Compliance Is Mandatory. Complexity Is Not.™

MEDISPEND

Improving Global Compliance for the Life Science Industry

MediSpend | Insight Analytics

Mini Summit 8: Analytics with Reference to Transparency and/or Monitoring

Tuesday, April 9, 2019
The 13th International Pharmaceutical and Medical Device Compliance Congress
Athens, Greece

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Terminology, Definitions and Architecture

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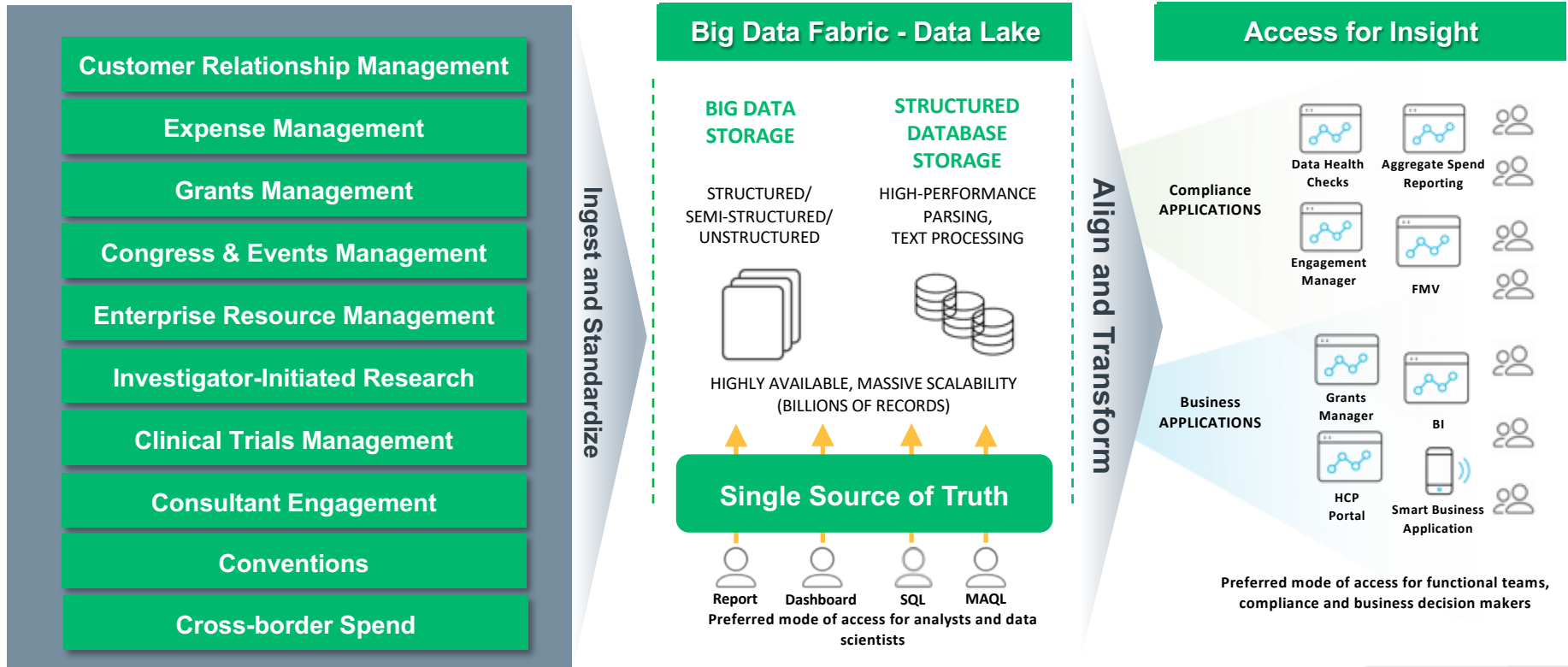
Terminology and Definitions

Item	Description
LDM	Logical Data Model – A representation of a system's database expressed in a way that is independent of the underlying database structure. This model is usually sufficient to depict how data elements relate to each other
Attribute	An element or property used to describe something about a row of data such as type, color, name, or location.
Dimension	A structure that represents categories of data. Common dimensions are covered recipient, state, country, specialty and time (calendar). Many attributes are part of a dimension.
Measure and Metric	A measure of a numeric value that represents a tangible quantity of something important for the business to track (i.e. spend amount, expense amount). A metric captures some higher function such as spend amount per day, total spend, etc...

Terminology and Definitions

Item	Description
Fact	A significant event or occurrence in the business, typically accompanied by attributes of dimensions. A Transfer of Value is a typical fact containing the spend measure and/or the total spend amount metric.
Aggregate	A function where metrics or measures where multiple rows are grouped together to generate a single value, i.e. average spend, greatest spend, top 10 total spend
Drill-down	The process of navigating in a hierarchical dimension. Drill Down zooms in to more detailed data by changing dimensions.

Life Science Data & Analytics Ecosystem

Customer Relationship Management	
Expense Management	
Grants Management	
Congress & Events Management	
Enterprise Resource Management	
Investigator-Initiated Research	
Clinical Trials Management	
Consultant Engagement	
Conventions	
Cross-border Spend	

Ingest and Standardize

Big Data Fabric - Data Lake

BIG DATA STORAGE

STRUCTURED/ SEMI-STRUCTURED/ UNSTRUCTURED

STRUCTURED DATABASE STORAGE

HIGH-PERFORMANCE PARSING, TEXT PROCESSING

HIGHLY AVAILABLE, MASSIVE SCALABILITY (BILLIONS OF RECORDS)

Single Source of Truth

Report Dashboard SQL MAQL

Preferred mode of access for analysts and data scientists

Align and Transform

Access for Insight

Compliance APPLICATIONS

Data Health Checks   Aggregate Spend Reporting

Engagement Manager   FMV

Business APPLICATIONS

Grants Manager   BI

HCP Portal   Smart Business Application

Preferred mode of access for functional teams, compliance and business decision makers

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MediSpend Insight – Data Analytics Platform

Visualize

Analytics

Automated Analytics Engine
Questions go in…

← →

User Ready Data Store
Answers come out!

Define key business metrics. Execute business rules to manage risk and monitor compliance.

Combine

Integrate and validate data. Aggregate, harmonize and prepare data for business operations.

Store

Gather and store complete history with audit trail functionality.

Collect
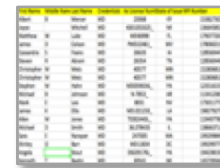
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Use Cases

- Compliance Monitoring

- Business Unit Analysis & Monitoring

- HCP Engagement Monitoring

- Market Analysis & Benchmarks

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Compliance Monitoring – Stay ahead of the business

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Compliance Monitoring – Total Spend Cap Alerts

All Commercial Spend

Physician Threshold - Analysis Vs 100K Cap

Physician Name	Credentials	Specialty	% of Cap - 100K	Spend
HOBSON, ROGER	MD	Internal Medicine	367.44%	$367,444.05
GRECO, George	MD	Internal Medicine	75.91%	$75,913.50
GRECO, Henrik	MD	Internal Medicine	73.20%	$73,200.00
HOBSON, Ginger	MD	Internal Medicine	62.66%	$62,659.51
RAYBURN, DAVID	MD	Orthopedic Surgery	22.90%	$22,900.00
MANNER, DAVID	MD	Obstetrics & Gynecology	21.00%	$21,000.00
RAYBURN, DAVID	MD	Cardiology (invasive)	20.75%	$20,750.00
		Gastroenterology	20.75%	$20,750.00
RAYBURN, JAMES	MD	Urology	19.73%	$19,730.00
TAYLOR, DONNICA	PHD	General Practice	18.51%	$18,513.15
TAYLOR, SCOTTY	MD	Dermatology	17.63%	$17,625.00

California ($1,500 Cap)

Physician Threshold - California

Physician Name	Credentials	Specialty	% of Cap - CA	Spend
JORDAN, MARSHALL	MD	Obstetrics & Gynecology	21.79%	$326.86
HOBSON, STEVEN	MD	General Practice	17.33%	$259.95
DENHAM, STEPHANIE	MD	Obstetrics & Gynecology	17.25%	$258.77

- Manage and reduce risk with real-time empirical data
- Spend alerts and threshold warnings

