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Predictive Analytics

August 18, 2015

Panel Members

- Mark Linver – Managing Director, Huron Life Sciences

- John Patrick Oroho, Esq. - Executive Vice President and Chief Strategy Officer, Porzio Life Sciences

- Brian J. Conner - Senior Director, Asst. Corporate Compliance Officer, Shire Pharmaceuticals, LLC

- Holly Kramen - VP, Global Compliance Officer, Circassia Pharmaceuticals plc

Agenda

- Utilizing Open Payment Data
- Predictive Analysis
- Applying Forecasting Techniques
- Creating Analysis Tools

Opening Statement

The following discussion will highlight types of analytics that can be accomplished using publically available Open Payments datasets, limitations that exist within the data, and different approaches for preforming the analytics.

This discussion will not include any specific data or analysis preformed by any of the companies represented on the panel or in attendance. The opinions expressed by panel members are their own, not their respective employer. For confidentiality purposes, please keep discussion at the industry level without speaking to any individual company specifics.
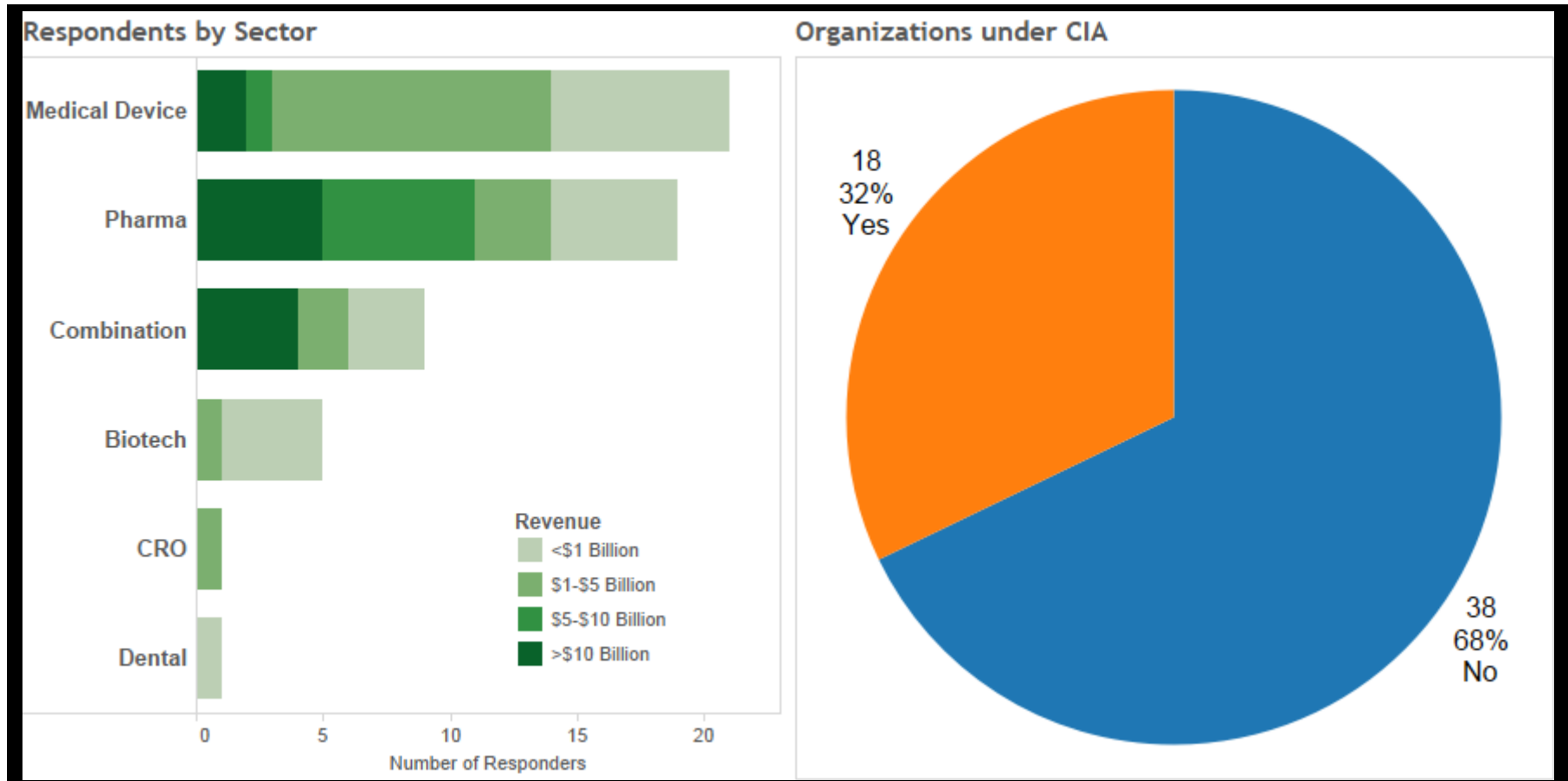
Utilizing Open Payments Data

