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Health and Human
Services

Texas Department of State
Health Services

A SHARPer Future for Data at DSHS

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DIR Discover 9/23/2022

Agenda

- 1. Introduction to SHARP**
- 2. Data Analytics and Reporting using SHARP**
- 3. Data Governance Practices within SHARP**
- 4. Challenges and Lessons Learned**
- 5. Future Plans**



Introduction to SHARP



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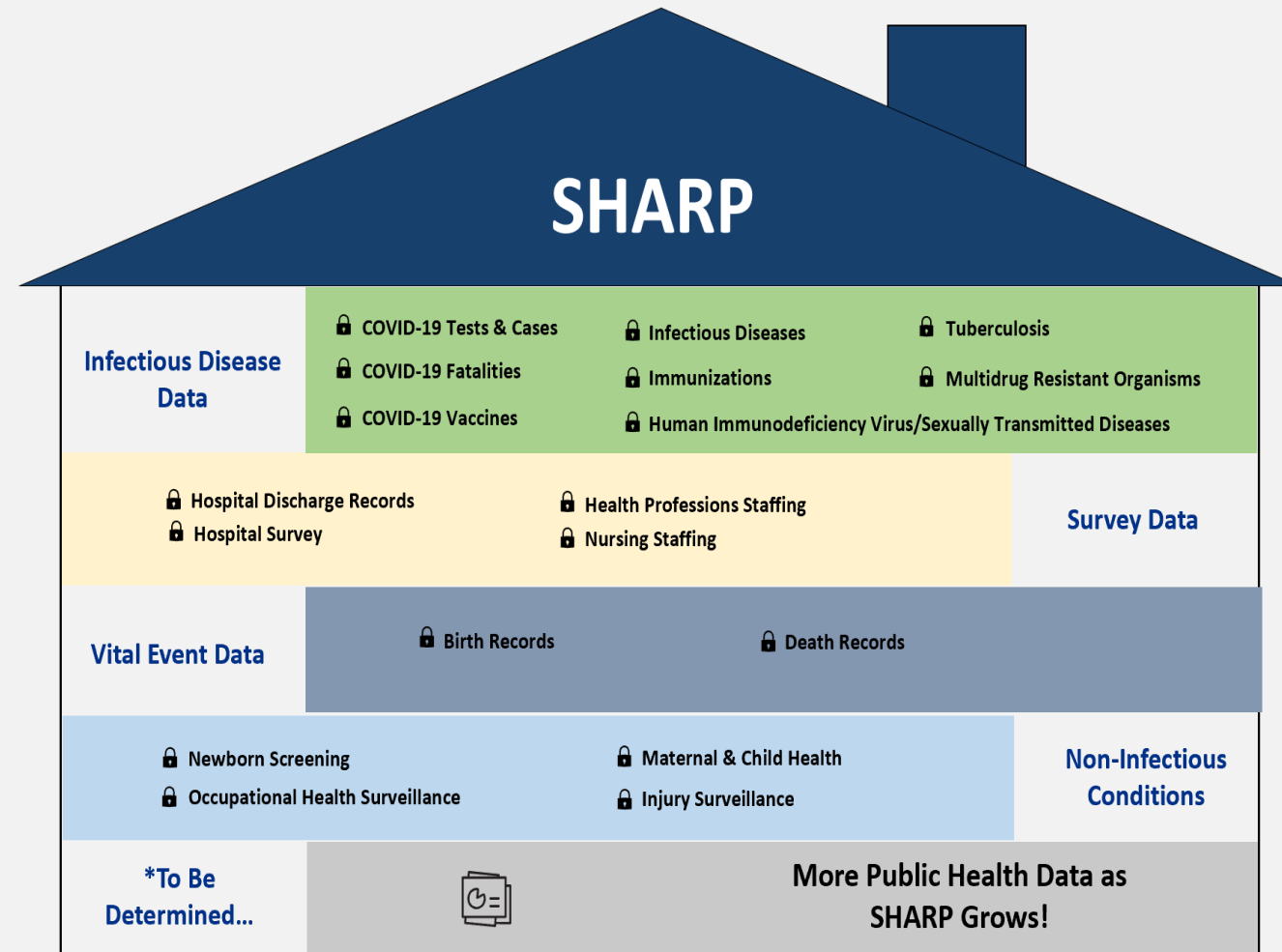
State Health Analytics & Reporting Platform (SHARP)

- Collection of:
 - a data warehouse
 - data analytics and visualization tools
 - data governance tools
- Working together to:
 - integrate, store, and enable the analysis of public health data
 - produce reliable reports and analysis
- Does not replace the systems of record



Data in SHARP

- Existing DSHS data sources
- Copy of the data needed for reporting and analysis ingested into the platform
- Only authorized people access data relevant to their role and/or jurisdiction
- Data are locked down and secured – access granted by data set



For illustrative purposes only. Not inclusive of all datasets. Each bullet indicates separate user permissions required.

