FRESENIUS MEDICAL CARE

Strategies for Establishing a Data Governance Framework

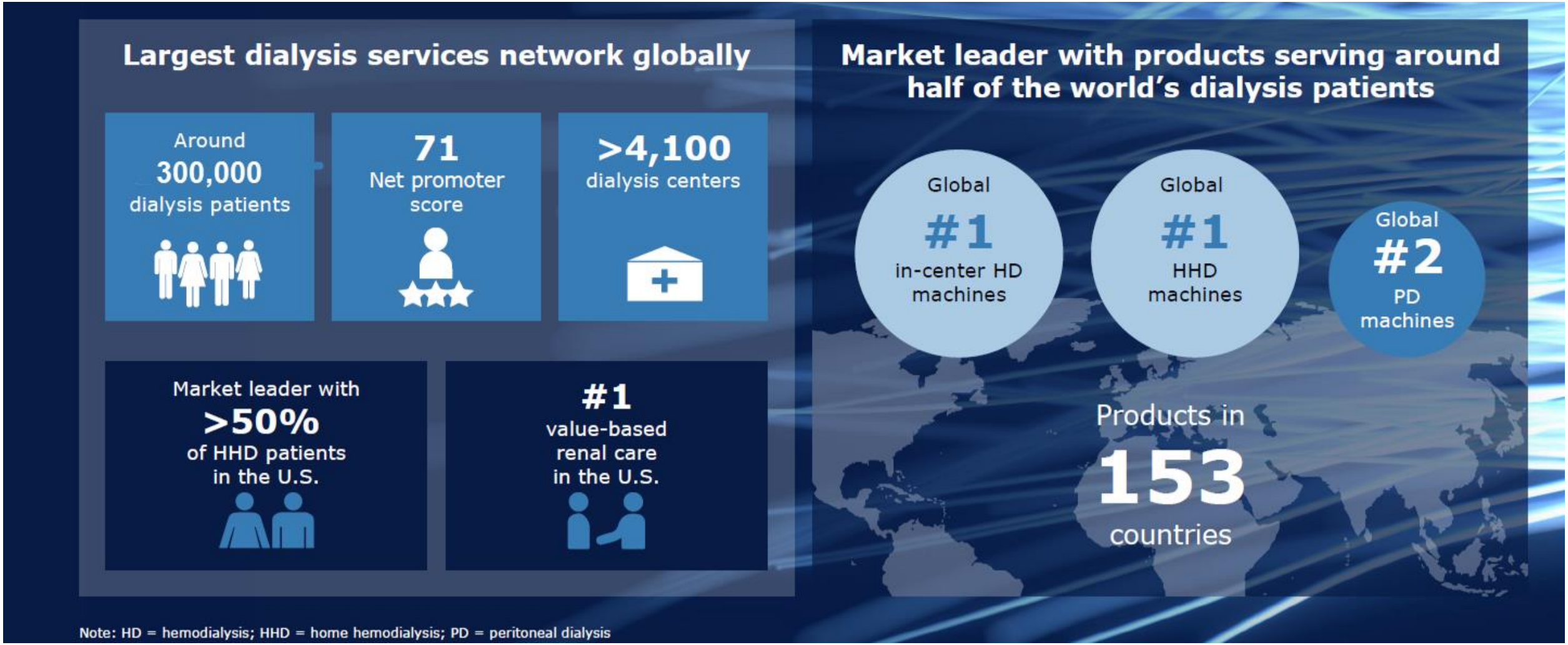
Engaging the business to implement policies and processes that ensure data quality, consistency, and compliance

Carly Van Zandt

Head of Data Stewardship

Sr Dir Data Governance

Fresenius Medical Care is the world's leading provider of products & services for individuals with renal diseases.



