

# Perioperative Outcomes Following Rhinoplasty: A NSQIP Analysis

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## Introduction

Rhinoplasty is a commonly performed outpatient procedure in patients with nasal deformities and resultant airway obstruction. Although anecdotal evidence is available, little data is available regarding patient factors contributing to poor outcomes or perioperative sequelae. In this study we evaluate demographic characteristics and perioperative complications for patients undergoing rhinoplasty within a large national cohort.

The primary aim of this study is to evaluate postoperative outcomes following rhinoplasty using the National Surgical Quality Improvement Program (ACS NSQIP®) database. We therefore performed a retrospective cohort study of patients aged  $\geq 18$  years undergoing rhinoplasty utilizing data from the 2011 to 2016 American College of Surgeons National Surgery Quality Improvement Program-Pediatric public use file.

## Methods

All adult patients who underwent rhinoplasty were identified. The CPT code which reflected the primary operative procedure was used to extract the specific sample. The following CPT codes were used in the extraction: 30400, 30410, 30420, 30430, 30435, 30450, 30460, 30462, 30465, 20912, 21210, 21230, 21235, 15760.

Postoperative complications were defined as 30-day postoperative infection, unplanned readmission and reoperation, and death. Multivariate logistic regression was used to identify predictors of complications. Subgroup analysis was performed based on comorbidities.

## Results

A total of 769 patients were identified that met the previously mentioned criteria. Patient demographics are detailed in Table 1.

	Total (N=769)
Age	
N	769
Mean (SD)	51.1 (17.87)
Median	52.0
Interquartile range	36.0, 65.0
Range	(18.0-90.0)
Sex	
Female	408 (53.1%)
Male	361 (46.9%)
Race	
American Indian or Alaska Native	10 (1.3%)
Asian	23 (3%)
Black or African American	37 (4.8%)
Native Hawaiian or Pacific Islander	2 (0.3%)
White	624 (81.1%)
Unknown/Not Reported	73 (9.5%)

**Table 1.** Patient demographic data including age, sex, and ethnicity.

The specific CPT codes extracted are shown in Table 2 below. Note that only 3 CPTs were found. The remaining 11 CPTs did not occur in the data set.

These CPT codes may not have occurred because they were not commonly used, were not operative procedures targeted by NSQIP, or for some other reason.

Of 769 patients identified undergoing rhinoplasty, 16.9% underwent composite graft (CPT 15760), 17.7% autologous rib graft (CPT 21230), and 65.4% auricular cartilage graft (CPT 21235) [Table 2]

The population mean age ( $\pm$  SD) was 51.1 ( $\pm$  17.87) years. The population was split female vs male (53.1% versus 46.9% respectively). A majority of the cohort was white (624, 81.1%) with the remaining either choosing not to identify race (73, 9.5%), Black/African American (37, 4.8%), Asian (23, 3%), American Indian/Alaskan native (10, 1.3%) or Native Hawaiian/Pacific Islander (2, 0.3%) [Table 1]

Complications were observed in 22 patients (3%). Surgical site infection (SSI) occurred superficially in 8 (1%) cases, deep in 3 (0.4%), and organ/space in 3 (0.4%). One patient had both organ/space and superficial SSI. Transfusion was required within 72 hours in 4 (0.5%) cases [Table 3]. Reoperation within 30 days was necessary in 10 (1.3%) instances. Readmission within 30 days was indicated 12 (1.6%) times [Table 4].

## Conclusions

Patients undergoing rhinoplasty experience few major complications, with the most common being unplanned readmission. Of patients with reported complications, smokers and diabetic males were shown to be at greater risk.

	Total (N=769)
Superficial incisional SSI within 30 days	
Yes	8 (1%)
No Complication	761 (99%)
Deep incisional SSI within 30 days	
Yes	3 (0.4%)
No Complication	766 (99.6%)
Organ/space SSI within 30 days	
Yes	3 (0.4%)
No Complication	766 (99.6%)
Wound disruption within 30 days	
Wound Disruption	4 (0.5%)
No Complication	765 (99.5%)
Transfusion within 72 hours of surgery start time	
Yes	4 (0.5%)
No Complication	765 (99.5%)

**Table 3.** Complications within 30 day postoperative period

	Total (N=769)
Death within 30 days	
No	769 (100%)
Unplanned reoperation within 30 days	
No	759 (98.7%)
Yes	10 (1.3%)
Hospital readmission within 30 days	
Unknown (NULL)	15 (.%)
No	742 (98.4%)
Yes	12 (1.6%)

**Table 4.** Overall outcomes following rhinoplasty surgery

## References

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