ANIMALYTIX

REAL DATA IN REAL TIME

US ANIMAL HEALTH MARKET INSIGHTS
2019 Mid-Year Update

Presented by Animalytix LLC & Axxiom Consulting

AUGUST 26, 2019

2019 Animal Health Industry Overview Presented by:

- Animalytix LLC
- Axxiom Consulting
- KC Animal Health Corridor
- And special thanks to Vetnosis

Review of the Global Market
Courtesy of Vetnosis

Vetnosis Animal Health Industry Review 2018

August 2019

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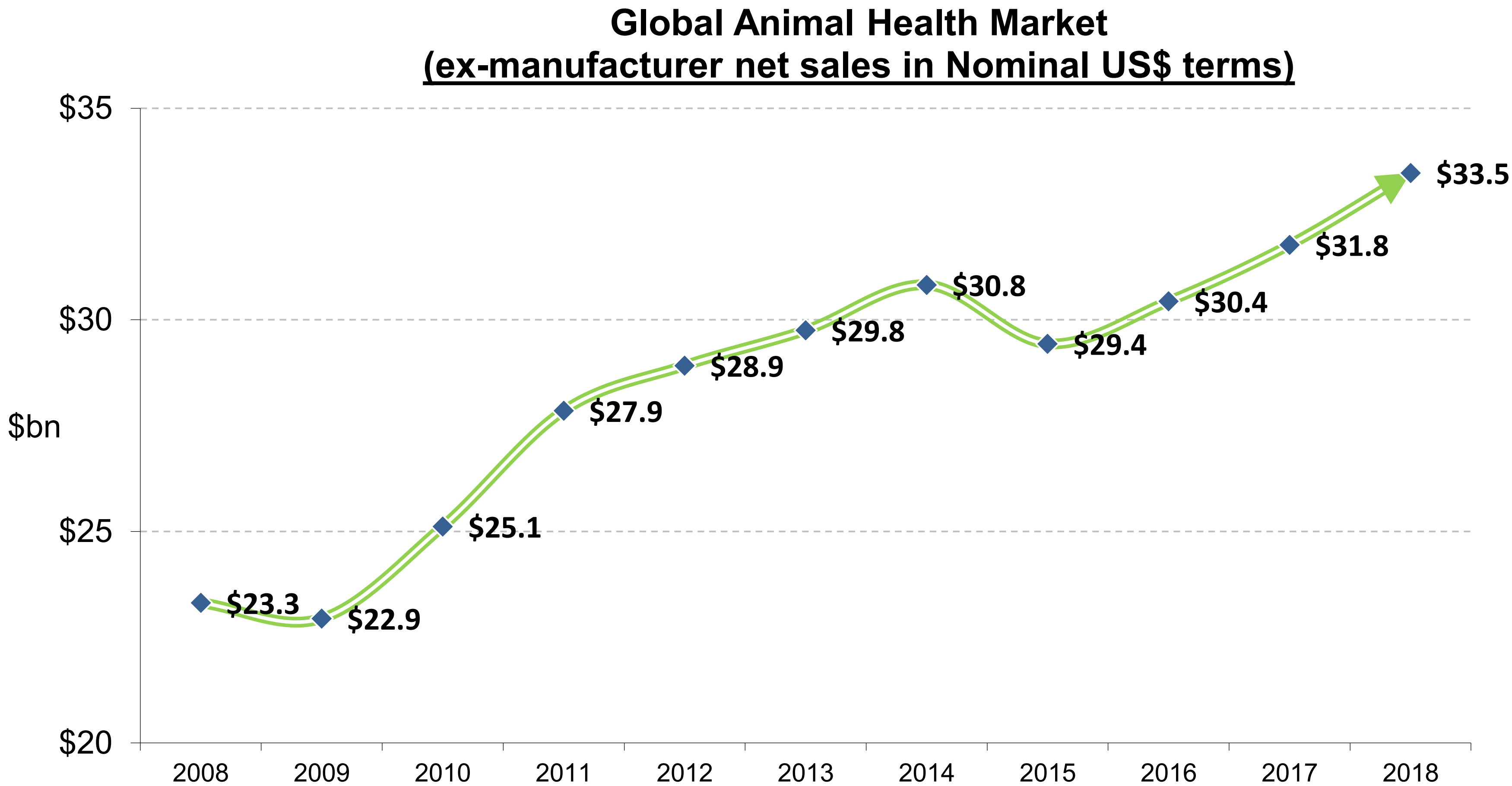
2018 Animal Health Industry

US$ 33.5 billion

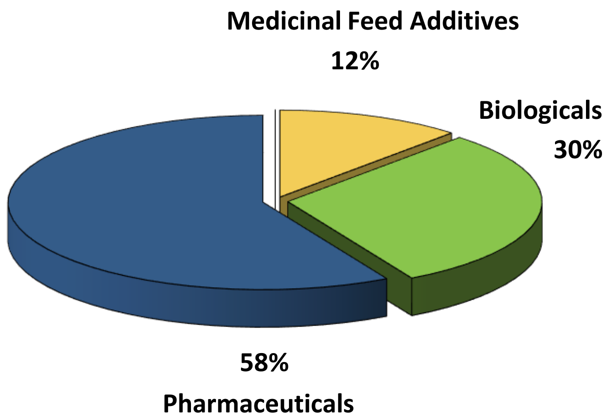
Nominal growth +5.3%

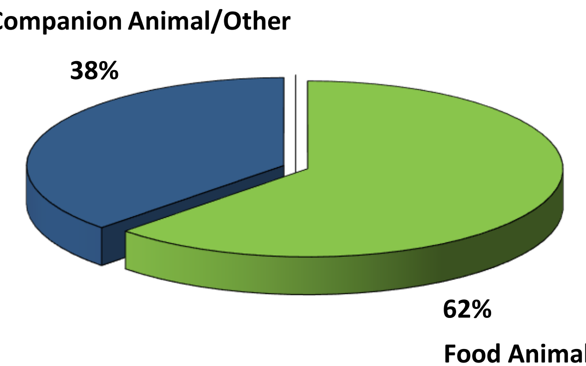
Source: Vetnosis

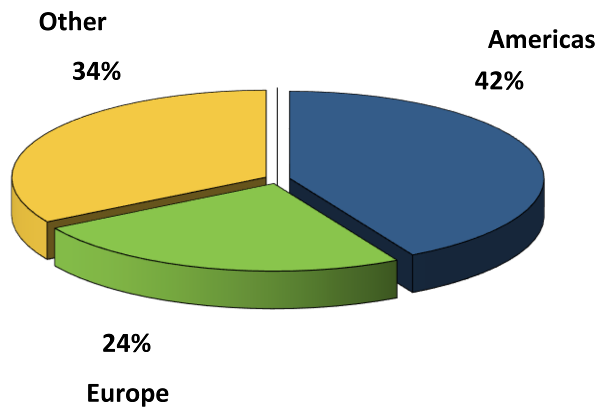


Source: Vetnosis

Animal Health Market by Product Group, Region & Species







Source: Vetnosis

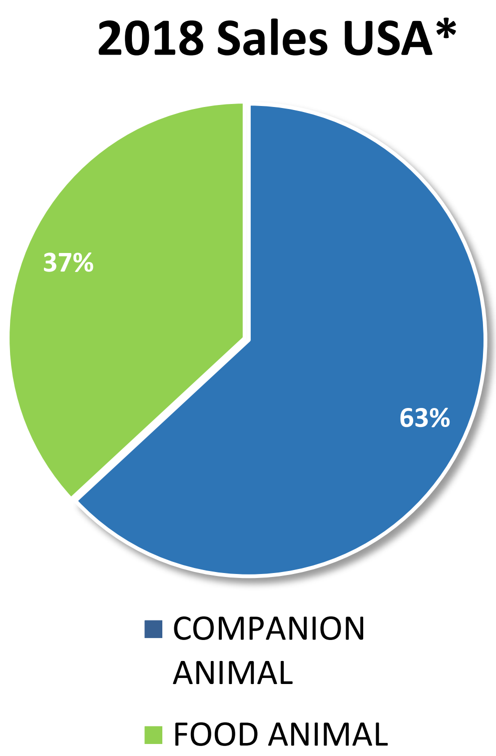
Review of US Sales By Segment

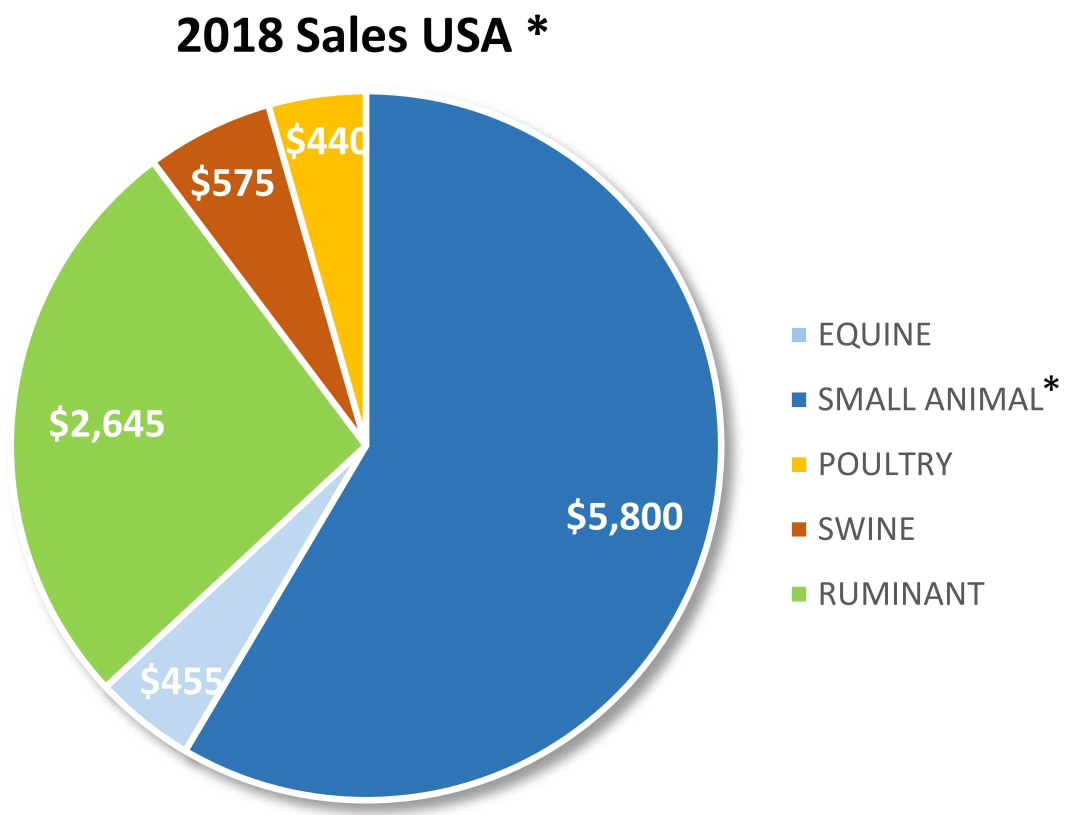
Some Key Points on the Data Set Used for the 2018 Market Projections …

