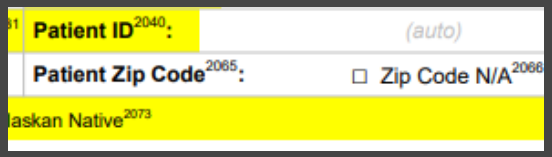
TVT VERSION 3.0

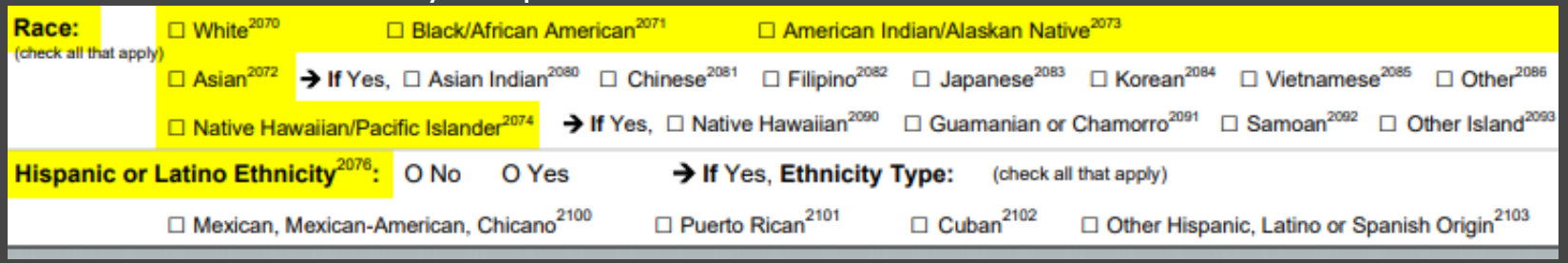
TAVR

DEMOGRAPHICS AND EPISODE OF CARE

- Zip Code added

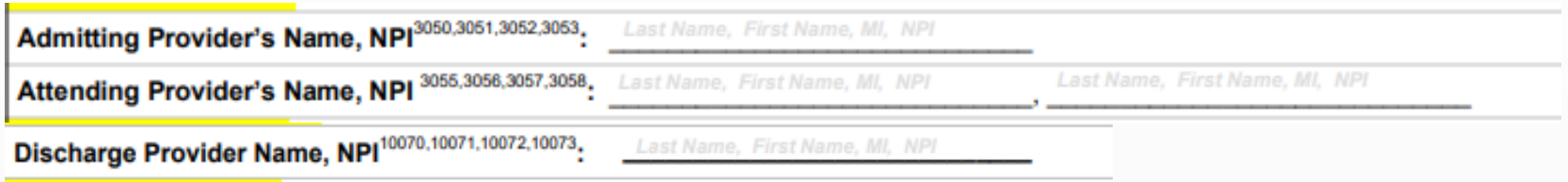


- Race and ethnicity expanded:



- Insurance:
  - Medicare Advantage added
  - MBI#
  - Residence added:

Added elements



Note(s):

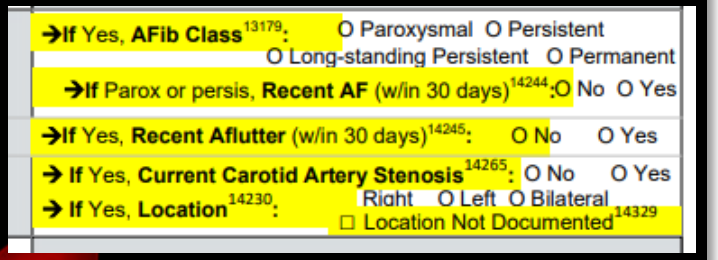
The completion of this data element is voluntary and at the discretion of your facility. NCDR will use the data to provide reporting at the physician level, which may assist physicians with demonstrating value based care as well as support your facility's engagement in quality improvement efforts. If completed, NCDR will defer to your facility's determination of assigning Admitting, Attending, and Discharging Provider roles, as supported by the patient medical record.

