State Health Planning & Development Agency
FY 2019 Annual Plan

Hawai'i Health Data Center
All-Payer Claims Database
June 28, 2018

Version 1.2

Revision History

Date	Version	Description	Author
May 24, 2018	1.0	Initial Draft, distributed to SHPDA HHDC APCD Steering Committee for comment.	SHPDA/PHIDC
June 26, 2018	1.1	Updated Draft, based on comments from SHPDA HHDC APCD Steering Committee Meeting on May 24, 2018. Added paragraph on p.4, describing HB 694 – Relating to Health. Added clarification on p.14 that the Medicare Advantage data that is currently collected is limited to only enrollment and does not include encounters or claims. Added details and clarification throughout regarding Med-QUEST role, based on federal requirements for Medicaid, and the 2018 Legislative session act.	SHPDA/PHIDC
June 28, 2018	1.2	HHDC APCD Steering Committee revisions to p.15 for regulatory controls, formatting, and Committee approval by vote for FY 2019 Annual Plan.	SHPDA/PHIDC

I. INTRODUCTION

A. Purpose of the Annual Plan

> **Hawai'i Administrative Rules (HAR) §11-188-19 Annual plan.**
> The agency shall develop an annual plan for the protection, collection per the parameters specified in the data submission guide, analysis, maintenance, and publication of data collected.

The State Health Planning & Development Agency (SHPDA) Annual Plan provides an overview of the Hawai'i Health Data Center (HHDC) All-Payer Claims Database (APCD) project goals for the upcoming year. Specifically, the SHPDA Annual Plan describes the data protection, data collection, data management and maintenance, data analysis, and reporting and publication activities and objectives. The period of this FY 2019 SHPDA Annual Plan shall run from July 1, 2018 through June 30, 2019, the State Fiscal Year. See *Attachment A* for descriptions of past and anticipated HHDC APCD project activities. This plan is a living document and is subject to updates and changes. Any updates and changes are subject to the approval of SHPDA HHDC APCD Steering Committee.

B. Project Authority and Designee

In June 2016, Governor David Y. Ige signed into law Act 139 (16) Relating to Insurance which authorizes the SHPDA to collect state-funded health insurance administrative data to establish a payer claims database. Line-level claims data for beneficiaries of Medicare, Hawai'i Medicaid (Med-QUEST), and the Hawai'i Employer-Union Health Benefits Trust Fund (EUTF) will be collected. Medicare provides health insurance coverage for eligible beneficiaries who are aged, disabled, or have end-stage renal disease. Med-QUEST provides health insurance coverage for eligible low-income beneficiaries of all ages. Hawai'i EUTF provides health insurance coverage to state and county government employees, retirees, and their dependents.

> **Hawai'i Revised Statutes (HRS) §323D-12 Health planning and development functions; state agency.**
> The state agency shall:
> (1) Have as a principal function the responsibility for promoting accessibility for all the people of the State to quality health care services at reasonable cost. The state agency shall conduct such studies and investigations as may be necessary as to the causes of health care costs including inflation... The state agency shall promote the sharing of facilities or services by health care providers whenever possible to achieve economies and shall restrict unusual or unusually costly services to individual facilities or providers where appropriate;

Act 139 (16) and the SHPDA's Interim Administrative Rules, HAR §11-188, designated the Telecommunications and Social Informatics (TASI)/Pacific Health Informatics and Data

Center (PHIDC) Research Program, under the Social Science Research Institute of the College of Social Sciences within the University of Hawaiʻi at Mānoa, to serve as the agency's data center through June 2018. This designation is governed by contractual agreements with options to extend that are under the purview of SHPDA and Med-QUEST. SHPDA designated PHIDC as the data center in accordance with Act 139 (16) and 42 U.S.C. 300gg-94, which requires that the data center be in an academic or non-profit institution. UH TASI/PHIDC Research Program conducts interdisciplinary and applied research in Hawaiʻi and the Pacific Islands Region, provides education, training, and service support as well as policy and program technical assistance in several areas – health information technology; public health, healthcare claims and clinical data management and analytics; electronic health record system implementation and management; telehealth; accessible and affordable information and communication technologies; and weather and disaster communications.

In the 29th Legislative Session (2018), House Bill 694 Relating to Health was introduced which establishes the Health Analytics Program in the Med-QUEST Division of the Department of Human Services (DHS). The bill continues the support of the APCD activities in collaboration with the State Health Planning and Development Agency (SHPDA), Department of Health (DOH), Department of Commerce and Consumer Affairs (DCCA), Hawaiʻi Employer-Union Health Benefits Trust Fund (EUTF), and the University of Hawaiʻi (UH). Utilizing the authority of SHPDA, this bill allows for the continued support and operational maintenance of the APCD.

C.   HHDC APCD Project Principles

The Hawaiʻi Health Data Center (HHDC) All-Payer Claims Database (APCD) is an interagency collaborative effort to improve transparency on population health, healthcare costs, and healthcare quality. The HHDC APCD has four main principles: building a data resource; establishing an information resource for informed decision-making; building analytic capacity; and building a foundation for healthcare transparency. The Hawaiʻi Health Data Center will serve as an information resource for State of Hawaiʻi policymakers, healthcare stakeholders, and consumers.

D.   HHDC APCD Project Phases

Since the start of this initiative, the HHDC APCD has been operating on the basis of the following project phases:

- **Phase I**: limited dataset is accessed only by the assigned and approved SHPDA, Med-QUEST Health Analytics staff, and/or the agencies' designee, PHIDC
- **Phase II**: limited dataset subset of the data becomes available to select State Agency researchers who have undergone a review and certification process, which is still to be determined
- **Phase III**: subset of the data becomes available to external researchers who have undergone a review process, which is still to be determined

All of the limited dataset information is to be accessed based on security controls, with approved staff developing reports and queries with SHPDA, Med-QUEST, and PHIDC for

defined and approved study areas. These topics and data releases are subject to protections on Medicaid data with Med-QUEST final approvals prior to release and publication, as is federally required. The scope of the FY 2019 SHPDA Annual Plan in this document is to focus on Phase I. Additional Plan details may be added for approval as attachments for Phase II scope, to codify the certified researcher process. The planning and implementation of Phase II and III are subject to law amendments, data protection, data management, and data cleansing enhancements, as well as the establishment of a data governance process for external users.

