

STATE OF CALIFORNIA
Budget Change Proposal - Cover Sheet
 DF-46 (REV 10/20)

Fiscal Year 2022-23	Business Unit 4440	Department Department of State Hospitals	Priority No. 003
Budget Request Name 4440-006-BCP-2022-GB		Program 4400 - Administration	Subprogram 4400010 – Headquarters Administration

Budget Request Description

Data Governance and De-identification Compliance

Budget Request Summary

The Department of State Hospitals (DSH) requests \$1.5 million General Fund and 6.0 2-year limited term (LT) positions in Fiscal Year (FY) 2022-23 and 2023-24, to establish the leadership for the Research, Evaluation and Data Insights (REDI) Program. The REDI Program would be responsible for implementing a comprehensive data strategy, establishing a data governance structure which will maximize data utilization and integrity, and compliance with the California Health and Human Services (CHHS) Data De-identification Guidelines.

Requires Legislation <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Code Section(s) to be Added/Amended/Repealed	
Does this BCP contain information technology (IT) components? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Department CIO Andrew Hinkle	Date 1/10/2022

For IT requests, specify the project number, the most recent project approval document (FSR, SPR, S1BA, S2AA, S3SD, S4PRA), and the approval date.

Project No. Project Approval Document:

Approval Date:

If proposal affects another department, does other department concur with proposal? Yes No

Prepared By Janna Lowder	Date 1/10/2022	Reviewed By Jaci Thomson, Deputy Director	Date 1/10/2022
Department Director Stephanie Clendenin	Date 1/10/2022	Agency Secretary Mark Ghaly, MD, MPH	Date 01/10/2022

Department of Finance Use Only

Additional Review: Capital Outlay ITCU FSCU OSAE Dept. of Technology

PPBA Steven Pavlov	Date submitted to the Legislature 01/10/2022
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A. Budget Request Summary

The Department of State Hospitals (DSH) requests \$1.5 million General Fund and 6.0 2-year limited term (LT) positions in Fiscal Year (FY) 2022-23 and 2023-24, to establish the leadership for the Research, Evaluation and Data Insights (REDI) Program. The REDI Program would be responsible for implementing a comprehensive data strategy, establishing a data governance structure which will maximize data utilization and integrity, and compliance with the California Health and Human Services (CHHS) Data De-identification Guidelines.

This program will encompass research, data, and technology expertise and a high-level Chief Data Officer (CDO) to lead these large-scale efforts so DSH implements a vision for obtaining actionable insights and transforming data into meaningful information to inform policy, practices, and services. Establishing the management structure will allow data leadership to swiftly examine DSH's research, evaluation and data limitations, while collaborating with CHHS Center for Data Insights and Innovation (CDII). Resourcing the REDI Program will ensure actionable data insights to continuously inform internal and external stakeholders

B. Background/History

DSH manages the nation's largest inpatient forensic mental health hospital system. Its mission is to provide evaluation and treatment in a safe and responsible manner, seeking innovation and excellence in state hospital operations, across a continuum of care and settings. DSH is responsible for the daily care and provision of mental health treatment of its patients. DSH oversees five state hospitals (Atascadero, Coalinga, Metropolitan, Napa, and Patton) and employs nearly 13,000 staff. In addition to state hospital treatment, DSH provides services in contracted jail-based competency treatment (JBCT), community-based restoration (CBR) and pre-trial felony mental health diversion programs, and the conditional release program (CONREP). DSH is responsible for the daily care to over 7,000 patients, in FY 2020-21, DSH served 7,813 across the state hospitals, 2,403 in JBCT and CBR contracted programs and 841 in CONREP programs. In addition, as of December 31, 2020, a total of 276 individuals were diverted into county programs funded by DSH.

As the nation's largest forensic state mental health hospital system, DSH manages an extraordinary amount of health information data. DSH collects health information data, including patient pre-admission and discharge data, clinical data, law enforcement data, and administrative and operational data throughout the full scope of inpatient and contracted forensic mental health services.

DSH's health information data span the following categories:

- Psychiatric Treatment Planning and Delivery
- Medical Treatment Delivery
- Forensic Evaluation and Court Reporting
- Pharmacy
- Law Enforcement and Criminal Offense Data
- Billing/Utilization
- Licensing
- Health and Safety

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- Administration
- Community Re-Entry (Conditional Release)

Each of the above data categories are essential to support the 24-hour care, treatment, safety, and operations of DSH.

Current Efforts

DSH has made considerable gains in recent years to further the use of data analytics to inform decision making and policy development. Yet, while progress is made, all DSH analytics still require manual steps and analysis. Manual data work entails manual data collections, merging data from manual collections and automated collections, manual reconciliations, and manual adjustments to cleanse data. DSH completes a substantial number of regular reports on a daily, weekly, and monthly basis to inform internal and external stakeholders. With all requiring manual steps, there is a huge need to move towards increased automatization, standardization and technology that can facilitate more rapid analytics. Automation and advancement of meaningful analytics cannot happen without a data governance structure to drive standardization of business practices, adoption of data definitions and metric calculations, and technology solutions to address gaps in data capture. Governance is needed across all DSH data categories identified above. Data governance and automation of metrics has been attempted multiple times, but due to limited resources has been unable to advance. Initial efforts of governance looked at data warehousing and developing an inventory of all metrics requiring review. Unfortunately, with continuous competing data priorities, including the development of new data analytic reports and predictive analyses, combined with limited staff and expertise, all subsequent attempts to re-initiate governance have stopped due to resource limitations.

The REDI data team will guide business teams to standardize best practice governance and quality processes that reduce the time to get to analysis and insights while balancing the operational needs of the business teams to not overburden them.

The Electronic Health Record (EHR) initiative will further compound the situation as the EHR program strategy involves consolidating a multitude of existing legacy applications and sources of data into one enterprise solution. Consolidating systems, workflows, and data also impacts the effectiveness of business teams as the adoption includes diversity in localized data governance and quality measures that will need to be standardized. The REDI team will help ensure that DSH is prepared for this.

Privacy Law Compliance

Data De-Identification Guidelines (DDG) is required under both Federal and State Privacy laws when disclosing personally protected health information or personally identifiable information without the authorization of the individual who is the subject of the information, or under a permitted use or disclosure. These laws, all of which apply to DSH, include California's Confidentiality of Medical Information Act (CMIA), Welfare and Institutions Code sections 14100.2 and 5328 et seq., the Lanterman-Petris-Short Act, Civil Code section 1798 et seq., the Information Practices Act of 1977 (IPA), Health and Safety Code section 123100 et seq., the Patient Access to Health Records Act, Title 42, Code of Federal Regulations (C.F.R.) part 431.300 et seq., and the Health Insurance Portability and Accountability Act of 1996 (HIPAA), including but not limited to section 1320d et seq. of Title 42 of the United States Code and its implementing regulations (including but not limited to Title 45, Code of Federal Regulations (C.F.R.), Parts 160, 162 and 164) (HIPAA regulations) regarding the confidentiality and security of protected health

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information (PHI.) Consequences for violation of these laws include fines and penalties by oversight entities, statutory damage awards to individuals whose data was compromised, and lawsuits for invasion of privacy, among others. Accordingly, in the absence of an authorization by the individual, or a permitted use or disclosure, DSH may not release confidential information if it knows that the information can be used alone or in combination with other information available to the intended recipient of the information to identify a patient or employee.