HISTORY AND RISK FACTORS

- Additions to History and Risk Factors:
  - "Heart Failure Hospitalization Within Past Year"
  - "Anticipated Life Expectancy of Less than 1 Year"
- Cardiac History, Other History and Risk Factors formatted differently, and their titles changed to: ***Condition History and Procedure History***
- Additions to Condition History:
  - Dementia- Moderate to Severe
  - Atrial Flutter

HISTORY AND RISK FACTORS CONT…

- Child Fields added to Afib/Aflutter:



Selection	Definition
Paroxysmal	AF that terminates spontaneously or with intervention within 7 days of onset. Episodes may recure with variable frequency.
Persistent	Continuous AF that is sustained > 7 days or with electrical or pharmacological termination.
Long-Standing Persistent	Continuous AF of >12 months duration
Permanent	The term "Permanent AF" is used when the patient and clinician make a joint decision to stop further attempts to restore and/or maintain sinus rhythm. • Acceptance of AF represents a therapeutic attitude on the part of the patient and clinician rather than an inherent pathophysiological attribute of the AF • Acceptance of AF may change as symptoms, the efficacy of therapeutic interventions, and patient and clinician preferences evolve.

HISTORY AND RISK FACTORS, CONT…

- Carotid Stenosis: Definition simplified:

Selection	Definition
Right Carotid Artery Stenosis	There is >=50% stenosis in the right carotid artery.
Left Carotid Artery Stenosis	There is >=50% stenosis in the left carotid artery.
Bilateral Carotid Artery Stenosis	There is >=50% stenosis in both the right carotid and left carotid arteries.

HISTORY AND RISK FACTORS, CONT.

- COPD: Ability to enter severity not documented
- PFT:
  - Target value change from 6 months to 12 months.
  - FEV1 is the % predicted value
  - DLCO no longer the adjusted value
    - Choose the lowest % predicted simple DCLO or DCLO/VA

Element: 13218	Diffusing Capacity of the Lungs for Carbon Monoxide Predicted
Coding Instruction:	Indicate the % predicted diffusing capacity of the lungs for carbon monoxide (DLCO) value obtained for the patient. Choose the value that represents the lowest % predicted whether or not it is the simple DLCO or the DLCO/VA.
Target Value:	The last value between 12 months prior to arrival and start of the first procedure

SMOKING EXTENDED

Tobacco Use

Selection	Definition
Never	An individual who has not smoked 100 or more cigarettes during his/her lifetime.
Former	An individual who has smoked at least 100 cigarettes during his/her lifetime but does not currently smoke.
Current – Every Day	An individual who has smoked at least 100 cigarettes during his/her lifetime and still regularly smokes every day.
Current – Some Days	An individual who has smoked at least 100 cigarettes during his/her lifetime and still regularly smokes periodically (not every day), yet consistently.
Smoker – Current Status Unknown	An individual known to have smoked at least 100 cigarettes in the past, but whether they currently still smoke is unknown.
Unknown if ever smoked	An individual whose current and prior smoking status is not known.

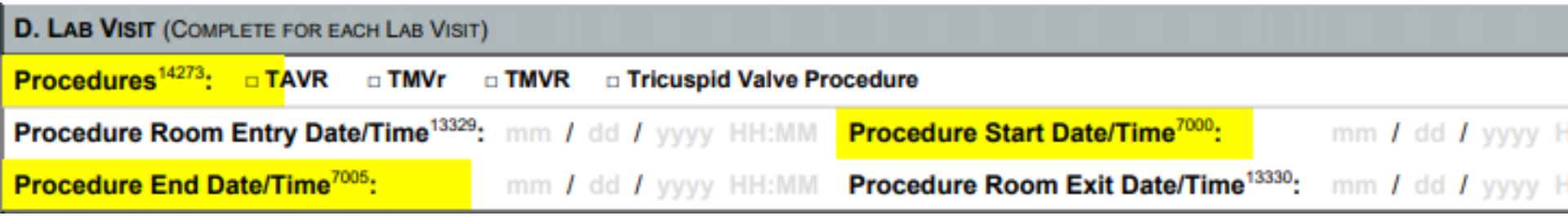
Tobacco Amount

Selection	Definition
Light Tobacco use (<10/day)	The patient smokes less than 10 cigarettes daily
Heavy tobacco use (>= 10/day)	The patient smokes 10 or more cigarettes daily

PROCEDURE HISTORY

- **Added:**
  - Tricuspid Valve Procedure
  - Pulmonic Valve Procedure

LAB VISIT DEFINITION CHANGES AND ADDITIONS



D. LAB VISIT (COMPLETE FOR EACH LAB VISIT)

Procedures[14273]: ☐ TAVR ☐ TMVr ☐ TMVR ☐ Tricuspid Valve Procedure

Procedure Room Entry Date/Time[13329]: mm / dd / yyyy HH:MM **Procedure Start Date/Time**[7000]: mm / dd / yyyy H

