


# NSQIP Surgical Risk Calculator: Is it right for OTO-HNS?

Christian Pingree, MD, Capt USAF  
ENT PGY4, SAUSHEC



## DISCLAIMER:

The views expressed are those of the presenter and do not reflect the official views or policy of the Department of Defense or its components.





# BRIEF BACKGROUND

- ▶ National Surgical Quality Improvement Project
  - Registry of surgical data
  - Any participating hospital can have access to these data
  - Currently 300+ large hospitals in US participate
  - Collect data FROM PATIENT'S CHARTS
    - Identifies more complications
  - BIG DATA



# With that BIG DATA

- ▶ High-powered studies generated
- ▶ UNIVERSAL Surgical Risk Calculator
  - Tool can be used to stratify risk

Begin by entering the procedure name or CPT code. One or more procedures will appear below the procedure box. You will need to click on the desired procedure to properly select it. You may also search using two words (or two partial words) by placing a '+' in between, for example: "cholecystectomy + cholangiography"

Reset All Selections

Are there other potential appropriate treatment options? ☐ Other Surgical Options ☐ Other Non-operative options ☐ None

Please enter as much of the following information as you can to receive the best risk estimates.  
A rough estimate will still be generated if you cannot provide all of the information below.

Age Group

Under 65 years

Sex

Female

Functional Status

Independent

Emergency Case

No

ASA Class

Healthy patient

Steroid use for chronic condition

No

Ascites within 30 days prior to surgery

No

Systemic Sepsis within 48 hours prior to surgery

None

Ventilator Dependent

No

Disseminated Cancer

No

Diabetes

No

Hypertension requiring medication

No

Congestive Heart Failure in 30 days prior to surgery

No

Dyspnea

No

Current Smoker within 1 Year

No

History of Severe COPD

No

Dialysis

No

Acute Renal Failure

No

BMI Calculation:

Height:  in /  cm

Weight:  lb /  kg



[Risk Calculator Home Page](#)

[About](#)

[FAQ](#)

[ACS Website](#)

[ACS NSQIP Website](#)

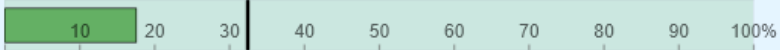
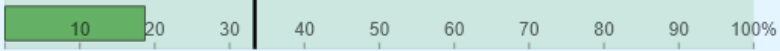
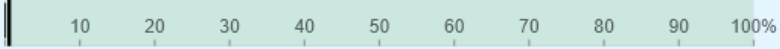
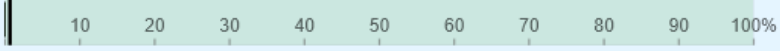
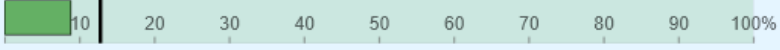
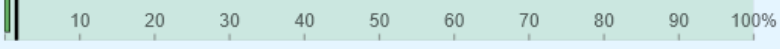
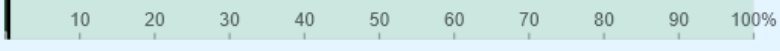
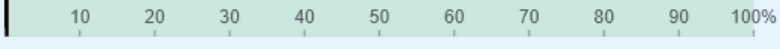
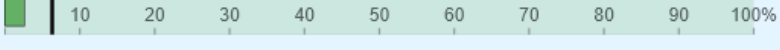
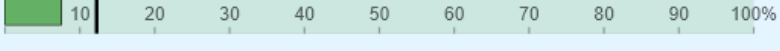
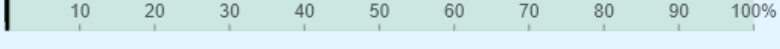
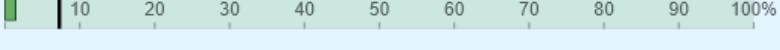
**Procedure:** 41145 - Glossectomy; complete or total, with or without tracheostomy, with unilateral radical neck dissection

**Risk Factors:** Over Weight

[Change Patient Risk Factors](#)

