



Surgery and Perioperative WG

Community Call Update 2026



A community for surgical & perioperative evidence

MISSION

To collaboratively generate the observational health evidence needed to better understand the role of surgical and perioperative interventions in medical care.

PUBLIC HEALTH

Surgical care high volume (313 million / year 2016*); Death within 30d of surgery is the 3rd leading cause of death globally**; Overall complication rate 1/6, poor outcomes ~ failure to rescue, 2.8% ^



Active since 2022

Five annual OKR cycles (2022–2026); grew out of the PROTEUS phenotyping effort.



Open, global membership

Surgeons, anesthesiologists, internists & data scientists across OHDSI sites.



Co-led & collaborative

Evan Minty (co-chair)
Oleg Zhuk (co-chair)
Jenny Lane (on fellowship)
Qi Yang (IQVIA)
Andreas Rosen (CSS, Denmark)
Dr. Adam Johnson (Duke)



Meets monthly

Last Wednesday of each month
9:30 EST / 11:30 MST / 7:30pm CEST

*Weiser et al 2016; **Nepogodiev et al 2019; ^ Pearse et al 2017



Five years of building surgical evidence

2022

2023

2024

2025

2026

Foundation

WG chartered; Terms of Reference & first OKRs.
RCRI recalibration (PROTEUS) provides the phenotyping agenda:

Major Non Cardiac Surgery

Aortic Diseases phenotyping & Large scale incidence

AA, AA-rupture & dissection phenotypes built to support a fluoroquinolone safety question.

HowOften study, 2023 Symposium

Study-a-thon & Prediction

Fragility-fracture study-a-thon (Dr. J. Lane).

V1.1 of Large Scale Incidence rate study

HORUS launch

Incidence-rate flagship formalised; protocol, cohorts and AKI outcomes specified; JHU coordinating centre IRB application.

Ongoing Prediction work using MNCS cohort (A. Saelmans, Erasmus)

Scale & standardise

ICD-10-PCS ↔ SNOMED vocabulary work,

Preliminary runs of HORUS in JHU and Duke university

Expand HORUS to network study



Major Non-Cardiac Surgery (MNCS)



The anchor phenotype

Non-emergent major non-cardiac surgery — non-cardiac, non-maternal, non-ophthalmologic procedures occurring on the same day as a hospital admission.

- Submitted to the OHDSI Phenotype Library with a full clinical description & CohortDiagnostics evaluation.
- Serves as the shared target cohort for both the incidence-rate (HORUS) and prediction workstreams.
- Persistent Work in Progress: if your favourite surgery isn't represented, join the WG.

A shared set of post-operative outcomes

Evaluated within a 60-day post-operative risk window

MACE	Death	Heart failure
Pneumonia	Post-op infection	Sepsis
Acute kidney injury	Venous thromboembolism	Delirium

Outcomes span cardiac, renal, pulmonary, infectious, thrombotic & neurologic domains.



2026 objectives & key results



Data, vocabulary & cohort standardization

- LLM + manual ICD-10-PCS↔SNOMED review
- Review 10K codes for the Aug 2026 edition
- Mapping-issues abstract; device-table scan



Guideline-driven evidence generation

- Complete the HORUS incidence-rate study
- Lock target & outcome cohorts
- Move to network execution



Dissemination & engagement

- Publish HORUS-AKI + ≥1 outcome study
- Publish ≥1 surgery phenotype description
- Present at ≥3 surgical/periop conferences



OHDSI community collaboration

- 2 strategic collaborations with 2 WGs
- Device · Waveform · PLP · Oncology
- 2 joint meetings during 2026



Improving procedural vocabularies



The ICD-10-PCS ↔ SNOMED gap

- Procedural ontology works against clinically coherent groupings
- SNOMED↔ICD-9 and ICD-9↔ICD-10 mappings exist, but ICD-10-PCS↔SNOMED coverage is incomplete — which also weakens any implicit definition of 'major surgery'.
- Approach: decompose procedures into attributes and map, with LLM-assisted drafting plus case-by-case manual community review.

2026 key results



Review ~10,000 codes

Contribute an ICD-10-PCS ↔ SNOMED review targeting the August 2026 vocabulary edition → completed.

Key value adds:



Device table? Cost table? Empirical Bootstrapping?



HORUS — How Often Risks Unfold in Surgery

A large-scale OHDSI network incidence-rate study of major post-operative complications — beginning with post-operative acute kidney injury (AKI), 48 hours and 7 days, stratified by sex and by dialysis requirement.

6–44%

of major-surgery patients develop post-operative AKI — yet its true incidence is poorly characterised.

>100M

adults aged 45+ undergo major surgery worldwide each year, making this a large public-health burden.

Multi-site

JHU is the coordinating centre designed for multi-target, multi-outcome network execution.

Progress

- ✓ Pilot Study in Global Symposium
- ✓ IRB approval secured at JHU
- ✓ Preliminary cohorts built, executed across Data sets including Claims, EHR
- ✓ Preliminary study package executed successfully at JHU
- ✓ [thinned] study package executed successfully at Duke
- ✓ CohortDiagnostics result review underway

Next steps

- Finalise & lock target (surgery / composite) and outcome cohorts
- Site recruitment & network execution across OHDSI partners
- Result viewer; publish HORUS-AKI + ≥1 further outcome study

JOIN US

Get involved

The perioperative encounter is a green field for observational evidence — and it will take a community to define it, and execute



Meet with us

Last Wednesday of every month, on MS Teams.



Partner across WGs

Device · Waveform · Patient-Level Prediction · Oncology · Vocabulary · Phenotype.



Bring a cohort

New surgical & perioperative labs and cohort-builders are welcome.

Contact minty@ohdsi.org zhuk@ohdsi.org