Industry Survey Overview

- Over the past two years, Huron surveyed Pharmaceutical, Med Device and Dental manufacturers to gain insight into Industry current practices for managing the Aggregate Spend Environment

- For 2015, Huron survey focused on infrastructure, staffing and approach to analyzing published data

3rd Qtr. 2014 Survey Response Overview

SURVEY DEMOGRAPHICS

Responses were received from 56 respondents crossed pharmaceutical, biotechnology, and medical device manufacturers and were of a variety of sizes.
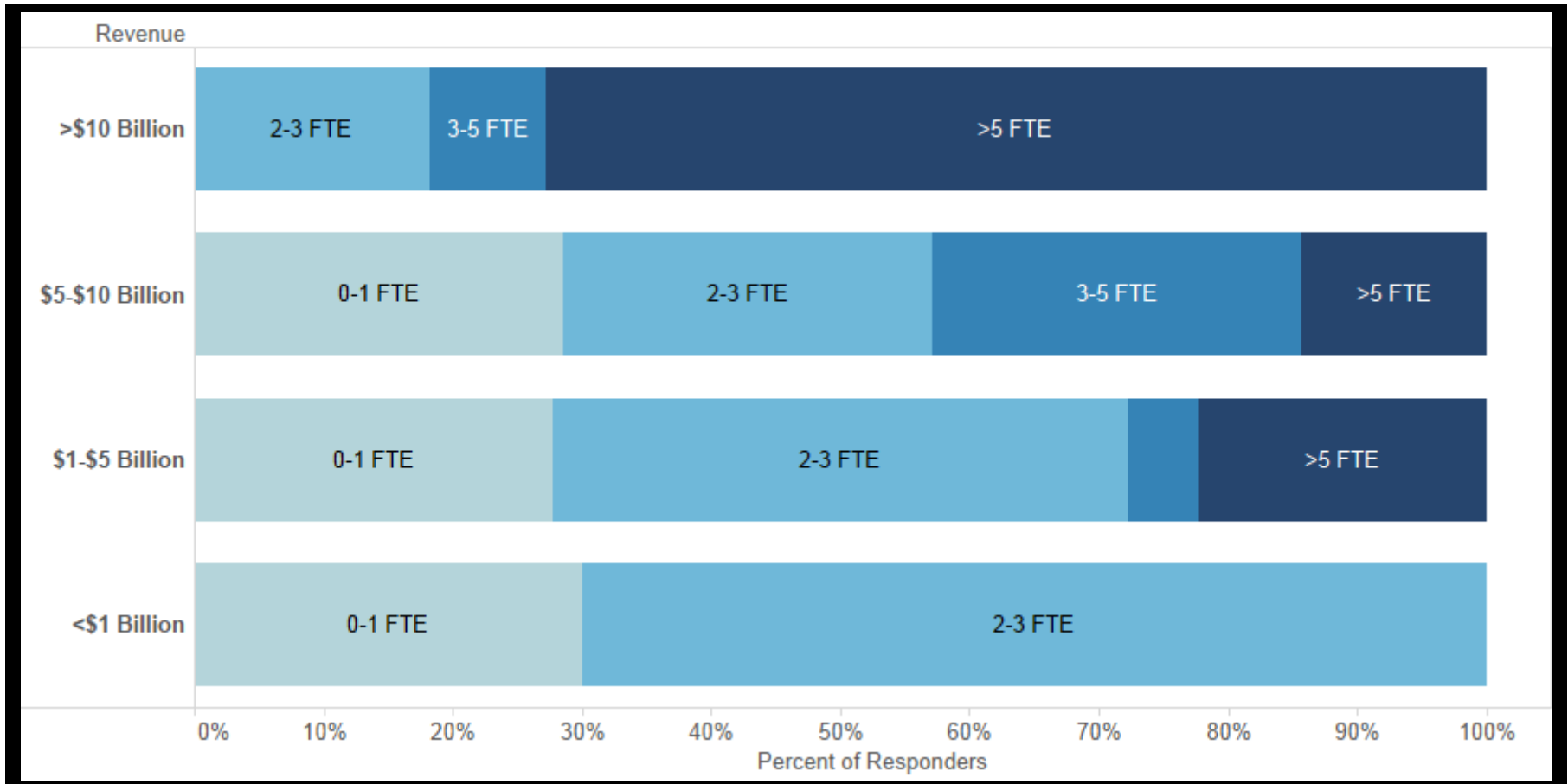
Survey Question: What department is Responsible for Managing Transparency?

