

Nationwide® | Purdue Veterinary Price Index

2019 update



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The Nationwide® | Purdue Veterinary Price Index:

Strong overall pricing gains continue; new analysis focuses on pricing trends in top metropolitan statistical areas.

The analysis of 10 years of claims data comprised of more than 30 million medical and well-care treatments shows a continuation of a sharp pricing recovery exclusively reported here in 2015. New to this edition is a deeper analysis of pricing trends in 18 metropolitan statistical areas, compared to pricing trends outside of these urban-suburban concentrations.

Overview

Now entering its fifth year, the **Nationwide | Purdue Veterinary Price Index** has become a benchmark for the veterinary industry. A collaboration between Nationwide's pet health insurance division and the Krannert School of Management at Purdue University, the **Veterinary Price Index** remains notable for the breadth and depth of Nationwide's claims data, and for the disciplined academic analysis by both the Nationwide and Purdue teams. With this collaboration, the Price Index provides analysis of a full decade of claims data, 30.6 million treatments in all with a value of more than \$3.3 billion.

The semi-annual refresh of the **Nationwide | Purdue** study has traced U.S. veterinary pricing trends in comparison to the U.S. Consumer Price Index (CPI), and has historically analyzed trends for medical vs. well-care conditions, species differences, regional variations, and veterinary practice zones (i.e., rural vs. suburban vs. urban). As the multi-year collaboration has matured, the **Veterinary Price Index** authors have expanded the scope of analysis. An analysis of claims data by type of veterinary practice, introduced in 2018, remains in the current study, comparing pricing trends at specialty vs. non-specialty practices, and corporate-owned vs. independent, non-corporate practices, identifying differences in how various practice types respond to economic pressures.

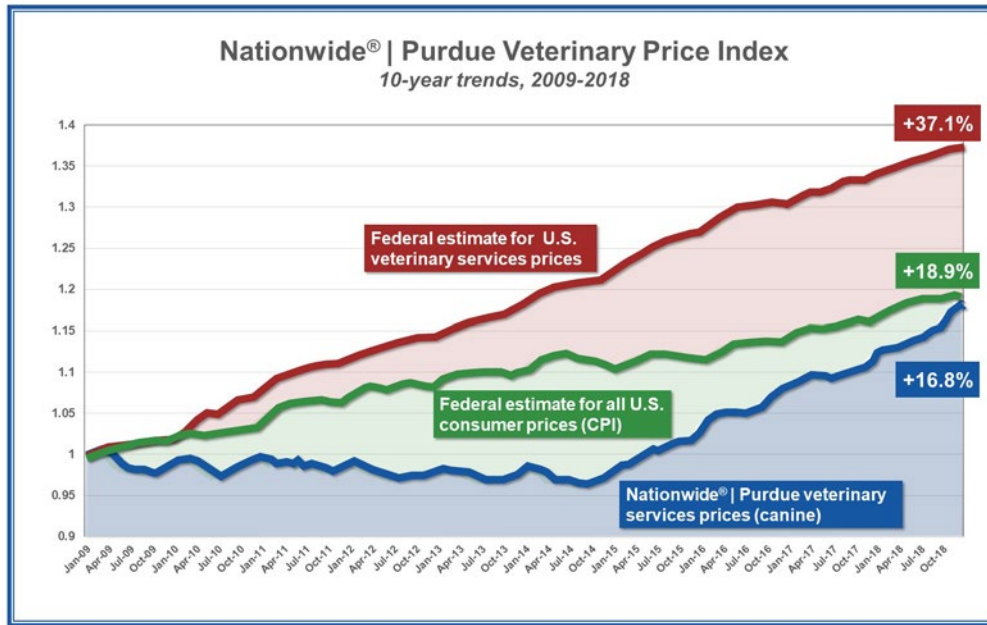
New to this release is an analysis of pricing trends at 18 of the top Metropolitan Statistical Areas (MSAs), side by side with trends for veterinary services outside of MSAs as well as compared to all other MSAs.

Distinct from previous editions of the **Nationwide | Purdue Veterinary Price Index**, this analysis shows that veterinary pricing overall has almost caught up to pricing of overall consumer goods and services as reported in the U.S. Consumer Price Index (CPI). The CPI reports an 18.9 percent increase for all consumer spending on goods and services over the same period, a figure similar to the change in the **Veterinary Price Index** that is based on all Nationwide claims over the same period. Of note: The **Nationwide | Purdue** analysis continues to show veterinary price changes to be far below trends for the industry as reported by in the CPI. Specifically, the federal government reported a 37.1 percent increase in veterinary prices between 2009 through 2018 compared to Nationwide claims data showing a 16.8 percent increase over the same time period. *Figure 1, page 3.*

Based on more than more than 30.6 million pet health treatments from January of 2009 through December of 2018 with a total value of \$3.3 billion, the **Nationwide | Purdue** study shows that veterinary pricing (what consumers actually paid for care, not the "list prices" at veterinary practices before any discounting) decreased in the recessionary and post-recessionary period of 2009 through 2014 by 3.6 percent.

In 2015, a sharp recovery began. Overall, veterinary pricing during the last four years, inclusive (end of 2014 to the end of 2018), has increased by 21.1 percent, offsetting the period of 2009 to 2014 when veterinary pricing was effectively stagnant or negative.

Figure 1



Methodology

The Nationwide database breaks down claims filed by pet insurance policyholders (members) into specific treatments. The expense of each treatment is separately recorded in the claims database. The **Nationwide | Purdue Veterinary Price Index** analysis uses this claims database, representing \$3.3 billion in veterinary services purchased by Nationwide members from 2009 through 2018. (Since the bulk of the database is comprised of canine claims, the focus of the analysis for this report is on veterinary services for dogs. An analysis of feline data was included in the July 2015 release.)