- Data reflects estimated 2018 annual sales for the US market only; adjusted to ex-factory levels and inclusive of free goods programs but not of any rebates (none for consumer, producer, veterinarian, retailer)
- Direct / agency sales estimates made for all segments for products marketed for Phibro, Huvepharma, Boehringer Ingelheim, Zoetis and others; sales for IDEXX & HESKA were excluded from these estimates
- An estimate for generic off-shore manufacturing of pet anti-parasitics was included at the ex-factory level
- Sales of $250m+ of human labeled pharma products were allocated across the applicable therapeutic categories; sales for compounders and scripts for human drugs at human pharmacies were excluded
- While Animalytix tracked sales of ~ $300m in SA & EQ nutraceuticals, an estimate of $ 1.0 billion is used for the total market*

** Excludes large animal nutraceuticals*

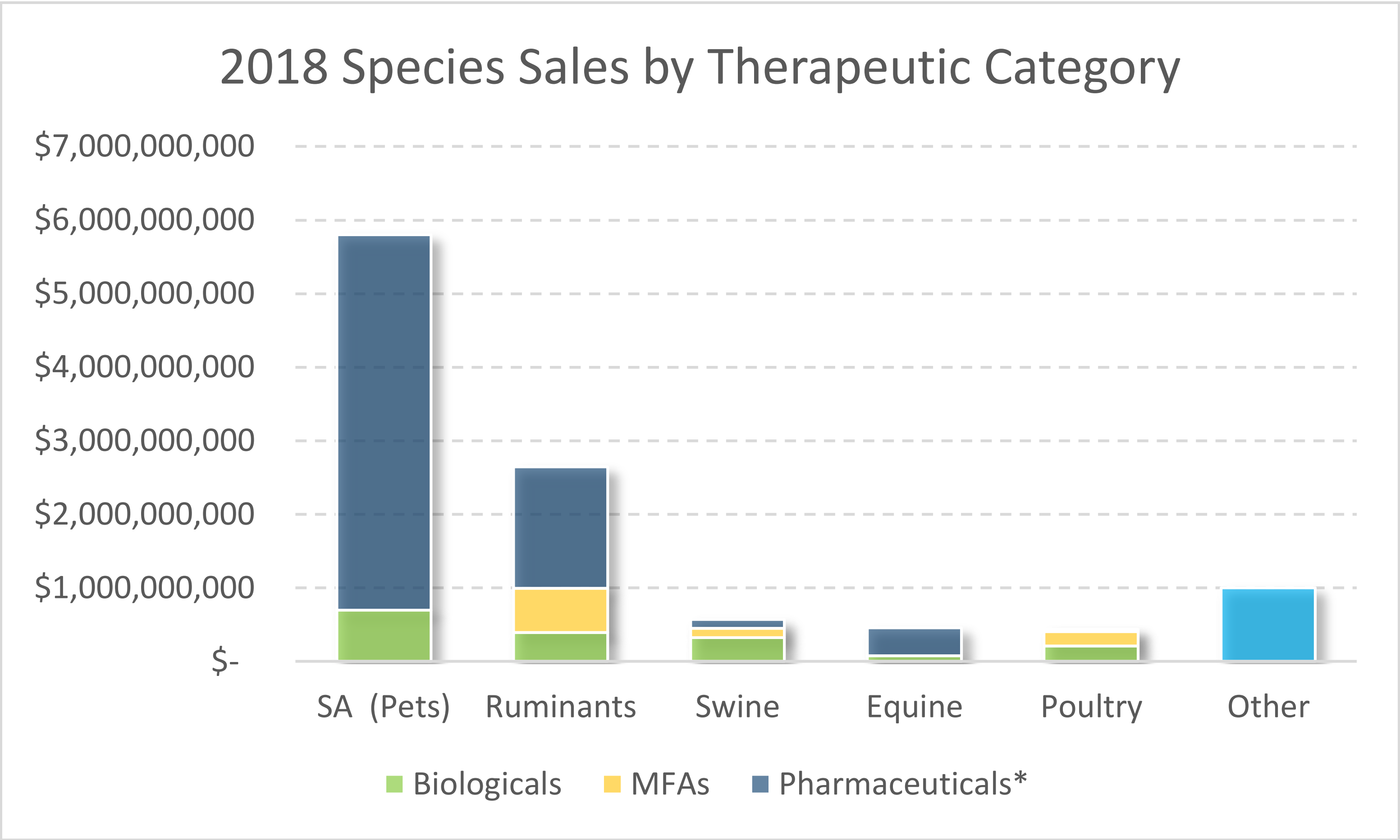
Companion Animal Products Dominated the 2018 US Animal Health Market *(ex-factory)*





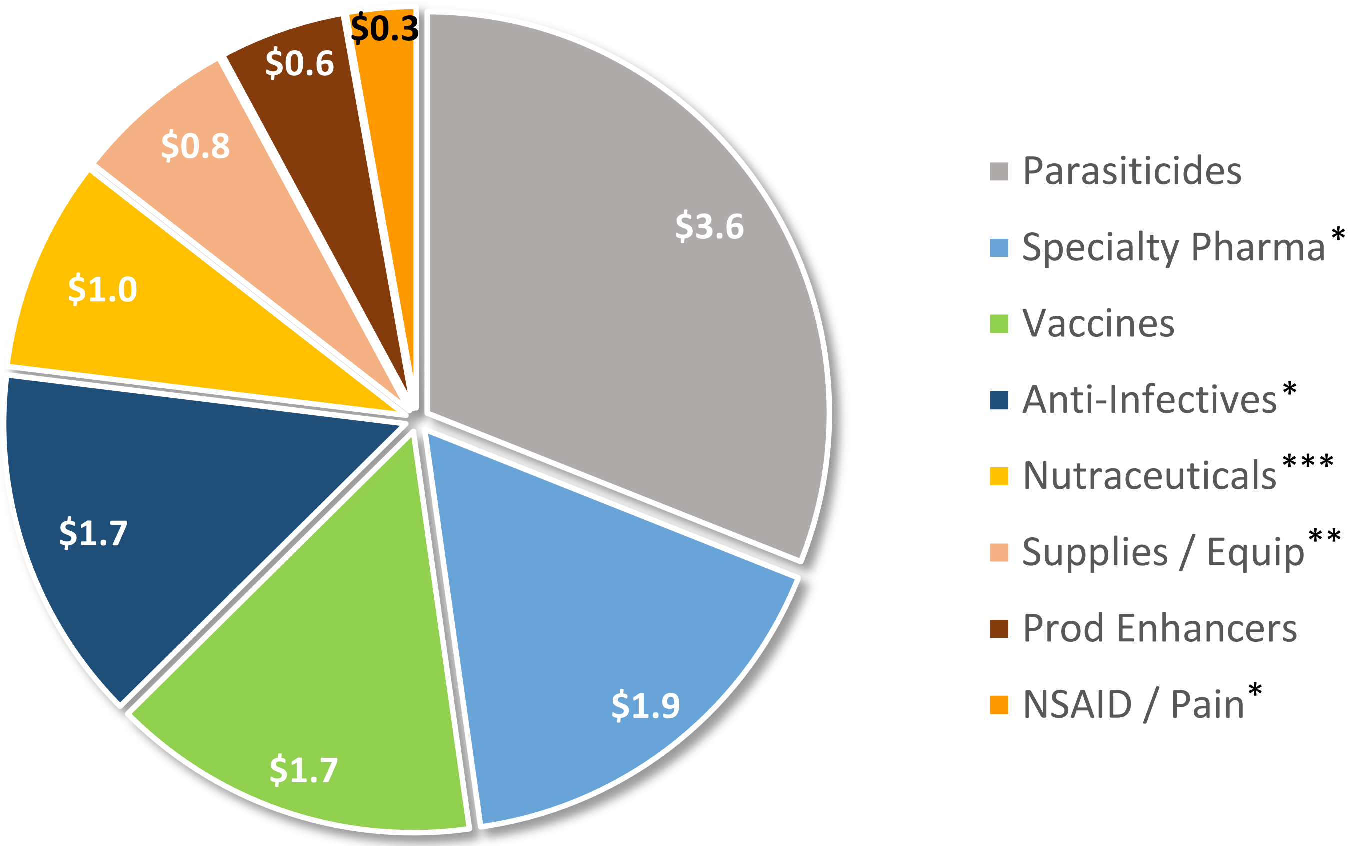
** Excludes ~ $1,000m in nutraceutical sales*

US Sales in Bios, MFAs & Pharma Topped $9.9b; Total Market Approached $11b w/ Nutraceuticals



Nutraceutical sales estimated at $1,000m; includes significant retail sales volumes

For the US Market, Parasiticides, Anti-Infectives & Vaccines Contributed~ 63% of Total 2018 Sales



** $250m+ in human pharma sales included in anti-infectives, spec pharma & NSAID / PAIN (vet dispensing only)*
*** New category added for equipment, supplies & products other then drugs, bios or supplements*
**** Nutraceutical sales includes significant retail sales volumes*

Review of Manufacturers & Leading Brands

Consolidation Among Leading AH Companies

zoetis

- Abaxis
- Abbott
- Agri-Bio
- Alpharma
- American Cyanamid*
- Beecham Labs
- Embrex
- Fort Dodge
- I.D. Russell
- Nextvet Biopharma
- Norden Labs
- Parke-Davis
- Pfizer Animal Health*
- Pharmacia / Upjohn
- Smith Kline
- Salsbury Labs
- Solvay
- Synbiotics
- Syntex

Boehringer Ingelheim

- Anchor Serum
- Fermenta
- Fort Dodge (SA bios)
- Merck AgVet
- Merial *
- Newport Laboratories
- Nobl Labs
- Philips Roxane
- Rhone Merieux
- Select Labs

MERCK Animal Health

- Ambico
- American Scientific Labs
- Bayer NA Biologicals
- Biotrends International
- Coopers
- Harris Vaccines
- Hoechst Roussel Vet
- ICI
- IMC
- Intervet*
- Jen-Sal
- Mallinckrodt*
- Pitman-Moore*
- Schering-Plough*
- Sterwin Labs
- Syntro Vet
- Tri-Bio
- Antelliq (Allflex)