Along with DDG, the data governance strategies as part of this proposal will focus on reducing and mitigating risks of exposing sensitive data to both internal and external entities while improving the accessibility to non-sensitive data that business teams require, integrating safeguards to ensure DSH's compliance to the most current privacy laws.

In July 2019, DSH received resources for a DSH privacy program to address system wide HIPPA and privacy compliance related to incident and breach response, risk mitigation, policies, procedures, training, and oversight. These positions included resources for DSH Legal to establish a Privacy Office and resources for each State Hospital for privacy and security incident response. The Privacy Officer position, approved in 2019, fulfills a critical role related to DDG compliance. The Privacy Officer is the DSH expert on privacy laws and provides legal guidance on DDG and complex data inquiries. The REDI team will be non-duplicative to this initial investment.

Separate from the Privacy Officer role is the expert determination process. The expert determination process must be fulfilled by data experts to conduct the risk assessment determination process and ensure statistical soundness across all scoring measures. Data experts then issue recommendations relating to de-identification and masking needs. Data resources specific to this process are included in this proposal and will work closely with the Privacy Officer on a regular basis and with data governance to ensure all practices are governed.

California Health and Human Services (CHHS) Agency Policy Directive

CHHS Agency is developing a DDG policy directive to provide guidance to departments to implement the CHHS DDG and ensure compliance with state and federal privacy requirements. This policy directive outlines how each department will operationally implement the DDG and identifies roles and responsibilities each department should adopt. While DSH began the adoption of a DDG practice in February 2020, there are multiple areas where additional resources are critically needed to fully adhere to the CHHS policy direction, including the expert determination process and governance.

Risks

Ungoverned data practices and manual data analytics lead to an increased risk of data discrepancies and inaccurate information being disseminated. Manual data efforts require manual steps to audit data quality and identification of compilation or calculation errors. Risks around publicly disseminated data increase annually as interest in data continues to grow and requests become increasingly more sophisticated. California courts frequently request preadmission and population data. Ongoing litigation leads to monthly data submissions and discussion on interpretation.

In addition to the concerns on accuracy, are concerns with timely data. Manual data practices lead to lengthy compilation, analysis, and review prior to dissemination,

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internal or external. This delay of analytics is not conducive to rapid decision making and to external requestors such as the courts. For example, complex data requests from a court may take two-four weeks to complete, possibly longer.

Compliance with DDG is an additional need that requires resources. DSH releases data through Public Records Act (PRA), media requests, state and federal courts, through its website and information sharing with external agencies. It is necessary that all publicly released data is reviewed for compliance with CHHS's DDG, involving assessment under the expert determination process to ensure all released data is compliant with privacy laws.

C. State Level Consideration

This proposal is consistent with DSH's mission, values, and goals. The Department's mission is to provide evaluation and treatment in a safe and responsible manner, by leading innovation and excellence across a continuum of care and settings. Continuing to achieve this mission requires the evolution to a data culture, where leadership and decision making is continuously informed through meaningful analytics, research and evaluations. This proposal will establish the data framework to guide future innovation through governed data and business led technology capabilities.

In alignment with the CDT's Vision 2023 (<https://vision2023.cdt.ca.gov/>) and the CalData Data Strategy (<https://www.govops.ca.gov/caldata/>), DSH REDI program is designed to advance DSH's data capabilities while contributing to the greater vision for California's Statewide Strategic Plan to efficiently and effectively use technology to meet our society's goals, and make progress on the big, complex problems affecting us all.

Additionally, this proposal is aligned with CHHS's goals to improve transparency, efficiency, availability, and utilization of data while also managing the data's integrity, quality, and strategic use to promote data-driven decision making and integrated care and services. This proposal is also in alignment with CHHS Center for Data Insights and Innovation (CDII) priority for "Turning data into insights, knowledge and action" as well as the following CDII objectives:

- Institutionalizing analytics as a service to improve knowledge management across policy areas
- Analytical excellence within government drives civic engagement externally
- DSH's technology readiness in advancing CDII's Agency Data Exchange (ADE) program through a modernized data management platform ensuring the highest data quality being shared

D. Justification

DSH has a responsibility, as California's largest provider of forensic mental health services and custodial entity of forensic health information, to effectively utilize the vast health information data, to generate valuable insights regarding our patients' treatment. DSH must be positioned to quickly utilize data to evaluate the needs of patients committed to DSH and the efficacy of all current operations, allowing for data informed decision and policy making. In addition, DSH carries a high-level of risk as the custodian of patient, employee, and operational data. DSH must govern and protect this data, while also providing transparent operations and responsiveness to external stakeholders.

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Governance over DSH's robust data system, is not only essential, but the primary first step towards enhanced utilization. Additionally, it's a standard of care for a hospital system to employ a robust data program to manage patient outcomes and continuous improvement.

Governance will look to promote data literacy efforts by developing practices for presenting information which can be informative, timely and using statistical metrics to highlight significance.

Comprehensive Research Evaluation and Data Insights Program

A comprehensive REDI Program is essential to achieving DSH's large data scope. This program will encompass research, data and technology expertise to enable continuous advancement in health data analytics, governance and privacy compliance, data automation and transparency, and research and evaluation of services and operations.

To achieve the REDI program, DSH requests to establish the critical leadership positions responsible for developing a comprehensive data strategy and create an implementation plan to address data governance. The data strategy and data governance structure will create the framework to ensure practices and policies are in place for enhanced analytics and research capabilities; and ensure data compliance with patient and employee privacy laws and health information privacy standards. The intent of the REDI Program is to expand existing functions, merging population analytics and research efforts with the expanded data scope. Merging new resources with existing expertise will ensure DSH can implement the vision for quickly obtaining actionable data insights, and the transformation of data into meaningful information to inform policy, practices and services.

REDI leadership will develop a plan and strategy, in consultation with CHHS-CDII to address the expansion of data capabilities and will examine current scope of operations. As a result of these efforts, a future resource request may be necessary to implement the expanded scope.

Below identifies the expanded scope and existing scope.

Expanded Data Program Scope

- Data Strategy Leadership
- Data Governance and Policy
- Expert Determination for Privacy Compliance
- Strategic Planning Outcomes
- Automation and Accessibility

Current Scope (Current functions are limited due to manual practices – enhancements will be gained through proposed expanded scope)

- Population Research and Predictive Analytics
- Population Analytics and Reporting
- Specialized Litigation Reporting
- Evaluation and Outcome Reporting

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Current resources in DSH's RED branch will continue to address the existing scope of work and will utilize all advancements and guidance gained through full REDI program to enhance, automate and evolve current data and reporting functions. The current RED branch is not able to address the expanded scope due to limited resources. Noticeable gains in automation and data analytics will need the more robust data program envisioned by for the REDI.