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Field Force Monitoring – Spending Trends – Meals
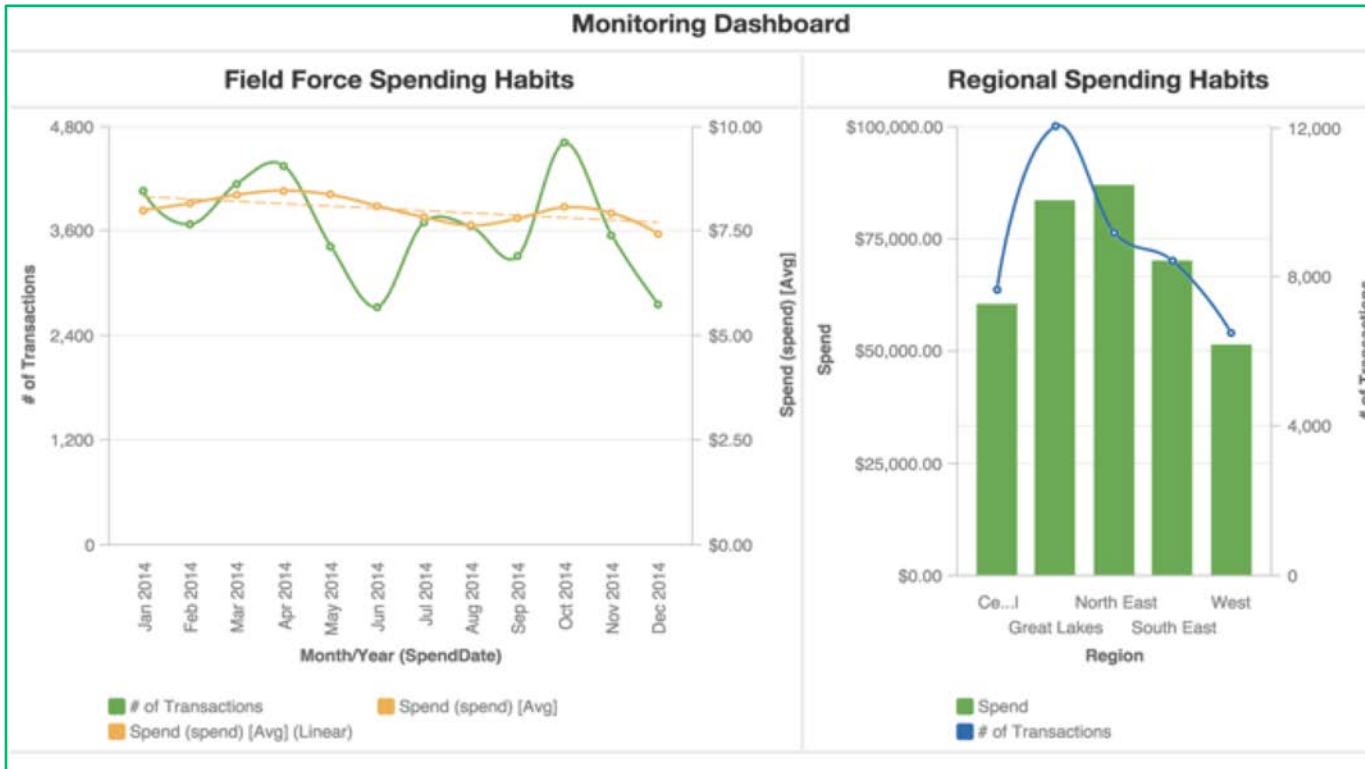
- Compare actual vs. expected spend values in real-time
- Monitor sales force behavior and trends in real-time by region

Field Force Monitoring – Spending Trends - Meals

In and Out of Office Meal Analysis

In-Office Meals
- 16%
- 3%
- 1%
- 80%

$0 - $15 | $15 - $25 | $25 - $35 | $35+

Out-of-Office Meals
- 26%
- 40%
- 10%
- 25%

$0 - $75 | $75 - $100 | $100 - $125 | $125+
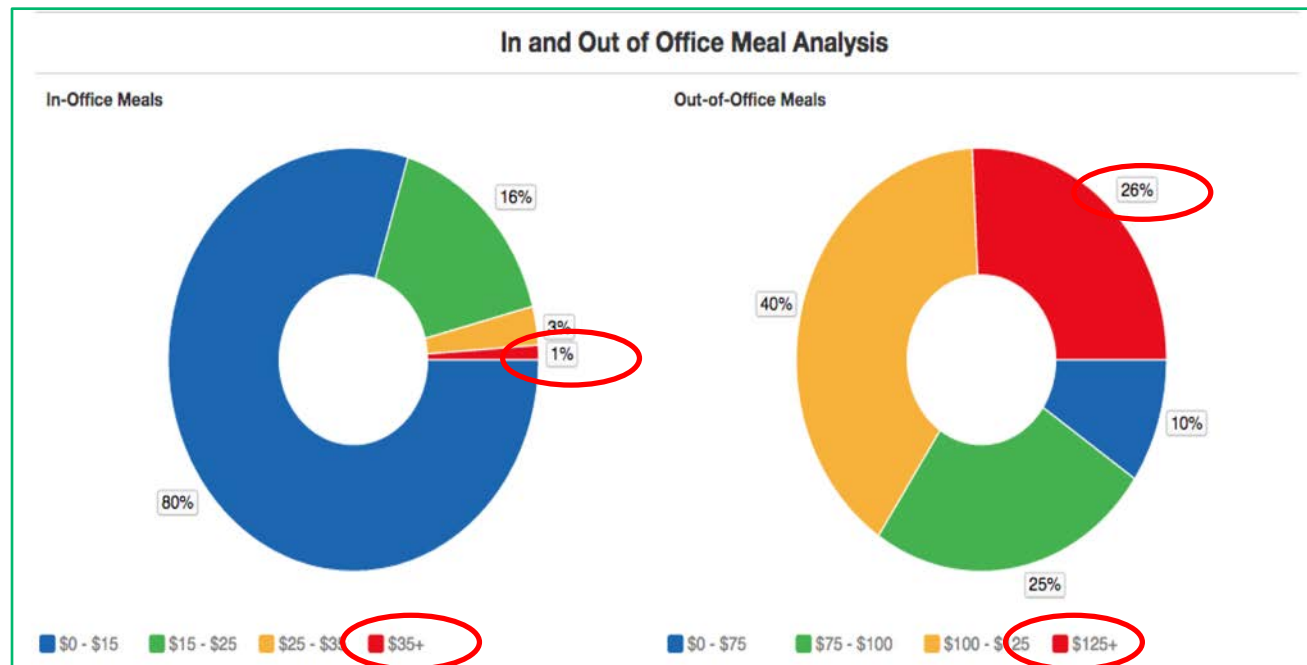
- Identify outliers to industry codes of conduct

- Real-time alerts to non-compliant behavior

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Compliance Monitoring – Off-label Analysis and Alerts

18% 1% 0%
21%
2%
3%
17%
13%
2% 2% 1%
19%
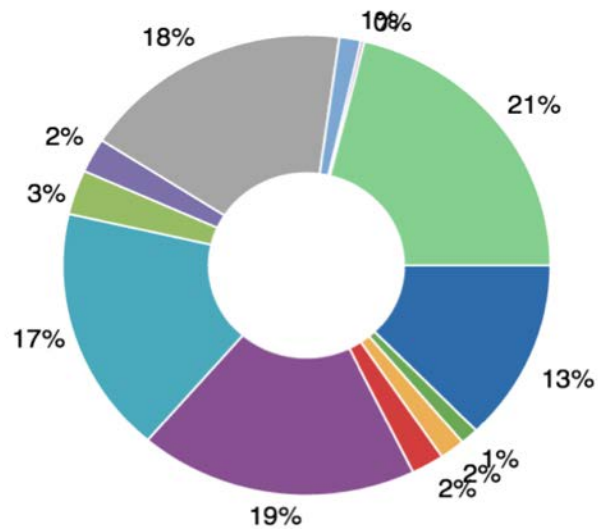
Legend:
- (empty value)
- ARNP
- CNS
- PAC
- PT
- APN
- CNM
- FNP
- PHARMD
- Resident
- APRN
- CNP
- LPN
- PHD
- RN

Identify transactions with a high number of non-prescriber attendees

Credentials	# of Transactions	Spend
RN	204	$9,042.25
CNM	70	$2,450.78
PHARMD	14	$1,279.07
APN	9	$541.11
PAC	23	$464.51
ARNP	4	$326.56
APRN	13	$268.02
PT	2	$127.36
CNS	9	$119.49
Resident	1	$77.55