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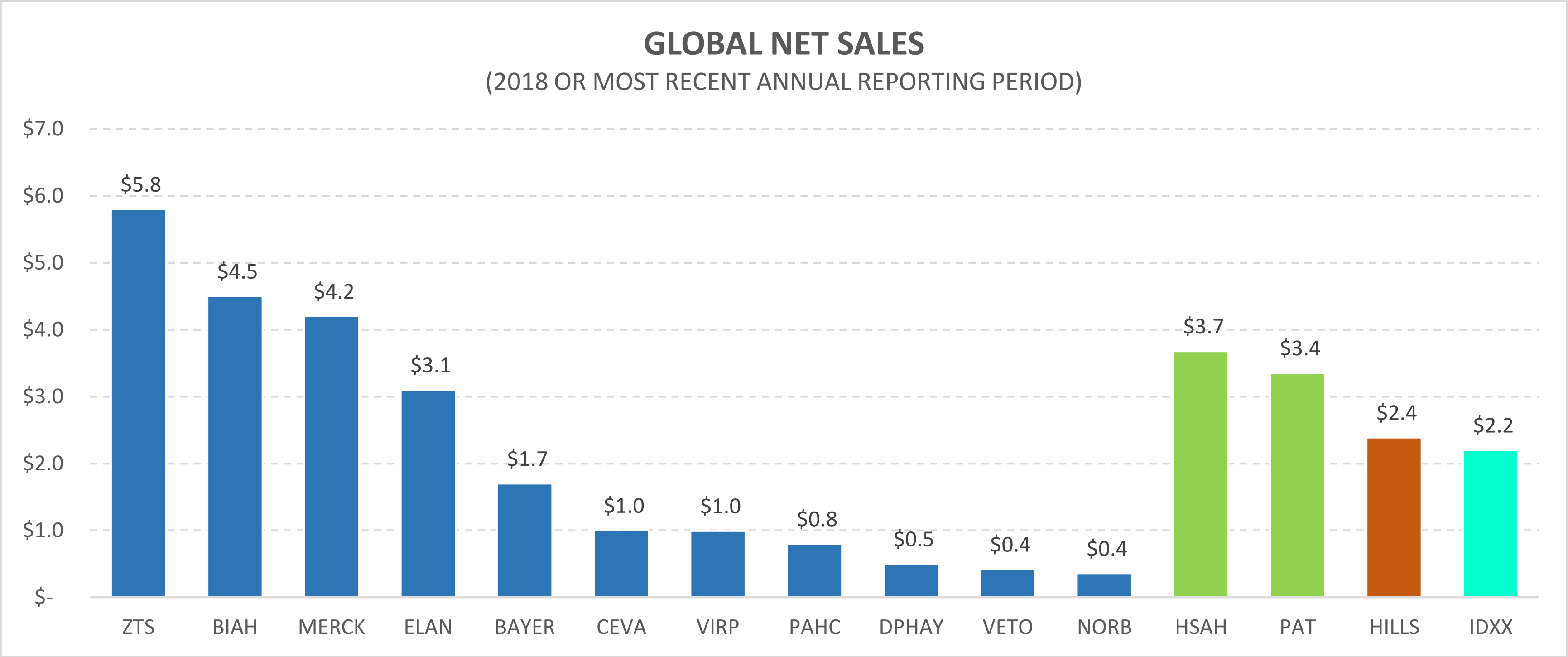
- AgriLabs (cattle bios)
- Chem Gen
- Ciba Geigy
- Grand Labs
- Ivy Labs
- Janssen Animal Health
- Lohmann Animal Health
- Maine Biological Labs
- Monsanto (rBST)
- Novartis
- Vet Life
- Vineland Poultry Labs
- Wyeth Labs (Ireland)
- Aratana
- Bayer Animal Health

**indicates past global #1 ranking*

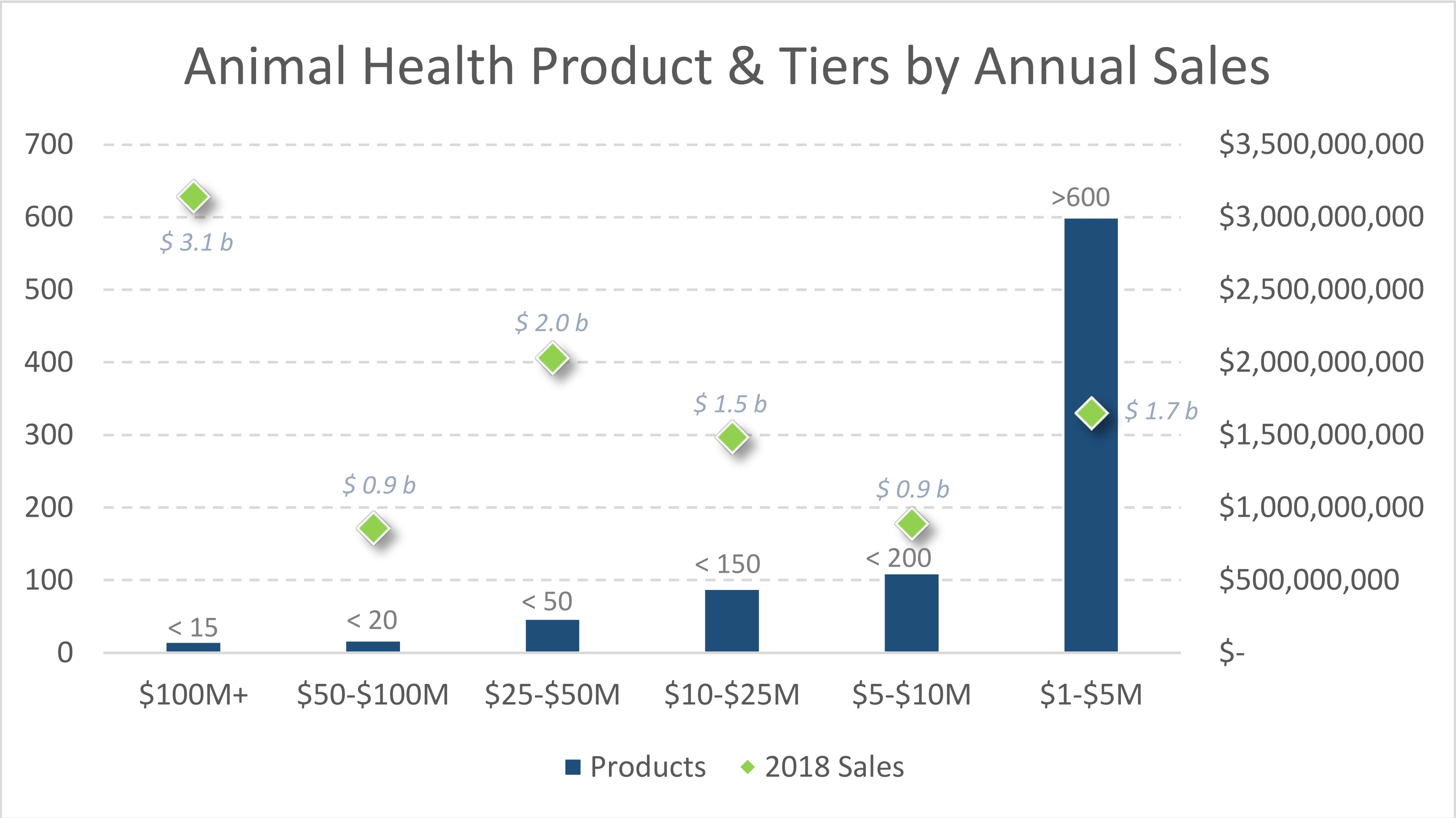
Axxiom

Annual Revenues Reported by Leading Pharma, & Other Animal Health Related Companies



Major events occurring among the leading animal health companies since last we met include: Antelliq acquisition by Merck, Aratana acquisition by Elanco and recent announcement of Bayer acquisition by Elanco

A Market with Few Dominant Brands and Thousands of Secondary & Tertiary Products



Among the top 6,000 products in 2018, the top 250 generated > 75% of total sales while the bulk of products (more than 5,100) had sales of less than $ 1.0 m

Animalytix

2019 Mid-Year Market Update
Smart Sort™ Segmentation & Price Volume

Animalytix Data Represents A Robust and Timely Census of the US Animal Health Marketplace

- More than $8.3 billion in reported sales for the period JUL 2017 – JUN 2018
- Primary data providers include leading animal health distributors such as Animart, Henry Schein Animal Health, Midwest Veterinary Supply, Leedstone, MWI Veterinary Supply, Patterson Veterinary, Victor Medical Company, Penn Veterinary, Valley Vet, and Veterinary Service, Inc. among others
- Market coverage reflects broad-based coverage for multiple segments:
  - Small Animal Specialty, Urgent Care, Referral, & Spay/Neuter Practices – 27,000+
  - Small Animal Rescues / Shelters, ASPCA, & Humane Societies – 3,000+
  - Mixed, Large Animal, & Equine Specialty Veterinary Practices – 7,000+
  - Family-Owned & Integrated Swine Production Operations – 6,000+
  - Corp./Independent Feedlots, Farmer Feeders & Calf Ranches – 1,300+
  - Privately-Owned & Corporate Dairy Operations – 6,000+
  - Farm & Fleet, Ag / Pet Specialty, & Equine Tack Shops – 13,000+

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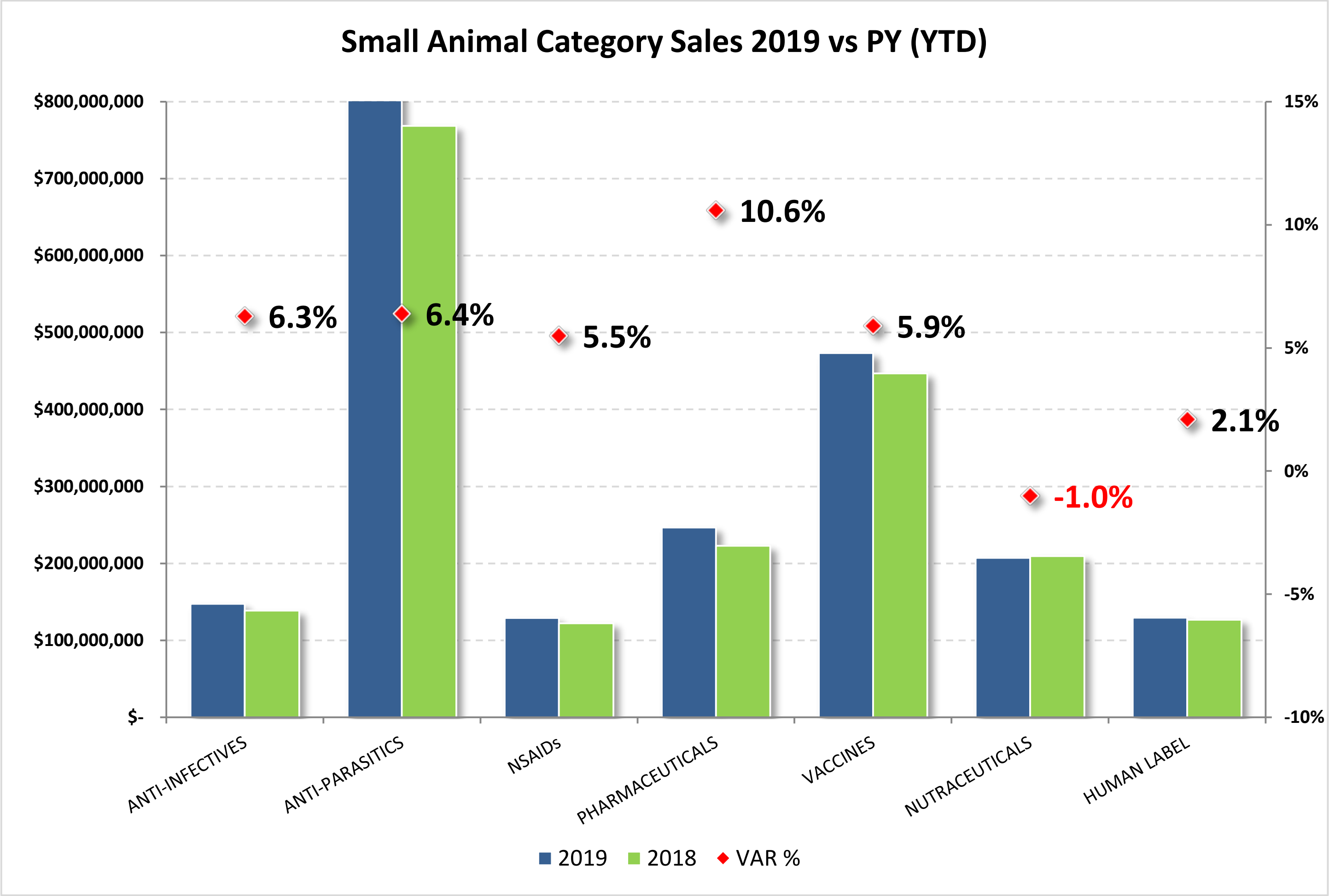
Robust Vaccine & Pharmaceutical Sales Growth Driving Small Animal Expansion

