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DiRAC

High-Volume / Low-Complexity: Endoscopic Sinus Surgery

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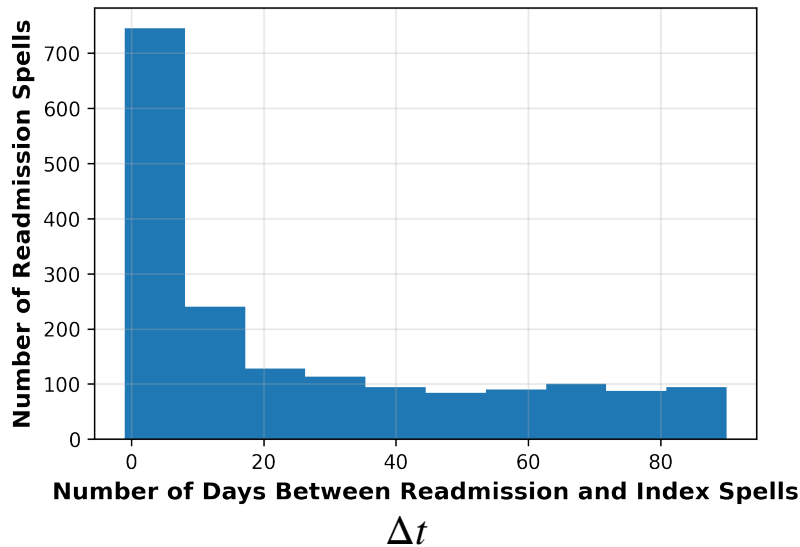
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Endoscopic Sinus Surgery dataset

49,465 patients

Includes: Index spell + Potential readmission

Discharged between 01/04/2014 and 31/03/2019



Number of readmissions: 1,775 (3.59 %)

Median Δt = 13 (5 – 46) days

Number of ≤ 30 day readmissions: 1,163 (2.35 %)

Can we identify patients that may be at risk of poorer outcomes?

ICD-10 codes for post-surgical complications

For the **readmission spells**: are there ICD-10 codes that can be used to identify post-surgical complications?

For ≤ 30 readmissions, the most common ICD-10 codes are:

Codes	Count	Description
Y83	368	Surgical operation and other surgical procedures as the cause of abnormal reaction of the patient, or of later complication [...]
R04	295	Hemorrhage from respiratory passages
J45	275	Asthma
I10	270	Essential (primary) hypertension
T81	269	Complications of procedures, not elsewhere classified
Z87	203	Personal history of other diseases and conditions
Z86	187	Personal history of certain other diseases
Z88	146	Allergy status to drugs, medicaments and biological substances
J32	114	Chronic sinusitis
Z92	102	Personal history of medical treatment

The following codes seem to be both frequent in readmission spells, and associated to post-procedural complications:

Y83 - R04 - T81

For ≤ 30 day readmissions, within the readmission spells:

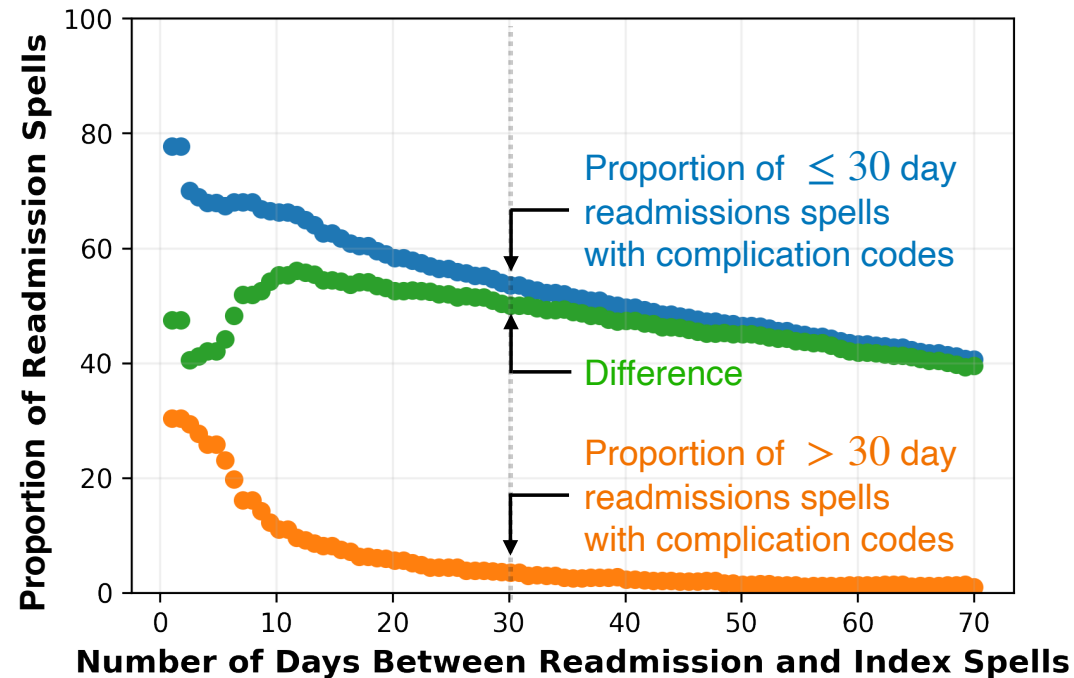
ICD-10 'Complication' Codes	Number of Readmission Spells
Y83	368 (31.47%)
R04	295 (25.37%)
T81	269 (22.70%)
Y83 + R04	133 (11.44%)
Y83 + T81	153 (13.16%)
R04 + T81	30 (2.58%)
Y83 + R04 + T81	14 (1.20%)
Y83 or R04 or T81	623 (53.57%)

The proportion of specific Y83 and T81 codes are summarised in tables at the end of the slides.