- For a majority of manufacturers compliance is responsible for managing and utilizing open payments data
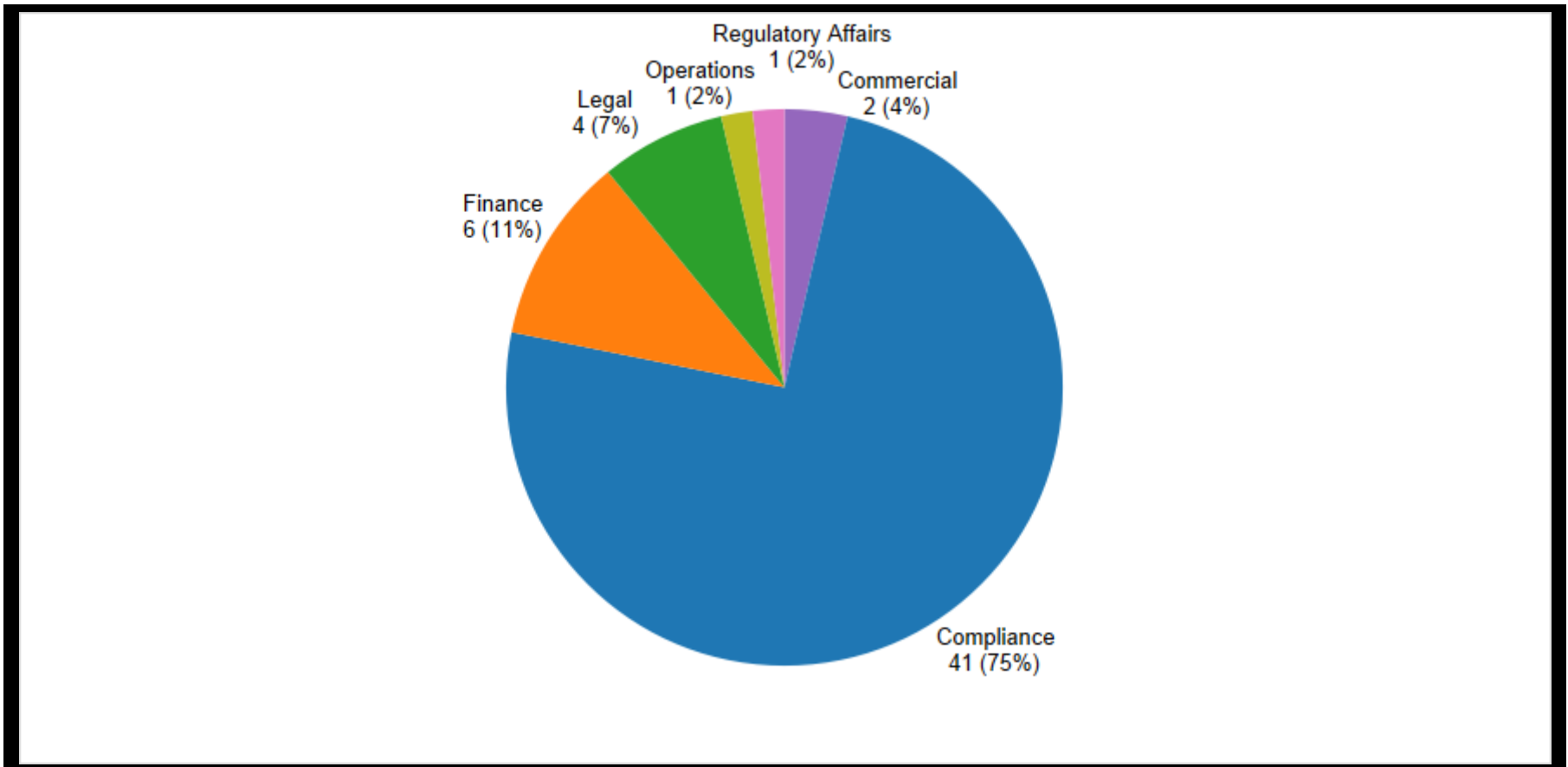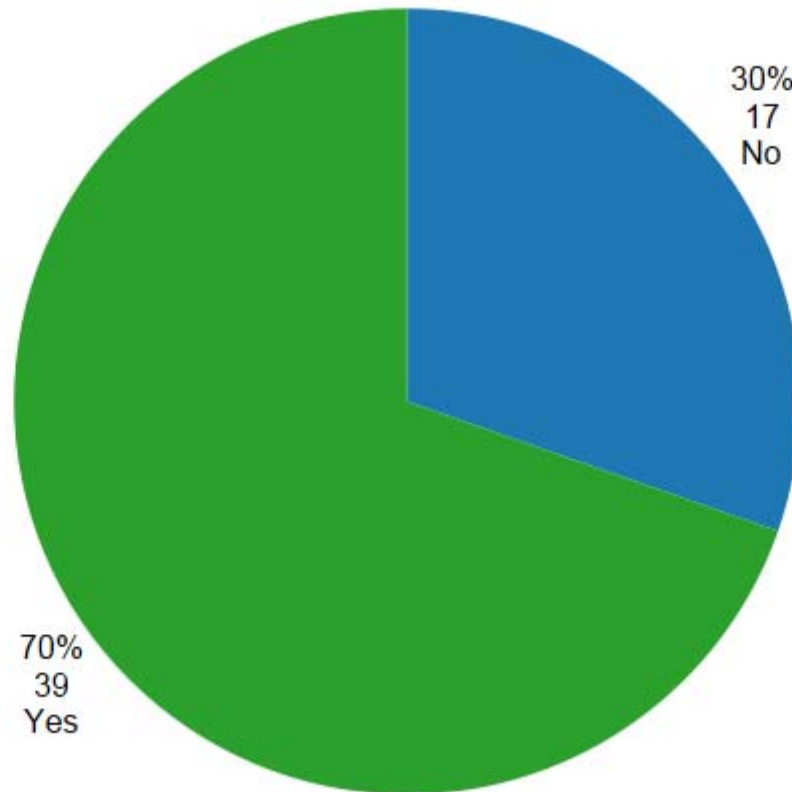
Survey Question: How many FTEs support the transparency reporting function?