- Parasiticides, anti-infectives, sp. pharmas & NSAIDs drove strong SA category growth
- Human labeled sales are often opportunistic and mild annual swings are common; softening nutraceutical sales are surprising



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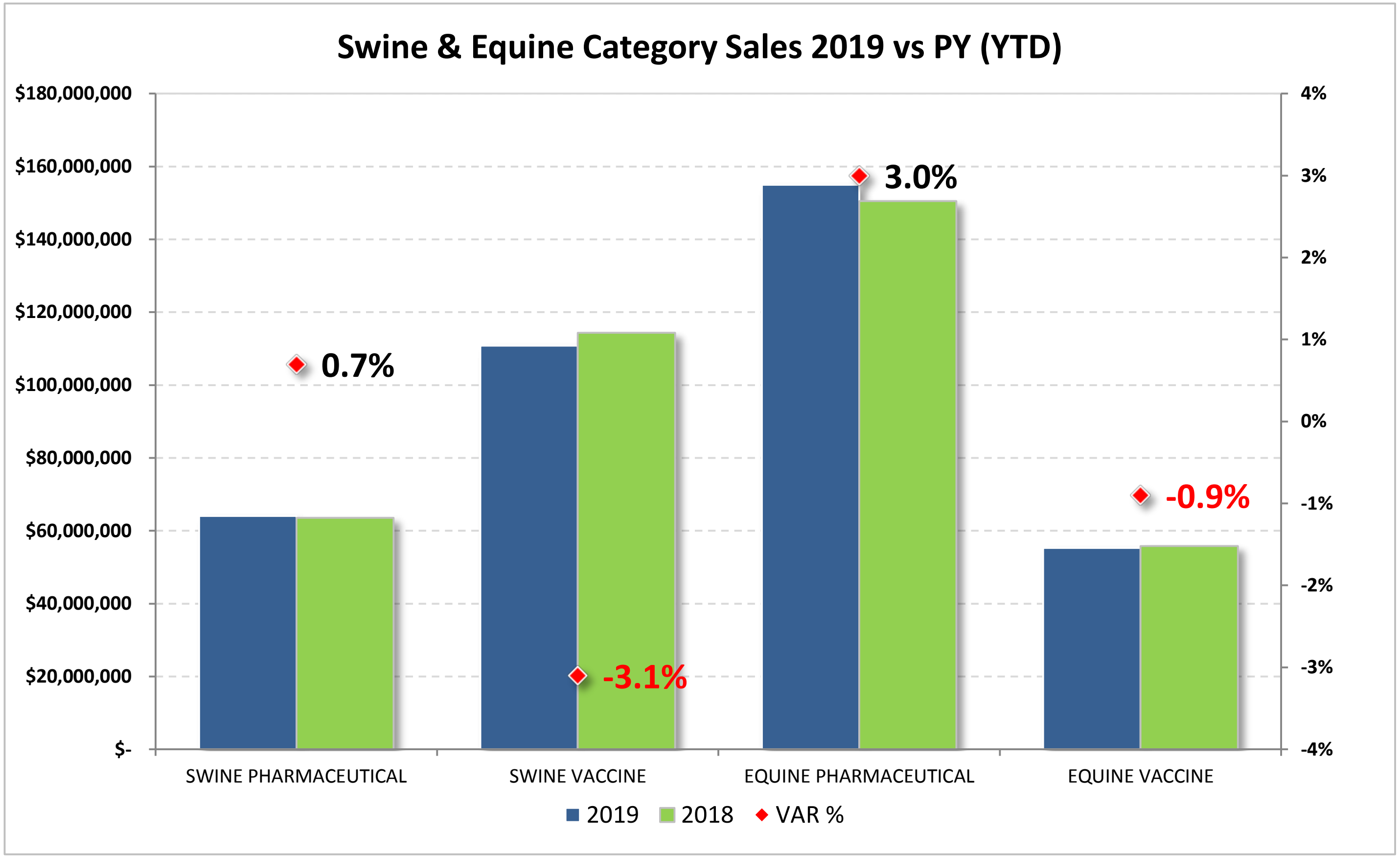
Swine & Equine Segment Sales Realized -1.7% & +1.9% Net Growth respectively vs 2018 Results

- Swine sales softened as vaccine sales fell -3.1% vs PY; pharma sales increased slightly by +0.7%
- Equine vaccine sales fell vs PY by -0.9% while pharma sales increased by +3.0%



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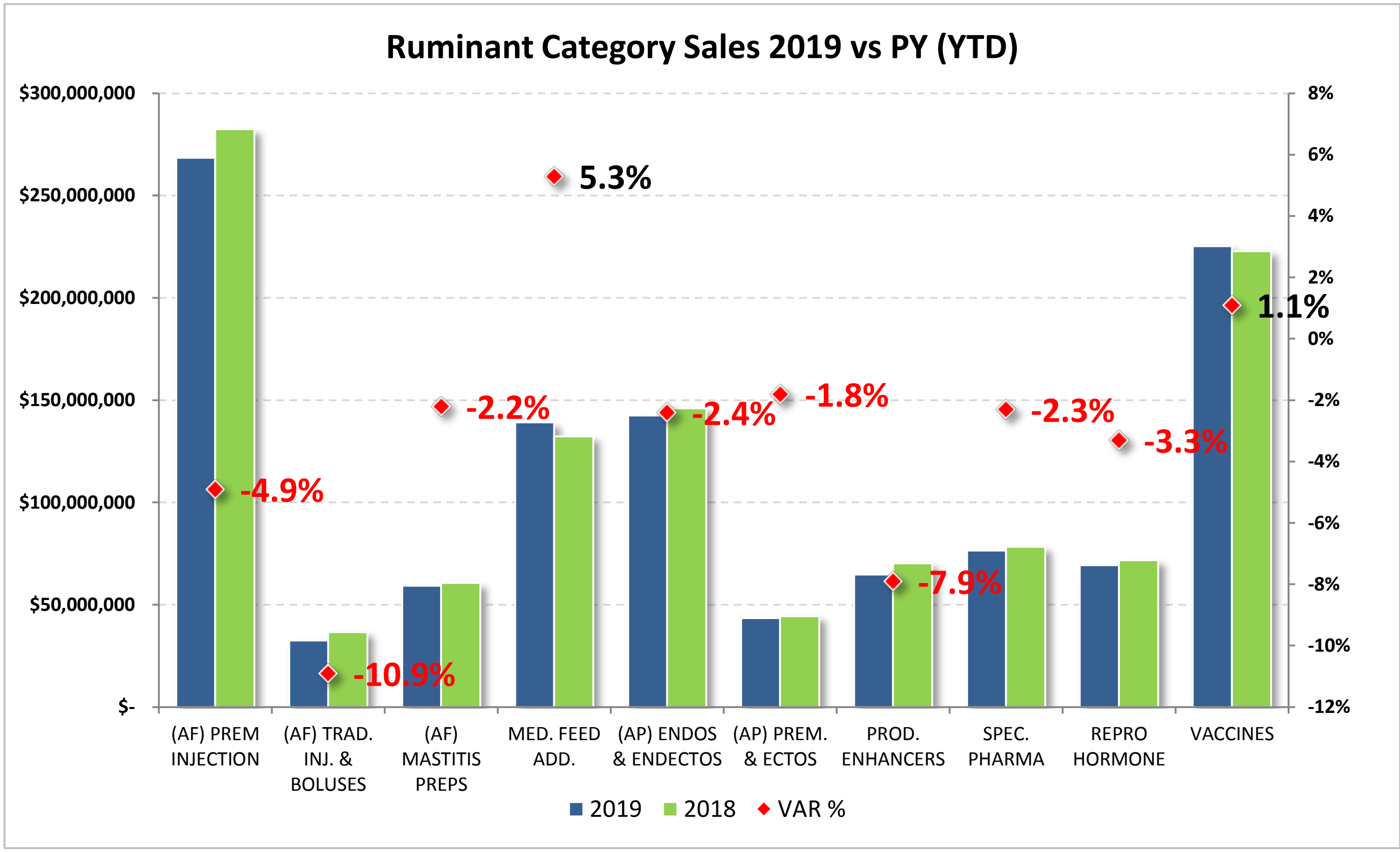
Ruminant Sales Lag; Market Prices & Weather Combine to Challenge Beef & Dairy Producers

- Vaccine & MFA sales remain positive vs losses in all other segments
- Pressure in the dairy segment is off-setting gains in cattle placements to drive negative volumes in multiple categories