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Physicians vs. Non-Physicians

Non - Physicians at Speaker Programs

- ✅ Analysis of credentialed versus non-credentialed attendees

- ✅ View of Top N in spend driven by filter criteria

33%

33%

33%
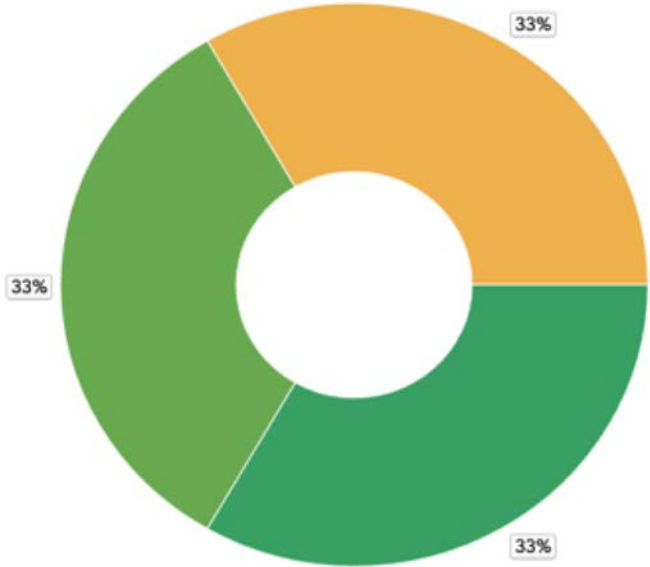
■ Nurse Practitioner (NP)   ■ Physical Therapist (PT)   ■ Physician Assistant (PA)

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Complete Travel Spend Availability
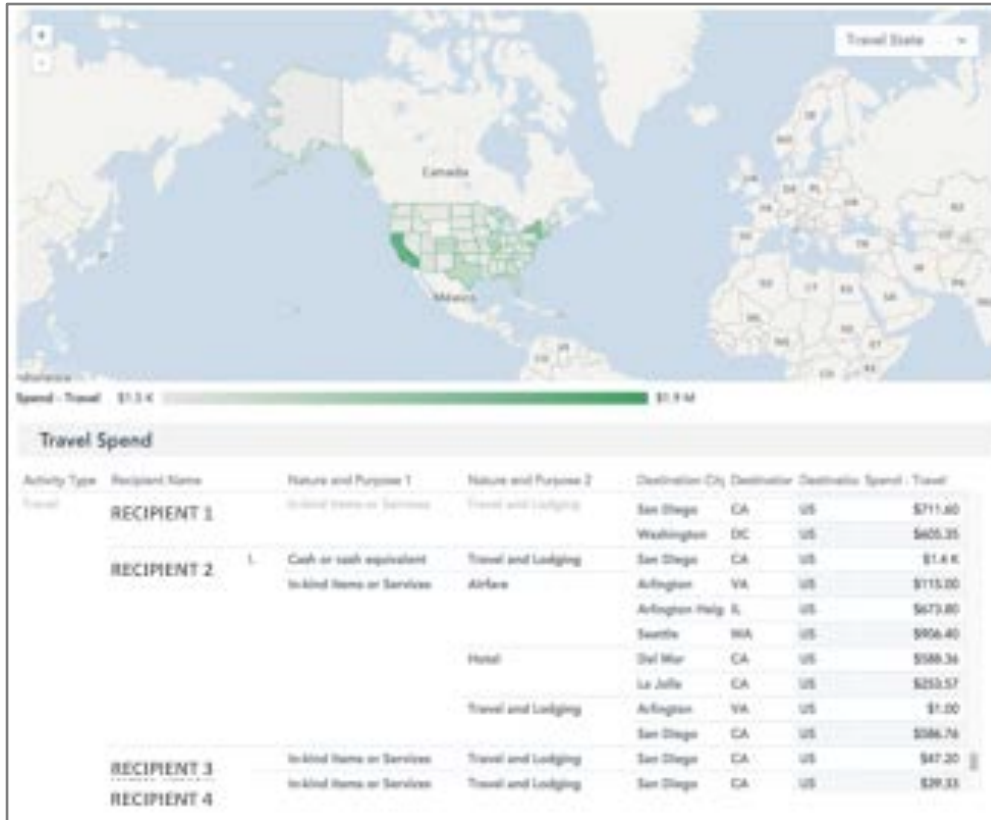
- Global Nature and Purpose analysis.
- Spend Activity Type by category
- Values of 'Travel' and 'Travel and Meals combined' displayed in the Travel Map and Travel Spend report.
- Alerts, warnings and monitoring dashboards and email notifications.

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Physician Total Spend Outlier Analysis

Physician Spend vs. Transactions

Covered Recipient (spend): **RAYBURN, JAMES**
# of Transactions: **109**
Spend: **$93,552.23**

Spend axis: $400,000.00, $300,000.00, $200,000.00, $100,000.00, $0.00

# of Transactions axis: 0, 60, 120, 180, 240
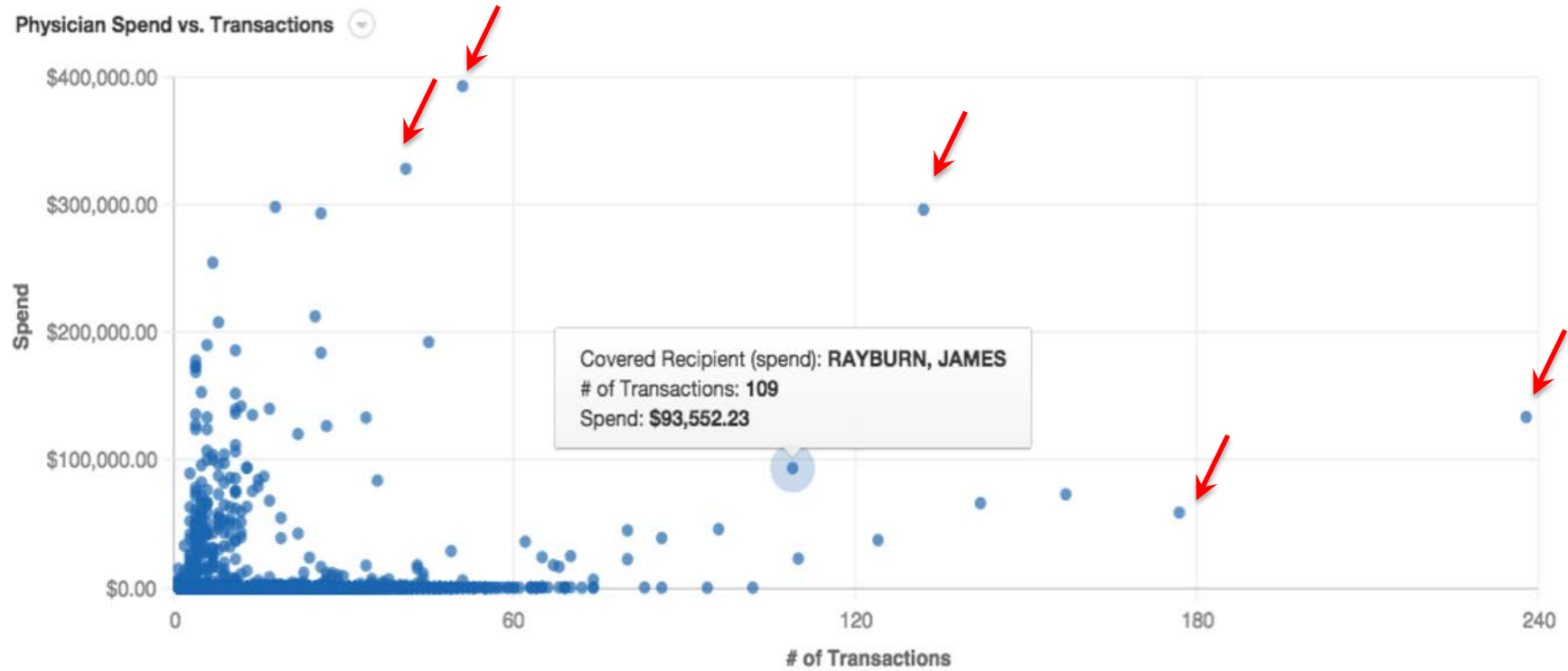
Compliance Monitoring – FMV Outlier Analysis - Alerts

Tier physicians and monitor unqualified speakers.

