Difficult Data Variables and Definitions in VQI: Question & Answer

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Q: When there are multiple procedures during the same admission and complications occur, where should we document the complication - if it occurred between procedures, or after all procedures? Under one or all visits? (i.e. patient had two visits to OR for PVI, post-procedure had a PE)

A: If it is known which procedure caused the complication you can put that complication only on that procedure. If etiology of the complication is unclear it goes on all the procedures for that admission and unfortunately counts multiple times as a complication. This should be up to the surgeon to decide.
Q: The follow-up time window for PVI, CEA, CAS, and infrainguinal bypass is 9-15 months? If the patient is seen at 3 months for a follow-up can you use that data or they have to follow-up with MD within the follow-up timeframe?

A:
- Follow-up is required for all VQI registries at one year (9-21 month window) post-procedure
  - Hemodialysis registry also has one early follow-up 0-6 months post-procedure
  - Varicose vein registry also has one early follow-up 0-3 months post-procedure
  - IVC filter registry follow-up is at time of filter retrieval or one year (9-21 month window) post-procedure
- You can enter as many follow-ups as you would like (SVS PSO encourages entry of all encounters with the pt just for good clinical practice) but the only ones formally evaluated are those where contact date is in 9-21 month post-procedure window
Q: How soon after a follow-up should it be entered into VQI?

A: You can enter the follow-ups as soon as they are completed. It is the contact date that has to be within 9-21 months not the entered date.

- Some registries also ask for imaging dates – even if imaging date is outside 9-21 month window, if follow-up form contact date is within 9-21 month window you will get credit. However, if data being analyzed pertains directly to imaging, for example sac diameter in EVAR, the imaging date needs to be within 9-21 month window in order to count on the reports.
Q: For Functional status (CAS, EVAR) we assume when we find a home address that they are not in a care facility; it’s uncommon to find other comments in the chart about the pts pre-op state related to this. Sometimes when DC planning or PT/OT get involved we get an idea but this is not always the case.

- 0 = Full, 1 = Light work, 2 = Self care, 3 = Assisted care, 4 = Bed bound
- Select most applicable functional status based on patient's condition before any acute current illness caused by the aortic pathology. If a patient's status falls between 2 categories, choose the higher functional (better) category.
  
  **Full** = Fully active, able to carry on all predisease activities without restriction.
  **Light Work** = Restricted in physically strenuous activity but ambulatory and able to carry out work of a light or sedentary nature (For example, light housework, office work).
  **Self Care** = Ambulatory and capable of all self care but unable to carry out any work activities. Up and about more than 50% of waking hours.
  **Assisted Care** = Capable of only limited self-care, confined to bed or chair 50% or more of waking hours.
  **Bed Bound** = Completely disabled. Cannot carry on any self-care. Totally confined to bed or chair.

A: All agreed this definition is bulky and difficult; Frailty Scale will be added to VQI in future; frailty is turning out to be very important predictor of outcomes; work internally at your site for now to improve documentation
Q: For Pre-op Modified Rankin Scale (CAS,CEA) it is difficult to find comments in the chart related to their pre-op state for this data point. How would one capture this?

A: Majority of data managers are determining this one their own – online certification is only good for one year-
discussion about how auditors will be able to verify entries – oftentimes clinicians completing mRS enter 1 when they mean 0 = opportunity for education

Q: Determining whether & when a patient has had a previous CVA can be a challenge. Example: The doctor dictated that the patient has had a stroke but no date was ever determined; or one admission history states that the patient had a stroke (no date); but a more recent admission history states patient has no history of stroke.

A: Many data managers synthesize all information and make a best estimate – look at imaging to see if CVA is documented there

- Note: if year is not known, give best estimate – but don’t give a generic date which might prompt a query at a later date (ie, 1/1/1911, which is prior to pts date of birth)
Q: For ‘Unfit for Open AAA Repair’ (EVAR) field I almost always have to call physician to inquire about this. I understand the risk stratification rationale behind the question, but 90% of the time the response I get is that endovascular is preferred and why wouldn’t they go this route?