SHARP Journey

Need: COVID-19 Vaccine Distribution & Administration Data

- Expanded COVID-19 use cases
- Kicked off initial Data Governance Council
- Launched communications and training

Aug 20 – Nov 20

Dec 20 – Mar 21

Apr 21 – Jul 21

Focus: Scalability and Continuous Improvement

- **TASSCC Project Excellence Award**
- Launched Data Governance Council
- Expanded SHARP to include non-COVID data



Aug 21 – Nov 21

Dec 21 – Mar 22

Focus: Distribute Public Health Data Across Texas

- Conducted data sharing pilot project
- Additional COVID case and lab data sharing options
- **GovTech Best of Texas Award**
- Planning for large-scale data sharing
- Implemented data governance training and implementation



Apr 22 – Jul 22

Need: COVID-19 Testing & Contact Tracing Data

- Initial build of technology platform
- Developed data governance model
- Built/automated reports




Focus: Scalability and Continuous Improvement

- Self-service analytics
- Refined data governance processes
- Expanded platform – new capabilities and public health programs

Need: Data Sharing Enhancements

- Enabled sharing COVID case and lab data
- Developed pilot project to test data sharing capabilities
- Defined & implemented data governance processes based on Texas Data Management Framework

SHARP Business Value

-  Trusted Data & Governance
-  Reduced Manual Data Processing
-  Actionable Insights
-  Scalable & Modular Solution
-  Increased Responsiveness
-  Enhanced Data Sharing

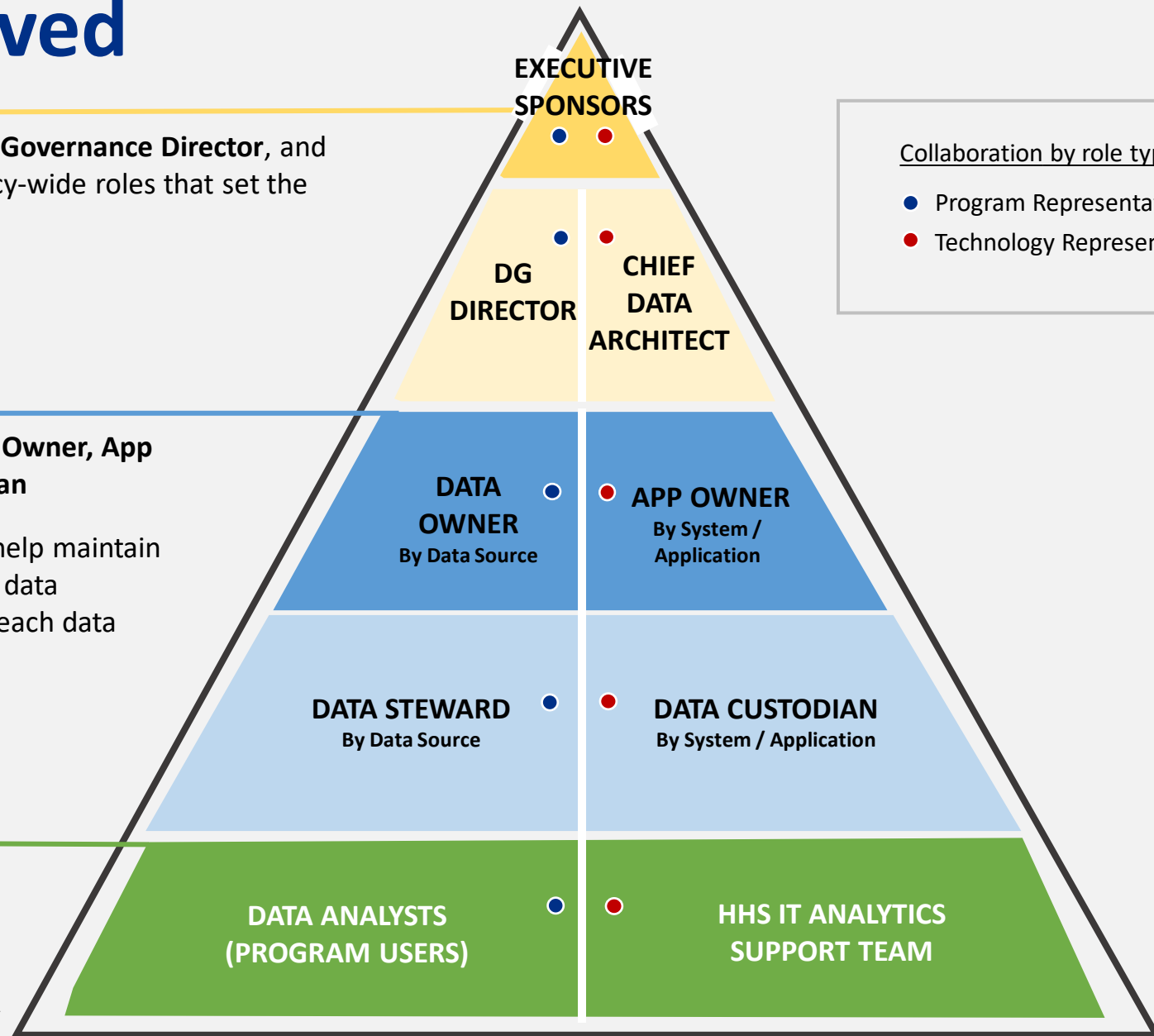


Collaboration Involved

- The **Executive Sponsors**, **Data Governance Director**, and **Chief Data Architect** are agency-wide roles that set the data strategy