- The number of FTEs increases with company size

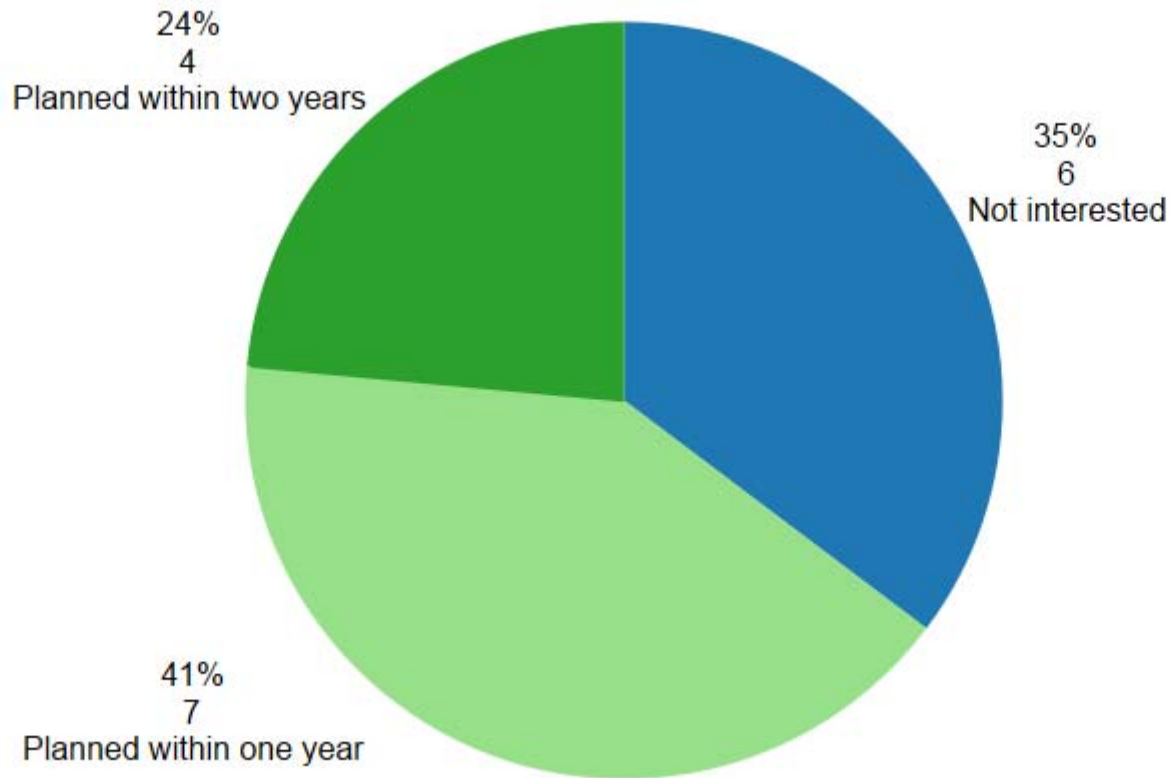# Have You Conducted Analysis on CMS's Open Payments Data?