A: Previous committee discussion about deletion of this field vs enhancement – status update?
   — Will be discussed further with the registry committee – likely will require change in wording but is an important field
Q: If juxtarenal aneurysm is repaired with EVAR & bilateral renal artery snorkel (not eligible for fenestrated graft), procedure is billed as EVAR, but renal stents are only able to be captured as a complication in EVAR registry. Shouldn’t this procedure be specified for inclusion in Complex EVAR registry?

A: To be discussed with the registry panel.
Q: In PVI registry when capturing an open exposure with concomitant endarterectomy, we then choose primary or patch closure. Why does it still ask if a closure device or skin patch was used? Wouldn’t this be irrelevant? I am thinking this option should gray out when access method is chosen, what am I missing?

A: Will be discussed with the registry panel.
Q: If PVI was performed for May-Thurner syndrome does this exclude the patient from registry?

A: May-Thurner is a venous disease so would be excluded

Inclusion: Percutaneous and/or cut-down interventional catheter-based procedures of native leg arteries including balloon angioplasty, stenting/stent grafting, and/or atherectomy for arterial atherosclerotic occlusive disease of the infrarenal aorta or distal arteries and true aneurysms of the femoral, profunda or popliteal arteries. Primary (first time) interventions and any and all secondary/subsequent interventions.
Q: PVI registry postop complications
  – definition of **perforation**:
    • 0 = No, 1 = Medical, 2 = Interventional, 3 = Surgical
  **No** = no artery perforation occurred. Perforation is an injury caused by a wire or catheter during the procedure.
  **Medical** = perforation occurred but required no invasive management, ie, only medical management which could range from outpatient observation to admission to hospital, administration of medications such as heparin, or any non-invasive escalation of care from what was planned, including longer admission
  **Interventional** = treatment with additional angioplasty, stenting, thrombolysis, suction catheter, etc
  **Surgical** = any open surgical procedure including open thrombectomy, bypass, etc

A: Perforation of artery caused by wire or catheter
Q: PVI registry postop artery complications
   - definition of **target lesion dissection**:
     0 = No, 1 = Medical, 2 = Interventional, 3 = Surgical
     No = no significant target lesion dissection occurred (local dissection at the site of treatment).
     Medical = target lesion dissection occurred but required no invasive management, ie, only medical management which could range from outpatient observation to admission to hospital, administration of medications such as heparin, or any non-invasive escalation of care from what was planned, including longer admission
     Interventional = treatment with additional angioplasty, stenting, thrombolysis, suction catheter, etc
     Surgical = any open surgical procedure including open thrombectomy, bypass, etc.
   - definition of **remote dissection**, per help text: remote dissection is an injury away from the target lesion caused by a wire or catheter during the procedure

A: Dissection of target artery by wire or catheter; remote is same just away from the target lesion
Q: In the PVI registry when capturing both pharmacologic and mechanical thrombolysis, how do we answer ‘thrombolysis timing’ when both occur?
   – Example: thrombolysis with tPA performed the day before (prior procedure) AND thrombectomy performed on day of procedure (planned, current procedure).

A: Discuss with registry committee, perhaps should be second timing field? For now, everyone capturing for ‘planned, current procedure’
Q: In PVI registry, there are suction thrombectomy devices listed under the mechanical thrombectomy drop down selection list, please clarify when to choose?

A: Just capture appropriate mechanical thrombectomy device used
Q: We struggle with carotid duplex data. The reports our physicians complete on the results don’t seem to fit well with what the system is looking for?

A: When CAS registry was updated, stenosis options were updated to be captured as a range – likely as CEA registry is updated, same will be done

– Note: if % is a range, physicians indicate we should use the smaller of the range numbers. Example: 60-75% stenosis enter 60%, then capture range in comments
Q: For ‘CAD symptoms’ field, if pt. underwent PCI due to coronary dx/diagnostic cath but never suffered actual MI due to early intervention, wouldn’t they still be considered a higher cardiac risk? and does ‘prior PCI’ (occurrences less than or over 5 years pre-procedure) properly address this?