The total dataset contains 1,350 treatments for canines; it classifies 1,228 of these treatments as “medical” treatments, and the remaining 122 are classified as “well-care” treatments. In all, more than 30.6 million treatments are considered in the analysis. (By comparison, the CPI’s information on veterinary pricing is derived from a few hundred phone calls to veterinary practices.)

To construct a price index, it is important to have a large number of price observations of treatments obtained from actual financial transactions spread over the entire

time period being considered, as well as from a high percentage of veterinary practices in the United States, in this case approximately 24,000 of an estimated 26,000 practices. Only treatments that have at least 5,000 claims over the nine-year period from 2009 to 2018, inclusive, and at least 500 claims each year during this period were considered. This reduces the number of canine medical treatments to 140, and reduces the number of well-care treatments to 32. The resulting dataset after thoughtful exclusion of outliers – called “common” treatments for canines in this analysis – still represents 82 percent of total claims recorded across all treatment codes. Figure 2.

Figure 2

| Well-care | | Medical | |
|---|------|---|------|
| Heartworm test | 1.4M | Atopic or allergic dermatitis | 863K |
| Physical exam | 1.3M | Otitis externa | 769K |
| Vaccination, Bordetella | 1.2M | Pyoderma | 514K |
| Fecal test | 1.1M | Gastritis | 399K |
| Vaccination, DHLPP | 973K | Osteoarthritis | 384K |
| Vaccination, parvovirus | 891K | Enteritis | 376K |
| Vaccination, rabies | 710K | Cystitis | 307K |
| +25 other treatments | | +133 other treatments | |
| Total treatments analyzed: 12.1M | | Total treatments analyzed: 12.0M | |

The frequency of the treatment is based on claims data from Nationwide®, 2009-2018



from one another in the years 2009 to 2014, inclusive. Despite the recessionary and post-recessionary climate, well-care treatment pricing continued at a positive clip of 10.5 percent and followed a similar pattern of price increases to the CPI. Medical treatment pricing, conversely, experienced a downward trend in 2009 to 2014. This -7.3 percent trend line appeared to be the source of the overall stagnation of pricing during the 2009 to 2014 years.

To remain consistent on a year-over-year comparison basis, the 2013 base year for the basket of treatments used to calculate these indices was again used. Movement in the price indices reflect only price changes as the proportion of claims of each type are held constant at the level observed in 2013. In April 2014, Nationwide’s pet insurance unit, then operating as Veterinary Pet Insurance, or VPI, had a change in its claim process that impacted the way physical exam costs were represented in the dataset. To preserve consistency of the data before and after April 2014, the affected physical exams after April 2014 and those that would have been affected prior to April 2014 were excluded from the analysis. More than 80 percent of the physical exams were retained in the final analysis.

Breaking down the data: well-care vs. medical

As previous editions of the **Nationwide | Purdue Veterinary Price Index** have shown, medical and well-care pricing trends behaved very differently

Starting at the end of 2014 and running through the end of 2018, medical treatment pricing has taken a notable upward turn. In fact, the overall increase of 21.1 percent in the **Nationwide | Purdue Veterinary Price Index** from the end of 2014 to the end of 2018 is predominantly driven by medical treatments (+23.4 percent), as compared to well-care services (+16.5 percent). *Figure 3.*

Pricing trends in major metropolitan areas: A new data cut

Our **Nationwide | Purdue Veterinary Price Index** typically includes data segmented by general population zones – urban, rural, suburban – and those categories are discussed in the next section. New to this update is to divide urban, rural, and suburban areas into those located in large Metropolitan Statistical Areas (MSAs) versus those not located in large MSAs (small MSAs and non-MSA areas), as requested by audience members at previous veterinary industry presentations.

