Cases as a cohesive Client case will need to be provided by a new platform
11. Panel Management	Panel Management capabilities will need to be provided by a new platform
12. Care Team Management	The capability for a single fully standardized and comprehensive shared Care Team that includes members from all WPC service domain areas will need to be provided by a new platform
13. Workforce Management	Workforce Management capabilities will need to be provided by a new platform for only the users of that platform
14. Service Definition and Management	The capability to conduct Service Definition and Management activities across all WPC service domain areas will need to be provided by a new platform
15. Population Health Management	Population Health Management capabilities will need to be provided by a new platform once CCMS is retired
16. Reimbursement/Invoice Support	Reimbursement/Invoice support capabilities will need to be provided by a new platform
17. Operational Analytics	Operational Analytics capabilities will need to be provided by a new platform
18. Performance Analytics	Performance Analytics capabilities will need to be provided by a new platform
19. Client Portal	Client Portal capabilities will need to be provided by a new platform
20. Consent, Privacy and Authorization	Consent collection and manage will need to be provided by a new platform

6.8 Access to CCMS Applications

From CCMS Main Page (DPH users only)

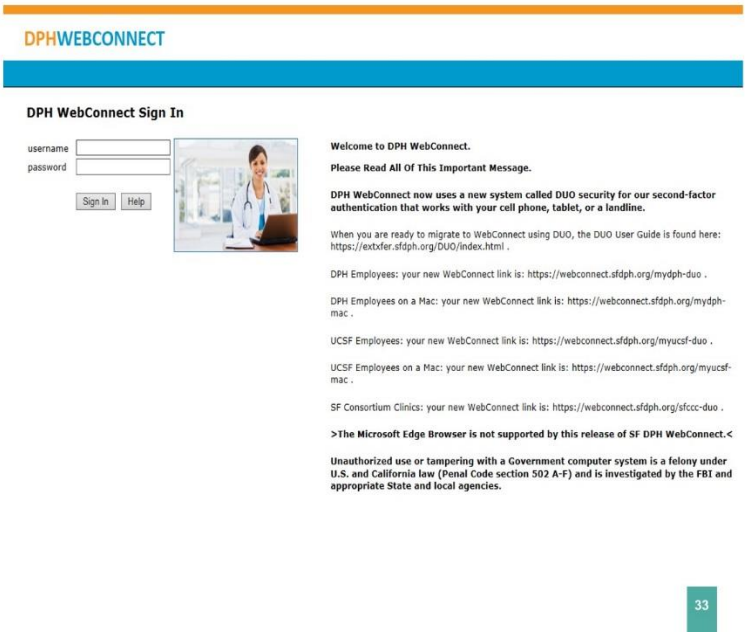
1. Navigate to the DPHnet homepage.
2. Select **Coordinated Case Management System** in the Applications dropdown on the DPHnet homepage.
3. Click the **Coordinated Case Management Rolodex** link on the CCMS Main page.
4. Enter your Username and Password.
5. Click Login.



Need to first use DPH Web Connect for external network access.

From WebConnect (DPH & non-DPH users)

1. Navigate to https://webconnect.sfdph.org/cityandcounty to access the DPH WebConnect Sign In page.
2. Enter your Username and Password.
3. Click Sign In.
4. Click the SF DPH CCMS Web Application Link.
5. Enter your Username and Password.
6. Click Login.



* From DPH IT CCMS Presentation on 2018-03-01

6.9 ONE System Migration Data Sources

The following are the list of data sources designated for migration into the ONE System, where the system will be retired and all relevant high-quality existing data imported into the ONE System, which should replace all of the current system functions. This list is as of 03/28/2018, however it is being revalued by HSH leadership team.

System Name	Current Technology/Software	Current Function	Current Data	Reports
SF Homeless Management Information System (HMIS)	Web-based database system developed by Efforts to Outcome Social Solutions	HUD HMIS Data Collection and Reporting database	Client level homeless data for single adult/family households	AHAR, APR, HMIS Project APR, HIC/PIT, Custom Report Query Building Tool; Various canned reports
Homelink: San Francisco Chronic Instance	Web-based system. Developed by Palantir	Coordinated Entry system management for non-veterans, including secure Protected Health Information sharing between the City and County of San Francisco and several nonprofit agencies. Prioritization using the Vulnerability Index Service Prioritization Decision Making Tool, housing matching and vacancy tracking	Client level data, housing vacancy information, and housing matches, including protected health information	Placement tracking, vacancy tracking, performance management
Homelink: San Francisco Veteran Instance	Web-based system. Developed by Palantir	Coordinated Entry system management for veterans, including secure Protected Health Information sharing between the U.S. Department of Veterans Affairs, City and County of San Francisco and several nonprofit agencies. Prioritization housing matching and vacancy tracking	Client level data, housing vacancy information, and housing matches, including protected health information	Placement tracking, vacancy tracking, performance management
CHANGES (Coordinated Homeless Assessment of Needs & Guidance through	Web-based database platform. The system is built in Cold Fusion and uses a SQL server database. The system is developed by the San Francisco Human Services	S.F. Single Adult Shelter Reservation System integrated with county benefits system for county single adult benefits	Client level homeless demographic data; Including Disabling Condition; Last Zip Code TB Status;	Spreadsheet reports on Shelter Vacancy Rates; Reservations and Check-ins counts; Shelter User

