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The Peripheral Vascular Intervention (PVI)-Lower Extremity Structured Report: A Tool for Physician Reporting Data Elements for the National Cardiovascular Data Registry (NCDR®) PVI Registry™

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Background

The American College of Cardiology (ACC)/ National Cardiovascular Data Registry (NCDR®) Peripheral Vascular Intervention (PVI) Registry™ relies on thorough data collection to give registry participants a way to measure and improve the quality of care they provide to their patients. The majority of the data being collected in the PVI lower extremity procedures comes directly from the Interventional Cardiologist's procedural report. There were three different reports from five physicians. The Interventional Cardiologist Group meets monthly to discuss cases and other pertinent information to the group. The members of this group include the Interventional Cardiologists, Parkview Heart Institute's Chief Operating Officer, Vice President and Medical Director. The Database Specialist goes quarterly to this meeting to share the quarterly data and any issues with gathering data. At this meeting the group decided to have a structured report built similar to the NCDR Cath Percutaneous Intervention (CathPCI) Registry™ that was developed and utilized at Parkview Health by the Interventional Cardiologists in 2015. The NCDR-CATH PCI Structured Report was presented in poster format at the NCDR 2016 National Conference and was a People's Choice winner. A structured report is a method of gathering and collecting data using pre-determined data elements and formats. The structured report allows for organized storing and retrieving of information through the record. EPIC© is the name of the company that provides our electronic medical record (EMR) and has developed and defined the structured report. At the Interventional Cardiology meeting, the physicians decided they wanted the data elements requested by the NCDR addressed in their structured report just as they had been doing for NCDR-Cath PCI. The Data Abstractor had difficulty determining the exact percentages of each lesion, which lesion was worked on, presentation of symptoms and procedure indication with the current reports (Fig. 1). The structured report will provide the physician a consistent tool that ensures data elements for the PVI Registry are addressed.

Method

Once the Interventional Cardiology Group determined the need for the structured report, the EMR software, EPIC Cupid® (the cardiology arm of EPIC) structured report was developed by Parkview's EPIC/Cupid Analyst with assistance from the Lower Extremity Physician Champion and PVI Registry Data Abstractor making up our Structured Report Team.

- Data elements were chosen from the NCDR PVI Registry Lower Extremity data collection form.[1] (Fig. 2)
- The EPIC/Cupid Analyst developed the structured report using the data elements agreed upon. (Fig. 3)
- The Structured Report Team met several times to adjust the report as it was being built.
- Devices used in the procedure automatically get populated in a report to reduce errors that can happen when dictating the device used.
- A summary report was populated with the data elements for ease for finding the most important data not only for the data abstractor but also anyone else wanting a quick summary of the procedure. (Fig. 4)
- A link to the Cath Lab report that provides the start and stop time, location, physician, contrast and fluoro doses used.
- Once the Structured Report Team was satisfied with the report, it was then presented to the Interventional Cardiology Team.
- The Structured Report Team met to use a current procedure to trial the new Structured Report by using the EPIC/Cupid test environment.
- More changes were deemed to be made.
- Once the changes were made, the other Peripheral Interventional Cardiologists were then able to use the report again in the EPIC/Cupid test environment on a current procedure.
- Upon approval from the Interventional Cardiology Team, the PVI Structured Report was placed into the production environment to allow physicians to now use the PVI Structured Report for all Lower Extremity Cath Lab procedures.

