

BACKGROUND

- The U.S. spends more on healthcare than any other industrialized nation.³
- About 2.5x the average of other nations
- Over \$150 billion is spent annually on medical devices, with orthopedic and cardiac procedures accounting for the majority of expenditures.¹
- Orthopedic implant costs are expected to increase approx. 9.8% annually.¹
- In the fields of urology and ENT, self-rated costs do not correlate with cost accuracy.^{2,4}
- In orthopedics, there is a mean of 6.9% estimation error (range 28-289%).⁵
- There is no published podiatric literature discussing awareness of implant costs

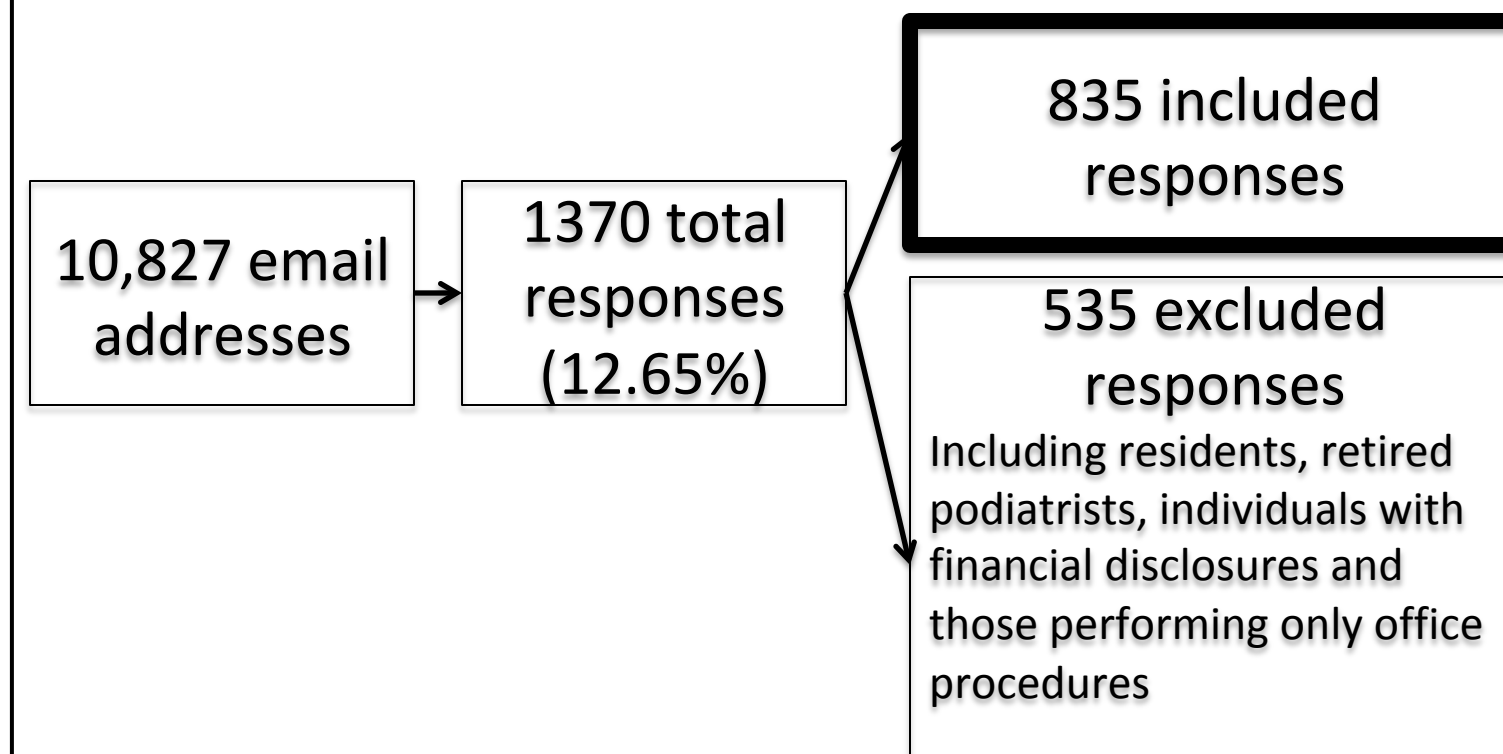
PURPOSE

- Evaluate for unawareness of surgical implant costs in common foot surgeries among podiatrists using a survey distributed nationwide
- Examine the popularity of various fixation types for common podiatric procedures
- Examine differences in knowledge between varying years of attending experience

METHODS

- Using the American Podiatric Medical Association (APMA) member directory, 10,827 email addresses (including attendings, residents and retired members) were extracted using an internet browser software.
- Using a SurveyMonkey platform, participants selected the type of implant used for 4 common procedures and estimated the cost of the implant(s) used (scan QR code for questionnaire)
- Hammertoe interphalangeal joint (IPJ) arthrodesis
- Chevron bunionectomy
- First metatarsocuneiform arthrodesis (Lapidus)
- First metatarsophalangeal joint arthrodesis
- Participants who selected "I am not sure" regarding implant cost were identified as unaware
- Participants were excluded from the calculation of percentage of unawareness if they did not perform the given procedure

