

# Average Cost of the Most Common Heart Procedure in the U.S by State

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## Introduction

We wish to figure out the most common heart procedure in the U.S using the *Medicare Physician and Other Supplier Data* for years (2012-2016) and then calculate the average cost of this procedure for each state over our five-year time period.

## Methods

We extract the following columns for each year (2012-2016) using `dplyr`:

- **HCPCS\_CODE**: Code for the specific medical service
- **HCPCS\_DESCRIPTION**: Description of the HCPCS code for the specific medical service
  - We will search in the description for all heart procedures
- **NPES\_PROVIDER\_STATE**: The state where the provider is located
- **LINE\_SRVC\_CNT**: Number of Services
  - We will extract the heart procedure with the most number of services
- **AVERAGE\_MEDICARE\_PAYMENT\_AMT**: Average Medicare Payment amount for service

## Results

First we find the top Heart Procedures in the U.S, which are listed below. We determine that *Ultrasound Examination of Heart* is the most common heart procedure in the U.S.

Next, we compute the average cost of this procedure for each U.S state from (2012-2016). For brevity, we will display the top five states with the highest average cost over the 5-year period. Likewise, we will display the five states with the lowest average cost of this time period.

In order to visualize the trends in our time-series we will display the results graphically.

## Discussion

First, we find that Ultra Sounds of the Heart are the most commonly used heart procedure in the U.S. Second, the average cost of an ultra sound decreased dramatically for all states in 2014. This trend can be further

Table 1: \*\*Table 1.\*\* Top 5 Heart Procedures in the U.S

Total Services	
7,372,122	
2,014,452	
1,326,899	Provision of test materials and equipment for home inr monitoring of patient with either mechan
1,286,032	
1,103,276	

Table 2: \*\*Table 1.\*\* Average annual Heart Ultra Sound Cost

State	2012	2013	2014	2015	2016	Overall Average
WI	\$1,103.32	\$1,160.30	\$ 67.63	\$ 66.80	\$ 66.23	\$492.86
AK	\$ 979.98	\$ 989.20	\$117.44	\$115.43	\$125.93	\$465.60
WY	\$ 884.05	\$ 861.17	\$ 86.67	\$ 94.22	\$ 89.30	\$403.08
VI	\$ 662.89	\$ 703.30	\$102.46	\$106.96	\$100.61	\$335.24
DE	\$ 644.48	\$ 623.43	\$100.44	\$101.99	\$102.41	\$314.55
ID	\$ 243.25	\$ 244.17	\$ 58.92	\$ 59.51	\$ 59.40	\$133.05
PR	\$ 194.20	\$ 190.50	\$ 92.60	\$ 94.90	\$ 92.97	\$133.03
NE	\$ 242.87	\$ 235.49	\$ 60.85	\$ 61.84	\$ 61.95	\$132.60
ME	\$ 286.23	\$ 212.36	\$ 52.39	\$ 51.12	\$ 50.89	\$130.60
SD	\$ 229.12	\$ 245.41	\$ 50.32	\$ 50.82	\$ 49.01	\$124.94

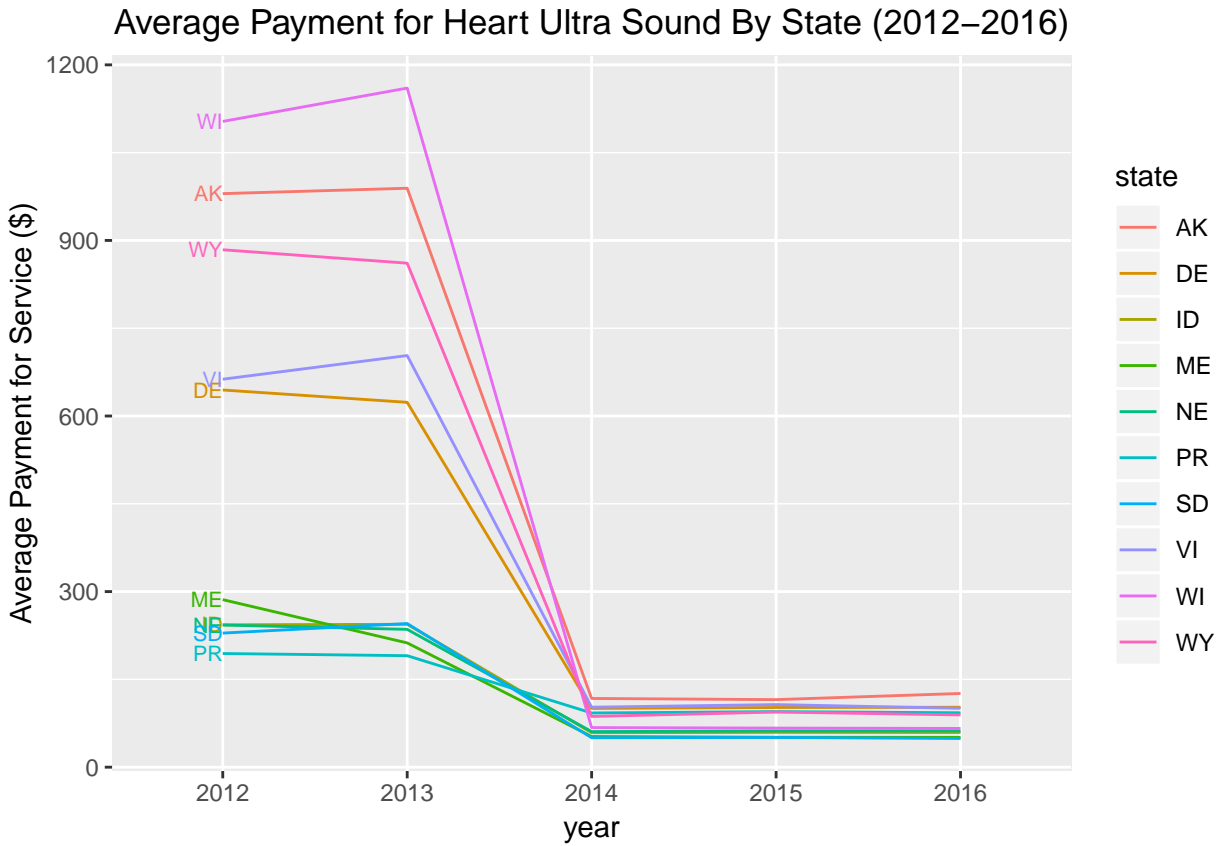


Figure 1: **Figure 1.** Average annual Cost of Heart Ultra Sound, Top 5 and Lowest 5 U.S States

evidenced by the establishment of the Affordable Care Act (ACA) whose major provisions came into force in 2014.