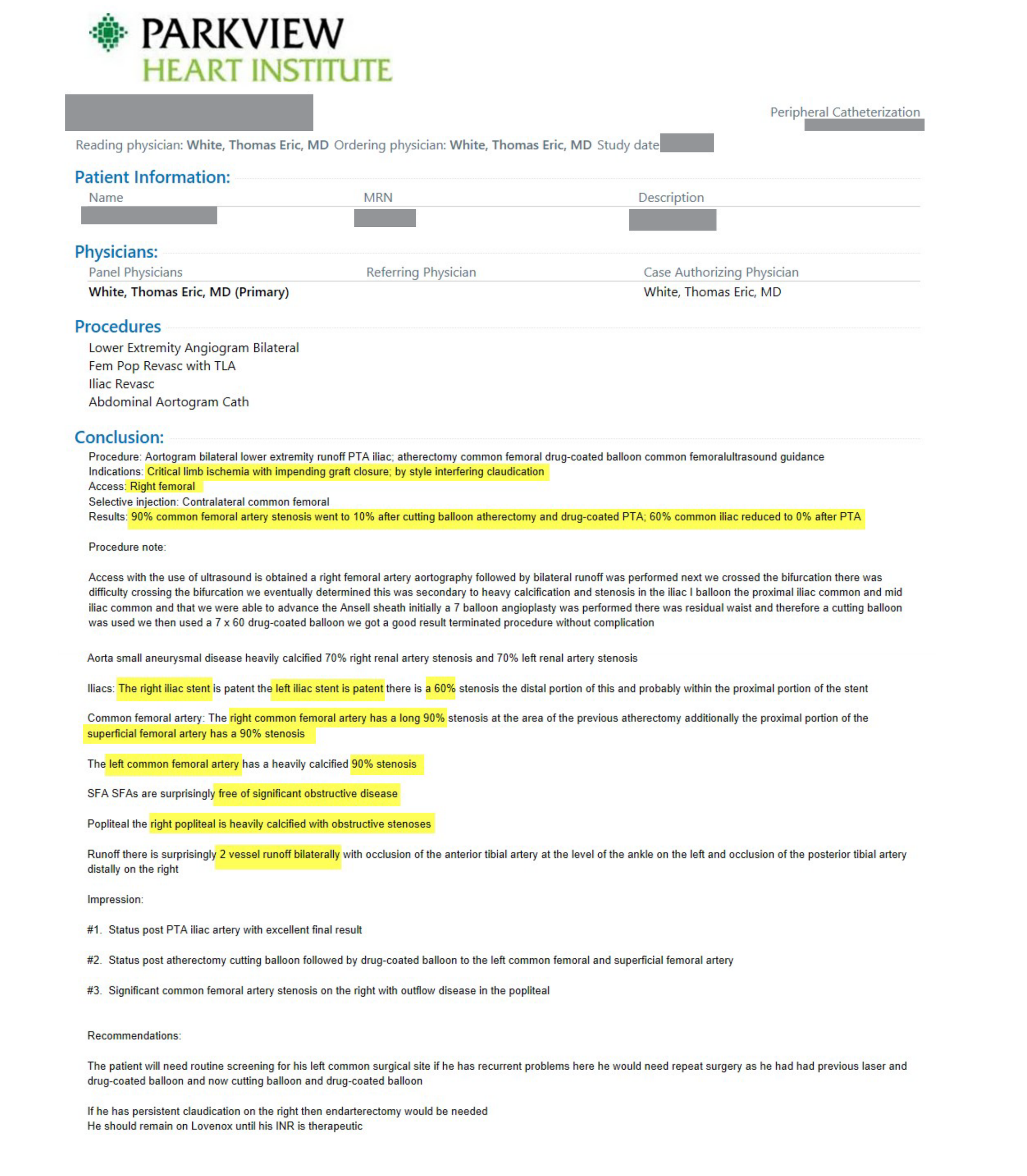

Fig. 1:
Typical lower extremity procedure report. This report was used before the structured report was developed. Yellow highlighted areas show what the abstractor can pull from the report for the registry.