- Each data source has its respective **Data Owner**, **App Owner**, **Data Steward**, and **Data Custodian**
- The individuals who occupy these roles help maintain key documentation and ensure the right data governance activities are happening for each data source

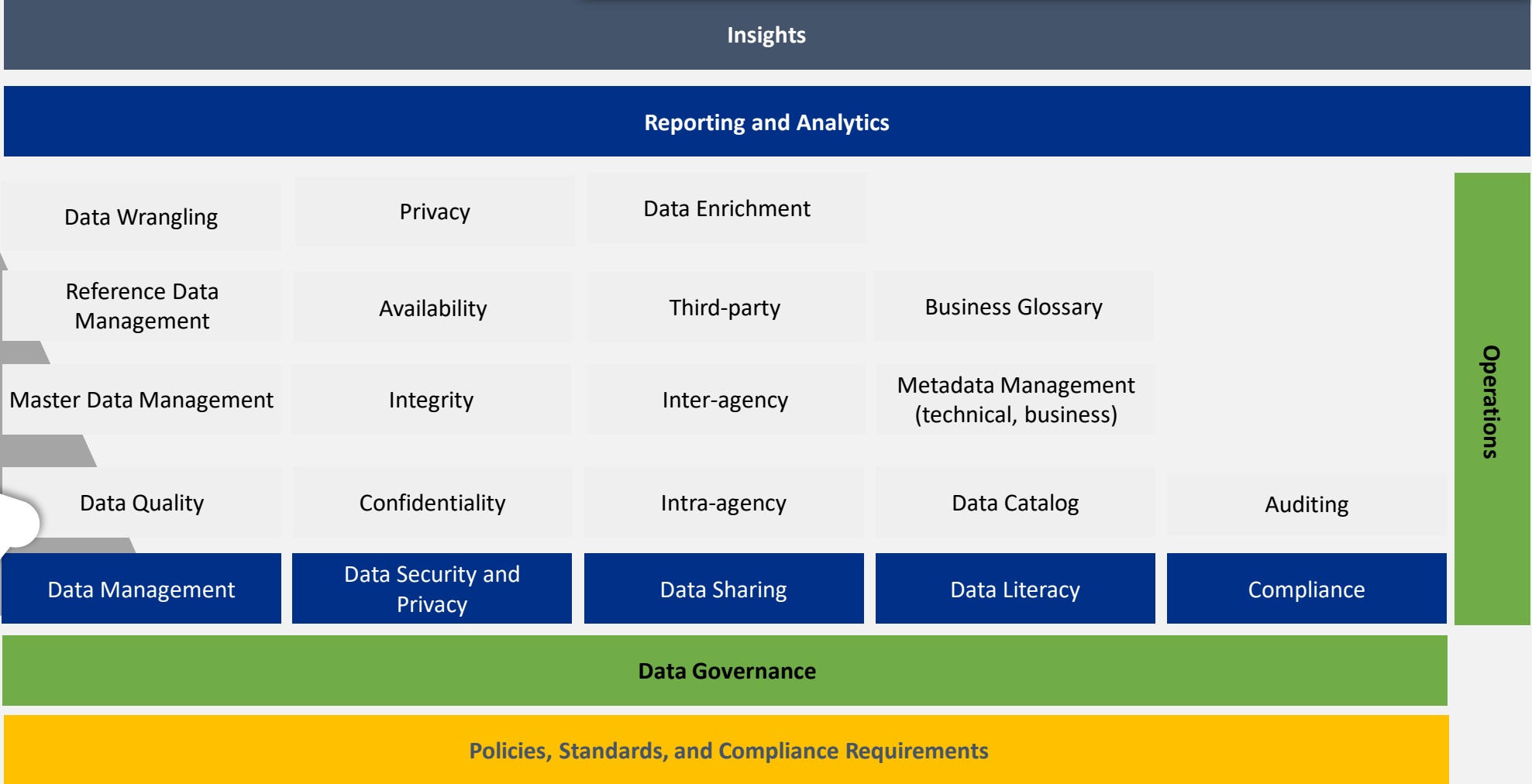
- Primary users are **Data Analysts** – program staff who interact with data, such as epidemiologists and research specialists.
- **Analytics Support Team** and outside contractors work with programs to set up data sources in SHARP and maintain the data