Procedure End Date/Time[7005]: mm / dd / yyyy HH:MM **Procedure Room Exit Date/Time**[13330]: mm / dd / yyyy H

Element: 7000	***Procedure Start Date and Time***
Coding Instruction:	Indicate the date and time the procedure started. The time of the procedure is the time that the skin incision, vascular access, or its equivalent, was made in order to start the procedure
Element: 7005	***Procedure End Date and Time***
Coding Instruction:	Indicate the ending date and time at which the operator completes the procedure and breaks scrub at the end of the procedure ***Note(s):*** If more than on operator is involved in the case then use the date and time the last operator breaks scrub for the last time.

NEW ELEMENTS

1. Symptoms of Aortic Stenosis Present

- Coding Instruction:
  - Code ***YES*** if the patient has any symptoms of heart failure on arrival or any time within the past 3 months.
    - **EXAMPLE:** if a patient had symptoms within the past 3 months (even if there are no symptoms on arrival to the hospital), code ***YES***. If there is documentation of symptoms (e.g. shortness of breath) but no documentation of heart failure, code ***YES***. These indicate presence of symptomatic aortic stenosis.
- Target Value:
  - Any occurrence between 3 months prior to arrival at this facility and start of the procedure

2. Syntax Score:

- Coding Instruction:
  - Indicate the syntax score documented in the medical record. The syntax score is required for patients with left main disease and/or 3 vessel disease in native coronary arteries.
  - SYNTAX (Synergy between PCI with TAXUS drug-eluting stent and Cardiac Surgery) Score: A grading tool used to determine the complexity of CAD in native vessels.
- Target Value:
  - The highest value between 12 months prior to the procedure and start of the procedure.

EXPANDED AORTIC ANNULUS MEASUREMENTS

PRE-PROCEDURE CTA FINDINGS
AV Annulus Assessment Method[13422]: O CTA O TTE O TEE O Other *(note: primary documentation should be CTA)*
AV Annulus Diameter: **Min**[13428]: _____ mm **Max**[13429]: _____ mm
AV Annulus Area[13438]: _____ mm^2 **AV Annulus Perimeter**[13439]: _____ mm
AV Calcification Severity[13423]: O None O Minimal O Moderate/Severe □ Not Documented[13437]

Element: 13422	Aortic Valve Annulus Assessment Method
Coding Instruction:	Indicate the method used to assess the aortic valve annulus size. Note: If the annulus was assessed with more than one method, code the findings based on computed tomography angiography (CTA). If CTA was not performed, code the measurement based on the assessment method (echo or other method) used to assess the annulus size to determine the size of the prosthetic valve implanted during the procedure.
Target Value:	The value on current procedure

PRE-PROCEDURE ECHO

Morphology – New Child Element

Aortic Valve Morphology[13468]: O Bicuspid O Tricuspid O Other

→**If** Bicupsid, **Ascending Aorta Size**[13469]: _____ cm □ Not Documented[13470]

Aortic Stenosis (if yes) – New Child Element

→**If** Yes, **AV Mean Gradient**[13674]: (highest) _____ mm Hg

→**If** <40 mm Hg, **Low Flow** *(stroke volume index <35 ml/m²)*[13700]: O No O Yes □ Not Documented[13701]

Mitral Valve Disease Etiology

Mitral Valve Disease Etiology[13490] *(Check all that apply)*: □ Functional MR (Secondary) □ Degenerative MR (Primary) □ Post Inflammatory □ Endocarditis □ Other □ None

Mitral Valve Disease Etiology - 1.3.6.1.4.1.19376.1.4.1.6.5.548		
Selection	**Definition**	**Source**
Functional MR (Secondary)	Typically the valve structures (i.e.. leaflets and chord tendinae) are normal in functional mitral regurgitation, but a variety of diseases (such as a prior myocardial infarction or cardiomyopathy) compromises the leaflets ability to coapt (i.e. form a tight seal when closed) and results in mitral regurgitation.	
Degenerative MR (Primary)	Degenerative mitral valve disease is due to multiple conditions that lead to abnormal leaflets and/or chordae that result and mitral regurgitation. The leaflets may prolapse or flail into the left atrium.	
Post Inflammatory		
Endocarditis		
Other		
None		