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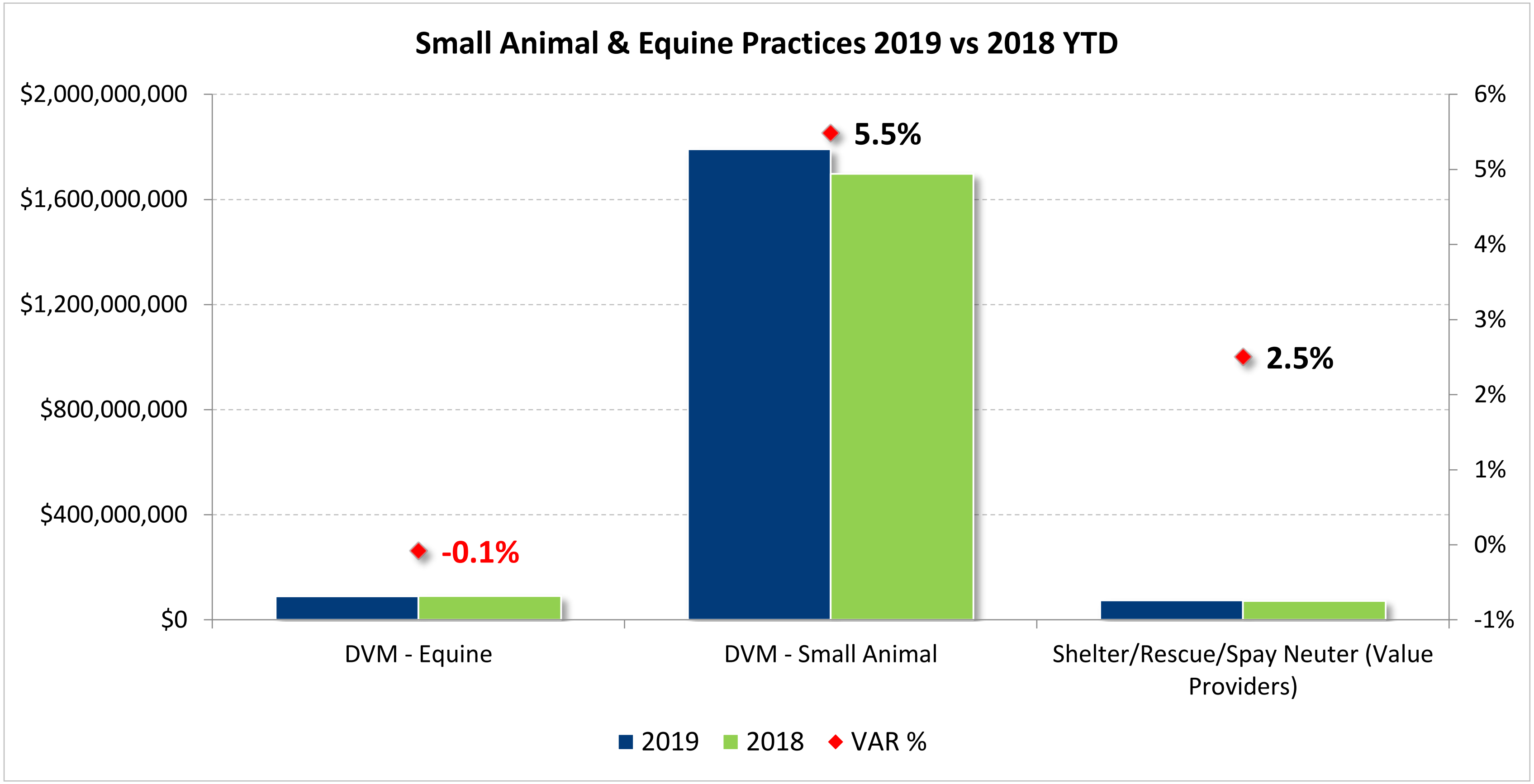
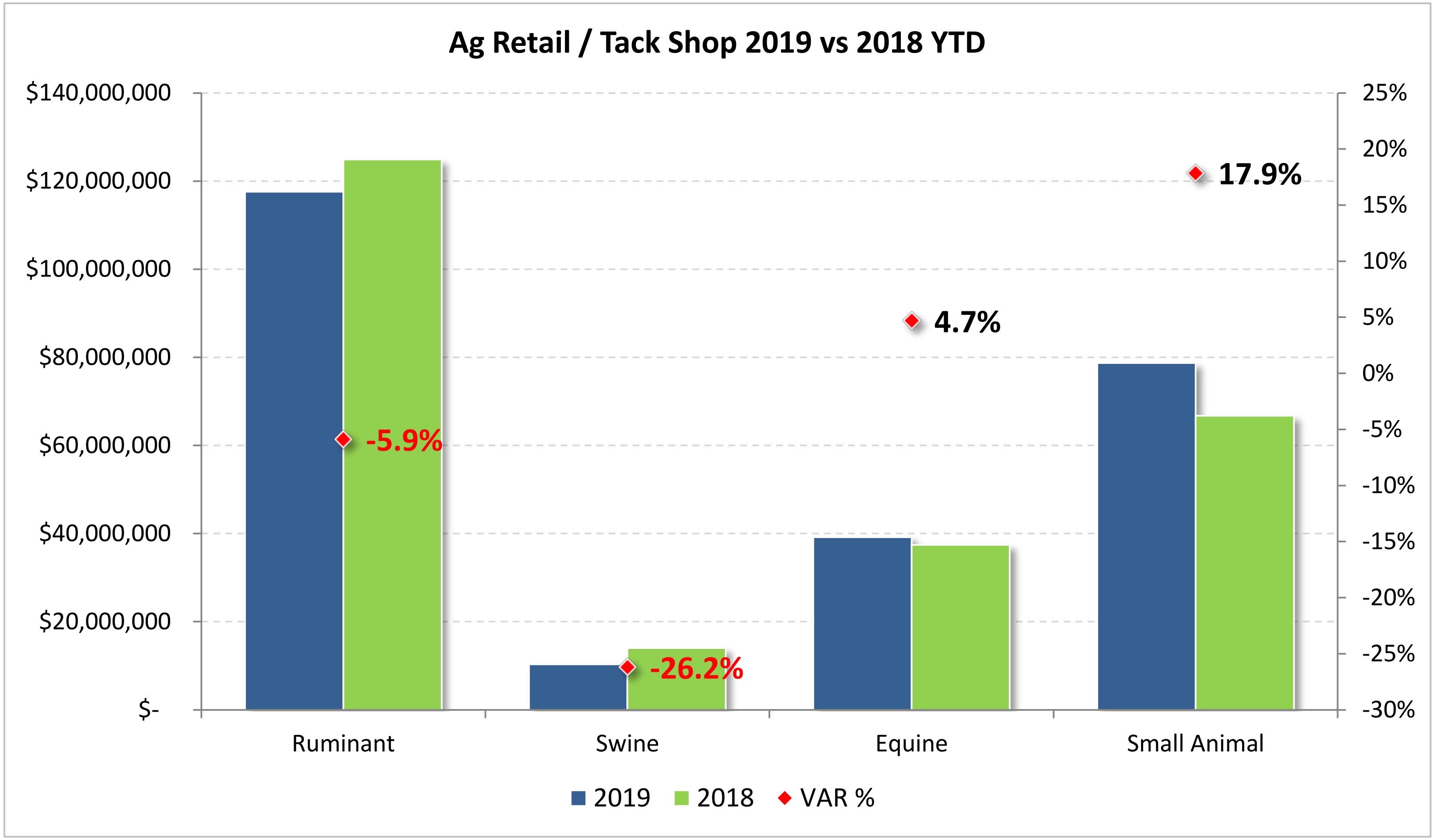
Smart Sort™ Customer Segmentation Analysis

DVM Small Animal / Shelter Growth Grew by > 5% vs PY while DVM Equine Fell Slightly



2018 Results: DVM EQ +0.5% DVM SA +3.9% Shelter +5.4%

Unlike 2018, Small Animal & Equine Sales Lead Ag Retail Growth while Ruminant Sales Lagged



