

Kentucky Health Data Trust Initiative

Creating the Reporting Plan: a Process to Guide the Development and Use of the KyHDT

Deliverable 4.3.1

Prepared for the Kentucky Health Data Trust
Interagency Governance Workgroup

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REPORTING PLAN OVERVIEW

A Reporting Plan outlines how information from the KyHDT will be disseminated, and defines – at a high level – the format, frequency, and level of detail of all expected outputs. The Reporting Plan reflects the priorities of the database’s primary users by laying out a reporting strategy targeted towards their specific use cases. The KyHDT team should engage all Data Trust stakeholders in developing the Reporting Plan, as it allows interested parties to reach consensus on the end goals for the Data Trust. Creating a Reporting Plan early in the Data Trust planning process, with buy-in from all stakeholders, drives subsequent development and implementation.

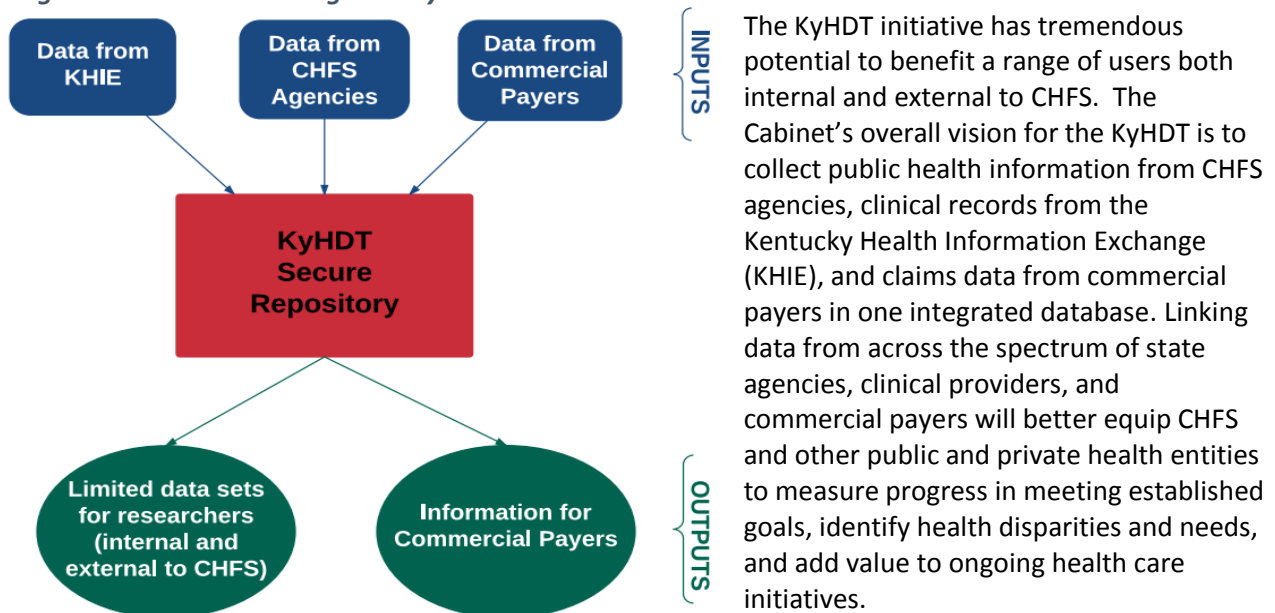
The Reporting Plan contains information about

1. Establishing the KyHDT vision
2. Defining use cases
3. Identifying the primary audiences for different reports and data products
4. Prioritizing use cases
5. Determining the reporting mechanism

The purpose of this document is to guide the Kentucky Cabinet for Health and Family Services (CHFS) through these five steps and set the stage for its development of a KyHDT Reporting Plan. The following sections summarize key findings from Freedman HealthCare’s discussions with KyHDT project leadership, representatives from participating CHFS agencies, and external stakeholders from the commercial payer community.

STEP 1: ESTABLISHING THE VISION

Figure 1: Data Flow through the KyHDT



As depicted in **Figure 1**, the KyHDT will be a centralized, secure repository within CHFS that houses data from a range of internal and external sources. Encrypted data files from CHFS agencies, KHIE, and

commercial payers will flow into the KyHDT, where a team of data experts will validate the data and assign a master patient identifier (MPI) to all datasets. Using Business Intelligence tools and other analytic resources, the KyHDT team will then produce custom reports and limited data sets for internal (CHFS) and external (non-CHFS) researchers. In addition, the KyHDT will feed clinical information (i.e. medical record data) to each commercial payer for the individuals in that payer’s member pool. In the diagram above, the blue boxes represent data flowing into the KyHDT, while the green boxes show the enhanced, integrated information that the KyHDT produces.