Over 128,000 staff in 153 countries across multiple business lines

FRESENIUS KIDNEY CARE

ACUMEN PHYSICIAN SOLUTIONS

FRESENIUS PHYSICIAN SOLUTIONS

FRESENIUS MEDICAL CARE
RENAL THERAPIES GROUP

NATIONAL CARDIOVASCULAR PARTNERS

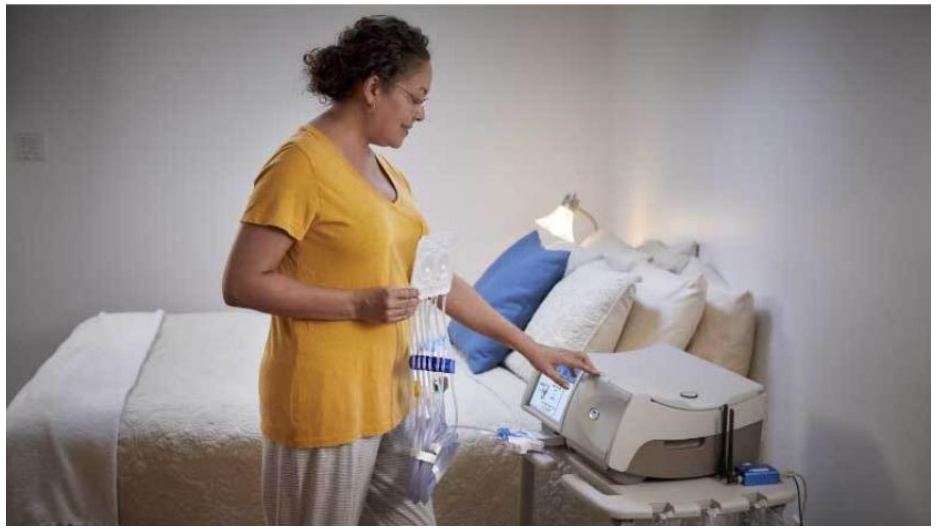
Frenova Renal Research

RENAL RESEARCH INSTITUTE

azura vascular care

FRESENIUS KIDNEY CARE
PHARMACY

spectra laboratories



Fresenius Medical Care's Data Profile

- Over **25 years** of data
- Data has been gathered on **~ 2 million patients historically**
- **~90,000 clinical data points per patient per year** (excluding machine data)
- Dialysis Machine data collected on a continuous basis every 10 second during treatment, which is about **4 Trillion machine data points per year**
- About 20% of data is Global (non-U.S.) and **80% is U.S.**

FRESENIUS MEDICAL CARE

Step 1: Identify and Engage Stakeholders

How to Engage the Business Stakeholders

Who are the business stakeholders? What are their priorities?

- Identify different data domains of your company and their head stakeholders (top-down)
- Calculate actual and possible negative **financial impacts** of poor data governance for each specific data domain if possible
- Give examples of actual and possible negative **business impacts** of poor data governance
- **Put the issues into the perspective of the business you're working with**

Example: Financial Impacts of Poor Data Governance

- **Time and effort to fix data issues, and impact on clinic staff**
  - Bad data for 21 days affected a report clinicians depend on
  - $40 avg nurse's salary per hour, 520K per day of bad data
  - Assuming 10 minutes of clinician time per error, this issue cost $4 million in additional time/effort

- **Inaccurate data sent to CMS in 2017 caused CMS to mis-calculate reimbursement rates for training treatments**
  - The resulting proposed add-on for 2017 is only 42%of the amount PHA calculated as the actual add-on cost ($229.83 actual cost vs $95.57 proposed)
  - 11,304 training treatments in 2022
  - 2.6 million vs 1.1 million
  - POTENTIAL LOSS of $1.5 million

- **Admission data issue – Data Integrity**
  - All treatments on this date were not linked to a clinic
  - 92,150 treatments – POTENTIAL LOSS of $24 million worth of treatments could have been missed

- **QIP 5-star rating – Effect of bad data which impacts QIP to new admissions in 1 year (Reputational)**
  - Analysts misinterpreting how to calculate hospitalization rates that we send to the government could cause a reduction in our 5-star rating
  - Average years on dialysis is about 5 years, therefore we lose at least $250,000 every time a patient chooses another dialysis provider

Example: Business Impacts of Poor Data Governance

Mrs. Smith never heard from the transplant center.

Data Inconsistency: her contact information wasn't updated in all systems.

My facility's hospitalization rate is too high on a report sent to the government.

Poor Data Literacy: analysts didn't understand the data and report incorrect information.

Why does the FRx report on binder utilization not match the FKC report on binder utilization?

Data literacy/Data interpretation: Lack of understanding of how data is gathered and analyzed between FKC and FRx

Why does the home growth rate from finance not match the home growth rate from FKC?

Data literacy/Bad data: Lack of understanding of how data is gathered and analyzed between analytical groups. Issues with how our EMR stores data

Mr. Robinson is still receiving home test kits, but he went back to incenter three months ago.

Data Inaccuracy: Dialysis modality & setting changes aren't being updated at Spectra. There is no data flow between FKC back to Spectra.

Talking to the Business: Why is Understanding the Data Important?