In collaboration with CDII, REDI Program leadership will explore the following objectives:

Data Leadership Strategy: Developing a vision for DSH data capabilities which encompasses new and current reporting and programmatic needs for internal and external data accessibility. This strategy will address DSH's current analytic capabilities and identify all data reporting gaps and areas in which data solutions are necessary. The identification of where DSH is across all data assets and the vision of where DSH will be, will drive a strategy that embraces the value of data intelligence, and utilization of technology and governance to aggressively address all opportunities to generate enhanced data insights.

Data Governance: Establishing a Data Governance program is a critical next step for DSH to pursue advanced data utilization. Data Governance will operate through a governing and advisory council made up of multi-disciplinary leadership and a program team within REDI. Data Governance will focus on four primary functional areas, 1) Data Quality and Utility, 2) Departmental Data Literacy, 3) Data Privacy and DDG Oversight, and 4) Data Escalation and Data Acquisition. Objectives will be developed across all four functions with measurable outcomes and transparency. The overarching objective is to advance data utilization through ensuring the business practices, technology tools and data needs are aligned. Gaps in data practices must be addressed and documented through development of policies and best practices. Ensuring data can be utilized to generate meaningful conclusions and evaluation is critical. Workgroups will be established within each of these functions, with lead and system-wide data stewards working together to meet objectives. Below are the targeted outcomes within each functional area of governance.

- 1) Data Quality and Utility
 - a. DSH Data Guide: Data inventory, standardized definitions, best practices
 - i. Develop a plan for achieving a system-wide guide of DSH data. This will need to be accomplished across multiple phases, with phases focusing on highest priority data categories.
 - b. Data Evaluation and Audit Process
 - i. Examining practices and tools for auditing, alerting data users/consumers, and resolving minor data concerns.
 - ii. Implementing a process through Data Governance to evaluate and resolve high-level data quality concerns.
 - c. Standardized Metrics and Methodologies
 - i. Developing and examining best practices for metric calculations and complex methodologies.

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- ii. Facilitate the automation of standardized metrics and methodologies
- 2) Departmental Data Literacy: Data Literacy Project
 - a. DSH will launch a Data Literacy Project that will encompass: 1) Data Literacy Certification for all levels of Management; 2) a training curriculum for all DSH staff with training pathways for all levels of data users; 3) a centralized location for accessing dashboards, published data, internal data summaries and data manuals and guidelines; and 4) a communication campaign that will evaluate ways for sharing data news and outcomes and ways to solicit involvement in the data community. Purpose is to build a data culture in which data usage is at the forefront of all discussions and becomes the norm across DSH's various roles.
- 3) Data Privacy and DDG Oversight
 - a. Develop protocols for annual privacy reviews
 - i. Establishing and annually review DSH's protocols to receive, review and resolve requests for aggregated data.
 - b. Assess existing published data that pre-dates DDG
 - i. Assessing public facing data and documents for compliance with DDG and coordinate the de-identification of previously published data.
 - ii. Conducting ongoing risk analysis on public facing data and documents to ensure continuous compliance with all applicable privacy laws.
 - c. Data Sharing agreements
 - i. Overseeing DSH's data sharing process for sensitive and confidential data from CHHS departments and external departments/stakeholders. Oversight will encompass a review of current and new Business Use Case Proposals and Data Sharing Agreements.
 - d. Data Ethics
 - i. Defining the ethical framework for responsible and proper data use that will support data-driven initiatives. Data ethics encompasses privacy and security compliance but also focuses on aligning data and analytics strategy to organizational goals and guiding decision making.
- 4) Data Escalation and Data Acquisition
 - a. Developing a formal process to escalate urgent data priorities. This process will involve the Data Governance Advisory Council and Research Specialists to swiftly identify scope of urgency and situational needs. The escalation process will develop a mechanism for evaluating urgent needs and resolution steps. This functional area will use lessons learned across the past year of the pandemic to identify best practices for achieving swift response to emergent data needs.

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Expert Determination and Privacy Compliance: Implementing the CHHS DDG and ensuring compliance with state and federal privacy requirements is essential in preventing the disclosure of personal information for DSH's patient population, and its employees. To effectively operationalize the DDG the Department must establish an Expert Determination and Privacy Compliance function that will 1) conduct expert determination of aggregated data; 2) provide supervision of the expert determination process; and 3) provide role-based training to support de-identification activities. Below are targeted outcomes for the expert determination and privacy compliance functions.

- 1) Expert Determination for Aggregated Data
 - a. Performing and documenting expert determination de-identifications in accordance with DDG and protocols developed by DSH's Data Governance Committee as it relates to data privacy and DDG oversight.
 - b. Assessing identification risks and documenting the process while ensuring the Department will provide the richest possible data for the lowest risk.
- 2) Supervision of Expert Determinations
 - a. Supervising expert determinations by experts, providing final approvals prior to release of aggregated data, and testifying in court as needed.
 - b. Collaborating with the CHHS Peer Review Team when a data de-identification consultation and/or review is needed.
 - c. Collaborating with DSH's Data Governance Committee to establish protocols to receive, review and resolve requests for aggregated data.
 - d. Participating in CHHS data de-identification activities such as DDG workgroups, committees, and information sharing.
- 3) Role-based Training
 - a. Providing role-based training to support de-identification activities including department staff general awareness.

Increased Automation and Accessibility of Meaningful Data Summaries: Automation is a critical step to achieving analytical enhancements and is reliant on data governance to create standardization, best practices, and data policies. Given this, objectives for technological advancements are linked to the achieved outcomes for data quality and utility.

- 1) Assessment and Automation of existing reporting requirements
 - a. Conduct a zero-based assessment of all internal and external reporting requirements. Identify current data solutions and tools and identify future best practices for data reporting tools.
 - b. Develop internal and external Dashboards to create efficient methods sharing data.
- 2) Predictive Analytic Capacities
 - a. Conduct and assessment of DSH's current predictive analytic capabilities. Identify current methods for predictive analytics (all/most are manual) and current and future predictive analytics needs.

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REDI - Requested Resources

DSH is requests six positions to develop the framework and implementation of the REDI program.

Title	Classification	# Positions
Chief Data Officer	CEA C	1.0
Research Data Officer	Research Manager/SSM III	1.0
Research Manager	Research Manager/SSM III	1.0
Strategic Planning Coordinator	Staff Services Manager II Specialist	1.0
Data Engineer	Information Technology Specialist III	1.0
Data and Information Architect	Information Technology Specialist III	1.0
Total		6.0

Attachment C provides an organizational structure for the proposed REDI Program.