- Most respondents have conducted analyses using Open Payments data

30%
17
No

70%
39
Yes

Do you plan on conducting an analysis using Open Payments data?

- Of the respondents that have not yet conducted analysis, most plan to do so within one or two years.

24%
4
Planned within two years

35%
6
Not interested

41%
7
Planned within one year

Addressing Limitations in Published Data

For both 2013 and 2014 submissions, manufacturers encountered issues during submission.

Some of the issues became apparent when conducting analysis and teams encountered limits to the datasets.

- Inconsistent categorization

- Bulk payments

- Multiple products

- Subsidiaries and parent companies

Which Internal Functions are Interested in Analyzing Open Payments Data?

- Most analysis is conducted by Compliance organizations

Which internal functions are interested in conducting analysis on Open Payments data?
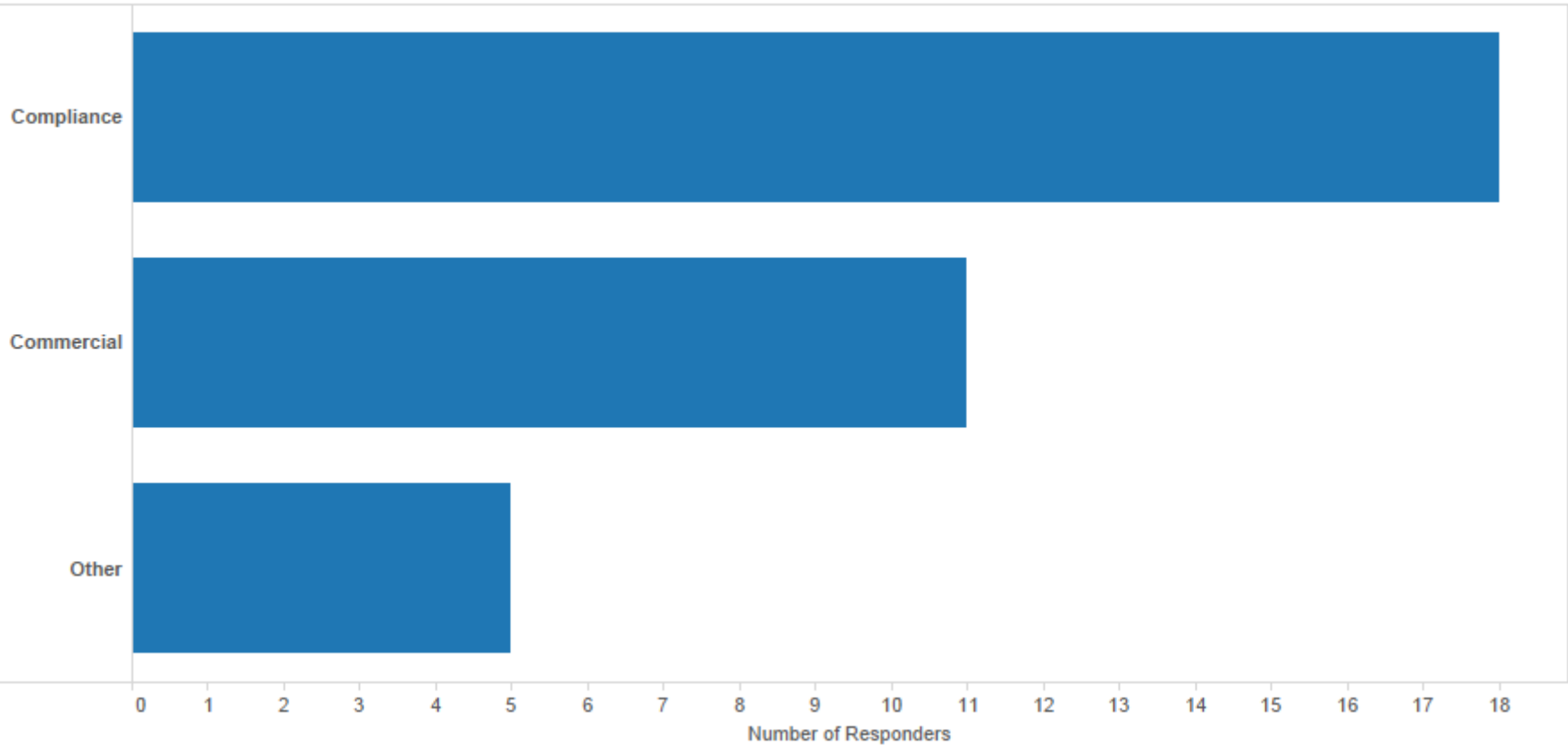
Which Internal Functions are Interested in Analyzing Open Payments Data?