FIGURE 1: SURVEY POPULATION



RESULTS

FIGURE 2: HAMMERTOE IPJ ARTHRODESIS

Figure 2.1: Implant of Choice

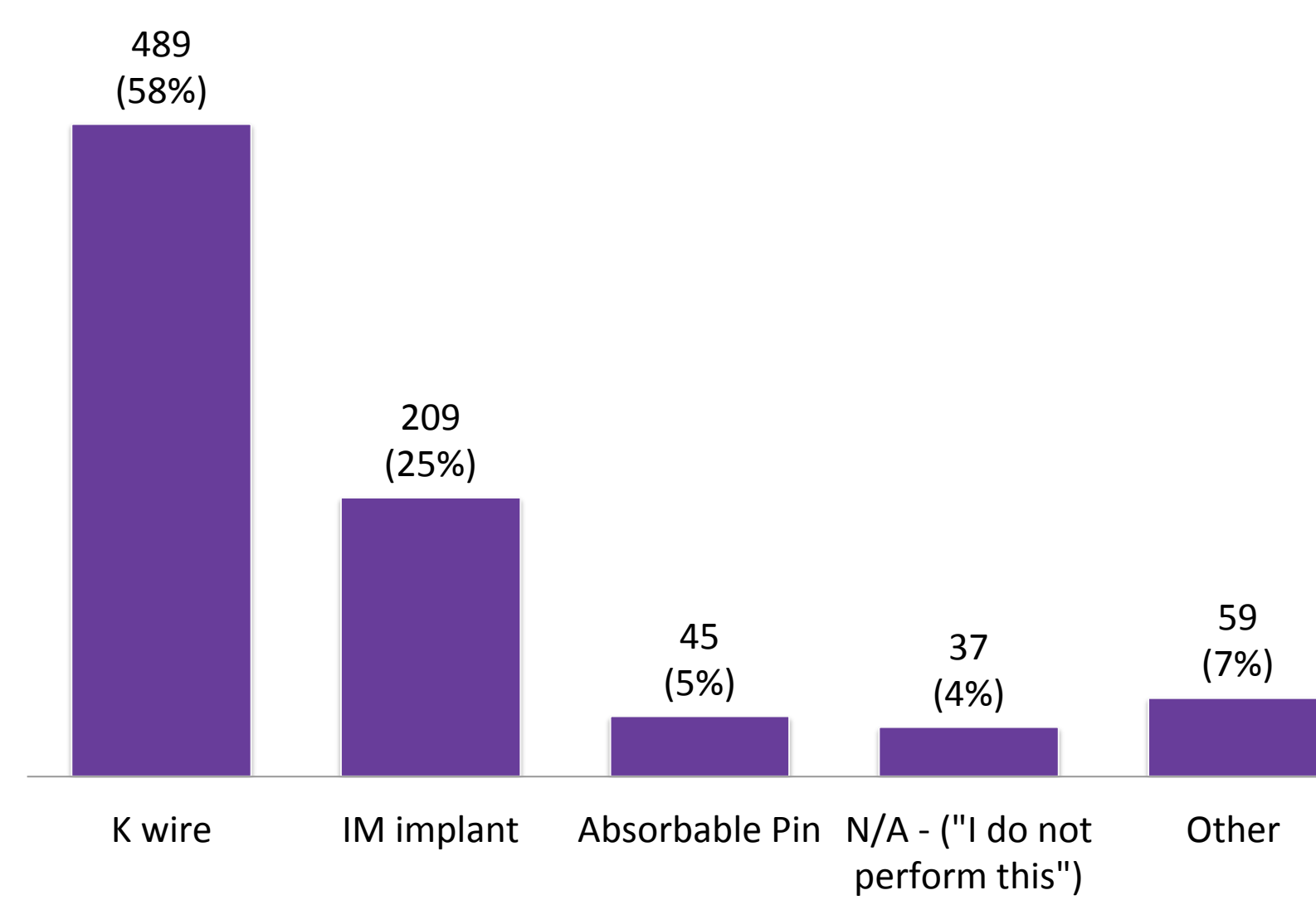
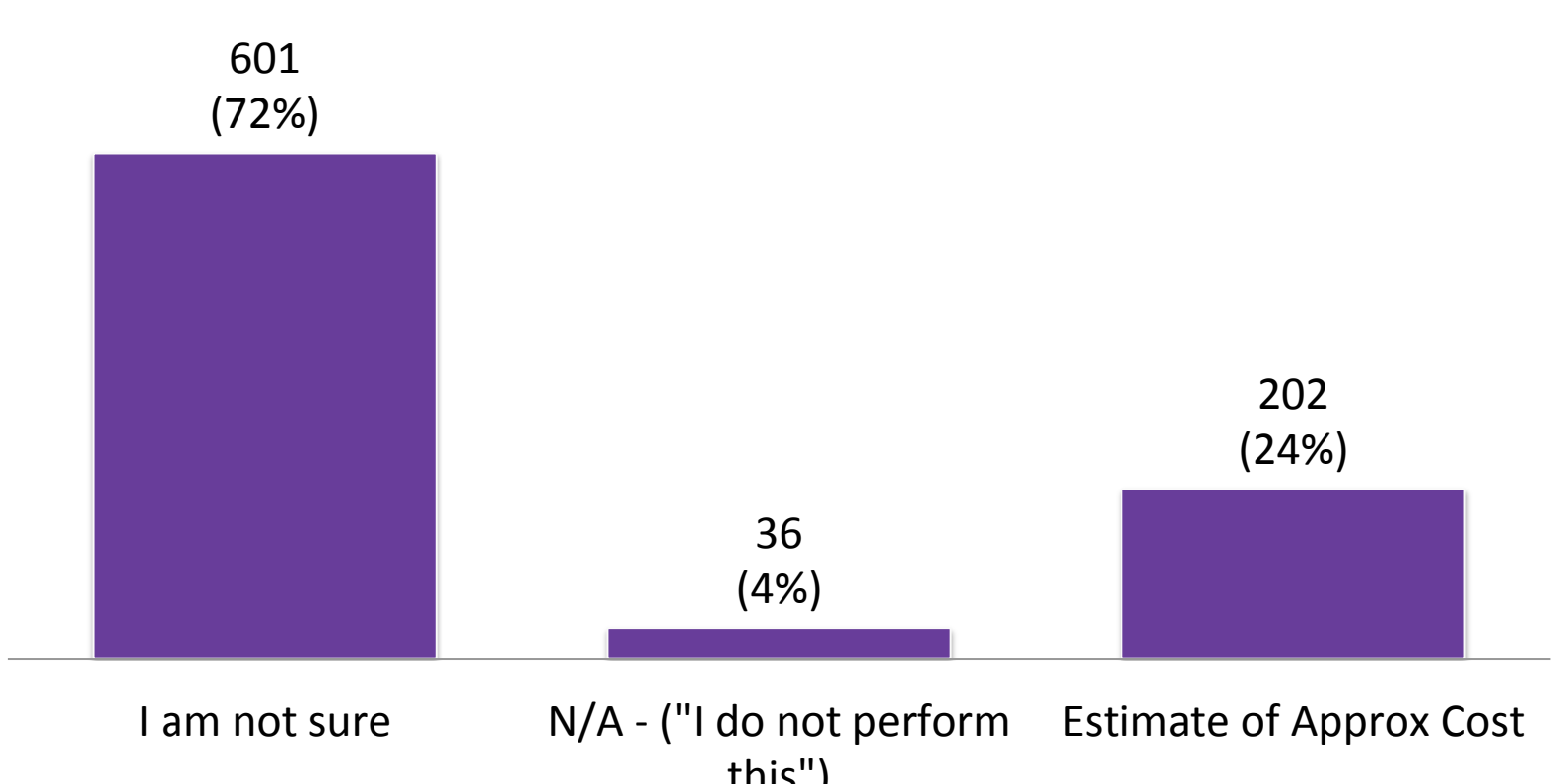