- What Users Want:
Critical Requirements for the KyHDT**
- Timely
 - Credible
 - Protective of privacy
 - Protective of trade secrets
 - Appropriately accessible
 - Affordable
 - Holistic
 - Builds over time

DRAFT VISION STATEMENT FOR THE KENTUCKY HEALTH DATA TRUST

The Kentucky Health Data Trust is a collaborative public-private initiative that aims to provide timely, comprehensive health care data to improve health quality, value and outcomes for all Kentuckians. The Data Trust will act as a neutral resource for all users and seek to disseminate useful information according to all applicable laws and the terms of data use agreements.

Step 2: DEFINING DATA USES

Defining clear and specific data uses is the next critical step in developing the KyHDT Reporting Plan. Understanding what types of information stakeholders (including those internal and external to the State) wish to receive from the KyHDT, and how they will use this information, will help CHFS clarify what data to collect, and what outputs to produce. **Figure 2** below shows some of the potential reports that the KyHDT could produce to benefit a range of users both internal and external to CHFS

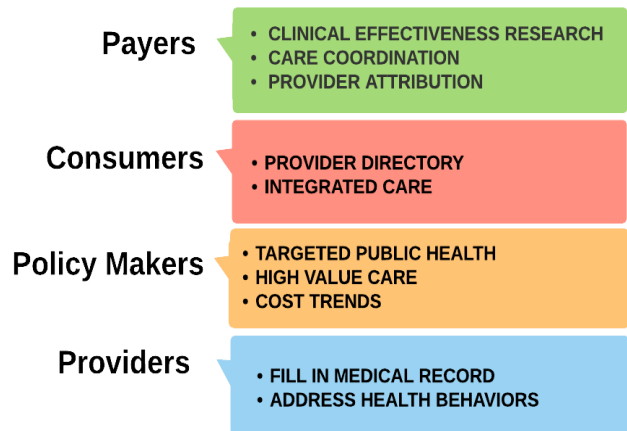
This section presents a selection of potential data uses for the KyHDT, based on conversations with internal and external KY stakeholders as well as common uses in other APCD states. CHFS and its partners should review this list and confirm that these uses align with their goals and objectives for the KyHDT.

2a. Use Cases Based on Existing CHFS Data Sources

Through preliminary conversations with CHFS agencies, KyHDT project leaders have identified several existing data sources for the KyHDT within CHFS. For the purposes of the KyHDT project, characteristics of an existing data source include the following:

- It is currently collected and stored in a data warehouse
- It is controlled by a Cabinet agency

Figure 2: Potential KyHDT Reports



- It contains person-level information
- In general, data elements support cross-file linkages, preferably at the person level

The table below lists the existing data sources within CHFS that can be linked within the KyHDT.

Agency	Available Data
Department of Medicaid Services (DMS)	Medicaid claims, enrollment, member, provider data
Department for Behavioral Health, Development, and Intellectual Disabilities (DBHDID)	Utilization data from Community Mental Health Centers (CMHC) and mental health facilities
Office of the Inspector General (OIG)	Controlled substance prescriptions through the Kentucky All Schedule Prescription Electronic Report (KASPER)
Department for Public Health (DPH)	Vital Statistics data (birth, death, marriage, and divorce certificates)
Kentucky Health Benefits Exchange (KHBE)	Exchange enrollment data
Office of Health Policy (OHP)	De-identified hospital/ED discharge data

Potential options for linking these existing datasets include the following:

1. KASPER person-level data aligned with Medicaid enrollment files

The State’s KASPER system records prescription drug dispensing for narcotics and other controlled substances. Information about Medicaid patients can be cross-referenced to their patient information, including conditions and diagnoses. Such information could generate notices to MCOs, primary care clinicians and care managers for purposes of outreach and health monitoring. This information could also be linked to person level records for households with records of children in residence.

Possible Outputs:

- Referral to medical or behavioral health care management
- Outreach to clinicians treating flagged individuals
- Dashboards showing areas with high match rates, type of prescription and other match/no match information
- Data/reports for prescription drug overdose prevention education (all clinicians or subset of Medicaid clinicians in geographic areas of interest).