The presence of any of the three complications code is added as an additional feature for all readmissions.

Is the ≤ 30 day readmission time threshold well suited for endoscopic sinus surgery?

Time between procedure and readmission



Looking at ≤ 30 day readmissions:

- We include a large proportion of readmission spells with complication codes
- We 'miss' a small proportion of readmission spells with complication codes

It seems to be an outcome which separates readmission spells with / without complication codes quite well.

ICD-10 codes in index spells

ICD-10 Codes	Proportion of spells with <30 day readmission (%)	Proportion of spells without <30 day readmission (%)	Description	Difference of Frequencies (%)
I10	24.419604	18.137965	Essential (primary) hypertension	6.281639
J34	47.979364	42.337791	Other and unspecified disorders of nose and nasal sinuses	5.641572
I25	7.652623	2.917063	Chronic ischemic heart disease	4.735559
Z92	8.082545	3.515382	Personal history of medical treatment	4.567163
Z86	16.16509	12.345245	Personal history of certain other diseases	3.819846
I48	4.385211	1.296013	Atrial fibrillation and flutter	3.089198
Z95	4.55718	1.726637	Presence of cardiac and vascular implants and grafts	2.830543
T81	3.697334	1.204919	Complications of procedures, not elsewhere classified	2.492415
K21	6.27687	4.055733	Gastro-esophageal reflux disease	2.221137
Z88	12.467756	10.318413	Allergy status to drugs, medicaments and biological substances	2.149342
J32	54.94411	52.82597	Chronic sinusitis	2.11814
E11	6.534824	4.859012	Type 2 diabetes mellitus	1.675812
E03	4.729149	3.09511	Other hypothyroidism	1.634039
Z85	3.697334	2.074448	Personal history of malignant neoplasm	1.622886
I20	2.407567	0.977185	Angina pectoris	1.430381
Y83	2.063629	0.685272	Surgical operation and other surgical procedures as the cause of abnormal reaction of the patient,	1.378357
F41	4.471195	3.1655	Other anxiety disorders	1.305695
J44	3.783319	2.55476	Other chronic obstructive pulmonary disease	1.228559
K44	2.407567	1.287731	Diaphragmatic hernia	1.119835
R33	1.203783	0.217382	Retention of urine	0.986401

Additional tables: proportion of Y83 codes in ≤ 30 day readmission spells

Y83 Codes	Number of Readmission Spells	Description
Y83.8	201 (17.28%)	“Other surgical procedures as the cause of abnormal reaction of the patient, or of later complication, without mention of misadventure at the time of the procedure”
Y83.6	115 (9.89%)	“Removal of other organ (partial) (total) as the cause of abnormal reaction of the patient, or of later complication, without mention of misadventure at the time of the procedure”
Y83.4	44 (3.78%)	“Other reconstructive surgery as the cause of abnormal reaction of the patient, or of later complication, without mention of misadventure at the time of the procedure”
Y83.1	3 (0.26%)	“Surgical operation with implant of artificial internal device as the cause of abnormal reaction of the patient, or of later complication, without mention of misadventure at the time of the procedure”
Y83.9	3 (0.26%)	“Surgical procedure, unspecified as the cause of abnormal reaction of the patient, or of later complication, without mention of misadventure at the time of the procedure”
Y83.2	1 (0.09%)	“Surgical operation with anastomosis, bypass or graft as the cause of abnormal reaction of the patient, or of later complication, without mention of misadventure at the time of the procedure”
Y83.3	1 (0.09%)	“Surgical operation with formation of external stoma as the cause of abnormal reaction of the patient, or of later complication, without mention of misadventure at the time of the procedure”

Additional tables: proportion of T81 codes in ≤ 30 day readmission spells

T81 Codes	Number of Readmission Spells	Description
T81.0	190 (16.34%)	“Haemorrhage and haematoma complicating a procedure, not elsewhere classified.”
T81.4	53 (4.56%)	“Infection following a procedure.”
T81.8	24 (2.06%)	“Other complications of procedures, not elsewhere classified.”
T81.2	1 (0.09%)	“Accidental puncture and laceration during a procedure, not elsewhere classified.”
T81.3	1 (0.09%)	“Disruption of wound, not elsewhere classified.”

Coding practice for post-surgical complications:

Coding T80–T88 Complications of surgical and medical care, not elsewhere classified

When the Alphabetical Index directs to a code from categories **T80-T88 Complications of surgical and medical care, not elsewhere classified**, (using lead terms for the actual complication, such as displacement and leakage, or via the specific condition with modifiers to indicate that it was a result of a procedure or under 'Complication'), apply the following codes and sequencing:

T80-T88 Complications of surgical and medical care, not elsewhere classified Y83-Y84 Surgical and other medical procedures as the cause of abnormal reaction of the patient, or of later complication, without mention of misadventure at the time of the procedure

- Do not assign a code from categories **Y83-Y84** when the postprocedural condition code (in categories **T80-T88**) fully describes both the nature of the condition and the procedure that has caused it.
- Do not assign codes **Y83.8**, **Y83.9**, **Y84.8** and **Y84.9** with codes from categories **T80-T88** because these codes do not add further detail about the nature of the procedure.

From: https://classbrowser.nhs.uk/ref_books/ICD-10_2020_5th_Ed_NCCS.pdf

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