2018 Results: Ruminant +4.3%   Equine +6.4%   Small Animal +0.4%

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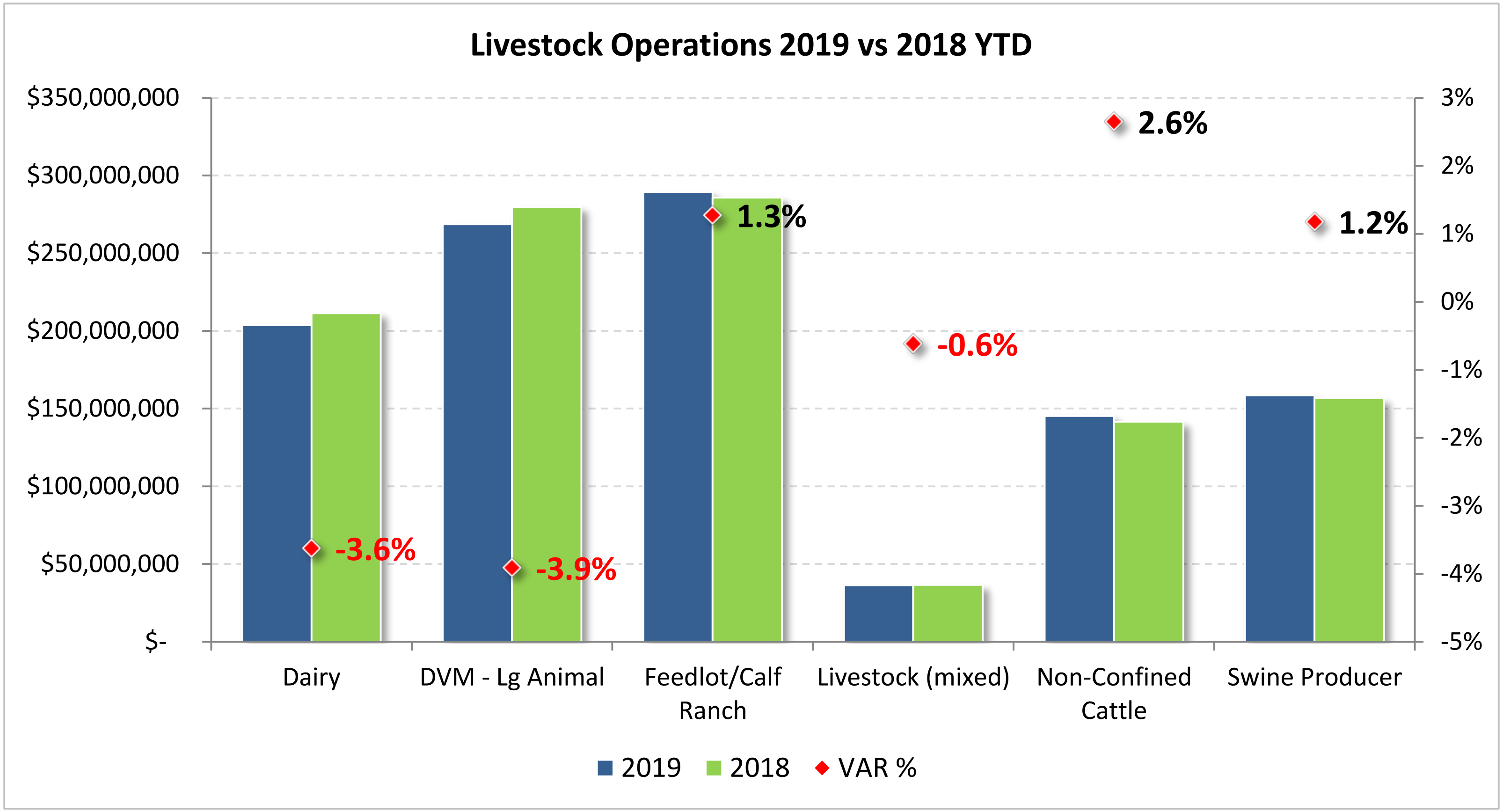
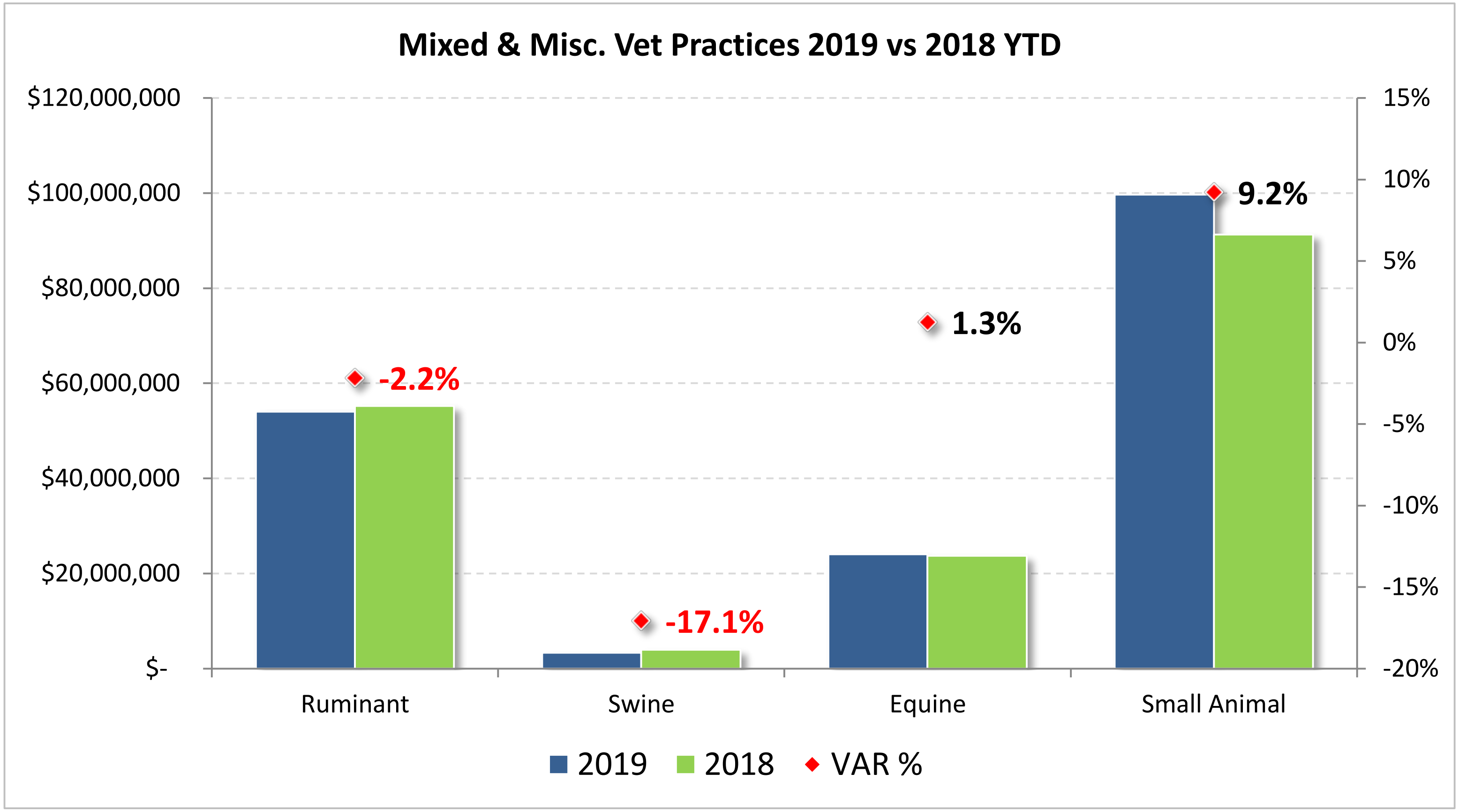
Soft Ruminate Sales Impact Large Animal DVM and Dairy Farms – Both Down Over 3%



2018 Results: Dairy -1.8% DVM LG AN +3.2% Feedlot +3.5%
Livestock +9.1% Non-Confined +17.8% Swine + -6.8%

Small Animal Growth Continues to Drive the Mixed Practice Sector



2018 Results: Ruminant -0.8% Equine +3.2% Small Animal +10.1%

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Animalytix Price Volume Analysis for Vaccine & Pharmaceutical Brands (JAN - JUN 2019)

ALX Conducted a 2019 YTD Price Volume Analysis for Established Vaccines & Pharmaceuticals

- A sample of 2,790 animal health products across all species and most product segments was used to assess price/volume effect for 2019 YTD
- Half year sales totaled $3.2 billion and represented 83.9% of total vaccine, pharmaceutical and nutraceutical sales reported by ALX for the period
- All year-over-year comparisons were done on a 'like-unit' basis with 5,600+ unique MFG SKUs included in the assessment*
- The analysis was based on distributor invoice pricing and inclusive of all reported free goods delivered but exclusive of any direct to producer, veterinarian or consumer rebates
- Aggregate results through June were as follows:
  - Net Pricing Variance +2.0%
  - Net Volume Variance - 0.8%
  - Net Total Variance +1.2%

**Excludes products incurring a change in go-to-market strategy from 2018 to 2019*

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Sharp Volume Declines Among Cattle Products Heavily Impacted YTD Aggregate Results

Summary Chart - Price/Volume Analysis

Species	Brands	2019 Sales (mil)	2018 Sales (mil)	PRI VAR (mil)	VOL VAR (mil)	Total $ VAR (mil)	PRI VAR %	VOL VAR %	Total VAR %
Ruminant	865	$ 1,053	$ 1,084	$ 20.7	$ (50.9)	$ (30.2)	1.9%	-4.7%	-2.8%
Swine	135	$ 149	$ 156	$ (5.3)	$ (2.1)	$ (7.4)	-3.4%	-1.4%	-4.7%
Equine	727	$ 210	$ 212	$ 3.5	$ (5.5)	$ (2.0)	1.7%	-2.6%	-0.9%
Small Animal	1040	$ 1,872	$ 1,793	$ 47.1	$ 31.2	$ 79.0	2.6%	1.8%	4.4%
Multi Sp	23	$ 3	$ 3	$ -	$ 0.1	$ -	-1.5%	3.2%	1.7%
Grand Total	**2,790**	**$ 3,287**	**$ 3,247**	**$ 66.0**	**$ (27.2)**	**$ 39.4**	**2.0%**	**-0.8%**	**1.2%**

- Price was the growth driver for ruminant, equine and small animal while swine experienced negative pricing effects; only SA experienced positive volume effects.
- Across all species, results by therapeutic categories were as follows:

	PRICING	VOLUME	TOTAL
– Anti-Infectives	+1.0%	-5.3%	-4.3%
– Anti-Parasitics	+3.3%	-1.4%	+1.9%
– Pharmaceuticals	+1.2%	+1.5%	+2.7%
– Vaccines	+2.2%	- 0.3%	+1.8%

** Excludes impact of any rebates; generally does include free goods programs*

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REAL DATA IN REAL TIME

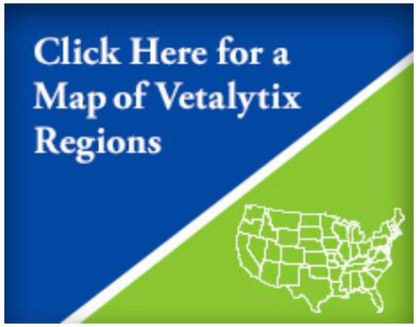
Vetalytix™ Market Insights

VETALYTIX

HELPING PRACTICES COMPETE

My Business Center

- **Welcome**
- **Marketplace**
- **In the Practice**
- **Profit Center**
- **Improvement Partners**



Getting Started

Welcome to your Vetalytix Management Portal. In the pages that follow, you will find critical business metrics to help you understand how your small business stacks up against local and national peers in several important areas of practice. From this dataset, you as an owner/manager can make important decisions to help your practice thrive in today's competitive environment.

1 Understand your practice performance and compare against your local region in our marketplace, practice and profit centers.

2 Review our educational toolkit of practice improvement suggestions and tactics, and start implementing the ones that are right for you. (Coming Soon)

3 Learn more about our approved practice improvement partners and start seeing the results in your business.

Marketplace

Utilize these benchmarks to see how your practice and local area compare to the national market in the areas of overall volume, wellness and procedural volume.

Visit the Marketplace

In The Practice

Utilize these metrics to understand your performance in the areas of revenue per patient, patient visit volume and new client growth.