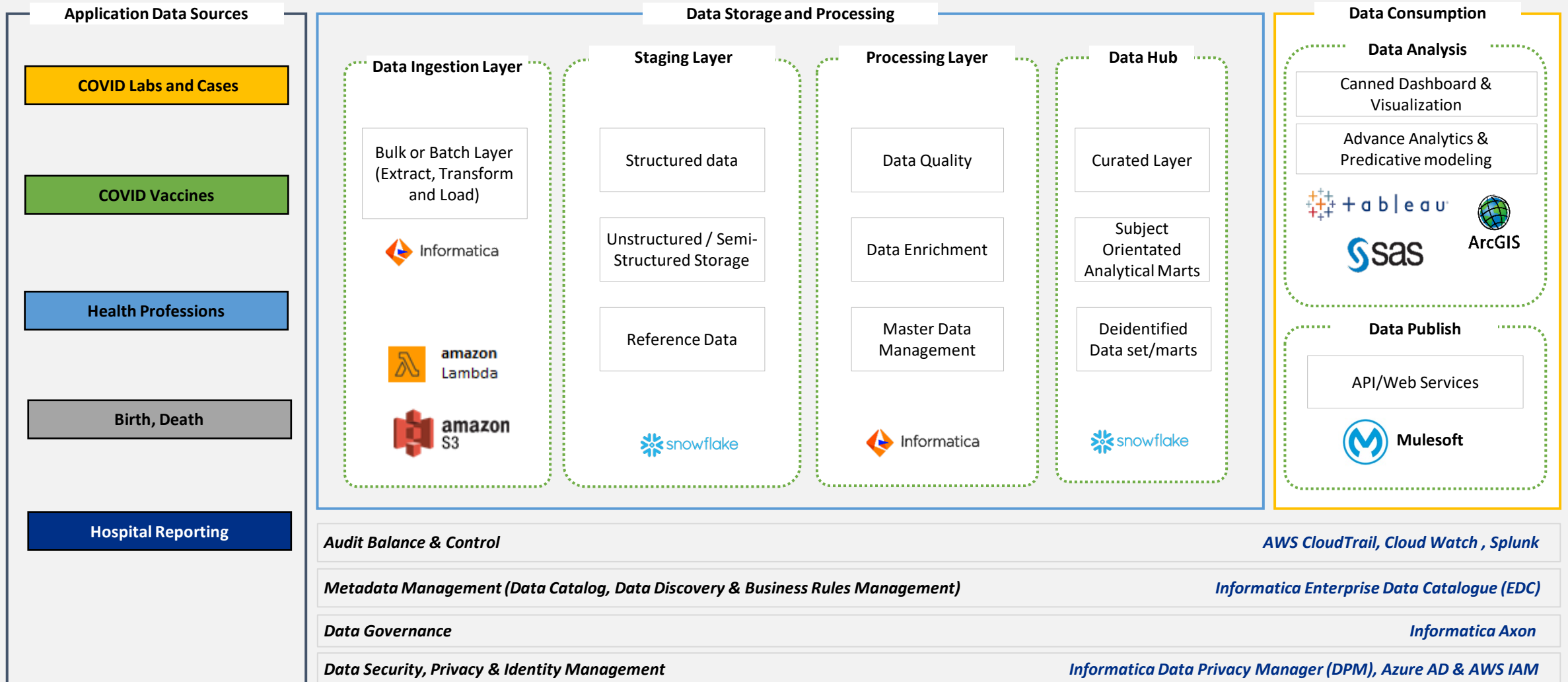
Collaboration by role type:

- Program Representation
- Technology Representation

SHARP Capabilities



SHARP Conceptual Architecture



Data Analytics and Reporting using SHARP



Curated Data Sets

Need: Consolidated reports

- Data needed for reports are located in multiple source systems and constantly changing

SHARP: Automated transformation and data quality

- Brings data sets together in one location
- Deduplicates records
- Applies data quality rules

Impact: Curated data sets

- Curated data sets used for analytics and reporting
- Simplified creation of reports
- Reduced the burden of manually creating reports
- Improved timeliness of reports
- Improved consistency and less error-prone



Trusted data and governance



Reduced manual data processing



Actionable insights



Increased responsiveness

Curated Data Sets

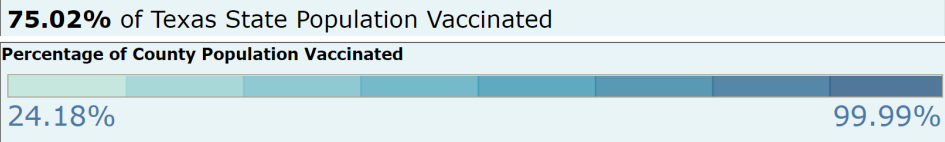
COVID-19 Vaccination in Texas

DSHS is partnering with vaccine providers across the state to ensure vaccine will be accessible to all Texans at no cost. Visit the DSHS COVID-19 Vaccine Information page for more details on phases and tiers, and other vaccine info here:



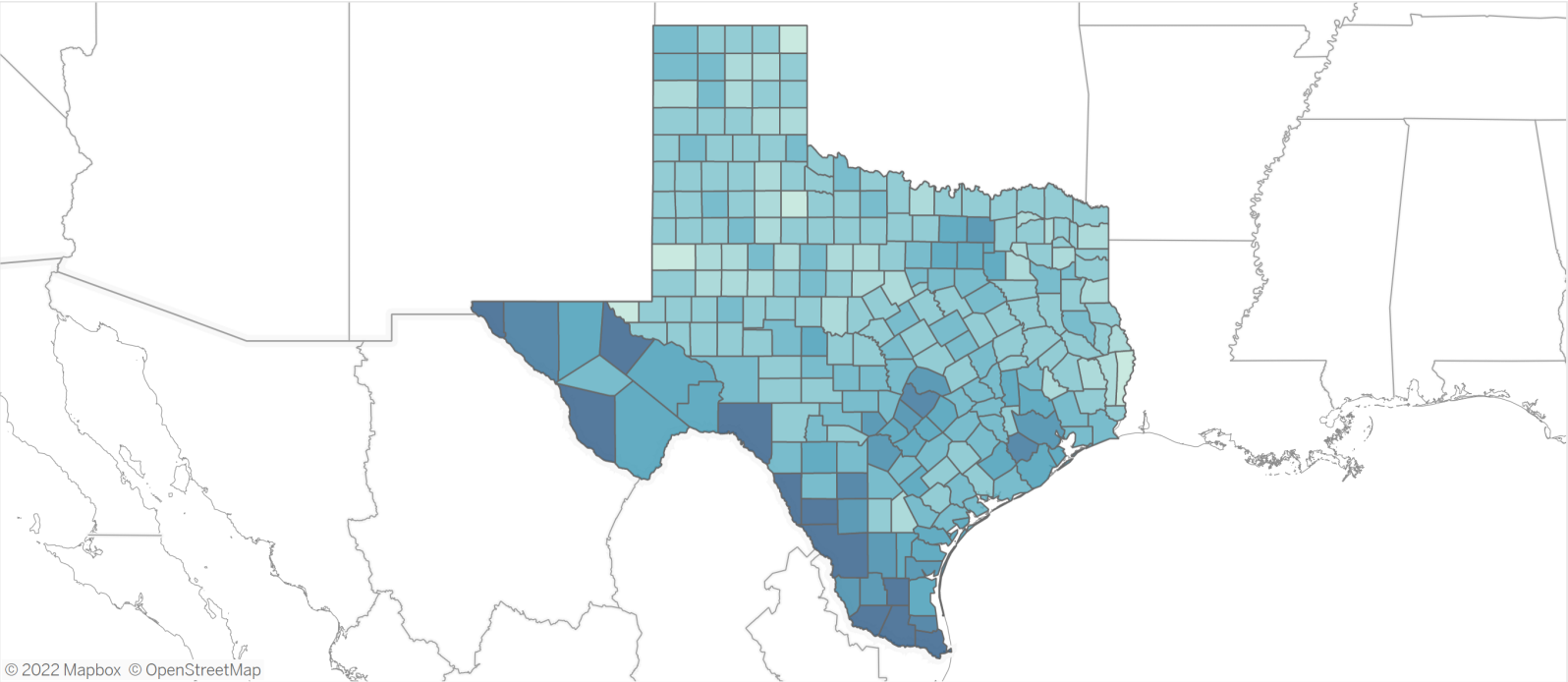
Texas Department of State Health Services

- Percentage Measure to Show**
- Percentage of Population 6 months+ Vaccinated with At Least One Dose
 - Percentage of Population 6 months+ Fully Vaccinated
 - Percentage of Population 65+ Vaccinated with At Least One Dose
 - Percentage of Population 65+ Fully Vaccinated



This dashboard is updated by 4:00 pm each day with data as of 11:59 pm the previous night. See the About the Data tab for more information on data sources.