2. KASPER prescription data compared to Medicaid claims data to monitor Medicaid prescription drug patterns

Prescription drug data is typically timelier than medical services claims, and may indicate emerging or exacerbated conditions. Continuous and interrupted patterns are one indication that further patient engagement may be required.

Possible Outputs:

- Medication compliance patterns for individuals with chronic conditions, including behavioral health medication continuity.
- Information for primary care practices about patient medication activity.
- Alerts regarding medication interactions identified through claims data.
- Percentage of Medicaid prescriptions filled at out of state and bordering locations.

- Assessment of whether controlled substances prescriptions for Medicaid enrollees are paid out of pocket rather than by Medicaid.

3. Medicaid data linked to DPH Vital Statistics data

Possible Outputs:

- Provider profiling and mortality rates by state, county, and provider – e.g. assess 30-day mortality after date of admission for a defined set of medical conditions (such as heart bypass surgery, stroke, heart attack, pneumonia, suicide, or overdose).
- Trends in incidence, hospitalization, or mortality due to a particular condition.
- Rate of delivery by cesarean section among Medicaid beneficiaries by county, facility, and provider.
- Prevalence of substance addiction among neonates at birth.

4. OHP Hospital Discharge and Emergency Department data aligned with DPH Vital Statistics death data

Possible Outputs:

- Top 10 admission diagnoses or ED presentations for patients who did not survive
- Range of charges for admissions aligned with dates of death

5. Other topics:

- Portrait of Medicaid service utilization prior to dual eligibility: Align Medicaid and Medicare enrollee information; look back at Medicare service utilization for prediction of dual eligibility.
- Health outcomes measurement for stroke and diabetes: Link Medicaid or Medicare clinical data to disease registries.

2b. Use Cases Incorporating CHFS Data Sources Expected in 2016

The table below shows the agency datasets that CHFS expects will be available in 2016. Projects listed in this section build upon the analysis and linking efforts mentioned above and require more complex analytic processes, modeling tools and alignment across more than two files.

Agency	Expected in 2016
Department for Behavioral Health, Development, and Intellectual Disabilities (DBHDID)	Integrated behavioral health/physical health outcomes data
Department for Public Health (DPH)	Lab data and disease registries

Potential options for leveraging these additional datasets include the following:

1. Create new flags in KHIE to feed data to CHFS agencies and/or directly to the KyHDT

- ED visits
- BH diagnoses
- Substance abuse (SA)

2. Align new DPH lab database and Medicaid data
 - Track diabetes (uncontrolled or undiagnosed), kidney function (identifying early stage renal disease), cholesterol, communicable diseases, and Hepatitis C in the Medicaid population for improved care management and targeted interventions
3. Use the MPID in Release 5 to develop cross-programs utilization portrait
 - Develop cross-agency total cost of care and analysis of state-funded service use.
 - Analyze service outcomes.
 - Potential data sources include: Medicaid eligibility and claims data; DBHDID; SNAP; TANF; KASPER; OHP KHA discharge data; KHIE clinical data

4. Implement a predictive modeling tool based on claims data.

Analytic opportunities include:

- Identify the predictive cost per member per quarter for the Medicaid population
 - Map the geographic distribution of “healthiest” Medicaid populations
 - Evaluate against self-reported illness burden (BRFSS) and disease registries.
 - Identify patterns of service utilization to assess gaps in care
 - Explore clinical service delivery models in operation that point to better care.

2c. Use Cases with Commercial Claims Data

CHFS’s vision for the KyHDT also includes bringing in claims data from external payers, including the following entities:

- Commercial fully-insured plans
- Commercial self-insured plans
- Kentucky Employee Health Plan (KEHP)
- Medicare
- Kentucky universities

Adding claims (medical, pharmacy, and dental), enrollment, member, and provider data to the KyHDT presents a wealth of additional use cases for CHFS. For example, CHFS can leverage these data in the following ways:

Use Case	Examples
Population Health	<ul style="list-style-type: none"> • Identify social determinants of health and geographic variations of disease prevalence • Understand the state of health care access and quality at the population level
Policy Research	<ul style="list-style-type: none"> • Compare KY data/trends to regional and national benchmarks • Evaluate the effectiveness/impact of CHFS programs
Data-Driven Decision Support	<ul style="list-style-type: none"> • Demonstrate ROI for CHFS programs to inform legislative or policy decisions • Measure the state’s existing population health goals, and set new goals • Understand which preventive services predict better outcomes for Kentuckians • Study the utilization, care patterns, and outcomes of individuals enrolled in HDHPs as compared to those in HMO/PPO plans