E. Summary of the FY 2019 Annual Plan Objectives

1. Data Protection

The data protection objectives and activities for this FY 2019 SHPDA Annual Plan include receiving security approval of the HHDC APCD system and authorization from the State Chief Information Officer (CIO) to initiate the collection of data. In addition, the State Chief Information Security Officer (CISO) has recently directed the HHDC APCD to explore using a data masking and tokenization tool to enhance the protection of the data collected. The HHDC APCD is in the process of assessing and planning the implementation of this tool. Due to the implementation status of the data masking and tokenizing tool, the project may experience delays with data collection, validation, analysis, and reporting activities.

Over the past 12-months, the PHIDC, under the direction and guidance of the State of Hawai'i's Office of Enterprise Technology Services (ETS) and its CIO and CISO, has implemented extensive security enhancements. These security enhancements included: a third-party security risk assessment in order to ensure the security, privacy, and confidentiality of the data collected; remediation work; enhancement of continuous security monitoring of systems; and the implementation of a managed secure infrastructure to receive and process the data. During the FY 2019 SHPDA Annual Plan period, the State of Hawai'i's CIO has approved the system security plan, and authorized the initiation of data collection.

2. Data Collection

The data collection objectives and activities for this FY 2019 SHPDA Annual Plan include initiating the collection of historical and ongoing data from the Hawai'i Employer-Union Health Benefits Trust Fund (EUTF), Hawai'i EUTF health plans, and Med-QUEST. In addition, the HHDC APCD also aims to receive the newly available Medicare Fee-for-Service claims datasets from the Centers for Medicare and Medicaid Services.

The HHDC APCD will begin to collect historical data per the SHPDA HHDC APCD Data Submission Guide (DSG) for the period of 2009-2017 from the Hawai'i EUTF, the Hawai'i EUTF health plans, and Med-QUEST, once the State of Hawai'i's CIO has approved the security of the system and authorizes data collection. For the historical data alone, the HHDC APCD estimates that there will be over 1,200 individual files to collect, validate, link, cleanse, and analyze (see section *II. Data Collection* for further details below). Once collection of the historical data is completed and validated, the HHDC APCD will initiate the collection of ongoing data from 2018 and beyond.

In preparation for the initiation of data collection activities, SHPDA, the PHIDC, and the HHDC APCD project team have engaged with each of the data submitters to prepare them for submission to the HHDC APCD. Engagements included reviewing the SHPDA HHDC APCD Data Submission Guide, reviewing the submission process, and beginning the Extensions and Waivers to DSG Requirements process. The MOA between SHPDA and Hawai'i EUTF and the MOA between SHPDA and UH was executed to enable data collection activities. During the period of this FY 2019 SHPDA Annual Plan the Med-QUEST data collection activities can be initiated, once the required agreements are executed. .

3. Data Management and Maintenance

The data management and maintenance activities for the FY 2019 SHPDA Annual Plan include the data validation and quality assurance processes. Once data is received, the PHIDC will check for compliance with the SHPDA HHDC APCD Data Submission Guide requirements, generate summary validation reports, and initiate other data validation and quality activities. Subsequently, the data linking process will occur. The HHDC APCD shall create encrypted data sets to be used by the PHIDC analysts for data analysis on behalf of the SHPDA.

In preparation for the initiation of data management and maintenance activities, the SHPDA, the PHIDC, and the HHDC APCD project team have been engaging with other State APCDs for insights on experiences, lessons learned, and how to best approach data management processes. Other States have cautioned that data validation and cleaning has taken up to two years.

4. Analytic Activities

The analytic activities for this FY 2019 SHPDA Annual Plan initially includes preliminary data analysis of the Medicare data. This is to be followed by cleansing, linking, and preliminary analyses of the EUTF and Med-QUEST data, based on the execution of required agreements with Med-QUEST.

The HHDC project team, through extensive consultation and stakeholder engagement with State agencies and the University of Hawai'i, has identified a comprehensive set of multi-year analytic objectives, encompassing the goals of Act 139 (16), as follows: (1) Establish baseline information for public use and applications for federal and state-funded program reporting; (2) Monitor and analyze healthcare cost; (3) Assess population health; (4) Measure utilization of services; (5) Identify health disparities; (6) Inform consumers of cost and quality of healthcare; (7) Support planning and evaluation of healthcare operations and care; (8) Improve coordination of care; (9) Enable oversight of health insurance premium medical loss ratios; and (10) Waste, fraud, and abuse studies.

5. Reporting Priorities

In accordance with the SHPDA Interim Administrative Rules, the publication and reporting aims for the FY 2019 SHPDA Annual Plan include prioritized reporting on the first four Analytic Objectives: (1) Establish baseline information for public use and applications for federal and state reporting; (2) Monitor and analyze healthcare costs; (3) Assess population health; and (4) Measure utilization of services. On behalf of the SHPDA, the PHIDC is to

prioritize reporting on the Medicare fee-for-service claims data, and to subsequently include additional non-Medicare fee-for-service data reporting (Hawaiʻi EUTF, Med-QUEST) as it is received, validated and linked, cleaned, and analyzed.

Specific questions and studies prioritized by the State are to be contingent upon financial, human, and time resources and domain-specific expertise on specific disease conditions, in addition to the aforementioned contingencies in data security, followed by data collection and validation and cleansing noted above. To identify priority study questions and develop feasible study designs, the HHDC team has engaged with the involved State agencies, including Med-QUEST, DOH, Hawaiʻi EUTF, DCCA-Insurance Division, Executive Office on Aging, DOH units, and units of the University of Hawaiʻi.