Figure 3

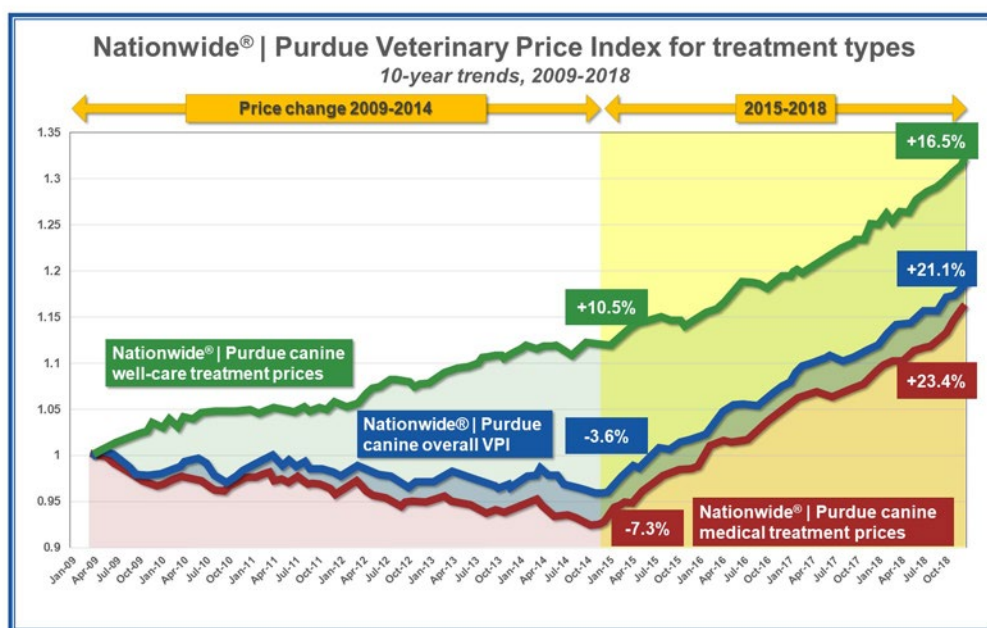
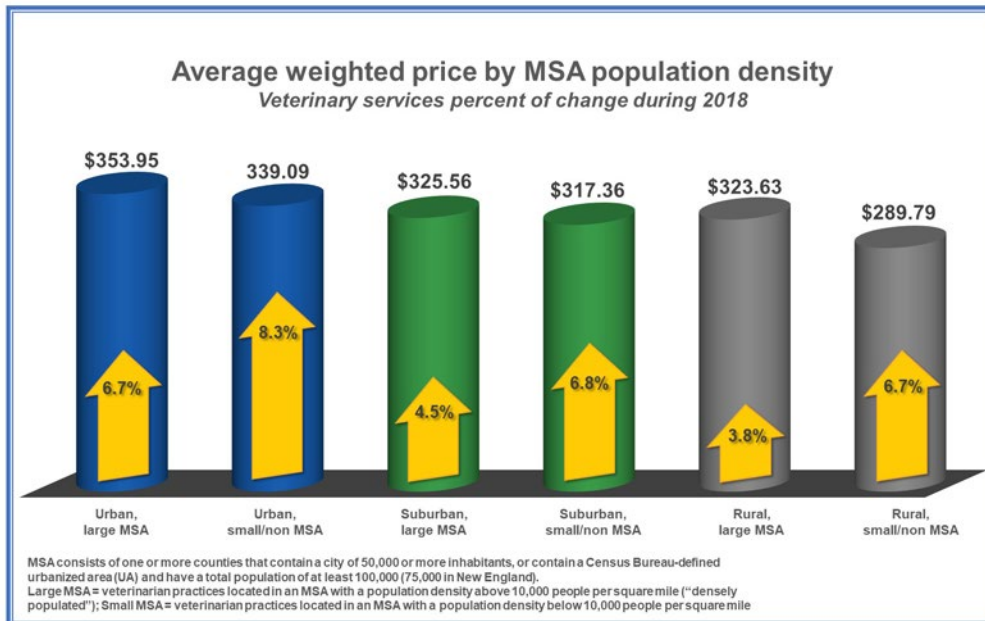


Figure 4



From the end of 2017 to the end of 2018, urban areas not located in large MSAs (“Urban, small MSA”) experienced the greatest increase with an average weighted pricing of 8.3 percent. Urban locations in large MSAs and suburban/rural locations not in large MSAs had very similar year-over-year percentage gains in the range of 6.7-6.8 percent. Two noteworthy deviations were an increase of only 3.8 percent in rural areas located in large MSAs (“Rural, large MSA”) and an increase of only 4.5 percent in suburban areas located in large MSAs (“Suburban, large MSA”). Figure 4.

When evaluating the data over a full 10-year period, small market rural areas (“Rural, small

MSA”) showed the highest rate of pricing increase (20.9 percent), along with large urban areas (“Urban, large MSA”) at 17.7 percent. Since rural areas typically have lower veterinary pricing overall (often lower overhead, labor costs, etc.) the increase in rural areas may have been the result of holding down costs during the recessionary period, followed by efforts to catch up to peers in more densely populated areas. Rural practices near large urban centers (“Rural, large MSA”) did not experience as sharp an increase (11.7 percent), perhaps in part because pricing in those areas, influenced by urban practices, were already higher than in more isolated areas. Figure 5.

Figure 5

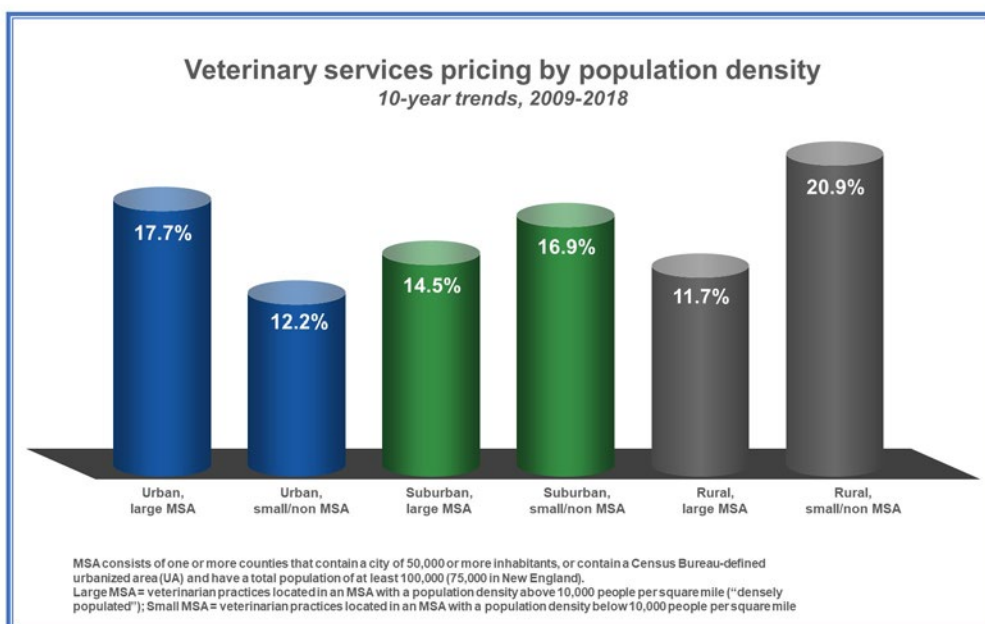
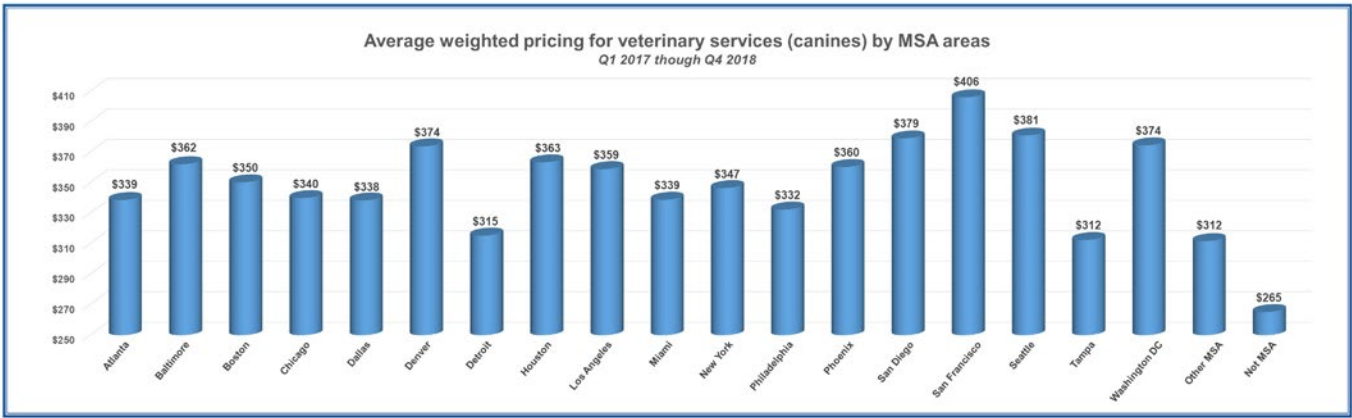