*Note: Your Risk has been rounded to one decimal point.*

## Outcomes

		Your Risk	Average Risk	Chance of Outcome
Serious Complication		17.5%	32.4%	Below Average
Any Complication		18.7%	33.4%	Below Average
Pneumonia		0.1%	0.6%	Below Average
Cardiac Complication		0.0%	0.7%	Below Average
Surgical Site Infection		8.8%	12.8%	Below Average
Urinary Tract Infection		0.7%	1.5%	Below Average
Venous Thromboembolism		0.2%	0.5%	Below Average
Renal Failure		0.0%	0.2%	Below Average
Readmission		2.6%	6.3%	Below Average
Return to OR		7.5%	12.2%	Below Average
Death		0.0%	0.3%	Below Average
Discharge to Nursing or Rehab Facility		1.4%	7.3%	Below Average



# Great!!! ... wait

- ▶ ENT procedures have lower Morbidity/Mortality than other surgeries
  - Renal Failure?
  - Pneumonia?
  - Cardiac Complications?
- ▶ Even in large surgeries, these are rare



# STUDY DESIGN:

- ▶ Systematic Literature Review
- ▶ PRISMA Guidelines:
  - Needs transparency to avoid sources of intentional or unintentional bias.
- ▶ Two reviewers (Dr. McKinlay and myself)

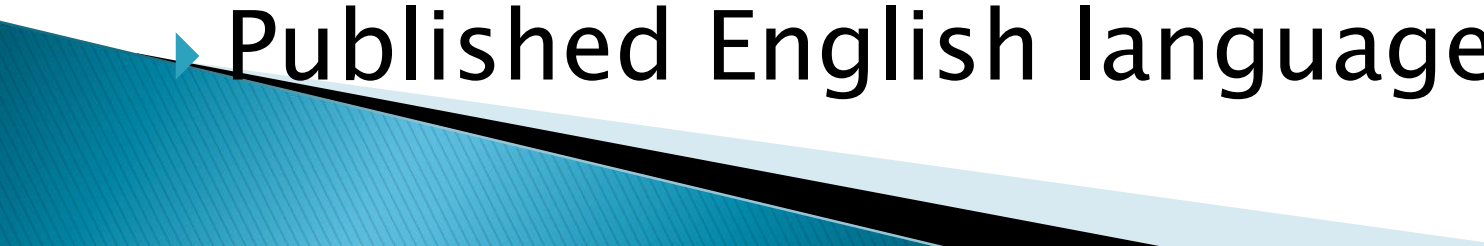


# Database Search:

- ▶ Medline, SCOPUS, EMBASE, EBSCO
- ▶ Search Strategy
  - (nsqip OR nsqip-p) AND ((Oto\* OR ear or nose or throat) or (saliv\* or parotid) OR (head and neck) Or (skull base) or (cosme\*) or (Tonsil) OR (Adenoid) OR (free flap) OR (fac\*) OR (otology) OR (parathyroid\*) OR (thyroid\*) OR (Lary\*) or (vocal\*))




# Inclusion Criteria

- ▶ Studies performed since 2004 – April 01, 2018
  - ▶ Specifically aimed at outcomes specific to Oto–HNS procedures
  - ▶ Specifically study the NSQIP risk calculator
  - ▶ Published English language
- 



# Exclusion Criteria

- ▶ Opinion/editorial articles
  - ▶ Don't report data in the form of predicted/observed outcomes or Brier Scores of the SRC.
- 



# Results:

- ▶ Generated 2,827 articles for review
- ▶ 139 articles after review of duplicates and abstracts
- ▶ 5 Articles Selected



# Studies Included:

- ▶ 1. Acre K et al. – Fibular Free Flaps
- ▶ 2. Schneider AL et al. – TL
- ▶ 3. Kao SS et al. – Glossectomy
- ▶ 4. Cao A et al. – TL
- ▶ 5. Vosler PS et al. – Total Thyroid, TL, Glossectomy, Laryngopharyngectomy



# Conclusions

- ▶ ENT complications are generally different from other surgical complications
- ▶ Larger studies are needed to assess calibration of the NSQIP SRC
- ▶ We should be tracking other complications in addition to the SRC risks



# QUESTIONS?