Medicaid Program Support	<ul style="list-style-type: none"> Track and assess “churn” from Medicaid to private coverage
Market Insight	<ul style="list-style-type: none"> Assess physician reimbursement trends Understand provider utilization, payment, and performance Develop a robust patient sample across multiple carriers to determine provider quality Perform risk-adjusted comparisons of providers and practices Identify the predicative cost per member per quarter for the commercial population Support value-based insurance product design specific to Kentuckian health care delivery Assess the relationship between having a primary care provider and ED use Evaluate the impact of out-of-pocket expenditures on plan selection and patient utilization
Publicly-Available Purchaser Reports	<ul style="list-style-type: none"> Provide consumers with health care cost and quality information to inform decision-making Identify the expected cost of name-brand vs. generic drugs Evaluate the effectiveness of employer wellness programs Compare cost and utilization patterns for self-insured plans to the statewide commercially insured population

2d. Use Cases for External Stakeholders

In addition to offering a range of potential use cases for CHFS agencies, the KyHDT will benefit external stakeholders as well. For example, commercial payers who contribute claims data to the KyHDT may be interested in using data derived from the KyHDT in the following ways:

Use Case	Examples
Population Health Research	<ul style="list-style-type: none"> Use all payer claims data to increase the patient sample size for research studies, by looking at patient populations across multiple carriers rather than just one. Access HIE, Vital Statistics, and registry data to explore new research topics. Use Medicaid and Medicare cost data to compare public vs. private health care costs.
Care Management	<ul style="list-style-type: none"> Use chronic condition data to expedite the development of a care management plan. Use historical claims data to understand the history of care for new members – including what services they’ve utilized, where they were seeking care (provider and location), their past insurance coverage status, etc.
Cost Trends Analysis	<ul style="list-style-type: none"> Access the entire claims history of new members to perform true cost trending over time. Use historical claims data to assess churn within the commercial market (e.g. plan shopping) and determine its effect on cost increases.

Business Development and Improvement

- Gain insights for expanding business to new geographic areas and network development by using all payer data to help identify utilization trends in those areas.
- Improve policies and procedures based on a fuller picture of how a population is utilizing services.

Data Elements that commercial payers would like to see in a Health Data Trust include:

- Patient identifiers (particularly, but not only, when a patient has opted into data sharing for a research project)
- Medicare and Medicaid data
- Multiple years of data

Operational considerations that commercial payers would like to see include:

- Standardized format for providing data
- No cost for payers to obtain data
- Any cost data reported out or released represents at least three payers, with no one payer holding more than 50% of the market share

Step 3: IDENTIFYING THE PRIMARY AUDIENCE

As evidenced by the above section, the KyHDT offers a range of benefits for many types of audiences.

Potential users include:

- State agencies
- Academic researchers
- Hospital systems
- Primary care providers
- Community hospitals
- Commercial health plans
- State employee payers
- Federal agencies
- Third party administrators
- Pharmaceutical companies
- Employers
- Public consumers/private citizens
- Non-profits
- Advocacy groups
- Public health organizations
- Legislators

When developing the reporting strategy, CHFS must decide who the target audience of the KyHDT will be. It may be state agencies to inform research, programs and policies. It may be public consumers to drive informed health care decision-making. It may be private or academic research groups to expand population health research at the state, regional, or national level. The primary audience for an APCD varies from state to state, and drives each state's individual Reporting Plan.

Identifying the KyHDT's primary user group, or groups, is essential for focusing CHFS's planning efforts. All priority use cases and outputs should focus first and foremost on meeting the priority needs of that

audience. This does not mean that the KyHDT cannot also benefit secondary and tertiary audiences and provide helpful information for those users; rather, it allows CHFS to focus its development efforts and implement a phased approach to KyHDT reporting.

Based on conversations with CHFS project leadership, a current assumption is that the primary audience for the KyHDT is CHFS, and that participating CHFS agencies (DMS, DPH, DBHDID, OHP, and KHBE) would be the primary users. Secondary audiences include public universities and commercial payers. However, CHFS should confirm whether this assumption is correct.