System Name	Current Technology/Software	Current Function	Current Data	Reports
Effective Services)	Agency. The system is hosted behind a City and County of San Francisco Human Services Agency firewall		Prior Residency; Length of Stay; Length in SF; etc.	Demographics; and TB verification
Special Programs Database	MS ACCESS system hosted on local server	Program database for Special Programs		
HAT (Housing Access Team) Database	FileMaker Pro relational database hosted on local server	Placement process management tool for the Care Not Cash housing program	Client level historical data for tracking placement progress of homeless CAAP clients	Total housing placements across HSA housing portfolio; and Number of individuals placed
Navigation Center Database	Web-based Drupal form	Primary case management and reporting tool for the Navigation Center	Client level data (Client bed assignments; Primary language; Client's referral agency; etc.)	Weekly data exports of program throughput and outcome data; Dashboard reports on client's referral locations; Current status (active clients); Exit Destinations (past clients); Weekly exit totals; and Benefits receipt information.
SF HOT Case Management Database	Oracle data system hosted on secure public health local servers	Tracking case management for SF HOT— note, outreach is not included	Case notes, vulnerability information, client level demographics	Programmatic
Direct Access to Housing Client Spreadsheets	MS: Excel database	Application status for people who have been referred to DAH	Case notes, vulnerability information, client level demographics, move in status	All manual
Direct Access to Housing Database	Oracle data system hosted on secure public health local servers	Tracking case management for DAH including some housing placement	Case notes, vulnerability information,	Programmatic

System Name	Current Technology/Software	Current Function	Current Data	Reports
			client level demographics	
Special Programs Intake/Income Certification Database	MS: Excel database	Program database and tracking sheet for Intake and Income Certification Activity	Client level Intake, Income, and Housing data	Excel Filter/Sort features to generate list of Intake/Income Certification Activity (monthly through annual); Intake Specialist Case Load; and Intake/Income Certification Query
Special Programs Housing Quality Standards (HQS) Inspection Database	MS: Excel database	Program database and tracking sheet for HQS Inspection Activity	Client level data; HQS Inspection Activity data; and HQS Inspection Expenditure data	Excel Filter/Sort features to generate weekly Inspection Driving Route; Inspection Activity Query; HQS Inspector Case Load; Project Inspection Activity Data; and Inspection Expenditure Report Tracker (weekly through annual)
Special Programs Billing/Invoicing Tracking	MS: Excel tracking sheets	Billing and Invoicing process to generate monthly invoices for Special Program providers	Client level rent-share data; Property data; Rental assistance data (per client, project, grant); and Grant data	Monthly Billing/Invoicing; Project grant expenditure reports (monthly through annually); Grant de-obligation report
CoC Coordinated Entry System (CES) Referral	The San Francisco Single Adults Coordinated Entry Referral system is an online form running on an Adobe ColdFusion 11 server that stores	Coordinated Assessment/Entry registry web form system used to prioritize homeless housing referrals. Authorized users can	Client level data (Demographic, Contact data); Housing Vacancy Inventory	Prioritized Client Lists

System Name	Current Technology/Software	Current Function	Current Data	Reports
	referrals in a MySQL database hosted as a second generation instance on Google's Cloud SQL platform. Access will be provided via the Google Cloud SQL Proxy (preferred) or using an SSL connection from a fixed IP address to a live replica of this database	also manually produce a CSV export of current referrals in the system for integration and use in other systems	data; and Housing Placements data	

6.10 SF WPC Program Metrics

Metrics — Universal

U1-ED VISITS:

- Emergency Department Utilization HEDIS — what: During reporting period: # medical and psy ED visits by WPC enrollees/# WPC enrollees using ED

U2-HOSP ADMITS:

- Inpatient Hospital Utilization HEDIS — what: During reporting period: # of hospital admissions and # of days/# of WPC enrollees being hospitalized

U3-MH HOSP F/U:

- Follow up after hospitalization for Mental Illness HEDIS — what: During reporting period: # of hospitalized WPC enrollees receiving follow-up/# hospitalized WPC enrollees

U4-POST DTX to RESID:

- Initiation and engagement in alcohol and other drug dependence treatment HEDIS — what: During reporting period: # WPC enrollees using residential AOD detoxification who enroll in other treatment following detox/# WPC enrollees in detox

U5-CPLAN 30 D:

- Proportion of beneficiaries with care plan accessible by entire team w/in 30 days of enrollment and anniversary in program — what: During reporting period: # of WPC enrollees in psych ED and Inpt receiving MH follow-up treatment who have care plans/# WPC enrollees in psych ED and Inpt

U6-INTERAGY CC:

- Care coordination, case management, and referral infrastructure — what: Reports on procedures for coordination and referrals among partners

U7-DATASHARE INFRA:

- Data and information sharing infrastructure as measured by documentation of policies and procedures for all entities that provide care coordination, case management

monitoring, strategic improvements — what: Reports on data sharing progress shown by development of infrastructure, policies, reports, case plans, monitoring of operations

WPC Metrics — Variant

V1-UNIV ASSESS TOOL:

- Completion of Universal Assessment Tool with homeless individuals — what: Health assessment is part of planned universal tool. This records completion of this shared data item

V2-READMIT 30D:

- Health Outcomes: 30 day All Cause Readmissions — what: Count of hospital re-admissions w/in 30 days of previous discharge

V3-JAIL RECIDIVISM:

- Health Outcomes: Decrease Jail Recidivism — what: Count of jail incarcerations over time period

V4-SUICIDE RISK:

- Health Outcomes Suicide Risk Assessment Required for Pilots w/SMI Target Population — what: Count of suicide assessments in PES and Psych Inpatient

V5-PERM HSG 6 MO

- Housing: Permanent Housing — what: Measures the number of persons who achieve a 6-month milestone in their housing placements

WPC Metrics — Outcome

O1-TB CLEAR:

- Obtain TB clearance — Protects everyone from communicable diseases and is an essential pre-requisite for transition into residential treatment

O2-PSH PLACEMENT:

- Other Outcome: Supportive Housing — Measures the success of our ability to transition a high-need individual from a permanent housing referral into placement

O3-ENCAMP SVC:

- Other Outcome: Encampment Resolution Days — Measures the success of our ability to identify and serve in our high-need permanent supportive residents who benefit from enhanced care coordination

O4-HSG COORD ENTRY:

- Other Outcome: Housing Care Coordination — Measures the success of our ability to identify and assess homeless individuals for coordinated entry

O5-HSG PLCMNT:

- Other Outcome: Common Assessment metric 5 — Measures efficiency in offering housing or shelter during Encampment to Placement. CCSF will seek to reduce by 5% the length of time it takes from initiating an encampment response (first encounter/touch) until the WPC clients are placed in shelter or housing

O6-HSG SVC REFRL:

- Other Variant: Housing Services — Measures the number of participants referred for housing services that receive service

6.11 Current and Interim State SF WPC IT Planned Activities

As of 4/23/2018

Task	Description
CCMS	
Access	■ Webconnect account flow
Provisioning	■ Authorization process
Promoting	■ Reasons to look at WPC Summary
Supporting	
CCMS Application Migration: ■ SF FIRST Stabilization Room Reservation System ■ SFHOT ■ DAH (Direct Access to Housing) Room Management ■ Medical Respite ■ Sobering Center	■ What to do w/native applications
Guides: ■ Admin ■ User	■ Internal guide to support CCMS ■ External guide for using CCMS
Documenting: ■ WPC state reporting CCMS methodology ■ Data load ■ Homeless flag ■ WPC Summary	■ Document process used to create reports with Carol by 3/15 ■ Document loads by type of entry (SQL vs. native), timing, etc. ■ Define what fields in which systems are used to set the homeless flag in CCMS ■ Create a data dictionary for the tables/views/fields used to produce the WPC Summary in CCMS
Adding Data	
Anthem Blue Cross	■ Equal status as SFHP data sharing
ONE (Bitfocus) for HSH	
CMIPS (IHSS) for DAAS	
SFGetCare (RTZ) for Transitions & DAAS: ■ Interview/demo from vendor ■ LHH needs assessment ■ DAAS needs assessment ■ Transitions needs assessment ■ Authorization ■ Implement	■ Conduct CCMS analysis
PreManage (CMT) for SFHP	

Task	Description
SSI Advocacy records into CCMS (PRC, HAP, DECU)	
EDie (CMT) & EMS: ■ Interview program and vendor ■ Needs assessment ■ Authorization ■ Implement	■ MOU and BAA ■ How/when/where
Encounter Form: ■ RideAlong ■ Paper Form	■ Desktop and mobile ■ Current process of manual entry
Reporting & Displaying Data	
Tableau/Power BI	■ Gain familiarity with using Tableau and/or PowerBI to extract CCMS data and visualize
Data for all WPC deliverables	
Cohort Reports	
WPC summary	■ Increase content in page
Managing Data Access and Use	
EMPI: ■ CCMS ■ Non-DPH applications	
Data Governance: ■ Data sharing agreements ■ Covered entity, data sharing & Privacy ■ Citywide Integrated Data Initiatives ■ Data Integrity/Data Quality Assurance	■ Spencer ■ Joy ■ Carrie Bishop