- Second to Compliance, Commercial organizations are interested in analyzing spend data

Compliance	Commercial Insights
• Benchmark overall spend volume by type against identified competitors • Identify activity outliers compared to broader industry data	• Identify KOLs that manufacturers share or do not share with key competitors • Compare engagement (e.g. meal) frequency/spending against key competitors • Benchmark meal spending, travel expense, or other activity as a percent of revenue compared to peers • Review geographic coverage of activities and compare to peers

Predictive Analytics

Can you conduct or provide analytics?

- When asked this question most respond in broad general terms that translate to
  - "we want you to provide us meaningful insight that's contained in our data."
- Analytics is a broad term that is used by almost everyone and that "meaningful insight" means something different to each person asking the question depending on their operational or strategic point of view.

Deterministic and Stochastic Analysis

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- ## Deterministic Analysis

  - Analysis of data or an environment without taking the probabilities of different events or sequences into account

  - Current method of analyzing CMS data as a "look back" to understand last year's spend or HCP behavior, utilizing the following tools

    - Data visualizations utilizing Tableau,

    - Business Intelligence applications,

    - Excel

What Tool Do You Use to Perform Analysis

- Majority of respondents utilize Excel to conduct HCP analysis

What tool did you use to preform analytics?

- 7% 1 MediSpend Insight
- 7% 1 Click View
- 21% 3 CMS Data Explorer
- 64% 9 Excel/Access/SQL
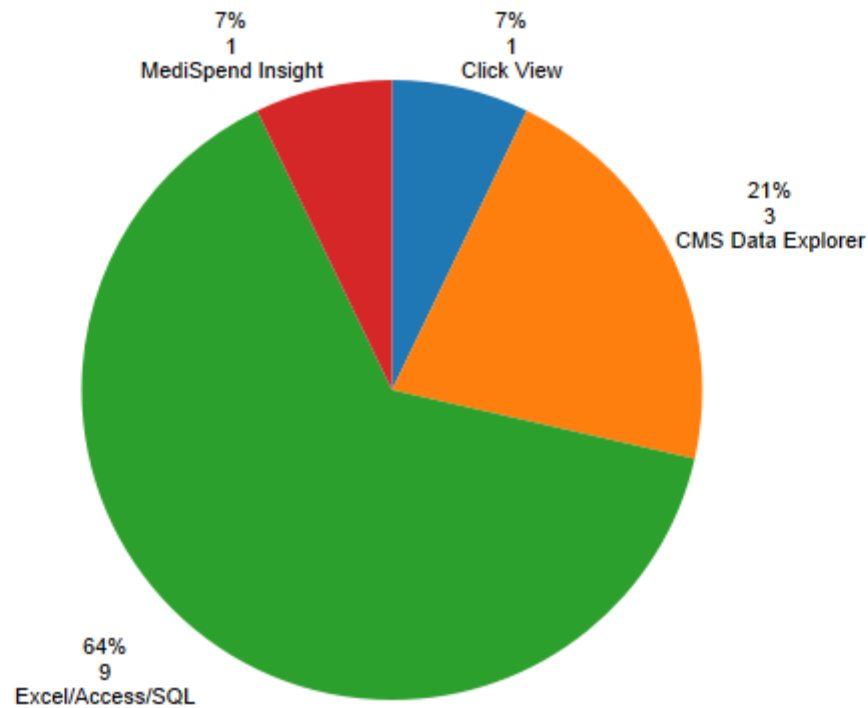
Example Analysis Utilizing Tableau