FMV Analysis For Speaker Program Compensation Spend

FMV Analysis - Speaker Program Compensation

Tier	Specialty	Spend	# of Transactions
National	Orthopedic Surgery	$51,975.00	24
	Cardiology (invasive)	$46,620.00	21
	Dermatology	$41,300.00	19
	Urology	$38,925.00	17
Regional	Obstetrics & Gynecology	$22,500.00	10
(empty value)	General Practice	$18,513.15	3
National	Obstetrics & Gynecology	$18,000.00	8
Regional	Urology	$17,500.00	11
National	Nurse Practitioner	$17,430.00	11
Regional	Gastroenterology	$17,000.00	8

FMV Analysis - Speaker Program Compensation - Pie

- 34%
- 13%
- 4%
- 50%

Legend: (empty value), Local, National, Regional

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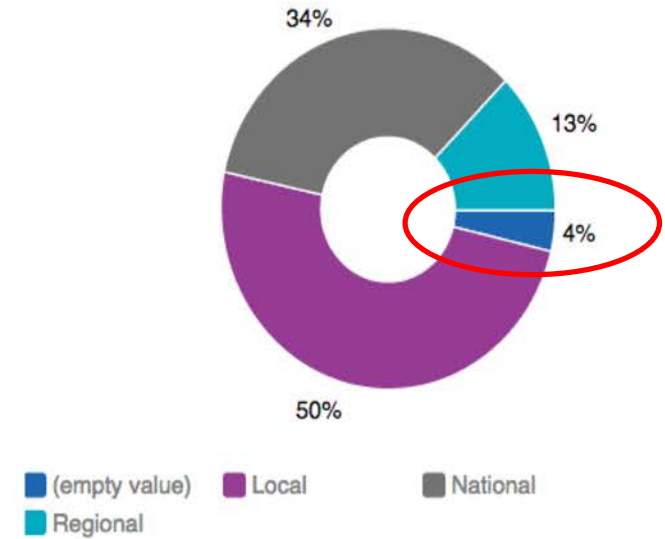
Certification Tasks = Real-time Monitoring

- Transparency Solutions now support spend certification process using task functionality.

- In the Compliance Dashboard, the Tasks Analysis tab, provides visibility to certification tasks assigned and updated in the MediSpend Transparency Solution Resolution Center.

Compliance > Task Analysis tab

TASK ID	TITLE		DESCRIPTION		DUE DATE	ASSIGN. STATUS DATE
All	All		All		2018	2018

ASSIGNEE USER EMAIL	ASSIGNED BY USER EMAIL	NOTE	ASSIGNMENT STATUS	PRIORITY
All	All	All	All	All

TASK GROUP L1	TASK GROUP L2	TASK GROUP L3	REMOVED
All	All	All	No

Task Analysis

Task ID Title   Cert. Req? Posted Date Due Date   Completion Date Removed? Priority Description   Notes   # Assig

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Clear visualization of what's important – KPIs and KRIs

✅ **Embedded KPIs and RPIs that adjust based on filters.**   ✅ **Enhanced color scheme for sharper contrast**
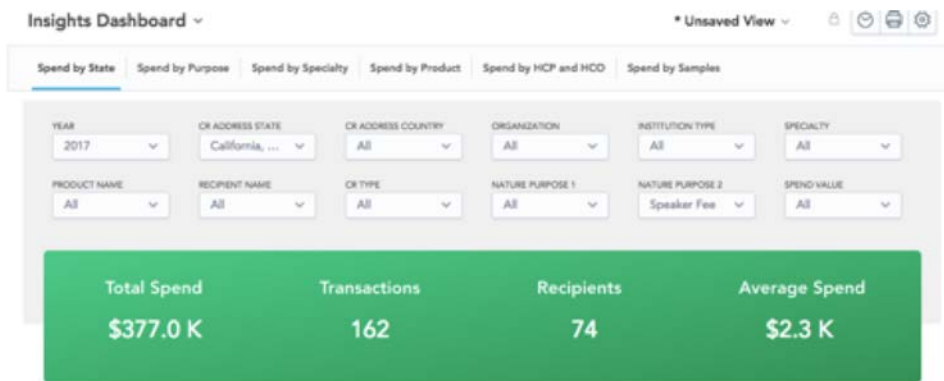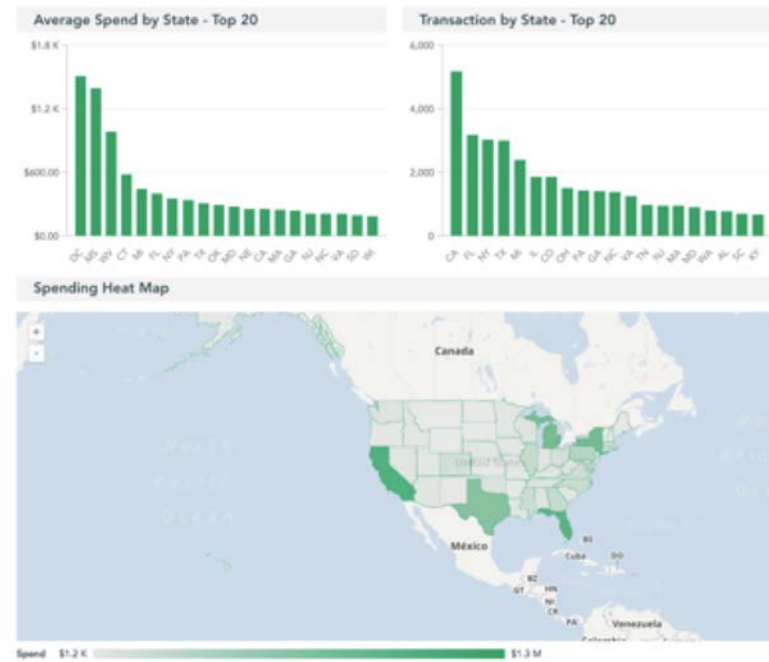
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Business Unit Analysis & Monitoring

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Business Unit Analysis
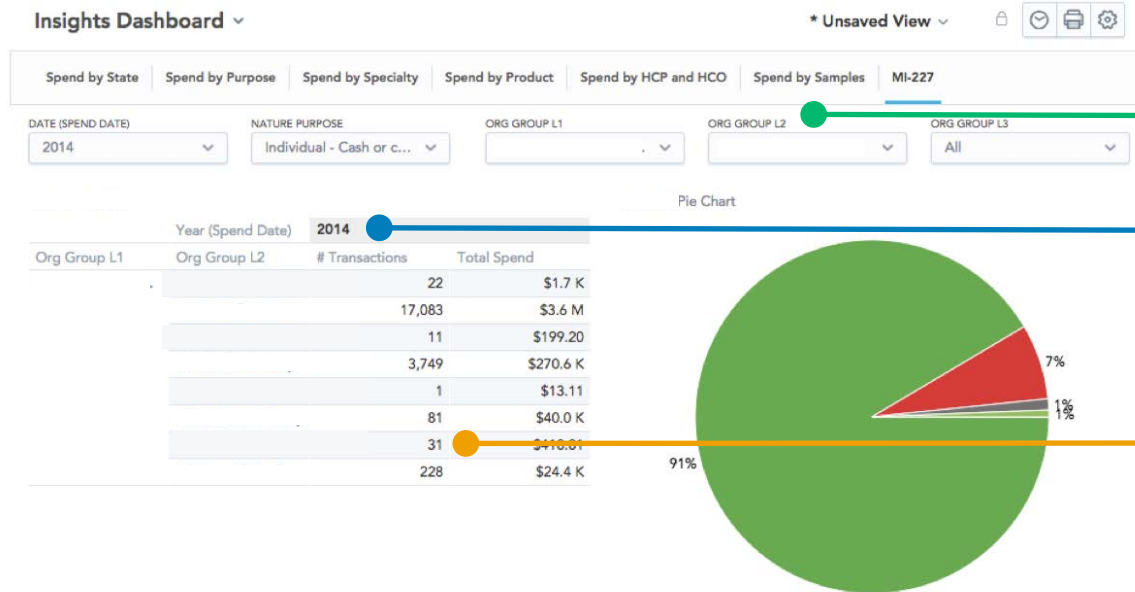
Filtering by group and subgroup

