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ECMO Programs: A Financial Synopsis

By Shane Recker

When adding a new service to a hospital's overall scope of care, projecting financial scenarios can be a daunting, though essential, task. It is vital to project the potential reimbursement based off of the expected volume for a new service so that revenue, margins, and return on investment from expansion efforts can be determined. In fact, often these financial projections can provide the basis for decision-making about a new or expanded service. That in itself can be tricky, but imagine how challenging this situation can be if there is uncertainty about reimbursement for a particular case type within the new service scope.

Many hospitals that provide extracorporeal membrane oxygenation (ECMO) most likely took substantial cuts in reimbursement this past year. However, these hospitals should expect to see those numbers increase significantly, and plan accordingly. Corazon has seen firsthand how such a change can cause a drastic swing in the financial outlook for an ECMO program.

Earlier this year, ECMO made national headlines over the decision by Centers for Medicare & Medicaid Services (CMS) to modify its reimbursement rate. Up until October 2018, all ECMO cases were assigned to DRG 003, which typically reimburses at a rate of roughly $100,000 per case. In Fiscal Year 2019, that methodology changed so that every ECMO case would no longer be assigned to DRG 003. Rather, the DRG assigned would depend on the path of the cannulation. If the ECMO patient was accessed centrally, DRG 003 should still be applied. However, if cannulated peripherally, then it will fall into another (lower-paying) DRG.

In April, the Extracorporeal Life Support Organization (ELSO) reported that, after working with the CMS and the Society of Thoracic Surgery, amongst other organizations (also called key stakeholders), CMS proposed to migrate all ECMO cases BACK to a single DRG: 003.

In August 2019, the final Inpatient Prospective Payment System (IPPS) rule confirmed the migration of all ECMO cases, no matter where cannulation occurs, back to DRG 003. Although from a reimbursement perspective, this change is very significant for hospitals that provide ECMO services, it is also important to understand why there was a change in the first place, and why that decision was ultimately overturned.

Essentially, the move assigning more than one DRG to ECMO was designed to provide less reimbursement for a less resource-intensive ECMO procedure, but ultimately, it was decided that there was not enough data to prove that peripherally-cannulated ECMO cases required fewer resources than centrally-accessed ECMO cases. Moving forward, this data will now be more easily tracked and could be scrutinized further down the road.

As mentioned above, there are two different types of ECMO that can be performed, based on which organs are failing. Venovenous (VV) ECMO is used when the lungs are not working, and Venoarterial (VA) ECMO is used when the lungs and/or heart are not supporting the rest of the body (Figure 1). In instances of cardiac failure where ECMO is necessary, VA ECMO is the type that will be performed. The blood is taken from a central vein, which is oxygenated and warmed through the ECMO circuit, and then recirculated via the arterial system.

VA ECMO can be achieved through one of the following two types of cannulation: central or peripheral. The difference between the two methods is that central cannulation typically occurs in the operating room, because it includes a sternotomy that allows for placement of cannulas in the great vessels near the heart, as opposed to peripheral cannulation, which can occur bedside, as the cannulas are inserted through femoral vessels.

In 2018, the clinical advisors to CMS recommended that new ICD-10 procedure codes be created that identify whether ECMO was cannulated centrally or peripherally:

- **Peripheral ECMO**
  - 5A1522G
  - 5A1522H
- **Central ECMO**
  - 5A1522F

Additionally, and most notably, they recommended at that time that peripherally-accessed ECMO cases should no longer fall under the single DRG 003, but into other DRGs with much lower reimbursements. Many of the peripherally–cannulated DRGs would fall into DRG 207, which has an average Medicare reimbursement rate of roughly $35,000. This means that hospitals would see almost a $65,000 decrease in reimbursement when performing peripheral ECMO. This came to be a controversial decision, as many of the ECMO stakeholders raised the following issues described in the FY2020 Final Rule document:

1) There was a lack of opportunity for public comment on the DRG assignment change;

2) Patient access to ECMO treatment and programs is now at risk because of inadequate payment;
3) The CMS did not appear to have enough patient data to make the DRG change.

The clinical advisors to CMS initially recommended these changes based on their claim that a peripherally-accessed ECMO patient does not bear as much of a resource need as a centrally-accessed ECMO patient. However, key stakeholders disputed that notion claiming that the method of cannulation is not an indication of the severity of illness of the patient. In other words, a patient who is cannulated peripherally could be just as ill as a patient that is cannulated centrally, thus making no difference in the amount of resources needed to take care of either patient. This also means that there would be little difference in the cost of caring for a central or peripheral EMCO patient, and thus, the huge decrease in reimbursement that comes with the change in DRG assignment, based on site of cannulation, is not warranted. The hospital bottom line would be negatively impacted with each peripheral case.