Figure 2.2: Estimate of Implant Cost



Estimated Costs	# of DPMs	# of Estimates	Median	Range
1 K wire	488	134	\$10	\$0.01-150
IM Implant	212	30	\$600	\$150-1800
Absorbable Pin	47	9	\$220	\$100-800

Using another type of implant: 62
I do not perform this procedure: 26
Unaware of cost: 602
Total # performing the procedure: 809
Overall Unawareness: 74.41%

Figure 2.3: Sample Implant Cost

0.045" K wire \$6.73
Absorbable Pin \$300
Intramedullary Implant: \$909.02

FIGURE 3: CHEVRON BUNIONECTOMY

Figure 3.1: Implant of Choice

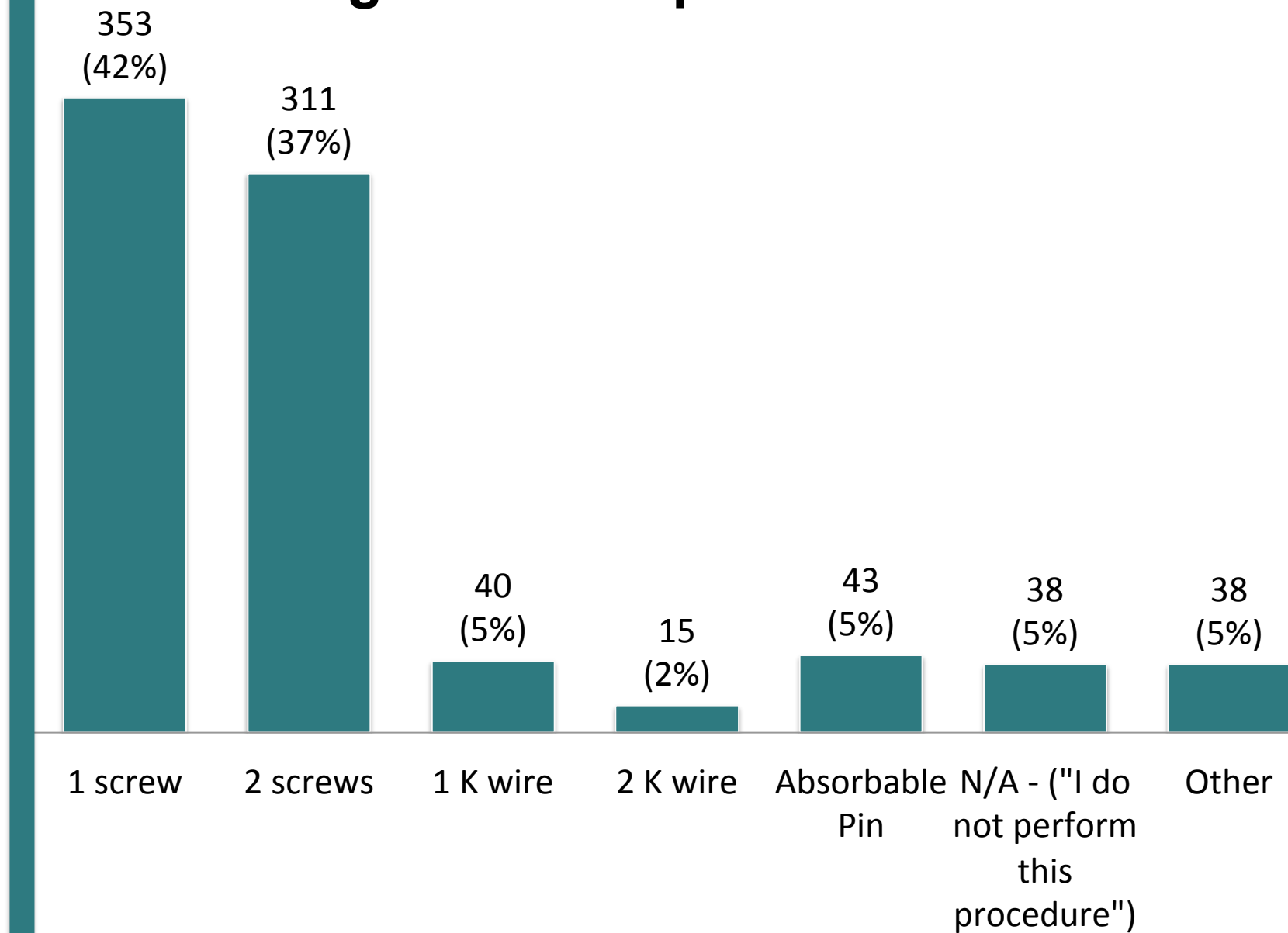
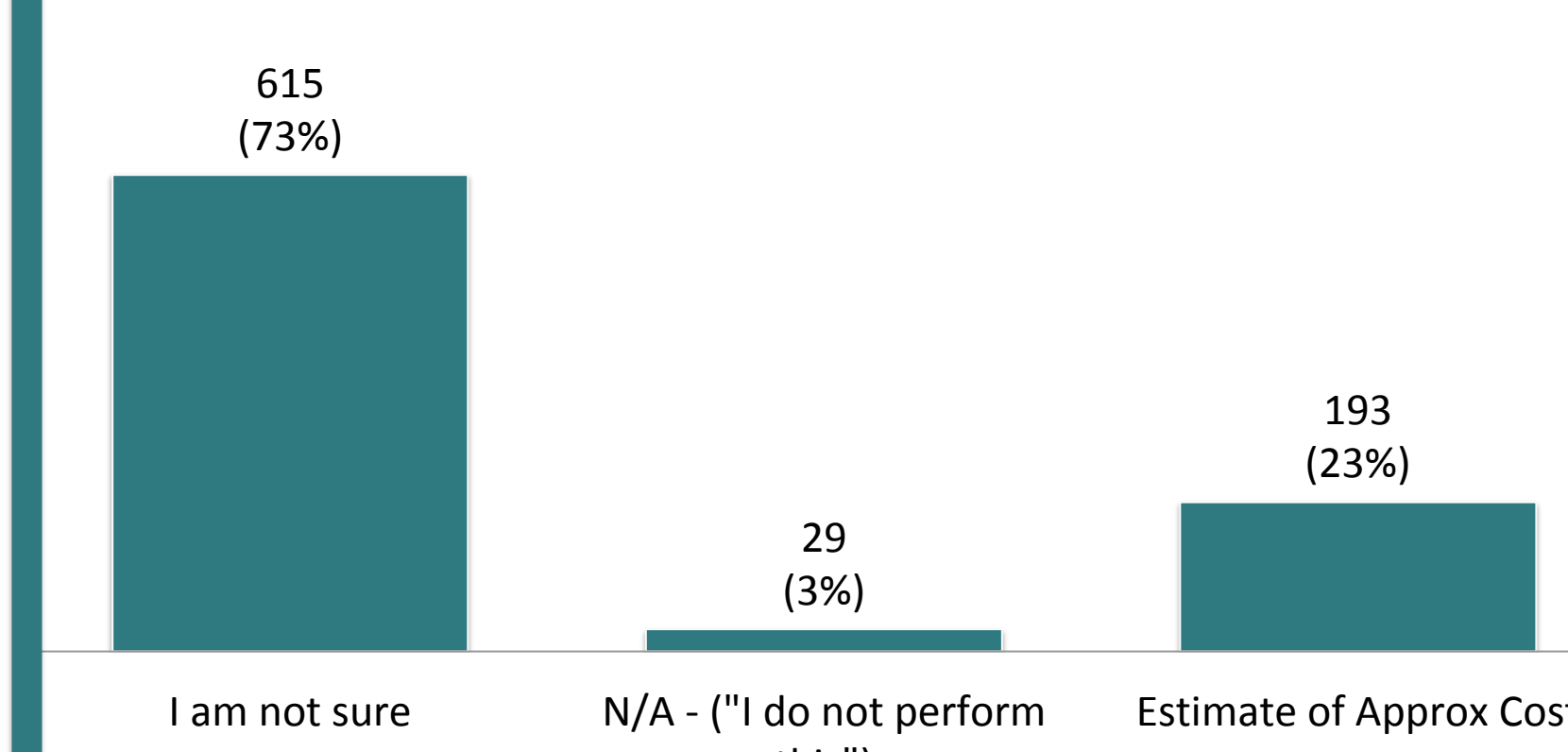