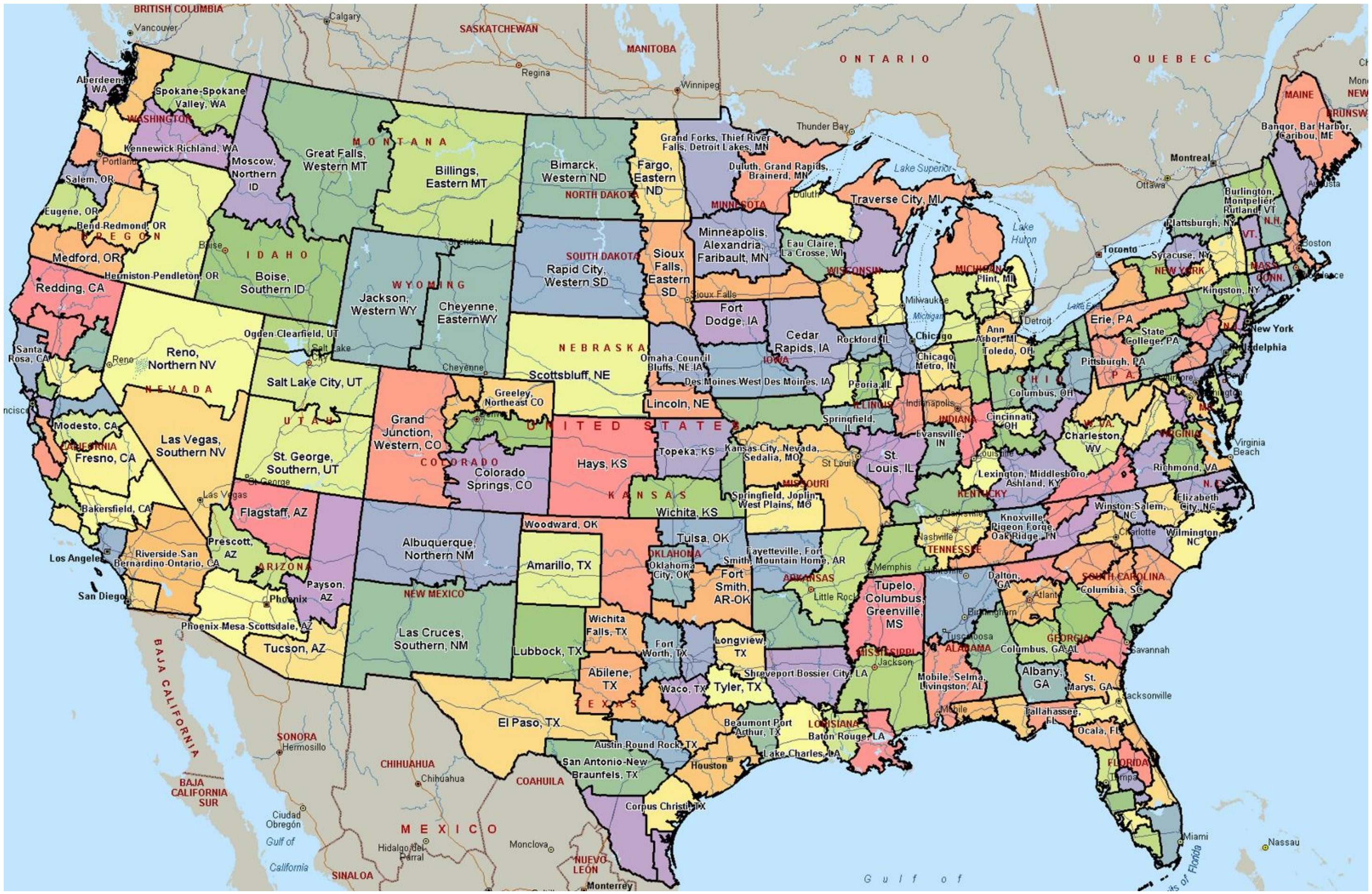
Visit the Practice Center

Profit Center

Understand the true profitability of the 8 most common revenue centers and monitor practice performance to make better business decisions.

Visit the Profit Center

Vetalytix Provides Benchmark Reporting For Key Practice Metrics Across 200+ Local Market Areas



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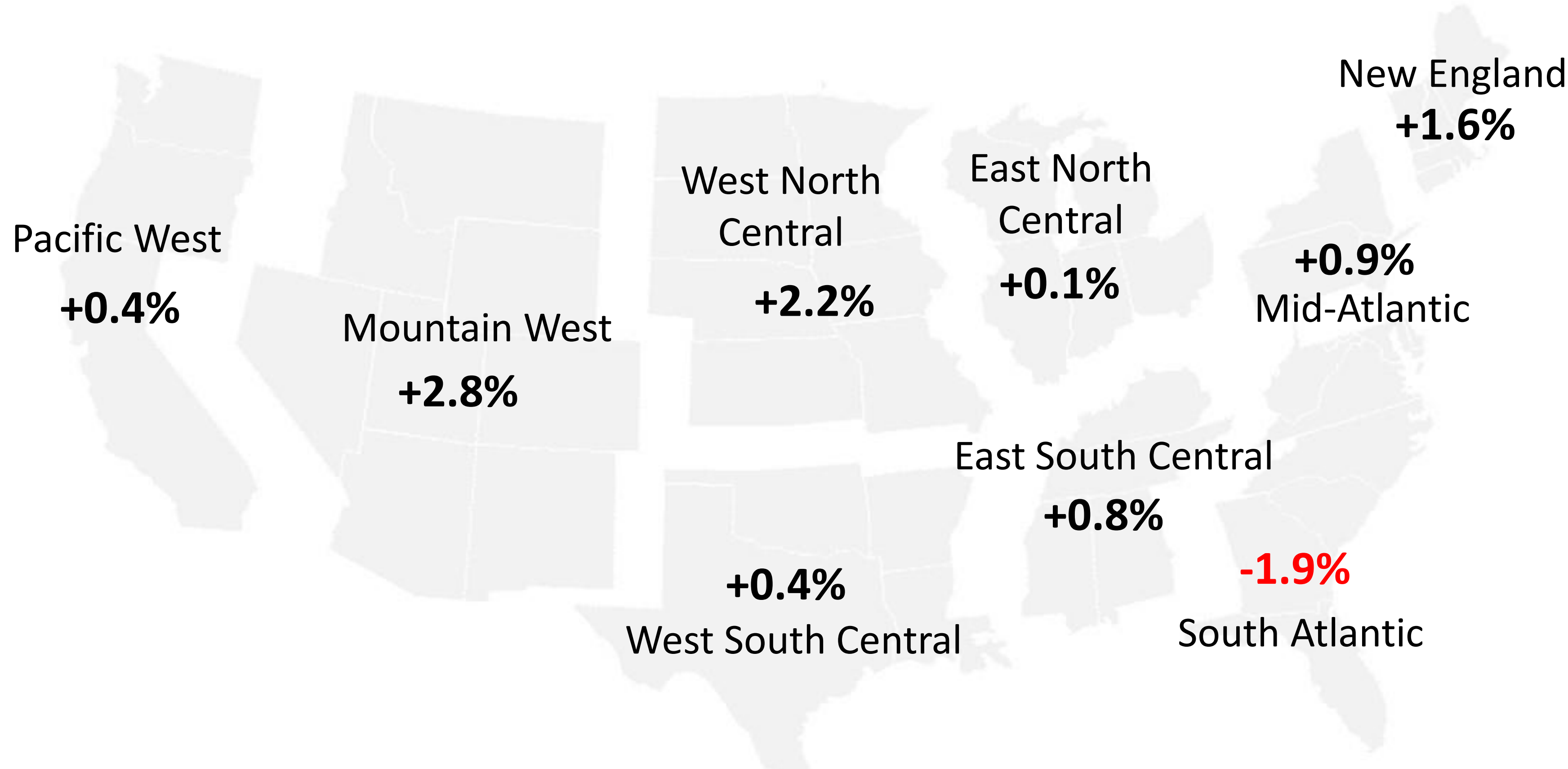
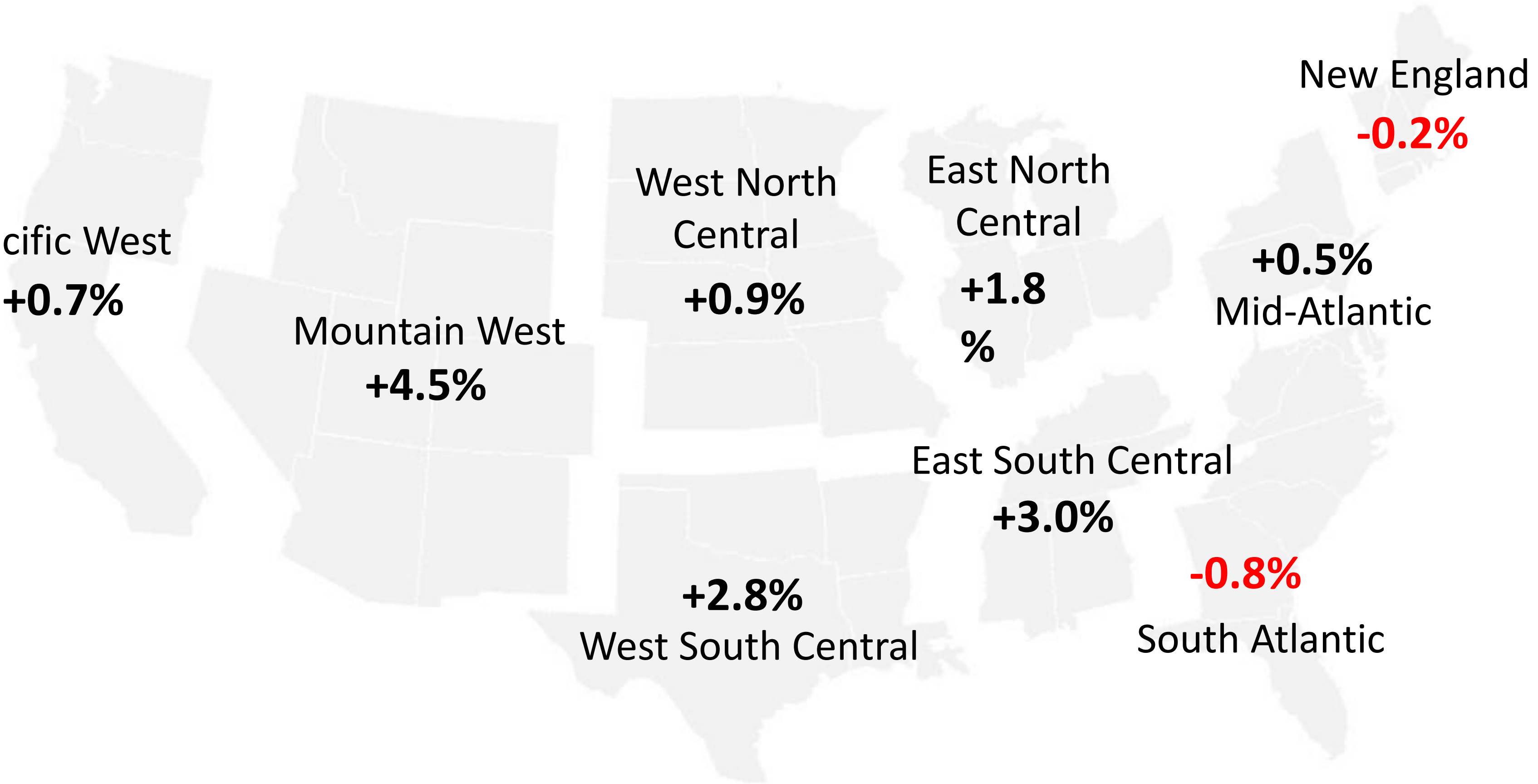
Growth in Canine Core Doses (DAP) Tepid at 0.4% and Reaching 39.7m (MAT Period JUL '18 - JUN '19)



Canine wellness visits are the critical component of the companion animal veterinary market; flat core dose growth suggest weakness in a key area

Feline Core (HCP) Doses of 13.6m Represented Growth of +1.1% (for the MAT Period JUL '18 - JUN '19)



In a reversal of recent trends, feline core doses in the Northeast and Midwest have stabilized and trended positive the past 12 months