Percentage of Population Vaccinated for COVID-19



© 2022 Mapbox © OpenStreetMap

Doses Administered

46,990,840

People Vaccinated

21,592,349

People Fully Vaccinated

17,983,568

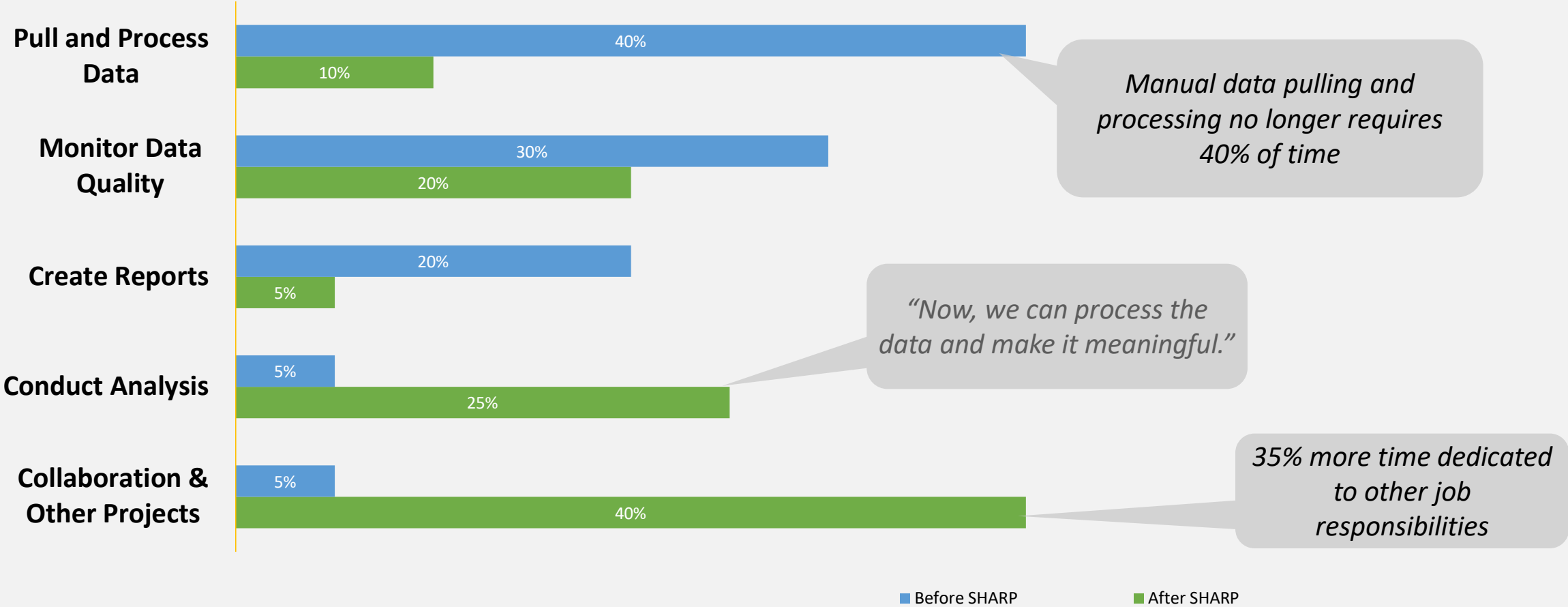
People Vaccinated With at Least One Booster

7,406,367

Last Updated:
09/04/2022 11:00 am

Curated Data Sets

Data Analyst Average Time Spent before SHARP vs with SHARP



Enhanced Data Sharing

Need:
Share data with partners

- Staff time spent pulling reports
- Inability to provide timely data
- Stress on data source systems

SHARP:
Direct access to data

- Aggregate – Tableau dashboards
- Line-level – pull a report from SHARP through source system
- Line-level – Snowflake reader accounts

Impact:
Increased access to data

- Partners able to access data they have never had before
- Robust access controls based on roles
- Insights gained through dashboards
- Reduced burden on source systems
- Eliminated extraction and transformation processes



Scalable solution



Reduced manual data processing



Enhanced data sharing




Actionable insights



Increased responsiveness

Enhanced Data Sharing



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Vital Statistics - Death


**Includes 2018 & 2019 Death Data for Pilot Purposes*

Total Texas Deaths:
404,037

**Number updated by filter selections*

[Deaths By Jurisdictions](#)
[Total Texas Deaths](#)
[Disclaimers](#)

Filter Selections



Data Filtered for the Following Selections:
 Age Group: **All** Gender: **All** Manner: **All**
 Race/Ethnicity: **All** Cause: **All**
 Underlying Cause: **All** Tobacco Contributed: **All**
 Year: **2018 to 2019**

Total Deaths by Month [Click Here To Reset Filters](#)

Month	Total Deaths
December 2017	21,440
January 2018	17,005
February 2018	17,138
March 2018	15,979
April 2018	16,061
May 2018	15,540
June 2018	15,781
July 2018	16,017
August 2018	15,298
September 2018	16,280
October 2018	16,636
November 2018	17,763
December 2018	18,336
January 2019	16,216
February 2019	17,941
March 2019	16,467
April 2019	16,516
May 2019	16,040
June 2019	16,464
July 2019	16,320
August 2019	17,109
September 2019	15,776
October 2019	17,448
November 2019	18,466
December 2019	18,466