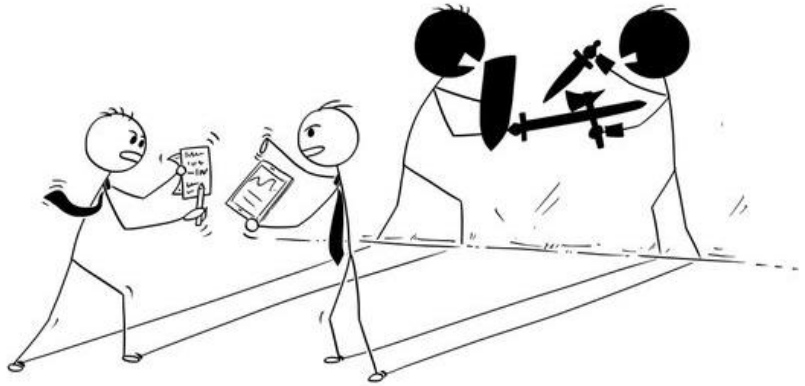
In the U.S., social workers ask about **“Household Risk”** to determine if the patient can live safely at their home, e.g., if they use a walker and have stairs to their bedroom, that is a risk.

Internationally, social workers ask about **“Household Risk”** to determine if the patient feels safe around their family members.

Talking to the Analysts: Why is Understanding the Data Important?

CVC Exposure Rate > 90 Days:

- Report 1 shows a rate of 20%
- Report 2 shows a rate of 25%



Why? Is one of the reports wrong?

NO! *Both reports are correct!*

Report 1: Denominator is all patients that were active within the **last 3 months**

- 30 patients, with 6 patients that had CVC exposure >90 days, resulting in 20% of their patients within the last 3 months.

Report 2: Denominator is all patients active **TODAY**

- 25 patients, with 6 patients that had CVC exposure >90 days, resulting in 25% of their currently active patients today.

A **Report Catalog** helps to understand the purpose of the report & can help clarify discrepancies.

FRESENIUS MEDICAL CARE

Step 2: Establishing a *Thriving* Data Governance Framework

Step 2: Establishing a Thriving DG Framework

After introducing why DG is so important, establish the DG Framework

- Discuss pain points related to data issues – every group has them
- Link Data Governance initiatives to Business Initiatives
- Establish clear roles and responsibilities
- Document each business's goals and drivers
- Create training materials
- Publish charter, framework, and the people filling these roles and responsibilities
- Meet on regular cadence with steering committee (quarterly), council (monthly) and workgroups (weekly, or on a project-by-project basis)

Data Governance Framework

Clinical Data Governance Steering Committee: Decision Makers

- Attend Steering Committee meetings
- Recommend and/or approve members of Data Governance Council
- Allocate resources to data governance activities
- Approve policies, procedures, and standards
- Set priorities for the data governance initiative
- Serves as final escalation point for challenges and/or issues that cannot be resolved by the Data Governance Council

Clinical Data Governance Council: Planners

- Recommend data stewards for each data domain
- Draft data governance policies, standards, and/or standard operating procedures
- Train personnel on data governance activities and best practices
- Within the prioritization set by the Steering Committee, prioritize the work of the domain-specific workgroups
- Approve recommended system enhancements recommended by the domain-specific workgroups
- Identify data-related pain points

Data Domain Workgroups

- Create and maintain business glossary terms
- Create and maintain report catalogs, data dictionaries, any other appropriate metadata, and applicable reference data
- Train personnel on data governance activities and best practices
- Serve as second tier of support for investigating data issues
- Identify data-related pain points
- Recommend system enhancements to resolve data issues and minimize recurrence
- Provide input to policies written by the Data Governance Council

Data Domain Owners: Business SMEs

Data Stewards: Business Data SMEs

Technical Stewards: Technical Data SMEs

Data Consumers

Data Governance Roles and Responsibilities

Data Domain Owner:

- Senior stakeholders within your organization who have the authority to make decisions about definitions, data quality, accessibility & retention requirements as they tie to the business needs.
- May appoint one or more Data Stewards to assist them in their responsibilities.

Business Data Steward:

- Assists the Data Domain Owner(s) in their responsibilities & has the delegated authority to make decisions about definitions, data quality, accessibility & retention requirements as they tie to the business needs.
- May have the knowledge and expertise to investigate data issues & assist in developing / designing database views & columns.
- May serve as an SME for data domains & should have a general knowledge of the business context of the data.

Analytical Data Stewards:

- Manages & oversees the quality, security, & usability of analytical data within an organization.
- Ensures that data used for analytical purposes (such as business intelligence, reporting, & data analysis) is accurate, reliable, & meets the needs of data consumers with collaboration from the Data Domain Owners (or delegated Business Steward).
- May be involved in data governance, establishing policies & standards for data management.
- May collaborate with stakeholders to optimize data usage for decision-making and strategic planning.