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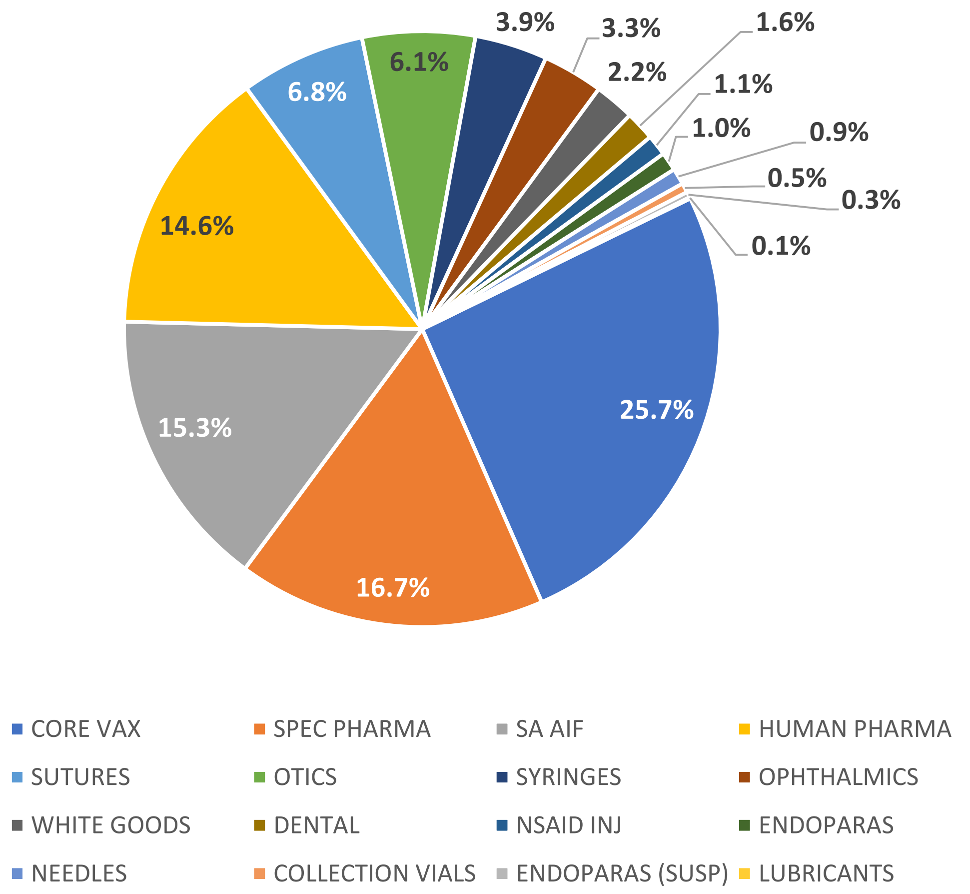
Veterinary Consumption Index

ALX Utilizes an Index of Exam Room & Surgical Suite Consumables to Assess Practice Visits

- 15+ Categories Comprise the $1.9 billion VCI Market Basket
- DAP, HCP & Rabies Vaccinations (CORE), Anti-Infectives, Human & Specialty Pharma are 70%+ of total $s in the market basket
- Small & mixed animal practices as well as urgent care, spay / neuter & most recently shelters are included
- Locations must purchase $5k of the market basket annually in the current or previous year to be included in the analysis *(new criteria)*
- Results recently re-stated to remove impact of products with multiple go-to-market strategies & oral NSAIDS



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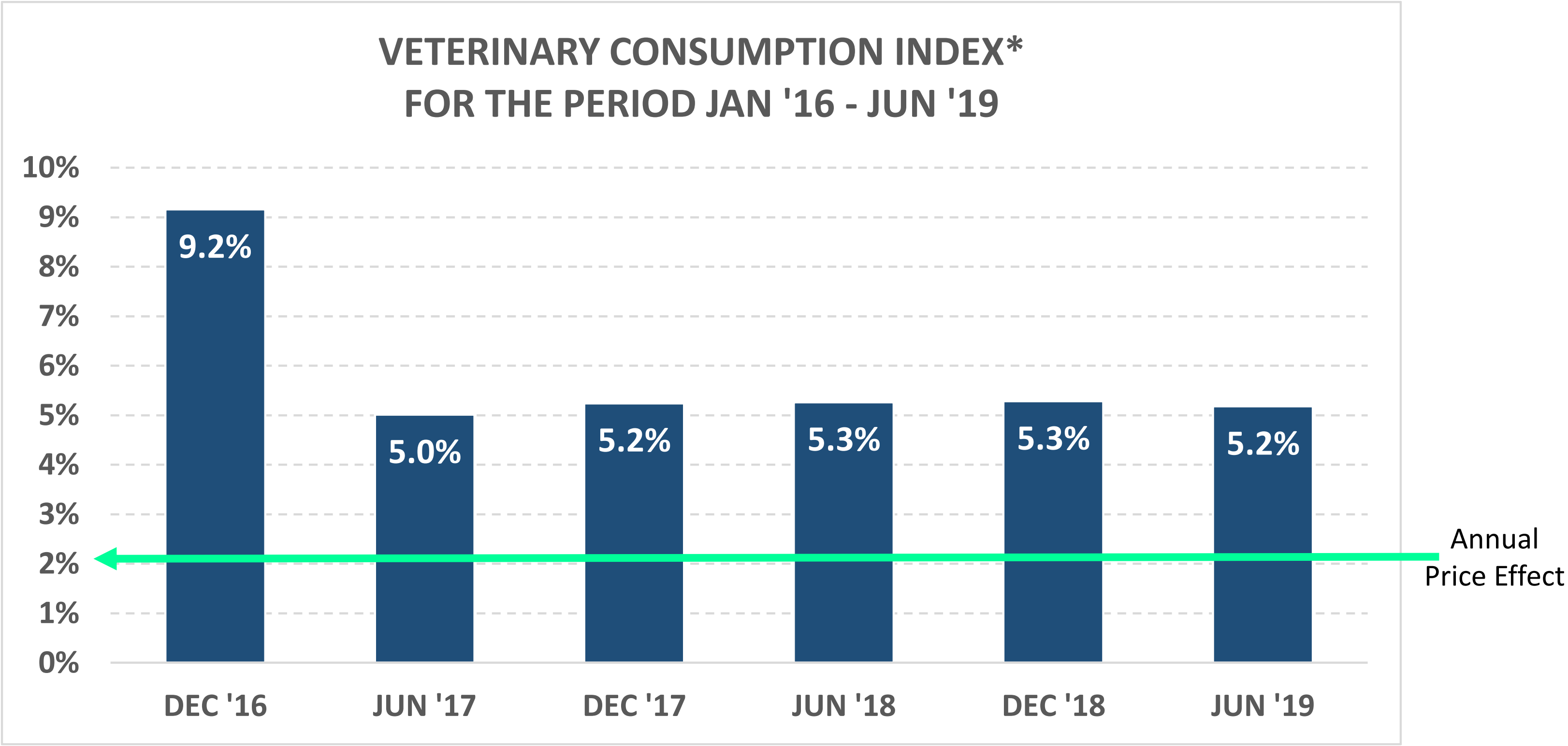
Veterinary Consumption Index (VCI) Spending Growth (as restated) is Unchanged for 30 Months



When re-stated to remove the impact of non-material locations, expansion for qualifying shelter locations, and removal of selected products with variable marketing approaches, the results are remarkably stable since January 2017

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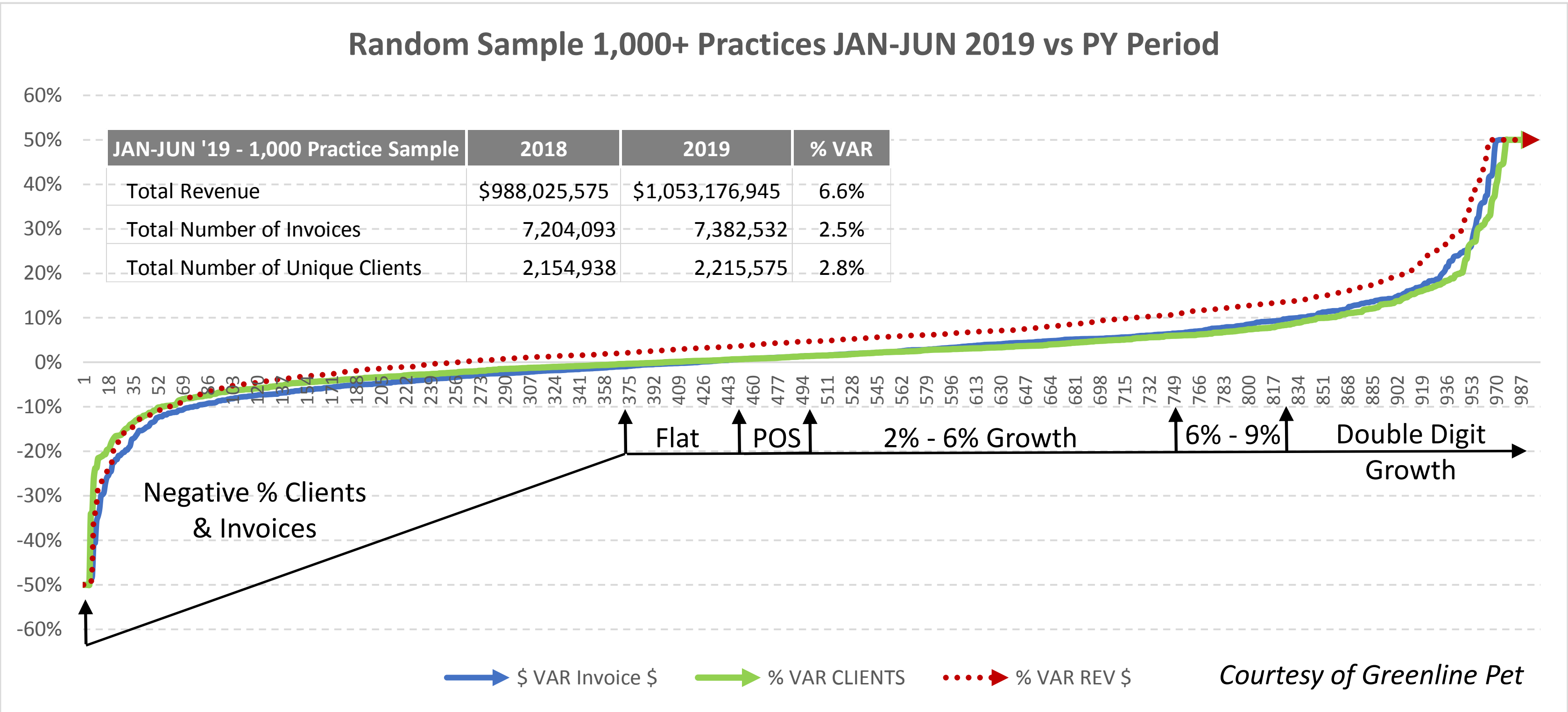
PIMS Analysis of 1,000 Unique Practices Reflect Growth with Significant Variance Among Practices



JAN-JUN '19 - 1,000 Practice Sample	2018	2019	% VAR
Total Revenue	$988,025,575	$1,053,176,945	6.6%
Total Number of Invoices	7,204,093	7,382,532	2.5%
Total Number of Unique Clients	2,154,938	2,215,575	2.8%

An analysis of 1,000 random practices showed 2.8% growth in unique patients and 2.5% growth in total invoices while revenue jumped by 6.6% on average; of these practices for patient and invoice results, 40% of practices were negative, 5% flat, 55% positive and 17.5%+ grew double digits

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Kansas City Animal Health Corridor

US ANIMAL HEALTH MARKET INSIGHTS

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