II.   DATA COLLECTION

A.   SHPDA Interim Administrative Rules and Data Submission Guide

The standard practices for other state APCDs have been to establish a Data Submission Guide (DSG) that specifies the requirements process and content, including the data dictionary, of the data to be provided from private and public health plans to the APCD. The Agency for Healthcare Research and Quality (AHRQ) maintains a list of the data fields commonly collected by APCDs, which are partially based on federally standardized HIPAA ASC X12 5010 EDI standards.[1] Each APCD makes their respective DSG publicly available to data submitters. The SHPDA HHDC APCD Data Submission Guide has been issued by SHPDA in accordance with Act 139 (16) and the SHPDA Interim Administrative Rules, Title 11, Chapter 188.[2] The SHPDA HHDC APCD Data Submission Guide includes five file formats, the Member Eligibility File, Medical Claims File, Pharmacy Claims File, Dental Claims File, and Provider File.

The claims data includes, but is not limited to, demographics, International Classification of Diseases diagnosis codes, procedure codes such as Current Procedural Terminology codes and Healthcare Common Procedure Coding System Level I and II codes, and paid amounts. The granular and complex line-level claims data allows for studies on population health, costs, services, and many other areas.

The SHPDA HHDC APCD Data Submission Guide also outlines the process in which data is to be submitted to the HHDC. This process includes: 1) Notice from the SHPDA Administrator; 2) DSG Extensions and Waivers Process; 3) Submission Test Data (Test #1); 4) Production Test Data (Test #2); and 5) Production Data Submission.

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[1]USHIK: All Payer Claims Database (APCD) Portal. (n.d.). Retrieved March 16, 2018, from https://ushik.ahrq.gov/mdr/portals/apcd?system=apcd&enableAsynchronousLoading=true
[2] ACT 139, HB2482 HD2 SD1 CD1. (2016, June 29). Retrieved March 16, 2018, from https://governor.hawaii.gov/acts-2/act-139-hb2482-hd2-sd1-cd1-6292016/

B. Historical Data Submissions

The HHDC APCD will be collecting line- and beneficiary-level claims data from Hawai'i EUTF, Hawai'i EUTF health plans, Med-QUEST, and Medicare. For just the historical data, the HHDC APCD estimates that there will be over 1,200 individual files to collect, validate, link, cleanse, and analyze.

The National Association of Health Data Organizations
"The main driver of cost and complexity for an APCD is typically the number of different data sources and platforms with which the collecting agency must interact."

Figure 1 below contains estimates of the files that the HHDC APCD anticipates receiving based on engagement with Hawai'i EUTF, Hawai'i EUTF Health Plans, and Med-QUEST. The file count and format of the Med-QUEST data is to be finalized upon execution of the necessary agreements with all relevant parties.

Figure 1. Estimated Number of Historical Files, 2009-2017
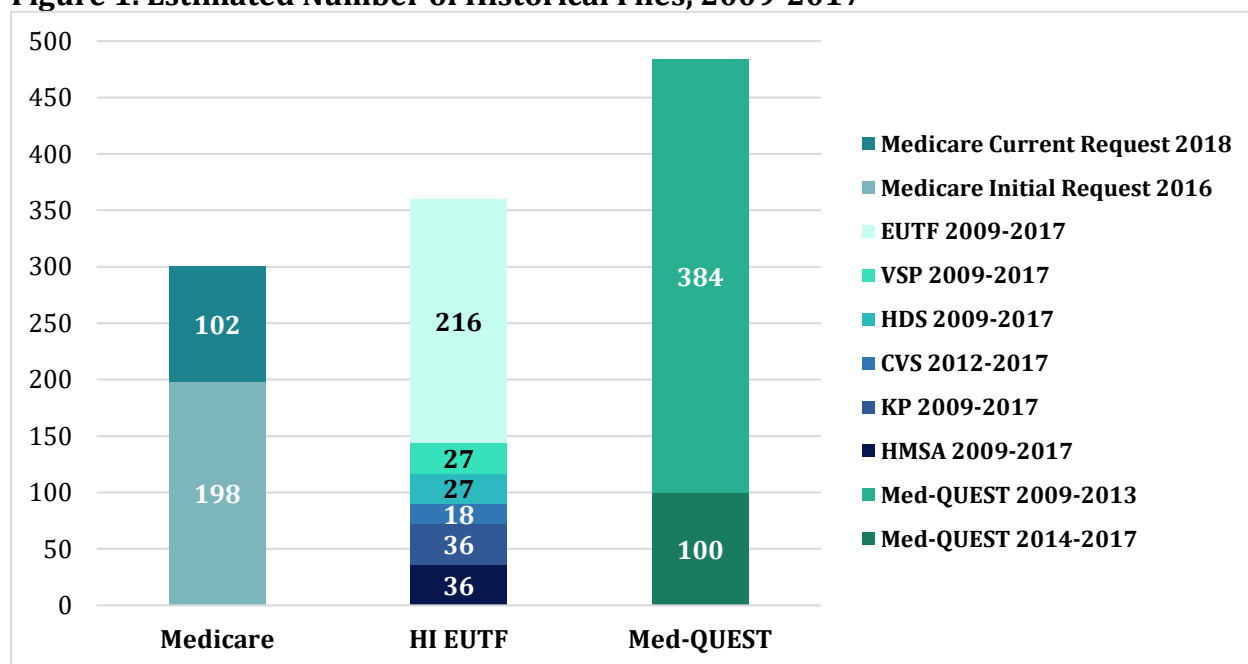
Hawai'i EUTF Data

In early 2017, SHPDA and Hawai'i EUTF executed an MOA to support the project activities for data collection and data analytics for the HHDC APCD. The Hawai'i EUTF data submitters include the following health plans: CVS Health (CVS), Hawai'i Dental Service (HDS), Hawai'i Medical Service Association (HMSA), Kaiser Permanente, and VSP Vision Care (VSP). The Hawai'i EUTF health plans will submit data in accordance with the SHPDA HHDC APCD Data Submission Guide format and submission processes. In addition to the data collected from the Hawai'i EUTF health plans, Hawai'i EUTF will be submitting enrollment and premium data to the HHDC APCD.

Med-QUEST Data
SHPDA and Med-QUEST are in the process of executing an MOA and other agreements to support the data collection and analytics for the HHDC APCD. The submission of data in another format and on a different schedule than the SHPDA HHDC APCD Data Submission Guide requires additional effort and project resources. Based on discussions between the HHDC APCD project team and Med-QUEST, Med-QUEST anticipates the data to be submitted in the Medicaid Statistical Information System (MSIS) and Transformed-Medicaid Statistical Information System (T-MSIS) file formats. There are projected to be at least 400 historical files to be collected. These files and their individual variables are to require mapping to the SHPDA HHDC APCD Data Submission Guide format and the standardized CMS Medicare data formats.