Chief Data Officer

DSH requests a Career Executive Appointment (CEA) range C to serve as the Chief Data Officer (CDO). The CDO is responsible to lead and oversee the establishment of the REDI Program, operating as the senior executive responsible for creating the strategy and vision for achieving a comprehensive data program that provides data solutions across all programmatic, clinical, and operational needs. The CDO is responsible to oversee the full landscape of DSH data assets, from a data analytics perspective, working closely with the Chief Information Officer to ensure alignment across Data and Technology goals. The CDO will work closely with the Statewide Medical Director and other departmental executives to ensure a shared vision across clinical and programmatic direction. Primary responsibilities include the development of a departmental data strategy, incorporating industry best practices across healthcare organizations to guide analytic advancement. The CDO will explore all areas for data growth and address areas of risk. Healthcare organizations which manage "bigdata" inherently have higher risk to ensure data is managed and utilized ethically and effectively. The CDO will be responsible to ensure ethical and effective utilization of all DSH data assets.

The CDO will function as the lead executive over DSH's data analytics and research generated from population analytics. As such, the CDO will partner and collaborate with all government and Agency operations. The CDO will represent DSH at CHHS Agency Data Sub-Committees, steering committees, and workgroups. The CDO will represent DSH in collaborations with California's Chief Data Officer. Additional duties include representing DSH during legislative and court hearings. The CDO will work with DSH's Chief Counsel regarding ongoing litigation and essential data reporting needs.

The CDO is requested as a CEA level C due to the expertise, skill set and scope of responsibility to oversee a complex forensic healthcare system. The role of the CDO requires extensive experience directing complicated data programs involving medical, law enforcement and protected patient and employee data. To obtain a qualified talent, the CEA level must be high enough to compete with private sector data

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executives. The CDO will bear the full responsibility for the scope and risk associated with DSH's health information; along with the responsibility for enhancing the quality, reliability and access of data and creating value from its data assets.

The CDO will develop a plan and strategy, in consultation with CHHS-CDII, examining the full scope and vision of the REDI Program. Based on these efforts, a future resource request may be necessary to achieve a comprehensive and advanced data program.

Data Governance Leadership

DSH requests a Staff Services Manager III position to serve as a Research Data Officer. The Research Data Officer will establish, oversee and directly lead the DSH Data Governance Program. The DSH Data Governance Program encompasses a Data Governance Advisory Council and a Data Governance Team to conduct the work within each primary data function. The Governance Program will address on four primary data functions:

- Data Quality and Utility
- Data Literacy
- Expert Determination and Privacy Compliance
- Data Escalation and Acquisition

Objectives across each data function are outlined on page eight of this proposal.

Data Governance Advisory Council

The Research Data Officer is responsible to establish and serve as Chair to DSH's Data Governance Advisory Council (Council). The Council will be multi-disciplinary with leadership across clinical, research, technology, and program. The Research Officer and Council will work together formalize and adopt all governance objectives and develop timelines and measures to evaluate achievement of objectives.

Data Governance Program Team

To fulfil the Data Governance objectives identified within each data function, the Research Data Officer will work to establish the Data Governance Program and examine the resource needs to fulfil all governance objectives. The Research Data Officer will work with the CDO to develop a Data Governance implementation plan for inclusion in the FY 2023-24 proposal. This will include establishing the role of Lead Data Stewards to function as Data Governance Specialists under the data governance program. The Research Data Officer will work with State Hospital data staff to develop the local Data Seward role and develop recommendations on local data steward operations. Local data stewards, across all five hospitals will report indirectly to the Research Data Officer for all data governance duties. This will include a minimum of two Data Stewards per facility. The Research Data Officer will establish the full governance framework and will initiate the governance workgroups across each function.

Additionally, the Research Data Officer will directly oversee Strategic Planning efforts and specialized outcomes research.

Attachment D displays the proposed Data Governance structure.

Resources specific to data governance operations include:

- Research Data Officer, 1.0 FTE included above: The Research Data Officer will lead all data governance operations. This position requires extensive data

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expertise to guide objectives within the key focus areas and will provide leadership to all Data Stewards. Lead data stewards will indirectly report to DSH's Research Data Officer.

Data Governance Specialist resources to staff the Data Governance Team Program, functioning as Lead Data Stewards, will be identified in a future REDI implementation proposal.

Expert Determination and Privacy Law Compliance Leadership

The Department must identify and designate experts to complete risk assessment determinations for record level and aggregated data that require de-identification prior to public release. The Department is required to have an Expert and Supervising Expert to complete the activities associated with the expert risk assessment determination process. The individuals in these roles must be experts in de-identification through professional experience, academic or other training, and actual experience using health information de-identification methodologies. The Expert and Supervising Expert are required to have appropriate knowledge of and experience with generally accepted statistical and scientific principles and methods for rendering information not individually identifiable. The Expert role requires a bachelor's level degree along with supervised experience with statistical de-identification. The Supervising Expert role requires a graduate level degree along with demonstrated experience with statistical de-identification. Furthermore, the Supervising Expert is expected to perform expert determination de-identification, testify in court as needed, supervise expert determinations by Experts, and provide final approvals for expert determinations prior to release.

Resources specific to Expert Determination operations include:

- Research Manager, 1.0 FTE: The Research Manager will function as the primary Expert Supervisor over the Expert Determination Program and provide direct supervision of the DDG practices, applying the expert determination scoring. Research Manager will be able to certify all scoring and recommendations prior to the release of data externally. The Research Data Manager will conduct the expert determination on complex data requests and publishing.

The Research Manager will evaluate the role of de-identification experts and will work with the CDO on a future REDI implementation proposal, to identify additional resources.

Strategic Planning

Strategic Planning is an organizational management activity that is used to identify priorities, monitor operations and outcomes, determine resources, and assess and adjust the organization's direction in response to a changing environment. Strategic Planning ensures department-wide alignment with our mission, vision, goals and values and identifies measures, such as Key Performance Indicators (KPI), for monitoring the performance of all goals, objectives and projects.

For Strategic Planning to be successful, KPI should be measurable to ensure they represent data metrics that demonstrate how effectively the organization is achieving business objectives. Additionally, KPI metrics must be governed to produce the intended results and/or insights. Identified KPI must be prioritized for the Data Governance Team and Advisory Council's review and methodology adoption.

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With KPI at the forefront of Strategic Planning and data specialists leading KPI management and reporting, the department will have the opportunity to innovate the strategic planning process utilizing data tools such as score cards and dashboards to provide consistent, data driven evaluations of progress and governance of KPI to aid in continuous monitoring of progress.

Resources specific to Strategic Planning operations include:

- Staff Services Manager II Specialist, 1.0 FTE: The Staff Services Manager II (SSM II) Specialist, will function as lead across strategic planning activities; coordinating with executives and goal teams to discuss the projects and efforts across each goal and guide the selection of KPI. The SSM II is responsible for documenting how efforts are operationalized throughout the system and for the development of mapping and communication tools to display performance across goals.

