Healthcare Payments Data Program
Review Committee

October 17, 2019

Office of Statewide Health Planning and Development

2020 W. El Camino Avenue, Sacramento, CA, 95833

Conference Room 1237

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Welcome and Meeting Minutes

Ken Stuart, Chair, Review Committee

Deputy Director's Report

Scott Christman,

Deputy Director and Chief Information Officer,

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Follow Up from September 19 Meeting

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Technology Alternatives

Phil Smith, Consultant, OSHPD

Jonathan Mathieu, Senior Health Care Data/Policy Consultant, Freedman HealthCare

Ted Calvert, Consultant, OSHPD

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Today's Topics

- What are the technical functions that should be performed by an HPD solution?
- What are the technical options available to meet those needs?
- How can OSHPD best apply technologies, experiences, and processes to reduce risk and cost of the HPD implementation?

Our "ask:"
- Provide guidance from a "big picture" perspective
- Address details in regulation, policy development and implementation

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Goals for an APCD Technical Solution

- Provide a secure platform for data collection and an environment for data management
- Provide a standardized, routinized, and stable process for data submitters
- Support the state's regulatory oversight responsibilities: determine submitter compliance
- Create processes that provide meaningful, actionable feedback on data quality
- Ensure timely and consistent analytic products
- Data quality and validation processes
- Transparent processing rules that are clearly communicated to data submitters and stakeholders
- Data access for approved state agency partners
- Minimal expense required to create and deliver approved analytic products
- Financially sustainable

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Researching Solutions

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Market Research Process

In developing the Legislative report, OSHPD performed market research to determine if the HPD system's needs can be met by products or services available in the marketplace. The results were also used in the California Department of Technology (CDT) Project Approval Lifecycle (PAL) process.

To determine the best-value alternatives for the HPD system, OSHPD researched:

- Twenty-one other states' APCDs

- Existing resources within the California healthcare system

- Existing resources within OSHPD and CHHS Agency

- Marketplace solutions via a Request for Information (RFI)

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Market Research Process - RFI

The RFI – which asked vendors about their capabilities in the areas of Data Collection, Integration, Aggregation, Analytics, Publishing, and Release – was distributed to the marketplace with the help of the Office of Systems Integration (OSI). OSHPD received 22 responses.

The market research results were reviewed by the HPD project team and OSHPD subject matter experts. Some respondents were invited to participate in follow-up Q&A sessions and product demonstrations.

These market research activities informed the development of HPD system requirements and a range of cost estimates across solution alternatives.

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Market Research Process – RFI Responses

System Area	Module/Function	Responses	Q&A / Demo
Data Collection	Manage Submitters	14	10
Data Collection	Monitor Compliance	17	10
Data Management	Data Quality and Validation	17	12
	Data Integration - Master Person Index - Master Provider Index - Claims Versioning	18	11
	Data Enhancement - Apply Reference Data and Code Sets - Calculations, Categorizations, Groupings - Linkages to Other Data Sets	17	11
	Data Persistence - Long-Term Source File Storage - Structured Data Warehouse - Aggregated, De-identified, and Limited Data Sets	17	11
Data Access	Reports Creation and Publishing	16	13
	Host Data in a Research Enclave	17	12
Other	Tools, Services, Consulting, Change Management, Benchmarks, etc.	11	8

Enhancements to Support Analytics

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Typical Enhancements in APCD Platforms

- Most vendors provide "out of the box" enhancements to support analysis

- Specifics vary by vendor, but in general these enhancements:
  - Have been added over time to meet the needs of other customers
  - Continually get updated

- Examples range from the simple (descriptions for codes) to complex (calculating HEDIS measures with continuous enrollment and lookback period requirements)

- Hard for "do-it-yourself" states to stand this up and keep it current

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Examples of Simple but Valuable Enhancements — Reference Data for Lookup / Descriptions

Source Field	Who Maintains?	Example (in APCD-CDL™)	Description
ICD-10 ICD-10-CM (Diagnosis) ICD-10-PCS (Procedure)	World Health Org. US HHS US HHS	S62.630 O2H73MA	S62.630 Displaced fracture of distal phalanx of right index finger Percutaneous placement of pacemaker lead into the left atrium
Current Procedural Terminology, 4th Edition (CPT-4)	American Medical Association (AMA)	82962	Blood glucose monitoring device
Revenue Code	National Uniform Billing Committee (NUBC)	0342	Therapeutic Nuclear Medicine
National Drug Code (NDC)	US Food and Drug Admin. (USFDA)	0777310502	Fluoxetine hydrochloride

Others: Code on Dental Procedures and Nomenclature (CDT), Healthcare Common Procedure Coding System (HCPCS), Provider Taxonomy Codes, Point of Origin of Admission, Place of Service, etc.