- CAD - Coronary Artery Disease:
  - **History of MI (Myocardial Infarction) no SX (symptoms)** = Old MI greater than 6 months ago;
  - **Stable angina** = Stable pattern or symptoms with or without anti-anginal medication;
  - **MI < 6 months ago** = Recent MI within last 6 months;
  - **Unstable angina** = New onset, increasing frequency, lasting > 20 min and/or rest angina.

A: Group agreed this definition plus option for ‘prior PCI’ adequately captures cardiac risk; commentary about bulkiness/granularity of this definition for data analysis.
Q: Several registries ask for “CAD symptoms” in the demographic section. The **stable angina** option in the drop down box reads “stable pattern or symptoms with or without anti-anginal medications”.

- Here is an example of my question:
  - (Scenario) Pt comes in complaining of chest pain however has not taken his Imdur since yesterday afternoon. Pt admits to administering Imdur before EMT arrival & now at the facility chest pain has resolved. The question is what exactly is VQI looking for in this selection?

- Is anyone who is on an anti-anginal medication considered stable all the time? Or is unstable angina only considered when a new onset of unrelieved angina is present, even on an anti-anginal medication?

A: Will look into definition of stable and unstable angina from a cardiology perspective.
Q: Post-op infrainguinal bypass ABI’s are not being done in the hospital; they are done in the physicians office at the first visit. Can we get an option for not done? All my infrainguinals are submitted without validation because of this.

A: This will be further discussed with the registry panel.
Q: In the Lower Extremity Amputation registry, trauma is excluded. Does this include burns that ultimately result in amputation due to ischemic tissue loss or infection (are the burns considered trauma)? Or is the exclusion only referring to when a limb may be severed from a trauma such as a motor vehicle accident, etc & the limb cannot be saved. Please clarify.

A: A burn is considered trauma.
Q: How do we calculate Dose Area Product (DAP)? (SVS PSO has identified problems related to DAP units and is currently working on this data point.)

A: Help text provides calculation assistance

Kerma Air Product (KAP) also known as Dose Area Product (DAP) expresses the dose of radiation (Gray, or GY) per square cm of tissue. It is available from fluoroscopy machines as a total amount at the end of the procedure. It is a good measure of radiation exposure to the patient.

Min/max range: 0 to 1000 Gy.cm²

KAP or DAP may be reported from fluoroscopic procedures using different units of dGy/cm², cGy/cm², mGy/cm² or Gy/cm².

Use the following table to convert to Gy/cm².

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<th>Unit Used</th>
<th>To Convert to Gy · cm²</th>
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<tr>
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<td>mGy · cm²</td>
<td>divide by 1,000</td>
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<tr>
<td>μGy · m²</td>
<td>divide by 100</td>
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</table>
Q: What constitutes “No, for Medical Reasons” (pertaining to medications)?
A: It is documented that the medication is contraindicated due to a medication interaction or medical condition.
Q: How do I capture “endoleak at completion” when the op note states that pt had a type II or type III endoleak at the end of the procedure but does not state from where?

A: Try to clarify the location with the surgeon; if it can’t be confirmed, enter ‘indeterminate’
Q: If a pt had a right iliac access via retroperitoneal with an iliac adjunct stent, would I capture this under the right iliac device?

A: The stent was used for access so it should only be recorded as an adjunct, not as a separate iliac device for aneurysm repair.
Q: How would I capture a distal iliac limb PTA that was performed in the OR after the grafts had been deployed due to heavy calcification?

A: It is not an iliac adjunct as it was done after the EVAR graft, it was done for calcification and is not an iliac injury (complication) – since there is no place to capture concomitant PVI on the EVAR form, you would put it in the comments field. If you subscribe to PVI, please include the procedure there as well.
Q: How do we document the placement of 4 left iliac devices, the drop down selection has a maximum of 3?

A: Choose the top 3 most clinically important devices and enter the 4th device in the comments field.
Q: If groin access is performed but there are complications and the procedure is aborted, is it included?