Resources to address KPI standardization and automation will be addressed through Data Governance objectives and future REDI Implementation Plan.

Information Technology Resources

As business capabilities expand with more reliance on enterprise data, so do DSH's inherent risks of falling behind in establishing necessary technology platforms to support the quality, protection, and governance of DSH data capacities. Investing in the proper data architecture, data management processes, and governance frameworks within a modernized secure data platform can turn data into valuable insights that drive the organization's initiatives forward. REDI specific roles in the Technology Services Division (TSD) department will allow DSH to begin designing a data and information architecture that closely aligns with the REDI initiative, setting the stage for quick enablement as the REDI program expands.

Data Capabilities Focus Areas:

- Governance and Privacy – Focused on the planning and design for frameworks, policies, rules, processes, and organizational structures to govern data and ensure regulatory compliance. This area promotes data teams to discover data, classify it, and understand its lineage and how it's used in business processes and systems to mitigate risks. Also developing new ways to increase data literacy throughout the enterprise, like creating common definitions and business glossaries for data usage.
- Operations and Optimization – Focused on architecture roadmap and design aspects of the infrastructure, tools, technology, processes, and systems to support organizational operations. This area ensures that enterprise data will become readily available and fit for use to drive operational efficiency and business productivity. Also designing new for ways to implement future automations that can be applied towards business processes and data management activities to reduce manual hours.

Proposed Data Technology Team:

- Data Engineer [ITS III] – This resource leads collaboration across business and IT units in building, managing and operationalizing data pipelines in support of key data and analytics use cases. They are also primarily responsible for leading the complex task of curating datasets and data pipelines created by the Data and Information Architect, nontechnical users, data scientists or even IT resources and

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operationalizing data delivery for production level deployments. Finally, they support the key task of deploying analytics and data outputs into existing business processes and applications while guaranteeing compliance with data governance and data security requirements. They are mission-critical as they know and where to start with data, and which pipelines are business-centric, needing to be adept in several technical and business skills.

- Data and Information Architect [ITS III] – This resource will lead the strategy for technology and business teams in the design, implementation, and health management of enterprise-wide data technologies and processes. This role also strengthens the impact of (and provides recommendations on) business information that will need to be available and shared consistently across the company through the identification, definition, and analysis of how information assets drive business outcomes. The data and information architect manages the data models, understands the impact of the different data and analytics scenarios (like data science or machine learning) on the overall enterprise technology architecture, and works with enterprise architecture for the data management strategies and supporting platforms.

These resources will allow the DSH TSD to begin designing an information framework and comprehensive business analytics platform to support the growing need for statistical reporting, advanced analytics, and improved accessibility. The resources will lay the groundwork in structuring technology designs and processes surrounding the health of the future platform, in compliance with data governance strategy while delivering accurate, timely data to the business. TSD will be better positioned to collaborate with the REDI Data Team, Data Governance Committee and CDII to use data as an asset, aligning the data capabilities with business goals, and improving data usability and availability for clinical and business research and reporting.

Continued Education and Training

A critical objective of the REDI Program is to internalize business intelligence which requires education and training opportunities. These resources allow for internal expertise to continue to grow and ensure through appropriate workforce planning that DSH maintains the expertise to become a leader in the delivery of healthcare analytics.

Ongoing (\$150,000) Training Needs:

- Education and Training: To support annual training across data analytic, research and technology expertise for existing and the requested data positions. This allows for advanced statistical training for both the application of statistical methods and use of statistical software. It also includes advanced training across technology applications used for data preparation, analysis, visualization, simulation and predictive analytics. This training is essential internalizing business intelligence and developing statistical expertise.

These large-scale efforts will ensure DSH can implement the vision for quickly obtaining actionable data insights, and transforming data into meaningful information to inform policy, practices, and services.

E. Outcomes and Accountability

The requested leadership and technology positions will allow for DSH to establish the REDI program, develop DSH's comprehensive data strategy, establish Data

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Governance, and achieve compliance with CHHS's DDG directives. This proposal also provides dedicated technology services support of a data scientist and architect to further data capabilities.

Year One Outcomes are presented in the table below:

Business Outcomes	
Data Leadership Strategy	Conduct comprehensive assessment and inventory of data capabilities across all DSH Data (Treatment/medical, operational and law enforcement). Assessment of current limitations and risks. Develop a vision and roadmap. Develop resource assessment REDI Implementation plan for expansion of data scope. Submit REDI Implementation plan as a FY 2023-24 companion proposal.
Data Governance	Establish Data Governance Advisory Council; DSH Data Governance Strategy and Roadmap; Initiate Workgroups for Data Utility and Quality objectives.
Expert Determination Compliance	Establish the Expert Determination Supervisor role, ensure compliance with DDG directives. DDG Expert Supervisor will certify all expert determination scoring.
Strategic Planning	Establish a lead role across all Strategic Planning activities. Examination of KPI management tools.
Automation and Data Advancement	Enterprise Data Platform – Analytics Data Output Design and Strategy. Assess and Design Technology Automations for Measuring and Improving Protection, Quality, and Utility in EDP analytical outputs.

Projected outcomes for the full scope REDI program will focus on growth across all the areas below. These outcomes will require the resources that will be identified in the FY 2023-24 implementation proposal.

Projected Outcomes

	Today	Tomorrow
Basics	Data quality inconsistencies / low reliability data, long lead times, and lack of insights	One source of truth , real-time insights, clear data ownership and governance
Approach	Unstructured and inconsistent approach to analysis and insights	One enterprise approach balanced with effective local support
Focus	“Jacks of all trades”, delivering ad-hoc data requests, and internal focus	Dedicated experts in critical focus areas, a balance of pro-active and re-active business support
Organization	Various disconnected pockets of excellence in data analytics and duplication of effort in key	Dedicated teams delivering insights at scale to staff, sites, functions, and initiatives; cross-functional processes, governance,

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	areas	and best practices
OCM	Culture of "gut decisions" and endless customizations	Informed decisions based on insights and standardization to share knowledge , becoming faster

F. ANALYSIS OF ALL FEASIBLE ALTERNATIVES

Alternative 1: Approve the request of \$1.5 million General Fund and 6.0 2-year LT positions in Fiscal Year (FY) 2022-23 and 2023-24 to establish key leadership positions of the REDI Program along with dedicated technology services support. These positions will be responsible to establish the REDI Program, developing DSH's comprehensive data strategy, establishing a Data Governance Program and Data Governance Advisory Council and compliance with CHHS DDG policy for DDG supervisory expertise. REDI leadership will examine staff resources necessary to achieve continued data advancement, submitting a companion proposal for FY 2023-24. Once implemented in 2023-24, this The REDI program will lead advancements across all data efforts, enabling advanced analytic capabilities and drive the progression of a data driven culture.