STEP 4: PRIORITIZING DATA USES

As previously discussed, the KyHDT holds tremendous potential for CHFS and its internal and external stakeholders. However, the KyHDT cannot meet all of these use cases overnight. CHFS should design a realistic, phased approach for implementing the KyHDT and producing outputs that fulfill these use cases, based on the target audience and its specific business needs.

To do so, CHFS should rank the use cases in terms of priority, and articulate which ones it will focus on first, second, and third. Prioritizing the use cases will help define the key reporting goals for the KyHDT. “Priority” can be defined by various criteria, including:

- Availability of the data source(s)
- Level of urgency (e.g. ability to meet a critical business need)
- Implementation/production cost
- Implementation timeframe
- Level of effort
- Benefit/Impact for internal vs. external users

CHFS and its stakeholders should develop prioritization criteria for KyHDT use cases and assign weights to each to determine which criteria are most meaningful for the KyHDT project. They should then evaluate each use case against these weighted criteria to rank them in order of priority. This priority ranking will help determine the data collection, analysis, and reporting goals for the KyHDT. CHFS should then group the prioritized use cases into three buckets (highest, medium, and lowest priority), and plan three phases of KyHDT implementation to focus on those specific use cases in the short, medium, and long term. Phase 1 will focus its data collection, analysis, and reporting efforts on meeting the highest priority use cases; Phases 2 and 3 will follow based on time and resource availability.

STEP 5: DETERMINING THE DATA DELIVERY MECHANISM

After CHFS and the KyHDT stakeholders prioritize use cases, they should determine the mechanism(s) through which priority users can access the data. Table 1 provides examples of the various options for data delivery that APCDs use, based on the category of users.

Table 1: Options for APCD Data Dissemination

	Public and Limited Datasets	Predefined Reports	Web-Enabled Data Analysis	Custom Datasets	Web Displays	Secure Data Review
State Agency Users	✓	✓	✓	✓		
Researchers	✓			✓		
Policy-makers		✓		✓	✓	
Provider Performance Measures					✓	✓
Consumers					✓	

Reference: Table 1: Common Data Dissemination Strategies. *Realizing the Potential of All-Payer Claims Databases: Creating the Reporting Plan*. January 2014. Prepared by Freedman HealthCare for the Robert Wood Johnson Foundation. Available at: http://www.rwjf.org/content/dam/farm/reports/issue_briefs/2014/rwjf409989.

For each expected output, CHFS should define, at a high-level, the format and frequency of the report. Defining this high-level Reporting Plan should be a collaborative process with all stakeholders and will help establish consensus and stakeholder buy-in on the “end goals” for the KyHDT.

CONCLUSION

By completing the five steps outlined above, CHFS and its partners will be able to define a high-level Reporting Plan for the KyHDT. Having this Plan in place will drive all subsequent elements of the KyHDT “roadmap” for building and implementing the APCD. Table 2 below provides a brief summary of the key elements of this Roadmap that CHFS should address:

Table 2: Key Elements of the KyHDT Roadmap

Area	Planned CHFS Activities
Governance	<ul style="list-style-type: none"> Establish a public-private governance structure Create new or amend existing data use agreements
Clinical Data	<ul style="list-style-type: none"> Roll out the Master Patient Identifier Build out lab and imaging data capture
Claims Data	<ul style="list-style-type: none"> Work with payers to define claims data collection Build out KyHDT data intake and quality control
Data Processing	<ul style="list-style-type: none"> Create standard data tables Apply analytic and business intelligence tools to integrate and analyze the data
Reporting	<ul style="list-style-type: none"> Define the data access/reporting options
Operations	<ul style="list-style-type: none"> Document privacy and security procedures Develop data access protocols Support data use request process
Sustainability	<ul style="list-style-type: none"> Explore options for data service fees
Public Messaging	<ul style="list-style-type: none"> Communicate the KyHDT’s uses, benefits, and security protections to the public

In conclusion, the Reporting Plan is the critical first step in implementing this Roadmap. It will provide CHFS the opportunity to clearly articulate the ultimate goals of the KyHDT initiative and align all development activities under a shared vision.

For more information on lessons learned for APCD Reporting Plans, as well as case studies from other APCD states, please refer to: [Realizing the Potential of All-Payer Claims Databases: Creating the Reporting Plan](#) (January 2014), prepared by Freedman HealthCare for the Robert Wood Johnson Foundation.