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National Drug Code Example

With reference information available from the US Food and Drug Administration and others, the following additional elements for NDC 0777310502 can be incorporated into the system:

Proprietary Name	Prozac
NDC Package Code	0777-3105-02
Strength	20 mg/1
Dosage Form	CAPSULE
Route	ORAL
Appl. No.	NDA018936
Labeler Name	Dista Products Company
Product NDC	0777-3105
Nonproprietary Name	Fluoxetine hydrochloride
Substance Name	FLUOXETINE HYDROCHLORIDE
Product Type Name	HUMAN PRESCRIPTION DRUG
Start Marketing Date	2/1/1988
End Marketing Date	N/A
Market Category	NDA
Package Description	100 CAPSULE in 1 BOTTLE (0777-3105-02)
Pharm Class	Serotonin Reuptake Inhibitor [EPC], Serotonin Uptake Inhibitors [MoA]

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Examples of Groupings

Record-Level Roll-Ups:
- ICD-10-CM S62.630 → Diagnostic Category (Injury, Poisoning and Certain Other Consequences of External Causes)
- NDC 0777310502 → Pharmaceutical Class (Serotonin Reuptake Inhibitor)

Groupings Across Multiple Records:
- Inpatient Records → Diagnosis Related Group
- Professional + Institutional → Admission Summary
- Diagnoses, Procedures, Dates of Service, All Settings → Episode of Care Summary

Note: code sets and groupings must be maintained – some have licensing arrangements, some are proprietary, others are free. All have update cycles.

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Example Enhancements/Methodologies

- Fee-For-Service equivalents for capitated encounters
- Lists of avoidable or low value services
- Risk scores
- Provider affiliations (e.g., provider to group, hospital)
- Benchmarking (comparisons to "norms" from other sources)
- Quality measures from:
  - National Committee for Quality Assurance (NCQA)
  - Centers for Medicare and Medicaid Services (CMS)
  - American College of Obstetricians and Gynecologists (ACOG)
  - National Quality Forum (NQF)
  - US Preventive Services Task Force (USPSTF)
  - American Academy of Pediatrics (AAP)

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Reporting Tools

- Most solutions have dozens of standard reports to jump-start analyses (e.g., enrollment, cost, use, pharmacy, quality)

- Most solutions have built-in "dashboard"-type reports as well as record-level custom reporting capability

- Solutions are increasingly expandable: ability to connect preferred business intelligence / reporting tools

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Other Benefits of APCD Platforms

- Experience with Master Patient Index
  - Direct identifiers typically used only to create a linking ID, and then removed from analytic database. Supports longitudinal analyses while protecting patient confidentiality
- Structure to support speed and ease of use
  - Data is integrated and stored in a way to support analysis – facts, dimensions, measures set up to optimize speed and ease of use
  - Measures are pre-built and combine claims and enrollment data to support analysis of rates (e.g., Preventive Visits / 1,000, Prescription Drug Payments Per Member Per Month)
- Experience with standardized build and update processes
- Updates built in – vendors continuously update platform based on technology and learnings from other customers

BREAK

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Defining HPD Requirements

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Summarizing the Common Functions of an APCD

- **Data Collection**
  - Submitter communication
  - Updating data submission requirements
  - Monitoring timeliness and conformance of submissions
- **Data Management**
  - Data security: technology, operations, administrative, governance
  - Data validation techniques
  - Member and provider identity resolution across all datasets
  - Enhancements, linkages, and value adds
- **Data Access**
  - Public websites for aggregated data and custom/standard reports
  - File extracts delivered to approved users
  - Data enclaves for researchers

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Requirements for the HPD

- HPD should be implemented in a modular fashion, each module functions discretely; combined, the modules interact to perform the complex activities of the HPD

- **Data Collection Modules**:
  - Workflow Control – provides a means to automatically control the flow of data as it makes its way through the HPD System from data submission to analytic product.
  - Data Validation – a set of business rules applied to each dataset to enforce semantics, structure, accuracy, completeness, validity, etc.
  - Security – the application of physical and electronic security protocols and standards to safeguard all data, and access to it, in any form.