Total 10 Causes of Death by Total Deaths

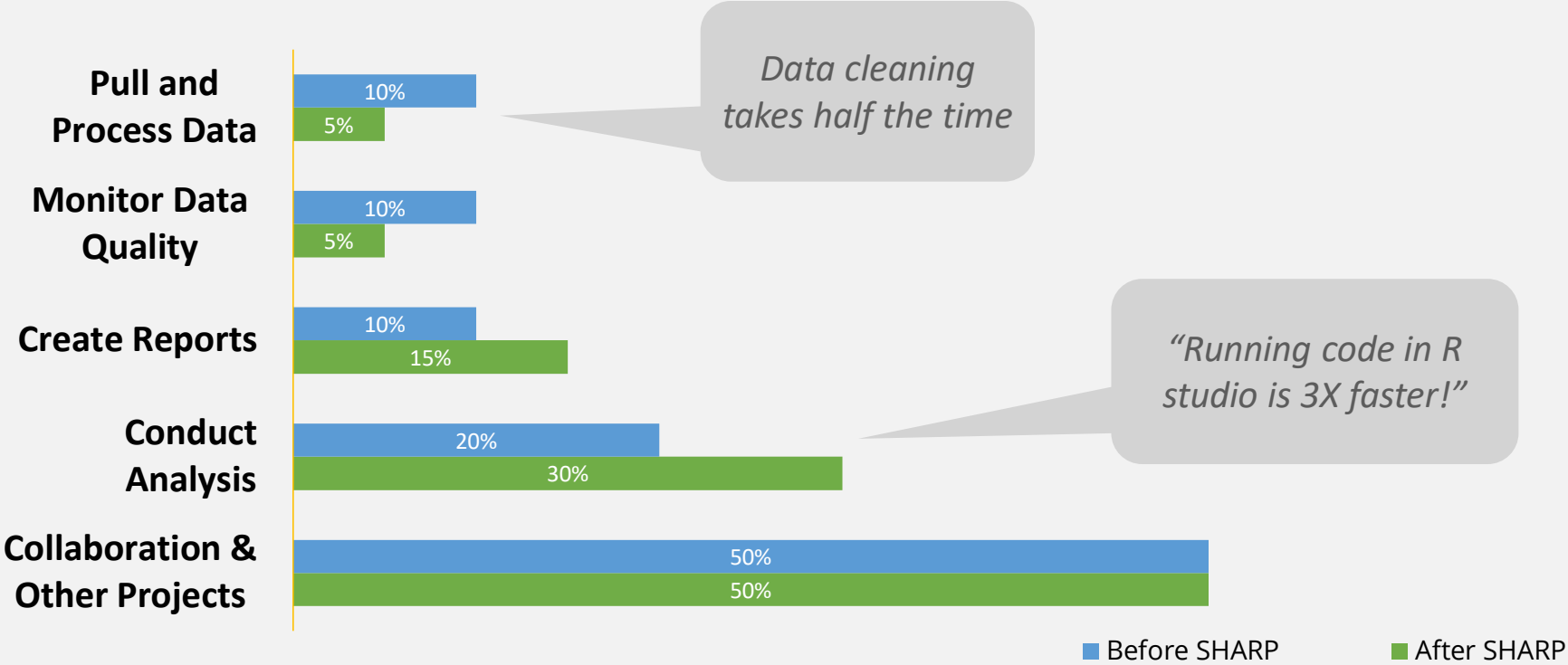
Cause	Total Deaths
Diseases of heart	92,504
Malignant neoplasms	82,091
All Other Causes of Death	61,564
Accidents	21,740
Cerebrovascular diseases	21,538
Chronic lower respiratory disease	21,534
Alzheimers disease	19,834
Diabetes mellitus	12,835
Nephritis, nephrotic syndrome and nephrosis	8,669
Chronic liver disease and cirrhosis	8,487

Total Deaths by Age Group and Gender

Age G. & †	Female	Male	Total
Grand Total	191,027 (47.28%)	213,010 (52.72%)	404,037
00-<01	18 (40.91%)	26 (59.09%)	44
01-04	1,449 (44.39%)	1,815 (55.61%)	3,264
05-14	988 (44.60%)	1,227 (55.40%)	2,215
15-24	1,579 (27.36%)	4,192 (72.64%)	5,771
25-34	2,702 (29.78%)	6,372 (70.22%)	9,074
35-44	4,923 (36.57%)	8,538 (63.43%)	13,461
45-54	10,248 (38.40%)	16,439 (61.60%)	26,687
55-64	22,786 (38.58%)	35,280 (61.42%)	58,066
65-74	34,776 (42.35%)	47,349 (57.65%)	82,125
75+	111,557 (55.14%)	90,770 (44.86%)	202,327
UNKNOWN	1 (33.33%)	2 (66.67%)	3

Enhanced Data Sharing

Data Analyst Average Time Spent before SHARP vs with SHARP



Note: Data sharing enhancement efforts are relatively new and will require additional time to gather comprehensive feedback.