DEFINITIONS: MITRAL VALVE DISEASE

NEW ELEMENT: *PRE-PROCEDURE DOBUTAMINE CHALLENGE*

Pre-Procedure Dobutamine Challenge

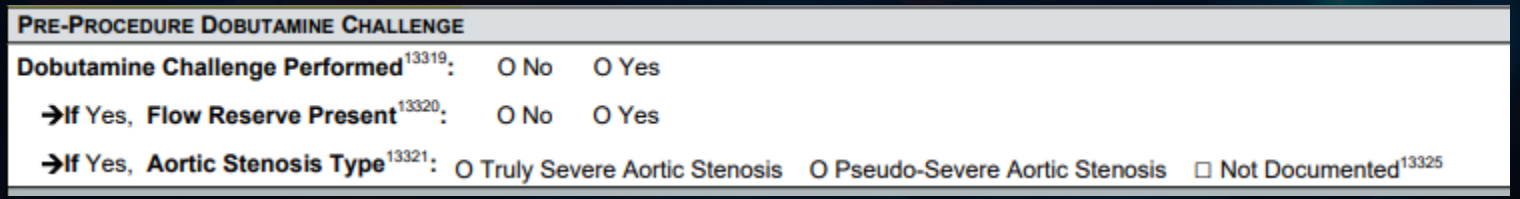
- **Coding Instruction -** Indicate if a dobutamine challenge was performed. (A dobutamine challenge is a type of stress echocardiography that can distinguish between true-severe versus pseudo-severe aortic stenosis.)
- **Target Value:** Any occurrence between 12 months prior to arrival and start of the first procedure

Flow Reserve Present

- **Coding Instruction:** Indicate if coronary flow reserve was documented on the dobutamine challenge. Flow reserve on dobutamine echocardiogram is indicated by an increase in the stroke volume index by ≥20%
- **Target Value:** Any occurrence between 12 months prior to arrival and start of the first procedure

Aortic Stenosis Type

- **Coding Instruction:** Indicate the type of aortic stenosis documented on dobutamine challenge. Physicians may use different criteria to differentiate, characterize and document truly severe aortic or pseudosevere aortic stenosis. The 2017 AUC for Severe Aortic Stenosis guideline differentiates "truly severe aortic stenosis" with an AVA <=1.0 cm2 and Vmax >4 m/sec at any flow rate.
- **Target Value:** Any occurrence between 12 months prior to arrival and start of the first procedure



PRE-PROCEDURE DOBUTAMINE CHALLENGE				
Dobutamine Challenge Performed[13319]:	O No	O Yes		
→If Yes, **Flow Reserve Present**[13320]:	O No	O Yes		
→If Yes, **Aortic Stenosis Type**[13321]:	O Truly Severe Aortic Stenosis	O Pseudo-Severe Aortic Stenosis	☐ Not Documented[13325]	

PROCEDURE INFORMATION CHANGES

Heart Team Reason for Procedure

- **Coding Instruction:** Indicate the heart team's reason for the transcatheter valve replacement procedure.
  - Note: If the heart team did not document a risk category, consider patients with a predicted risk of 30-day mortality based on the risk model developed by the Society of Thoracic Surgeons as noted below:
    - Low risk is considered < 3%
    - Intermediate risk is considered 3-7%
    - High risk is considered >= 8%
    - Extreme risk includes technically inoperable, co-morbid and debilitated patients.
- **Target Value:** The value on current procedure

Embolic Protection Deployed

- **Coding Instruction:** Indicate if embolic protection was used during the procedure.
- **Target Value:** The value on current procedure

ANESTHESIA TYPE CHANGES

SELECTION (TYPE)	DEFINITION
General Anesthesia	General Anesthesia is a drug-induced loss of consciousness during which patients are not arousable, even by painful stimulation. The ability to independently maintain ventilatory function is often impaired. Patients often require assistance in maintaining a patent airway, and positive pressure ventilation may be required because of depressed spontaneous ventilation or drug-induced depression of neuromuscular function. Cardiovascular function may be impaired
Deep sedation/Analgesia	Deep Sedation/Analgesia is a drug-induced depression of consciousness during which patients cannot be easily aroused but respond purposefully following repeated or painful stimulation. The ability to independently maintain ventilatory function may be impaired. Patients may require assistance in maintaining a patent airway, and spontaneous ventilation may be inadequate. Cardiovascular function is usually maintained.
Moderate Sedation/Analgesia (Conscious Sedation)	Moderate Sedation/Analgesia ("Conscious Sedation") is a drug-induced depression of consciousness during which patients respond purposefully to verbal commands, either alone or accompanied by light tactile stimulation. No interventions are required to maintain a patent airway, and spontaneous ventilation is adequate. Cardiovascular function is usually maintained. Reflex withdrawal from a painful stimulus is NOT considered a purposeful response.
Minimal Sedation/Anxiolysis	Minimal Sedation (Anxiolysis) is a drug-induced state during which patients respond normally to verbal commands. Although cognitive function and physical coordination may be impaired, airway reflexes, and ventilatory and cardiovascular functions are unaffected.