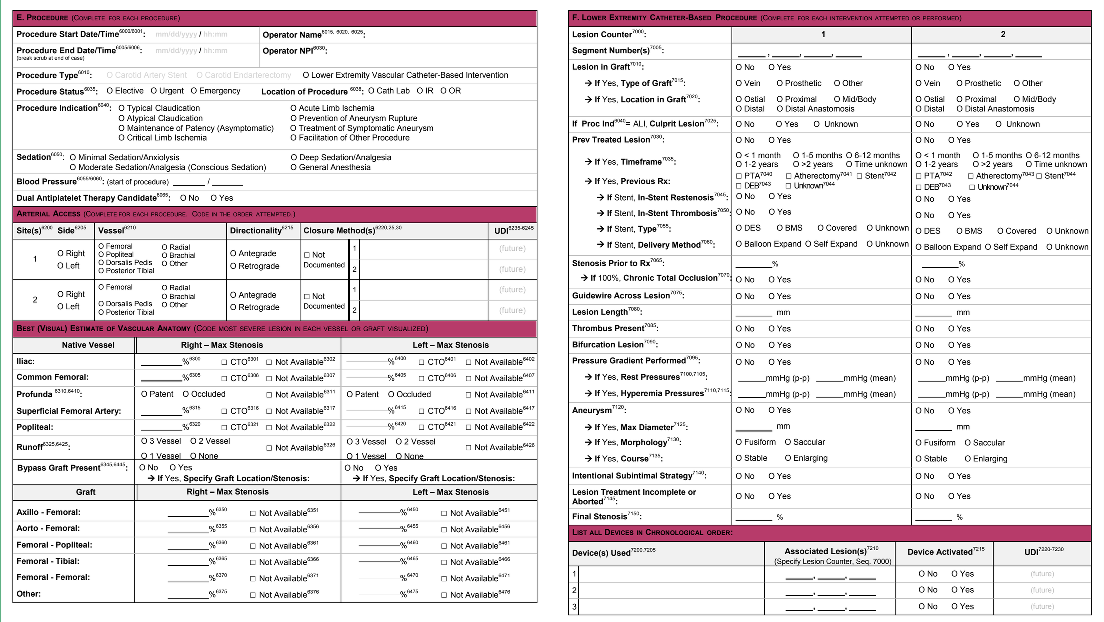

Fig. 2:
Data elements defined by the NCDR® PVI Registry™ Lower Extremity Data Collection Form used for the structured report.

