Pragmatic, Evidence-Based Approach to Coding for Abdominal Wall Reconstruction

Benjamin K. Pouluse, MD, MPH

wexnermedical.osu.edu/CACH
Disclosure Statement

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The Problem

AWR?

CPT 15734
Consequences

- Nobody has precisely defined AWR
- ACS Bulletin excluded MIS approaches from billing for CPT 15734 regardless of what was performed
- No recognition of the work performed for a Rives-Stoppa repair without TAR
Goals

- Precisely define AWR
- Link the performance of VHR and AWR to the actual work performed and with appropriate billing codes using data
- Remove the MIS restriction
How CPT Codes get Assigned wRVUs

- Clinical vignettes
- Time
- Surveys
Defining Abdominal Wall Reconstruction

- CMS definition…defined by the ACHQC
- AWR = Ventral hernia repair + myofascial release
- Myofascial release = an abdominal wall fascial layer separated from a muscular layer
Myofascial Releases

- Posterior rectus sheath incision (Rives)
- Transversus abdominis release
- External oblique release
- Anterior rectus sheath release(s)
No Myofascial Release

Myofascial Release

External Oblique Release

Posterior Rectus Sheath Release

Tranversus Abdominis Release
Clinical Vignettes/Scenarios

- VHR with mesh and no release (NR)
- VHR with mesh and posterior sheath release (PRS)
- VHR with mesh and PRS with transversus abdominis release or external oblique release (PRS-TA/EO)
Primary Outcome Measure

- Operative time
  - 0-59 minutes
  - 60-119 minutes
  - 120-179 minutes
  - 180-239 minutes
  - 240+ minutes
Secondary Outcome Measures

- Disease severity measures
- 30 day postoperative outcomes

(These were selected to determine if patients had increased levels of complexity going from: NR->PRS->PRS-TA/EO)
Results

Between 2013 – 2020:
- 7287 NRS
- 2425 PRS
- 5534 PRS-TA/EO
# Results

|                        | NR (7287) | PRS (n = 2425) | PRS-TA/EO (n = 5534) | p value |
|------------------------|-----------|----------------|---------------------|---------|
| Incisional hernia (%)  | 59%       | 89%            | 97%                 | < 0.001 |
| Centers for disease control wound class (%) |           |                |                     |         |
| Class 1 (clean)        | 96%       | 86%            | 77%                 | < 0.001 |
| Class 2 (clean-contaminated) | 3%     | 9%             | 13%                 |         |
| Class 3 (contaminated) | 1%        | 4%             | 9%                  |         |
| Class 4 (dirty)        | 0%        | 1%             | 1%                  |         |
| Operative approach (%) |           |                |                     | < 0.001 |
| Open                   | 29%       | 71%            | 82%                 |         |
| Laparoscopic           | 37%       | 1%             | 0%                  |         |
| Robotic-assisted       | 28%       | 24%            | 12%                 |         |
| MIS converted to open  | 1%        | 3%             | 1%                  |         |
| Laparoscopic-hybrid    | 4%        | 0%             | 0%                  |         |
| Robotic-hybrid         | 1%        | 1%             | 5%                  |         |
| Mesh location (%)      |           |                |                     | < 0.001 |
| Intraperitoneal        | 100%      | 0%             | 0%                  |         |
| Retromuscular          | 0%        | 91%            | 54%                 |         |
| Retromuscular and preperitoneal | 0% | 9% | 46% | |
| Fascial closure achieved (%) | 80% | 99% | 96% | < 0.001 |

The bold values indicate statistical significance.

\*NR (no myofascial release), PRS posterior rectus sheath myofascial release, PRS-TA/EO PRS with transversus abdominis release or external oblique release.
# Results

| EHS classification—midline       | NR (n = 7287) | PRS (n = 2425) | PRS-TA/EO (n = 5534) | p value |
|----------------------------------|---------------|----------------|----------------------|---------|
| M1—subxiphoidal                 | 5%            | 12%            | 29%                  | p < 0.001|
| M2—epigastric                   | 35%           | 66%            | 77%                  |         |
| M3—umbilical                    | 69%           | 83%            | 86%                  |         |
| M4—infraumbilical               | 14%           | 48%            | 70%                  |         |
| M5—suprapubic                   | 4%            | 14%            | 25%                  |         |
| No midline component            | 7%            | 3%             | 5%                   |         |