Technical Data Stewards:

- Provide the technical expertise around source systems, extract, transform, & load (ETL) processes, data stores, data warehouses, & Business intelligence tools.
- Explain how a system or process works (or doesn't).
- May assist the Data Steward in their responsibilities.
- May have the knowledge & expertise to investigate data issues & assist in developing / designing database views & columns.

Data Domain Buildouts

Start simple! Have examples and templates ready

- Business Glossaries (business terms and acronyms/abbreviations)
- Report Catalogs
- Data Dictionaries
- Reference data
- Policies and Procedures

Some of our favorite questions to ask:

- What information do you use to onboard a new employee?
- What data do you keep in spreadsheets?
- How many times have you heard someone using an acronym and had no idea what it meant?
- Have you ever heard one team using the same term to mean something different?

Align Business Goals with Data Governance Goals

What are the top business goals/priorities of the company?

Which data is needed to measure those goals/priorities?

What pain points do you have when dealing with that data?

Do you trust that data?

FRESENIUS MEDICAL CARE

Step 3: Measure Data Governance Successes with KPIs and ROIs

Step 3: Help DG thrive - Track Success and ROIs

Create your own KPIs to measure DG success	• Data Governance Maturity Assessments
Track DG Activities	• Data Governance Helpdesk
ROI calculations	• Reference Data Management model • Survey to users to calculate how much time and effort saved with good DG practices