Filters and Reports for comparing internal business unit performance

Hierarchical business unit analysis across common metrics

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Nature Purpose Analysis

Total Spend by Purpose - TOP 10
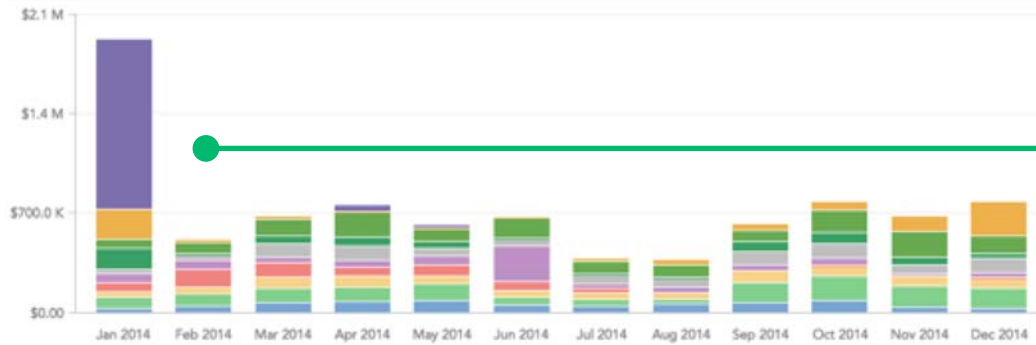
Drill-down to transactional detail ✓

Total Spend by Purpose - Top 20

Detailed Nature Purpose ✓

Nature Purpose	Total Spend	% of Spend
Individual - Cash or cash equivalent - Honoraria | N/A | N/A	$1.4 M	13.16%
Individual - Cash or cash equivalent - Investment Interest | N/A | N/A	$1.3 M	12.28%
Individual - Cash or cash equivalent - Consulting Fees | N/A | N/A	$1.2 M	11.60%
Individual - Cash or cash equivalent - Speaker Fees - Accredited Educational Program | N/A | N/A	$867.1 K	8.36%
Individual - In-kind Items or Services - Gifts - Privileges | N/A | N/A	$789.8 K	7.62%
Individual - In-kind Items or Services - Food and Beverage | N/A | N/A	$743.0 K	7.16%
Individual - In-kind Items or Services - Gifts - Free Product | N/A | N/A	$732.3 K	7.06%
Individual - In-kind Items or Services - Non Consulting Fees - Travel and Lodging | N/A | N/A	$611.3 K	5.89%
Individual - In-kind Items or Services - Education - Non Accredited | N/A | N/A	$579.0 K	5.58%
Individual - In-kind Items or Services - Gifts - Other | N/A | N/A	$558.4 K	5.38%
Individual - Cash or cash equivalent - Consulting Fees - Other | N/A | N/A	$528.5 K	5.10%
Individual - In-kind Items or Services - Gifts - Equipment or Product Service / Fees | N/A | N/A	$299.4 K	2.89%

Meeting Analysis

YEAR
2015 - 2018

EVENT NAME
All

EVENT VENUE
All

EVENT IDENTIFIER
All

ORGANIZATION
All

NATURE PURPOSE 1
All

✅ Analysis By Venue and Nature Purpose

✅ Drill down to Meeting Details By Recipient

Top 5 Meeting Venues

- CHEF S CORNER CAFE
- PARKER MERIDIEN NEW YO
- SALS GOOD EATS
- Sheraton Downtown Denver
- THE FIREMAN GROUP

Top 5 Meeting Nature and Purposes
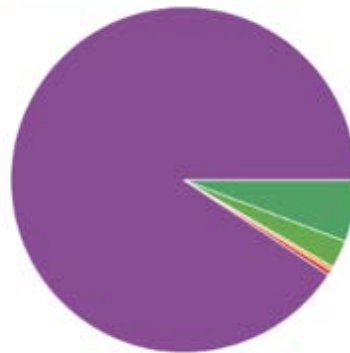
Meeting Details

Event Identifier	Event Venue	Attendees	Home System Id	Recipient Name	Customer Name	# of Transactions
(empty value)	(empty value)	(empty value)	SP0063	DIETZ, GREGORY M	CHICAGO	1
			SP0096	KLAUER, DANIEL GERARD	HS Dental Group	1
			SP0105	WILHELM, DAVID FRANKLIN	ZAHN04	1
			SP0111	VAFIADIS, DEAN CONSTANTINE	HS Dental Group	1
			SP0129	KENNEDY, RYAN W	GEORGIA	1
			SP14131	GEBEAU, WILLIAM Q	OREGON	1
			SP14151	EDELSON, DAVID R	CONNECTICUT	1
			SP14162	KOLKMAN, MATTHEW S	INDIANA	1
			SP14186	MURRY, DONALD R	SOUTHERN VIRGINIA	1
			SP14262	PHAM, AMY H	SACRAMENTO	1
			SP14464	CHERY, JERRY	FLORIDA NORTH	1
			SP14465	CLARKE, KELLY ROBERT	FLORIDA NORTH	1
			SP14466	CORN, JACK H	FLORIDA NORTH	1
			SP14468	KOTZE, LEONE	FLORIDA NORTH	1
			SP14469	LEFTON, MARC DAVID	FLORIDA NORTH	1
			SP14470	LEVSKY, STANLEY SHEPARD	FLORIDA NORTH	1

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Specialty and Product Analysis

Threshold Analysis	**Specialty Analysis**	Event Analysis	Travel	Business Rules	All -Meal Analysis	Meal Analysis - N

YEAR	CR ADDRESS STATE	CR ADDRESS COUNTRY	ORGANIZATION	DATA SOURCE	SPECIALTY
2015 - 2018 ∨	All ∨	All ∨	All ∨	All ∨	All ∨

PRODUCT NAME	RECIPIENT NAME	SLN STATE	CREDENTIALS	NATURE PURPOSE 1	NATURE PURPOSE 2
All ∨	All ∨	All ∨	All ∨	All ∨	All ∨

EXPENSE ORIGINATOR
All ∨

Product and Specialty Analysis: Top 10 Specialties by Spend Amount Across Top 5 Products

Product Name

- ◼ Anesthesiology
- ◼ Internal Medicine Endocrinology, Diabetes & Metabolism
- ◼ Pediatrics
- ◼ Physician Assistant
- ◼ Counselor Addiction (Substance Use Disorder)
- ◼ Nurse Practitioner Family
- ◼ Physical Therapist

✅ Analysis By Specialty and Product Drill down to Meeting Details By Recipient

✅ View of Top N Specialty in spend by Top X Product driven by filter criteria

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Specialty and Credential Analysis

Specialty Analysis

Specialty	Spend	# Transactions
Pediatrics	$11.1 K	3
Physical Therapist	$500.00	1
Anesthesiology	$145.00	2
Internal Medicine Endocrinology, Diabetes & Metabolism	$101.00	1
Nurse Practitioner Family	$45.00	1
Physician Assistant	$28.00	1

✅ Analysis By Specialty and Professional Credential

Credentials and Specialty Analysis Top 5

95%
0%
4%
0%

HCP Credentials	Total Spend
Medical Doctor (MD)	$11.4 K
Physical Therapist (PT)	$500.00
Nurse Practitioner (NP)	$45.00
Physician Assistant (PA)	$28.00
Sum	$11.9 K
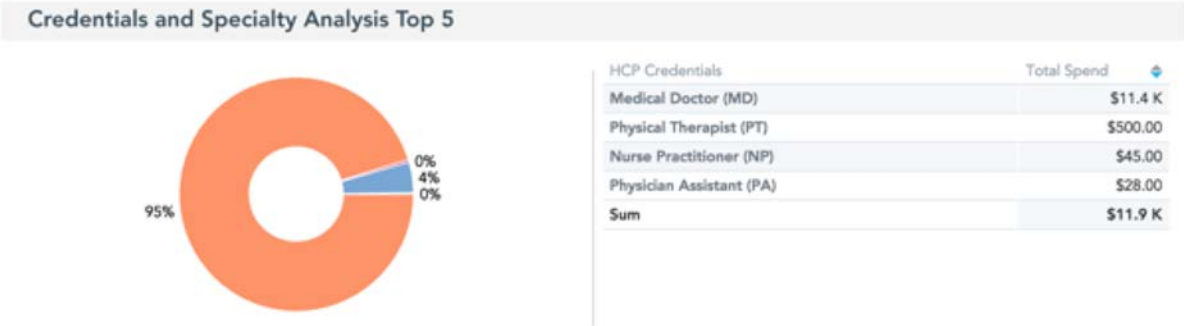
✅ View of Top N in spend driven by filter criteria

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Report Generation – Dashboard view to generate custom reports

Custom Reports may be created using the MediSpend Insight embedded analytics tool.