| EHS classification—lateral      |               |                |                      | p < 0.001|
| L1—subcostal                    | 3%            | 1%             | 6%                   |         |
| L2—flank                        | 6%            | 4%             | 14%                  |         |
| L3—iliac                        | 4%            | 2%             | 11%                  |         |
| L4—lumbar                       | 0%            | 0%             | 2%                   |         |
| No lateral component            | 88%           | 94%            | 74%                  |         |

| EHS classification—width        |               |                |                      | p < 0.001|
| W1—< 4 cm                       | 59%           | 12%            | 1%                   |         |
| W2—≥ 4—10 cm                    | 35%           | 68%            | 24%                  |         |
| W3—≥ 10 cm                      | 6%            | 20%            | 75%                  |         |

The bold values indicate statistical significance.
Results – Operative Time
## Results – Secondary Outcomes

| Outcome                                                                 | NR (7287) | PRS (n = 2425) | PRS-TA/EO (n = 5534) | p value |
|-------------------------------------------------------------------------|-----------|----------------|----------------------|---------|
| Patients undergoing recurrent repair (%)                                | 21%       | 37%            | 50%                  | < 0.001 |
| Transverse hernia width (cm, median (interquartile range))              | 3 (2, 5)  | 6 (5, 9)       | 13 (9, 16)           | < 0.001 |
| Length of hospital stay (days, median (interquartile range))            | 0 (0, 1)  | 3 (1, 4)       | 5 (3, 7)             | < 0.001 |
| Any non-infectious complication at 30 days (%)                          | 12%       | 21%            | 29%                  | < 0.001 |
| Surgical site infection at 30 days (%)                                  | 1%        | 3%             | 6%                   | < 0.001 |
| Surgical site occurrence requiring procedural intervention at 30 days (%)| 2%        | 4%             | 8%                   | < 0.001 |

The bold values indicate statistical significance

\(^a\)NR no myofascial release, PRS posterior rectus sheath myofascial release, PRS-TA/EO PRS with transversus abdominis release or external oblique release
Summary

- AWR = Ventral hernia repair + myofascial release
- Myofascial release = an abdominal wall fascial layer separated from a muscular layer
Summary

Ohio State Center for Abdominal Core Health
Summary

- PRS (Rives-Stoppa) deserves its own code reflective of the additional work performed
- Coding should be based on the myofascial releases performed, regardless of approach
- MIS approaches should be equally as able to bill for AWR codes as open approaches
Summary

- Use CPT 14301/14302 (Adjacent tissue transfer) for Rives-Stoppa without TA/EO
- Use 15734 for Rives-Stoppa with TA or if EO performed
- Do not code for both 14301 and 15734
- Do not code for four instances of 15734
Adjacent Tissue Transfer Hernia Area = 3 * (1/2 Hernia Length) * (1/2 Hernia Width)
Example 1 – Open Rives Stoppa, 12cm x 8cm defect (total surface area 3*6*4=72cm²)

| CPT Code | wRVU |
|----------|------|
| 49560    | 12   |
| 49568    | 5    |
| 14301    | 13   |
| **TOTAL**| **30** |

(Lap chole = 10 wRVU)
Example 2 – Open Rives Stoppa VHR with TAR, 20cm x 10cm defect

| CPT Code          | wRVU |
|-------------------|------|
| 49560             | 12   |
| 49568             | 5    |
| 15734             | 23   |
| 15734-59 (converts to -51) | 23   |
| **TOTAL**         | **63** |

(Lap chole = 10 wRVU)
Example 3 – MIS eTEP, 8cm x 6cm defect (total surface area 3*4*3=36cm²)

| CPT Code | wRVU |
|----------|------|
| 49654    | 14   |
| 14301    | 13   |
| TOTAL    | 27   |

(Lap chole = 10 wRVU)
Example 4 – Robotic TAR with 20cm x 10cm defect

| CPT Code           | wRVU |
|--------------------|------|
| 49654              | 13   |
| 15734              | 23   |
| 15734-59 (converts to -51) | 23   |
| TOTAL              | 59   |

(Lap chole = 10 wRVU)
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Abdominal Core Health Quality Collaborative

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