Medicare Data
Medicare data is available in three standardized file formats: Public Use Files, Limited Data Sets, and Research Identifiable Files (RIFs). In 2016, the PHIDC requested and received the RIFs, the most granular data available, in support of health analytics initiatives. The Medicare RIFs consists of approximately 40 different data files per year of data. However, due to CMS data release limitations at present, the detailed line-level claims data is only available for Part A Hospital Insurance, Part B Medical Insurance and Part D Prescription Drug Coverage. The Medicare RIFs include Master Beneficiary Summary Files, Institutional Claims Files, Non-Institutional Claims Files, Part D Files, and other supplementary files.

While the RIFs contain enrollment data for Part C beneficiaries, also referred to as Medicare Advantage, it does not contain detailed encounters or claims. Studies of Medicare are thus limited by the type of data currently available in the RIFs. CMS has indicated that they will begin releasing the Medicare Advantage encounter data, but a timetable for release has not yet been established.

C.   Ongoing Data Submissions

Once the PHIDC has validated, cleansed, and linked the submitted historical data, the HHDC APCD will initiate the collection of ongoing data (i.e. for 2018 and beyond) from Hawaiʻi EUTF, Hawaiʻi EUTF health plans, and Med-QUEST. The data collected from Hawaiʻi EUTF and Med-QUEST is anticipated to come in monthly installments (subject to required agreements), while the data from the Hawaiʻi EUTF health plans will be collected quarterly, in accordance with the SHPDA HHDC APCD Data Submission Guide.

D.   Extensions and Waivers to DSG Requirements Process

The SHPDA HHDC APCD Extensions and Waivers to DSG Requirements process allows health plans to request waivers for the submission of specific data elements as well as extensions for the submission of data. For example, if a health plan does not collect a data field in their system or collect at the specified threshold (of non-missing values), the health plan must request a waiver for submitting the data, which is then acted on by the SHPDA Administrator.

The Extensions and Waivers to DSG Requirements process also allows for requests for extensions for the timely submission of data. Based on the ongoing engagement with the

Hawaiʻi EUTF health plans and resource constraints, some health plans may submit data earlier than others. Due to variations in the data fields and definitions across the different data submitters (SHPDA HHDC APCD Data Submission Guide, Medicare, Med-QUEST), additional time and resources will be required to map out field definitions and data transformation for analytic purposes.

III.   DATA MANAGEMENT

A.   Data Management and Maintenance

The Hawaiʻi Health Data Center (HHDC) All-Payer Claims Database (APCD) plans to begin the data validation and quality assurance processes and to initiate the data linking process in FY 2019. In addition, in compliance with Act 139 (16) and the SHPDA Interim Administrative Rules, the team plans to create usable encrypted data sets to be used initially by PHIDC analysts for data analysis.

Once data is submitted, PHIDC will initiate file validation and compliance checks against with the SHPDA HHDC APCD Data Submission Guide and other relevant standards. Through the validation process, PHIDC will communicate and engage with data submitters to ensure the understanding of the data being submitted and to provide feedback on the quality of data being received. Once the data has been validated, the data will then be linked to assign beneficiaries an encrypted beneficiary key. This key will allow analysts to use the data and identify unique individuals across data sets, without accessing protected health information identifiers. The HHDC APCD will generate an encrypted beneficiary key file which will contain all the protected health information identifiers required for linking and which will be stored separately from encrypted data sets for analysis. Storing the encrypted beneficiary key file separate from the encrypted data sets used for analysis increases the protection of the data. In addition, the encrypted data set for analysis will contain only limited protected health information identifiers (dates, zip codes), with all others removed. The limited data set is to be protected following security rules and standards for HIPAA data, given the protected health indicators it contains. The HHDC APCD project team is also developing a data retention policy, for approval, to define how long data is retained and then destroyed.

During the 2017 National Association of Health Data Organizations (NAHDO) conference and APCD Council conference calls, multiple State APCDs communicated the substantial time required for data quality assurance, validation, and cleansing activities. Extensive consultations and lessons from best practices indicate that forerunner APCDs, in their first years of establishing of an APCD, have required human resources and an extensive period of time for data cleaning and validation in order to produce accurate reports and to avoid report retractions. States have reported that data cleaning took up to two years for some data sources. CMS for example, requires at least a year to validate and process Medicare claims data before it is released for analysis.

IV. ANALYTIC OBJECTIVES AND REPORTING PRIORITIES

A. HHDC APCD Multi-year Scope for Analytic Objectives

The HHDC APCD project team, through consultation and stakeholder engagement with state agencies and the University of Hawaiʻi departments as well as extensive review of publications using claims data, has identified multi-year analytic objectives encompassing the goals of Act 139 (16) as follows:

> **HAR §11-188-4(1) Goals.**
> Promote the use of claims data to enable studies on the cost and quality of care, population health, health disparities, consumer transparency in the cost and quality of health care, health care planning, and to inform public policy.

Table 1 below presents the multi-year analytic objectives to be conducted over multiple years using the validated and cleansed HHDC APCD data. Each objective is accompanied by examples of topics and questions. Note the multi-year analytic objectives encompass the specific study questions that were collected in collaboration with units of the Department of Health, Med-QUEST, units within the University of Hawaiʻi, and other HHDC-involved state agencies (see *Attachment B*). The HHDC APCD project team has engaged in consultations with other State APCDs on topics such as record linkage, data cleansing, quality, and reporting.

An important prerequisite to conducting analyses and producing reports in line with these multi-year analytic objectives is the availability of validated and cleansed data. The complex and multifaceted processes of data collection and data management, including validation and cleansing, as described in earlier sections, are necessary and sequential activities that must be conducted before unbiased and accurate analyses and reports can be generated.