Users have the ability to select filters, drill down into transactional data and export in multiple formats
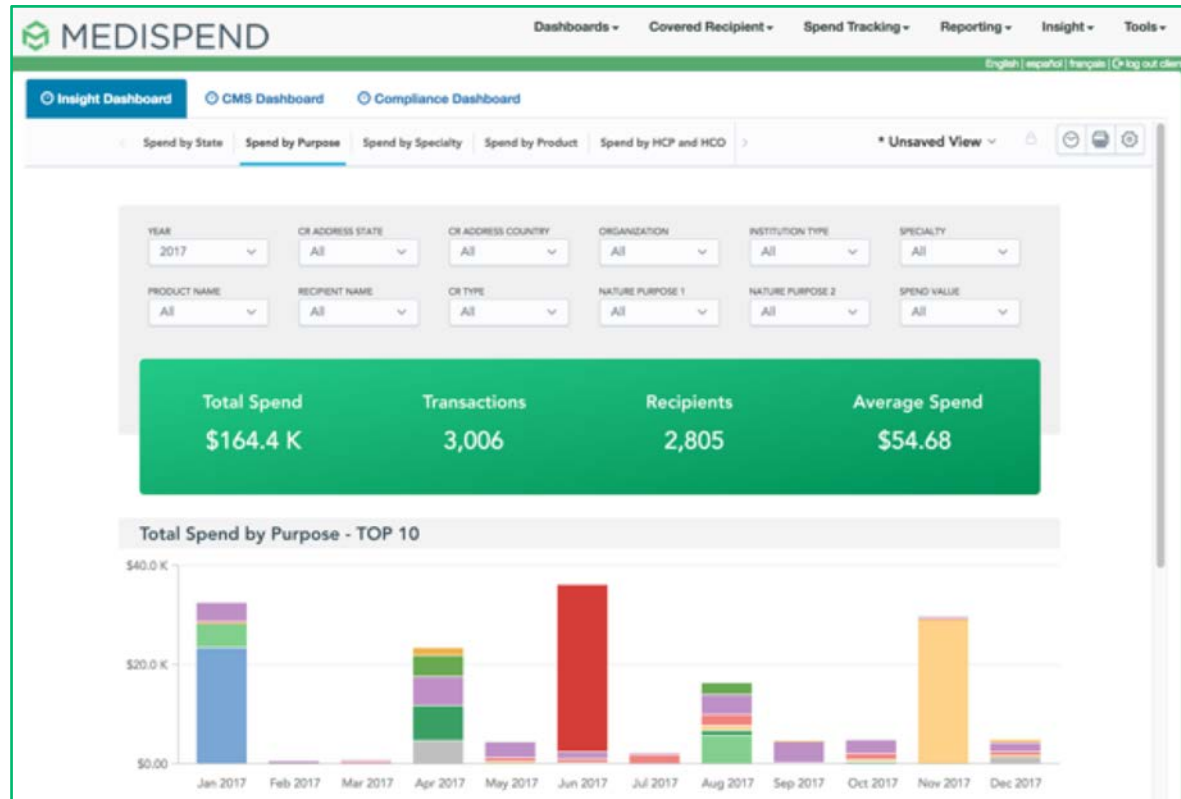
Analysis of Spend by Specialty for (HCPs)
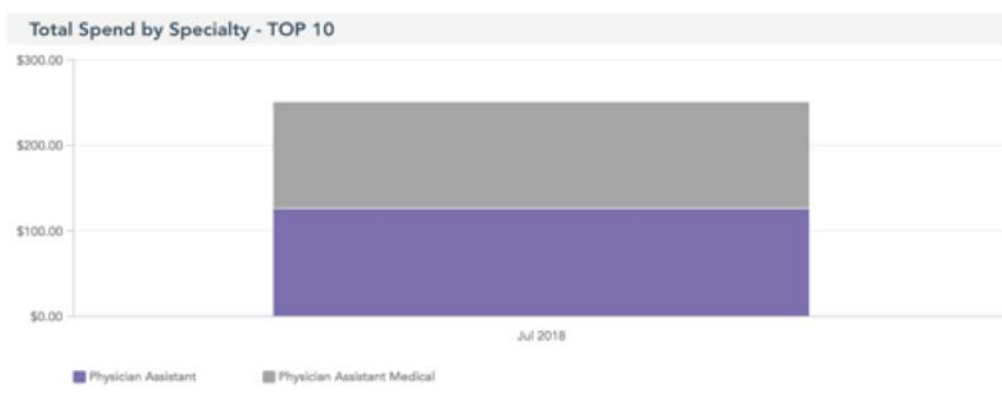
- Review multiple specialties, thresholds, alerts, and warnings.
- Data triggers emails and alerts in real-time.
- Predictive analysis to provide warnings of risk for future events.
- Customize

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Enhanced Teaching Hospital Search
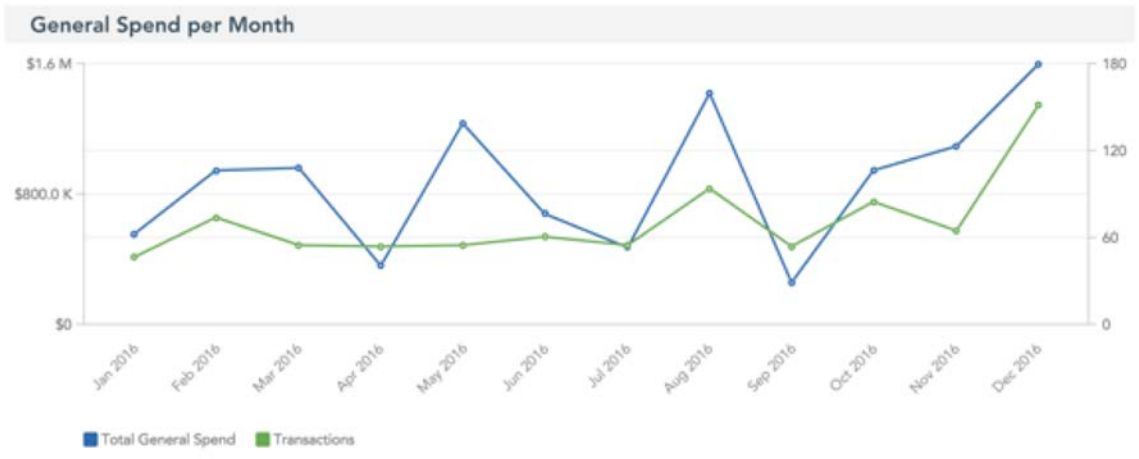
Use US Open Payments data to compare historical spend over time to real-time spend to monitor spend vs. competitors.

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HCP Engagement Monitoring

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HCP Engagement Monitoring & Analysis

Engagement Manager

Needs Assessment | Engagements | HCE Activity & Payments

Needs Assessement Dashboard

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YEAR	REGION	BUSINESS UNIT	NEEDS ASSESS...	EFFECTIVE DATE
All	All	All	All	2017
STATUS	FUNCTIONAL AREA	TITLE	OWNER USER ID	EXPIRY DATE
All	All	All	All	2017

Needs Assessment Summary

APPROVED | CLOSED | DRAFT | IN_REVIEW
RELEASED

Needs Assessment Detail

ID	Year	Title	Version	Status	Region	Functional Area	Business Unit	Forecasted $	Forecasted Hours
00001	2017	AMER Training &	0	RELEASED	Americas	Compliance	Custom Name 1	0.00	0
			2	CLOSED	Americas	Training & Education	Custom Name 1	6,230,200.00	3,906
			2	APPROVED	Americas	Training & Education	Custom Name 1	6,230,200.00	3,906
			2	APPROVED	Americas	Training & Education	Custom Name 1	567,220.03	409
			2	APPROVED	Americas	Training & Education	Custom Name 1	0.00	0
			1	CLOSED	Americas	Training & Education	Custom Name 2	3,259,914.07	3,722
			1	CLOSED	Americas	Advisory Group	Custom Name 2	131,066.15	0
			5	APPROVED	Americas	Training & Education	Custom Name 2	271,578.52	448
			3	APPROVED	Americas	Training & Education	Custom Name 2	3,070,200.00	3,508
			2	APPROVED	Americas	External Research	Custom Name 2	4,150.80	0
			5	APPROVED	Americas	External Research	Custom Name 2	59,144.15	0
			1	APPROVED	Americas	External Research	Custom Name 2	100,576.00	0
			3	APPROVED	Americas	External Research	Custom Name 2	5,106.93	0
			3	DRAFT	Americas	Clinical Affairs	Custom Name 2	0.00	0
			4	APPROVED	Americas	External Research	Custom Name 2	210.00	0