Figure 6



Isolating the data to the two-year period 2017 and 2018, inclusive, revealed a considerable range in pricing. Given the notoriously high cost of living in the San Francisco Bay Area and pricing in the regional economy driven by the technology industry, few will be surprised to see those prices at the top, along with Seattle, Washington, D.C., San Diego and Denver. Figure 6.

A broader look at density and region

When aggregating data into trend lines, we continue to observe a consistent stair-step differential in pricing by population density. Although all population densities saw increases over the 10-year period, the recovery has been strongest in rural areas, with pricing up 24.7 percent. Figure 7.



Figure 7

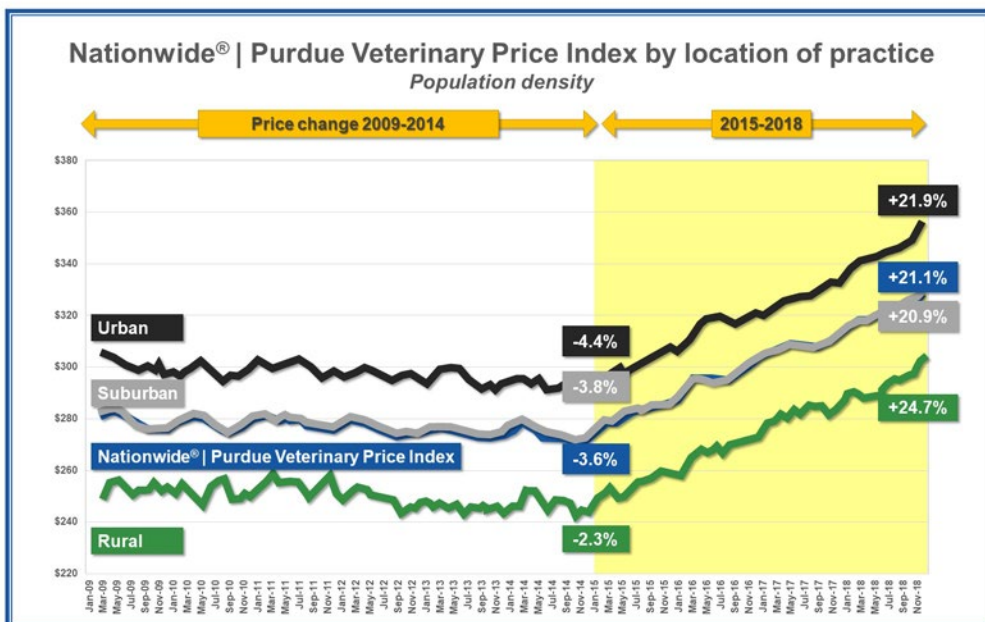
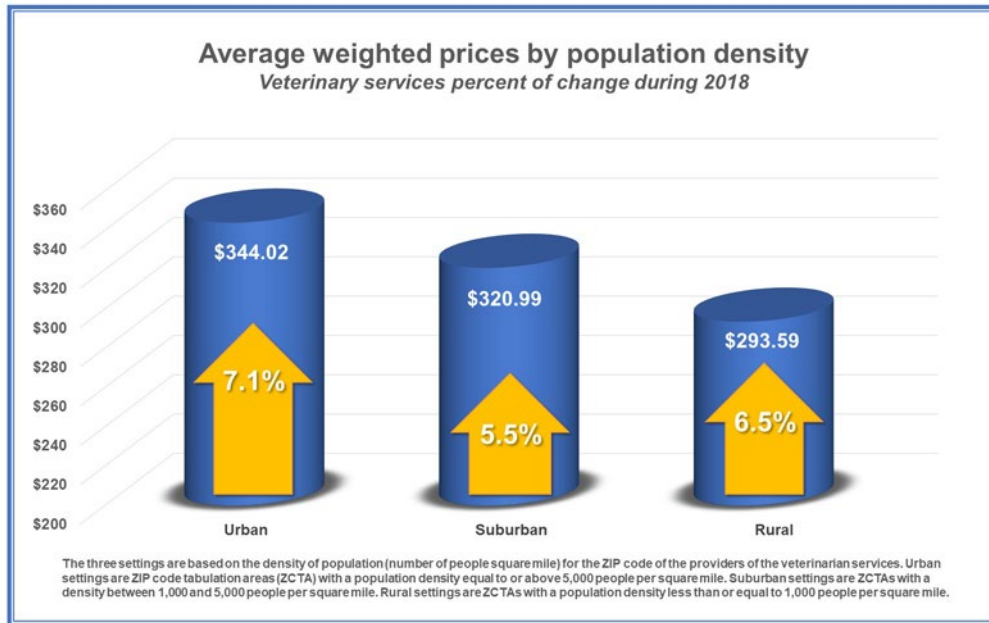