Pros:

- Provides the resources to establish a CDO to lead DSH's data strategy, ensuring DSH advances capabilities consistent with large healthcare organizations.
- Provides the leadership resource to establish a Data Governance structure responsible to establish practices and polices across all DSH data.
- Provides the leadership resource of the Expert Determination Supervisor to address supervisory compliance with CHHS DDG direction.
- Provides the resources to examine advanced automation and technology capabilities to ensure technical solutions can be paired with all data advancement.

Cons:

- This option requires new State General Fund resources.

Alternative 2: Do not approve this proposal and maintain status quo data operations.

Pros:

- No additional pressure to the General Fund.

Cons:

- No advancement of data capabilities. Advancements require a data strategy and data governance to establish best practices across data fields and metrics to ensure automation and advancement produces meaningful analytics.
- Unable to keep up with increasing demands of data while being susceptible to poor data quality, increasingly sophisticated data breaches, and timely regulatory compliance. Currently DSH does not have the resources to comply with CHHS's policy on Data De-identification Practices.
- Increased departmental risk. DSH receives a considerable number of data inquiries, many of which are tied to litigation or court requests. Status quo does

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not provide for advancements in data quality or accessibility, leading to long timelines to conduct in-depth research for such inquiries.

G. IMPLEMENTATION PLAN

DSH will on-board new in order to achieve the desired outcomes. Please see the general implementation plan as outlined in the table below:

DESCRIPTION	ESTIMATED COMPLETION DATE
Advertise and Recruit	May-June 2022
Hire and On-board	July 2022

H. SUPPLEMENTAL INFORMATION

Attachment A: BCP Fiscal Detail Sheet

Attachment B: Workload Analysis

I. RECOMMENDATION

DSH recommends approval of Alternative 1, which allows DSH to establish key leadership roles to form a Research, Evaluation and Data Insights program. This alternative allows for DSH data leaders to develop a strategy to utilize governed data to guide the delivery of treatment and services to California. This alternative will progress outcomes including a data informed healthcare system and reduce the risk associate with poor data quality, privacy compliance and a vision for DSH's data strategy.

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Attachment A: BCP Fiscal Detail Sheet

BCP Fiscal Detail Sheet

BCP Title: Data Governance and De-identification Compliance

BR Name: 4440-006-BCP-2022-GB

Budget Request Summary

	FY22					
	CY	BY	BY+1	BY+2	BY+3	BY+4
Personal Services						
Positions - Permanent	0.0	6.0	6.0	0.0	0.0	0.0
Total Positions	0.0	6.0	6.0	0.0	0.0	0.0
Salaries and Wages						
Earnings - Permanent	0	739	739	0	0	0
Total Salaries and Wages	\$0	\$739	\$739	\$0	\$0	\$0
Total Staff Benefits	0	474	474	0	0	0
Total Personal Services	\$0	\$1,213	\$1,213	\$0	\$0	\$0
Operating Expenses and Equipment						
5301 - General Expense	0	46	46	0	0	0
5304 - Communications	0	6	6	0	0	0
5320 - Travel: In-State	0	6	6	0	0	0
5322 - Training	0	150	150	0	0	0
5324 - Facilities Operation	0	30	30	0	0	0
5346 - Information Technology	0	6	6	0	0	0
Total Operating Expenses and Equipment	\$0	\$244	\$244	\$0	\$0	\$0
Total Budget Request	\$0	\$1,457	\$1,457	\$0	\$0	\$0
Fund Summary						
Fund Source - State Operations						
0001 - General Fund	0	1,457	1,457	0	0	0
Total State Operations Expenditures	\$0	\$1,457	\$1,457	\$0	\$0	\$0
Total All Funds	\$0	\$1,457	\$1,457	\$0	\$0	\$0
Program Summary						
Program Funding						
4400010 - Headquarters Administration	0	1,451	1,451	0	0	0
4400020 - Hospital Administration	0	6	6	0	0	0
Total All Programs	\$0	\$1,457	\$1,457	\$0	\$0	\$0

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BCP Title: Data Governance and De-identification Compliance

BR Name: 4440-006-BCP-2022-GB

Personal Services Details

Positions	Salary Information			CY	BY	BY+1	BY+2	BY+3	BY+4
	Min	Mid	Max						
1415 - Info Tech Spec III				0.0	2.0	2.0	0.0	0.0	0.0
4802 - Staff Svcs Mgr III				0.0	2.0	2.0	0.0	0.0	0.0
4969 - Staff Svcs Mgr II (Mgrial)				0.0	1.0	1.0	0.0	0.0	0.0
7500 - - C.E.A. - C				0.0	1.0	1.0	0.0	0.0	0.0
Total Positions				0.0	6.0	6.0	0.0	0.0	0.0
Salaries and Wages	CY	BY	BY+1	BY+2	BY+3	BY+4			
1415 - Info Tech Spec III	0	238	238	0	0	0			
4802 - Staff Svcs Mgr III	0	241	241	0	0	0			
4969 - Staff Svcs Mgr II (Mgrial)	0	100	100	0	0	0			
7500 - - C.E.A. - C	0	160	160	0	0	0			
Total Salaries and Wages	\$0	\$739	\$739	\$0	\$0	\$0			\$0
Staff Benefits									
5150200 - Disability Leave - Industrial	0	10	10	0	0	0			
5150210 - Disability Leave - Nonindustrial	0	3	3	0	0	0			
5150350 - Health Insurance	0	34	34	0	0	0			
5150450 - Medicare Taxation	0	11	11	0	0	0			
5150500 - OASDI	0	46	46	0	0	0			
5150600 - Retirement - General	0	217	217	0	0	0			
5150700 - Unemployment Insurance	0	1	1	0	0	0			
5150800 - Workers' Compensation	0	34	34	0	0	0			
5150820 - Other Post-Employment Benefits (OPEB) Employer Contributions	0	20	20	0	0	0			
5150900 - Staff Benefits - Other	0	98	98	0	0	0			
Total Staff Benefits	\$0	\$474	\$474	\$0	\$0	\$0			\$0
Total Personal Services	\$0	\$1,213	\$1,213	\$0	\$0	\$0			\$0

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Attachment B: Workload Analysis

Chief Data Officer (1.0)				
	Hours Required To Accomplish	Frequency of Task (Daily)	Months	Total Hours Projected (Annually)
Serve as the Department's Chief Data Officer. Provides oversight and direction across all REDI operations. Representing these functions and the REDI program within internal meetings, workgroups, and committees. Working with HR/budgets on personnel related activities; providing management support on complex issues. Collaborate with Chief Medical Officer, Chief Information Officer, and other departmental deputies to ensure the DSH Data Strategy and REDI operations are aligned with clinical, technology and programmatic needs.	12	Weekly	12	624
Data Governance Advisory Council: Serves as the Executive Sponsor of the Data Governance Advisory Council, ensuring the Council is informed on executive direction and advising executive leadership on actions and recommendations.	4	Monthly	12	48
Advises the Directorate and executive management staff on significant data trends and outcomes. Provides data in the development of and/or revisions to policies and practices. Presents data, research, and evaluation findings to inform the decision-making process.	4	Weekly	12	208
Represents DSH on data and research issues with the California Health and Human Services Agency, Department of Finance, Legislative Analyst's Office, Governor's Office, and other stakeholders as appropriate.	4	Weekly	12	208
Advocates and testifies in the Legislature on DSH-sponsored legislation or budget proposals related to data, research, and evaluation activities.	16	Bi-monthly	12	69
Oversees the management of the division's budget, including program contracts and fiscal tracking and analysis to ensure that program expenditures are within allocations.	2	Monthly	12	24