A: If no aortic device placement is attempted, the procedure is excluded

– Note: failed EVARs that convert to open AAA repair during the index procedure are included

– Note: for open AAA registry, include pts who die during the procedure where the incision is made even if the graft is never placed
Q: How do I capture cell saver volume administered?

A: Per VQI definition, the estimated blood loss amount should include the amount autotransfused. You should add the cell saver to the EBL to get the total EBL value required.
Q: The device used in the procedure is not listed in the database, how do I capture it?

A: Select the manufacturer if listed, otherwise select ‘other.’ Select ‘other’ in device details field and enter specific device information into the “Please specify manufacturer or details” field. Select ‘other’ in device diameter and device length fields. The SVS PSO reviews the “other” devices on a regular basis.
Q: When is a procedure considered a revision versus a redo?

A: If any part of the original bypass graft is used, it is considered a revision and captured in the follow-up form for the original bypass, not as a new infrainguinal bypass.
Q: Would I include a redo infrainguinal bypass when the procedure was done for aneurysmal degeneration of the graft and not for atherosclerotic disease?

A: Yes, the inclusion criteria includes procedures done for atherosclerosis or degenerative aneurysm, even if redo (not revision)
Q: Is a redo bypass included even if the original reason for the bypass was excluded (ie, trauma)?

A: No, if the original bypass was not included then redo should not be included.
Q: Do we capture a failed first attempt with an in situ SVG, when there is a second successful attempt with a propaten vascular graft?

A: You can only capture one attempt in the registry so capture the successful bypass, and note the failed attempt with the SVG in the comments field.
Q: Would I capture cellulitis as a wound infection/complication?
A: If the cellulitis was treated with an antibiotic, then yes, it would be captured as a wound complication. Per the help text: “culture positive or requiring antibiotic treatment”
  – Note: different definition for Surgical Site Infection in other registries, ie EVAR (superficial SSI, deep SSI, etc with qualifying criteria)
  – Note: wound infection for infrainguinal is ‘no or yes’; wound complication for suprainguinal is ‘no, superficial separation/infection, or return to OR’ but same help text definition
Q: In the postop section, does “wound infection” only pertain to the incision related to the bypass? For example, if a pt has had an infrainguinal bypass but also has an infected ulcer on the foot, does wound infection include the separate wound on the foot?

A: Wound infection pertains only to the incision related to the bypass.
Q: Does return to OR only pertain to the infrainguinal bypass? For example, would surgery on an infected wound on the foot count as a return to OR?

A: You should select “yes” for ‘return to OR’ if pt returns to OR for any reason, whether related to index procedure or not

– if related to procedure, select one of the child fields (bleeding, thrombosis, infection, or revision)

– if not related to procedure, or reason is not one of the available child fields, indicate ‘no’ for each of the child fields and add specifics on reason pt returned to OR in comments field
  • this process helps to explain what may be a longer length of stay due to return to OR

– NOTE: ‘return to OR’ options for other registries may be different – i.e., EVAR help text specifically states to capture return to OR for any reason, then there is the option to indicate whether access-related, graft-related, other-related, or unrelated
Lillian Camino, MD, RPVI, RVT – Midwest Regional data manager at Indiana University Health analyzed “core data elements” across 4 VQI registries (CAS, open AAA, EVAR, & PVI)

- Variability in naming as well as definitions for pre-admission meds, co-morbidities, hx of prior procedures, discharge meds, and postop complications from registry to registry can make data analysis tricky

- Important for physicians and data managers to keep this variability in mind when:
  - Abstracting across different VQI registries
  - Building reports in Analytics Engine as well as any manual reports
  - Disseminating SVS PSO reports or other reports using VQI data
### Core Data Elements

#### Preadmission Meds Among 4 modules

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<th>CAS</th>
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**Notes:**
### Preadmission Meds Among 4 modules

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<th>PVI</th>
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**Notes:**

- None
- Warfarin
- Dabigatran
- Rivaroxaban
- Other
- No, for medical reasons
- Non-compliant
### Core Data Elements

#### Preadmission Meds Among 4 modules

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Thank you!