Figure 8



For 2018, average weighted prices in urban areas were the most expensive (\$344.02). Prices in suburban areas were approximately \$25 less than prices in urban areas, and prices in rural areas were approximately \$25 less than prices in suburban areas. Over the period from the end of 2017 to the end of 2018, prices increased the most in urban areas (7.1 percent) and the least in suburban areas (5.5 percent). Figure 8.

Differences across geographic regions of the country continue to reflect the pricing pressures in play. Both of the more modest regions for veterinary pricing – the South and the Midwest – experienced decreases in prices during the period from the start of 2009 to the end of 2014 that exceeded the price decreases experienced in the Northeast and West. The subsequent price increases over the 2014 to 2018 period further distanced prices in the West from these two regions. However, prices in these two regions gained relative to prices in the Northeast region area as the price increases over the 2014 to 2018 period were lower in the Northeast region compared to the South and Midwest regions. As of 2018, the West region remains the nation's

The gap between urban and rural pricing data has narrowed during the time period studied, as country practices caught up a bit to their city counterparts (\$89 gap or differential in 2009 reduced to \$50 gap in 2018). Figure 9.

Figure 9

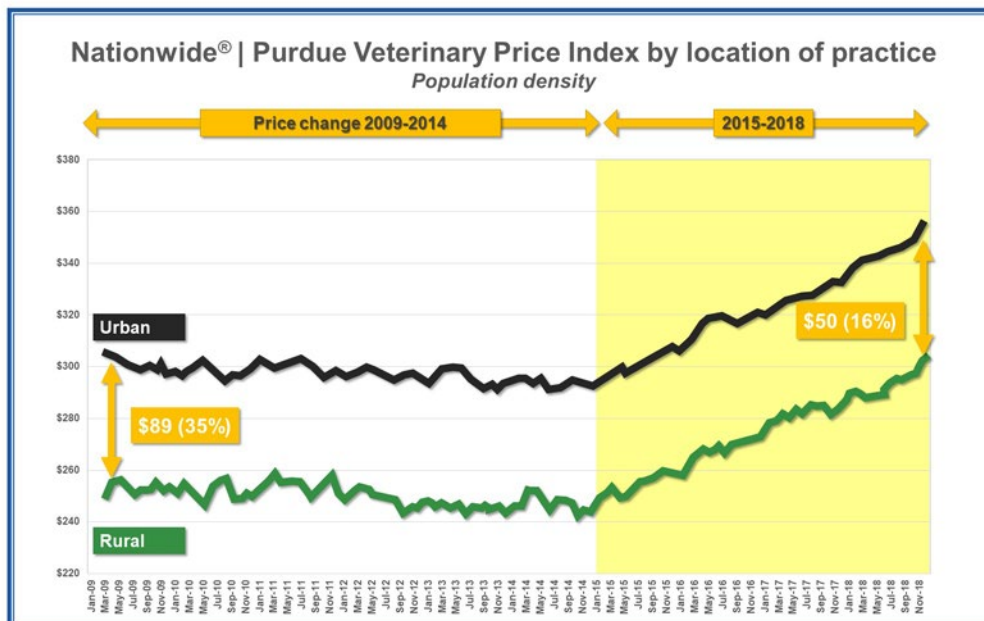
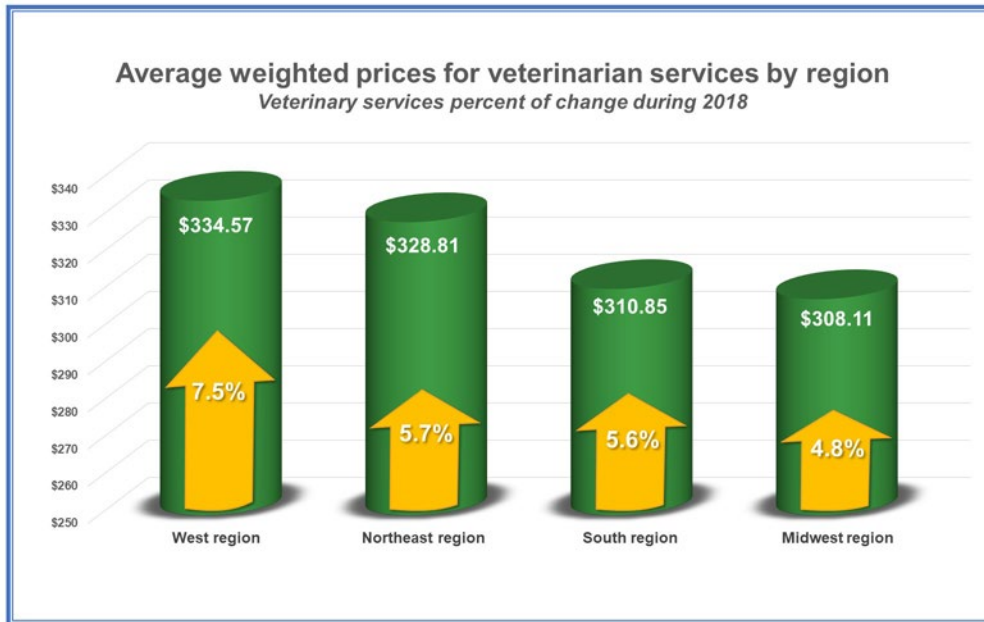


Figure 10



most expensive for veterinary care (\$334.57), with the Northeast close second (\$328.81) after a multi-year run at the top. The South and Midwest are likewise closely paired in pricing, but below prices at the other two regions. Pricing in all four regions gained over the period from the end of 2017 to the end of 2018, with the West showing the largest increase at 7.5 percent. Figure 10.