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Provides court testimony on DSH data and data practices. Reviews data provided in declarations and signs declaration as a data custodian.	2	Weekly	12	104
Data Strategy: Establishing the vision and overall strategy for achieving a comprehensive data program that provides data solutions across all programmatic, clinical, and operational needs. The CDO is responsible to oversee the full landscape of DSH data assets, from a data analytics perspective. CDO will develop departmental data strategy/vision for DSH data capabilities which encompasses new and current reporting and programmatic needs for internal and external data accessibility. This strategy will address DSH's current analytic capabilities and identify all data reporting gaps and areas in which data solutions are necessary, incorporating industry best practices across healthcare organizations to guide analytic advancement. The CDO will explore all areas for data growth and address areas of risk. The CDO will be responsible to ensure ethical and effective utilization of all DSH data assets. Data strategy will include all categories of DSH data: Psychiatric Treatment -Planning and Delivery, Medical Treatment Delivery, Forensic Evaluation and Court Reporting, Pharmacy, Law Enforcement and Criminal Offense Data, Billing/Utilization, Licensing, Health and Safety, Administration, and Community Re-Entry (Conditional Release).	10	Weekly	12	520
TOTAL HOURS PROJECTED ANNUALLY				1,805
TOTAL HOURS PROJECTED ANNUALLY: 1,776 (hours/1,776 = PYs)				
TOTAL POSITIONS NEEDED				1.0

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Research Data Officer (1.0)				
	Hours Required to Accomplish	Frequency of Task	Months	Total Hours Projected Annually
Serves as the Research Data Officer, overseeing and directly leading the DSH Data Governance Program, Strategic Planning and Long-Term research and operations studies. Representing these function and the REDI program within internal meetings, workgroups, and committees. Providing direction, mentorship and guidance to Data Stewards, Research Data Specialists and Strategic Planning Specialists in the completion of projects. Working with HR/budgets on personnel related activities such as recruitment; working on team development through annual IDPs and performance review; providing management support on complex issues.	4.00	Weekly	12	208
Data Governance Advisory Council: Serving as the Chair of the Data Governance and Advisory Council at monthly council meetings. Managing the workload of the Council including oversight, planning and coordination of timelines, objectives, recommendations, deliverables, etc. Ensuring administrative activities of the council are completed. Monthly Council meetings. Working directly with the CDO to represent the Data Governance Advisory Council objectives, outcomes, and recommendation to DSH leadership and executive management.	6.00	Weekly	12	312

Data Quality and Utility: Oversight and guidance across data quality and utility workgroups. Establish workgroup to address DSH data sets and metrics and drive standardization through definitions and practices. This will include data inventory, and development of a data guide/manual. Workgroups will initially operate utilizing system-wide SMEs and data owners. Workgroups will examine data evaluation and auditing practices determining technology and practice solutions. Resolution practices will be developed and implemented.	8.00	Weekly	12	416
Literacy: Oversight and guidance across the data literacy function. Oversee contract for Data Literacy Campaign/training and establish governance workgroup to address data literacy objectives. Workgroup will work to develop centralized a data hub and communication plan. Centralized data hub will provide for easy access data summaries and data policies and practices developed through governance. The communication plan will assist with facilitating data user engagement. Workgroup will address activities identified by contractor and identified to further DSH's data culture.	4.00	Weekly	12	208
Privacy/DDG: Oversight and guidance across expert determination/privacy workgroup. This workgroup will meet monthly to discuss complex data requests and distributions; review of DDG protocols, DSH Privacy program concerns, data sharing agreements and data ethics.	4.00	Monthly	12	48
Data Escalation: Oversight and guidance across the escalation workgroup. Workgroup will develop a formal process to escalate urgent data priorities and define when escalation is needed. Process will be used to advice the Data Governance Advisory Council and Executive on emerging and urgent issues needing action.	8.00	Bi-Monthly	12	192
Strategic Planning: Oversight on strategic planning activities, automation, and scorecard development.	4.00	Weekly	12	208
Research: Oversight and guidance on long term research and operation studies including re-evaluation of DSH staffing studies, involving the evaluation of methodologies to support operational workload.	4.00	Weekly	12	208
Represents DSH on data and research issues with the California Health and Human Services Agency, Department of Finance, Legislative Analyst's Office, Governor's Office and other stakeholders as appropriate.	4.00	Monthly	12	48
TOTAL HOURS PROJECTED ANNUALLY				1,848.00
TOTAL HOURS PROJECTED ANNUALLY: 1,776 (hours/1,776 = PYs)				
Total Positions Needed				1.0

Research Manager (1.0)				
ACTIVITY TASK	Hours Required to Accomplish	Frequency of Task	Months	Total Hours Projected Annually
Serves as the Research Manager, overseeing and directly leading the Population and Research Branch. Representing these function and the REDI program within internal meetings, workgroups, and committees. Providing direction, mentorship, and guidance to Research Data Specialists in the completion of projects. Working with HR/budgets on personnel related activities such as recruitment; working on team development through annual IDPs and performance review; providing management support on complex issues.	4	Weekly	12	208
Expert Determination: The Research Manager will function as the primary Expert Supervisor over the Expert Determination Program and provide direct supervision of the DDG practices and the Research Data Specialists applying the expert determination scoring. Research Manager will be able to certify all scoring and recommendations prior to the release of data externally. The Research Data Manager will conduct the expert determination on complex data requests and publishing.	12	Weekly	12	624
Data Governance: Providing leadership and facilitation of the Expert Determination and Privacy Compliance Data Governance workgroup. This workgroup will meet monthly to develop protocol for annual DDG and privacy reviews, assess existing, address data sharing agreements and data ethics.	6	Monthly	12	72

<p>Complex Data Projects: Provides oversight and guidance on all complex data projects and inquiries. This workload involves developing new methodologies and ways for examining data, exploring data possibilities, addressing new data needs, developing application recommendations, and working with SME groups to identify solutions. Additionally complex data inquires, and court requests are addressed including PRAs, media requests and other stakeholder requests. SSM III provides consultation and guidance on all complex projects, working with other divisions for solutions when possible. Collaborations often include DSH legal, Communications, Technology, Forensic Services Division and HSPI branches.</p>	6	Weekly	12	312
<p>Population Research: Provides oversight and guidance on all population research. This workload involves recidivism studies, outcomes, and population cohort studies. SSM III provides consultation and guidance throughout all studies, directly assisting on complex challenges relating to data utility, availability, and quality. Collaborates with other divisions. Internal Collaborations often include Clinical, DSH-Legal, Technology, Forensic Services Division and HSPI branches. External collaborations may involve Department of Justice (DOJ) and UC Davis, and other external stakeholders.</p>	5	Weekly	12	260
<p>Caseload Estimate: Provides oversight and guidance on all caseload estimate workload. This includes predictive analytics (waitlist and wait-time projections), population adjustment tables and tracking, data analytics included within narratives, narrative developments, staffing calculations, staffing study caseload adjustments, staffing study outcomes reporting and collaboration on items which impact either population or staffing.</p>	5	Weekly	10	217