Figure 3.2: Estimate Implant Cost



Estimated Costs	# of DPMs	# of Estimates	Median	Range
1 K wire	40	15	\$10	\$2-200
2 K wires	13	0	N/A	N/A
1 Screw	355	77	\$125	\$2.10-500
2 Screws	315	80	\$212.50	\$10-1250
Absorbable Pin	44	10	\$200	\$125-500

Using another type of implant: 21
I do not perform this procedure: 10
Unaware of cost: 608
Total # performing the procedure: 788
Overall Unawareness: 77.16%

Figure 3.3: Sample Implant Cost

0.062" K wire: \$6.97
2.4 Headed Solid Screw: \$29.90
2.5 Headless Cannulated Screw: \$376.72
3.0 Headed Cannulated Screw: \$195.81
Absorbable Pin: \$300

FIGURE 4: LAPIDUS BUNIONECTOMY

Figure 4.1: Implant of Choice

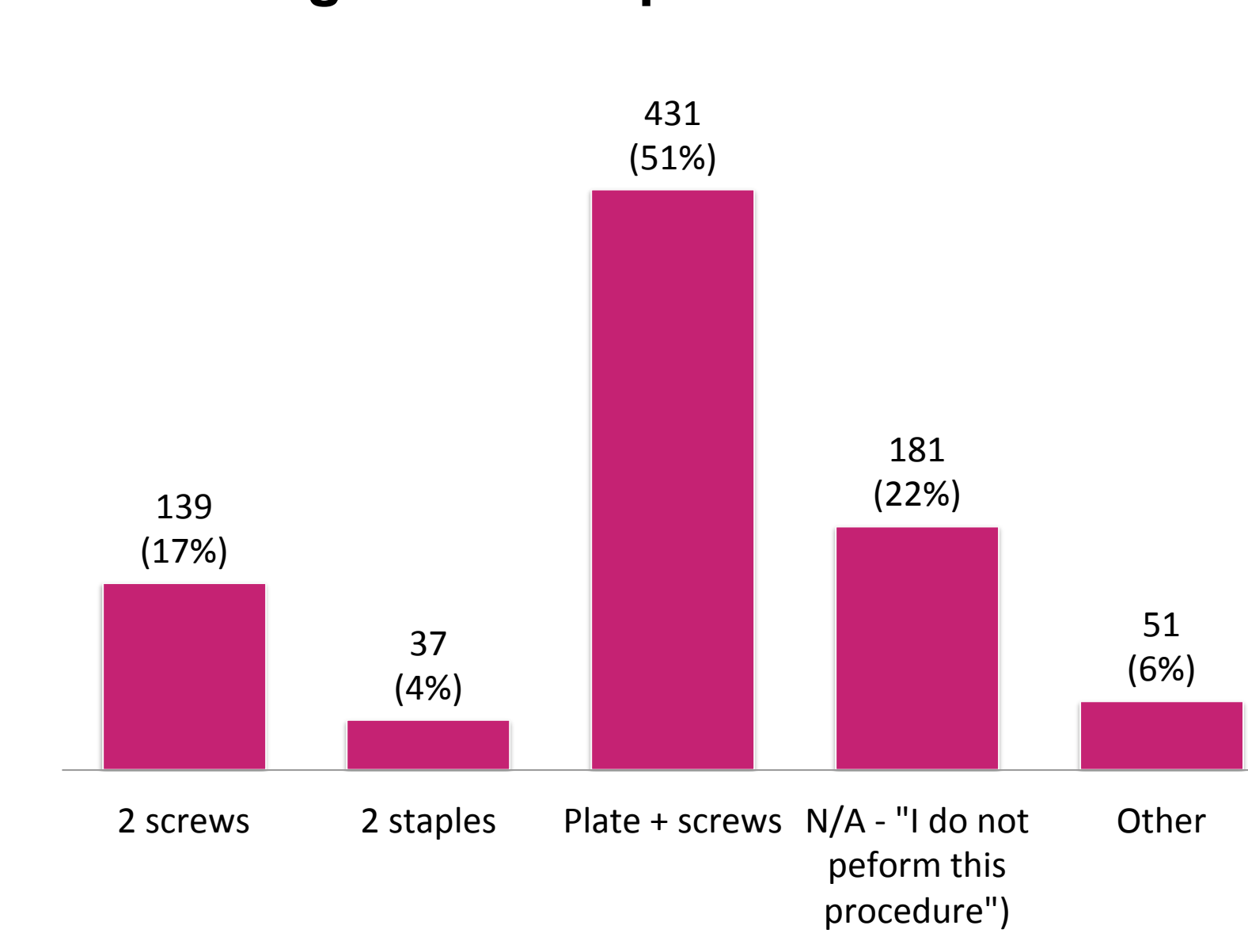
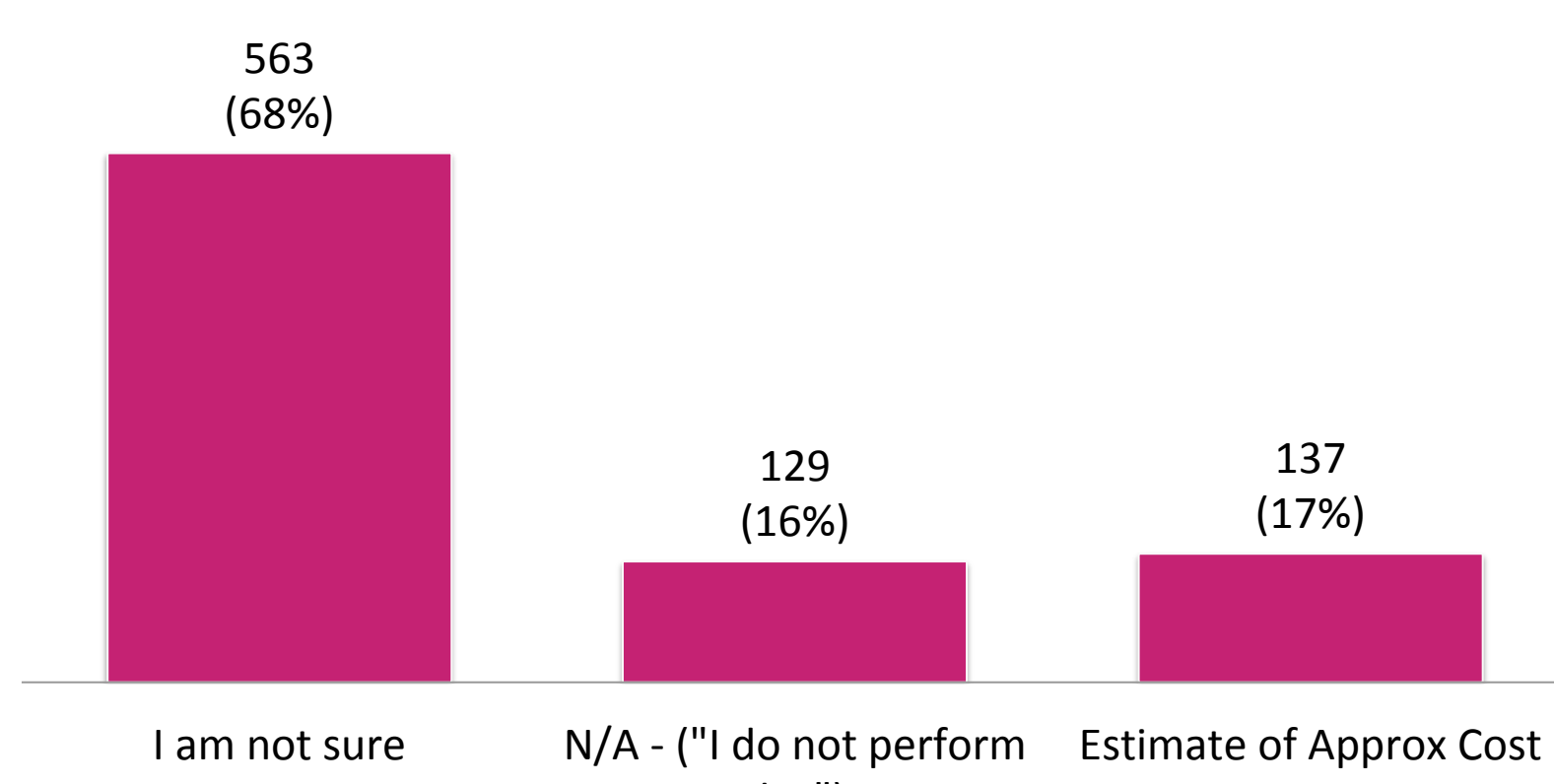


