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Incidence of Concurrent Surgery in Pennsylvania

Introduction

In late 2018, the Pennsylvania Patient Safety Authority received an inquiry about whether healthcare facilities in Pennsylvania had reported events of *concurrent* surgery. In response, the Authority queried its database for both concurrent and overlapping surgery that occurred in 2017.

Definition and Literature

In 2016, the American College of Surgeons published a bulletin (http://bulletin.facs.org/2016/06/looking-forward-june-2016/) that defined overlapping and concurrent surgeries as follows:[1]

> "Overlapping – critical elements of the first operation are complete and the primary surgeon is no longer needed. The surgeon may supervise the start of another operation while a qualified healthcare professional performs the final rudimentary components of the first operation. Less commonly, the primary surgeon will have completed the critical elements of the first operation and begun performing key portions of the second procedure in another room.
>
> Concurrent – critical or key components of the procedure for which the primary attending is responsible are occurring all or in part at the same time."

ACS does not support concurrent surgery, stating: "A primary attending surgeon's involvement in concurrent or simultaneous surgeries on two different patients in two different rooms is not appropriate."[1] Leven, Moon, and Payne note that some specialty societies like the American Academy of Orthopedic Surgeons likewise deem concurrent surgery as inappropriate, and opine that the practice of overlapping surgery presents professional, legal, and ethical concerns.[2]

Analysts were unable to identify large-scale studies of concurrent surgery. A study by Dy et al. addressed the safety of *overlapping* orthopedic surgeries at five academic institutions during 2015.[3] Overlapping surgeries occurred in 40% of the cases and the frequencies of perioperative complications were larger in the non-overlapping surgery group than in the overlapping surgery group. They concluded that "overlapping inpatient orthopedic surgery does not introduce additional perioperative risk for the complications" they studied.[3] The authors recommend that individual surgeons and facility leaders determine the suitability of this practice at their own institutions.[3]

Events in Pennsylvania

Authority analysts queried the Pennsylvania Patient Safety Reporting System (PA-PSRS) database for events involving concurrent and overlapping surgery and procedures in hospitals and ambulatory surgical facilities that occurred during calendar year 2017 (most recent complete calendar year at time of the request). Analysts queried the free-text event narratives and recommendations for the following key words and phrases, including variations: "concurrent," "overlap," "simultaneous," "double book," "2 rooms," and "two rooms."

The queries yielded 860 events, which were each manually reviewed. Using the ACS definitions, analysts identified 15 events (1.7% of 860) in which the narrative or recommendations indicated that the surgeon was operating in more than one room at the same time (i.e., overlapping); for example, the attending surgeon started the second case while the resident was closing the first case. Eleven of these events indicated that the overlap contributed to the reason for which the event was reported; for example, the overlap contributed to a delay in starting the next case. None of the 15 events resulted in patient harm.

There was no clear evidence of a surgeon performing critical elements of an operation on more than one patient at a time (i.e., concurrent). In one event there was insufficient information to determine whether the two surgeries were concurrent.

Despite mandatory reporting laws, PA-PSRS data are subject to the limitations of self-reporting. It is possible that processes that occur but are not thought to contribute to unsafe conditions or harm may not be reported through PA-PSRS.

Although overlapping surgery is a common practice and permissible by regulators, specialty organizations and federal bodies state that overlapping surgery should have appropriate oversight and monitoring and be clearly communicated to the patient during the informed consent process.[1,2,4-6]

Conclusion

A search of data reported through PA-PSRS revealed 15 examples of overlapping surgery and no definitive events involving concurrent surgeries occurring in 2017.

Notes

1. Hoyt DB. Looking forward. Bull Am Coll Surg. 2016 Jun;101(6):8-11. PMID: 27405179.
2. Levin PE, Moon D, Payne DE. Overlapping and concurrent surgery: a professional and ethical analysis. J Bone Joint Surg Am. 2017 Dec 06;99(23):2045-50. Also available: http://dx.doi.org/10.2106/JBJS.17.00109 (http://dx.doi.org/10.2106/JBJS.17.00109). PMID: 29206796.
3. Dy CJ, Osei DA, Maak TG, Gottschalk MB, Zhang AL, Maloney MD, Presson AP, O'Keefe RJ. Safety of overlapping inpatient orthopaedic surgery: a multicenter study. J Bone Joint Surg Am. 2018 Nov 21;100 (22):1902-11. Also available: http://dx.doi.org/10.2106/JBJS.17.01625 (http://dx.doi.org/10.2106/JBJS.17.01625). PMID: 30480594.

4. Mello MM, Livingston EH. Managing the risks of concurrent surgeries. JAMA. 2016 Apr 19;315(15):1563-4. Also available: http://dx.doi.org/10.1001/jama.2016.2305 (http://dx.doi.org/10.1001/jama.2016.2305). PMID: 26985632.
5. Mello MM, Livingston EH. The evolving story of overlapping surgery. JAMA. 2017 Jul 18;318(3):233-4. Also available: http://dx.doi.org/10.1001/jama.2017.8061 (http://dx.doi.org/10.1001/jama.2017.8061). PMID: 28658474.
6. Concurrent and overlapping surgeries: additional measures warranted. A Senate Finance Committee Staff Report. Washington (DC): United States Senate; 2016 Dec 6. Also available: https://www.finance.senate.gov/imo/media/doc/Concurrent%20Surgeries%20Report%20Final.pdf (https://www.finance.senate.gov/imo/media/doc/Concurrent%20Surgeries%20Report%20Final.pdf).

Patient Safety Authority

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