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Real-time monitoring of upstream HCP engagements
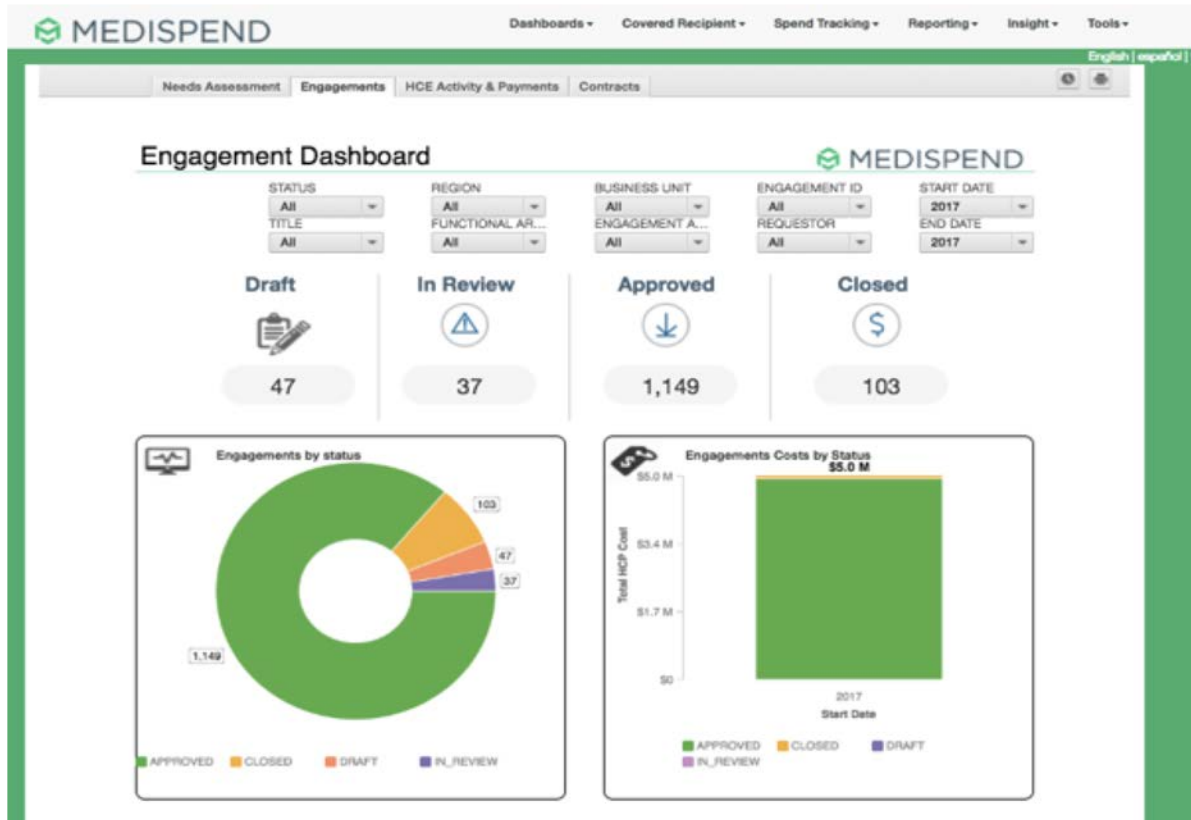
- Real-time monitoring of HCP engagements
- Filters provide unlimited data analysis and reports
- Ability to set alerts and warnings
- Access from any mobile device – fully responsive

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Manage and monitor contracts and link to remittance payments
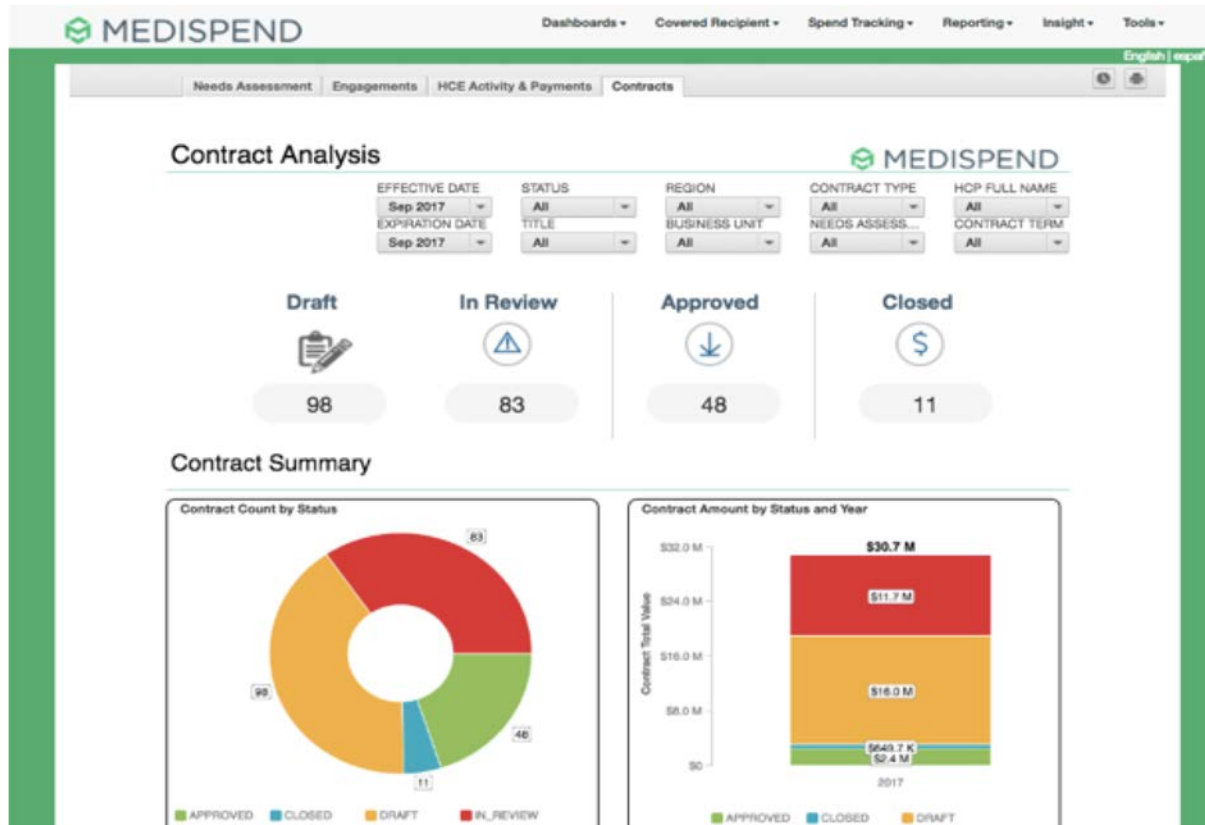
- Monitor Contract status in real-time
- Filters provide unlimited data analysis and reports
- Ability to drill down into data from any graph
- Access from any mobile device – fully responsive