Table 1. Multi-Year Analytic Objectives and Example Topics and Questions

Objective	Example Topics and Questions
Objective 1: Establish baseline information for public use and applications for federal and state reporting	General Information ▪ What are the total number of beneficiaries by benefit program? Demographics ▪ What is the distribution of race, gender, and age for the beneficiaries across the State of Hawaiʻi counties? Insurance Coverage ▪ What types of health insurance coverage do the Med-QUEST, Hawaiʻi EUTF, and Medicare beneficiaries have?

Objective	Example Topics and Questions
Objective 2: Monitor and analyze healthcare cost	Cost of Care ▪ What are the total healthcare expenditures for beneficiaries? By condition? By services and provider type? ▪ What are the annual growth rates of total expenditures and of expenditure per beneficiary? Cost by Demographics and Other Cost Drivers ▪ What are the total healthcare expenditures by beneficiary characteristics and other demographics? ▪ What are the average expenditures for specific services?
Objective 3: Assess population health	Baseline Population Health and Trends ▪ What are the most prevalent chronic conditions? By beneficiary demographic categories? By location? Specific Chronic Conditions Cost & Utilization ▪ What are the average utilization of health care services for specific chronic conditions?
Objective 4: Measure utilization of services	Utilization of Services ▪ What are the common types of services that beneficiaries utilize? ▪ How frequently are preventative services being used? ▪ What are the rates and trends of common drug prescriptions?
Objective 5: Identify health disparities	Differences by Region & Demographics ▪ What are the differences in service utilization by demographics, chronic conditions, etc.? ▪ What are the regional cost variations for high volume services?
Objective 6: Inform consumers of cost and quality of healthcare	Cost Evaluations ▪ What are the average service costs per beneficiary for specified procedures by facility/provider? Quality Improvement ▪ How do facilities/providers perform in terms of nationally endorsed quality measures?
Objective 7: Support planning and evaluation of healthcare operations and care	Trends in Utilization ▪ What are the variations in out-of-pocket costs for different services by providers of service? ▪ How frequently are beneficiaries receiving a follow-up visit with a PCP within 7-14 days of discharge from an acute inpatient facility?

Objective	Example Topics and Questions
Objective 8: Improve coordination of care	Interactions between Physicians and other Providers ▪ How frequently do beneficiaries receive services from referrals? ▪ What are the variations in expenditures between coordinated vs. uncoordinated care?
Objective 9: Enable oversight of health insurance premium medical loss ratios	Cost Drivers for Premiums ▪ How do total premiums compare to medical expenditures? ▪ What are the differences in premium rates? By geography?
Objective 10: Waste, fraud, and abuse studies	Waste ▪ What are the low-value care services that are frequently provided? Fraud and Abuse ▪ Are there instances of overbilling and upcoding?

Note: The table is a partial list of examples of study topics that can be done with the HHDC APCD data and does not represent all HHDC APCD prioritized studies and reports. Study topic examples are incorporated in *Attachment B*.

Some topical areas may not be able to be studied at desired levels of granularity given the limitations of the HHDC APCD data. Study questions and/or report topics are subject to change based on resources, priorities, and data collection activities. Medicaid data used in the studies and reports that is sourced from the limited data set, requires review and approval by the Medicaid program both before the study/report is initiated, and prior to publication.

Any additional analytic objectives and/or topics that are not included as part of these multi-year analytic objectives listed above are subject to the review and approval for inclusion to this plan by the SHDPA HHDC APCD Steering Committee.

B. FY 2019 SHPDA Annual Plan Reporting Priorities

HAR §11-188-21 Minimum reporting.
>   The agency shall, at a minimum, issue reports from the health care claims data at an aggregate level to describe patterns of incidence and variation of targeted medical conditions, state and regional cost patterns, and utilization of services.

The multi-year analytic objectives outline the analytics aims of the HHDC APCD, which is to be conducted over multiple years.

Based on lessons learned from the APCD Council and forerunner states' APCDs, as well as the extensive data collection and management processes of complex administrative claims data

including necessary data validation and cleansing, the reporting priorities are established as objectives subject to change based on availability of data in the period of this Annual Plan.

Subject to the current state of data security, current and anticipated data collection, and data management and cleansing activities, the priority reporting is to be on the first four analytic objectives for this FY 2019 SHPDA Annual Plan (see *Table 2*).

Table 2. FY 2019 SHPDA Annual Plan Reporting Priorities

(1) Establish baseline information for public use and applications for federal and state reporting (2) Monitor and analyze healthcare costs (3) Assess population health (4) Measure utilization of services

Specific questions and studies prioritized are contingent upon financial, human, and time resources and domain-specific expertise on specific disease conditions, , in addition to the aforementioned contingencies in data security, followed by data collection and validation and cleansing noted above. To identify priority study questions and develop feasible study designs, the HHDC team has engaged with the involved State agencies, including Med-QUEST, DOH, Hawaiʻi EUTF, DCCA-Insurance Division, Executive Office on Aging, DOH units, and units of the University of Hawaiʻi.

The following types of report topics and questions are in scope for the FY 2019 SHPDA Annual Plan, in alignment with the multi-year analytic objectives. These reports include: (1) Standard Reports; (2) Supplemental Reports; and (3) Partnership Reports.

(1) Standard Reports are standard ongoing topical reports that will be publicly released and will include information on the coverages, demographics, conditions, costs, and other related topics of the data collected. The Standard Reports will initially rely upon the Medicare data and further expand to the non-Medicare data as the data is collected, validated, linked, cleansed, and analyzed.
(2) Supplemental Reports will consist of reports that fall under the multi-year analytic objectives, but may be more specialized in nature, and thus not normally captured in the Standard Reports.
(3) Partnership Reports will be reports that are designed and built based on requests and partnerships from various State Agencies or University of Hawaiʻi departments and units, for topics and objectives that fall under one of the multi-year analytic objectives.

Publicly released reports are comprised of analytic summaries and shall comply with all applicable federal and state laws, including any cell size suppression requirements and geographic reporting limitations, and Medicaid analytics rules.

Any requests for reports for topics and objectives out of scope of the FY 2019 SHPDA Annual Plan (out of alignment with the multi-year analytic objectives) are subject to the review and approval for inclusion to this plan by the SHPDA HHDC APCD Steering Committee. Reports and research projects on Medicaid recipients must be done to the beneficial use of Med-QUEST, subject to the final review and approval of the Medicaid program and agreements.