HCP Utilization Overlap Between Products
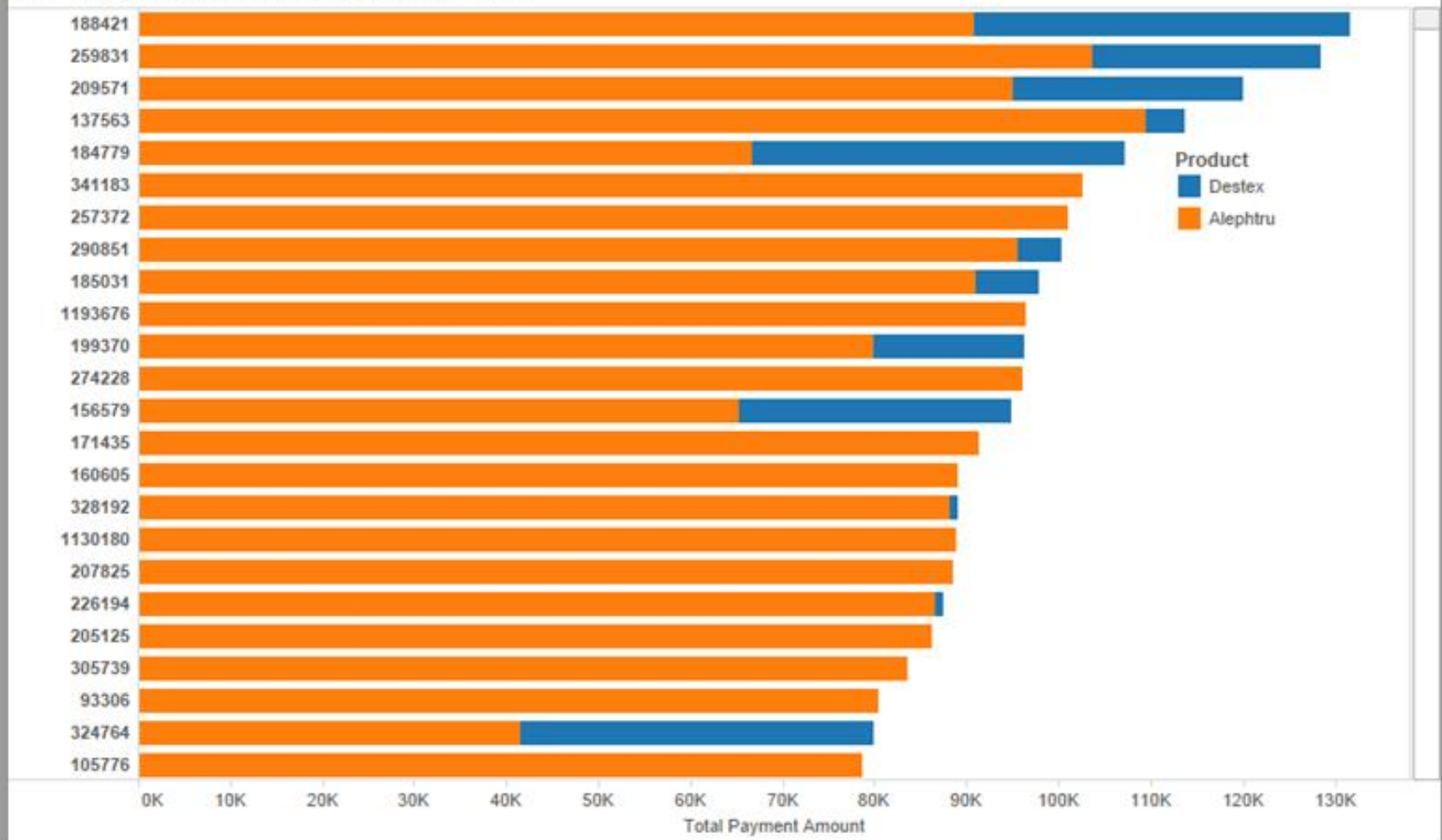
■ Stochastic (or Predictive) Analysis

- A method of analysis, using historical data, that estimates the probability of outcomes within a forecast to predict what conditions might be like under different situations.

- Stochastic Analysis is the foundation for "Predictive Analytics"

Use Historical data to identify trends or patterns and apply statistical forecasting techniques to predict probable outcomes

For Compliance, What Spend Types Will You Analyze?

- Most analysis is conducted on Consulting Fees and the almost equal focus on Speaker Programs, Meals and Research

What spend types are you interested in analyzing?