Figure 4.2: Estimate Implant Cost



Estimated Costs	# of DPMs	# of Estimates	Median	Range
2 Screws	140	31	\$225	\$30-800
2 Staples	38	5	\$1100	\$100-2400
Plate and Screws	437	79	\$1750	\$300-5000

Using another type of implant: 52
I do not perform this procedure: 167
Unaware of cost: 485
Total # performing the procedure: 667
Overall Unawareness: 72.71%

Figure 4.3: Sample Implant Cost

Nitinol staples: \$1528.56
4.0 Headless Cannulated Screws: \$376.72 x 2 = \$753.44
Lapidus Plate + Screws: \$3433.50

FIGURE 5: 1st MPJ ARTHRODESIS

Figure 5.1: Implant of Choice

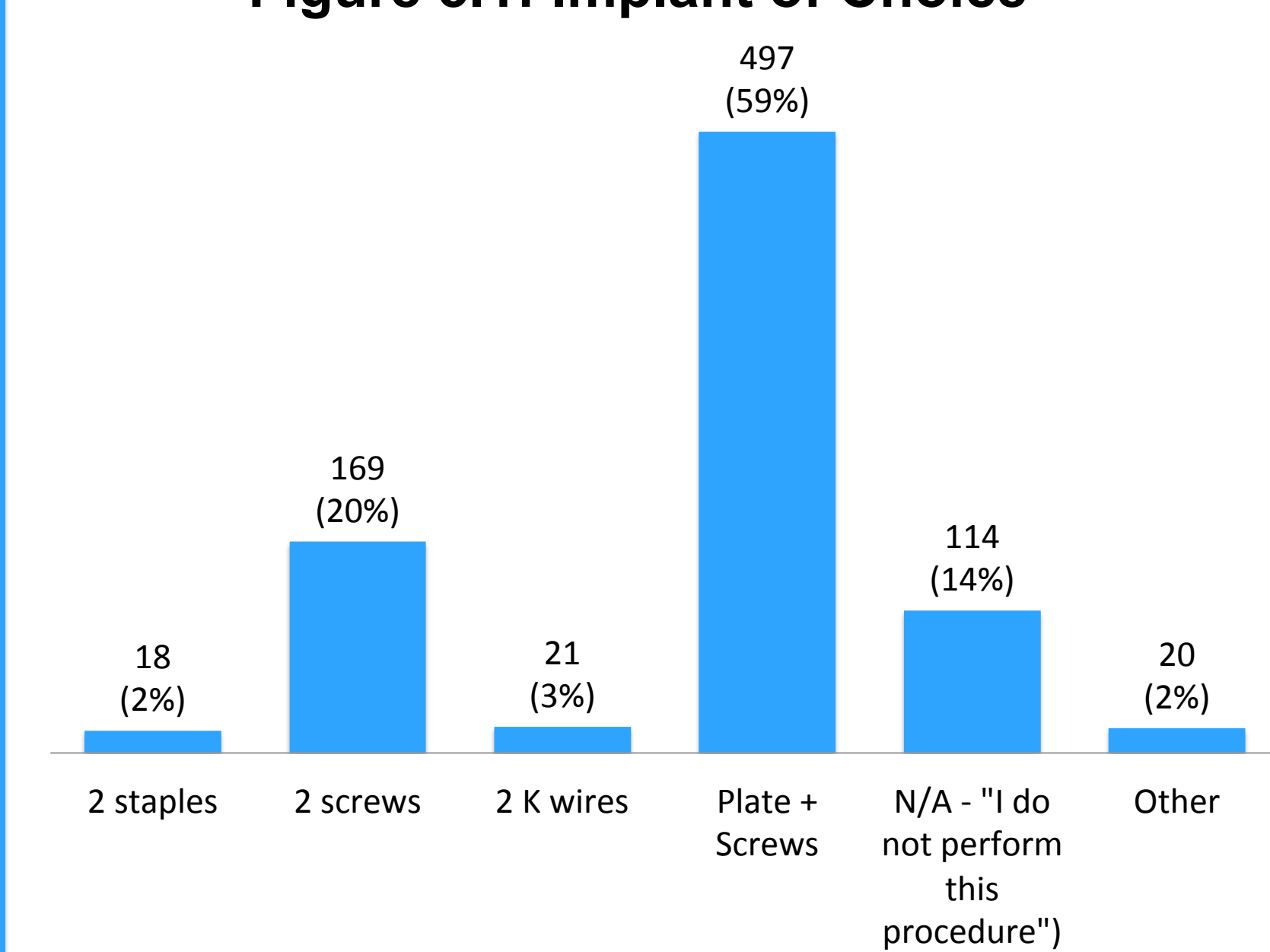
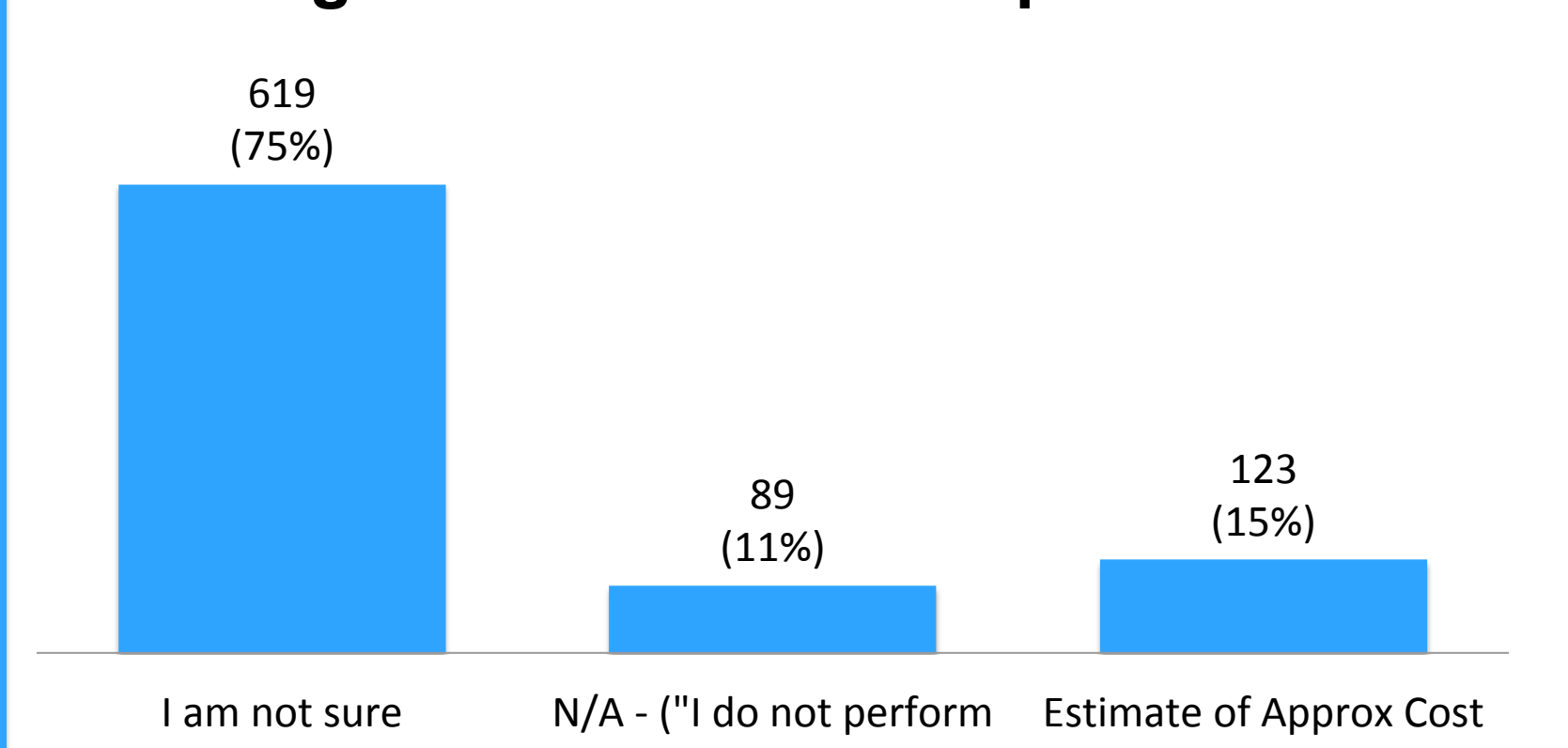