Specialists vs. non-specialists: Trend lines converging

We discussed above how veterinary pricing trends for medical treatments can be very different than pricing trends of well-care treatments. We also observed that the impact of medical treatment pricing can be profound. In fact, it appears to have

been the force behind overall veterinary price stagnation from 2009 to 2014.

Previous analyses have indicated that specialty practice pricing was even more severely impacted in the period from 2009 to late 2014, with a negative pricing trend of -13.7 percent. These results seem to follow anecdotal stories of a reduced willingness of consumers to pay for specialty services during the recessionary and post-recessionary period. Less dramatic but still significant is the pricing drop among non-specialty practices over the same period (-4.5 percent).

Just as we saw a notable transition towards recovery for all practices in early 2015, the recovery came swiftly for specialty practices, too. In our

Figure 11

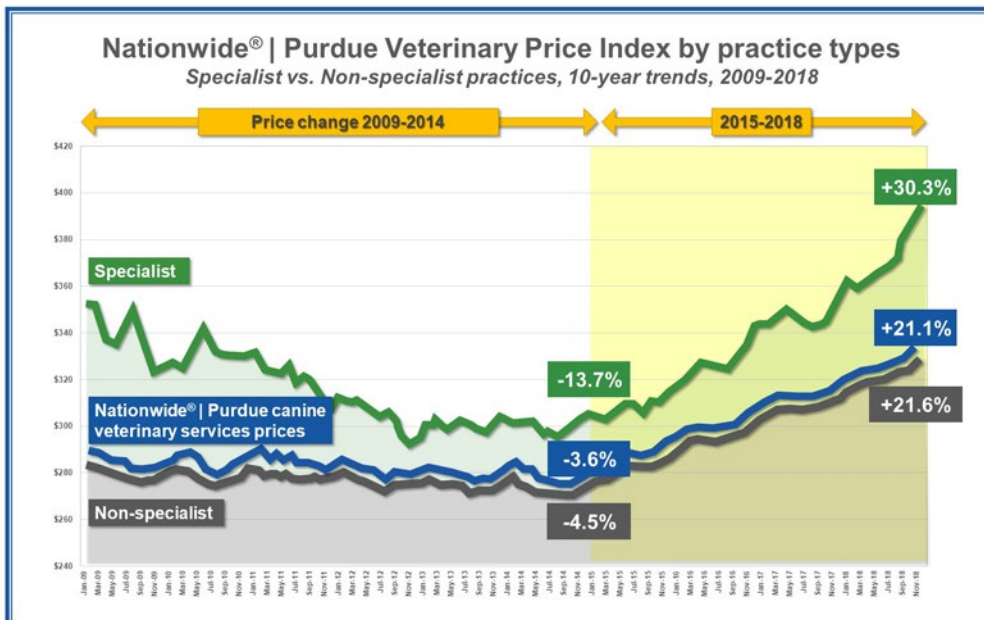
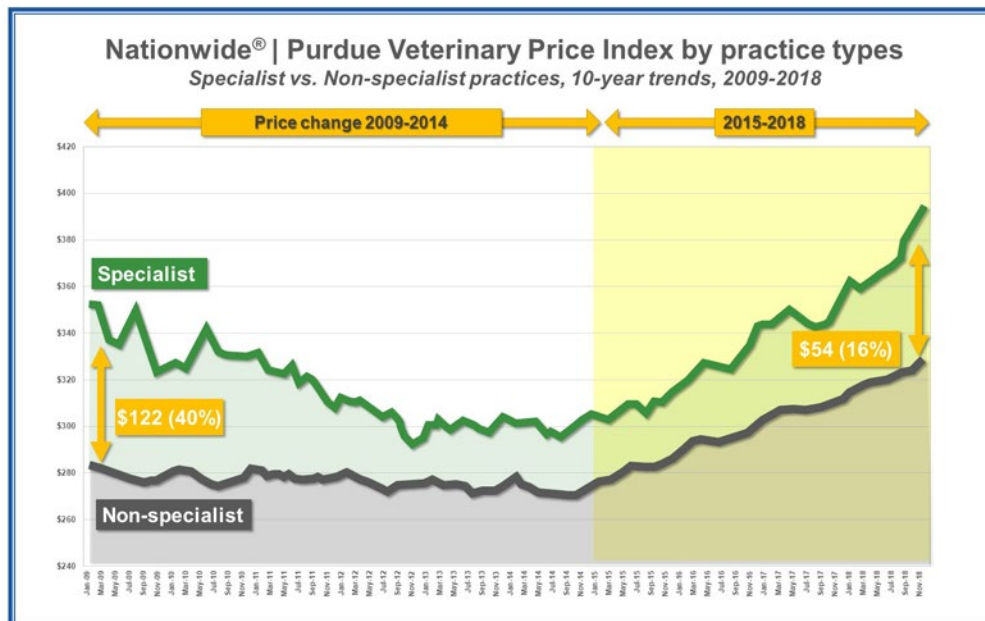