Monitor HCP payments in real-time
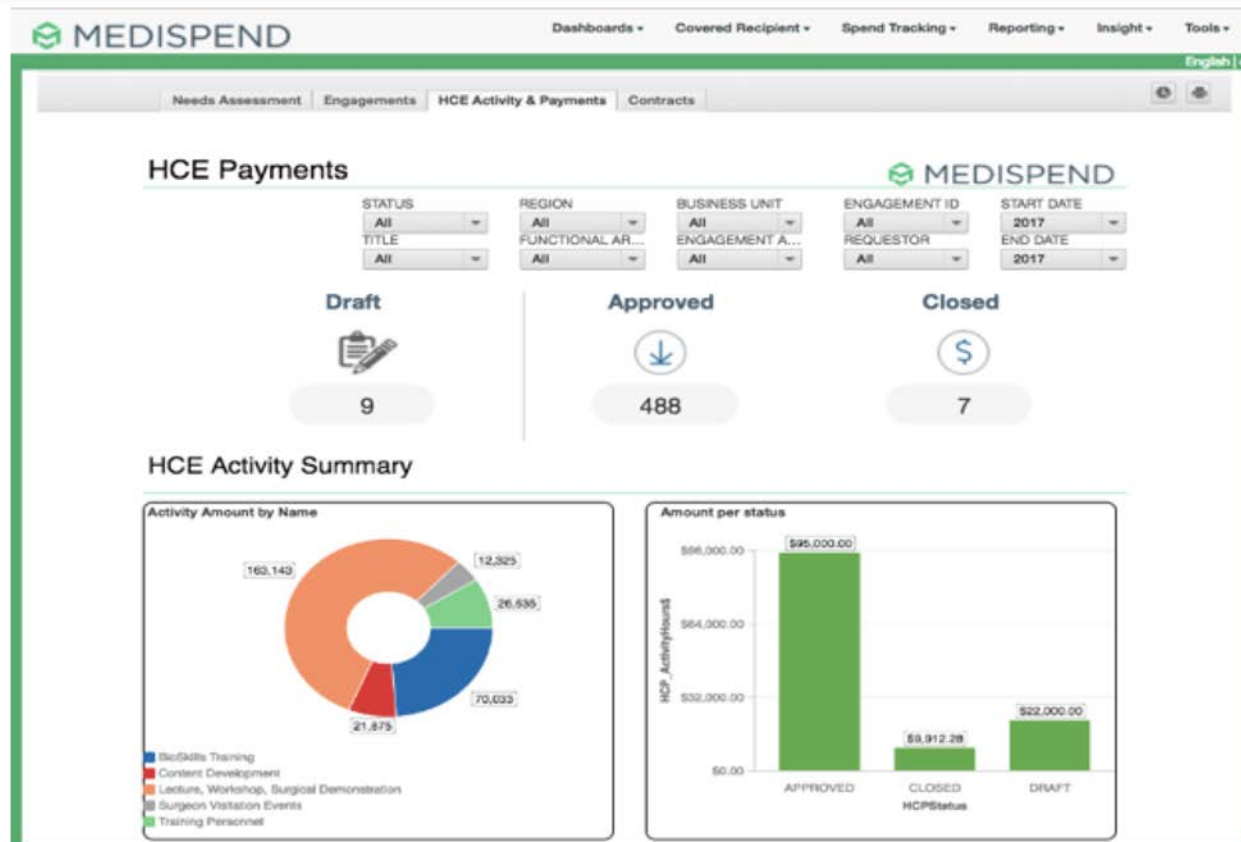
- Monitor HCP Spend in real-time
- Access one click reports from dashboard
- Ability to drill down into data from any graph
- Access from any mobile device – fully responsive

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Market Analysis & Benchmarks – See into the future

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US HCP Competitive Spend Monitoring – CMS Data

Ability to drill down by physician spend

Benchmarking – View the market and your competitors

Enhanced ability to compare and contrast publicly available, submitted data in one view

Drill-down to transactional detail

Benchmarking – View the market and your competitors
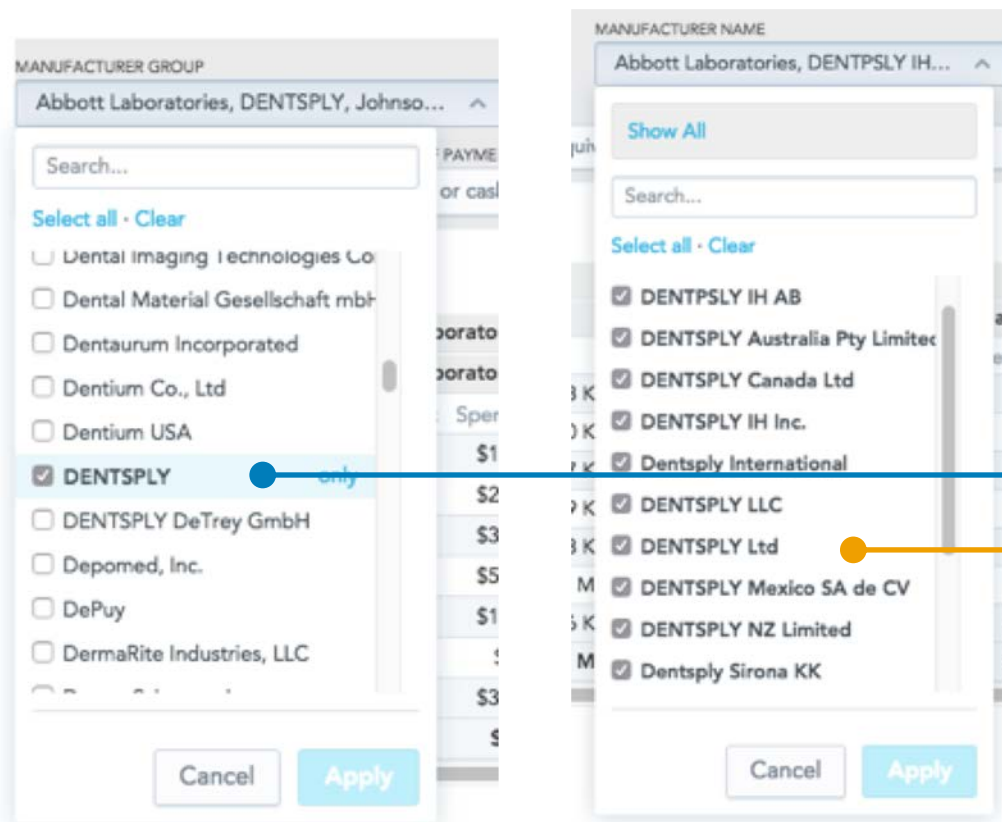
- ✅ Ability to group manufacturers into "one" entity for analytical purposes
- ✅ Ability to select specific entities within the group for analysis

- Manufacturer group
- Reporting Entities

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Benchmarking – Sizing Your Markets

Reporting Entity Group Comparisons

22%

20%

58%

- Abbott Laboratories
- AbbVie, Inc.
- Boehringer Ingelheim
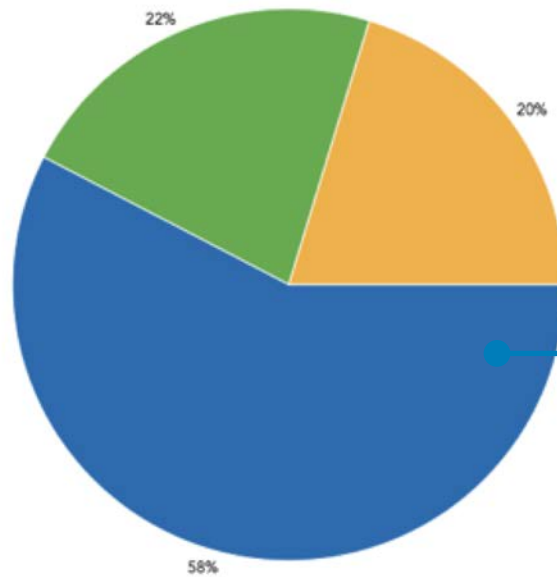
✅ Depiction of reporting entity comparison

✅ Drill-down to transactional detail

✅ Reporting Entities

Detailed view by Nature of Payment

Market Analysis By Nature of Payment

Reporting Entity Group Compar... » Abbott Laboratories ···

| Manufacturer Group	Abbott Laboratories			
Manufacturer Name	Abbott Laboratories		Sum	
Nature Of Payment	TOV Count	Spend	TOV Count	Spend
Charitable Contribution	6	$104.3 K	6	$104.3 K
Compensation for services of	46	$219.0 K	46	$219.0 K
Consulting Fee	30	$300.7 K	30	$300.7 K
Education	25	$547.9 K	25	$547.9 K
Grant	9	$196.3 K	9	$196.3 K
Royalty or License	13	$2.2 M	13	$2.2 M
Space rental or facility fees(t	88	$397.6 K	88	$397.6 K
Sum	217	$3.9 M	217	$3.9 M

Drill down on pie chart
depicting summary of
reporting entity
by Nature of Payment

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Thank you.
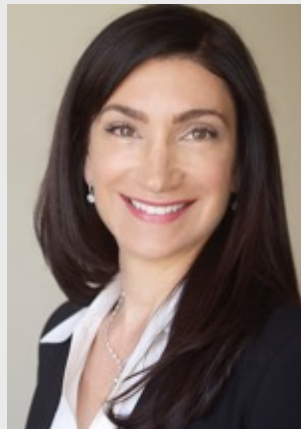
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