In its capacity as SHPDA, Med-QUEST Health Analytics, and PHIDC team will continue to consult and engage with the SHPDA State Health Coordinating Council (SHCC), SHPDA Sub-Area Councils (SACs), other state agencies, subject matter experts, payers and providers to conceptualize and design studies, methodologies, and algorithms. As targets for data validation and quality are met, and as data is linked and cleansed, it is anticipated that partnerships with subject matter experts are to be developed as needed.

Due to the complexity of the data being collected and the multitude of data formats (with differing data dictionaries) being collected (SHPDA HHDC APCD Data Submission Guide, Hawai'i EUTF, Med-QUEST, Medicare, etc.), the level of granularity included in the reports will be phased in, and SHPDA will engage with providers, health plans, and other subject matter experts, as appropriate, prior to releasing reports.

C.   Data and Reporting Limitations

The HHDC APCD will include individual eligibility, medical, pharmacy, dental, and other patient encounter-based diagnosis, services, procedures, prescription drugs, and cost data. The granular line-level claims data will enable many different types of studies related to demographics, healthcare costs, health conditions, and services.

Like all data sources, there are several limitations. The data will not include information on the uninsured, individual health insurance marketplace plans, individuals under TRICARE and/or the Veterans Affairs Health System, Employee Retirement Income Security Act of 1974 covered plans, as well as other specialized populations that do not bill to Medicare, Med-QUEST, or Hawai'i EUTF or its health plans. Also, state and county employees who qualify for health coverage under Hawai'i EUTF and elect to receive coverage through non-Hawai'i EUTF health plans or the individual health insurance marketplace, will not be reflected in the Hawai'i EUTF data.

Figure 2. Estimated Number of Beneficiaries in HHDC APCD, Expressed as a Share of Total Hawaiʻi Population (2017/2018 estimates)[3456]

263,864 (18%)[5]

618,370 (43%)

- Individuals not captured
- HI EUTF
- Med-QUEST
- Medicare

350,304 (25%)[3]

195,000 (14%)[4]
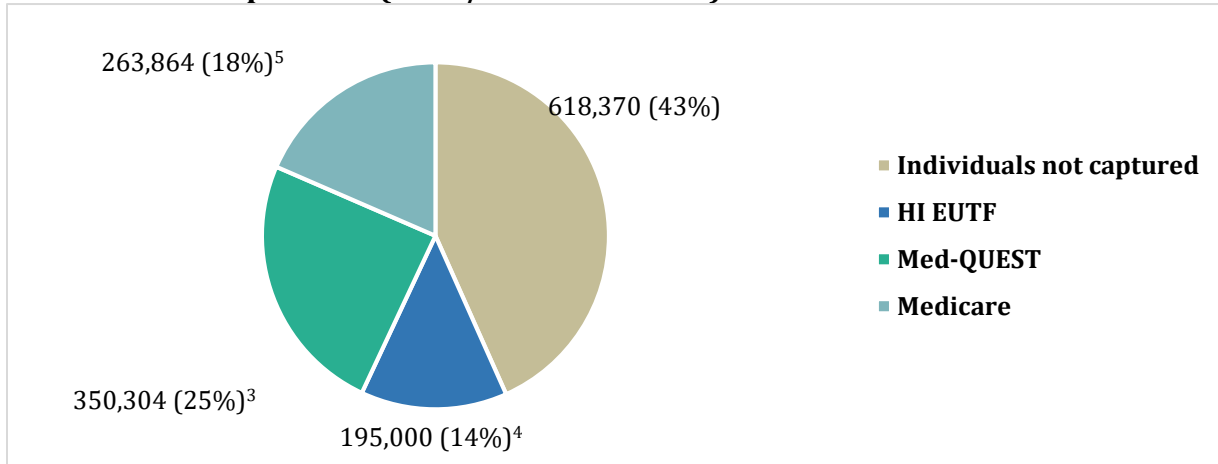
Note: The numbers in *Figure 2* may include beneficiaries who are enrolled in more in one program, and thus these dually-enrolled individuals may be counted more than once. This graphic provides an estimate of the population included in the data to be initially collected by the HHDC APCD. The Medicare population estimates above include all Hawaiʻi Medicare beneficiaries, regardless of Medicare health plan enrollment type. However, please note that the data currently collected does not include encounters or claims for those beneficiaries enrolled in Medicare Advantage plans.

There are also limitations of each of the three data sources. The Medicare, Med-QUEST, and the Hawaiʻi EUTF data will not include detailed clinical data such as specific laboratory values and detailed patient record data that may be available in an electronic health record system. In addition, the three different data sources, Hawaiʻi EUTF, Med-QUEST, and Medicare, and their respective data dictionaries are different, and therefore there are data gaps between them.

Careful and laborious data collection, data validation, linkage, and cleansing processes are required to ensure quality data and hence quality analyses. The available data fields and non-standardized submission of data may also impact analysis and reports. The HHDC APCD values accurate reporting of information in order to avoid retracting of studies, based on experiences from other States.

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[3] Hawaiʻi Medicaid Population Estimates. (February 2018). Retrieved May 11, 2018, from https://www.medicaid.gov/medicaid/by-state/stateprofile.html?state=hawaii

[4] Hawaiʻi EUTF Population Estimates (n.d.). Retrieved May 11, 2018, from https://eutf.hawaii.gov/about-the-fund/eutf-overview

[5] Hawaiʻi Medicare Population Estimates (January 2018.). Retrieved May 11, 2018, from https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/Dashboard/Medicare-Enrollment/Enrollment%20Dashboard.html Note: Available Medicare claims data does not include Part C which is approximately 45% of the Medicare population.