Figure 12

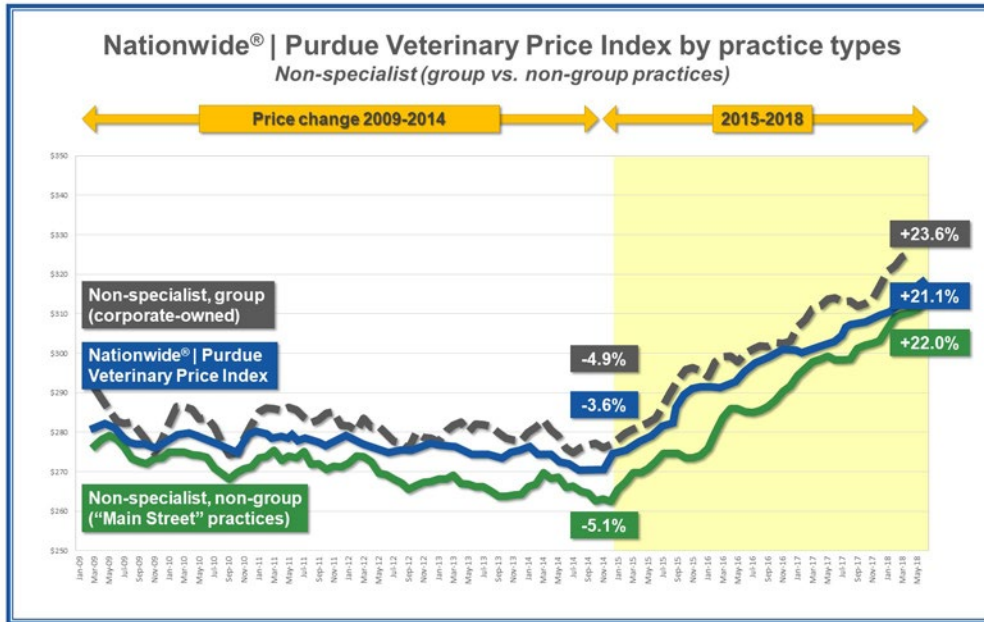


separation of specialty vs. non-specialty practices, we see that they both have been experiencing pricing increases in 2015 through 2018. With a 30.3 percent increase from the end of 2014 through the end of 2018, specialty practices more than recovered all the ground lost in 2009 to 2014. Non-specialty practice pricing has recovered too, although it has not been quite as robust for primary-care veterinarians at 21.6 percent. Figure 11 on previous page.

An interesting observation when comparing specialty practices to non-specialty practices is the gap or deviation in pricing changes over time. Early in the study period (2009), specialty practice pricing exhibited a \$122 or 40 percent pricing differential compared to non-specialists. In 2018 this pricing differential had changed, with specialty pricing \$54 or 16 percent higher than non-specialty practices. Whether or not the gap continues to widen is something to watch in future studies. Figure 12.



Figure 13



Breaking out practice ownership

During past presentations of the **Nationwide | Purdue Veterinary Price Index**, members of the veterinary industry asked if there were observed differences in pricing between corporate-owned and independently owned veterinary practices. Inspired by these questions and starting with 2017 reports of the **Veterinary Price Index**, the authors included pricing trend comparisons between two different models of veterinary practice ownership: corporate-owned (non-specialist) practices vs. independently owned (non-specialist, “Main Street”) practices. Throughout 2009 to 2018 corporate-owned (non-

specialist) practice pricing consistently tracked above the overall Index. Meanwhile, independently owned (non-specialist, “Main Street”) practices consistently tracked below the Index. The data show that independently owned practices took the bigger pricing hit (-5.1 percent) during the 2009 to 2014 period. However, since 2015 they have also posted recovery nearly as robust as corporate-owned non-specialty practices, a 22.0 percent increase vs. a 23.6 percent gain for corporate-owned (non-specialist) practices. Of note: Over the 10 years of pricing data, we have observed a fairly steady differential (9 percent) between corporate-owned and “Main Street” practices. Figure 13, 14.