Deterministic and Stochastic Analysis

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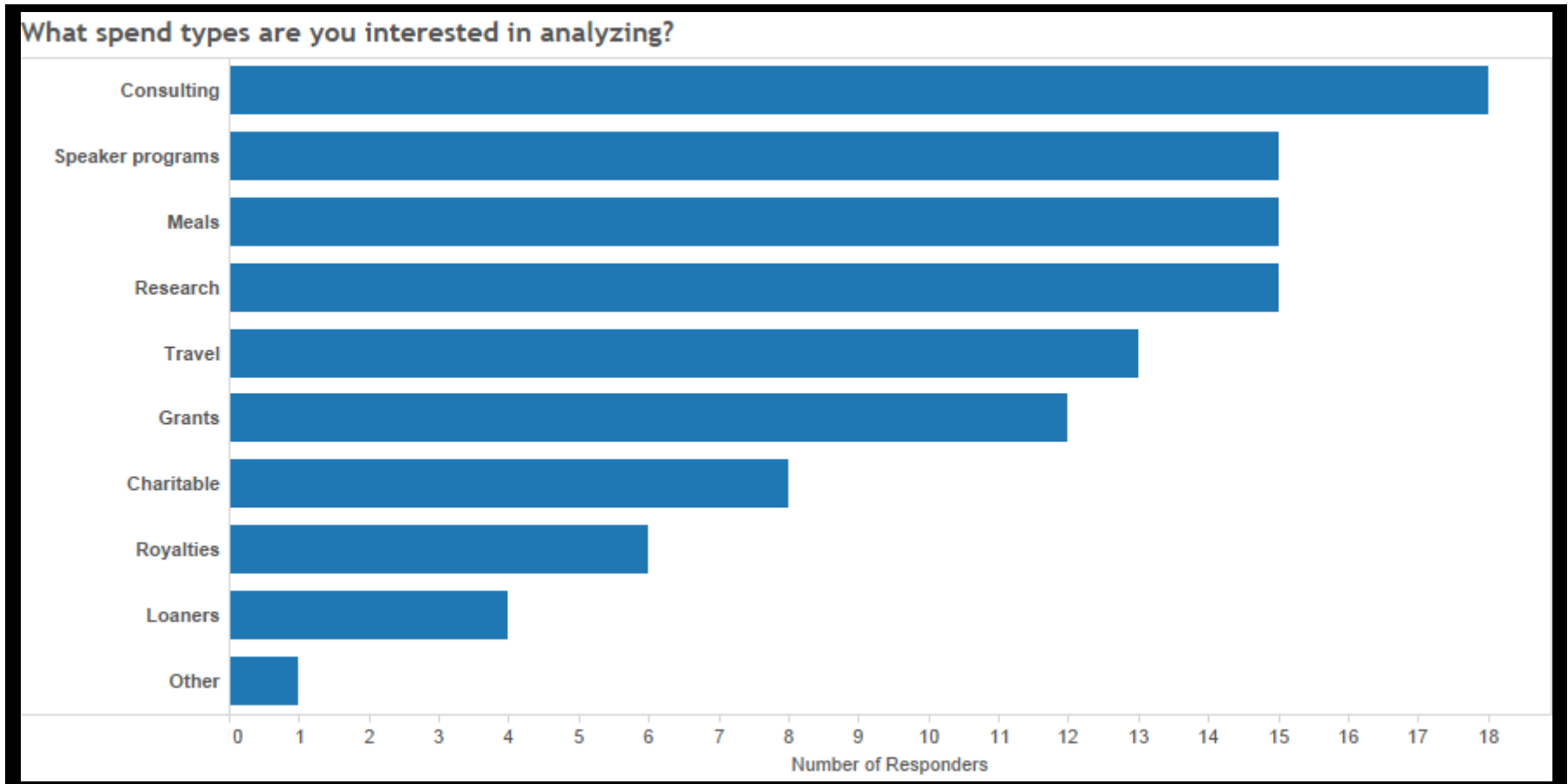
- What types of analysis and outcomes are of interest?
    - Open payments speaker spend tied to script data; identify potential undue influence
    - KOL scoring; identification of emerging thought leaders
    - Predictive analysis against commercial and government sales, claims
- What issues or constraints do you perceive in using predictive analytics?
    - Data
    - Tools
    - Outcomes
    - Compliance

Deterministic and Stochastic Analysis

Analytics Definition

Examples

Competitive Advantage (vertical axis)

Optimization	"What's the best that can happen?"	
Predictive Modeling	"What will happen next?"	**Predictive Analytics**
Forecasting/extrapolation	"What if these trends continue?"	
Statistical analysis	"Why is this happening?"	
Alerts	"What actions are needed?"	
Query/drill down	"What exactly is the problem?"	
Ad hoc reports	"How many, how often, where?"	**Descriptive Analytics**
Standard Reports	"What happened?"	

Sophistication of Intelligence (horizontal axis)

Predictive Analytics:
- Commercial and Government customer behavior modeling
- Identification of emerging KOLs
- Speaker bureau optimization

Descriptive Analytics:
- HCP Speaker and Consultant spend comparisons
- Program identification and speaker bureau sizing
- Periodic trend analysis

* Source: Competing on Analytics: The New Science of Winning (Davenport / Harris)

Creating Analysis Tools

Resource Challenges When Developing Analysis Tools

- Effort to access and load data and develop analysis models is complex and should be approached as a well-planned effort:
  - ✓ Actionable goals and measures of success should be established from the onset.
  - ✓ As Open Payments touches multiple business units (Sales, Research, Compliance, Marketing, Medical, etc.), all stakeholders should have a seat at the table for implementing an analysis platform.
  - ✓ Project should be a partnership between Compliance and business leads that understand the underlying data.
  - ✓ Integrated approach, however, must be balanced with the need to adhere to applicable regulations and policies which is where the compliance functions role comes into play.

Questions?

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