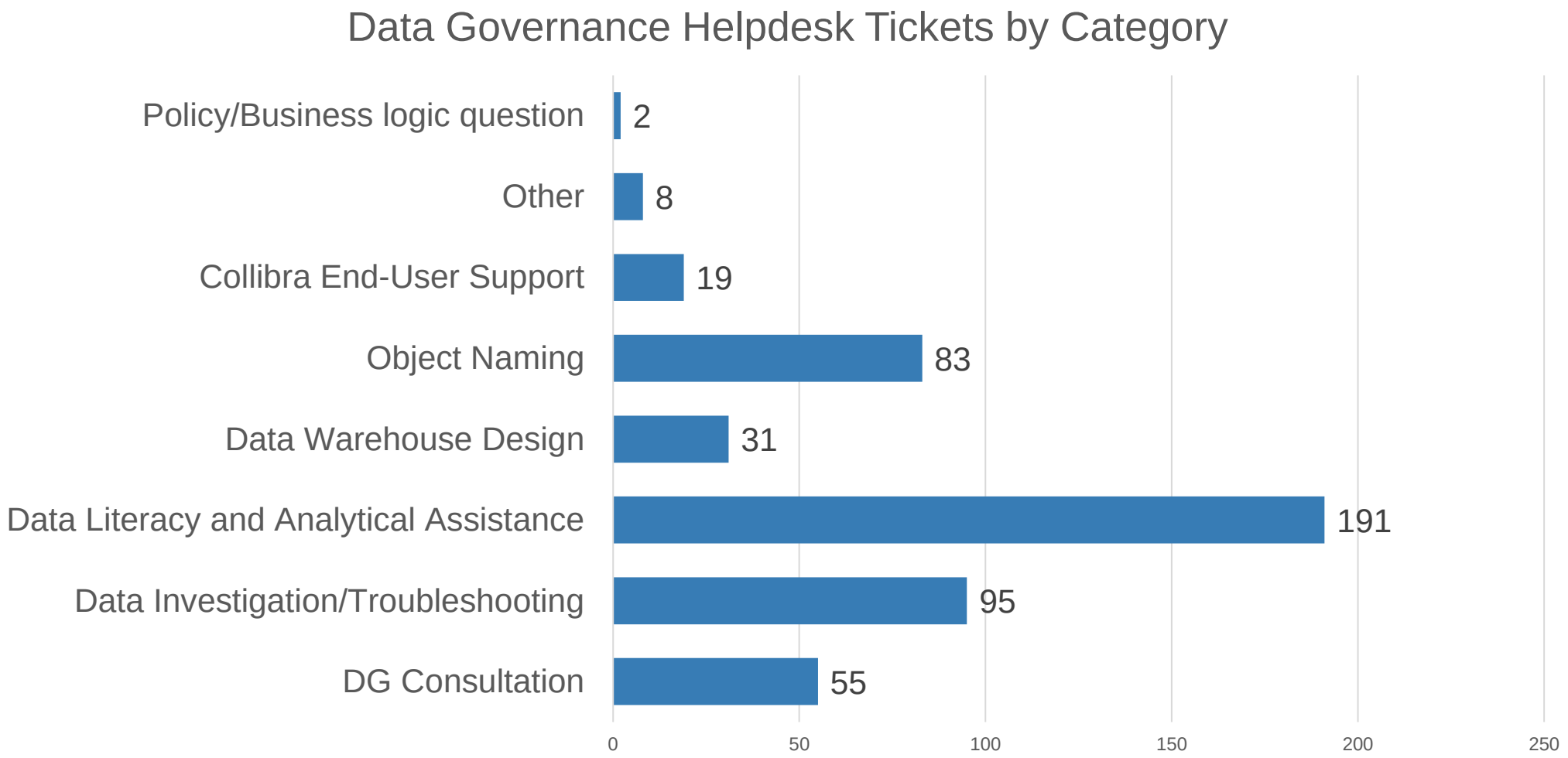
DG Maturity Assessment 2023

Data Governance Office (DGO) has conducted surveys to measure our business's current maturity level of governing and managing U.S. clinical data.

Response scale: 1 = Strongly disagree; 2 = Disagree; 3 = Neither agree nor disagree; 4 = Agree; 5 = Strongly agree; 0 = N/A

1. The DGO has data policies and procedures in place in regards to clinical data storage and usage
2. Senior leadership is fully aware of and involved in clinical data management initiatives
3. There is a single, centralized place I can go to understand information about clinical data (a centralized glossary of business terms, technical data dictionaries, definitions of KPIs, etc.)
4. I can easily find and use the clinical data that I need
5. I can easily determine the source of clinical data in a report or dashboard
6. I trust that the clinical data behind reports and dashboards are accurate
7. Our clinical data is of high quality (accuracy, completeness, timeliness)
8. The DGO has established and documented processes and responsibilities for measuring and maintaining clinical data quality
9. The DGO has a formal, documented process to manage clinical reference data (e.g., organism gram type, diagnosis code classifications, etc.)
10. Communications about clinical data issues and updates are relevant, accurate, complete, and timely
11. When I raise concerns about proposed or planned clinical data changes, my concerns are heard and addressed
12. Clinical data changes are well-planned, aligned with business goals, and widely communicated
13. I know who to go to when I have issues or questions related to clinical data

Data Governance Helpdesk Tickets 2021-2024



DG ROI Example #1

Explanation

- Increased time and effort for the business to maintain clinical reference data in manual spreadsheets
- Every time a change needs to be made to these spreadsheets, IT must create a full Jira story to migrate the spreadsheet in the data warehouse for data analyst/report consumption
- Inefficient use of time and effort, putting most of the work on IT instead of the business data stewards

Benchmarks

Measured via actual Jira stories, IT DEV and QA time, and estimated hourly rate

Calculation

INCREASED PRODUCTIVITY: Data Analytics Teams		
Current Investments	A. # reference data subject areas maintained via manual spreadsheets	18
	B. Hourly rate of Development time * actual hours for each reference data management Jira stories	$141,400
	C: Hourly rate of QA time * actual hours for each reference data management Jira stories	$49,350
	C. Total annual cost ($) (A * B)	3,433,500
Fresenius Actual	D. % of reference data subject areas maintained in Collibra, no IT work needed	44%
Adoption Level	E. % impacted by Collibra (%)	100%
Business Value	F. Redirected FTE capacity (#) ((A * D * E))	
	G. Annual capacity savings ($) (C * D * E)	**1,510,740**

Data

- *Customer input: A, B, C*
- *Benchmark: E*
- *Calculation: D, F (rounded), G*

DG ROI Example #2

Explanation

- Increased time working with data vs. locating, organizing and preparing data for use
- Ability to use the data insights to perform analyses faster
- As a result, ability to perform more analyses (increased throughput) to generate improved business outcomes

Benchmarks

Measured via discussion with analytical teams, determining about 4 weeks of saved time per year, contributing to 9% higher gross productivity for data analyst teams

Calculation

INCREASED PRODUCTIVITY: Data Analytics Teams		
Current Investments	A. # of Data Analysts (#)	100
	B. Average annual fully loaded cost per ($)	$124,800
	C. Total annual cost ($) (A * B)	$12,480,000
Fresenius Actual	D. Productivity improvement (%)	9%
Adoption Level	E. % impacted by Collibra use cases (%)	80%
Business Value	F. Redirected FTE capacity (#) ((A * D * E))	7.2
	G. Annual capacity savings ($) (C * D * E)	**$898,560**

Data

- *Customer input: A, B, C*
- *Benchmark: E*
- *Calculation: D, F (rounded), G*

FRESENIUS MEDICAL CARE

Thank you