Figure 14

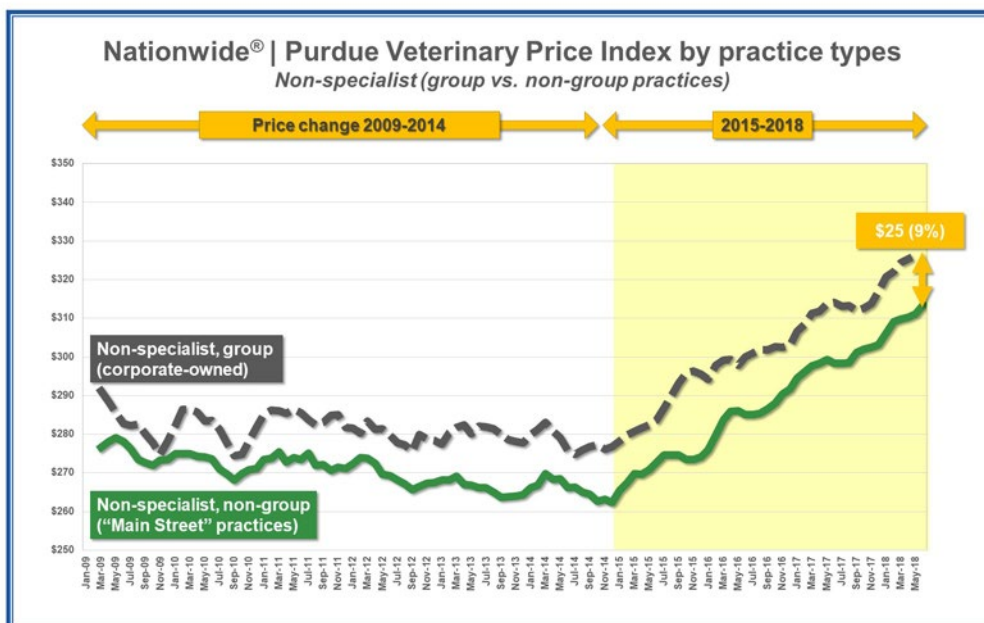
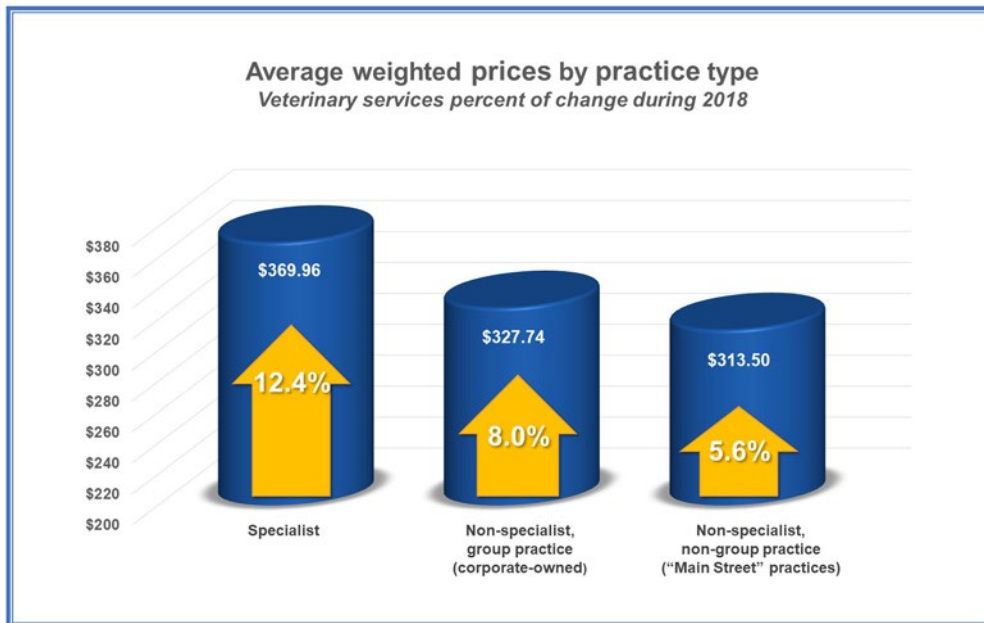


Figure 15



Wrapping it all together

Although specialty practice pricing fell the most during the recession and has recovered nicely, specialty practices overall have yet to return to their original pricing gap (40 percent differential, as depicted in Figure 12 above) compared to non-specialists. However, specialty practices continue to post the highest average weighted prices, \$369.96, experiencing a 12.4 percent increase in 2018 compared to 2017, compared to non-specialists.

Price increase trends of corporate-owned (non-specialty) practices trailed their independently owned competitors over the last three years, but the former posted increase of average weighted price of \$327.74 (an 8.0 percent increase in 2018 compared to 2017) among non-specialist practices.

The lowest average weighted price in this analysis is \$313.50 (a 5.6 percent increase in 2018 compared to 2017, and is attributed to non-specialist, non-corporate ("Main Street") practices. Figure 15.

Background

With more than 750,000 currently insured pets, Nationwide is the first and largest pet health insurance provider in the United States; as such, the company has access to millions of treatment prices through its peerless claims data.

Nationwide began its collaboration with the Krannert School of Management at Purdue

University in 2014; the relationship was developed to provide third-party analysis of Nationwide's vast proprietary claims data. Nationwide has its own expert research team for both the financial and medical analysis of its pet health insurance claims database. Despite that, the industry-academic collaboration was formed to provide a more independent analysis of veterinary pricing, with the mutual goal of creating a standard for the entire companion animal veterinary industry.

The inaugural Nationwide | Purdue Veterinary Price Index was presented at the North American Veterinary Community (NAVC) conference (now known as VMX) in January of 2015 and again at the Western Veterinary Conference (WVC) the following month. After a refresh of the data and a subsequent analysis, the second edition of the study was presented at the American Veterinary Medical Association (AVMA) convention in July of the same year. The Veterinary Price Index has been refreshed at regular intervals since, with presentations to industry groups such as VetPartners, and various state and regional meetings of veterinary medical associations.

As the collaboration between Nationwide and the Krannert School of Management at Purdue University continues into a full fifth year, the Veterinary Price Index has illustrated a recessionary multi-year decline in veterinary pricing, the current recovery, and most importantly, the point at which the trajectory reversed.






Summation

This latest refresh of the **Nationwide | Purdue Veterinary Price Index** continues to show the strong pricing recovery reported in the previous analyses. After years of falling veterinary prices reflected in pet health insurance claims, Nationwide's data through the end of 2018 confirms increases across all sorts of treatments, all types of population densities, and all geographic regions. Over the 2009 to 2018 period covered by the **Nationwide | Purdue** analysis, claims records show that veterinary pricing trends have caught up to other CPI-reported trendlines for all consumer goods and services.

Nationwide considers such uses of its data to be of service not only to the small animal veterinary community but also to the broader community in the pet-care services industry, individual pet owners and Nationwide members. The ongoing commitment to the **Nationwide | Purdue Veterinary Price Index** represents a considerable investment in service to those overlapping communities.

In providing data to show trends in veterinary pricing, Nationwide continues to deliver on its promise to the veterinary community to provide information that will help pet owners and veterinarians work together as a team for the better health of companion animals that are so important to the continued well-being of people of all ages.

The next presentation of the **Nationwide | Purdue Veterinary Price Index** will be offered in the first quarter of 2020, reflecting claims data through the first half of 2019. Subsequent presentations for 2020 will be noted on NationwideDVM.com website and NationwideDVM social media platforms. The refreshed studies that accompany these presentations are always available for downloading at no charge at NationwideDVM.com.

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¹ "Pet Industry Market Size & Ownership Statistics," American Pet Products Association, February 2017.
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