NEW CHILD ELEMENTS

Procedure Aborted[13505]: O No O Yes

→**If** Yes, **Reason**[13506]: O Access Related O Consent Issue O Device Delivery System Malfunction O Navigation Issue After Successful Access O New Clinical Findings O Patient Clinical Status O System Issue O Other

→**If** Yes, **Action**[13757]: O Conversion to Open Heart Surgery O Scheduled Open Heart Surgery O Rescheduled Transcatheter Procedure O Converted to Clinical Trial O Balloon Valvuloplasty O Converted to Medical Therapy O Other

Conversion to Open Heart Surgery[13542]: O No O Yes

→**If** Yes, **Reason**[13543]: O Valve Dislodged to Aorta O Valve Dislodged to Left Ventricle O Annulus Rupture O Ventricular Rupture O Aortic Dissection O Coronary Occlusion O Access Related O Cardiac Tamponade O Inability to Position Device O Device Embolization O Valve Injury O Other

Mechanical Support[7422]: O No O Yes →**If** Yes, **Device**[7423]: _____

→**If** Yes, **Timing**[7424]: O In place at start of procedure O Inserted during procedure and prior to intervention O Inserted after intervention has begun O Post Procedure

CardioPulmonary Bypass Used[13579]: O No O Yes

→**If** Yes, **Status**[13580]: O Elective O Emergency →**If** Yes, **CPB Time**[13581]: _____ min

Delivery System Removed[13525]: O No O Yes

VALVE-IN-VALVE EXPANDED

Valve-in-Valve Procedure[13500]: O No (degenerative native valve) O Yes (degenerative bioprosthetic valve)

→**If** Yes, **Bioprosthetic Valve Fracture Attempted**[13501]: O No O Yes

→**If** Yes, **BVF Timing**[13502] *(Check all that apply)*: ☐ Pre Implant ☐ Post Implant

→**If** Yes, **Valve Observed To Be Fractured**[13503]: O No O Yes

Coding Instruction: Indicate if bioprosthetic valve fracture (BVF) with high pressure balloon dilation was attempted on the previously implanted bioprosthetic valve. Note 1: If pre-implant valvuloplasty or post-implant post dilatation with lower pressure inflations (e.g. a hand inflation up to 4 atm), code no. Note 2: If the previously implanted bioprosthetic valve was fractured during the procedure (even though BVF was not planned), code yes.

Target Value: The value on current procedure

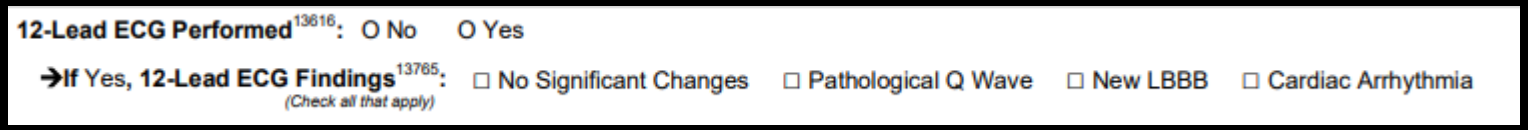
Supporting Definition: Bioprosthetic Valve Fracture Bioprosthetic Valve Fracture (BVF) is a technique that uses a high pressure dilatation with intent to purposefully fracture or crack the ring of the previously implanted bioprosthetic valve and allow the new implanted valve to more fully expand. This technique requires balloon pressures of up to 20 atm. Source: STS/ACC TVT Registry

INTRA- OR POST PROCEDURE EVENTS

Element: 12153	Intra or Post Procedure Events
Coding Instruction:	Indicate if there were any Intra or Post Procedure Events.
Target Value:	Any occurrence between start of procedure and until next procedure or discharge

- **NOTE:** change in definition post procedure is now from the end of the procedure until next procedure or discharge.
- Definitions are now imbedded in the data dictionary
- The Adverse Event Definitions document will be retired.