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Requirements for the HPD

- **Data Management Modules:**
  - Data Processing/Enhancements – the functionality to load data into structures that support analytics, retrieval, use, and linking; including:
    - Load external data sets (Census, Social Determinants of Health (SDOH))
    - Reference data (diagnosis code names, drug names)
    - Claims versioning
    - Coordination of Benefits consolidation or disaggregation
    - Categorizations (diagnostic groups, drug types)
    - Geocoding
    - Groupers (episodes of care, admissions)
    - Low Value Care / Waste Calculator estimates
  - Master Patient Index – assigns a unique HPD patient identifier to all datasets that include individual patient information.
  - Master Provider Index - assigns a unique HPD provider identifier to all datasets that include individual provider information.
  - Master Payer Index - assigns a unique HPD payer identifier to all datasets that include individual payer information.
  - Data Persistence – enables the HPD to persist datasets in a variety of formats from raw transmission formats to fact/dimension structures (analytics), and to effectively scale.

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Requirements for the HPD

- **Data Access Modules:**
  - Data Quality Analysis – ability to apply data quality metrics to the validation engine and to facilitate research that improves the data quality of the HPD. Information from the analysis can be used to automate pattern matching to continually mature data quality.
  - Data Marts – distinct populated structures that support specific use cases simplifying analytic product creation and research. Data marts can also be extended to members of the data enclave.
  - Analytics – the facility and tools to automate or generate analytic products for trend analysis, utilization, and other insights.

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Modules of the HPD

Data Collection:

- Workflow Control
- Data Validation
- Security

Data Management:

- Data Processing
- Master Patient Index
- Master Provider Index
- Master Payer Index
- Data Persistence

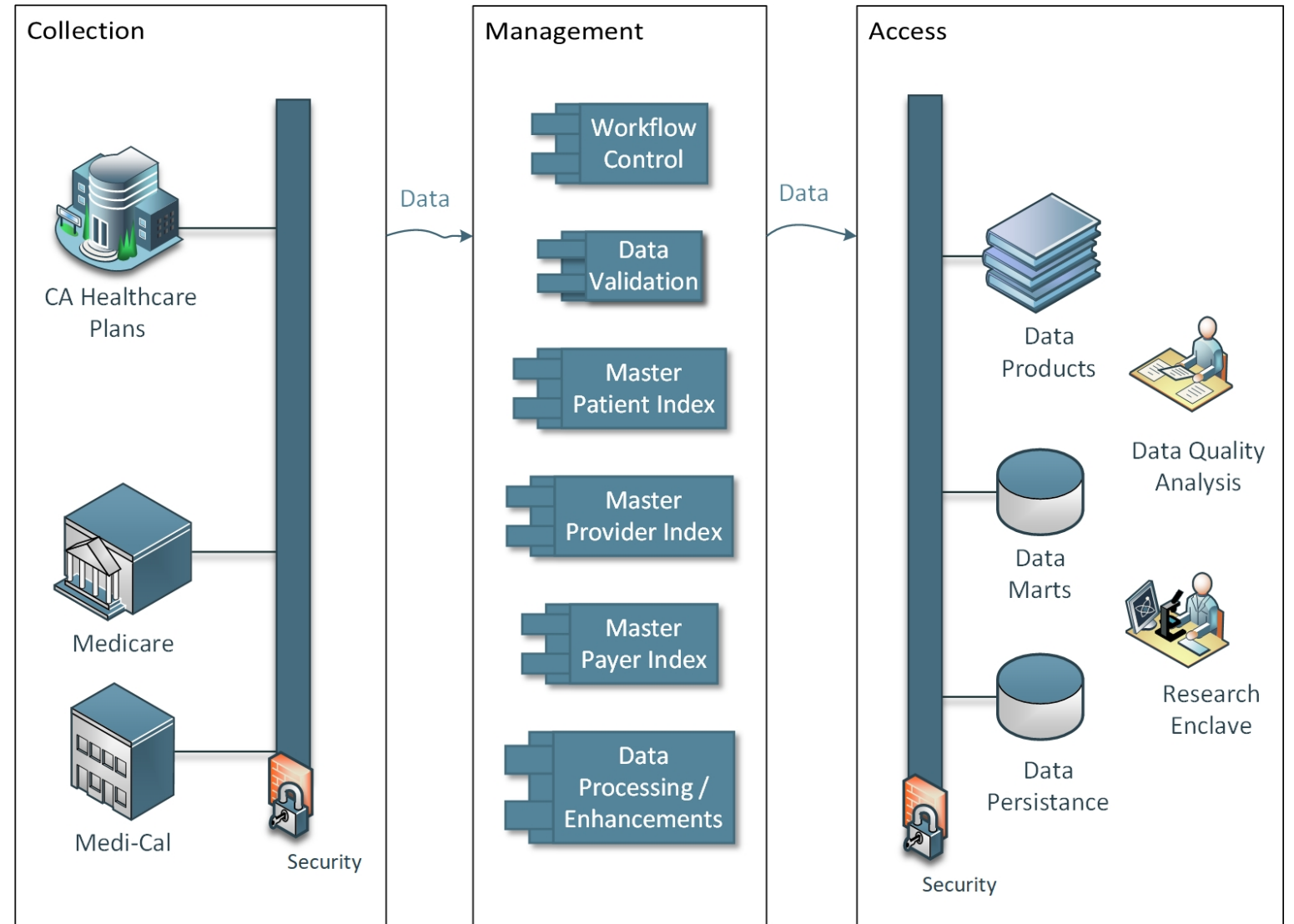**Data Access**:

- Data Quality Analysis
- Analytics
- Data Marts

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Selecting an Implementation Strategy

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2017 Health Care Cost, Quality, and Equity Data Atlas: Technical Feasibility Analysis Findings

- **Leveraging existing systems would likely decrease the amount of time to meet use case goals.**

- **Cloud computing and minimizing extract / transform / load (ETL) procedures can result in implementation cost savings.**

- Defining specific use cases is important because technical requirements, governance structure, and funding sources are interdependent.

- Use case evaluation should prioritize: (1) benefitting stakeholders, (2) contributing to funding and sustainability, and (3) leveraging existing resources.

- Funding models can include: data submitter fees, federal matching funds, and data consumer fees.

- California poses unique challenges due to its amount of capitated managed care.

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Proposed Technical Solution

Collection
- CA Healthcare Plans
- Medicare
- Medi-Cal
- Security

Data →

Management
- Workflow Control
- Data Validation
- Master Patient Index
- Master Provider Index
- Master Payer Index
- Data Processing / Enhancements

Data →

Access
- Data Products
- Data Marts
- Data Persistance
- Security
- Data Quality Analysis
- Research Enclave

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How Other APCD States Implement These Solutions

State	Data Collection	Data Management	Data Access - Output Production	Data Access - Other Dissemination
Arkansas	●------------------------- APCD Managed ------------------------●			Commercial Solution
Colorado	●------------------ Commercial Solution ------●		APCD Managed	APCD Managed
Minnesota	Commercial Solution	●---------------- APCD Managed --------------●		N/A
Oregon	●---------------------------- Commercial Solution ------------------●			APCD Managed
Washington	●---------------------- Commercial Solution --------------------●			Commercial Solution 2
New Hampshire	●------------------ Commercial Solution ------●		APCD Managed	UNH Managed
Maine	●------------------ Commercial Solution ------●		APCD Managed	Commercial Solution
Maryland	●------------------------------ Commercial Solution -------------------------------●			
Massachusetts	●------------------------------ APCD Managed-------------------------------●			
New York	●------------------------ Commercial Solution ----------------------●		N/A	
Florida	●------------------------ Commercial Solution --------------------------------●			
Rhode Island	●---------------- Commercial Solution ------●		APCD Managed	APCD Managed
Delaware	APCD Managed	Commercial Solution	Commercial Solution 2	N/A

Legend: Commercial / Internal

Leverage Resources – OSHPD

Some of the OSHPD resources to be leveraged for the HPD solution were presented at previous Review Committee meetings:

- In September Scott Christman, OSHPD Deputy Director and Chief Information Officer, discussed OSHPD's current information security, data collection, data access, and data governance practices.