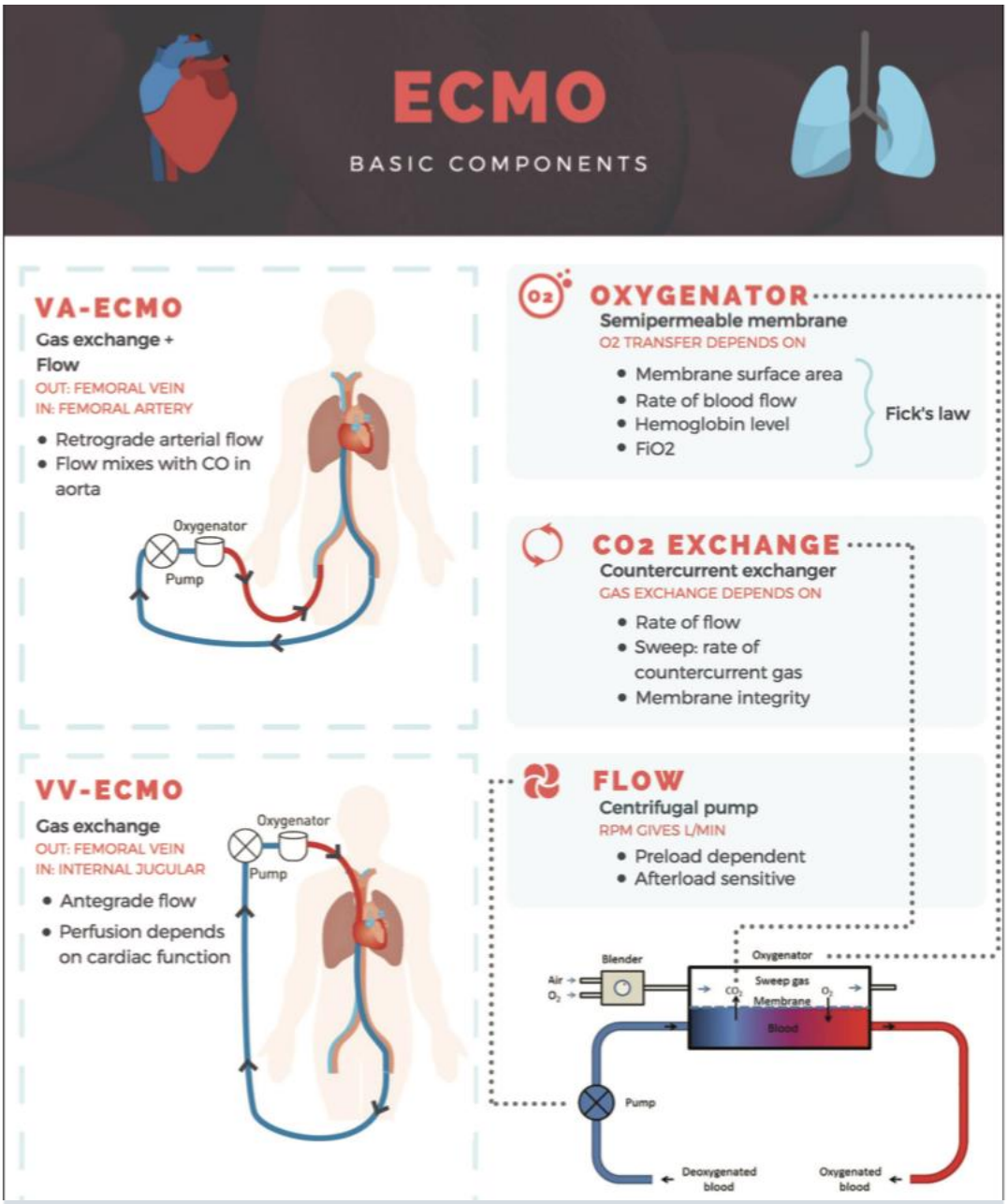

Figure 1. (Top) Venoarterial (VA) ECMO is used when the lungs and/or heart are not supporting the rest of the body, and (bottom) venovenous (VV) ECMO is used when the lungs are not working.

Reprinted with permission from ECMO: Basic Components (https://twitter.com/totalbodydolor), CE Beni, November 2018. Includes images adapted from SJ Finney 2014. Finney SJ. Extracorporeal support for patients with acute respiratory distress syndrome. Eur Respir Rev. 2014;23(133):379-89.

Ultimately, for FY2020, CMS decided that there was not enough data to substantiate the reassignment of DRGs based on the site of cannulation, saying, “We also noted that while we do not yet have Medicare claims data to evaluate the new peripheral ECMO procedure codes, review of limited registry data provided by stakeholders for patients treated with a reported peripheral ECMO procedure did not contradict that costs for peripheral ECMO appear to be similar to the costs of overall resources required to treat patients on ECMO (regardless of method of cannulation) and appear to be attributable to the severity of illness of the patient.”

Moving forward, all ECMO cases, no matter what type or where cannulation occurs, will result in the assignment of DRG 003.

Recently, Corazon was engaged to perform an advanced heart failure-specific financial pro forma, which included five years of revenue projections related to the implementation of ECMO services. In order to do so, it was necessary to assume that many of the cases would fall into the lower-paying DRGs, which of course significantly impacted the financial outlook of this program. The impact of the reversion to DRG 003 was certainly felt in the five-year pro forma and painted a much more positive picture in terms of ECMO reimbursement. This is not to say an ECMO program, on its own, will now be a large source of revenue, but it does take some of the sting out of how expensive ECMO programs tend to be.

It is important to keep in mind that with the addition of the new ICD-10 ECMO procedure codes, there will be more data transparency in the years to come. Thus, the issue of whether or not peripheral ECMO requires the same amount of resources as central ECMO could become a discussion again in the near future.

In addition, when a hospital offers a service such as ECMO, it will cause a spike in volume of higher-acuity patients in the cath lab, which must be considered when projecting volume. Although the ECMO cases are now all being assigned to DRG 003, it still may be a valuable exercise to project some of those cases to multiple DRGs simply to estimate any impact should the ruling change again.

Any such analysis (of this case type or others), whether as part of an expansion feasibility study or any financial benchmarking or general review, is a worthwhile practice for assuring program viability long into the future, no matter what appears on the regulatory horizon.

References

1. *CMS FY 2020 Inpatient Prospective Payment System (IPPS) Final Rule. Available online at https://s3.amazonaws.com/public-inspection.federalregister.gov/2019-16762.pdf. Accessed August 20, 2019.*

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