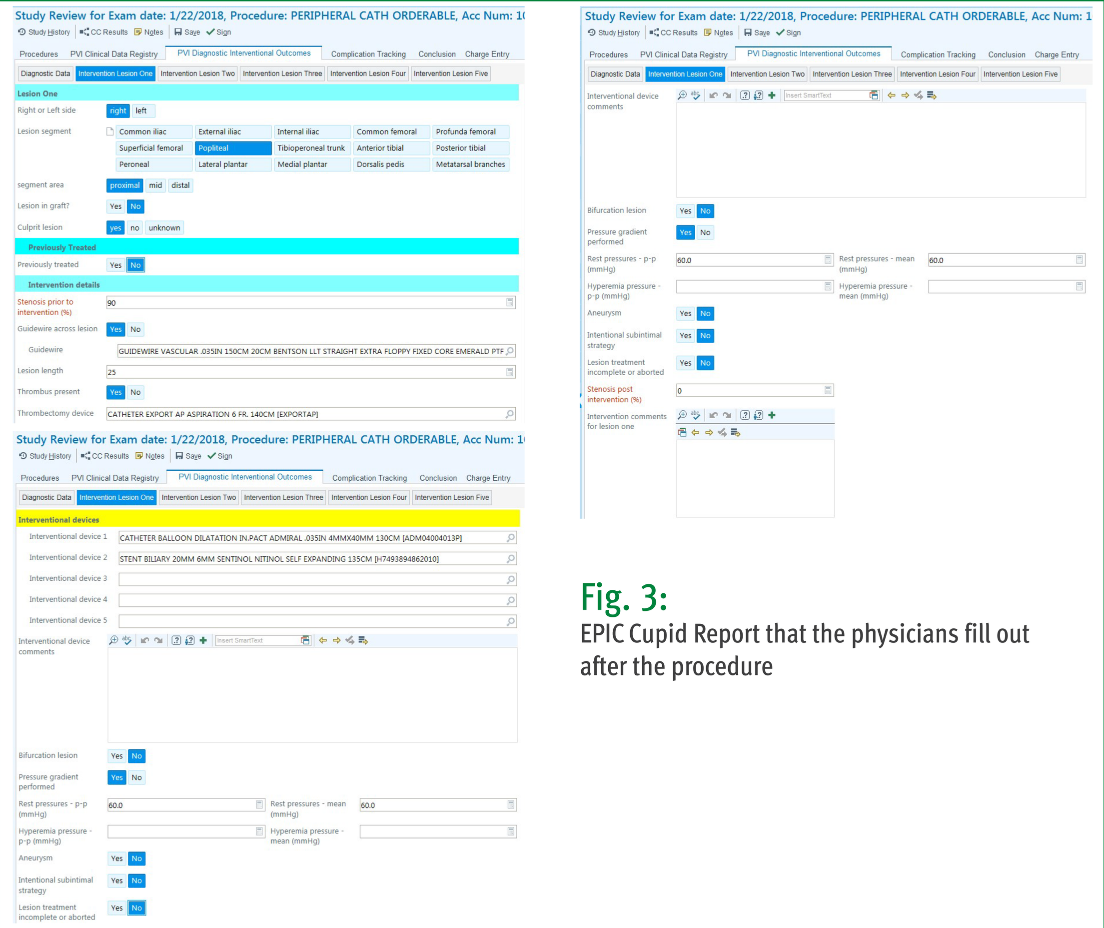

Fig. 3:
EPIC Cupid Report that the physicians fill out after the procedure

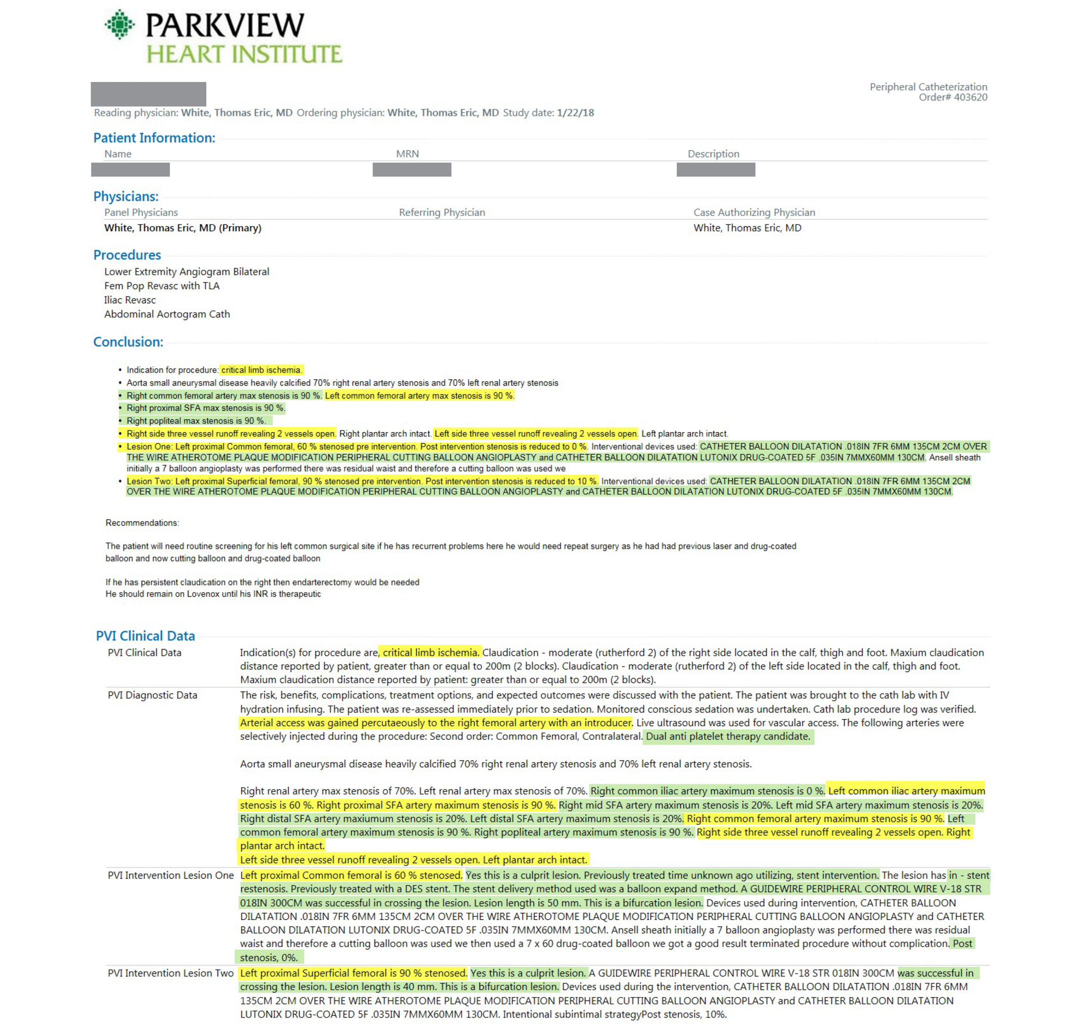

Fig. 4:
Current structured report seen in the EMR after the physician fills out the report in Fig. 3. Yellow highlight shows what was found in the previous and current report. The green highlight shows the additional information that the structured report now captures.

Results

- The structured report was presented at a meeting with the Interventional Cardiology Team where there was an opportunity to provide feedback on the report.
- There were a few suggestions made resulting in changes to the report. The report was then accepted by the five Peripheral Interventional Cardiologists and implemented by Parkview's EPIC/Cupid Analyst.

Abstractor's Notes

- Lesion length was never recorded, abstractor had to try to determine from report with notes and length of devices. Difficult when devices overlap. Now the report asks for this number.
- Dual antiplatelet is always recorded when appropriate. Difficult to discern in the previous report.
- Most descriptions of claudication was described in leg but not exactly where (hip, calf, etc.). Abstractor would have to choose "other". Now location is chosen in the report.
- Devices are now listed with the lesion instead of the abstractor looking at the list of devices used in the procedure note to try and determine which device was used where.
- Culprit lesions are now designated.
- All vascular anatomy now has a discrete number, rather than only the lesions that are worked on.
- Some physicians' reports were completely in paragraph form. Very difficult to quickly find the data points. Abstractor had to read report word for word to find everything, if it was in there. The structured report makes it much easier to find important data for the abstractor.
- Limitations to the report are the ability to bypass the report and make a straight verbal dictation as in the past. There are five physicians in this group and all were in the meeting and could give feedback to address any concerns they have. Since there was buy-in from the Interventional Cardiologists from the beginning, there should be little bypassing of the report.