- In August Anthony Tapney, Manager, Patient Data Section, discussed OSHPD's current patient-level data intake and data quality validation practices.

- In June Christopher Krawczyk, Chief Analytics Officer, discussed OSHPD's current healthcare data linkage, analytics, and reporting practices.

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Leverage Resources – Commercial

Some of the California healthcare system and national resources to be leveraged for the HPD solution were presented at previous Review Committee meetings:

- In May Dolores Yanagihara, IHA Vice President, discussed IHA's data collection, total cost of care measurement, and program oversight practices.

- In May Isaac Menashe, Covered California Associate Director, discussed Covered California's data collection, analytic enhancement, and reporting practices.

- In March and May, Emily Sullivan, NAHDO Deputy Director, discussed adopting the APCD Council's APCD-CDL™ file format.
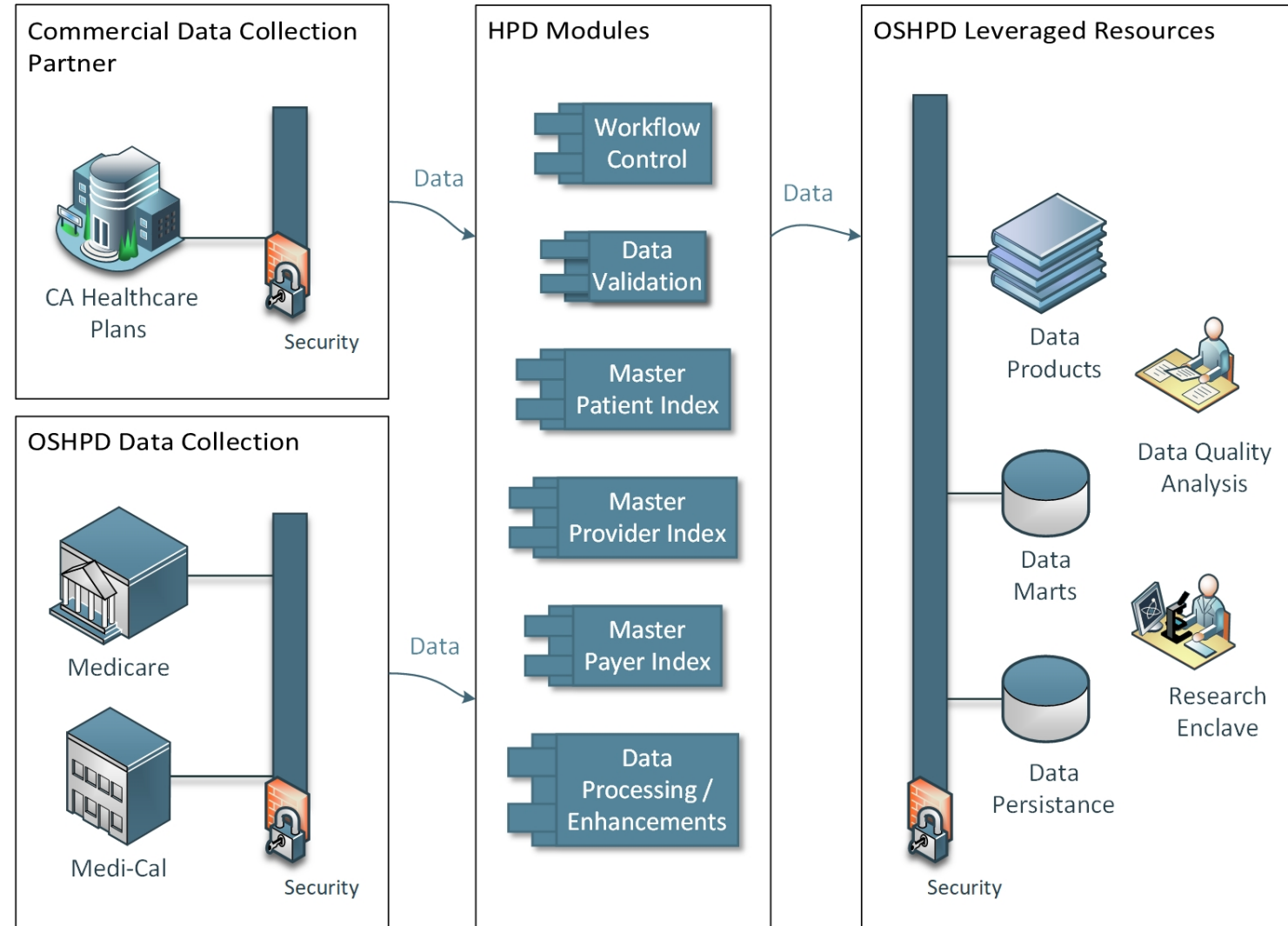
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Implementation Alternatives