[6] Hawaiʻi Total Population Estimates (July 1, 2018). Retrieved May 11, 2018 from https://www.census.gov/quickfacts/HI

> **HAR §11-188-27 Disclosure of data with direct personal identifiers.**
> No person or entity shall disclose data that contain direct personal identifiers.
> No report shall include a cell size of ten or less to prevent the re-identification
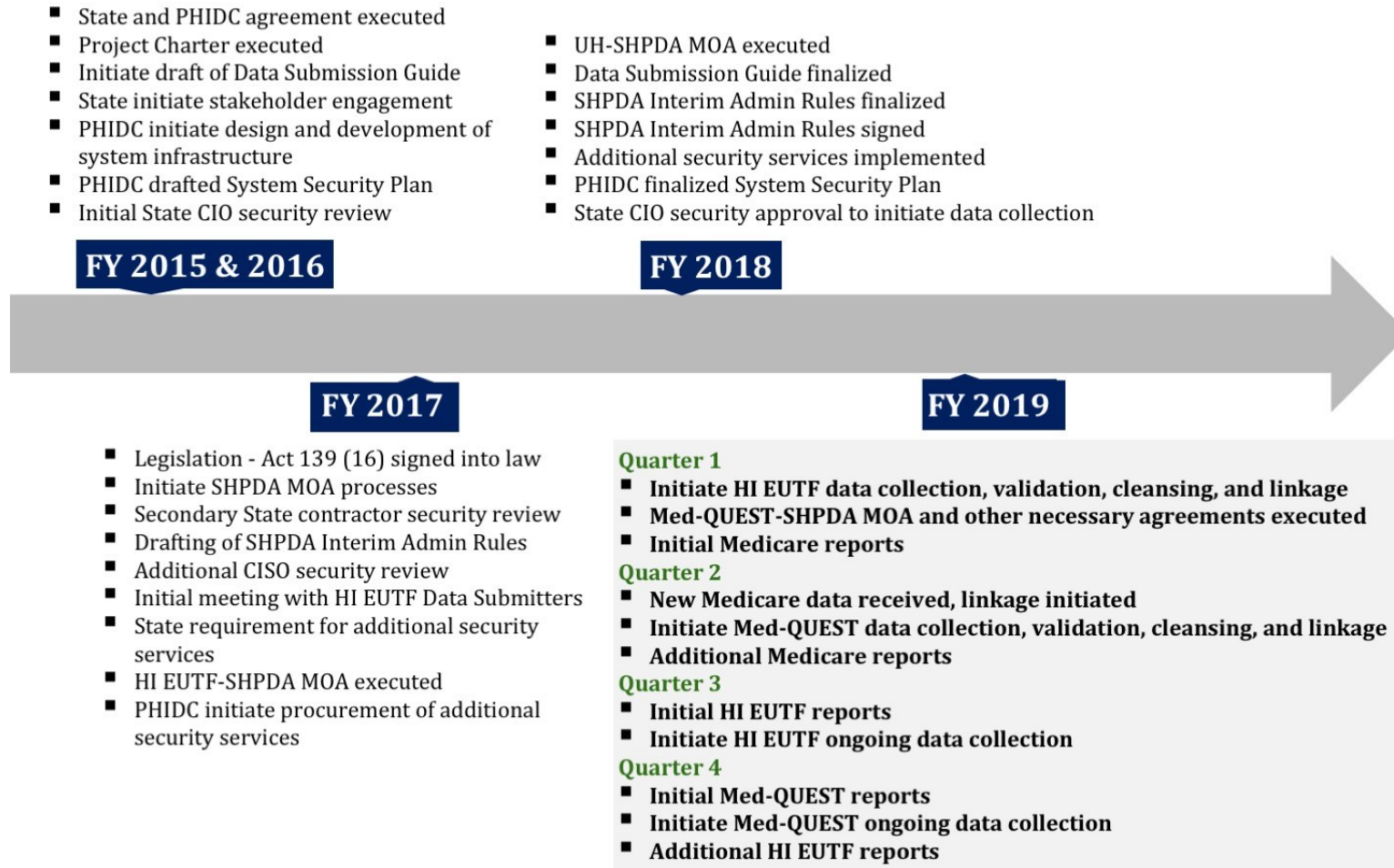> of individuals.

In addition to limitations of the data collected, the HHDC APCD also must abide by federal and state statutory limitations for reporting. The HHDC APCD is unable to report any metric or statistic where the cell size is ten or less. This requirement ensures that all reports protect the confidentiality of beneficiaries. This policy is in accordance with Act 139 (16) and the SHPDA Interim Administrative Rules, HAR §11-188. All Medicaid data used in the studies and reports that is sourced from the limited data set, requires review and approval by the Medicaid program both before the study/report is initiated, and prior to publication.

The HHDC team is to establish the details for a Privacy Control & Data Release process during this Annual Plan year for ensuring privacy protections in alignment with federal requirements for data privacy. This process is to be inclusive of Steering Committee approval of a list of reports and research studies with PHIDC, SHPDA/DOH, and Med-QUEST program operations staff reviews, for discussion among the HHDC-involved agencies' identified staffers. This is to ensure the state agencies with regulatory requirements for limited dataset use may identify, and approve or deny reports to ensure regulatory compliance.

In summary of this Privacy Control & Data Release process for projects aligned to the health data analytics roadmap in this Annual Plan year:

- Reports and studies are to be identified by HHDC-related program staff in their agency (for HHDC-involved agencies only this year), with details presented in a standard analytics request template.
- These identified reports and studies are to be presented to all of the agencies, allowing program staff in other agencies to review and add/revise template details as needed (for example adding a template limited dataset data use agreement as may be required by Medicaid for use of Med-QUEST data).
- The Steering Committee shall vote to approve the reports and studies that meet privacy criteria, with the State data submitters (the Med-QUEST program and EUTF) able to veto requests that do not meet regulatory compliance.
- Subsequent to running the report and study queries, PHIDC, SHPDA, and Med-QUEST shall review the results prior to publication and/or release, for report alignment to regulatory compliance.
- The Steering Committee shall vote to approve or deny the reports and studies that do not clearly meet privacy criteria, or require approval due to report revision.