Represents DSH on data and research issues with the California Health and Human Services Agency, Department of Finance, Legislative Analyst's Office, Governor's Office, and other stakeholders as appropriate.	2	Bi-monthly	12	52
Provides court testimony on DSH data and data practices. Reviews data provided in declarations and signs declaration as a data custodian.	8	Monthly	6	48
TOTAL HOURS PROJECTED ANNUALLY				1,793.00
TOTAL HOURS PROJECTED ANNUALLY: 1,776 (hours/1,776 = PYs)				
Total Positions Needed				1.0

Strategic Planning Coordinator (1.0)				
ACTIVITY TASK	Hours Required to Accomplish	Frequency of Task	Months	Total Hours Projected Annually
Functions as the Lead across all strategic planning activities and efforts providing regular updates to internal stakeholders and management.	1	Daily	12	261
Regularly coordinates with Executives and Goal Teams to discuss planned and active projects as well as progress across each strategic planning goal.	2	Weekly	12	104
Functions with high expertise in Key Performance Indicator (KPI) selection, measurement, and tracking.	4	Weekly	12	208
Tracking and regular reporting of how strategic planning efforts are operationalized across the DSH system.	1	Weekly	12	52
Responsible for selecting, developing, and mapping communication tools to display strategic planning performance across all goals.	3	Weekly	12	156
Assesses KPI on a regular basis.	3	Weekly	12	156
Provides consistent governance of KPI to aid in continuous monitoring of progress.	8	Weekly	12	416
Provides consistent, data-driven evaluations of strategic planning progress via the use of data tools such as score cards and dashboards.	2	Weekly	12	104
Leads and attends regularly scheduled strategic planning goal team meetings.	2	Weekly	12	104
Leads and/or participates in meetings with the Director's Office and/or Senior Executives to advise on strategic planning efforts and progress.	1	Weekly	12	52
Operates as an advisor to the Director's Office, Senior Executives, and Goal Teams.	1	Weekly	12	52

Regularly coordinates with the lead research specialist regarding tracking, reporting, and innovation of KPI and strategic planning.	4	Weekly	12	208
TOTAL HOURS PROJECTED ANNUALLY				1,873.00
TOTAL HOURS PROJECTED ANNUALLY: 1,776 (hours/1,776 = PYs)				
Total Positions Needed				1.0

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Data and Information Architect (1.0)				
ACTIVITY TASK	Hours Required to Accomplish	Frequency of Task	Months	Total Hours Projected Annually
Design, implement, and maintain analytical data models that are in compliance with data security and privacy practices. Analytical data model structure will also guide the data preparation pipelines to be inclusive of data governance guidelines along with security and privacy best practices.	6	Weekly	12	312
Construct process methodologies to measure consistency in data usage structures and corresponding information derived from analytical data.	4	Weekly	12	208
Provides input into the data and analytics architecture designs to ensure technology and planned maturity is appropriately provisioned for advancing data analytics capabilities.	2	Weekly	12	104
Creates data consolidation patterns that can be implemented consistently across analytics teams when using data preparation tools for BI and analytics purposes.	2	Weekly	12	104
Monitors data and analytics output processes to ensure best practices are adhered. Ensures data security, privacy, quality, and governance models are applied as intended.	4	Weekly	12	208
Collaborate with data governance committee to provide guidance on the creation, implementation, and ongoing growth of a Master Data Management strategy with corresponding roles and responsibilities.	2	Weekly	12	104
Design, implement, and maintain analytical capability roadmap which advances automated anomaly detection in data outputs.	4	Weekly	12	208

Construct a digital asset model and strategy to assist in development of inter-agency sharing capabilities. Inclusion of data security and privacy practices with visibility into what data is approved to be shared.	6	Weekly	12	312
Provides input into the expansion and enhancement of enterprise data services of the REDI team.	2	Weekly	12	104
Create strategy for automated scaling of data science workloads that can be used in a productionized way across multiple business teams across the enterprise.	4	Weekly	12	208
TOTAL HOURS PROJECTED ANNUALLY				1,872.00
TOTAL HOURS PROJECTED ANNUALLY: 1,776 (hours/1,776 = PYs)				
Total Positions Needed				1.0

Data Engineer (1.0)				
ACTIVITY TASK	Hours Required to Accomplish	Frequency of Task	Months	Total Hours Projected Annually
Design, build, and support repeatably automated data environments and pipelines to enable advancement of data science capabilities. Configure and support data science toolsets in the EDP. Scripts repeatable data preparation pipelines and delivers outputs to staging areas for data model consumption. Prepares data containers for high volume output data.	8	Weekly	12	416
Establish environment capabilities to enable alerting when data anomalies are detected. Automated notification mechanism to alert REDI team with built-in auto healing capabilities (re-run processes, etc.) when applicable.	8	Weekly	12	416
Orchestrate large volumes of DSH category data to be available for data analytics and science consumption. Optimize data pipelines of orchestration with automatic validations of data to DS destination.	4	Weekly	12	208
Design and automate repeatable data staging processes to enable fast data analytics and science environment creation. Script setup and configure different data analytics and science environments based on type of data hypothesis.	4	Weekly	12	208
Collaborate with technology and business teams to productionize data analytics and science outputs through automated processes and deployments.	4	Bi-monthly	12	104

Create data analytics and science environment shelving system to allow automated environment management to: pause and defer, expand and scale, share and integrate when needed in collaboration with data analytics and science teams across DSH.	4	Bi-monthly	12	104
Continuously evaluate data engineered pipelines to manage run costs in delivering the right fit data for enterprise data analytics and science consumption.	2	Weekly	12	104
Expedite data acquisition process when analytics teams need new data sources to be added to the data analytics and science environments.	4	Weekly	12	208
Collaborates with analytics and science teams to acquire, configure, deploy, and maintain toolsets that enable automated predictive analytics capabilities.	2	Bi-monthly	12	52
Collaborates with analytics and science teams to acquire, configure, deploy, and maintain toolsets that enable automated predictive analytics capabilities.	2	Bi-monthly	12	52
TOTAL HOURS PROJECTED ANNUALLY				1,820.00
TOTAL HOURS PROJECTED ANNUALLY: 1,776 (hours/1,776 = PYs)				
Total Positions Needed				1