POST-PROCEDURE ELEMENTS



12 Lead Electrocardiogram Findings Selections:

- Cardiac Arrhythmia
  - The patient has a new onset of an atrial or ventricular arrhythmia requiring medication or other therapy. This includes brady or tachy arrhythmias.
- No Significant Changes
- Pathological Q Wave
- New Left Bundle Branch Block

Echocardigram:

- AV Peak Doppler Velocity removed, and Tricuspid Regurgitation added

DISCHARGE ELEMENTS

Element: 10116	Cardiac Rehabilitation Referral
Coding Instruction:	Indicate if the patient has been referred to an outpatient cardiac rehab program prior to hospital discharge. The referral may be to a traditional outpatient cardiac rehab program with face-to-face interactions and training sessions or may include other novel delivery options.
Target Value:	The value on discharge
Supportin Definition:	Cardiac Rehabilitation Referral 1. Documented communication between the healthcare provider and the patient to recommend an outpatient CR program AND 2A. Official referral order is sent to outpatient CR program OR 2B. Documentation of patient refusal to justify why patient information was not sent to the CR program

Selection	Definition
No - Reason Not Documented	
No - Medical Reason Documented	Patient deemed by a medical provider to have a medically unstable, life-threatening condition or has other cognitive or physical impairments that preclude CR participation
No - Health Care System Reason Documented	Patient is discharged to a nursing care or long-term care facility, or patient lacks medical coverage for CR.
No - Patient - Oriented Reason	No traditional CR program available to the patient, within 60 min [travel time] from the patient's home, or patient does not have access to an alternative model of CR delivery that meets all criteria for a CR program.
Yes	

CARDIAC REHAB DEFINITIONS

CHANGES

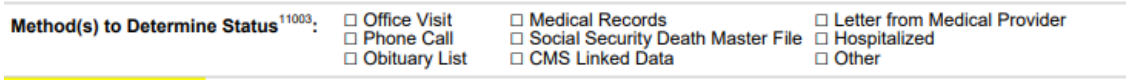
- Cause of Death expanded and includes "Other" category for both for cardiovascular and non-cardiovascular reasons.
- Medications at Discharge changed to reflect consistency with other ACC registries

DISCHARGE MEDICATIONS *D/c meds are not required for patients who expired, discharged to "Other Acute Care Hospital," "AMA", or are receiving Hospice Care.*

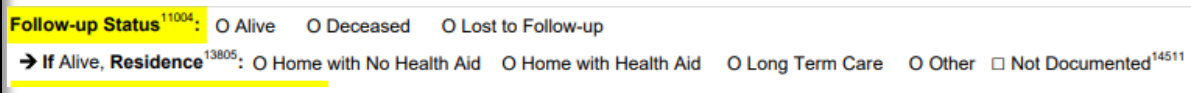
CATEGORY	MEDICATION CODE[10200]	PRESCRIBED[10205]			
		YES	NO– NO REASON	NO– MEDICAL REASON	NO–PT REASON
Anticoagulant	Direct Thrombin Inhibitor	O	O	O	O
	Warfarin	O	O	O	O
Antiplatelet	Aspirin	O	O	O	O
Non-Vitamin K Dependent Oral Anticoagulant	Direct Factor Xa Inhibitors	O	O	O	O
P2Y12 Inhibitors	P2Y12 Antagonist	O	O	O	O

FOLLOW-UP CHANGES

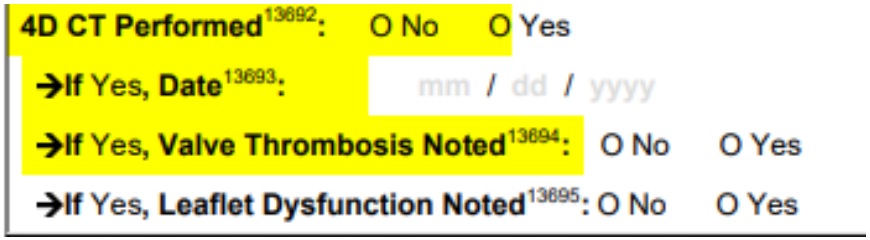
- **Methods to Determine status expanded**



- **Note: Withdrawn removed and Residence added**



- **Echo - Tricupid Regurgitation was added**



- **5 Meter walk was Eliminated**
- **KCCQ date was added**
- **Changes to ECG, Medications and Events reflect the base DCT.**