Attachment A. Project Timeline

- State and PHIDC agreement executed
- Project Charter executed
- Initiate draft of Data Submission Guide
- State initiate stakeholder engagement
- PHIDC initiate design and development of system infrastructure
- PHIDC drafted System Security Plan
- Initial State CIO security review

- UH-SHPDA MOA executed
- Data Submission Guide finalized
- SHPDA Interim Admin Rules finalized
- SHPDA Interim Admin Rules signed
- Additional security services implemented
- PHIDC finalized System Security Plan
- State CIO security approval to initiate data collection

FY 2015 & 2016　　　　**FY 2018**

FY 2017

- Legislation - Act 139 (16) signed into law
- Initiate SHPDA MOA processes
- Secondary State contractor security review
- Drafting of SHPDA Interim Admin Rules
- Additional CISO security review
- Initial meeting with HI EUTF Data Submitters
- State requirement for additional security services
- HI EUTF-SHPDA MOA executed
- PHIDC initiate procurement of additional security services

FY 2019

Quarter 1
- **Initiate HI EUTF data collection, validation, cleansing, and linkage**
- **Med-QUEST-SHPDA MOA and other necessary agreements executed**
- **Initial Medicare reports**

Quarter 2
- **New Medicare data received, linkage initiated**
- **Initiate Med-QUEST data collection, validation, cleansing, and linkage**
- **Additional Medicare reports**

Quarter 3
- **Initial HI EUTF reports**
- **Initiate HI EUTF ongoing data collection**

Quarter 4
- **Initial Med-QUEST reports**
- **Initiate Med-QUEST ongoing data collection**
- **Additional HI EUTF reports**

Attachment B. Multi-Year Analytic Objectives and Reporting Priorities

Legend: Medicare = green (M), HI EUTF = dark blue (E), Med-QUEST = light blue (Q)

Analytics Objectives and Reporting Priorities	FY 2019 SHPDA Annual Plan				Projected				
	Q1 2019	Q2 2019	Q3 2019	Q4 2019	Q1 2020	Q2 2020	Q3 2020	Q4 2020	Future
Objective 1. Establish baseline information for public use and applications for federal and state reporting									
General information	Medicare		HI EUTF	Med-QUEST					
Demographics	Medicare		HI EUTF	Med-QUEST					
Insurance coverage	Medicare		HI EUTF	Med-QUEST					
Objective 2. Monitor and analyze healthcare cost									
Cost of care		Medicare		HI EUTF	Med-QUEST				
Cost by beneficiary demographics		Medicare		HI EUTF	Med-QUEST				
Risk-adjusted payments							Medicare	HI EUTF	Med-QUEST
Objective 3. Assess population health									
Population health and trends	Medicare		HI EUTF	Med-QUEST					
Chronic conditions cost & utilization			Medicare	HI EUTF	Med-QUEST				
Well visits/preventive screenings							Medicare	HI EUTF	Med-QUEST
Objective 4. Measure utilization of services									
Service utilization		Medicare		HI EUTF	Med-QUEST				
Utilizations for specific issues/conditions		Medicare		HI EUTF	Med-QUEST				
Drug utilization				Medicare	HI EUTF	Med-QUEST			
Objective 5. Identify health disparities									
Differences in utilization & cost by region & demographics							Medicare	HI EUTF	Med-QUEST
Access to care							Medicare	HI EUTF	Med-QUEST
Telehealth							Medicare	HI EUTF	Med-QUEST

Legend: Medicare | HI EUTF | Med-QUEST

Analytics Objective and Reporting Priorities	FY 2019 SHPDA Annual Plan						Projected		Future
	Q1 2019	Q2 2019	Q3 2019	Q4 2019	Q1 2020	Q2 2020	Q3 2020	Q4 2020	
Objective 6. Inform consumers of cost and quality of healthcare									
Cost for services by facilities						Medicare	HI EUTF	Med-QUEST	
Quality of services between facilities						Medicare	HI EUTF	Med-QUEST	
Readmissions by facilities					Medicare	HI EUTF	Med-QUEST		
Objective 7. Support planning and evaluation of healthcare operations and care									
Trends of utilization					Medicare	HI EUTF	Med-QUEST		
Quality indicators					Medicare	HI EUTF	Med-QUEST		
Objective 8. Improve coordination of care									
Interactions between physicians and other providers					Medicare	HI EUTF	Med-QUEST		
Objective 9. Enable oversight of health insurance premium medical loss ratios									
Premiums comparisons to expenditures							Medicare	HI EUTF	Med-QUEST
Objective 10. Waste, fraud, and abuse studies									
Waste						Medicare	HI EUTF	Med-QUEST	
Fraud and Abuse							HI EUTF	Med-QUEST	

Legend:
Medicare   HI EUTF   Med-QUEST

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- ❖ APCD Council
- ❖ Boston University
- ❖ Center for Health Information and Analysis (CHIA) – Massachusetts APCD
- ❖ Center for Improving Value in Healthcare (CIVHC) – Colorado APCD
- ❖ FDA Sentinel and Harvard Medical School
- ❖ Freedman HealthCare
- ❖ HealthFacts – Rhode Island APCD
- ❖ Maine Health Data Organization (MHDO) - Maine APCD
- ❖ Minnesota Department of Health – Minnesota APCD
- ❖ National Association of Health Data Organizations (NAHDO)
- ❖ New York APD
- ❖ Oregon Health Authority (OHA) – Oregon APCD
- ❖ Research and Data Assistance Center (ResDAC)
- ❖ State Health Access Data Assistance Center (SHADAC)
- ❖ Truven Health Analytics
- ❖ University of Arkansas College of Medical Sciences (UAMS) – Arkansas APCD
- ❖ University of Massachusetts
- ❖ Utah Department of Health – Utah APCD

The HHDC APCD project team acknowledges the consultation and engagement with several state agencies and stakeholder groups including but not limited to the SHPDA State Health Coordinating Council (SHCC), SHPDA Sub-Area Councils (SACs), health plans, units within the Department of Health, Med-QUEST, Hawaiʻi EUTF, DCCA – Insurance Division, Executive Office on Aging, and others.

The UH TASI/PHIDC Research Program team also acknowledges the engagement with various UH stakeholders from the UH Mānoa College of Social Sciences, Social Science Research Institute, Office of Public Health Studies, Department of Sociology, UH Center on Aging, UHERO, various JABSOM units (Family Medicine, Psychiatry, Biostatistics and Quantitative Health Sciences, and others), UH Hilo Daniel K. Inouye College of Pharmacy, and others.