

ACS NSQIP Pediatric Database Cannot Estimate Craniosynostosis Incidence in the United States

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Purpose

- U.S. incidence of craniosynostosis estimated 1 in 2,000 - 2,500 live births



Determine whether the NSQIP Pediatric database can act as a surrogate for incidence of craniosynostosis

Methods

- Pediatric NSQIP queried from 2017-2021 using CPTs for primary operations and ICD-10 diagnosis of craniosynostosis (Q75.0)
- Patients under 2 years were included to minimize risk of capturing secondary surgery.
- Annual live births collected from CDC Vital Statistics Rapid Release from 2017 – 2021

Results

- Incidences increased annually from 2017 to 2021 but did not match estimates
- 3,116 cases for multiple suture and 2,605 cases for single suture craniosynostosis were returned
- Updated ICD-10 coding specifying fused sutures was not included in any datasets

Conclusions

- The NSQIP Pediatric Database underestimates incidence of craniosynostosis
- Lack of coding granularity and a high proportion of multiple-suture cases limit the utility of this database
- Further development of pediatric craniofacial databases are critical to compiling generalizable data

CPT Code	Definition
61550	Craniectomy or craniotomy for craniosynostosis
61556	Craniotomy with frontal or parietal flap for craniosynostosis
61557	Craniotomy with bifrontal bone flap for craniosynostosis
61558	Extensive craniectomy for multiple suture craniosynostosis
61559	Extensive craniectomy for multiple suture craniosynostosis (cloverleaf skull)

Year	Estimated Incidence from Pediatric NSQIP data
2021	1:2,785 Live Births
2020	1:2,884 Live Births
2019	1:3,116 Live Births
2018	1:3,587 Live Births
2017	1:4,286 Live Births