Data Quality Dashboards

**Need:
Insight on
data quality**

- Identify why files are rejected
- Identify missing data

**SHARP:
Data quality
dashboards**

- Work with data providers to correct data quality issues

**Impact:
Improved
data quality**

- Overall better data quality



Trusted data and governance



Reduced manual data processing



Actionable insights

Data Governance Practices within SHARP

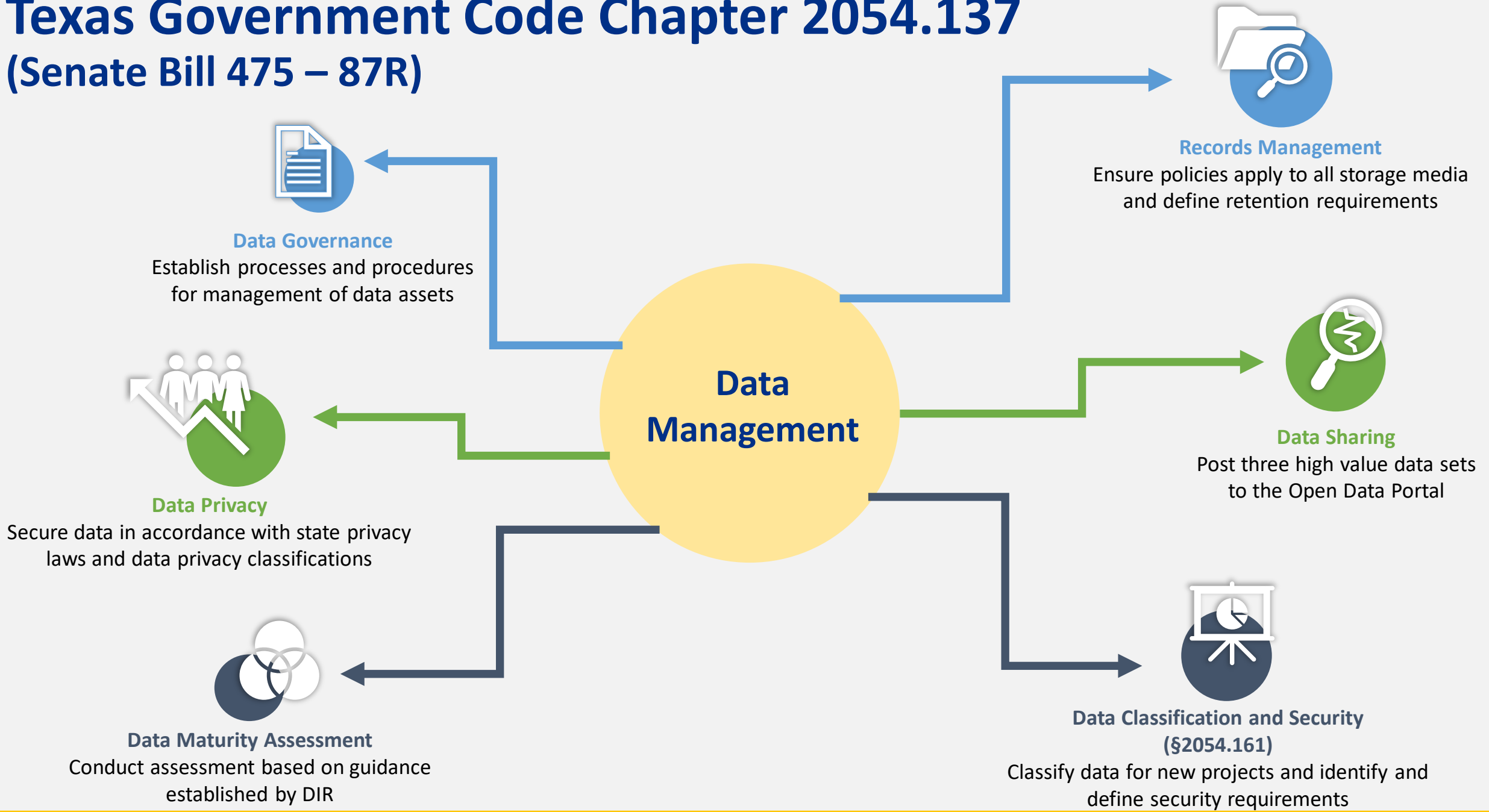


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Texas Government Code Chapter 2054.137

(Senate Bill 475 – 87R)



What is Data Governance?

Texas Data Management Framework

- Data Management Knowledge Areas
- Best practices that deliver, control, protect, and enhance the value of data and assets throughout their life cycles.
- Texas Government Code 2054.137 mandates these activities for state agencies through the Data Management Officer.



Data Governance Implementation

- Data governance tool to enable program users' engagement with and understanding of the data
- Standardized approach with concurrent training and implementation
- Program staff identifying and approving what is important
- Build champions, Metadata Workgroup, and Community of Practice
- Build data asset repository



Challenges and Lessons Learned



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Challenges and Lessons Learned

- Cost and funding
- COVID pandemic
- Cloud roles and responsibility
- Avoid vendor lock-in
- Collaboration
- Data governance implementation



Future Plans



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Next Steps

- Continue to build SHARP:
 - Enable/enhance self-service analytics
 - Enable/enhance self-service metadata documentation
 - Add additional data sets
- Expanded data governance:
 - Metadata Workgroup under Data Governance Council
 - System scanning and metadata documentation
- Enhanced data sharing:
 - Dashboard for public and public health partners
 - Standardized data sharing procedures and governance
- Enhanced training and communications



Thank you!

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