Alternative	Pro	Con
Single Commercial Solution	• Permits HPD to focus on program delivery and stakeholder engagement • Reduces the need for new State staff resources to support and maintain a new technology solution • Commercial based implementations are usually faster	• Potential vendor lock in • Subject matter expertise resides mostly with a vendor • Expensive • HPD functional requirements not already implemented would need to be added
OSHPD Internal Program	• Gives OSHPD total control of HPD data • Helps OSHPD develop expertise in healthcare claim, encounter, enrollment, and provider data • Provides an easy structure for cross-support of OSHPD's other data programs • Supports linkage with OSHPD's other data sets	• Will require the hiring and training of a large new staff • OSHPD responsible for establishing and maintaining all data submission processes • May initially draw resources away from OSHPD's other data programs • Increased time to implement
Hybrid - Blended	• Fully maximizes the capabilities and experience in the market by providing the flexibility to acquiring services and modules from more than one vendor • The knowledge for maintaining the solution, handling the data, interacting with data suppliers, and generating reports and analytics is shared between OSHPD staff and technology/service partners • Ability to leverage existing OSHPD investments	• Requires resource commitments to acquisitions and contract management • Increases scheduling risks due to the need to coordinate more than one vendor/entity

Proposed HPD Solution

- Commercial health plan data collected by a vendor partner
- Medi-Cal and Medicare data collected by OSHPD
- Source data files stored in OSHPD's environment
- Data quality, integration, and enhancement steps performed by OSHPD and/or vendor
- Cleaned, integrated, and enhanced data supports analytics
- Reports, data products, research enclave, and access coordinated by OSHPD
- Estimated annual cost: approximately $15M*

* Annual budget estimate for the recommended HPD functions, based on OSHPD's market research and assumptions about data sources, format, and frequency. Includes OSPHD state staff salaries, benefits, operating expenses, and equipment; interdepartmental costs; and vendor costs.

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Recommendations

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Recommendation:
1. Leverage Resources and Expertise

1. The Review Committee recommends that OSHPD leverage existing resources and expertise to facilitate a faster time to implement, maximize the early capabilities of the system, and learn from subject matter experts in the all-payer and multi-payer database industry.

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Recommendation:
2. Modular Approach

2. The Review Committee recommends the HPD system be implemented with a modular approach, with each module performing a discrete system function.

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Recommendation:

3. Data Collection Vendor

3. The Review Committee recommends that commercial healthcare data be initially collected by a vendor with established submitter management and data quality processes.

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November Agenda Setting

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Public Comment

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Upcoming Review Committee Meeting :
November 21, 2019

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Review Committee Meeting Topics

October → **November** → **December** → **January** → **February**

Technology Alternatives

- Technology options to receive, store, and structure data
- Technology options to incorporate other data sets for research
- Technology options to analyze data and publish reports

Overflow Month

- Opportunity to catch up on topics not captured in past months

Governance: Administrative Plan for Operating the Database

- Considerations for effectively governing a data management system
- Opportunities to leverage existing data governance structures

Sustainability

- Discussion on associated costs of the database
- Role of fees for data usage or data submission
- Recommended business plan elements to fund the operations of the database

Close Out

- Review of final Review Committee recommendations
- Next Steps

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