The structure of the report does not change. The accuracy will be improved with distinct data elements to choose from instead of qualitative data in variable procedure reports. It is difficult to determine just how long the Data Abstractor spends on each patient due to the various registries and projects that the Data Abstractor is working on in a given day. For the data element procedure indication, the abstractor would look at the history and physical, the imaging reports and the procedure report. The structured report ensures that the data element is found in the procedure report and eliminates the need to search other reports for that data element. Also, the registry asks the best estimate for vascular anatomy. The prior report would have less than 25% or just left blank. Now the physicians must put an exact number. A structured report makes it easier to find the numbers than a dictated report with no tables.

Conclusion

The development of this tool will increase the accuracy of the data abstraction for each patient. Also, physicians know that everything they need to document for the PVI Registry for Lower Extremity is incorporated in the report. All interventional cardiologists now have consistent reports. Hospital systems with EPIC® EMR will eventually be able to utilize this tool. For hospitals using another EMR, this tool can be used as a template to create their own structured report. The NCDR PVI Registry will benefit from more facilities using structured reports to ensure the accuracy and ease of gathering data on peripheral vascular interventional procedures. Our next steps are to continue to meet quarterly with the Interventional Cardiology Team and get feedback from using the report and making any changes they feel need to be made to ensure they are comfortable with the report and will continue using it and not resort to going back to the old way. Ongoing, we would like to have a structured report for all of our registries and will look at the successes and challenges with implementing the NCDR-PVI structured report.

References:

1. www.ncdr.com/WebNCDR/pvi/resources/documents

Disclosures:

Emily Keltner, BS, MA: Zoll, Brenda Springer, RN, BSN, and T. Eric White, MD: No Disclosures