Figure 5.2: Estimate Implant Cost



Estimated Costs	# of DPMs	# of Estimates	Median	Range
2 Screws	140	31	\$225	\$30-800
2 Staples	38	5	\$1100	\$100-2400
Plate and Screws	437	79	\$1750	\$300-5000

Using another type of implant: 20
I do not perform this procedure: 102
Unaware of cost: 604
Total # performing the procedure: 732
Overall Unawareness: 82.51%

Figure 5.3: Sample Implant Cost

0.062" K wire: \$6.97 x 2 = \$13.94
4.0 Headless Cannulated Screw: \$376.72 = \$753.44
Nitinol Staple: \$1528.56 x 2 = \$3057.12
Locking Plate + Screws: \$2255.11

Figure 6.1: Region of Practice

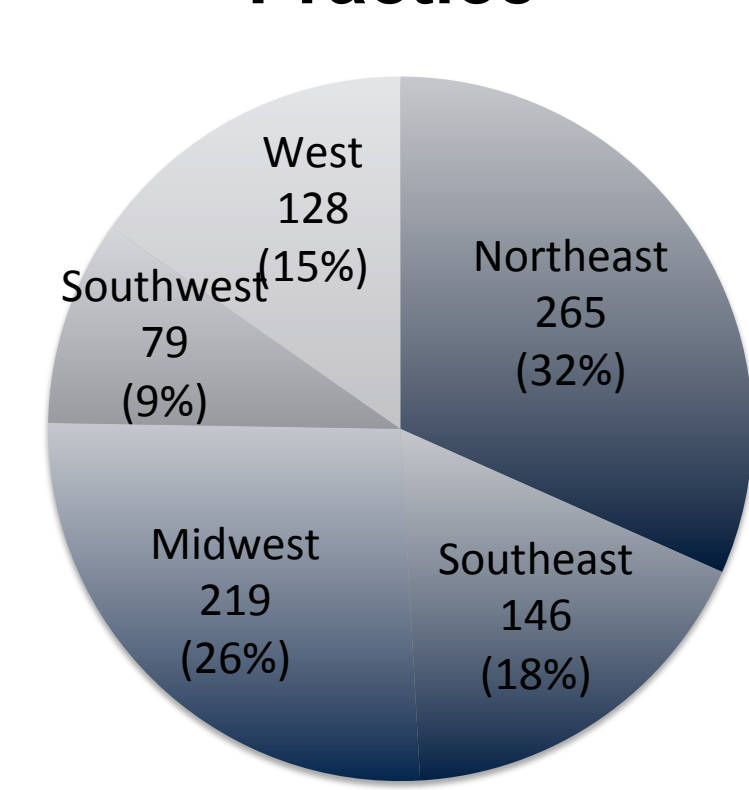


FIGURE 6: DEMOGRAPHIC DATA

Figure 6.2: Location of Procedures Performed

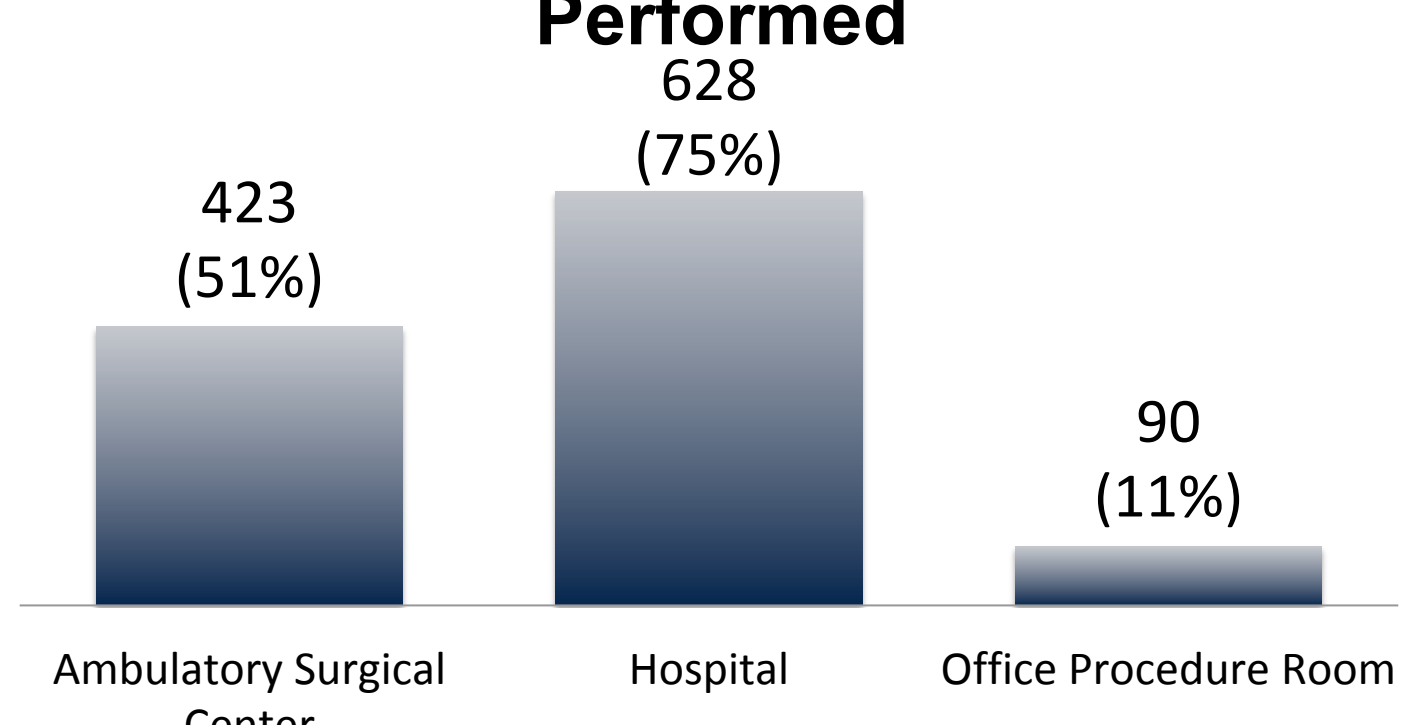


Figure 6.3: Years of Experience

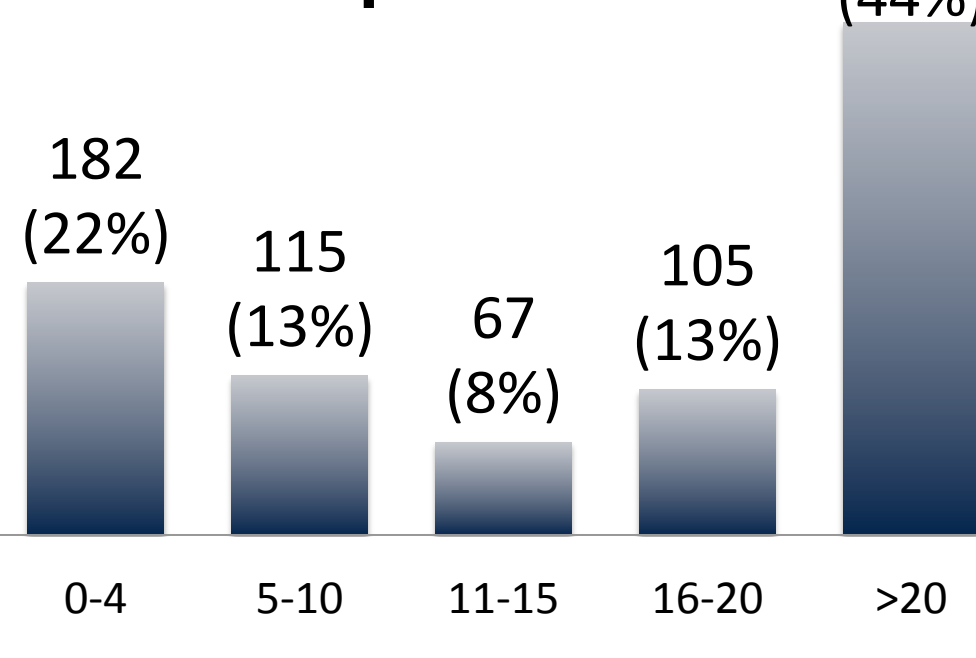


FIGURE 7: SUMMARY

Figure 7.1: Unawareness of Implant Cost

Procedure	Unawareness (%)
Hammertoe IPJ Arthrodesis	74.41
Chevron Bunionectomy	77.16
Lapidus Bunionectomy	72.71
1 st MPJ Arthrodesis	82.51
Mean Unawareness (%)	76.70

Figure 7.2: Response Rates by Experience

Experience Level (Years)	# of DPMs	Avg Cost Estimates Provided (%)
0-4	182	13.08
5-10	117	22.56
11-15	66	19.32
16-20	102	21.86
>20	367	21.66

LIMITATIONS

- Including participants in administrative positions and those performing office procedures if selected with ASC or hospital
- Inability to independently evaluate estimates due to cost variability, multiple manufacturers, regional differences and contract pricing

CONCLUSIONS

- High surgical implant costs unawareness exists among podiatrists in the US; however, this is comparable with other fields in medicine. Within this study, the mean unawareness for four common surgical procedures was 76.70%
- Minimal differences exist between experience and awareness, except for those with 0-4 years of experience where the unawareness was higher
- Our data supports the need for stricter protocols for delivering implant cost to providers

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